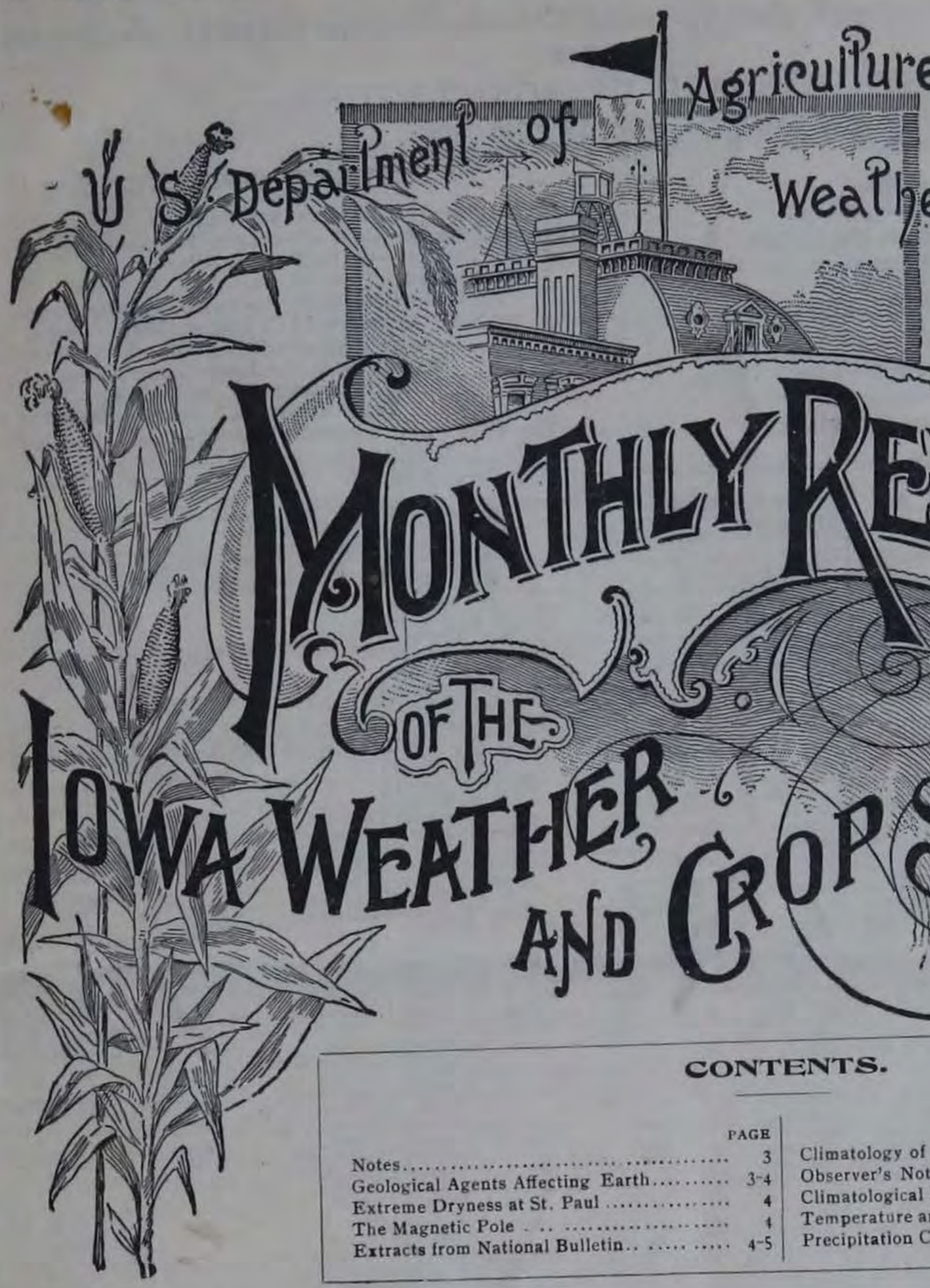
Vol. XIII. JANUARY, 1902.



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CENTRAL STATION, DES MOINES, IOWA.

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LOCAL FORECAST OFFICIAL,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

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BERNARD MURPHY, STATE PRINTER
1902.

THE IOWA WEATHER AND CROP SERVICE

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De Soto	R. D. Minard
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Pella	B. A. Viersen
Perry	J. A. Harvey
Plover	J. S. Smith
Primghar	P. R. Bailey
Red Oak	J. S. Cole
Ridgeway	Arthur Betts
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Spencer	S. Gillespie
Spirit Lake	W. C. Drummond
Stockport	C. L. Beswick
Storm Lake	Prof. M. L. Fuller
Stuart	Dr. W. C. Tanner
Thurman	C. R. Paul
Tipton	G. W Barclay
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Waverly	H. S. Hoover
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Wilton Junction	J. M. Rider
Winterset	W. W. McKnight
West Bend	Phil. Dorweile
West Union	J. M. Lisher
Woodburn	C B. McDonough

*U. S. Weather Bureau

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Spirit Lake	E. E. Arey
State Center	E. P. Thompson
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Winterset	H. A. Kinsman
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West Union	H. B. Blackman
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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIII. JANUARY, 1902. No. 1.

NOTES.

The value of a midwinter snow storm in the winter wheat belt may be estimated by its effects in the eastern markets.

* * *

There are numerous indications of a considerable increase in the acreage of corn the coming season. This is especially true as to the sections where the yield was smallest last season. Better, however, than an increase in the area planted would be more thorough preparation of soil and more careful cultivation of the crop during the critical stages of growth. More bushels per acre should be the aim, rather than more acres devoted to the crop. To accomplish this, the farmer should use great care in testing his seed as well as in the culture of the crop in due season.

* * *

The idea that drowning persons take much water into the lungs has seemed to be unquestioned. But it has been long opposed by Prof. W. K. Whitford, who in forty years has successfully treated many patients apparently dead from drowning, and who now asserts, as the result of many examinations, that practically no water enters the lungs. The mistaken view has caused the waste of much valuable time. He has found heat—energetically and persistently applied—to be the most important agent in resuscitation, and with this, aided by artificial respiration and stimulation, he has restored patients that have been submerged an hour.—*Exchange.*

* * *

"Still we are a nation of farmers," remarks the Philadelphia *Ledger* anent census returns, "which show that in 1900 there were 5,700,000 farms under cultivation as compared with 4,564,691 in 1890. This may be deemed a remarkable increase, showing that the growth of our industries is symmetrical, the farmers keeping pace in the march forward. The single discouraging feature of the situation is the increase of tenant farming. This is accounted for, however, to some extent by the lease of lands by immigrants who are intending purchasers. As the area of unoccupied arable lands in the United States becomes less and less, it is altogether probable that future censuses of the country will show a comparative decline in the number of farms. The heavy increase in the past ten years is in the nature of a surprise, though the inducements of fine crops and fair prices have doubtless given a spur to land investments since 1896."

GEOLOGICAL AGENTS AFFECTING THE EARTH.

The atmosphere plays its part in geological operations. Its corroding power, backed by rain and wind, helps to decay and disintegrate those rocks which are exposed to its influence. Rain completes the work thus begun. Wind blows dust, sand and volcanic ashes over large tracts of earth—in fact, over the whole of it.

It is only of late years that geologists have discovered that fine volcanic dust is carried over the whole of the earth's surface and plays a very important part in the deep sea deposits. On deserts and nearly rainless regions blown sand will wear away the hardest rocks by beating against them. Some sandstone formations appear to have been piled up by winds.

Winds cause ocean currents, waves and storms. The great denuding power of the sea is largely due to the atmosphere. Some parts of the English coasts are being rapidly washed away. Plants and animals have their distribution considerably affected by winds and ocean currents. Again, whether living in water or on land, animals live on the oxygen supplied from the atmosphere, and land plants absorb carbonic acid from the same source.

Rain acts in two ways: (1) chemically by dissolving certain substances, such as lime, out of the rocks, and (2) mechanically by wearing down their surfaces as it flows over them. Any old building—a ruined castle or cathedral, for instance—shows a "weathered" surface resulting from the action of rain and wind. In sandstone structures the details of carving are often lost, and on old tombstones the lettering can hardly be deciphered. Springs are due to rainwater collecting in rocks and rising to the surface. Rivers are fed by rains and springs.

A river is a very powerful geological agent. In the hardest rocks rivers gradually carve out a valley or gorge. This is accomplished partly by chemically dissolving certain mineral substances, but chiefly by mechanical erosion, the stones, sand and mud wearing away the bed of a stream as they run and tumble over it.

The finest examples of river action are the famous canyons of Colorado, which in some places are gorges 5,000 or even 6,000 feet deep, with vertical sides. But, as already pointed out, rivers have a constructive action quite as important as their destructive action. By bringing down their burden of sediment into lakes, estuaries and seas they build up great piles of rock and "sow the dust of continents to be."

Glaciers are rivers of ice fed by the "eternal snows" of high mountain ranges such as the Alps. They wear out their own valleys as rivers do; they transport mud, sand and stones to great distances, in some cases sending them sealed up in icebergs to float far out to sea and on melting deposit their burdens on the sea floor. Off the coast of Newfoundland northern icebergs are depositing a great mass of "glacial drift."

The sea is a great denuding agent; but its work is more constructive than destructive. It is the workshop where nearly all the stratified rocks have been accumulated and ranged in layers or strata. The rivers and ocean currents continually bring in fresh supplies of debris even for hundreds of miles.

Man, compared with the lower animals, produces but little effect as a geological agent. Still the human race has considerably modified the distribution of plants by cutting down forests and by cultivating certain plants to supply food. So with animals. Certain useful species have been cultivated and enor-

OBSERVERS' NOTES.

ALTA—*David E. Hadden:* Ideal weather during first and second decades of the month, but cold and wintry the last decade. On 22nd at 7:30 p. m. a vertical bar was seen on the planet Venus. On the 22nd about 11:55 P. M. a brilliant detonating meteor passed from east of zenith to near the east horizon; loud report followed three or four minutes later.

BONAPARTE—*B. R. Vale:* A remarkably mild and pleasant month. Roads fine for January.

CENTERVILLE—*Jas. S. Hamilton:* An unusually favorable month in everything but stock water which is scarce. Feed high priced; three inches of snow on ground.

CLEAR LAKE—*John Cobb:* About seven inches of snow at close of month.

CLINTON—*Dr. Luke Roberts:* Month over three degrees warmer than January average. Rainfall 1.18 less than normal. Per cent of cloudiness 28, or 22 per cent less than normal. Wind movement 4,240 miles—700 miles below normal. About four inches of snow at close of month.

COLUMBUS JUNCTION—*Prof. H. E. Simpson:* Dry, clear weather characterized the month, there being no precipitation from the 1st to 19th.

ESTHERVILLE—*Leslie Littell:* Very warm and dry, except the last week which was coldest of the season.

GRUNDY CENTER—*E. S. King:* Finest weather possible 1st to 20th; from 20th to 31st very frosty and disagreeable.

RIDGEWAY—*Arthur Betts:* Mild month, two and one-half degrees warmer than December. Precipitation heavy and about all came in last decade; 228 hours of sunshine. From 7th to 10th fields were in good working order.

BELATED REPORT.

TIPTON—*December:* Mean temperature 23.2 degrees; highest 48° on the 1st; lowest, 15° below zero on the 14th; greatest daily range 30 degrees; prevailing direction, northwest. Number of clear days 10, partly cloudy 4, cloudy 17.

CLIMATOLOGICAL DATA FOR JANUARY, 1902.

NORTHERN SECTION.

STATIONS.	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES				Number rainy days	SKY			Prevailing direction of wind	DATES OF THUNDER-STORMS.
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)		Number clear days	Number partly cloudy days	Number cloudy days		
Algona	Kossuth	1,213	9	21.1	†6.9	48	8	-18	27	29	1.04	†.43	54	10.4	4	16	12	3	NW	
Alta	Buena Vista	1,513	7	20.0	†5.0	45	8, 17	-20	27	30	.94	†.21	62	14.4	5	17	9	5	S, NW	
Alta (near)	Buena Vista	....	....	.....	....	.....	.....	.....	.....	.....	.75	....	.35	....	3	....	..	..	.....	
Britt	Hancock	1,236		19 0		49	8	-22	27	40	.55	.....	.20	5.5	6	16	12	3	NW	
Charles City	Floyd	1,012	10	25.2	†11.3	48	8	-27	28	33	.65	-.64	20	8.5	5	10	16	5	N	
Clear Lake	Cerro Gordo	984	....	23.4		60	7	-22	27	45	.90	.....	.25	9 0	6	21	7	3	NW	
Cresco	Howard	1,280	29	17.4	†7.1	43	8	-23	28	35	.60	-.63	.40	6 0	2	23	4	4	NW	
Decorah	Winneshiek	875	8	18.8	†6 3	47	8, 17	-30	28	38	1.20	- 06	65	9 0	4				.....	
Dows	Wright	1,142		20.1	....	54	8	-24	27	31	.75		.30	.	4	23	2	6	NW	
Elkader	Clayton	600	20	20.7	†7.7	51	9	-30	28	40	.77	- 73	.45	12 0	3	18	11	2	NW	
Estherville	Emmet	1,298	....	19.4	.....	50	7	-25	28	35	.36	....	.19	4 8	5	16	15	0	NW	
Fayette	Fayette	1,000	11	18.5	†2.8	47	9	-30	28	37	.82	-.62	.45	8 6	5	20	6	5	NW	
Fonda	Pocahontas	1,232	.	.....	.....	.	.....	.....	.....	.....	1 50	.....	.65	15.5	5	19	6	6	S	
Forest City	Winnebago	1,220		20.0	.....	49	8	-20	27	36	.72	....	30	9.0	4	19	6	6	.....	
Grand Meadow	Clayton	1,180	10	18.6	†3.7	45	9	-25	28	28	.85	- 58	.40	8 5	3	14	10	7	NW	
Greene	Butler	943		20.2		52	8	-24	28	34	.58	....	.20	5 0	6	4	20	7	W	
Hampton	Franklin	1,000	11	21.6	†7.7	59	8	-19	28	36	1.46	†.23	.84	15 2	5	13	15	3	NW	
Humboldt	Humboldt	1,095	8	24.4		58	8, 10	-22	28	46	.45	-.04	.20	8.0	4	25	1	5	SE	
Larrabee	Cherokee	1,366	10	20.4	†3.9	47	8	-22	27	33	.95	†.31	.75	11.6	2	18	10	3	NW	
Le Mars	Plymouth	1,224		21.6	.....	48	7, 8	-24	27	32	.98	.....	.65	11.0	3	21	7	3	S	
New Hampton(a)	Chickasaw	1,166	...	19.6		47	8	-22	27	32	.90	.....	.30	9 0	4	17	10	4	NW	
Northwood	Worth	1,222		20.1	.....	47	8	-18	27, 28	35	.80	....	.23	8.0	4	16	12	3	NW	
Osage	Mitchell	1,184	10	18.8	†6.4	43	5, 9	-22	28	32	57	-.35	.30	5.8	6	11	12	8	NW	
Plover	Pocahontas	1,426		20 8		51	9	-25	27	32	.60	.....	.30	6.0	4	21	2	8	S	
Primghar	O'Brien	1,800	....	20.3	.....	45	8, 9	-22	27	32	.45	....	.40	4.5	2	18	0	13	SW, NW	
Ridgeway	Winneshiek	1,215	....	21.4		47	8	-21	27	32	2.83	.....	1.51	15.8	9	18	9	4	NW	
Ruthven	Palo Alto	1,435		20.2		45	9	-21	27	39	.65	....	.30	6.5	3	6	13	12	NW	
Sheldon	O'Brien	1,406		20.4		51	8	-23	7	49	.61	....	.30	6.1	5	18	5	8	S	
Sibley (a)	Osceola	1,506	8	19.2	†6.5	49	8	-21	27	33	.30	-.50	.20	3 0	3	11	18	2	NW	
Sioux Center	Sioux	.....	....	20 8	.....	49	8	-20	27	29	40	....	.30	4.0	2	19	6	0	W	
Spirit Lake	Dickinson	1,458	....	20.4	.....	50	8	-23	27	35	.60	.....	.60	6.0	1	21	4	6	N	
Storm Lake	Buena Vista	1,440	12	20 1	.....	48	18	-20	27	37	.89	-.09	.51	10.4	5	21	7	3	NW	
Washta	Cherokee	1,157	...	.....	.....	.....	.....	.....	...	.....	1. 10	.....	60	10.5	5	23	5	3	S	
Waverly	Bremer	942		20.3		50	8	-25	28	33	.92	.....	.29	11.0	7	12	12	7	NW	
West Bend	Palo Alto	1,197	8	20.7	†5.1	49	8	-20	27	34	.70	-.06	30	7.0	3	17	9	5	NW	
West Union	Fayette	1,115	....	.....	.....	.....	.....		.....	.....	1.20	....	.50	12.0	3	20	0	11	SW, NW	
Average	...		....	20.4	†6.2	49.1	.....	-22.8	.....	35.1	0.84	-.20	.....	8.8	4	17	9	5	NW	

CENTRAL SECTION

Amana	Iowa	721	25	22 0	†7.6	49	9	-22	27, 28	34	.88	- .66	.27	8 3	6	17	10	4	NW	
Ames	Story	926	21	21.8	†6.0	49	6, 7, 9, 17	-23	28	34	1 32	† .28	.50	14 5	5	24	1	6	NW	
Baxter	Jasper	998		21.2	.....	55	8	-21	27	41	.70	.....	.20	7.0	5	21	3	7	NW	
Belle Plaine (a)	Benton	828	11	20.4	†2.4	50	9	-22	27	36	1.07	- .66	.40	10.7	6	8	21	2	SE	
Buckingham	Iowa		...		.....	.....	.....		.....	.....	1.09	....	.42	10 4	4	15	11	5	....	
Carroll	Carroll	1,265	11	22 4	†3.9	54	8	-21	27	34	1.35	† .12	.60	13.5	5	20	3	8	.....	
Cedar Rapids	Linn	733	19	22.2	†5.5	52	9	-23	28	30	1.03	- .57	.40	10 4	4	17	5	9	NW	
Clinton	Clinton	609	10	22.3	†3.6	52	9	-15	27, 28	34	.63	-1.55	.22	6.3	4	16	7	8	...	
Davenport	Scott	529	31	24.0	†2.9	52	9	-13	27	36	60	-1.06	.38	7 3	6	15	8	8	W	
Delaware	Delaware	1,083	10	19.5	†6.2	44	8, 9	-22	27	28	.67	- .55	.48	8.0	4	15	12	4	NW	
Denison	Crawford	1,180	8	22.4	†2.4	52	8	-27	27	36	1 00	† .38	.30	10.0	6	19	7	5	N	
Des Moines	Polk	861	24	24.4	†4.4	58	8	-16	27	30	.91	- .32	.54	12.0	6	9	14	8	NW	
De Soto (a)	Dallas	866		25.0	.....	57	9	-13	27	28	.80	....	.30	8 0	6		....		NW	
Dubuque	Dubuque	655	29	22.8	†4.3	52	9	-18	28	29	.74	- .84	28	8.3	7	15	11	5	NW	
Fort Dodge	Webster	1,126		20.2	.....	55	8	-24	27	41	.90	....	.30	9.0	4	21	5	5	NW	
Galva	Ida	1,290	8	21.1	†5.7	49	8	-20	27	34	50	† .06	.30	5.0	4	20	9	2	W, NW	
Gilman	Marshall	1,053		.....	.....		.....		.....	.....	.72	....	40	7.2	2	18	8	5	NW	
Grinnell	Poweshiek	1,023	11	22 7	†4.4	50	8	-16	27	27	.49	- .92	.21	5.9	3	11	15	5	NW	
Grinnell (near)	Poweshiek	.....		21.7	.....	50	8, 9	-20	27	32	.80	.....	.20	10.5	5	16	7	8	NW	
Grundy Center	Grundy	976	10	20.1	†5.2	51	9	-25	27	33	1.16	† .41	.40	10.5	6	21	4	6	NW	
Guthrie Center	Guthrie	1,077		23.0		56	8	-23	28	56	1.25	.....	50	12.5	5	19	9	3	NW	
Harlan	Shelby	1,192	....	22.4	.....	54	8	-22	27	38	1.67	....	.80	17.5	5	11	15	5	NW	
Independence	Buchanan	921	39	19 6	†4.8	47	8, 9	-24	28	30	.93	- .37	.40	9.3	4	18	8	5	NW	
Iowa City	Johnson	644	11	21.1	†0.1	53	8	-23	28	34	1.29	- .74	.50	14.0	4	13	12	6	NW	
Iowa Falls	Hardin	1,107	8	17.9	†5.7	53	8	-25	28	35	1.60	† .69	.60	18.0	5	16	8	7	NW	
Jefferson	Greene	1,052		.....	.....	.....	.....	.....	.....		.95	....	.35	9.7	5	....	...	....	NW	
Le Claire	Scott	576		.....	.....		.....	.....	.....	.....	.55		.38	....	4	...	....	..		
Logan	Harrison	928	36	24.0	†3.7	56	15	-21	27	37	1.30	† .11	.....	13.0	....	24	4	3	NW	
Maquoketa	Jackson	688	8	21.4	†3.6	57	9	-29	28	34	.73	- .98	.35	....	4	18	5	8	SW	
Marshalltown	Marshall	947	11	23.0	†5 0	50	9	-23	28	34	1.11	† 27	.30	8.3	6	15	10	6	NW	
Monticello	Jones	925	47	20 2	†4.8	52	9	-28	28	33	.68	- .93	.40	9 0	2	19	3	9	NW	
Mt. Vernon	Linn	847		21.7	.....	52	8	-21	27	32	.90	.....	.37	10 2	6	19	5	7	NW	
Newton	Jasper	592	14	22 6	†6.3	50	8	-22	27	30	1.37	† .45	.52	14.0	5	20	6	5	S	
Odebolt	Sac	1,356		21.6	.....	49	8	-21	27	31	.91	.. ..	.50	12.0	4	21	3	7	.....	
Ogden	Boone	1,211	...	23.1		58	8, 17	-24	27	38	1.08	.....	.31	14.0	6	21	0	10	NW	
Olin (a)	Jones	760	....	20.7	.....	48	9	-28	28	32	.80	....	.30	8 5	3	....	....	....	NW	
Onawa	Monona	1,053	.	23 6		55	8	-23	27	34	1.15	....	.65	14.0	6	24	3	4	NW	
Perry	Dallas	975	...	23.2	.....	57	8	-22	27	31	.95	.....	.50	8.5	3	20	5	6	.....	
Rockwell City (c)	Calhoun	1,219	....	22.8		52	8	-21	27	36	1.35	.....	.45	15.0	4	23	2	6	....	
Sac City (b)	Sac	900	22	20.4	†6.5	48	9	-21	27	32	1.45	† .34	.50	14.5	4	23	3	5	SW	
Scranton (b)	Greene	1,172		22.5	.....	58	8	-16	27	34	1.20	....	.40	12.0	4	23	5	3	N	
Sioux City	Woodbury	1,122	13	22.7	†2 7	51	8	-21	27	29	.83	† .25	.70	13.9	5	19	7	5	NW	
Tipton	Cedar	807	....	23 8	.....	54	8	-18	28	33	1.10	.....	.35	7.5	5	18	5	8	W NW	
Vinton *	Benton	800	11	20.9	†3.7	50	8	-27	28	.....	.75	- .62	.40	7.5	3	26	1	4	NW	
Waterloo	Black Hawk	862	22	20.4	†3.7	51	8	-23	28	30	.93	- .27	.32	10.0	5	17	8	6	NW	
Wilton Junction	Muscatine	683	....	22.9	.....	52	9	-21	27	29	.81	...	40	10.0	4	20	5	6	NW	
Whitten	Hardin	1,036		19.5	.....	51	8	-22	27	36	95	. ....	.30	9.5	6	11	12	8	NW	
Average	...		....	21.9	†4.4	52 2	.....	-21.6	.....	33.7	0.98	- .30		10.6	5	18	7	6	NW	

CLIMATOLOGICAL DATA FOR JANUARY, 1902--CONTINUED.

SOUTHERN SECTION.

STATIONS	COUNTIES.	Elevation, feet.	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC. IN INCHES.				Number rainy days.	SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	....	24.3	.....	54	8	-17	27	29	1.30	.....	.40	13.0	5	12	14	5	SW	
Albia	Monroe.	945		26 1	.....	60	8	-16	27	36	.82	..	50	8.2	3	17	9	14	SW	
Atlantic	Cass	1,164	10	22.4	†4 0	59	8	-31	27	42	1 90	†1 13	.80	19.0	3	16	6	9	SW	
Belknap	Davis	877	...					-18	27	.....	60		40	6,0	3	22	7	2	NW	
Bonaparte	Van Buren	.....	10	24 9	†3 3	58	8	-16	27	34	.55	†1 46	.30	5.5	3	..		...	.....	
Burlington	Des Moines	544	....	24.7	.....	61	9	-14	27	30	.89	.....	56	8 9	4	17	5	9	NW	
Bussey	Marion	...		.....	.....	....	.....	...	.....	.....	.....	1 00	.....	40	10.0	4	....		....	.....	
Centerville	Appanoose	1,013		26.4	.....	60	9	-16	27	32	30		20	7,0	2	22	0	9	NW	
Chariton	Lucas	1,042	....	24.4	.....	60	8	-20	27	36	.74	.....	30	8.0	6	16	9	6	NW	
Clarinda	Page	1,069	11	25 7	†4.5	60	8	-21	28	39	1.23	†.12	.61	13.2	3	20	8	3	S, NW	
College Springs(*a*)	Page		10	25.4	†2.9	58	8	-17	27	38	1.05	†.47	.55	10.5	0	25	2	4	SW	
Columbus Junct	Louisa	595	....	24.4	.....	53	9	-15	28	32	.46	.....	.21	6.5	6	14	10	7	NW	
Corning	Adams	1,127	9	23.0	†2.4	55	8	-25	27	34	1.50	†.68	.70	14.5	3	18	8	5	SW	
Council Bluffs	Pot'wat'mie	990		25.8		56	8	-19	27	35	1.05	.....	.65	12.0	3	19	6	6	.....	
Cumberland	Cass	.....	..			.....	....	.....	.....	.....	1.10		.60	11 0	3	19	5	7	N	
Eldon	Wapello	630	...	24.4	.....	57	8	-18	27	33	.65	.....	32	6.5	4	19	3	9	W	
Emerson	Mills	1,053	....	.....	.....	....	.....	.....	.....	.....	.34	.	.23	...	3	...	....	..	.....	
Fairfield	Jefferson	.....	...	24 3		57	8	-17	27	34	.55	.....	.40	5.5	4	17	6	8	NW	
Fort Madison	Lee	516	53								1.10	-.90	30	11,0	5	9	12	10	W	
Glenwood	Mills.	957	31	25.2	†7.5	55	8	-16	27	34	.73	-.15	.36	8.5	3	4	21	6	NW	
Greenfield	Adair	...	10	24.5	†4.4	56	8	-18	27	31	.91	-.18	.43	9 2	6	20	5	6	NW	
Hopeville	Clarke	.....	....	.....	.....	....	...	.....	.....		53	.....	.28	....	4	....	..	....	.....	
Indianola	Warren.	969	10	24 3	†5.0	60	8	-20	27	32	84	-.65	.30	8.4	5	18	1	12	NW	
Keokuk	Lee.	619	30	27.5	†4.3	57	8, 9	-10	27	29	.44	-1.36	.14	5 5	6	17	7	7	NW	
Keosauqua	Van Buren	644	9	25 5	†3.1	55	8, 9	-15	27, 28	32	.58	-1.25	.35	5 6	5	....	..	....	.....	
Knoxville	Mari n	9 0	....	24.8	.....	57	8	-17	27	31	.68	.....	23	7.5	5	17	7	7	SW	
Lacona	Warren		....	.....			.....				1.15	.....	.50	9 5	3	9	19	3		
Lenox	Taylor	1,250	....	23 8		49	9	-24	27	36	.70	.....	.40	7.0	3	22	4	5	S	
Mt Ayr	Ringgold	1,236	8	23.9	†1.7	56	8	-23	27	37	1.45	†.13	.70	14.0	3	17	8	6	NW	
Mt Pleasant	Henry	729	...	22 7	.....	54	8	-17	27	34	19	.....	.09	....	4	20	7	4	NW	
Omaha, Neb.	Douglas	1,113	32	26.6	†7.4	59	8	-12	27	29	.71	†.08	31	8.0	3	16	9	6	NW	
Oskaloosa	Mahaska	843	18	23.6	†6.0	57	8	-17	27	37	.28	-.68	.10	4.2	5	21	3	7		
Ottumwa	Wapello	630	7	25.9	†3 3	55	8	-12	27	29	.60	-1.90	.40	6.0	4	19	6	6	NW	
Ovid	Wayne	992	8	24 4	†1.8	59	8	-20	27	36	.81	-1.20	41	8 0	3	11	2	18	NW	
Pacific Junction	Mills	960	....	24.3	.....	54	8	-21	27	33	.93	.....	.43	9 3	3	20	7	4	S	
Pella (*a*)	Marion	877	....	23.3	.....	63	7	-22	26	35	.55		.40	5.5	5	...	.....	...	NW	
Red Oak	Montgom'ry	1,033	....	27 4	.....	54	8	-15	27	37	1.22	....	60	12 4	6	8	20	3	SE, NW	
St. Charles	Madison	1,070	....	25 9	.....	63	8	-16	27	32	1.01	...	.40	10.5	6	20	4	7	NW	
Sigourney	Keokuk	768		24.2	.....	54	8	-18	27	35	.56	.....	.22	5 5	5	19	7	5	NW	
Stockport	Van Buren					....	.....	.....	.....	.....	.43		.24	2 0	3	15	6	10	NW	
Thurman	Fremont		...	25.2	.....	63	8	-27	27	40	.75		.40	7.5	4	20	5	6	NW	
Villisca	Montgom'ry	1,058	8	24.8	†4.0	55	8	-25	27	39	1.55	†.83	.70	13 5	4	17	10	4	NW	
Wapello (*d*)	Louisa	578	....	25 0	.....	51	9	-12	27	28	.31		18	4.5	2	.....	.....		NW	
Washington	Washington	769	11	22.6	†1.1	55	8	-20	27	34	.49	-1.33	.22	3.0	3	...	....	..	NW	
Winterset	Madison	1,129	10	24.7	†5.1	58	8	-17	27	45	1.20	† 09	.40	12.0	4				.....	
Woodburn	Clarke	961		.....	.....	....	.....	.....	.....		.98		.40	9.8	3	20	4	7	NW	
Average		.....		24 8	†1.0	56.9	.....	-18 3	....	34.3	0.82	-0.40		8.7	4	17	7	7	NW	
Av. for the state			...	22.4	†4.9	52.7	.....	-20.9	....	34.4	0.88	-0.30	..	9.4	4	17	8	6	NW	

*Means determined from 7 A. M., 2 P M, and 9 P. M observations, and maximum and minimum are taken from eye readings. †Means determined from 7 A.M. and 7 P. M. observations ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JANUARY, 1902.

STATIONS.		DATE.																													Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max	44	39	23	27	40	47	47	54	49	41	34	31	37	42	43	38	48	40	44	37	31	30	29	30	23	17	11	14	20	27	22	34.2
	Min	22	21	4	4	16	23	32	34	28	29	19	12	8	25	23	14	21	18	14	28	21	11	12	6	14	- 9	-17	- 8	4	12	1	14.4
Albia	Max	41	43	34	31	39	49	50	60	55	44	34	27	39	43	45	36	51	39	47	40	33	38	32	28	22	27	14	11	19	24	27	36.2
	Min	28	23	4	4	18	33	29	34	32	30	21	17	7	24	20	15	22	17	19	29	23	19	17	9	12	- 9	-16	-10	4	15	5	16.0
Algona	Max	38	32	15	29	43	41	44	48	45	35	35	30	39	34	39	36	45	38	43	38	33	32	29	20	13	11	2	10	15	22	18	30.7
	Min	18	10	- 2	4	19	23	28	31	31	25	18	6	8	17	21	9	22	14	14	29	11	14	16	5	2	-10	-18	-14	- 2	11	- 6	11.5
Alta	Max	36	22	16	27	42	42	44	45	44	33	32	26	38	34	40	34	45	38	42	35	34	36	24	22	10	3	2	9	13	16	12	29.0
	Min	18	8	- 2	4	22	25	27	32	31	23	15	8	9	20	16	12	23	12	16	28	16	17	14	4	1	-14	-20	-14	2	- 1	- 9	11 0
Amana	Max	38	36	20	26	35	44	45	48	49	39	30	25	30	38	41	35	47	38	42	35	35	31	29	18	18	28	6	7	20	25	23	31.6
	Min	20	20	3	- 2	15	20	26	28	27	27	22	10	2	19	17	15	19	18	10	30	25	14	16	- 2	0	- 6	-22	-22	4	17	10	12.3
Ames	Max	40	39	32	30	41	49	49	36	49	42	31	30	38	38	43	39	49	44	46	43	32	29	25	22	18	11	6	6	16	23	19	32.7
	Min	21	17	2	2	19	24	32	30	30	29	19	9	4	22	20	12	20	17	12	11	17	8	5	1	1	- 9	-17	-23	3	3	- 8	10.8
Atlantic	Max	48	40	24	30	46	50	52	59	51	38	38	30	43	43	46	36	49	42	44	40	32	35	29	33	24	15	10	10	17	21	24	35.5
	Min	23	20	5	2	21	29	23	24	21	28	15	13	5	15	15	15	25	15	10	29	8	5	0	- 9	13	- 9	-31	-22	5	2	-18	9.3
Baxter	Max	40	44	24	27	40	48	48	55	54	42	32	28	37	40	44	34	49	40	47	40	32	28	28	24	19	20	8	7	13	21	20	33 3
	Min	12	13	0	-11	17	20	28	31	29	15	17	8	- 4	19	11	11	6	14	10	19	23	11	9	2	6	- 8	-21	-17	3	13	- 3	9 1
Belle Pl'ne	Max	38	25	..	25	37	45	44	50	49	35	31	20	33	38	40	28	48	35	42	33	36	35	31	21	25	5	6	10	20	28	24	31 2
	Min	18	17	2	0	..	..	..	..	..	24	19	8	..	..	18	15	12	15	10	..	28	21	15	0	1	- 5	-22	-18	..	..	11	9 6
Bonaparte	Max	44	40	23	29	39	49	48	58	57	41	33	27	34	43	44	34	50	38	46	35	34	32	32	29	22	29	12	9	20	25	27	34 9
	Min	23	23	6	2	12	21	27	32	29	28	20	13	4	23	17	16	17	18	12	31	28	21	16	7	14	- 3	-16	-11	5	14	14	14.9
Britt	Max	37	36	16	27	44	43	45	49	45	32	31	25	38	33	39	31	45	38	45	38	30	32	25	18	15	15	- 2	14	16	26	15	30.4
	Min	15	10	- 3	- 1	14	16	26	20	25	25	16	5	1	13	17	8	18	10	5	28	15	7	9	- 5	4	-10	-22	-19	1	7	-18	7 6
Burlington	Max	44	40	24	29	39	47	50	59	61	45	35	26	32	45	46	34	47	40	46	36	34	33	32	28	26	29	12	10	21	23	30	32 4
	Min	24	24	7	5	16	22	28	33	31	30	23	13	5	25	20	18	21	24	18	30	29	22	19	9	14	0	- 4	- 6	9	15	14	17.0
Carroll	Max	45	35	22	31	49	48	51	54	52	41	37	31	39	42	43	38	49	38	46	40	35	35	29	28	16	12	8	8	15	24	18	34 2
	Min	18	15	0	3	22	24	30	31	26	27	14	8	9	20	20	19	11	12	13	27	15	16	14	0	2	- 1	-21	-15	0	- 9	-11	10.5
Cedar Rap	Max	39	38	20	26	36	45	44	51	52	43	31	31	35	38	40	37	49	40	41	36	35	28	27	20	19	28	2	4	19	22	23	32.1
	Min	19	19	4	1	17	17	29	27	26	27	11	14	1	21	18	15	20	20	11	29	27	18	19	- 2	- 2	- 4	-18	-23	3	15	3	12.4
Centerville	Max	45	48	27	28	44	50	51	51	60	48	35	30	34	45	50	41	52	47	49	42	35	33	33	28	25	30	12	0	18	21	27	37.3
	Min	24	23	5	5	18	25	30	35	32	29	20	13	9	24	22	15	21	18	17	29	25	14	17	10	14	- 7	-16	- 8	3	15	5	15 6
Chariton	Max	44	41	23	27	39	47	52	60	54	40	34	28	37	44	45	35	61	40	45	38	30	30	31	25	21	26	12	9	19	20	23	34 8
	Min	24	22	5	5	15	24	30	31	28	28	18	12	6	24	20	15	21	17	17	28	24	11	15	4	15	-10	-20	- 9	4	14	1	14.1
Charles Cy	Max	32	32	16	25	43	40	43	48	46	36	29	27	33	33	37	34	44	38	34	33	24	23	33	21	18	15	- 6	6	13	29	17	41.7
	Min	16	14	- 1	- 2	17	15	26	20	28	24	20	5	1	14	20	11	16	20	16	23	12	13	16	- 9	1	- 9	-20	-27	- 3	8	-13	8.8
Clarinda	Max	49	37	22	32	42	53	53	60	54	42	38	31	43	44	48	38	52	53	53	47	32	35	35	35	23	23	15	13	19	25	25	37.8
	Min	27	20	9	5	19	20	30	28	26	28	21	17	10	21	21	17	22	19	18	29	14	11	7	- 4	11	-15	-21	-11	6	13	2	13 6
Clear Lake	Max	39	37	28	30	57	52	60	53	..	42	44	30	40	46	54	38	52	49	45	37	43	39	40	30	16	12	16	13	30	28	30	37 7
	Min	15	11	- 3	2	18	19	27	26	28	25	17	4	3	12	20	9	7	10	9	27	26	6	12	- 1	- 4	-10	-22	-17	- 3	8	- 8	9.1
Clinton	Max	38	40	19	26	38	41	47	48	52	40	30	20	23	40	40	35	45	36	37	34	35	31	29	25	26	29	3	8	22	26	29	32.1
	Min	17	18	6	2	23	17	23	25	27	28	19	10	5	19	15	18	16	18	10	25	29	16	11	3	- 2	- 5	-15	-15	6	11	8	12 5
College Sp	Max	47	40	27	30	42	52	49	58	54	43	38	32	43	42	47	38	53	42	46	38	..	33	32	33	20	23	13	13	19	21	23	36.3
	Min	26	23	8	5	16	14	27	28	27	26	18	16	10	23	24	15	23	18	18	28	..	11	18	0	14	-11	-17	- 6	5	11	13	14 4
Colum. Jc.	Max	43	44	22	29	38	48	45	52	53	44	30	26	32	40	43	34	49	40	45	35	35	37	30	22	22	29	8	11	22	23	28	34 4
	Min	20	22	5	2	15	22	23	32	31	26	22	11	4	22	20	16	20	22	17	29	27	17	9	6	4	- 3	-14	-15	5	15	17	14.5
Corning	Max	45	39	23	28	41	47	48	55	43	39	35	31	39	44	44	36	48	48	42	37	31	28	21	25	20	22	9	17	16	19	19	33.5
	Min	25	21	6	6	19	24	30	30	26	27	20	14	7	22	23	15	23	13	27	28	10	6	10	- 7	8	-12	-25	-17	4	11	- 5	12.5
Co. Bluffs	Max	46	39	24	33	54	50	55	56	50	43	37	32	48	44	48	35	51	43	45	53	34	33	28	16	10	14	4	8	15	18	18	36 7
	Min	28	20	9	7	22	25	25	29	28	29	20	16	13	23	24	18	20	18	24	31	20	18	16	1	15	- 8	-19	- 7	- 2	- 1	- 4	14 8
Cresco	Max	32	32	11	22	38	35	38	43	40	32	26	22	33	32	35	30	41	30	35	33	30	24	24	25	17	15	- 5	6	14	24	11	26 5
	Min	11	9	- 5	- 4	20	18	28	28	30	22	18	2	2	18	21	9	17	14	9	28	20	14	0	-10	- 5	- 9	-22	-23	- 2	- 2	- 3	8.2
Davenport	Max	40	44	19	27	38	47	46	51	52	39	31	23	29	40	41	34	46	37	42	35	35	29	27	22	26	30	4	7	20	21	26	32.5
	Min	20	15	6	6	17	24	29	34	33	26	23	10	5	23	22	19	22	26	18	29	29	18	14	5	2	- 6	-13	-11	6	16	13	15.5
Decorah	Max	34	33	14	24	40	39	40	47	44	43	27	13	32	33	37	28	47	29	35	34	32	28	26	20	20	12	- 4	8	22	25	19	28.4
	Min	11	8	- 3	- 6	18	17	28	22	32	23	19	6	2	17	19	12	17	16	7	28	25	16	10	- 6	- 4	- 6	-20	-30	- 2	10	2	9.3
Delaware	Max	34	34	16	21	32	40	40	44	44	36	30	25	26	35	37	36	42	35	35	34	33	28	27	19	15	22	- 1	3	17	23	25	28.6
	Min	11	11	- 2	- 1	10	18	26	26	30	25	20	7	2	18	19	14	22	19	10	28	26	10	10	0	- 5	- 6	-22	-21	0	10	8	10.4
Denison	Max	42	38	21	30	46	44	48	52	48	37	34	30	43	40	42	37	48	41	45	39	33	38	26	28	18	12	5	22	13	17	14	33 3
	Min	21	11	2	- 6	22	25	25	25	35	27	19	10	13	22	22	14	25	15	10	23	16	16	9	- 3	4	-12	-27	9	3	- 2	-17	11.5
Des Moi'es	Max	44	39	21	29	44	49	51	58	50	38	35	29	38	41	46	32	49	41	45	39	33	30	29	25	20	20	9	7	18	20	21	33.9
	Min	24	14	6	6	21	27	32	35	30	27	22	13	8	27	23	16	22	18	20	30	16	13	15	5	10	- 8	-16	-10	4	15	0	15 0
De Soto	Max	44	39	23	28	43	48	49	..	57	48	38	34	37	41	43	37	47	40	44	40	30	33	29	27	22	16	10	12	19	30	21	34.3
	Min	25	21	5	6	22	28	33	.	36	30	30	22	9	28	23	15	25	19	17	30	18	15	18	2	13	- 8	-13	-12	5	15	- 2	15.8
Dows	Max	38	34	18	28	46	49	47	54	48	35	32	25	37	35	40	32	48	39	42	40	30	28	24	23	18	19	5	1	12	20	12	30.9
	Min	17	13	2	- 2	18	19	25	27	25	25	15	5	7	17	16	7	19	11	17	27	2	10	19	- 4	5	-12	-24	-18	- 9	10	9	9.3
Dubuque	Max	36	38	19	25	33	44	44	48	52	36	28	22	22	37	37	34	45	37	37	34	35	31	29	26	18	27	0	5	19	24	26	30.7
	Min	20	12	4	4	19	23	30	30	32	26	22	11	7	23	23	20	21	22	15	30	30	15	15	9	0	- 2	-15	-18	4	12	18	14.9
Eldon	Max	43	42	23	30	40	51	50	57	53	43	32	27	36	42	43	37	52	40	46	37	34	30	32	28	23	27	12	12	18	23	25	35.1
	Min	25	23	6	2	12	18	26	28	25	29	19	13	5	23	10	12	19	18	12	30	27	19	17	9	12	- 3	-18	-12	5	11	2	13 6
Elkader	Max	36	28	24	29	39	46	47	48	51	37	34	20	33	39	41	33	47	36	36	36	45	26	32	26	18	6	7	10	21	28	28	31.9
	Min	9	17	0	- 6	13	14	24	20	24	20	19	8	1	17	15	14	18	19	6	30	27	9	16	- 5	- 7	- 5	-17	-30	2	9	15	9.5
Estherville	Max	37	32	15	28	45	40	50	45	45	40	30	47	31	10	37	40	38	45	45	41	38	38	25	19	11	10	0	10	10	15	11	31 1
	Min	14	4	- 4	0	22	15	25	28	27	20	5	4	16	22	5	20	12	6	10	29	15	10	8	2	- 2	-12	-20	-25	- 3	- 3	-11	7.8
Fairfield	Max	43	41	23	28	39	49	47	57	55	41	32	20	39	42	43	33	52	38	46	35	35	32	32	29	21	28	13	9	20	24	19	34.5
	Min	23	22	5	2	13	21	26	32	28	27	19	11	4	22	17	15	18	17	14	29	28	17	14	7	9	- 3	-17	- 8	5	15	9	14.1
Forest City	Max	37	33	17	28	45	44	46	49	44	35	33	28	33	33	36	33	45	39	43	39	33	32	25	18	12	13	2	5	16	20	15	30.2
	Min	15	10	- 3	2	21	20	23	27	30	25	18	5	8	18	12	10	19	11	7	29	19	8	13	1	4	-10	-20	-11	- 1	8	-14	9.7
Ft. Dodge	Max	43	40	20	30	48	51	49	55	50	40	34	30	44	38	43	37	50	42	46	42	30	30	27	24	20	12	0	8	15	20	20	33.4
	Min	14	12	- 2	- 2	18	13	27	22	20	20	15	6	1	18	15	8	20	12	5	27	17	1	1	- 8	- 2	-18	-24	-30	1	..	..	7.1
Galva	Max	39	37	29	29	43	43	46	49	46	37	33	29	40	37	40	35	45	39	43	..	35	36	30	25	11	11	3	11	15	18	15	31.6
	Min	19	14	0	0	20	22	20	29	25	26	17	9	0	21	19	10	25	11	15	29	15	14	13	5	2	- 8	-20	-18	2	3	-19	10.6
Glenwood	Max	41	41	26	38	46	49	53	55	50	46	39	37	48	43	47	44	49	46	49	44	33	29	28	27	24	17	7	10	14	16	16	35 8
	Min	25	21	8	6	20	24	27	28	25	30	20	17	15	25	24	17	26	19	25	28	19	16	15	- 2	10	- 9	-16	-12	5	3	- 3	14.6
G. Meadow	Max	32	36	14	22	35	36	40	43	45	32	26	22	21	32	36	32	45	31	33	33	35	28	28	19	18	18	- 3	2	19	23	19	27 7
	Min	12	12	- 3	- 2	12	18	22	26	31	24	16	5	7	16	19	11	17	15	10	27	25	14	12	0	3	- 6	-21	-25	- 4	13	3	9.6
Greene	Max	35	33	17	27	46	44	45	52	48	40	30	27	31	35	40	34	47	39	39	31	31	28	24	21	15	15	0	9	18	24	19	30.7
	Min	16	14	- 1	- 1	17	18	27	27	29	24	19	5	6	17	19	11	17	13	7	30	21	7	13	- 5	3	- 9	-20	-24	- 3	10	- 5	9 6
Greenfield	Max	46	38	24	29	42	47	48	56	49	41	37	31	32	43	43	34	48	42	44	43	33	33	33	33	30	14	9	14	18	29	17	35 0
	Min	22	20	4	14	..	28	30	33	29	28	16	11	8	22	20	12	22	15	22	28	28	15	12	3	11	-10	-18	- 9	3	11	0	14 3
Grinnell	Max	37	35	22	25	36	44	44	50	50	39	32	26	37	37	40	34	46	37	43	36	37	30	25	21	17	22	3	5	21	22	20	31.2
	Min	20	18	2	5	17	25	30	33	32	29	19	9	3	23	21	13	19	15	17	29	27	12	14	5	8	- 6	-16	-11	2	14	8	14 2
Grin'l (nr.)	Max	37	34	20	25	36	43	44	50	50	40	30	25	36	38	42	34	47	38	40	34	32	28	25	21	18	23	4	6	16	27	20	31.0
	Min	20	17	2	0	15	20	28	31	30	28	18	9	5	21	18	13	13	14	13	29	25	17	12	3	7	- 7	-20	-14	1	14	3	12.4
Grundy C'r	Max	36	..	20	25	41	44	45	50	51	37	32	27	33	38	41	34	48	33	42	38	31	27	26	20	14	18	4	3	16	20	19	30.5
	Min	15	14	- 1	- 1	16	18	27	28	29	20	18	7	4	12	19	10	19	13	9	29	25	3	11	- 1	1	-10	-25	-21	1	12	- 3	9.7
Guthrie Cr	Max	46	40	22	31	44	49	48	56	47	36	34	28	42	41	43	35	48	40	45	39	40	33	27	26	20	15	6	12	16	22	39	34 4
	Min	23	18	14	14	22	25	30	23	26	29	12	12	0	24	18	13	25	17	13	21	16	9	11	- 7	8	- 9	-19	-23	3	6	-17	11.7
Hampton	Max	38	32	20	28	48	50	48	59	49	36	32	27	37	35	40	36	51	39	46	38	32	33	24	19	15	13	2	8	20	23	20	32 3
	Min	16	14	- 1	1	19	22	29	30	31	26	18	6	8	19	20	11	20	13	10	30	18	9	15	2	4	-10	-18	-19	- 1	10	- 5	11.0
Harlan	Max	43	38	20	29	44	45	47	54	47	38	34	35	42	40	42	34	47	39	42	40	30	28	24	23	18	19	5	1	12	20	12	30.9
	Min	23	17	4	3	19	21	30	27	25	28	20	13	2	21	20	15	22	16	16	29	15	9	9	- 5	8	-11	-22	-17	4	3	-11	11.6
Humboldt	Max	49	57	32	34	52	48	54	58	56	58	43	41	48	48	46	..	50	43	52	57	44	34	38	33	34	26	5	14	24	2	23	40.1
	Min	17	13	- 2	2	20	18	28	34	24	26	15	7	9	20	18	8	20	13	8	29	18	6	12	- 3	2	-12	-21	-22	2	-18	-17	8.6
In'pen'nce	Max	34	31	15	23	36	42	43	47	47	35	29	25	33	36	38	34	45	37	37	34	32	26	23	20	14	14	- 2	5	16	18	20	28.6
	Min	14	15	0	- 2	12	15	29	27	30	27	20	7	2	16	20	12	16	16	7	28	25	16	15	- 2	-25	- 8	-22	-24	1	12	5	10.5
Indianola	Max	45	39	22	29	42	50	49	60	51	39	34	28	31	41	45	36	50	41	46	38	31	30	30	25	20	21	12	8	17	23	22	34.3
	Min	23	21	4	4	17	26	32	33	30	29	20	11	8	33	21	13	21	17	17	29	19	11	15	1	11	-10	-20	- 9	5	14	- 1	14.3
Iowa City	Max	41	39	21	35	35	49	43	53	51	37	31	24	37	40	42	35	52	40	46	36	37	32	26	20	20	23	5	11	23	24	26	33.2
	Min	20	21	4	- 1	15	15	23	26	27	27	22	11	2	20	14	15	17	22	10	30	28	20	14	0	- 2	- 5	-22	-23	4	16	8	9 0
Iowa Falls	Max	36	26	16	27	45	44	46	53	50	32	30	26	32	37	40	29	46	39	41	37	31	27	21	19	14	13	0	8	15	22	16	28.8
	Min	16	8	- 1	- 1	19	18	27	25	25	23	17	4	5	18	19	9	20	13	4	27	1	3	10	- 5	0	-15	-20	-25	-15	7	-15	7 0
Keokuk	Max	46	38	20	31	38	50	50	57	57	44	33	28	30	44	45	32	52	39	46	37	34	34	32	29	31	21	15	11	20	24	25	35.5
	Min	27	27	9	8	17	22	31	37	33	31	23	15	6	28	23	21	23	26	21	33	29	25	20	16	17	3	-10	- 2	9	16	17	19.5
Keosauqua	Max	45	42	..	28	37	50	49

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JANUARY, 1902—CONTINUED.

STATIONS.		DATE.																													Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
abee..	Max...	37	37	15	30	44	44	45	47	42	34	34	27	41	34	40	33	41	39	45	36	33	39	30	26	15	10	0	13	16	20	15	31.0
	Min...	17	10	- 3	1	20	23	24	29	24	23	15	7	8	20	19	8	24	10	15	26	14	15	16	6	0	-12	-22	-13	- 1	- 1	-18	9.8
Le Mars...	Max ..	38	36	19	30	45	46	48	48	47	36	31	31	40	36	35	35	42	39	44	38	35	37	27	25	12	10	1	14	16	15	13	31.3
	Min...	21	15	1	6	23	24	26	30	24	26	18	10	11	19	27	21	29	19	15	26	16	19	16	5	- 2	-11	-24	-18	1	- 5	-19	11.9
Lenox.....	Max ..	44	40	25	28	39	46	47	53	49	43	35	33	38	42	44	39	48	..	42	37	30	29	28	26	22	23	9	9	16	23	22	33.6
	Min...	24	22	4	4	18	21	28	30	31	28	20	13	9	21	21	14	22	17	20	28	18	10	12	17	12	-13	-24	- 9	2	10	0	13.9
Logan.	Max..	38	29	21	30	44	45	47	52	45	35	43	42	40	43	56	49	43	42	44	38	34	32	30	30	25	10	7	17	21	21	20	34.6
	Min ..	20	17	5	6	22	24	26	28	26	27	10	12	25	22	22	25	15	23	17	30	14	13	19	3	10	-10	-21	-20	7	15	-13	13.5
Maquoketa	Max..	38	38	32	25	30	45	47	50	57	40	33	25	27	41	42	36	45	39	40	35	39	34	31	25	20	28	5	5	20	23	25	32.9
	Min ..	13	18	3	3	4	13	12	21	25	25	22	10	3	17	16	18	15	20	7	28	29	8	17	- 2	-11	- 1	-19	-29	3	8	10	9.9
Marsh'lt'n.	Max ..	39	39	..	26	41	45	46	48	50	45	34	30	35	39	42	39	48	45	44	41	33	29	28	23	20	21	5	8	18	23	22	33.5
	Min..	19	17	1	1	17	24	30	32	30	28	18	8	4	20	20	12	20	14	10	29	26	13	11	1	8	- 8	-20	-23	3	14	6	12.4
Monticello.	Max .	33	36	21	26	30	45	42	48	52	35	30	30	29	36	40	35	45	40	38	35	38	35	30	28	18	8	2	5	18	21	29	30.9
	Min...	20	14	1	- 2	10	19	20	23	26	26	21	10	2	10	15	15	18	15	25	22	18	10	9	- 4	-10	- 5	-18	-28	2	10	5	9.6
Mt. Ayr ..	Max...	45	38	24	23	39	47	49	56	53	40	35	30	38	42	44	36	50	40	43	35	30	33	29	31	20	26	10	11	18	23	24	34.3
	Min..	25	22	6	3	16	18	31	29	32	28	20	13	6	22	23	15	21	17	18	27	14	4	13	3	13	-11	-23	- 6	3	11	1	13.5
Mt.Ple's'nt	Max. .	42	40	30	21	37	45	45	54	50	44	28	30	40	38	41	36	50	37	44	37	35	35	32	24	23	29	15	10	21	27	27	34.3
	Min...	19	20	2	- 1	9	14	24	23	26	19	9	0	19	15	15	14	20	15	10	26	25	12	12	3	5	- 2	-17	-13	3	9	10	11.1
Mt.Vernon	Max..	35	34	20	27	36	42	42	52	50	38	30	24	30	39	42	33	47	39	42	33	37	29	28	23	17	26	8	8	20	22	26	31 6
	Min...	24	15	4	4	13	20	27	27	32	26	19	6	- 1	18	18	12	15	20	13	21	26	11	15	1	- 4	- 6	-21	-15	0	12	9	11.8
NewH'pton	Max..	32	33	17	29	41	39	43	47	46	38	28	25	32	33	36	33	45	35	38	35	31	24	23	16	15	17	- 5	5	15	18	18	29.3
	Min..	15	13	- 3	..	..	17	26	25	29	24	19	4	0	15	20	10	15	13	6	27	20	14	13	- 4	1	-10	-22	-19	- 4	- 4	- 3	10.0
Newton....	Max..	38	38	25	26	39	45	45	50	48	44	33	..	34	38	41	38	48	42	44	40	31	27	28	25	20	20	3	7	17	25	25	32 9
	Min ..	20	17	0	0	16	21	29	30	29	28	18	8	3	22	20	11	17	14	14	29	24	12	10	0	9	-10	-22	-14	3	14	3	12 2
Northwood	Max..	35	31	16	28	43	46	42	47	44	35	30	26	37	33	37	32	44	36	42	35	33	27	24	21	16	16	- 1	8	21	22	17	29 9
	Min...	14	9	- 3	0	20	19	30	28	31	25	19	5	4	19	22	11	17	12	7	29	18	5	14	1	7	- 9	-18	-18	- 1	9	- 7	10.3
Odebolt....	Max ..	39	37	20	30	45	41	47	49	47	37	34	30	40	36	40	35	40	45	44	43	34	34	26	29	17	11	4	12	19	23	15	32.3
	Min...	19	15	1	4	23	25	27	32	26	10	16	10	9	21	2	12	13	15	10	29	16	15	15	3	1	-10	-21	-14	3	6	12	10.9
Ogden. .	Max...	43	37	21	30	48	52	52	58	52	40	35	30	40	40	45	35	58	40	48	40	35	33	29	22	21	15	7	20	18	23	24	34.9
	Min.	20	16	- 1	2	16	22	25	26	25	21	14	8	2	18	14	7	18	31	15	27	19	10	7	2	0	11	-24	-18	0	11	10	11.3
Olin..	Max...	37	30	21	22	33	42	41	46	48	41	31	26	26	35	37	35	42	36	37	34	36	30	30	21	15	27	0	4	20	25	0	30 5
	Min ..	16	20	2	- 2	11	18	23	23	25	27	21	9	2	16	16	15	15	22	9	30	28	10	19	- 3	- 6	- 4	-23	-28	2	13	..	10 9
Omaha, N.	Max..	45	40	25	35	51	49	56	59	46	39	36	32	47	43	47	38	52	44	45	37	35	31	27	28	21	6	- 7	11	15	16	17	34.9
	Min.	27	20	9	11	23	29	35	37	33	29	24	19	18	32	28	20	30	22	26	20	21	20	22	8	6	- 8	-12	- 2	6	2	- 1	18 2
Onawa....	Max..	42	35	20	33	50	47	49	55	48	38	35	30	44	44	46	37	50	45	46	38	38	38	32	31	20	12	2	13	19	17	15	34.5
	Min...	22	17	5	5	22	23	23	25	25	26	20	13	12	20	22	15	24	15	19	30	17	17	20	7	5	-10	-23	-14	7	0	-13	12.8
Osage.....	Max..	33	33	16	26	43	40	41	49	43	36	28	25	33	31	35	34	42	37	36	34	31	22	23	18	15	14	- 2	5	16	21	17	28.1
	Min..	15	13	- 2	0	17	18	28	26	32	25	20	4	1	12	22	10	16	12	7	29	19	11	13	0	0	- 0	-20	-22	- 2	7	- 3	9 6
Oskaloosa .	Max...	42	36	22	28	38	48	47	57	53	38	32	24	35	40	43	32	50	36	45	35	34	36	30	27	22	20	11	10	19	28	25	33.6
	Min...	24	21	4	3	15	22	28	31	28	28	18	10	4	23	17	14	19	15	13	30	22	18	15	6	10	- 6	-17	-12	3	14	- 1	13.5
Ottumwa ..	Max...	44	42	24	28	36	46	47	55	52	46	34	28	35	44	44	35	51	42	45	38	36	30	32	27	24	26	12	8	20	23	23	34 7
	Min..	26	24	7	6	18	27	31	34	30	30	22	14	8	28	21	17	22	18	16	26	26	24	20	13	13	- 2	-12	- 6	4	16	9	17.1
Ovid.....	Max...	43	39	27	29	40	48	52	59	55	41	38	28	37	45	47	35	54	43	40	37	32	31	31	28	20	27	16	9	20	22	29	35.7
	Min..	24	19	5	4	14	22	28	33	27	27	17	12	5	23	18	14	21	16	18	26	23	12	13	3	13	- 9	-20	- 8	- 5	12	1	13.2
Pella	Max..	43	39	39	39	42	50	63	55	42	41	38	37	38	45	46	37	52	47	50	33	39	36	32	22	29	6	..	-14	- 4	14	0	9.6
	Min .	20	18	0	6	12	10	..	27	28	13	14	10	3	20	14	15	16	15	15	16	24	12	4	10	- 4	-22	..	-14	- 4	14	0	9.6
Perry.....	Max..	43	..	22	30	46	48	50	57	50	43	34	31	40	40	44	32	49	41	47	41	31	33	28	25	20	15	6	12	19	25	19	34 0
	Min...	32	18	13	15	20	23	29	28	27	29	18	10	13	23	18	13	23	16	15	19	12	11	14	5	7	-11	-22	-19	4	12	-12	12 5
Primghar ..	Max..	25	20	15	18	41	40	40	43	45	34	32	20	30	35	35	41	40	40	42	35	35	35	35	32	18	12	10	10	12	12	18	28 9
	Min ..	10	11	- 4	3	21	25	24	30	31	23	15	6	10	15	20	20	21	14	18	27	14	18	8	10	3	-12	-22	-11	1	5	-11	11.7
Red Oak...	Max .	45	46	30	28	40	47	48	54	51	41	5	33	32	42	44	46	48	40	43	48	37	37	30	36	23	28	14	15	23	22	18	36 9
	Min..	29	23	12	10	23	25	24	28	28	28	21	19	15	25	24	19	28	19	21	30	30	18	15	1	10	- 4	-15	- 5	10	15	..	17 8
Ridgeway .	Max...	34	34	22	30	44	44	46	47	45	36	35	26	34	42	39	34	45	33	39	35	34	27	28	30	21	17	1	12	24	25	25	32.0
	Min...	11	11	- 3	0	18	18	30	27	33	25	18	5	2	17	23	10	18	15	9	30	25	15	12	1	5	- 8	-21	-18	0	5	3	10.8
Rockwell C	Max .	43	38	34	29	45	46	47	52	48	35	..	..	..	..	..	38	..	38	40	49	41	31	31	28	24	..	13	6	12	12	19	15	32 6
	Min...	18	23	- 1	2	20	24	27	31	30	25	..	..	..	..	..	31	10	20	15	13	23	15	10	12	4	12	..	-21	-16	3	10	- 8	12.9
Ruthven ..	Max .	34	..	..	24	39	..	39	42	45	..	29	27	28	32	36	39	39	42	46	32	48	50	35	15	15	25	18	14	10	..	10	31.3
	Min ..	22	10	- 6	- 4	5	22	24	29	28	25	8	12	5	12	17	8	22	16	25	8	22	15	15	- 4	0	- 8	-21	-12	0	- 5	-10	9.0
Sac City....	Max. .	41	37	19	29	..	.	43	45	48	38	33	30	40	36	41	35	46	41	43	31	34	32	28	21	17	12	2	8	14	18	11	30 2
	Min...	19	14	0	5	..	..	16	38	33	28	17	9	8	22	21	11	24	11	17	28	14	12	17	5	0	-10	-21	-18	2	5	-11	10.5
St. Charles.	Max...	46	40	23	32	45	51	55	63	54	40	39	28	40	45	48	37	52	45	46	39	32	28	33	28	19	15	16	7	17	29	27	36.4
	Min ..	23	22	4	4	19	28	33	35	32	29	20	12	9	27	24	13	22	17	20	29	20	14	16	4	13	- 9	-16	-10	8	13	1	15 4
Scranton ..	Max...	38	30	20	30	46	48	50	58	50	42	40	30	40	40	43	37	48	45	45	.	30	30	28	23	18	.	4	10	16	22	15	33.7
	Min..	20	7	2	4	20	24	..	30	30	20	16	10	9	..	22	10	22	14	11	28	17	15	15	4	3	- 9	-16	-11	4	12	- 5	11 3
Sheldon ...	Max...	36	38	34	32	47	43	47	51	45	35	35	23	40	39	42	35	43	39	42	37	38	39	31	23	15	10	3	12	15	15	15	31.2
	Min...	17	12	- 2	12	-2	20	25	29	22	18	15	5	9	17	18	9	25	12	15	24	14	17	18	3	- 5	-12	-23	-15	- 5	- 3	-18	8 7
Sibley	Max. .	37	34	18	29	44	41	46	49	..	32	32	25	40	37	42	35	41	..	41	30	35	35	35	19	10	3	0	14	12	15	14	29 3
	Min...	17	10	- 3	3	22	19	23	29	23	24	15	5	7	17	18	8	24	..	14	26	16	17	15	0	- 4	-11	-21	-17	- 4	0	-17	9 2
Sigourney .	Max ..	44	40	22	29	38	50	49	54	51	42	31	23	35	40	43	35	53	42	46	38	36	35	31	27	20	28	11	11	27	24	25	34 9
	Min ..	20	20	4	0	16	19	20	31	28	29	19	10	2	23	18	14	18	15	12	28	27	16	14	5	6	- 6	-18	-12	3	14	9	13 4
SiouxC'nt'r	Max...	37	39	26	31	44	42	44	49	44	37	31	30	40	36	40	33	40	37	41	36	33	36	27	23	11	9	1	13	16	11	14	30 7
	Min..	18	14	- 2	3	22	22	24	33	30	24	15	7	11	21	21	10	22	13	17	24	14	18	17	4	- 4	-12	-20	-15	- 4	- 1	-10	10.8
Sioux City.	Max...	40	40	18	34	47	43	49	51	44	35	32	30	44	37	42	26	41	42	42	36	34	38	28	24	13	- 1	2	12	14	12	11	31.4
	Min..	24	11	3	10	25	27	32	34	29	24	21	13	17	26	26	17	26	18	24	30	17	19	17	3	- 2	-10	-21	-10	3	1	-15	14.1
Spirit Lake	Max. .	35	35	23	24	45	42	44	50	44	32	32	27	37	32	41	35	44	40	45	37	37	29	27	18	12	5	12	14	18	21	21	31 0
	Min .	18	7	- 4	2	21	22	24	29	28	25	15	4	6	22	19	8	24	15	13	29	15	15	14	- 2	- 3	-11	-23	-14	- 1	1	-13	9 8
Storm L...	Max...	37	37	18	22	42	41	44	46	44	34	32	28	38	34	42	34	44	48	40	36	34	33	26	22	9	9	0	7	12	13	10	29.5
	Min ..	18	12	- 3	3	20	24	25	33	28	24	17	7	9	21	20	10	24	11	10	29	15	11	11	2	0	-13	-20	-13	0	5	-13	10 7
Thurman ..	Max...	51	43	28	32	48	52	56	63	62	45	45	34	49	44	50	43	50	51	45	43	35	33	29	28	23	20	10	12	15	16	15	37.6
	Min...	25	23	9	3	19	17	26	26	25	23	23	20	9	22	29	28	30	20	17	29	20	12	12	- 3	3	-14	-27	-13	2	- 6	-11	12 8
Tipton	Max ..	38	40	25	28	38	45	45	54	52	40	34	28	29	44	42	29	48	47	40	42	34	33	30	25	23	31	3	5	18	25	33	31.0
	Min ..	20	20	3	0	15	20	25	28	31	28	22	10	3	22	18	15	23	23	16	30	28	18	15	0	- 5	- 3	-15	-18	3	15	18	13.7
Villisca....	Max...	48	42	34	30	41	51	49	55	52	46	48	46	42	45	46	49	48	50	42	31	32	32	33	30	28	12	12	15	20	24	22	37.3
	Min .	28	22	6	3	16	26	24	26	25	25	22	15	3	20	20	15	21	15	22	22	20	19	4	6	- 8	-10	-25	-17	5	10	- 2	12 2
Wapello...	Max ..	..	..	25	31	35	45	50	49	51	49	38	30	33	45	46	38	.	45	41	36	34	34	..	31	34	28	15	8	18	21	29	34.8
	Min..	..	..	8	4	15	20	27	30	29	30	25	14	5	24	21	19	.	20	17	30	30	19	..	8	7	2	-12	- 8	7	12	11	15.3
Wash'ton .	Max .	42	28	.	29	39	49	47	55	53	40	32	24	34	41	41	32	51	39	45	35	36	32	31	25	24	5	13	9	22	23	29	33.6
	Min..	20	15	2	0	12	18	26	30	25	28	18	7	0	19	16	13	18	18	11	27	25	14	10	2	1	- 9	-20	-12	2	13	6	11.5
Waterloo..	Max..	35	35	12	26	41	47	49	51	50	35	32	22	33	40	42	33	38	39	39	34	31	27	27	22	30	17	5	3	18	20	20	30.4
	Min.	17	12	1	0	13	20	29	26	28	23	20	8	3	12	20	12	18	15	9	28	21	13	13	- 1	4	- 8	-20	-23	3	12	- 3	10.5
Waverly...	Max..	34	34	14	24	44	41	45	50	47	35	30	26	33	28	39	33	46	36	38	36	33	28	26	21	17	18	0	8	17	25	17	29 8
	Min ..	17	14	0	0	16	17	28	28	29	20	20	7	3	17	21	13	18	15	8	29	20	15	12	- 3	4	- 7	-20	-25	1	14	- 5	10 8
West Bend	Max..	40	34	18	29	44	43	44	49	46	35	33	26	40	34	41	32	46	38	45	38	34	33	27	23	12	12	1	15	16	21	13	31.0
	Min...	17	14	- 1	4	21	18	15	28	27	25	16	7	6	19	19	9	18	14	12	30	16	11	17	5	4	-10	-20	-18	1	8	-11	10 4
Whitten...	Max ..	37	34	22	25	40	44	46	51	50	37	35	29	35	38	40	37	48	41	43	40	31	28	26	29	18	18	2	17	11	25	20	28 6
	Min ..	18	14	- 1	14	15	30	27	28	28	26	21	5	2	6	18	10	12	11	10	27	25	8	9	- 3	2	-11	-22	-23	1	11	0	10.4
Wilton Jc .	Max ..	40	39	23	26	38	45	44	49	52	43	33	27	28	39	35	40	47	40	42	33	36	34	30	24	20	28	5	10	24	27	30	33.3
	Min ..	20	23	3	0	14	17	28	28	28	27	23	10	0	19	15	16	21	21	11	29	18	17	10	- 1	- 5	- 1	-21	-18	5	15	14	12 5
Winterset..	Max ..	44	..	..	30	42	48	49	59	58	..	38	..	48	42	45	..	50	41	48	..	29	37	31	28	15	1	10	10	20	29	24	35.0
	Min ..	23	22	5	5	18	26	32	32	31	29	19	12	8	25	23	14	22	18	16	29	22	12	..	3	12	- 8	-17	-10	4	8	- 2	14 4

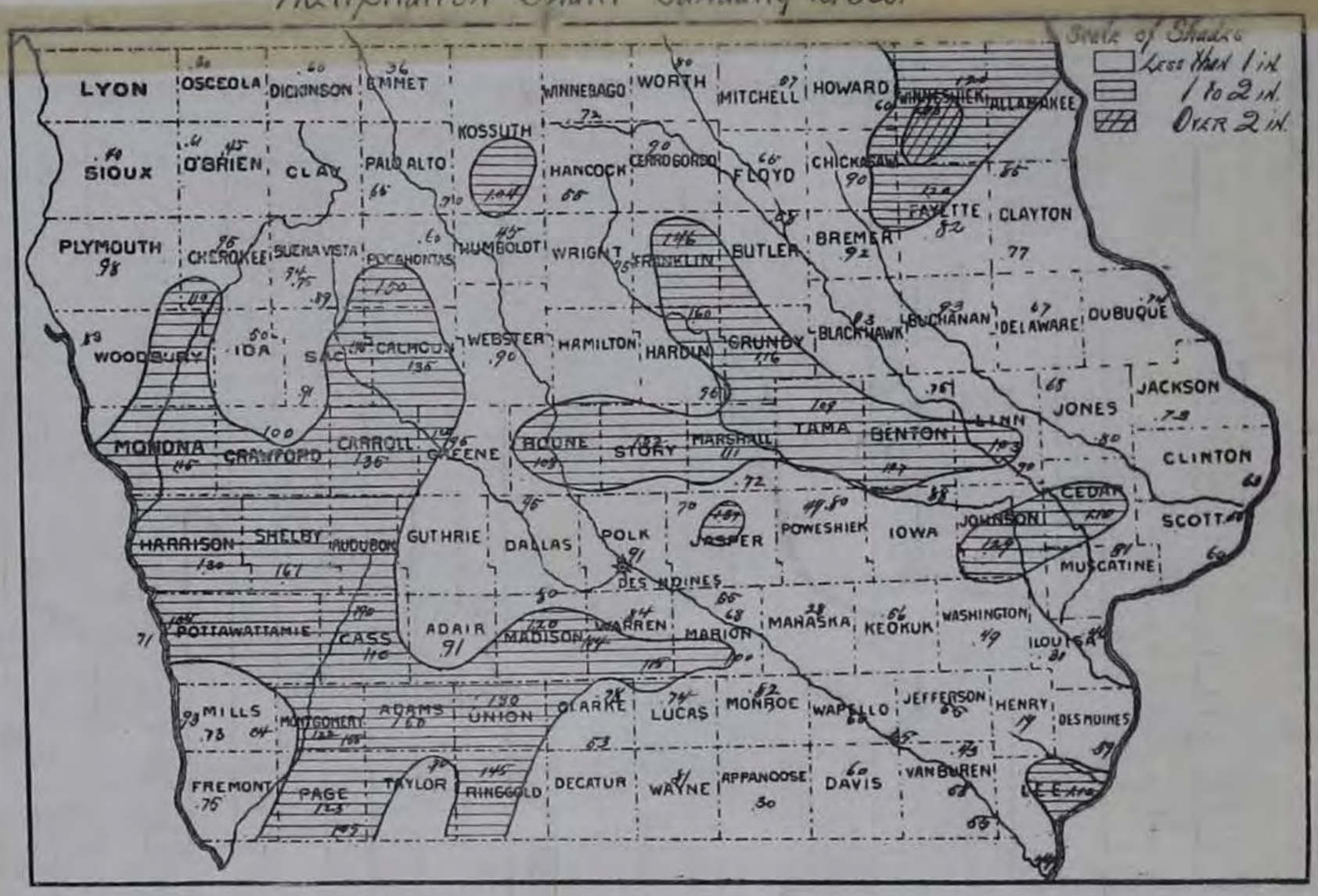
DAILY AND MONTHLY PRECIPITATION FOR JANUARY, 1902.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	....	..	....	..	....	....	....	....	..	..	....	....	....	..	..	....	....	..	.40	.10	..	....	....	.40	...	.		.30	.10	....	1.30
Albia	....	....	..	....		..	....	....		...	....	...	....	....	..	..	....	....	....	.07	....	....	....	....	.25		....	....	.50	....		.82
Algona	....	....	...	....	....	....	.	....	..	....	....	....	....	....	....	....	..	....	....	.10		.	T	T	.54	..	.		.15	.25	....	1.04
Alta	....	....	....	..	....	....	....	....	...	....	....	....	.	..	....	....	...	....	....	08	....	....	....	T	62		....	.02	.15	07	..	.94
Alta (near)	....	...	....	...	.....		..		..	....	..	..	....	..	....	....	.	....	..	.10	....	.	....	....	.35	....	....	....	.30		....	.75
Amana	....	..	....	...	....	....	..	....	..	....	....	..	....	....	....	....	....	....	....	.27	.10	....	....	...	23	.11	..	....	.11	.06		.88
Ames	..	....	....	...	...	..	...	....	....	....	..	..	....	....	....	....	..	....	....	.23	.04	..	....	T	.50	.20		....	.25	.10	....	1.32
Atlantic	....	....	..	....	..	....	....	....	....	....	.	....	..	...	..	....	....	..	....	....	.80	..	....	....	.60	.		....	.30	....	....	1.90
Baxter	....	....	....	....	....	...	....	....	....	..	....	..	..	....	...	..	....	...		10	.20	....			.20	....	....	....	.10	.10	....	.70
Belknap	....	..	....	....	....	..	....	....	..	...			....	....	....	....	.....	....	....	....	.10	..	..	....	40		...		.10	..	....	.60
Belle Plaine	...	..	....	...	...	..	....	....	....	....	....	.10	....	....	....	....	....	....	..	.25	....	....	....	....	.40	...	....	....	.20	.10	.02	1.07
Bonaparte	....	...	....	....	....	....	..	....	....		....	...	....	....	...	.	..	....	..	....	.10	....	....	....	.30	.	..	.	.15	....		.55
Britt	....	..	....	....	...	....	....	....	..	...	....	..	..	...	..	..	..	..	....	.20	...	....	T	.01	.20	03	....	.	.05	.06	..	.55
Buckingham	..	..	....	....	.	..	...	..	....	....	..	....	..	....	....	....	....	..	....	42	....	....	..	..	.35	..		..	15	.17		1.09
Burlington	T	....	....	....	....	..	....	....	....	....	..	..	....	....	..	..	..	....	....	T	.14	.		....	.56	....	....	....	.11	.	.08	.89
Bussey	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	.30	..			....	T	.40	.10	T	.20	..	..	1.00
Carroll	....	....	....	....	....	....	....	..	....	....	....	....	....	....		....	....	....	....	.20	....	....	....	....	..	.60	....	.	.35	.20	....	1.35
Cedar Rapids	..	...	...	....	....	....	....	..	.	..	....	....	....	....	....	....	....				40	....	..	....	....	.35	....	....	.18	.10	T	1.03
Centerville	..	...	....	....	....	..	....		....	....	..	....	....	....	..	....	..		....	....	T		...		.20		....	....	.10		....	.30
Charlton	.	....	....	....	....		....	....	....	..	..	....	....	..	.	....	..	....	....	.15	.07		....	T	.30	.01	....	....	.17	.04	....	.74
Charles City	...	....	....	....	....	....	....	..	....	..	....	....	....	....	....	....	....	T	.20	.10	....	T	....	....	.10	.20	....	....	....	.05	....	.65
Clarinda	...	....	....	....	....	....	...	..	....	....	....	....	....	....	....	....	....	..	....	.61	....	....	....	....	.42	....	...	.20	T	.	....	1.23
Clear Lake	....	....	...	....	...	....	....	....	...	.	..	....	..	....	....			....	....	.25	.05		....	T	.20	.20	..	....	.10	.10	....	.90
Clinton	....	....		....	....	....	....	....	..	...	..	....	..	....	....	....	....	....	....	.22	.08	....	...	....	.22	...	....	....	.11	..	....	.63
College Springs	....	....	....	....	....	....	....	....	...	....	....	....	..	....	....	.....	..	..	.02	.55	.10	...	....	....	.30	.03	..	T	.05	..	....	1.05
Columbus Jct	..	..	....	...	....	..	....	...	....	....	....	....	....	....	..	....	..	....	....	.10	.09	....	....	..	.21	.04	...	....	.01	....	.01	.46
Corning	....	...	....	....	....	....	..	....	....	....	....	....	..	....		..	..	....	....	.60	..	....	....	....	.70	..	...	T	.20	T	..	1.50
Council Bluffs	.	....	....	....	-	....	.	....	..	....	...	..	..	....	..	....	..	....	....	.65	..	....	....	....	.31	....	....		.09	..	.	1.05
Cresco	..	..	...	..	....	....	....	....	..			..	..		....	....	....	....	....	40		....	..	.20	....	....		....	....	....	....	.60
Cumberland	....	....	....	...	..	..	....	....	....	....	....	....	....	..	....	....	.....	..	....	60	....	....	....		.40	....	....	....	.10	....	....	1.10
Davenport	....	....	....	....	....	..	....	....	..	.	....	....	..	..		....	.....	....	....	.31	.10	..	..	T	.09	.01	....	....	.07	.02	T	.60
Decorah	....	...	...	...	....	....	...	....	....	....	....	....	..	...	T	....	....	....	....	.65	.15	....	T	....	....	.30	..	....	T	.10	..	1.20
Delaware	..		....	....	..	....	....	....		....	....	....	....	..	..	....	....	....	.....	.48	....	....	....	....	.13		...	....	.03	.03	...	.67
Denison	....	....	....	...	....	....	....	....	..	...	....	..	....	..	..	....	....	....	....	.30	.10	..			.30	.10	....	.05	.15	....	....	1.00
Des Moines	....	....	.....	....	....	....	....	....	....	....		....	....	..	.	....	....	....	....	.14	.07	..	T	T	.48	.06	....	T	.11	05	T	.91
De Soto	....	....	..	.	....	....	....	....	....	....	....	.	....	....	....	....	....	....	..	.20	.10	....	T		.30	.10	....	T	.05	.05	....	.80
Dows	..	....	...	....	....	..	....		....	....		....	....		....	....	....	....	..	.30	....	.	....	T	.30		..	.05	.10	....	....	.75
Dubuque	....	....	....	...	T	..	....		...	T	....	....	..	....	T	....	....	T	.	.17	.18	....	T	....	.03	28	....	..	.04	.03	01	.74
Eldon	....	....	....	....	..	..	....	....	..	....	....	....	..	..	....	..	....	....	....	..	.06		....	....	.32	.11	..	....	.16	....	....	.65
Elkader	....	..	....	....	..	....	....	...	..	....	-	....	....	..	....	....	....	....	....	45		....	....	....	.26		....	....	T	06	....	.77
Emerson	. .	....	....	....	....	.....	....	...		...	....	..	....	..	....	....	....	.	....	.23	....		....	....	.08	....	....	....	.03	....	..	.34
Estherville	....	....	....	....	T	....	..	..	..	....	....	....	....	....		....	....	..	....	T	....	T	T	T	.19	.04	....	....	.06	.05	.02	.36
Fairfield	....	....	....	....	..	....	..	....	....	....	....	....			....	....	....		..	....	.10	..	....	....	.30	.05	..	....	.10	....	....	.55
Fonda	....	....	..	....	....	....	....	..	....	..	..	....	T	....	....	....	....		..	.20	..	..	....	T	.65		.35	.10	.20	T	..	1.50
Forest City	....	....	..	....		....	....	....	....	..	..	....	....	....	....	....	....	....	....	.12	..	....	....	T	.30	.20	..	....	.10	..	..	.72
Fort Dodge		...	..	..	.....	....	.....	....	..	.....	....	....	....	....	....	....	....	....	....	.30	....	....	....	T	.30	.20	....	....	.10	T	....	.90
Fort Madison	....	....	....	....	....	....	....	....	....	....	....	....	..	....	....	....	..	....	....	.30	T	....		...	.30	..	...	.30	.10	.10	....	1.10
Galva	....	....	..	..	..	....	....	....	....	....			..	....	..	....	....	....	....	.10		....	T	T	.30	.05	....	....	....			.50
Gilman	....	....	..	..			....	....	....	....	....	....	....	....	....	....	..	....	....	T	.40	..	....	T	.32	..	...	..	T	T	....	.72
Glenwood	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	....	..	.28	....	..	..		.36	..	..	.09	....	....	....	.73
Grand Meadow	..	....	.	....	....	....	..	..	..	....	....	....	....	....	T	....	..	....	....	....	.40	....	....	....	..	40	....	....	T	.05	....	.85
Greene	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	..	....	20	.10	....	....	....	.05	.09	....	....	.04	.10	....	.58
Greenfield	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	....	....	....	....	.43	03	....	..	...	.33	.02	....	T	.09	.01	....	.91
Grinnell	....	...	..	....	....	....	....	....	....	..	..	....	...	....	....	....	....	....	....	.21	..	....	....	.	.20	....	..	....	.08	....	.	.49
Grinnell (near)	....	...	..	....	....		....	....	....	....	..	..	....	....	..	....	....	....	....	....	.15	....	....	....	....	.20	.15	..	.20	.10	...	.80
Grundy Center	....	..	.	....	....	...	....	..	....	....	....	..	....	....	..	....	....	....	....	.16	.40	....	....	....	.10	.35	....	.	.10	.05	....	1.16
Hampton	....	....	....	..	..	....	..	..	..	....	....	....	....	....	....	....	....	.	.11	.28	..	....	....	..	.84	....	..	.08	.15	....	....	1.46
Harlan	....	T	....	....	....	....	....	....	....	....	....	....	....	....	..	....	....	....	....	.32	....	....	....	..	.80	.10	.	..	.40	.05	....	1.67
Hopeville	....	..	..	....	....	....	....	.	..	....	....	....	..	....	..	.	....	....	....	.28	....	....	....	....	.10		.10	....	05	....	....	.53
Humboldt	....	...	..	....	....	....	....	....	....	....	....	....	....	....	..	....	..	....	....	.10	....	....	....	....	.10	.20	....	..	.05	....	....	.45
Independence	....	....	..	....	....	....	....	....	....	....	..	....	....	.	....	....	....	....	..	.33			....	....	.40	....	....	....	.10	.10	....	.93
Indianola	..	....	..	...	....	....	....	.	....	....	....	....	..	....	..	..	....	....	....	.15	.06	....	T	T	.28	T	....	....	.30	.05	....	.84
Iowa City	....	....	....	...	....	..	....	....	....	....	...	....	....	....	....	....	..	....	..	.40	02	..	....		.30	.20	....	....	.25	.12	....	1.29
Iowa Falls	....	....	....	....		...	....	....	....	T	..	....	....	..	....	....	..	....	..	.40	.10	...	T	T	.60	....	....	T	.30	.20	....	1.60
Jefferson	....	.	....	..	....	..	....	..	....	....	....	....	....	....	....	....	....	....	....	.35	....	....	....	....	.25	....	....	....	.35	T	....	.95
Keokuk	....	...	....	....	....	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	.10	....	....	..	.08	.06	....	....	08	.04	.08	.44
Keosauqua	....	..	..	....		....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	.05	....	....	..	.35	.06	....	....	.11	.01	....	.58
Knoxville	..	...	....	..	....	....	....	.....	....	....	....	....	....	....	..	....	....	....	....	.05	.23		....	....	.20	.05	....	....	.15	T	....	.68
Lacona	....	..	...	....		....	....	....	....	....	....	....	....	....	.	....	....	....	..	.40	....	....	....	....	.50		....	....	....	.25	T	1.15
Larabee	.	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	..	....	T	....	....	T	T	.75	....	....	....	20	....	....	.95
Le Claire	..	...	....	....	...	.....	....	.	....	....	....	....	..	....	....	....	.	....	...	T	.38	....	....	..		.08	....	...	.07	.02	T	.55
Le Mars	....	....	....	....	....	....	..	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	....	.65	....	....	....	.18	.15	..	.98
Lenox	....	. ..	...	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.40	....	....	....	....	.20	....	....	....	.10	....	....	70
Logan	....	....	...	..	....	....	....	...	.	...	....	....	....	....	....	....	....	....	....		....	....	..	..	....	..	..	..	....	....	....	1.30
Maquoketa	..	..	..	....	....	....	....	....	....	....	.....	....	....	....	....		....	....	....	.35	.05		....	..	....	23	....	....	.10	....	....	.73
Marshalltown	....	....	...	...		....	....	....	...	....	....	....	....	....	....	....	....	....	....	.19	.20	..	....	....	26	.30		....	07	.09	....	1.11
Monticello	..	....	...	...	....		....	....	....	....	....	....	....	....	....	....	....	....	....	....	.40	....	....	....	.28	....	....	T	T	T	....	.68
Mount Ayr	....	....	....	....	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	..	.50	....	....	....	....	.70	....	....	T	.25	T	....	1.45
Mt. Pleasant	.	....	..	....	....	..	....	....	....	.	....	....	....	....	.	....	....	....	....	.03	.02	....	....	....	.09	....	....	....	.05	....	....	.19
Mt. Vernon	....	.	....	....	..	....	..	....	....	....	....	..	....	....	....		....	....	....	.37	....	..	....	....	.30	...	....	.15	04	.03	.01	.90
New Hampton	....	....	....	....	...	....	....	..	....	....	....	....	....	....	....	....	....	....	....	.30	.10	..	...	..	....	.30	....	T	T	.20	T	.90
Newton	....	...	....	..	....	....	..	..	....	..	..	....	....	....	....	....	....	....	....	.20	52	...	....	....	.41	....	....		15	.09	....	1.37
Northwood	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	. ..	.20	....	....	T	T	23	.17	.	....	T	.20	....	.80
Odebolt	....	....	..	....	....	....	..	..	....	....	..	....	....	..	....		....	....	....	.20		..	....	T	50		.	...	17	.04	....	.91
Ogden	....	....	....	....	...	....	....	....	....	...	....	....	....	....	....	....	....	....	....	31	.10	...	..		.24	.30	....	....	08	.05	....	1.08
Olin	..	....	....	...	.	....	....	....	....	..	T	....	....	.	....	..	.	....	....	.30	....	T	..	....	.25	.	...	....	.15	10	.	.80
Omaha, Neb	...	...	....	..	...	...	....	....	....	....	....	....	....	....	..	....	....	....	....	.31	T	....	....	....	.28	T	....	T	.12	T	....	.71
Onawa	...	....	....	....	....	....	....	....	....	...	....	....	....	....	...	....	....	...	....	.10	01	....	....	T	.65	.15	....	....	.18	.06	....	1.15
Osage	....	....	....	....	..	...	. ..	....	..	...	....	....	..	....	....	T	....	....	....	.30	.09	....	T	....	.10	....	....	....	04	.03	.01	.57
Oskaloosa	...	..	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.07	.10	....	....	...	.10	....	....	....	.05	.05	....	.28
Ottumwa	....	....	....	.....	..	..	....	....	....	.. .	..	....	....	....	....	....	....	..	....	T	....	....	.40	....	..	....	....	....	.20	....	...	.60
Ovid	....	....	....	....	..	....	...	...	.....	..	....	....	....	..	....	....	....	....	T	T	.25	.	..	...	.41	....	....	....	.15	T	..	.81
Pella	...	....	....	....	....	....	....	....	....	....	.....	....	..	...	....	....	..	....	...	.05	.08	....	....	....	.40		....	.01	.01	....	....	.55
Perry	..	....	...	....	....	....	....	....	..	....	....	..	....	....	....	....	....	....	....	.50	.05	....	....	....	.40	..	....	....	T	T	....	.95
Plover	..	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.10	....	....	..	...	.30	....	..	....	.10	.10	....	.60
Primghar	...	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.40	..	..	...	.05	..	....	.45
Red Oak	...	....	....	...	....	....	...	...	....	....	. ..	....	..	....	....	....	....	....	....	.60	.05	....	..	....	.41	.05	....	T	.09	.02	....	1.22
Ridgeway	....	....	....	..	.01	T	....	....		.01	....	....	....	T	.01	....	....	....	....	1.51	.01	T	03	....	.97	....	....	....	.01	.27	....	2.83
Rockwell City	....		....	....	....	....	..	..	. .	...	..	....	....	....	....	..	...	..	....	.10	....	....	....	....	.40	.45	....	....	.40	....	....	1.35
Ruthven	...	...	.	....	....	..	....	....	....	....	....	.....	....	....	....	....	....	....	....	T	....	....	T	T	.30	T	....	....	.25	.10	T	.65
Sac City	..	....	..	....	....	...	..	..	...	....	....	..	...	....	....	....	....	....	....	.45	....	....	...	T	.50	....	....	....	.30	.20	T	1.45
St. Charles	...	....	....	....	....	..	...	....	....	....	..	....	....	...	....	....	....	....	....	.25	.05	....	T	T	.40	.05	....	....	.18	.11	....	1.04
Scranton	.	. .	....	..	....	...	....	....	....	....	....	..	..	....	...	.....	....	....	....	.40	....	...		....	T	.30	....	....	.30	.20	....	1.20
Sheldon	...	....	....	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	T	T	.30	.10	....	....	.10	.20	.01	.61
Sibley	....	T	....	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	T	T	.20	.05	....	....	.05	T	...	.30
Sigourney	...	....	..	...	....	....	....	....	....	....	....	....	..	....	....	....	....	..	....	.10	.05	....	....	....	.22	....	....	....	.19	....	....	.56

DAILY AND MONTHLY PRECIPITATION FOR JANUARY, 1902—CONTINUED.

STATIONS.	DAY OF MONTH. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL.
Sioux Center	....	....	....	..	....	....	....	....	....	....	T	....	....	....	....	....	....	....	....	....	T	....	T	T	.30	....	.	T	.10	....	....	.40
Sioux City	....	....	..	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	T	....	....	T	T	.64	.08	....	.01	.08	.02	....	.83
Spirit Lake	....	....	....	.....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.05	....	....	....	.24	....	....	....	.14	T	T	.43
Stockport		.....		....	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	.03	....	....	T	T	.50	.01	....	T	.20	.15	....	.89
Storm Lake	..	....	....	....	...	.	....	....	....	....	....	....	....	....	....	....	....	....	....	.10	T	....	T	....	.40	.05	..	T	.20	....	....	.75
Thurman	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	.05	.70	....	....	....	....	.60	....	....	05	.20	T	T	1.55
Villisca	.	....		.	....	....	....	....	....	....	....	....	....	....	....	....	..	....		.40	..	...	....	....	.30	....	....	....	T	T	....	.75
Vinton	....	....	....	....	....	....		....	....	....	....	....	....	..	....	....	....	..		T	13	....	....	....	.18	....	T	....	T	....	....	.31
Wapello	....	....	....	....		..	....	..	....	....	..	..	....	..	....	....	.	....	....	.15		....	....	....	.22	....	....	....	.12	....	....	.49
Washington	....	.	....	....		..	....	..	....	....	....	..	....	....	....	..	.	..	....		.05	....	..	T	.60	...	.20	.10	.15	T	T	1.10
Washta	.....	....	..	....		..	....	....	....	....	....	....	..	....	....	....	....	....	...	.28	.10	....	...	....	.32	....	....	...	.09	.14	...	.93
Waterloo	....		....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....		.29	.13	....	....		.15	.15	....	....	.08	.10	.02	.92
Waverly	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.10	....	....	T	T	.30	....	T	T	.30	T	....	.70
West Bend		....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.50	....	....	....		...	50	....	....	....	.20	....	1 20
West Union	....	....	....	....	....	....	....	....	....	....	....	....	....		....	....	....	....	....	.20	10	....	....	T	20	.30	....	....	.10	.05	....	.95
Whitten	....	..	...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.40	....	....	....	....	.20	.	....	.09	.12	T	....	.81
Wilton Junction	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	.30	....	....	....	....	.40	....	....	.30	.20	....	1.20
Winterset	....	....	....	....	.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.38	....	....	....	....	.40	....	....		.20	....	....	.98
Woodburn	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....													

Precipitation Chart January 1902.



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DES MOINES:
BERNARD MURPHY, STATE PRINTER
1902.

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Tenth District—J. W. WADSWORTH, Algona.
Eleventh District—C. E. CAMERON, Alta.

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Algona	C. D. Pettibone
Alta	D. E. Hadden
Alta (near)	W. J. Minard
Amana	Conrad Schadt
Ames	Exp. Station
Atlantic	J. W. Love
Audubon	Roy B. Smith
Baxter	W. T. Thorp
Belknap	A. W. Rankin
Belle Plaine	S. P. Vandike
Bonaparte	Hon. B. R. Vale
Britt	G. P. Hardwick
Buckingham (Traer P. O.)	Dr. W. A. Daniel
Burlington	I. S. Shontz
Bussey	Agent C. B. & Q. Ry
Carroll	Moses Simon
Carson	Agent C. B. & Q. Ry
Cedar Rapids	Electric Light & Power Co
Centerville (near)	Jas. S. Hamilton
Chariton	Hon. S. H. Mallory
Charles City	Chas. O. Schmidt
Clarinda	A. S. Van Sandt
Clear Lake	John Cobb
Clinton	Luke Roberts
College Springs	A. M. Finley
Columbus Junction	Prof. H. E. Simpson
Corning	Jerome Smith
Council Bluffs	Agent C. R. I. & P. Ry
Cresco	Anthony Marshall
Cumberland	Agent C. B. & Q. Ry
Danville	Agent C. B. & Q. Ry
Davenport	*J. M. Sherier
Delaware	Wm Ball
Decorah	F. H. Baker
Denison	Prof. W. C. Van Ness
Des Moines	*Geo. M. Chappel
De Soto	R. D. Minard
Dows	A. C. Fuller
Dubuque	*E. H Bowie
Earlham, R. F. D	Geo. Phillips
Eldon	T. Madden
Elkader	Chas. Reinecke
Emerson	Agent C. B. & Q. Ry
Estherville	Leslie Littell
Fairfield	Prof. Wm. W. Mendehall
Fayette	R. Z. Latimer
Fort Dodge	C. R. I. & P. Agent
Ft. Madison	Miss L. A. McCready
Fonda	H. P. Barron
Forest City	J. A. Peters
Galva	D. W. Farnsworth
Gilman	Jas. L. Wylie
Gladbrook	Agent C. G. W. Ry
Glenwood	J. P. Jackson
Grand Meadow (Postville P. O.)	F. L. Williams
Greene	J. L. Cole
Greenfield	J. G. Culver
Grinnell	Prof. S. J. Buck
Grinnell (near)	A. O. Price
Grundy Center	Ed King
Guthrie Center	W. F. Braun
Hampton	E. C. Grenelle
Harlan	C. A. Reynolds
Hazleton	G. M. Miller
Hopeville	M. T. Ashley
Humboldt	H. S. Wells
Independence	E. F. Wulfke
Indianola	Prof. L. Tilton
Iowa City	Prof. A. A. Veblen
Iowa Falls	J. B. Parmelee
Jefferson	Isaac Young
Keokuk	*Fred. Z. Gosewisch
Keosauqua	Prof. J. H. Landes
Knoxville	Casey & Belville
Lacona	Agent C. B. & Q. Ry
Lansing	G. H. Markley
Larchwood	Ralph Twamley
Larrabee	H. B. Strever
Lenox	J. L. Hurley
Le Mars	Dr. T. E. Cole
Logan	Mrs. M. B. Stern
Maquoketa	Frank Keeney
Marshalltown	Branch S. Jones
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Ogden	E. Sayre
Olin	Hon. Nathan Potter
Omaha, Neb	*L. A. Welsh
Onawa	C. G. Perkins
Ovid	H. C. Miller
Osage	G. D. Pattingill
Oskaloosa	Jos. Boyd
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Primghar	P. R. Bailey
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Toledo	Lulu G. Bookwalter
Vinton	T. F. McCune
Villisca	C. E. Matteson
Wapello	Geo. W Schofield
Washington	Wm. A. Cook
Washta	H. L. Felter
Waterloo	M. L. Newton
Waverly	H. S. Hoover
Whitten	Dr. Frank P. Butler
Wilton Junction	J. M. Rider
Winterset	W. W. McKnight
West Bend	Phil. Dorweiler
West Union	J. M. Lisher
Woodburn	C B. McDonough

*U. S. Weather Bureau

WEATHER-CROP OBSERVERS.

Reporting for the Weekly Bulletin.

Agency	J. H. Van Zandt
Albia	Wm. Mercer
Algona	J. H. Zanke
Allerton	James Piper
Alta	Jonas Cushman
Audubon	Hon. A. H. Edwards
Blairstown	T. H. Weil
Bondurant	C. I. Thorp
Burt	R. Jain
Cedar Rapids	Hon. A. J. Fuhrmeister
Charles City	W B. Towner
Chariton	C. C. Burr
Clarksville	F. M. Russell
Correctionville	Hon. W. B. Chapman
Corwith	Wm. Oxley
Council Bluffs	L. Prouty
Creston	M. V. Ashby
Danville	Sherman Matthews
Dunlap	Hon. B. F. Roberts
Gruver	E. Dawson
Elliott	C. B. Hamilton
Emerson	D. B. Nims
Fort Dodge	R. W. Blaine
Geneva	Wm. H. Thompson
Harlan	H. B. Kees
Hesper	G E. Dillingham
Humeston	Hon. S. H. Moore
Independence	Geo. H. Wilson
Indianola	H. D. Guthrie
Iowa City	Edward Hummer
Ireton	J. M. Sherman
Le Mars	Hon. Henry Schrooten
Madrid	Geo. Swisher
Manson	J. D. Skinner
Marshalltown	Hon. S. B. Packard
Martinsburg	W. B. Berridge
Mapleton	A. Lamb
Mt. Pleasant	W. S. Wright
Milton	Hon. E. C. Holland
Osage	E. W. Stacy
Orange City	H. J. Vande Waa
Owen	Hon. J. W. Bird
Pittsburg	G. C. Duffield
Rock Rapids	D. E. F. Merrill
Rossville	T. B. Wiley
Sageville	Hon. F. N. Knoll
Seymour	L. B. Sager
Shenandoah	Reuben Mullison
Spirit Lake	E. E. Arey
State Center	E. P. Thompson
Stuart	W. W. Bailey
Tama	W. G. Malin
Van Horne	Spencer Smith
Van Wert	J. I. Walker
Winterset	H. A. Kinsman
West Branch	Wrigley Smith
West Union	H. B. Blackman
Wilton	Thos. Boot
Wiota	I. S. Coomes

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIII. FEBRUARY, 1902. No. 2.

NOTES.

A fir tree nearly 18 feet in diameter growing near Tacoma, Washington, is to furnish a log 22 feet long for exhibition at the St. Louis fair.

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In Italy three furnaces of 500 electric horse power have been erected for the manufacture of pig iron, by electric heat, under the Stassano patent.

***

In this section a large amount of ice has been secured during the past winter, and its quality is extra fine. Ice has become a very important product, involving a considerable amount of capital and labor.

***

Nature has a large corps of sanitary agents and doctors, viz: food, pure air, sunshine, beauty of landscape, change of scenery, recreation, exercise, cleanliness, rest and sleep. Nature-opathy is a very safe system to follow.

***

Hon. S. H. Mallory, meteorological observer at Chariton, Iowa, writes: "My barometer broke the record on the 28th, the reading at 7 A. M. and 2 P. M. being 27.86 inches, which is the lowest ever observed by me." This was the actual reading, of course—not reduced to sea level.

***

An interesting metereological station is that of Mammoth Tank, on the line of the Southern Pacific railway, in San Diego county, Cal. The mean annual rainfall for twenty-three years has been 1.81 inches; maximum temperature, 130 degrees, on August 1878, 17; hottest month, July, with a mean of 98.5 degrees.—*Exchange*.

***

Mr. Edward Dodson, an English explorer, has recently returned from a prolonged sojourn in the great desert of Tripoli, Northern Africa. This portion of the country has never been thoroughly explored, and indeed has not been visited by a European for over fifty years, so that Mr. Dodson's results are of inestimable value. One of the greatest achievements of the expedition was the exploration of the great petrified forest at Murzuk. Throughout this whole area which extended for several miles petrified trees were found, varying in circumference from 7 feet to a few inches. Every branch of this forest was of course lying prone, and this together with the presence of marine shells showed that this part of the Great Sahara had at one time been submerged. On one occasion the party passed through a strange experience. They were surrounded by thunder-storms. No less than five distinct storms were in progress all 'round, and the guns and spears of the party became surrounded by a halo of phosphorescent light.—*Scientific American*.

ERRATA IN JANUARY REVIEW.

ATLANTIC—January total precipitation recorded, 1.90 inches, on pages 8 and 11, should have been 1.70 inches. Total snowfall recorded, 19.0 inches, on page 8, should have been 17.0 inches.

FORT DODGE—January minimum temperature recorded, 24° on the 27th, on page 7, should have been 30° on the 28th.

NEW HAMPTON—January mean temperature recorded, 19 6° on page 7, should have been 19.2°. Mean maximum temperature recorded, 29.3° on page 10, should have been 28.3°.

SHELDON—January total precipitation recorded, .61 inch on pages 7 and 11, should have been .71 inch. Total snowfall recorded, 6.1 inches, on page 7, should have been 7.1 inches.

FEBRUARY WEATHER IN THE UNITED STATES.

EXTRACTS FROM NATIONAL CLIMATE AND CROP BULLETIN.

February, 1902, averaged decidedly cold in the central valleys, southern states, over the southern part of the Lake region and in the Atlantic coast districts south of New England. In the lower Missouri, Ohio, central and lower Mississippi valleys the average daily deficiency in temperature ranged from 6° to 12°, the most marked departures occurring in the central Mississippi and Ohio valleys, while along the middle and south Atlantic and east Gulf coast the deficiency generally ranged from 6° to 8°. Over the northern portion of the upper Lake region, in Minnesota, the Dakotas, throughout the Rocky Mountain regions and on the Pacific coast, except in extreme southern California, the month averaged milder than usual, the temperature excess ranging from 6° to 9° over the greater part of the districts named, the most marked departures occurring in the central and northern Rocky Mountain districts and in the Red River of the North Valley.

No maximum or minimum temperature records were broken during the month. The maximums were generally below 50° in the upper Lake region and over portions of northern New England and the upper Missouri valley; they exceeded 80° in extreme southern Florida and from central and southern Texas westward to southern California. The lowest minimum temperatures, ranging from —20° to —30°, occurred in the upper Missouri and Red River of the North Valleys. The southern limit of freezing temperature extended from central Texas eastward to the Florida coast in the vicinity and south of Jacksonville.

In the Atlantic coast and east Gulf districts, with the exception of northern New England and small areas along the immediate South Atlantic coast, the precipitation of February was very heavy, occurring principally near the close of the month. From the east Gulf coast northeastward to southern New England the total precipitation generally ranged from 4 to 6 inches, more than 8 inches occurring over southern Alabama and extreme west Florida, and causing destructive freshets in many of the rivers of this region. Throughout the central valleys, Lake region, central and West Gulf states, and over the

eastern Rocky Mountain slope the precipitation was lighter than usual, being decidedly deficient from Texas and northern Louisiana north-eastward over the central Mississippi, lower Missouri and Ohio valleys, including the central portion of the Lake region, where it was from 1 to more than 3 inches below the normal. On the Pacific coast the precipitation was decidedly in excess of the average, being unusually heavy in all districts, except extreme southern California. Along the coast northward of San Luis Obispo the total precipitation generally exceeded 8 inches, ranging from 12 to 19 inches in northern California and from 8 to 25 inches on the coasts of Oregon and Washington.

At the close of the month but little unmelted snow remained on the ground, except in the extreme northern portions of the Lake region and New England.

In the lower Missouri and upper Mississippi valleys, to the northward of the Ohio river and in the Middle Atlantic states, the month, although cold, was generally favorable for the prosecution of such farm work as is usually performed in winter. In the Southern States the conditions were not favorable for farm work. Moderate rainfall has partially relieved drought in eastern Texas, but elsewhere in that State drought conditions continue. On the Pacific coast the temperature has been favorable, and the rainfall abundant.

The northern portion of the winter wheat belt was generally well protected by snow during the month, and an improvement in the condition of winter wheat is indicated over the northern portions of Ohio, Indiana, Illinois, and Missouri, the outlook being less favorable over the southern portions of these states and in Kentucky, Tennessee, and Arkansas. The severe sleet storm near the close of January left a large portion of the Ohio Valley covered with ice, which remained on the ground for a considerable part of February, the effects of which it is feared will prove unfavorable. In Nebraska and Kansas the crop as a whole is in promising condition. In California the condition of wheat has materially improved, except in a few sections where the rains came too late to save the early sown. In western Oregon the crop is in excellent condition, and it is generally promising in eastern Oregon where, however, considerable has been winter killed. In Washington the severe cold of the latter part of January caused serious injury in localities, but where not injured by cold it has made good growth.

CLIMATE AND CROP DATA IN SCHOOL WORK.

We are in receipt of copies of the *Normal Eyte*, a weekly paper published in the interest of the Iowa State Normal School at Cedar Falls, in which we find articles recommending and illustrating the use of the MONTHLY REVIEW of the Iowa Climate and Crop Service in school work, especially in teaching arithmetic and geography. Under the general head of "Training," after giving numerous examples as to the methods to be employed in the use of climate and crop data in arithmetic classes, the editor says:

Why use this material for this purpose. In the first place the population of the state is decidedly rural. It thus would happen that the interests of the greater portion of the people of the state would be drawn upon to supply much of the material used in the teaching of the common subject of arithmetic in our schools. As a matter of justice the farming interests of the country would have fair recognition in this way in furnishing a reasonable proportion of the matter of the problem used in the schools by the children. Since each child in the state is so closely related in the experience to the agricultural industries it would be an advantage to use matter that stands in such immediate relation to his personal experiences and in this manner link the experiences and interests of the home with those of the school. Not the least of the benefits to come from this plan is the fund of general information about the common conditions of life that the pupil incidentally acquires. The idea of the barometer, velocity of winds, amount of precipitation, what the leading crops of the state are, average yield per acre, and the prices that these various products bring would thus be easily learned. When one stops long enough to realize what a general want of intelligence there is in such matters he can see that there is room for such work, especially when it can be done in this way without demanding extra time in a course already somewhat crowded. In fact, instead of stealing time, the added interest that would thus come to the arithmetic work would make the teaching in that subject so much more effective that time would be saved. Here is one simple case in which the much lamented waste in education can be prevented in a slight degree at least.

Referring to the use that may be made of the climatic and crop data in teaching geography, the editor gives the following valuable suggestions:

"Since observation and experience must furnish the point of contact in teaching any child it would be sensible to base the instruction as to climatic conditions of the globe and the products incident to these conditions upon the personal experience of the pupil in his own locality, supplemented and made more effectual by the excellent data and varied information that the director of the weather bureau for this state prepares and sends out. A knowledge of the extremes of heat and cold, winds, storms, lightning, precipitation, natural climatic conditions, and the equally natural variation from what is the normal condition for the state should be correlated with the more abstract statement of the text book. Crops raised at home, other products of the state, and the value of these all may contribute to give the geography a reality that is not often done in the ordinary school. These things properly associated with the soil, seasons, and climate that unite to produce them are a rich fund of materials with which the student is thus equipped in his attempts to understand regions remote but with similar climate, or near but having modified conditions. As an illustration of the facts that these reports furnish and which would be of marked help in explaining the importance of the amount of rainfall in producing a crop a few statements of facts gathered from the report of 1900 are given. "The average precipitation for the state is a little over 30 inches per year; and in the last decade the lowest amount was 21.95 inches in 1894, and the highest 37.45 inches in 1896. The normal for the three summer months is 11 inches. In 1894 the total for the summer months was only 4.88 inches; and in 1900 the amount was 14-78, or 10 inches above the low water mark. The difference of about 10 inches in the critical months of the crop season accounts for the fact that the output of cereals in 1900 was more than twice the total produced in 1894. Fully 70 per cent, on the average, of our annual precipitation falls in the six crop months, and over 37 per cent of the yearly total comes in the three summer months. So there is in Iowa a wet and dry season about as well defined as in some of the tropical countries. * * * * * * During the past eleven years the average from April first to October first has been 21.67 inches, with some noteworthy departures above and below. In 1896 it was 29.33 inches, and in 1900, 25.74 inches. But in 1894, the memorable year of the great drouth, the amount was only 13.39 inches, and about half of that total fell in April and September, leaving the four months in which the bulk of crop growth was made with very scant moisture." There is not space here to work out the many points of interest and value that can be seen from such data. Closer observation of the seasons and of the aspects of nature in general should result. Superstitions about permanent changes in climate, effects of the moon, and so forth will not be so readily drawn from one season's experience. From these facts about his own state the pubil should be more able to understand other countries. A little more intelligence on the matter of the weather and climatic conditions governing it would make it more difficult for the political demagogue to win votes by representing conditions that are purely the result of the weather as attributable to the acts of the party in power. One illustration of the use made of these fact is given. To show how important to the interests of our state is the rainfall during the growing or crop months the comparison of the average of

the corn crop for the state in 1894 and in 1900 is given. In '94 the average was 14 bushels per acre, in 1900 it was 40.3 bushels per acre. Other crops in about the same ratio. These reports are valuable in other respects in ways that it is not possible to take space t omention, but the thinking teacher will find profitable use to make of all such aids in the study of Iowa geography and in the interpretation of statements about other countries.

A kind of training of no small value can be given the pupils by the use of statistics thus so easily obtainable in the diagrammatic and graphic representation to which such statistics so readily lend themselves. What more valuable exercise in testing the judgement and skill of a class than to let them show the variation of the rainfall in our own state through a period of years by the rise and fall of a line as it is traced across the page according to a definite scale? Crops, prices, and total values are available for innumerable exercises that lead to a better understanding of the every day affairs of life and a quickened interest in school work because of the pleasure the pupil gets from seeing things work out into some definite results. Ability to make things live and assume meaning in graphic illustration is of very great value to any person. Inventive and illustrative power and the power to direct his own activities may thus be given many a child in such a way as to lead to incalculable benefits in making him thoughtful and in trying his own powers.

In these weather and crop reports there is a mine that the teacher may work to the lasting benefit of the class when teaching Iowa geography and in making him master of the greater world that lies beyond through his fund of illustrative materials that he has from his own experiences. Try it ''

A SUN MOTOR.

So powerful are the sun's rays when at their height, that on every square yard of the earth's surface there falls the equivalent of three horse-power. The sunshine on a four-acre lot at noonday represents an energy equal to that now taken from Niagara. Enough heat falls on a steamship's deck, if it were all gathered up and applied to the propeller, to drive the vessel along at its usual speed. The world uses 800,000,000 tons of coal every year, and wastes nine-tenths of it in the using, while upon an area less than twenty miles square of the Sahara Dseert the sun is pouring as much heat as that coal contains.

For thousands of years inventors have sought how to put this enormous power to use. The schoolboy hears the story of Archimedes, how twenty years before Christ he set on fire the ships of the enemy in the harbor of Syracuse by concentrating on them the heat of scores of mirrors. John Ericsson, the builder of the Monitor; turned his attention to the problem, and in 1870 produced his first solar machine. Then for fourteen years he labored to perfect his motor. The best he could do was to produce about one horse-power from a surface of 100 square feet, thus using only a thirtieth of the actual energy of the sun. His method was to condense the heat upon a boiler of water by mirrors.

About the same time a Frenchman, Mouchot, produced similar results. The latter afterwards put his discoveries to practical use by building a machine light enough to be carried on a man's back. It is useful for distilling water on the ocean or in arid regions, and will distill 2½ quarts in an hour. The French have put this method of distilling to use in Algiers on an extensive scale.

We do not need to go to the Sahara to find desert. The arid plains of the great west are a needy field. There the sun shines with scarcely a cloud. Given a cheap power to pump the water, these barren plains would ''blossom like the rose,'' and the power is there in limitless abundance if only it can be used. In southern California, at South Pasadena, an experiment is now in progress that holds out a hope of redemption to the whole of that great western country. It is a solar motor built on the same general principle as that followed by Ericsson, but brought to a perfection that seems to promise practical usefulness.

The essential part of the motor is a huge glass reflector, somewhat the shape of an umbrella with its top cut off. The inner surface is lined with 1,788 small mirrors, so arranged that they reflect the sunlight upon a boiler located at the center, corresponding to the handle of the umbrella. The great disc is circular, with a diameter of thirty-three and one-half feet at its broad edge, narrowing down to fifteen feet at the inner opening. It is mounted on a steel frame strong enough to resist a wind of 100 miles an hour. The mounting is necessary, in order that the axis or center may always point exactly to the sun. The disc weighs several tons, but is moved into place in the morning with a few pounds' pressure by the hand. An indicator shows when it is exactly in focus.

The position once fixed, it automatically keeps its face to the sun, being regulated by a clock, like the mounting of a great telescope. As the sun becomes concentrated upon the boiler there arises, first, a vapor like the morning dew; then the heat begins to quiver within the magic circle and along the black water tube. In an hour there is a jet of steam, which is led into the compound engine and begins to turn the centrifugal pump; and the sun is ''drawing water'' at the rate of 1400 gallons a minute. When the sun descends to the horizon, the heat no longer plays upon the boiler, and the motor stops, ready to take up its task on the coming day.

Many people who see this machine at work ask what makes it go. They seem absolutely unable to understand the idea, simple as it is. Those who do comprehend fail to appreciate the enormous power at work. Thrust a piece of copper into the focus and it will melt directly. Let the rays fall upon a piece of wood, and the flames will shoot up as by magic. Were man to climb into the circle, he would be burned to a crisp in a few seconds. Think of the possibilities of such a machine to the future melodrama!

The Pasedena motor is the result of numerous experiments by some Boston capitalists. They built a silver reflector at enormous cost, only to abandon it. They built a machine modeled after Ericsson's, but it failed to do the work. They built a third machine at Longwood, and a fourth was set up at Denver. Now comes the Pasedena model and with it success. Not that it is the best that can be made, for already inventors are suggesting improvements; but it actually does work, and does it well and cheaply. Better and larger machines will undoubtedly follow. It is safe to say that, with even the present development, the wheels of the world would not stop should every pound of her coal have been consumed.—*Kuhlow's*.

AN AGRICULTURAL REVIVAL.

The writer is attending and conducting a great many farm institutes this year and notes with much pleasure the marked increase of interest and attendance at these meetings. It is not too much to say that there is a great agricultural revival in progress all over the country, a desire on the part of the men who till the soil to be better informed, to pursue better methods, to improve all grades of seed and stock, to improve the conditions of the farm home, to be more in touch with the spirit of progress which is dominating and shaping all lines of business in this country. The constantly increasing value of farm lands compels a more intelligent and economic handling of them to secure paying returns.—J. S. TRIGG, in *Rockford Register*.

BAROMETRIC RANGE IN DES MOINES.

The records of the United States Weather Bureau station at Des Moines since its establishment in 1878, show a range of 2.13 inches in the actual reading of the barometer. The highest actual

reading was 30.00 inches on February 23, 1889; and the lowest observed reading (not reduced to sea level) was 27.87 inches on February 28, 1902. So the last day of February broke all previous records for low barometric pressure in this section. It was a notable storm from start to finish.

CLIMATOLOGY OF THE MONTH.

BAROMETER.—The mean pressure for the month was 30.08 inches; highest observed 30.59 inches at Sioux City on the 8th; lowest observed 28.67 inches at Davenport on the 28th; range for the state 1.92 inches.

TEMPERATURE.—The monthly mean temperature, as shown by records of 110 stations, was 17.6°; which is 4 1° below the February normal for this state. The monthly means by sections were as follows: Northern section, 16.6°; Central section, 16.8°; Southern section, 19.3°. The highest monthly mean reported was 22 2° at Thurman; lowest mean, 12.8° at New Hampton. The highest temperature reported was 62° at Humboldt on the 27th; lowest reported 2.° below zero, at Galva on the 2d. The average monthly maximum was 52 2°; average monthly minimum 14.2° below zero. The greatest daily range was 46° at Elkader; average of greatest daily ranges 32.5°.

PRECIPITATION.—The average precipitation for the state, as shown by records of 128 stations, was 0.73 of an inch, or 0.33 inch below normal. The averages by sections were as follows: Northern section, 0.69 of an inch; Central section, 0.74 of an inch; Southern section, 0.75 of an inch. The largest amount reported was 2.39 inches at Belle Plaine; least amount 0.02 of an inch at Thurman. The greatest daily precipitation reported was 1.40 inches at Belle Plaine on the 27th. Average number of days on which .01 or more precipitation fell, 4.

WIND AND WEATHER.—Prevailing direction of wind, northwest; highest velocity reported 46 miles per hour, from northwest at Sioux City, on the 28th. Average number of clear days 13; partly cloudy 8; cloudy 7.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced	EXTREMES			
		Highest reduced barometer	Date.	Lowest reduced barometer.	Date
Davenport	30 05	30 49	14	28 67	28
Des Moines	30.10	30 55	8	28 78	28
Dubuque	30 06	30.54	14	28 79	28
Omaha, Neb	30.08	30 59	8	28 90	28
Keokuk	30 07	30 51	2	28 76	28
Sioux City	30.10	30.59	8	28 95	28
Means	...	.....		.....	...

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction	Date.
Davenport	4628	24	W	3
Des Moines	4791	27	NW	3
Dubuque	3664	22	NW	7
Keokuk	4710	30	NW	3
La Crosse, Wis	4130	26	NW	4
Omaha, Neb	5353	30	NW	3
Sioux City	7890	46	NW	28

OBSERVERS' NOTES.

ALTA—*David E. Hadden:* Cold during first decade; much snow on ground until middle of the month; light rain, turning to snow closed the month.

AMANA—*Conrad Schadt:* Ground well covered with snow during the cold weather prevailing three-fourths of the month, affording protection to rye, fall wheat and roots of trees and shrubs.

BONAPARTE—*B. R. Vale:* A solid, pleasant and profitable month; good roads, and good weather for feeding stock.

BRITT—*Geo. P. Hardwick:* A fine winter month; last half very mild.

CENTERVILLE—*Jas. S. Hamilton:* Roads good, and fine weather for feeding or hauling, except last two days.

CLINTON—*Dr. Luke Roberts:* The temperature of the air did not rise above 31° during first and second decades, and the mean for that period was 10°. The minimum for the month was 11° below zero on the 5th The coldest day was the 2nd, which gave a mean of 4.5° below zero. Prevailing wind from the west; highest velocity 20 miles an hour, on the 4th; total wind movement 3,140 miles, or 1,470 miles below normal. Precipitation 1.18 inches, or .81 of an inch below normal. Up to 27th there had fallen only .23 of an inch of water, mostly in form of snow. Ice harvest large and quality good. The winter season which has just closed was a fair sample of Iowa winter weather. Those who had out of door work to do could prosecute their business with little interruption, and most of them took advantage of these conditions. The average amount of rainfall for the winter seasons—December, January and February—for the last twenty-three seasons. is 5.60 inches. The least amount in any one season was 2.14 inches, occurring in 1898-99. The next least in 1901-02, being 2.69 The greatest seasonable amount was 8.79, occurring in 1885-86. It will be seen that the season just closed was deficient; below normal 2.91 inches. The mean temperature of these 23 winter seasons was 22.1 degrees. The season giving the highest mean temperature was that of 1901-02, being 33.0 degrees, and that of 1899-00, 31 degrees. The lowest mean was in 1884-85, being 12.2 degrees, or a range of 20.8 degrees.

COLUMBUS JUNCTION—*H. E. Simpson:* Another dry month. Fair and cold with excellent sleighing most of the month. Warm and wet at close.

ELKADER—*Chas. Reinecke:* Ice went out of the Turkey river on 27th.

ESTHERVILLE—*Leslie Littell:* First half of month cold and ground covered with snow; last half warmer. Ducks and geese flying northward at close of month.

FONDA—*H. P. Barrow:* A very fine winter. First flight of ducks northward on the 26th.

HUMBOLDT—*Humboldt:* Month remarkable for good weather; hay plenty, also fair supply of corn; real estate advancing.

OLIN—*Nathan Potter:* Month cold up to 27th; good sleighing and no hard storms prior to 27th; never better for feeding stock.

OVID—*H. C. Miller:* Sleighing good from Jan. 26th to Feb. 17th.

RIDGEWAY—*Arthur Betts:* Temperature 1° above normal. Last three days frostless. Sunshine 223 hours. One peal of thunder on 25th at 11:30 P. M. Last week delightful; flies and "crusaders" put in appearance.

FAIRFIELD—*Wm. Mendenhall:* Rings around the moon on 13th and 22nd; also lighter rings on 17th, 18th and 19th. On the evening of the 18th there was a fine spectrum at the edge of a thin cloud to the south of the moon.

IOWA FALLS—*J. B. Parmalee:* A brilliant spectacular display of parhelia was observed on morning of the 4th, continuing with nearly full effects from 8 A. M. to 12. The primary and secondary circles, with regular sundogs at right and left, were unusually fine, exceeding any similar display ever noted here. The rainbow colors were nearly as bright as were ever seen in a summer shower.

CLIMATOLOGICAL DATA FOR FEBRUARY, 1902.

NORTHERN SECTION

STATIONS.	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT. Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	PRECIP., IN INCHES Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)	Number rainy days	SKY Number clear days	Number partly cloudy days	Number cloudy days	Prevailing direction of wind	DATES OF THUNDER-STORMS.
Algona	Kossuth	1,213	9	18.6	-0 5	51	26	-16	2	25	.50	- .37	.15	4.0	5	10	13	5	NW	
Alta	Buena Vista	1,513	7	17.2	-1.0	54	26	-18	2	28	.40	- .36	.19	2.5	5	12	9	7	S	
Alta (near)	Buena Vista										.30		.20	3.0	2					
Britt	Hancock	1,236		16.1		55	26	-18	2	29	.47		.36	1 0	6	9	16	3	NW	
Charles City	Floyd	1,012	10	13.6	-4 0	45	24	-15	5	37	.33	-1 01	.25	2.0	2	11	12	5	S	
Clear Lake	Cerro Gordo	984		20.4		59	23	-16	2	39	.66		.40	2 5	4	18	5	5	NW	
Cresco (a)	Howard	1,280	29	13.3	-2.6	48	26	-16	5	27	.58	- .35	.40	5 0	3					
Decorah	Winneshiek	875	8	14.6	-2.9	47	26	-15	5	38	1.35	† .58	.49	4.8	6					
Dows	Wright	1,142		14.6		50	26	-18	1	30	.54		.34	2.0	4	21	1	6	NW	
Elkader	Clayton	600	20	16.4	-2.7	53	23, 25	-15	3	46	1.19	† .09	.76	6.0	6	19	4	5	NW	
Estherville	Emmet	1,298		17.4		54	26	-15	4	31	.29		.22	1.7	4	17	9	2	NW	
Fayette ‡	Fayette	1,000	11	13 0	-7.1	48	26	-16	5	40	1.48	† .37	1.10	1.9	7	17	3	8	NW	
Fonda	Pocahontas	1,232									.88		.75	2.4	3	11	10	7	S	
Forest City	Winnebago	1,220		18.4		51	26	-17	2	32	.40		.25	1.5	4	14	7	7	NW	
Grand Meadow	Clayton	1,180	10	14.6	-5.1	46	26	-15	5	33	1.97	† .92	1.00	4.2	7	13	9	6	NW	
Greene	Butler	943		15.0		47	23, 26	-17	2	37	.89		.35	3 0	7	10	10	8	NW	
Hampton	Franklin	1,000	11	17.2	-0.8	49	23, 26	-16	2	34	.87	- .30	.58	1.2	6	12	13	3	NW	
Humboldt	Humboldt	1,095	8	20.6		62	27	-18	2	42	1.29	† 65	1.00		3	16	6	6	NW	
Larchwood	Lyon	1,465		18.8		45	26	-19	1	29	.50		.50		1					
Larrabee	Cherokee	1,366	10	17 8	-2.7	51	26	-19	2	38	.60	‡ .00	.40	4.0	5	13	11	4	NW	
Le Mars	Plymouth	1,224		18.0		54	26	-16	2, 4	28	.20		.18	2 0	2	17	5	6	S	
New Hampton	Chickasaw	1,166		12.8		44	26	-18	5	34	.74		.26	4.0	5	14	7	7	NW	
Northwood	Worth	1,222		17.3		51	26	-13	2	35	.77		.42	1.5	4	9	14	5	NW	
Osage	Mitchell	1,184	10	14 8	-1.2	46	23, 26	-14	5	33	.70	- .47	.25	3.0	7	5	11	12	NW	
Plover	Pocahontas	1,426		16 4		55	26	-20	2	30	60		.35	3.5	4	17	4	7	S, NW	
Primghar	O'Brien	1,800		17.4		50	26	-19	2	32	.30		.30	3 0	1	15	0	13	NW	
Rockford	Floyd										.08		.03		4	16	4	8	NW	
Ridgeway	Winneshiek	1,215		18.0		51	26	-15	5	31	2.28		1.20	4.9	10	16	7	5	NW	
Ruthven	Palo Alto	1,435									.46		.21	3.5	4	11	11	6	NW	
Sheldon	O'Brien	1,406		17.2		47	23	-19	2	30	.65		.40	4.5	5	13	9	6	SW	
Sibley (b)	Osceola	1,506	8	15.2	-2.8	46	22, 25	-20	2	34	.40	† .02	.25	4.0	3	5	20	3	NW	
Sioux Center	Sioux			17.4		49	26	-18	2	30	.65		.30	6.5	5	11	8	9	NW	
Spirit Lake	Dickinson	1,458		17 4		52	26	-20	2	33	.20		.20	2.0	1	17	4	7	S	
Storm Lake	Buena Vista	1,440	12	16 2		50	26	-19	2	27	.32	† .36	.17	1.2	5	13	8	7	NW	
Washta	Cherokee	1,157									.45		.35	4.0	2	16	10	2	N	
Waverly	Bremer	942		15 2		46	26	-12	5	36	1.39		.81	3.2	8	14	8	6	NW	
West Bend	Palo Alto	1,197	8	18.0	-1.7	54	26	-17	2	27	.67	- .25	.37	4.0	4	13	6	9	NW	
Average				16.6	-2.7	50.4		16.9		32.7	.69	- .06		3.2	5	13	9	6	NW	

CENTRAL SECTION

Amana	Iowa	721	25	16 4	-4.4	50	26	-13	3	38	1.10	- .17	.65	1.2	6	11	11	6	NW	
Ames	Story	926	21	15.3	-7 1	49	23	-12	2	36	.38	- 54	.16	1.4	5	21	2	5	NW	
Baxter	Jasper	998		17 4		55	26	-13	2	28	.75		50		2	20	2	6	NW	
Belle Plaine	Benton	828	11	18.4	-4.1	53	26	-11	5	30	2.39	†1.27	1 40	4.9	9	5	21	2	SE	
Buckingham	Iowa										1.06		64	2 2	5	8	18	2		
Carroll	Carroll	1,265	11	18 6	-2 1	52	23	-15	2	31	.30	- .73	.15		3	15	9	4		
Cedar Rapids	Linn	733	19	15.6	-6 1	49	26	-11	3	38	.90	- .77	.65	2.5	4	14	7	7	NW	
Clinton	Clinton	609	10	16 8	-5.9	50	26	-11	5	33	1.18	- .52	.92	2 5	7	12	4	12	W	
Davenport	Scott	529	31	17.4	-6.9	52	26	- 8	4	30	.96	- 63	.60	1 6	7	11	8	9	W	
Delaware	Delaware	1,083	10	14.2	-3 9	46	26	-14	5	34	1.09	† .31	.55	2 0	4	13	8	7	NW	
Denison	Crawford	1,180	8	17 3	-5.2	54	26	-15	4	31	.14	- .72	.10	1.5	3	17	7	4	N	
Des Moines	Polk	861	24	19 9	-2.1	56	26	- 9	4	26	.52	- .59	.33	1.3	7	9	11	8	NW	
De Soto	Dallas	866		21.0		55	26	- 8	4	29	.25		.11	0 5	3	20	1	7	NW	
Dubuque	Dubuque	655	29	17.6	-0 4	48	26	-10	4	35	1.43	‡ .00	65	2.9	11	14	8	6	NW	
Fort Dodge	Webster	1,126		16.3		52	26	-16	2	36	.40		40		1	23	0	5	NW	
Galva (b)	Ida	1,290	8	16.8	-3.2	54	27	-21	2		.20	- .13	.20		1					
Gilman	Marshall	1,053									.89		.51		3	13	7	8	NW	
Grinnell	Poweshiek	1,023	11	17.8	-5.4	51	26	-10	4	24	1.23	† .46	1.00	3.3	8	5	12	11	NW	
Grinnell (near)	Poweshiek			16 9		52	26	-11	2, 4	30	1.13		.60	5.0	8	10	10	8	NW	
Grundy Center	Grundy	976	10	15.0	-5.0	48	26	-17	3	36	.79	† .09	.42	.5	3	18	4	6	NW	
Guthrie Center	Guthrie	1,077		18.2		55	26	-12	2, 4	35	.16		.16	1.5	2	14	9	5	NW	
Harlan	Shelby	1,192		17.8		53	26	-15	4	30	.15		.15	2.0	1	6	13	9	NW	
Independence	Buchanan	921	39	13.6	-6.7	45	26	-15	5	34	1.10	† .06	.70	2.0	4	15	9	4	NW	
Iowa City	Johnson	644	11	16.7	-8.2	53	26	-15	3	36	.85	- .40	.55	1.8	4	12	13	3	NW	
Iowa Falls	Hardin	1,107	8	14.5	-2.7	47	23, 26	-15	2	30	.84	† .01	.29	3.0	7	15	4	9	NW	
Jefferson	Greene	1,052									.37		.15		4				NW	
Le Claire	Scott	576									1.03		.73		6					
Logan	Harrison	928	36	19.3	-4.8	55	26, 28	-15	4	35	.50	- .68	.20	5.0	3	21	0	7	NW	
Maquoketa	Jackson	688	8	16 1	-9.2	50	23, 26	-13	15	44	1.31	- .47	.55		5	20	1	7	SW	
Marshalltown	Marshall	947	11	17.6	-4.1	48	23	-12	2	34	.72	‡ .00	37	1.2	7	10	10	8	NW	
Monticello (a)	Jones	925	47	14.6	-6.8	46	26	-14	15	44	.92	- .79	.82	1 0	2	16	4	8	NW	
Mt. Vernon	Linn	847		16 6		50	26	-14	9	33	.70		.35	2 3	5	17	5	6	NW	
Newton	Jasper	592	14	17 9	-3 8	55	27	-13	4	26	.72	- .25	.45	1.0	3	15	6	7	NW	
Odebolt	Sac	1,356		18.6		53	26	-16	2	31	.30		.22	3.0	2	19	4	5		
Ogden	Boone	1,211		17.6		55	26	-16	2	30	.15		.10	1.0	2	13	4	11	NW	
Olin	Jones	760		13.8		46	26	-15	15	38	94		.40	4.2	5	15	9	4	NW	
Onawa	Monona	1,053		20.4		52	23, 26	-13	2	29	.36		.25	3 2	4	17	2	9	NW	
Perry	Dallas	975		18.0		55	26	-14	2	32	.36		.20		3					
Rockwell City	Calhoun	1,219		17.8		46	23	-18	2	31	.20		.10	2.0	2	22	1	5		
Sac City	Sac	900	22	17.4	-2.3	52	26	-17	2, 3	29	.18	- .88	.10	1.8	1	13	8	7	NW	
Scranton	Greene	1,172		18.0		47	23	-12	2	40	1.10				2	17	4	7	N	
Sioux City	Woodbury	1,122	13	18.8	-0.2	51	26	-14	4	24	.30	- .24	.20	2.7	4	10	7	11	NW	
Tipton	Cedar	807		16.6		48	26	-12	3	34	.55		.40		3	17	6	5	NW	
Vinton *	Benton	800	11	16.1	-5.8	47	23	- 9	4		1.13	† .17	1.03	1.0	3	21	0	7	NW	
Waterloo	Black Hawk	862	22	15.6	-6 3	48	25	-11	2, 5	32	1.47	† .36	.80	3.5	6	13	9	6	NW	
Wilton Junction	Muscatine	683		17.0		52	26	-15	3	38	.96		.53	2.5	5	21	0	7	W	
Whitten	Hardin	1,036		15.9		49	26	-14	2, 3	33	.10		.05	T	2	9	13	6	NW	
West Branch (a)	Cedar			16.1		53	26	-15	3	41	.82		.43	1 7	4	4	20	4	NW	
Average				16.8	-4.7	50.8		-13 4		33.0	0.74	- .22		2.2	4	14	7	7	NW	

CLIMATOLOGICAL DATA FOR FEBRUARY, 1902--CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC. IN INCHES.				Number rainy days.	SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	....	18.8	.....	53	26	-13	4	31	.40	..	.20		3	6	17	5	NW	
Albia	Monroe	945	..	19.8	.....	55	26	-10	4	28	.92	.....	.65	9	3	11	0	17	NW	
Atlantic	Cass	1,164	10	17.2	-5.7	55	26	-13	4	36	.59	- 32	.30	4.5	2	8	9	11	NW	
Belknap	Davis	877	....	17.7		54	26	-10	3, 4	28	.69	.....	.25	3.0	7	13	12	3	NW	
Bonaparte	Van Buren	.....	10	18.6	-6.8	55	26	-14	3	32	.55	-.47	.35	...	2	....	..	....	.....	
Burlington	Des Moines	544	....	21.6	.....	57	25	- 7	3, 4	33	1.16	.....	.86	1.2	4	16	5	7	NW	
Bussey	Marion	....	...	.....	.....	.....	.....	...	.....	.....	1.52	.....	1 27	1.0	3	....		....	.....	
Centerville	Appanoose	1,013		19.6	.....	53	26	-11	4	33	1.14	.....	.81	1.0	3	15	0	13	NW	
Chariton	Lucas	1,042	....	18.4	.....	57	26	-11	4	31	1.15	.....	.75	1.8	5	11	10	7	NW	
Clarinda	Page	1,069	11	20.0	-4.9	59	26	-13	4	35	.30	-.76	.19	3.4	4	12	11	5	NW	
Columbus Junct	Louisa	595	....	19.3	.....	57	26	- 8	3, 4	31	.91	.....	.47	1 5	5	11	12	5	NW	
Corning	Adams	1,127	9	16.4	-8.8	54	26	-17	4	33	.50	- 33	.25	4.0	2	13	10	5	NW	
Council Bluffs	Pot'wat'mie	990	...	21.3	.....	58	26	-11	4	25	.06	.....	.03	.9	3	8	10	10	NW	
Cumberland	Cass	.....	....	.....	.....	....	.....	.....	.....	.....	.21	.....	.10		3	14	6	8	SW, NW	
Danville	Des Moines	715	....	.....	....	....	.....	.....	.....	.....	1.28	.....	.50		9	16	7	5	.....	
Eldon	Wapello	630	....	18.4	..	53	26	-14	3	36	.72	.....	.41	1 4	5	19	2	7	NW	
Fairfield (*c*)	Jefferson	.....	....	18.9	.....	55	26	-11	3	35	.74	.....	.36		3	13	8	7	NW	
Fort Madison	Lee	516	53	.....		.....	.....	.....	.....	.....	1.52	-.42	.71	0 5	3	9	8	11	NW	
Glenwood	Mills	957	31	19.9	-3 8	57	26	-13	4	29	29	.51	.20	3.0	2	0	22	6	NW	
Greenfield	Adair	....	10	18.0	-5 0	53	26	-15	2, 4	29	.38	-.79	.17	3 2	4	14	9	5	NW	
Hopeville	Clarke	.....	....	.....	.....	.....	.....	.....	.....	.....	.61		.23	..	3	....	....	..	..	
Indianola (*b*)	Warren	969	10	18.6	-6.4	57	26	-12	4	33	.72	†.02	.41	2.2	5	....	....	..	NW	
Keokuk	Lee	619	30	21.0	-7.1	52	26	- 6	4	29	1.02	-.63	62	0.4	6	15	6	7	NW	
Keosauqua	Van Buren	644	9	19.2	-7.4	55	26	-15	3	37	.77	-.45	.51	1.3	5	....	....	....	.....	
Lacona	Warren	....	....	....	....	.....	.....	..	.....	..	1.25	.. ..	.75	3.5	5	7	17	4	..	
Lenox	Taylor	1,250	....	17 2	....	53	26	-18	4	26	.20	.....	.10	1.2	2	26	0	2	NW	
Mt Ayr	Ringgold	1,236	8	17 5	-9.0	56	26	-15	4	29	.67	- 47	.25	3.5	5	10	8	10	NW	
Mt Pleasant	Henry	729	....	17.8		55	26	-15	3	34	.87	.....	.60	....	4	14	9	5	NW	
Murray	Clarke	1,183	....	.....	.....	.....	.....	.....	.....	.....	...	.	...	....	....	....	....	....	.....	
Omaha, Neb	Douglas	1,113	32	21.3	-3.7	58	26	-11	4	24	.13	-.59	.10	1.3	4	6	12	10	NW	
Osceola	Clarke	1,130	....	.....	.....	.. .	.....	.....	.....	.....	.....	.....			....	....	....	....	.....	
Oskaloosa	Mahaska	843	18	18.4	-4.0	55	26	-12	3	36	.88	-.19	67	2.2	6	17	1	10	NW	
Ottumwa	Wapello	630	7	20.2	-5.0	54	26	- 8	3	29	1.50	†.37	.85	2.0	5	15	6	7	EW, NW	
Ovid	Wayne	992	8	18.8	-6.0	56	26	-14	4	37	1.16	- 19	.70	2.0	5	11	0	17	NW	
Pacific Junction	Mills	960	....	20.7	.....	57	26	-16	2	34	.08	.....	.06	.5	3	9	12	7	NW	
Pella	Marion	877	....	19.7	.....	56	26	-12	3	37	.84	.....	.72		3	13	7	8	NW	
Red Oak	Montgom'ry	1,033	....	21.4	.....	55	26	- 9	4	25	.29	.....	.14	3.5	3	6	17	5	NW	
St. Charles	Madison	1,070	....	20.2	.....	56	26	-12	4	33	.61	.....	.26	3.5	5	14	7	7	NW	
Sigourney	Keokuk	768	....	19.0	.....	57	26	-12	3	35	90	....	.52	1.0	4	17	8	3	NW	
Stockport	Van Buren	.....	....	.....	.....	.....	....	.....	.....	.....	.53	-	.30	1 5	5	13	5	10	NW	
Thurman	Fremont	..	...	22 2	.....	61	26	-15	4	34	.02	....	.02	.4	1	12	4	12	NW	
Villisca	Montgom'ry	1,058	8	18.5	-6.0	56	26	-17	4	34	.60	-.25	.20	6.0	4	11	11	6	NW	
Wapello (*c*)	Louisa	578	....	18.6	.....	53	27	- 9	3	29	.90	....	.55	T	2	...	....	....	.....	
Washington	Washington	769	11	.....	....	55	22		.....	.....	1 01	†.01	.98	....	3	....	...	..	NW	
Winterset	Madison	1,129	10	19.6	-4.0	50	2	-12	2, 4, 5	34	.47	-.32	.20	3.0	3		....	....	.....	
Woodburn	Clarke	961	...	.....	.....	.....	...	....	.....	.....	1.15	...	.54	2.5	4	15	10	3	NW	
Average		.....		19.3	-5.8	55.3	.....	-12.3	.....	31.8	0.75	-0.35	....	2.3	4	12	8	8	NW	
Av. for the state		....	....	17.6	-4.4	52.2	.....	-14.2	.....	32.5	0.73	-0.21	....	2.6	4	13	8	7	NW	

§Means determined from 7 A. M., 2 P. M, and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Means determined from 7 A. M, and 7 P. M. observations. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR FEBRUARY, 1902.

STATIONS.		DATE. 1	2	3	4	5	6		8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	Mean.
Afton	Max	20	7	20	8	17	19	19	15	15	23	27	21	30	24	27	29	27	36	31	30	35	41	44	40	44	53	45	38	28.3
	Min	4	-11	- 3	-13	- 6	2	- 3	- 4	- 4	8	10	18	15	5	- 4	9	9	10	14	5	6	21	27	26	22	35	34	33	9.3
Albia	Max	26	12	21	9	11	21	21	14	14	22	27	27	28	26	30	30	27	30	29	32	42	50	48	43	50	55	44	36	29.5
	Min	5	- 6	- 5	-10	- 8	3	- 1	- 4	- 3	- 3	9	6	14	6	8	10	7	12	10	5	14	24	29	30	26	36	33	32	10.0
Algona	Max	12	6	13	8	13	17	11	13	19	21	26	24	27	27	29	27	25	30	33	33	38	46	48	42	46	51	44	38	27 5
	Min	- 3	-16	- 6	-11	- 9	- 1	- 3	- 8	2	1	12	5	15	8	8	16	10	15	9	10	13	22	28	28	28	36	36	31	9.8
Alta	Max	8	2	10	2	18	13	15	10	16	20	28	24	24	24	28	29	24	30	30	33	39	44	46	41	47	54	39	36	26.3
	Min	- 9	-18	- 8	-16	-10	1	- 4	-10	- 4	- 2	10	4	12	11	6	14	11	14	10	11	12	24	28	24	28	35	34	20	8.1
Amana	Max	17	8	15	8	14	18	14	10	17	25	28	20	28	27	26	29	26	26	30	29	37	41	43	40	44	50	44	39	27.1
	Min	- 7	- 6	-13	- 8	-10	3	- 3	- 6	- 5	11	1	6	12	2	-10	- 1	8	- 3	3	- 4	- 1	15	24	28	20	35	38	35	5 6
Ames	Max	11	5	15	4	13	15	16	12	8	20	26	22	27	24	28	28	27	29	29	30	37	44	49	45	45	47	46	38	26 6
	Min	- 3	-12	-11	-11	- 8	2	- 1	- 6	- 2	- 2	- 1	- 3	- 4	- 2	- 2	- 6	- 4	11	8	4	4	20	19	20	26	26	25	33	4.0
Atlantic	Max	14	5	16	5	17	18	20	14	16	2	30	38	24	26	28	31	28	29	30	35	37	41	47	42	43	55	42	40	28 1
	Min	-12	-10	-11	-13	0	0	-13	- 5	- 8	8	9	7	11	- 5	- 8	7	9	1	10	- 5	5	24	18	24	26	37	33	30	6.4
Baxter	Max	16	5	16	6	11	19	20	12	18	22	25	26	28	27	25	30	27	30	30	29	35	42	48	43	47	55	48	40	27.9
	Min	- 2	-13	-12	-12	..	- 2	- 6	- 8	- 8	- 2	4	8	2	10	2	8	5	8	5	3	7	18	27	26	24	35	32	32	6.8
Belknap	Max	15	7	18	5	13	22	17	12	15	24	30	26	27	22	26	28	25	31	27	30	36	44	47	43	45	54	39	40	27.5
	Min	7	- 7	-10	-10	- 7	0	- 4	- 5	- 4	10	8	8	11	0	- 2	8	8	9	7	6	6	6	29	28	22	32	34	32	7 9
Belle Plaine	Max	18	...	18	...	19	18	13	13	22	24	32	22	28	29	24	33	...	30	30	30	33	44	43	40	43	53	37	40	29 6
	Min	- 4	-10	-10	-10	-11	- 3	- 2	- 2	- 5	14	3	7	10	9	- 3	8	6	0	6	0	3	16	25	28	22	32	35	31	7.2
Bonaparte	Max	20	10	18	10	14	25	18	14	16	23	28	24	28	26	28	25	24	30	29	32	39	45	48	44	49	55	43	39	28.8
	Min	7	- 6	-14	- 8	-10	2	- 2	- 5	- 3	12	6	5	12	4	- 1	7	8	4	8	6	8	17	29	27	21	34	39	32	8.5
Britt	Max	8	2	13	3	10	14	10	10	18	21	25	22	32	29	26	28	22	29	32	33	38	44	48	43	45	55	42	38	26 5
	Min	- 3	-18	-16	-12	-13	4	- 6	-10	- 2	0	4	- 0	-14	3	- 1	9	6	8	3	4	10	10	23	26	26	26	34	32	5.7
Burlington	Max	27	11	15	12	28	27	20	18	19	26	29	36	32	28	29	27	26	33	32	33	43	47	48	47	51	57	45	46	31 6
	Min	11	- 5	- 7	- 7	8	9	0	- 2	- 1	13	10	12	12	7	4	11	10	4	10	9	10	21	31	29	24	35	39	33	11 6
Carroll	Max	14	5	12	5	20	16	20	15	17	24	30	30	26	27	29	30	26	30	31	35	40	46	52	46	46	55	48	38	29.0
	Min	- 7	-15	- 6	-14	-11	2	- 5	- 8	- 4	3	7	3	15	- 1	3	12	9	18	10	2	12	24	28	25	28	36	32	32	8.2
Cedar Rap	Max	15	10	13	9	10	17	11	11	17	21	22	23	26	25	21	28	26	25	28	28	39	43	46	40	46	49	47	41	26.3
	Min	- 9	- 7	-11	- 8	- 7	- 1	- 3	- 6	- 3	12	- 2	1	6	4	-10	- 1	7	- 5	1	- 2	1	14	25	28	22	22	37	36	5 0
Centerville	Max	18	10	20	10	14	23	19	15	15	23	29	29	28	25	28	28	26	32	30	32	40	48	48	43	47	53	49	36	29.2
	Min	8	1	- 9	-11	- 7	2	- 3	- 3	- 5	12	12	8	12	6	- 3	12	7	10	12	6	7	22	30	29	25	34	32	32	9 9
Chariton	Max	15	6	17	5	12	21	20	15	13	23	28	28	27	25	25	27	28	30	30	34	35	42	48	43	45	57	45	35	27.8
	Min	5	-10	- 8	-11	-10	1	- 3	- 4	- 4	10	9	9	13	5	- 6	8	9	9	11	4	10	22	28	30	25	37	32	31	9.0
Charles Cy	Max	16	5	10	7	9	14	9	12	16	18	24	18	25	24	25	38	23	24	27	28	31	37	44	45	42	44	43	38	24.9
	Min	- 5	-12	-12	-12	-15	1	- 4	- 8	- 6	2	- 4	- 2	- 9	- 7	-12	3	4	- 7	- 7	- 6	- 3	14	21	29	25	34	33	32	2.4
Clarinda	Max	15	12	22	22	18	22	21	15	14	21	30	32	26	28	33	31	27	30	32	37	44	45	49	44	48	59	43	37	30.6
	Min	- 1	-11	- 7	-13	- 4	0	- 7	- 2	- 5	5	11	17	16	4	- 1	10	11	9	18	16	8	23	25	27	25	38	37	26	9.5
Clear Lake	Max	20	19	15	8	14	30	23	29	23	38	28	38	29	40	31	40	34	41	39	39	46	46	59	50	49	58	39	38	24.4
	Min	0	-16	-13	-13	-13	3	- 1	-10	- 3	0	3	- 1	10	2	1	10	4	5	3	6	8	19	23	28	25	35	34	31	6 3
Clinton	Max	23	10	13	10	12	23	12	11	19	26	25	24	28	29	25	26	27	28	31	30	37	40	46	44	46	50	45	45	28 0
	Min	2	- 7	-10	-10	11	2	- 4	- 9	- 5	6	0	- 6	2	8	5	2	9	- 4	- 2	2	5	10	24	22	20	31	37	35	5 5
Colum. Jc.	Max	28	22	17	12	13	17	16	15	17	27	22	26	26	26	28	32	25	30	32	31	39	47	48	42	50	57	42	40	29.5
	Min	17	- 5	- 8	- 8	- 7	6	- 2	- 4	- 3	12	12	2	7	4	- 3	6	8	3	5	3	8	19	28	29	24	32	38	33	9.1
Corning	Max	12	6	17	5	13	18	18	14	17	17	27	29	24	22	25	31	28	28	27	28	34	38	44	38	43	54	41	40	26.4
	Min	- 7	-13	-10	-17	- 9	1	- 1	- 5	- 7	- 5	8	10	10	- 2	- 8	10	5	3	11	- 3	8	22	23	25	25	36	34	26	6 3
Co. Bluffs	Max	12	8	18	10	18	17	17	15	15	18	35	33	26	28	29	30	27	27	29	35	40	47	48	44	48	58	44	44	29.3
	Min	1	- 8	1	-11	3	5	- 4	1	- 2	3	13	12	21	22	11	19	16	12	20	10	19	24	29	28	27	42	35	23	13.3
Cresco	Max	10	...	10	2	10	11	13	10	16	16	25	26	24	25	27	27	17	24	25	28	32	35	38	39	38	48	38	...	23.4
	Min	- 8	14	-14	-14	-16	2	-11	-10	- 7	- 3	- 2	5	4	7	- 7	7	1	0	0	2	7	18	24	28	22	34	32	...	3 2
Davenport	Max	22	5	12	4	9	20	10	10	15	23	21	20	25	26	23	24	25	27	27	29	37	42	44	43	47	52	46	44	26.1
	Min	5	- 5	- 7	- 8	- 6	6	- 2	- 5	- 2	9	7	4	9	8	2	6	8	1	1	5	7	13	29	29	26	35	37	35	8.8
Decorah	Max	13	4	9	- 2	10	13	8	12	18	23	24	22	32	30	28	32	22	26	-10	- 1	16	18	20	25	20	37	34	28	25.6
	Min	- 4	- 9	-14	-12	-15	- 4	- 7	- 8	- 3	3	- 5	- 1	- 1	- 6	- 8	7	8	- 7	36	38	41	38	42	46	40	40	24 9		3.6
Delaware	Max	16	10	10	6	13	15	7	9	19	23	29	21	22	23	23	29	25	26	25	30	35	38	41	38	42	46	40	40	24 9
	Min	- 2	-12	-12	-13	-14	1	-10	-10	- 7	7	0	- 5	5	5	- 4	4	4	- 1	- 1	- 2	1	12	21	22	16	32	32	33	3 6
Denison	Max	9	5	12	4	18	15	13	14	16	19	31	26	25	24	27	24	24	27	29	31	38	46	45	43	45	54	46	40	26 8
	Min	- 7	-14	-12	-15	-13	2	- 3	- 6	- 3	- 1	10	6	7	1	5	15	10	6	7	2	15	24	27	27	26	37	33	31	7.8
Des Moines	Max	16	6	18	8	13	20	19	15	19	23	28	27	27	25	26	31	27	32	31	32	37	42	50	42	46	56	42	38	28.4
	Min	- 1	- 6	- 7	- 9	- 8	2	0	- 2	0	12	12	9	16	11	0	12	10	13	13	8	12	24	29	32	28	38	34	31	11 2
De Soto	Max	15	8	22	6	23	16	19	14	19	29	30	29	30	29	29	30	28	37	30	32	36	44	47	42	45	55	45	39	29.6
	Min	0	- 6	- 2	- 8	- 5	1	1	- 2	2	14	14	14	19	4	0	11	11	14	15	4	11	27	33	32	29	39	39	35	12 4
Dows	Max	1	1	9	3	11	13	9	10	16	16	21	22	23	24	25	27	2	28	49	28	34	42	48	41	42	50	43	37	24 1
	Min	-18	-17	-12	-11	-12	0	- 6	-12	- 5	2	4	5	14	5	- 3	- 3	5	5	3	2	8	21	25	25	26	34	34	31	5.0
Dubuque	Max	18	7	11	4	10	19	9	11	20	25	26	23	27	25	25	30	23	27	30	33	36	41	48	44	44	48	44	41	26 9
	Min	3	- 4	- 6	-10	- 8	7	- 2	- 2	3	9	2	7	3	9	- 2	6	12	2	2	- 2	5	14	25	26	22	34	38	36	8.0
Eldon	Max	17	10	18	8	12	25	20	18	15	25	26	28	29	25	29	28	25	30	30	31	40	48	49	43	48	53	42	38	28 9
	Min	3	- 8	-14	- 8	-11	- 5	- 2	- 4	- 3	12	5	5	12	7	- 5	5	7	10	9	8	4	14	27	27	20	33	37	34	8 0
Elkader	Max	20	7	10	4	12	22	15	16	23	30	30	28	36	32	30	36	28	36	34	37	44	45	53	48	53	50	42	04	30.8
	Min	-10	-10	-15	-11	-12	4	- 6	-10	- 9	9	- 8	- 7	- 3	0	-13	2	6	-10	- 2	- 8	- 2	10	19	23	18	35	38	36	1 9
Estherville	Max	10	5	11	5	11	15	11	11	18	21	26	26	28	29	29	26	27	31	30	34	40	47	48	43	46	54	42	35	27.1
	Min	11	18	-11	-15	-12	- 3	- 5	- 9	- 8	- 3	12	1	0	- 2	7	13	9	9	3	11	11	23	26	19	22	34	30	28	7 8
Fairfield	Max	18	7	18	10	12	18	24	14	16	24	27	28	31	25	29	28	..	30	29	..	42	46	48	46	49	55	42	37	29.3
	Min	5	- 8	-11	- 8	- 8	..	- 4	- 6	- 3	10	7	3	12	5	7	8	..	4	9	..	7	15	27	25	21	33	35	31	8.5
Forest City	Max	9	4	8	2	10	12	9	8	16	18	22	22	26	19	25	23	21	23	29	32	37	40	48	42	43	51	42	37	24.1
	Min	- 1	-17	-14	-13	-13	3	- 5	-11	- 1	0	5	0	12	5	2	10	5	9	20	25	25	26	16	28	27	33	34	31	8.6
Ft. Dodge	Max	10	3	8	7	15	15	14	11	19	20	25	25	28	27	25	29	25	32	31	32	38	42	50	42	47	52	47	45	27.3
	Min	1	-16	-15	-14	-14	3	- 2	-12	- 5	- 6	4	1	15	- 9	- 6	7	6	8	1	- 1	10	19	23	24	25	35	34	31	5.3
Galva	Max	10	6	13	4	20	13	13	11	18	23	31	28	28	30	..	30	25	..	34	37	-	45	48	40	48	48	51	39	27.8
	Min	- 4	-21	-13	-15	-13	5	- 2	-10	- 5	- 4	8	2	10	3	..	10	9	..	9	4	..	13	20	20	28	35	32	31	5 9
Glenwood	Max	13	5	16	4	15	18	19	14	14	18	34	31	25	24	28	29	28	26	29	31	38	43	49	48	50	57	49	39	28 4
	Min	- 3	-10	4	-13	- 2	2	- 5	- 2	- 5	9	9	16	17	11	7	17	15	12	17	4	15	24	28	27	28	37	33	27	11.4
G. Meadow	Max	16	3	11	3	11	15	8	10	22	20	24	22	26	25	22	30	25	20	28	31	35	40	44	42	40	46	38	35	24 9
	Min	- 5	-13	-13	-14	-15	2	-12	-10	- 5	8	- 1	- 2	6	6	- 5	5	4	0	1	- 2	3	19	23	23	20	34	35	32	4.4
Greene	Max	11	4	11	7	14	15	11	12	17	22	23	24	28	27	27	29	22	27	29	32	37	40	47	42	44	47	39	38	25 9
	Min	- 3	-17	-11	-11	-15	2	- 6	-11	- 7	2	0	- 2	10	- 5	-10	7	7	- 3	- 5	- 4	0	17	25	28	25	35	33	33	4 1
Greenfield	Max	16	7	20	6	18	17	18	13	16	20	27	30	21	24	28	29	27	34	28	29	35	41	45	45	44	53	45	39	27.9
	Min	1	-15	- 6	-15	-10	8	- 8	- 7	- 7	9	9	7	15	0	4	12	9	7	10	4	12	12	27	25	24	31	35	32	8.0
Grinnell	Max	12	7	16	10	11	17	16	10	16	20	24	24	25	23	22	27	25	28	26	26	34	41	43	42	44	51	45	44	26 0
	Min	1	- 9	- 6	-10	- 6	4	- 1	- 6	- 3	12	11	5	12	5	2	12	6	10	7	3	14	22	30	30	26	35	33	32	9 7
Grin'l (nr.)	Max	13	5	19	7	11	16	15	10	15	18	25	23	27	25	27	25	24	29	29	29	37	42	44	41	45	52	44	39	26 2
	Min	- 1	-11	- 9	-11	- 9	0	- 4	- 8	- 5	11	5	1	10	6	8	8	4	4	6	3	7	15	30	30	24	33	32	32	7 6
Grundy C'r	Max	12	3	14	9	11	16	13	12	18	20	23	27	25	23	25	30	25	26	31	31	37	40	46	42	42	48	43	38	26.1
	Min	- 7	-14	-17	-12	-15	0	- 9	-11	-10	9	2	- 2	10	- 2	-11	7	3	0	1	- 3	5	18	25	22	25	34	32	32	4 0
Guthrie Cr	Max	15	5	1	8	15	16	18	15	17	17	28	28	28	28	28	28	29	36	31	32	33	38	42	46	43	45	55	50	40	28.7
	Min	8	-12	- 5	-12	- 9	1	- 2	- 7	- 3	10	10	7	13	- 3	- 6	6	11	6	6	- 2	5	20	28	27	26	38	35	33	7.6
Hampton	Max	12	2	12	3	12	15	11	12	18	18	23	24	28	30	28	29	23	30	31	33	39	44	49	47	45	49	40	39	26.6
	Min	0	-16	- 8	-11	-11	2	- 3	- 9	- 4	5	9	1	12	1	4	11	6	8	4	6	5	22	29	27	27	35	33	32	7 8
Harlan	Max	12	7	16	3	20	15	18	13	16	22	31	32	32	26	27	31	25	34	31	33	36	41	46	41	43	53	46	39	28 3
	Min	- 3	-14	- 8	-15	-10	- 2	- 5	- 6	- 6	2	10	9	13	5	- 1	7	10	5	10	3	6	20	26	25	25	35	34	29	7.3
Humboldt	Max	27	12	25	18	23	22	20	15	22	26	32	38	32	32	33	40	32	34	38	36	38	48	48	59	46	58	62	49	34 5
	Min	- 1	-18	-17	-14	-13	4	- 6	-11	- 3	0	8	0	15	6	- 3	10	7	10	6	2	10	22	24	27	28	36	36	31	6 6
In'pen'nce	Max	12	4	8	5	7	13	7	10	15	16	19	18	25	22	19	27	26	25	26	27	34	37	40	40	42	45	42	39	23.2
	Min	-9	-11	-14	-11	-15	- 2	- 5	- 9	- 6	9	- 4	2	7	7	-12	4	3	- 9	3	- 4	0	13	17	25	33	34	36	35	4.0
Indianola	Max	17	6	17	6	13	18	20	15	16	22	26	27	26	24	27	29	29	..	32	..	38	43	50	43	45	57	45	36	28.0
	Min	1	-11	- 7	-12	- 8	2	- 2	- 4	- 3	11	10	7	15	6	- 5	8	8	..	10	..	5	22	27	30	25	37	34	32	9 2
Iowa City	Max	19	9	14	10	12	20	21	14	16	23	27	23	31	29	23	32	23	29	33	31	42	46	44	42	50	53	48	40	28.8
	Min	- 7	- 7	-15	-14	-11	4	- 2	- 8	- 6	14	-2	1	10	2	-12	- 4	4	- 4	2	- 5	4	11	22	24	22	34	37	34	4.6
Iowa Falls	Max	10	0	12	3	12	14	10	11	17	17	22	23	25	25	24	28	21	28	30	28	33	39	47	39	43	47	40	31	24.5
	Min	- 5	-15	-12	-10	-12	- 2	- 4	- 9	- 6	0	0	- 2	6	- 2	- 6	6	3	0	1	0	3	19	26	26	25	33	32	31	4.5
Keokuk	Max	23	6	20	5	16	26	19	15	15	23	27	31	29	25	28	27	27	31	30	30	37	49	47	45	51	52	45	39	29.2
	Min	16	- 3	- 5	- 6	- 4	11	1	1	0	13	12	10	14	11	6	12	11	9	13	10	13	20	31	31	26	35	40	33	12.6
Keosauqua	Max	19	12	18	16	15	21	20	15	17	25	29	27	30	24	27	29	25	31	39	45	46	48	44	49	55	45	40	29.8	
	Min	5	- 6	-15	- 7	- 8	- 1	4	- 4	- 4	13	6	5	14	4	6	3	8	7	4	2	13	22	29	28	19	34	39	32	8.7
Larchwood	Max	6	8	5	15	14	16	15	20	21	30	28	30	27	33	31	30	30	40	35	38	39	37	43	41	42	45	43	40	28.6
	Min	-19	- 3	-18	-12	1	4	5	..	..	..	15	14	15	9	11	11	12	14	15	13	10	12	16	17	20	28	20	20	9.1

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR FEBRUARY, 1902—CONTINUED.

STATIONS		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	Mean.
Larrabee	Max	15	3	12	4	25	15	18	13	19	24	32	28	28	30	31	29	23	24	34	35	39	43	46	43	48	51	45	36	28.7
	Min	- 7	-19	-10	-17	-13	1	- 5	-12	- 5	- 6	12	0	15	1	3	15	11	12	10	7	11	22	25	23	24	34	33	24	6.8
Le Mars	Max	10	5	10	3	17	13	17	10	17	20	32	26	28	27	29	30	23	24	32	35	38	45	45	41	45	54	48	38	27.2
	Min	- 5	-16	- 8	-16	-11	4	- 1	- 9	-11	- 4	12	5	17	7	7	21	11	11	10	10	16	23	26	25	29	35	34	28	8.9
Lenox	Max	15	7	17	8	14	18	18	14	12	19	26	28	23	23	27	30	26	29	27	28	34	41	43	39	43	53	43	40	26 6
	Min	4	-16	- 9	-18	-10	- 1	-11	- 7	-10	6	7	10	13	2	17	7	10	5	14	4	9	19	26	25	23	34	35	31	7.8
Logan	Max	13	11	17	7	18	17	21	15	19	18	35	37	32	26	30	34	28	36	34	33	38	48	46	41	46	55	45	55	30.5
	Min	- 3	-14	- 4	-15	- 7	4	- 7	- 3	- 2	- 2	0	11	15	4	2	12	12	8	12	3	12	23	22	28	25	35	32	26	8.1
Maquoketa	Max	23	28	10	11	8	20	11	12	20	27	22	26	31	30	23	27	26	32	33	31	37	40	50	46	46	50	45	45	28.9
	Min	12	- 6	-12	-11	- 8	- 3	- 2	-11	- 8	11	4	- 4	0	3	-13	- 5	11	- 8	-11	- 8	6	3	19	18	15	32	36	33	3 3
Marsh'lt'n	Max	16	9	16	9	12	18	16	12	18	20	24	27	30	28	26	29	30	31	29	31	36	44	48	45	46	47	47	40	28.0
	Min	- 2	-12	- 8	-10	- 8	0	- 2	- 8	- 4	12	5	3	12	0	- 8	6	5	3	7	0	4	21	28	29	26	35	33	33	7 1
Monticello	Max	21	10	8	10	9	18	10	10	23	25	22	23	34	29	30	..	33	31	30	28	30	40	45	44	44	46	43	42	29.3
	Min	-10	- 8	-13	-11	-11	- 1	- 3	- 9	- 5	10	- 8	- 2	5	0	-14	..	- 7	- 8	- 9	- 8	- 5	7	18	23	17	31	37	39	2.0
Mt. Ayr	Max	15	3	18	8	13	19	17	13	12	19	25	27	25	23	27	30	25	30	30	32	38	42	44	40	45	56	41	37	26.9
	Min	3	-11	- 9	-15	-10	- 2	- 6	- 4	- 8	7	6	10	15	5	2	5	10	7	15	7	9	20	22	26	23	35	36	30	8.1
Mt. Ple's'nt	Max	21	16	19	15	11	23	19	15	19	27	27	26	30	24	30	31	25	30	30	29	37	44	46	43	46	55	43	46	29 5
	Min	8	- 7	-15	-10	-10	0	- 3	- 6	- 4	10	2	3	7	0	- 2	3	5	1	2	2	6	14	25	25	17	30	35	30	6.0
Mt. Vernon	Max	20	10	11	3	10	20	11	11	16	25	23	25	31	25	25	31	24	31	32	31	40	41	47	47	47	50	45	40	27.6
	Min	1	- 9	-11	-12	-12	0	- 3	- 8	-14	9	2	1	5	5	-12	- 2	2	1	4	2	11	11	24	25	23	32	33	33	5.6
NewH'pton	Max	11	6	9	5	11	11	11	10	15	16	20	18	27	27	21	28	18	25	26	27	21	37	43	41	39	44	40	38	23 0
	Min	- 3	-13	-12	- 4	-18	- 1	- 8	-10	-10	1	- 1	- 3	8	7	- 6	- 6	2	- 2	5	3	6	14	14	28	23	-	32	32	2 5
Newton	Max	19	11	16	10	13	18	17	12	17	18	24	25	27	25	24	30	29	27	28	30	35	42	44	45	45	50	55	38	27 6
	Min	2	-11	-10	-13	-11	0	- 5	- 8	- 5	12	9	4	13	5	0	10	5	8	11	5	10	20	28	30	23	33	32	32	8.2
Northwood	Max	14	3	13	5	17	16	12	15	18	21	26	28	23	28	28	31	30	23	28	32	38	39	42	48	45	42	51	42	37	27.4
	Min	0	-13	- 7	-12	-11	5	- 4	- 7	1	2	4	0	10	2	- 1	10	4	5	2	3	5	18	28	32	28	34	31	30	7 2
Odebolt	Max	9	4	12	13	19	14	19	11	17	22	30	28	28	27	28	30	25	32	34	35	40	42	46	41	46	53	48	40	28.3
	Min	1	-16	- 6	-14	-12	4	- 2	- 9	- 4	0	10	6	17	0	5	14	12	8	10	7	12	25	27	25	29	36	33	32	9.0
Ogden	Max	12	5	16	8	15	17	21	14	19	22	27	26	29	25	27	32	31	31	30	32	36	43	48	45	47	55	50	40	28.6
	Min	- 5	-16	-13	-15	-15	- 1	- 5	-12	- 6	6	7	1	13	5	2	8	2	8	6	4	10	20	27	25	25	34	34	31	6 5
Olin	Max	13	13	14	10	13	12	10	7	18	22	25	21	25	28	23	29	26	27	29	24	30	40	42	38	42	46	42	42	25.4
	Min	- 8	- 8	-12	-11	-13	- 4	- 5	-11	- 7	14	- 5	- 5	5	2	-15	- 5	3	- 7	- 8	- 6	- 5	5	22	23	18	32	36	35	2 2
Omaha, N.	Max	11	8	16	9	17	18	16	12	14	18	35	29	26	27	30	30	27	28	30	36	41	47	53	44	49	58	42	38	28.9
	Min	- 3	- 8	- 3	-11	3	8	0	- 2	- 2	3	14	16	22	14	12	21	15	17	19	12	49	27	31	31	30	41	35	23	13.7
Onawa	Max	10	10	15	13	20	18	18	15	16	21	37	30	29	28	32	30	28	30	36	36	41	46	52	48	45	52	47	37	30.0
	Min	- 1	-13	- 3	..	- 6	4	- 6	- 6	- 6	1	13	14	16	6	7	18	14	12	16	7	15	22	26	26	27	34	32	25	10.9
Osage	Max	10	5	10	5	11	13	9	11	16	18	22	19	26	25	24	27	19	23	26	30	33	39	46	42	41	46	41	38	24.1
	Min	- 1	-13	-10	-13	-14	4	- 4	- 8	- 1	2	4	0	9	2	- 9	8	2	1	- 1	- 1	4	13	22	32	25	34	33	32	5.4
Oskaloosa	Max	17	8	22	8	17	20	19	14	15	24	28	25	33	26	29	29	25	31	32	34	40	49	48	41	48	55	42	37	29.1
	Min	0	- 9	-12	-10	- 9	0	- 5	- 6	- 5	8	7	4	11	7	- 7	5	5	7	7	7	5	21	28	30	24	35	32	32	7.6
Ottumwa	Max	18	13	20	10	12	23	20	14	16	24	28	28	29	25	29	26	24	31	29	31	38	47	48	47	45	54	45	40	29.1
	Min	9	- 3	- 8	- 6	- 4	0	2	- 2	0	14	12	8	15	9	0	13	9	13	11	10	9	23	31	32	25	35	25	32	11.4
Ovid	Max	22	9	21	11	13	23	21	17	17	25	27	31	26	32	30	29	28	32	30	38	38	42	54	47	45	56	46	46	30.2
	Min	8	-11	- 9	-14	- 9	0	- 6	- 6	- 6	9	7	6	12	4	- 7	6	7	6	6	4	6	20	26	27	24	35	32	31	7 4
Pacific Jct.	Max	17	10	18	9	18	19	24	12	16	22	37	37	29	24	29	34	28	28	31	33	38	44	48	41	49	57	45	38	29.8
	Min	- 3	-16	- 4	-15	- 1	4	-10	- 3	- 6	- 3	11	18	22	14	8	16	17	16	20	20	16	23	26	27	26	40	35	28	11.6
Pella	Max	20	21	23	6	15	26	30	29	29	30	31	36	29	29	29	35	27	35	31	32	42	47	55	45	45	56	45	44	32 6
	Min	0	-10	-12	-11	-11	- 4	- 2	- 8	- 4	- 2	8	- 5	10	4	- 8	10	8	9	5	2	9	18	28	29	20	33	32	32	6.8
Perry	Max	13	5	18	5	17	16	21	14	19	22	28	26	30	29	28	31	26	35	32	34	39	42	43	41	46	55	45	40	28.6
	Min	- 8	-14	-11	-12	-13	10	- 2	- 8	- 4	11	9	5	11	1	- 2	8	7	9	10	2	11	24	28	22	26	36	37	32	7.3
Plover	Max	10	5	8	4	15	10	10	11	16	22	19	26	27	28	29	30	26	34	33	34	36	43	47	43	47	55	42	50	26.8
	Min	0	-20	-16	-17	-15	1	- 8	-10	- 4	- 3	- 4	0	10	0	0	10	7	15	8	5	10	21	26	30	25	33	34	32	6.1
Primghar	Max	10	5	10	3	20	14	20	12	12	22	20	18	26	25	30	30	33	30	30	31	38	40	45	46	46	50	40	50	26 3
	Min	0	-19	- 8	-17	-12	- 1	- 1	- 6	- 6	- 6	5	6	16	3	5	12	11	- 1	10	15	15	25	25	24	30	35	38	38	8 4
Red Oak	Max	13	9	26	9	16	17	19	23	15	19	29	30	26	26	26	31	31	30	30	31	36	39	44	40	51	55	46	42	28.9
	Min	4	- 4	1	- 9	3	7	- 5	- 1	2	8	14	18	19	11	16	15	17	15	19	8	17	25	28	28	29	39	37	32	14.0
Ridgeway	Max	18	9	12	3	10	13	11	13	23	25	27	29	32	32	25	35	28	34	34	33	40	41	46	46	44	51	43	40	28.6
	Min	0	-11	-11	-13	-15	4	- 9	- 8	- 3	5	4	2	8	8	0	11	6	3	5	5	10	17	25	29	24	36	37	35	7.3
Rockwell C	Max	10	- 3	14	5	20	15	15	12	20	20	30	33	25	25	29	31	25	30	30	30	39	36	40	41	38	41	43	41	27.0
	Min	3	-18	- 9	-14	-11	3	- 3	10	- 4	3	15	3	10	0	6	11	6	12	9	9	9	21	25	29	25	30	34	30	8.7
Sac City	Max	8	2	2	12	17	15	17	10	18	20	28	27	25	24	28	29	24	28	30	33	38	42	47	42	46	52	46	41	26.8
	Min	- 1	-17	-17	-15	-12	5	- 2	- 8	- 4	1	9	4	15	- 2	4	8	12	9	12	5	12	24	27	26	28	35	34	32	8.0
St. Charles	Max	18	8	19	8	16	23	25	20	18	27	29	34	25	25	31	30	30	29	28	33	42	44	53	46	46	56	49	36	30 3
	Min	3	- 9	- 4	-12	- 6	3	0	- 4	- 2	11	11	9	14	5	0	11	9	11	10	5	9	23	30	29	25	36	35	33	10.2
Scranton	Max	12	5	15	5	16	15	18	12	18	20	28	28	27	25	27	30	28	30	30	26	36	43	47	40	45	41	41	36	26.6
	Min	- 1	-12	- 7	-11	- 7	1	- 1	- 7	- 3	10	8	6	15	0	5	10	10	13	16	10	12	23	22	27	35	35	33	21	9.4
Sheldon	Max	8	5	8	6	17	12	13	10	18	20	28	27	26	25	28	29	26	27	30	35	38	43	47	42	46	51	44	39	26.7
	Min	- 4	-19	-11	-18	-13	- 1	- 5	-12	- 6	- 5	9	2	16	2	3	20	10	14	9	8	20	23	26	25	27	35	34	27	7 7
Sibley	Max	6	2	8	3	15	11	12	11	18	21	..	26	26	24	29	25	25	28	32	36	40	46	43	41	46	..	35	32	24 7
	Min	- 4	-20	- 9	-16	-12	- 2	- 7	-12	- 3	-13	..	- 8	17	8	6	17	7	11	6	9	13	24	27	24	30	..	32	26	5.8
Sigourney	Max	19	10	20	13	16	23	21	14	16	26	24	27	35	31	30	32	25	33	35	34	41	48	48	42	49	57	46	38	30.5
	Min	4	- 9	-12	-10	-10	2	- 4	- 7	- 5	10	7	3	9	5	- 3	7	5	4	7	4	6	19	27	28	21	33	36	32	7.5
SiouxC'nt'r	Max	8	8	9	3	19	14	12	8	16	22	31	29	27	27	29	27	23	30	33	35	36	42	43	39	43	49	45	39	26 6
	Min	- 7	-18	- 8	-18	-11	- 2	1	-11	- 5	- 5	11	5	17	7	5	19	10	12	11	8	12	22	28	25	30	35	34	24	8.2
Sioux City	Max	9	6	10	4	16	14	16	9	15	17	30	24	26	25	29	27	22	28	30	36	37	43	47	43	44	51	44	37	26.4
	Min	- 5	-14	- 6	- 4	- 8	3	- 2	- 7	- 3	- 1	14	13	19	13	10	20	13	16	17	13	18	25	30	29	31	37	36	21	11.3
Spirit Lake	Max	9	6	6	4	15	15	12	10	18	29	27	29	27	30	30	21	30	38	30	33	39	48	46	43	45	52	47	35	27.6
	Min	- 3	-20	-13	-14	-18	*	- 6	-12	0	- 4	7	1	6	7	7	14	13	10	9	10	19	28	26	28	28	28	30	30	7 2
Storm L	Max	8	1	8	2	15	12	13	9	15	20	27	23	24	22	21	27	23	27	28	32	37	43	47	41	47	50	40	36	24.9
	Min	- 2	-19	-12	-16	-11	4	- 4	-11	- 4	- 4	8	4	15	2	5	5	10	15	10	7	10	24	26	25	24	34	34	29	7.4
Thurman	Max	14	9	18	8	17	19	20	15	14	17	35	32	27	25	28	32	31	28	30	31	38	46	50	44	49	61	52	42	29.7
	Min	- 4	-11	- 6	-15	- 8	- 5	-14	- 1	- 2	- 2	12	17	18	13	2	10	17	12	19	6	13	24	25	25	28	40	37	26	14.7
Tipton	Max	25	14	14	15	14	18	14	10	16	22	27	21	22	24	25	28	25	25	26	26	33	44	42	40	46	48	45	45	26.9
	Min	0	- 6	-12	-10	-10	3	- 2	- 7	- 3	14	0	3	6	4	- 7	- 4	5	0	5	- 2	3	10	24	25	21	33	32	40	6.4
Villisca	Max	14	17	24	17	12	20	24	15	17	20	32	34	26	28	28	35	29	34	32	32	38	44	44	41	46	56	51	52	30.8
	Min	- 4	-16	-10	-17	- 7	- 7	-10	- 7	- 9	5	5	17	13	6	- 7	5	13	5	15	0	5	20	28	25	22	22	35	30	6.2
Wapello	Max	22	15	14	12	..	22	21	18	22	23	20	28	..	27	26	28	..	27	31	28	30	35	40	44	45	46	53	42	28 8
	Min	10	- 3	- 9	- 6	.	- 7	1	- 4	- 1	10	5	2	..	7	- 1	8	..	9	3	8	8	8	17	29	29	26	25	35	8.4
Wash'ton	Max	20	..	17	6	12	23	19	23	14	16	27	29	25	29	27	27	31	25	34	30	31	..	46	47	43	49	49	41	27.0
	Min	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Waterloo	Max	15	- 2	12	3	9	20	11	14	18	30	23	24	27	26	24	30	26	26	28	29	33	41	45	43	48	45	41	40	25.8
	Min	- 5	-11	- 9	-10	-11	- 1	- 3	- 8	- 3	10	1	- 1	9	2	- 8	4	3	6	0	- 2	2	15	25	26	28	34	33	31	5.5
Waverly	Max	15	4	12	4	13	17	11	12	19	20	24	23	27	27	24	29	27	27	29	30	34	40	45	42	42	46	41	39	25.8
	Min	- 5	-11	- 8	-10	-12	3	- 3	- 8	- 4	8	- 2	0	9	- 2	-10	4	5	- 5	- 3	- 6	0	16	25	26	25	35	32	33	4.7
West Br'ch	Max	..	11	13	12	10	21	11	13	20	27	24	25	26	20	27	30	25	25	29	29	38	43	46	41	43	53	45	42	27.7
	Min	..	- 6	-15	- 8	-11	1	- 3	- 8	- 4	4	1	0	8	4	- 8	- 6	4	- 5	1	- 2	- 3	7	24	25	20	33	37	33	4 5
West Bend	Max	8	4	12	5	14	14	14	12	12	22	27	27	29	28	28	28	25	37	33	33	38	43	48	42	46	54	44	38	27.6
	Min	- 1	-17	-10	-12	-10	6	- 4	- 9	- 1	- 1	10	2	15	4	4	12	9	12	8	8	11	23	26	23	27	35	36	32	8 5
Whitten	Max	13	11	16	8	15	16	14	11	20	20	26	25	27	28	24	29	27	28	32	30	34	40	45	40	43	49	46	39	27.0
	Min	- 4	-14	-14	-13	-12	- 2	- 4	-11	- 6	7	4	- 1	10	2	- 9	6	2	3	3	0	5	17	22	25	23	33	31	31	4.8
Wilton Jc	Max	23	14	17	13	14	20	14	12	20	26	28	26	26	30	28	30	25	32	30	27	34	44	45	45	46	52	47	43	29.0
	Min	1	- 6	-15	- 7	- 6	6	- 6	- 4	- 4	15	4	- 1	6	6	- 4	- 3	- 5	- 6	- 1	0	- 2	9	23	19	21	32	37	35	5.1
Winterset	Max	18	7	21	5	16	20	20	16	17	27	28	30	27	28	31	36	27	32	31	35	38	43	44	43	44	50	46	39	29.5
	Min	4	-12	- 4	-12	-12	2	- 2	- 3	- 4	10	10	7	15	6	- 3	11	10	10	11	6	14	24	28	29	25	36	36	36	9.7

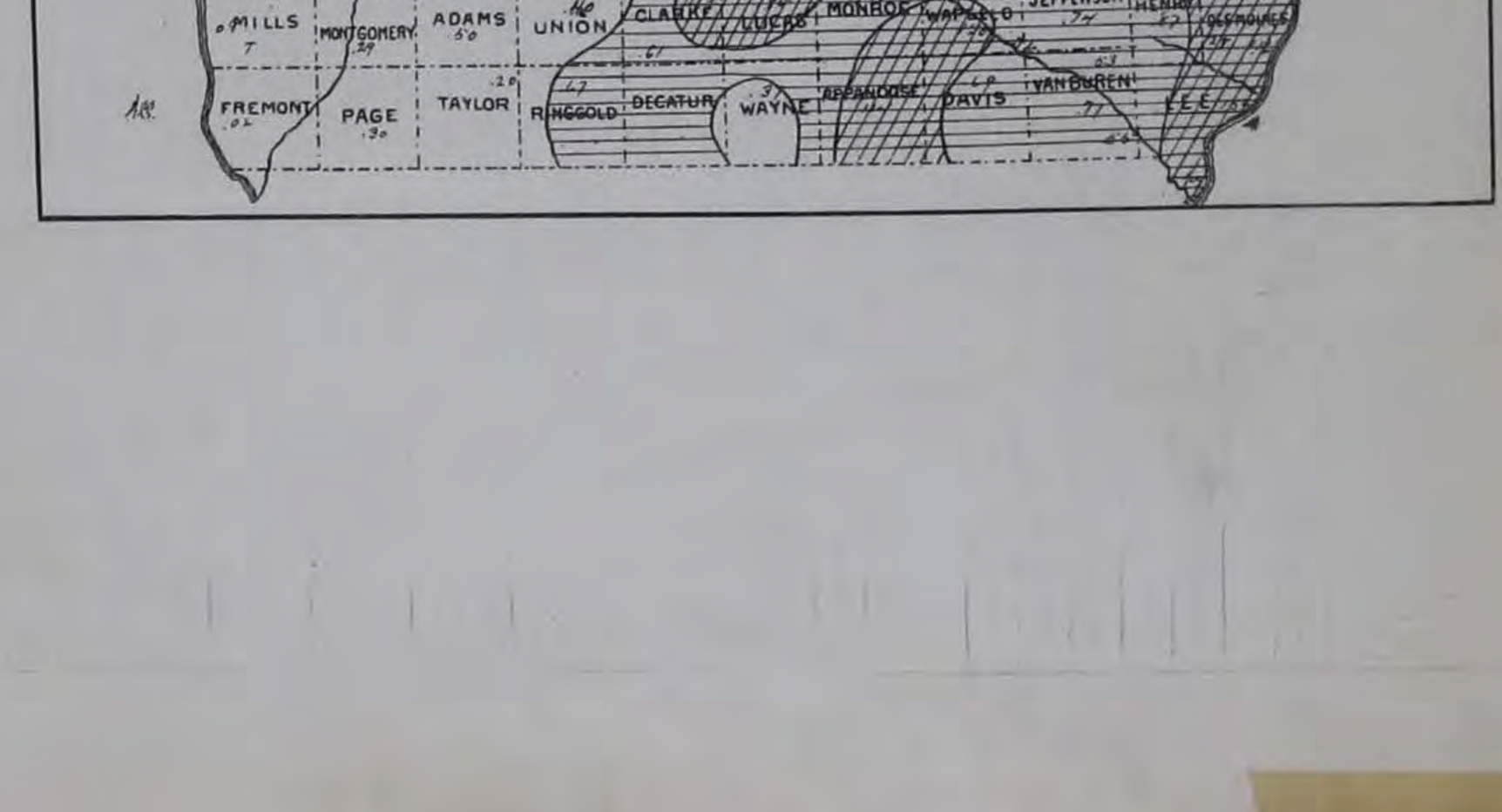
DAILY AND MONTHLY PRECIPITATION FOR FEBRUARY, 1902.

STATIONS.	DAY OF MONTH.																												TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Afton	.10	....	....	....	T	....	..	....	T	T	.10	....	....	...	....	T		..	....	....	....	....	...	..	....	....	T	.20	.40
Albia		....	T	..	T	....		...	T	T	.09	...	..	....	....	T	...	.	....	....	....	....	....	....	....	....	.65	.18	.92
Algona	10	....	T	....	T	.05	....	....	T	T	....	.10	...	....		T	....	....	....	....	....	....	....	....	....	....	.15	.10	.50
Alta	.03	....	T		.03	....	T	..	T	....	.10	....	....	....	....	....	T				....	....	....	....	.....	.....	.05	.19	.40
Alta (near)	T	-	....	....	....	....	....		T	....	.10	....	....	....	.	....	.. .	....	....	....	....	....	....	....	....	....	T	.20	.30
Amana	T		.01	....	08	01	....	....	T	....	.02	....			....	T		....	....	....	....	....	..	....	T	.65	.33	1.10
Ames	T	....	T	..	.03	....		....	.04	..	.05	....	....	T	.....	..	....	....		....	..	....	....	....	....	....	.10	.16	.38
Atlantic	....	....	....	....	T	...	T	....	....	..	.30	...	....		....	....	....	....	..	....	....	..	....	....	....	...	.04	.25	.59
Baxter	....	....	...	....		....	....	..	....	..	....	....	....	....	....	.	....	....		....	....	....	..	..	....	....	.50	.25	.75
Belknap	.05		05	....	.05	....	....	....	.05	T	10	....	....	....	....	....	....	....	....	....	....	....	..	....	....	T	.25	.14	.69
Belle Plaine	.10	....	.10	....	.15	.02	....	...	T	.02	.05	....	....	T	T	.05	....	....		..	....	....	....	....	....	....	1.40	50	2.39
Bonaparte	....	....	....	-	....	....	....	....	....		....	....	....	....	....	....	....	....	..	....	....	....	..	....	....		.35	.20	.55
Britt	02	....	02	....	....	.01		....	..	....	.01	....	...			....	....	....	..	....	....	....	....	....	....	....	05	.36	.47
Buckingham	.04	....	T		.02		....	....	T	....	.02	....	....	T		T	....	....	..	....	....	....	....	....	....	....	.64	.34	1.06
Burlington	08	....	....	T	....	T	....	....		....	.04		....			T		....	..	....	....	....	....	....	.	..	.86	.18	1.16
Bussey	T		..		....		...		....	.10	....	....		....	....	....	....		..	..	....	...	T	.	....	....	1 27	.15	1.52
Carroll	...	....	.	....	....	....		....	....	....	.15			....	....	.. .			....	..	....		....		....	....		.15	.30
Cedar Rapids	T	....	.05	..	.12	..	....	.	....	T	.08	....		T	T	..	....	....	....	....	..	....	....		....	T		.65	.90
Centerville	..	....	....	..	T	....			....		.10	...	..	..	....	....	..	...	....	....	....	....	....		.....	....	.81	.23	1.14
Chariton	.05	....	T	....	.73		T	....	T	T	.07	....				T	..	....	. ..	....	....	....	....	....	....	T	.75	.25	1.15
Charles City	T		.08	....	T	T	....	....	T	....	T		..	T		T	..		....	....	....	....	....	....	....	....	.25	T	.33
Clarinda	.04					....	....		....	....	.07	..			..	.....	....	....	....	....	....	....	....	....	....	....	T	.19	.30
Clear Lake	T		.10	....	01	T	....	....	T	T	.05	....	T	T	....	....	..	....		....	....	....	....	....		....	.10	.40	.66
Clinton		....	05	....	05	.05	....	..	....	....	.08	..		....	....	T		....	....	....		....	....		..	....	.72	.23	1,18
Columbus Jct	T		T		.02	....		T	T	.06	05	....	....	....		....	....	....		....	....	....	....	..	....	....	.47	.32	.91
Corning	T				T	....	T		T	T	25	....	....	..		....	T	....	..	....	.....	....	....		....	....	....	.25	.50
Council Bluffs	.03		T	....	....	....	....	....	T	T	.01	....	....	....	....	..	....		..	....	....	....	....	....	....	....		.02	.06
Cresco	..	....	.10	.40	....	....	....	..	..	..	..	..	....	....		..	....		....	..	..	....	....	....	....	....	....	08	.58
Cumberland		....	.10	....	....	....	....		....	.10	..		....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.01	.21
Danville	.05	.10	....	.05	.08	....		....	.05	.05	.10	....	....	....		....			....		....		....	....	....	....	.50	.30	1.28
Davenport	T		T	.02	.04	.01		...	T	T	.04	....	....	T	T	.03	....	....	....	..	....	....	..	....	....	....	.58	.24	.96
Decorah	T	...	.18	....	....	.02	....	.	T	T	.30	...	....	T		....	....	....	....	....	....	..	....	....	....	.49	26	.10	1.35
Delaware	....	....	04	....	....	....	....	....	T	....	.12		....	..	....		....	....	....	....	....	.	....	....	....	....	.38	.55	1.09
Denison	.02	....		....	....	....	....	....	02	....	....	.10	....	....	....	..	....		....	.	....	....	....	....	....	....	T	T	.14
Des Moines	T	....	.01		.03	T	T	....	01	.01	.04	....	T	T	....	T	....		....	..	....	....	..	....	T	24	.18	.52
De Soto	T	....	T	T	.05		T		T		..	....	....	....		T	....	....	....	....	....	....	....	....	T	.09	.11	.25
Dows	.10	....	T	....	.05	T	....		.05	....	....	....	....	....	....	T	....	....	....	..	....	....	....	....	....	....	....	.34	.54
Dubuque	T		03	.03	01	.05	....	..	T	01	.12	1	....	.02	01	.01	....	....	....	....	....	..	....	....	....	....	56	.45	1.43
Eldon	07	....	T		.03	....	....	....	T		.04	....	....		....	1	....	....	....	..	....	....	....	....	....	....	.41	.17	.72
Elkader	.07	....	.06	....	04	....	....	....	....	....	08	....	..	....		..	....	....	....	....	....	....	..	..	....	....	.76	.18	1.19
Estherville	....	T	T	....	T	.03	.02	.02	T		T	....	....		....	....	....	..	..	....	...	T	....	T	....		T	22	.29
Fairfield	.05		T	..	...		....	....	T	T	....	....	....	..	..	..	....	.	....	....	.	....	....	....	....	....	.36	.33	.74
Fonda	T	....	....		....	....	T	....	03	....	T	...	....	...	.		..	..	....		....	..	....	....	..	....	.10	.75	.88
Forest City		..	.10		T	T	....	....	T	..	.05	....			....	T	....	....	....	....	....	....	....	....	---	..	.20	.05	.40
Fort Dodge	....	....		....	....	....		....		....	....				....	....	....	....	....	....	..		....	..	....			40	.40
Fort Madison		....	....		..	....	....	....		....	....	....	....	....	....	....	....	....	....		.	....	....		....	.71	.32	.49	1 52
Galva	...	T	....	....	....	....	....	....	T	....	....	....	.. .		....	....	....	....	..		....		....	....	....	....	..	.20	.20
Gilman	T	T	T	T	.07	T	T	...	T	..	....	....	..	T	....	T	....	....	..	....	.	...	....	T	....	....	T	.31	.51	.89
Glenwood	.09	....	....	....	....	...	1	....	T	T	....	....	....	....	....		...	..		..	....	....	....	T	....	....	T	.20	.29
Grand Meadow	T	....	.10	....	.02	.05	....	....	.05		.20	....	...			...		....	.	....	....		....	....	...	....	1.00	.55	1.97
Greene	08	....	.05	....	.04	.04	....	....		....	05	....	....	....		T		....		....	....	..	....	....	....		.28	.35	.89
Greenfield	.14	....	T	....	....	....	T	T	T	.01	.17	....		.....	....	....	T	....			....	....	..	....	....	T	T	.06	.38
Grinnell	.01	....	01	....	06	..	..	....	.07	....	.02	....	....	T		06		....			....	....	....	....	....	....	..	1.00	1.23
Grinnell (near)	.01	....	02	...	.05		....	...	.07		.02	....	....	..	....	.06	....		....	..	..		....	....	...	T	60	.30	1.13
Grundy Center	.05	....	..	....	T	T	....	...	T	T	...		T	..	....	T	....	....			....	....	....	....	....	....	.32	.42	.79
Guthrie Center	..	..	..		T	....	T	....	....	..	15	....	....	....	....	T	....	....	....	....	....	..	....		...	....	T	.16	.31
Hampton	07	....			08	....	....	....	T	...	.05	..	..	....		T	...				....	..	....	....	....	.04	.58	.05	.87
Harlan	T	..	T	T	T	T	T	....	T	T	.15		....	....	....	T	T				....			....	....	....	T	T	1 52
Hopeville	T	..	T	....	T	....	T	....	T	T	.11	...		....	....	T		..			..	...	....	....	.....	T	.22	.28	.61
Humboldt	....			....	T	....	T	T	T	....	1.00	05			....	.....	....	....	....		-	....	....	....	....			24	1 29
Independence	T		T	...	.10	....	....	....	T		10	....		....	..		....	....	....	....	....	....	..	....	....	....	.70	.20	1 10
Indianola	.11		T	....	.01	...	T	....	T	.10	....		.	..		....	....	....	....	....	....	....	....	....		T	41	09	.72
Iowa City			...	....	.08	...	....	....	...	....	.05		....	...			....				....	....	---	....	....	....	55	.17	.85
Iowa Falls	.10	....	T	....	.05	T	....	....	.05	.05	T			T		.05		. ..	....	....	....	....	....	....	....	T	.25	.29	.84
Jefferson	.05	....	T	..		....			.10	..	.15	..			....	T		..	....		....	....	....	....	....			.07	.37
Keokuk	.02	....	....	T	.01	T	....		T	T	.01	....		....	....	T	..		....	..	....	....	....	....	....	.10	.50	.38	1 02
Keosauqua	07		T	....	03		....	T	T	....	.03	...		....	....	T	....			....	....	..	....	....	....	....	.51	.13	.77
Lacona	T	.10	....	....	.05		T	T	....		10	....	....		....	....		....		T	....	..	....	....	....	T	.75	.25	1.25
Larchwood	....			..	....	....		...	...	....	....	....	....	....	....	....	....	....		....	....	....	....	....	....	..	....	.50	.50
Larrabee	.05	....	....	....	08	....	T	....	T	...	0.7	....	.	....	....	....	T	T	....	...		..	....	....	....		..	.40	.60
Le Claire	T	....		.02		.03	....	....	..	T	1	.05	....	....	....	....	.02			....	....	....	....	....	....	....	.18	.73	1.03
Le Mars	....		..	....			....		....	....	.18	....	....		...		T	....	..	....	....	....	....	....			....	.02	.20
Lenox	..	....	....	....				....		....	.10	....	..	. ..	....	...	....		....		.	....	....	....	..	....	....	.10	.20
Logan		-	....		...		....	....	....	....	.20	.10		....	....	....	....	....		....	....	....	....	....		....	....	.20	.50
Maquoketa			....	.02	.20		..	....	....	....	.04	.....	....	....	....	....	....			....	....	....	....	....		....	.55	.50	1.31
Marshalltown	.02	....	.01	....	.06			....	....	....	.03	....				03	....	....		....			....	....		....	.37	.20	.72
Monticello		....	.10	....	T	T		..	....	....	T		....	T	....	....			....		.....	....	....	....		....	....	.82	.92
Mount Ayr	.10	....	....		.02		....			....	.20	....	....	....	....	..	....	....	....	....	....	..	....	....	....	....	.10	.25	.67
Mt. Pleasant	.04	.	T	....	T	....	....	....	..	T	.03	....	...	....	....	T	..			....	....		....	....		T	.20	.60	.87
Mt. Vernon		....	.03	....	.08	....	..	....	T	....	06	...	T	T	T		....	...	..	....	....		....	....	....	....	.35	.18	.70
New Hampton	..	....	.20	..	....	.10		....	....	T	.10		....		....	T	....	..	....		....			....		....	.26	.08	.74
Newton	....	....	....		10	....		....	....	....	....	.	..			....	....	....	....	....	....	....	....	....	....	....	45	.17	.72
Northwood	T		10	....	T	T	....	....	T		.05	....	...	T	....	T	....	....	..	.	...	....	....	....	....	....	.20	.42	.77
Odebolt	..		..	....	....	..	....	....	.	....	.08	..	....	....	..	....	....	....	.	....		.....		..	....	....	....	.22	.30
Ogden	....			....	..	....	....	....	....	....	.10	....			.....		....		..	..	....			..	....	..	..	.05	.15
Olin	....	..	.05	....	.20	....	....	....	....		.12	....		.02	T	T	....		..	..	....	....	....	....	....	....	.40	.12	.94
Omaha, Neb	03	....	01	....	..	....	T	T	T	T	.03	..	....	..	....	T	T	...	....	..	....	....	....	T	....	....	T	.06	.13
Onawa	T	....	..	....		....	T	...	.02		25	....			....	..	T	....	....	....			....	....	....	....	.01	.08	.36
Osage	T	....	.10		02	.03	.	....	T	....	.08	....	....	T	....	.04	....		....	..		..	....	....	....	....	.18	.25	.70
Oskaloosa	.03		T	....	.04	....	....	....	T	.05	....			....	....	02	....	.	....	....	....	....	..	....	....	T	.67	.07	.88
Ottumwa	.10	....	....	....	....			....	..	05	.05	....		....	....	T	....	....	....	....	....	..	....	....	....	....	.85	.45	1.50
Ovid	.04	....	....	....	.05	....	....	....	....	....	.10	....	....	.	...	T	....	....		....	..	....	....	....	....	....	.70	.26	1.16
Pacific Junction	..	....	....	....		....		....	T	.01	.01	....	....	....	..	T	T	....	....	....	....	....	....	....	.....	..	T	.06	.08
Pella		...	T	....	.02		T		....	....	....	....	....	....	....	....	....		....	....	....	...	.	....	....	....	.72	.10	.84
Perry		....	....	....	.05	....	....	..	T	T	.1)	....	..	....	....	T	....	..	....			..		....	....	..	....	.28	.36
Plover	.05	...	....	....	.10	.	..	....	....	..	T	..		..	....	....	....	....	....	....	....	..	....	....	....	....	.10	.35	.60
Primghar			....	....	....	....	....	....	....		T	..	....	....	....	....	....	....	....	....	....	..	....	....	....	..	....	.30	.30
Red Oak	.10	....	T	T	..		T	.....	T	T	.14	....	....	....	...	T	T	....	....	....	....	..	..	T	....		T	.05	.29
Ridgeway	.03	....	.15		.09	.03	....	....	.04	....	.25	....	..	T	.01	.02	....	....	....	....	....	....	....	....	T	T	1.20	.46	2.28
Rockwell City	....	....	.10	..	....	....	....	..	....	....	.10		..	....	....	..	....	....	....	. .	....	....	....	....	....	....	....	....	.20
Ruthven	T	T	....	....	05	T	T	T	T	....	.05	....		....	....	T	....	....	....	....	....	....	....	....	....	..	.21	.15	.46
Sac City	T	....	T	....	T	....	T	.	T	T	.10	...	...	....	....	....	....	....	....	....	..	....	....	....	....		....	.08	.18
St. Charles	.05	....	.05	....	....	....	....	....	....	....	.07	....	....	....	....	T	....	....	....	..	....	....	....	....	....	T	.26	.18	.61
Scranton	...	....	T	....	....		T	....	T	T	.10	..	....	....	....	.. .	....	...	....	....	....	....	....	....	....	....	....	1.00	1.10
Sheldon	.04	....	.01	T	.10	T	T	....	T	....	.10	..	....	....	....	....	T	T	....	....	....	....	T	....	....	.....	T	.40	.65
Sibley	T	....	T	....	.05	T	T	T	T	..	....	.10	....	....	....	T	....	....	....	....	....	....	....	....	....	....	....	.25	.40

DAILY AND MONTHLY PRECIPITATION FOR FEBRUARY, 1902—CONTINUED.

STATIONS.	DAY OF MONTH.																											TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
Sigourney	.05		T		.08				T	T	T					T											.52	.25	.90
Sioux Center			.05		.10				T		10						T	10										.30	65
Sioux City	.01		T	T				T	T		20															T	20	.17	20
Spirit Lake				T	0			T	T	T						.02											.30		53
Stockport	03		T			T		T	T		10						T										03	17	32
Storm Lake	.01		T	T	01	T	T	T	T	T	T					T											T	T	02
Thurman	.02		T				T		T																		4[illegible]	.10	55
Tipton				T	05	T	T	T	T	T	.20					T	T									C5	2	.15	60
Villisca	T				T				T		T			T														1.03	1 13
Vinton			.05		05																						55	.35	90
Wapello	T																											.98	1 01
Washington	.01				T							.02															T	.35	.45
Washta	T								T	.10	T					T											42	.80	1 47
Waterloo	.08				.07	T			.06		04		T	T		T											81	.33	1 39
Waverly	.07		.07	.03	.02	.02			T		.04			T		T												37	.67
West Bend			2		05			T			T				T												.43	.22	.82
West Branch	T		T		.12	T			T		.05					T											05	.05	.10
Whitten	T		T		T	T			T																	T	.53	.18	.96
Wilton Junction					15				T		10																	.17	47
Winterset	.10						T		T		20															T	.54	37	1 15
Woodburn	.12										.12																		

Precipitation Chart February 1902.



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DIRECTOR.

GEO. M. CHAPPEL,
LOCAL FORECAST OFFICIAL,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

ALLIED PRINTING TRADES UNION LABEL COUNCIL DES MOINES

DES MOINES:
BERNARD MURPHY, STATE PRINTER.
1902.

THE IOWA WEATHER AND CROP SERVICE

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Amana	Conrad Schadt
Ames	Exp. Station
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Baxter	W. T. Thorp
Bedford	E. E. Healy
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Carroll	Moses Simon
Carson	Agent C. B. & Q. Ry
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Clinton	Luke Roberts
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Cumberland	Agent C. B. & Q. Ry
Danville	Agent C. B. & Q. Ry
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De Soto	R. D. Minard
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Dubuque	*E. H Bowie
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Elkader	Chas. Reinecke
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Gilman	Jas. L. Wylie
Gladbrook	Agent C. G. W. Ry
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Thurman	C. R. Paul
Tipton	G. W. Barclay
Toledo	Lulu G. Bookwalter
Vinton	T. F. McCune
Villisca	C. E. Matteson
Wapello	Geo. W Schofield
Washington	Wm. A. Cook
Washta	H. L. Felter
Waterloo	M. L. Newton
Waverly	H. S. Hoover
Whitten	Dr. Frank P. Butler
Wilton Junction	J. M. Rider
Winterset	Prof. E. R. Zeller
West Bend	Phil. Dorweiler
West Union	J. M. Lisher
Woodburn	C B. McDonough

*U. S. Weather Bureau

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Reporting for the Weekly Bulletin.

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Algona	J. H. Zanke
Allerton	James Piper
Alta	Jonas Cushman
Audubon	Hon. A. H. Edwards
Blairstown	T. H. Weil
Bondurant	C. I. Thorp
Burt	R. Jain
Cedar Rapids	Hon. A. J. Fuhrmeister
Charles City	W B. Towner
Chariton	C. C. Burr
Clarksville	F. M. Russell
Correctionville	Hon. W. B. Chapman
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Council Bluffs	L. Prouty
Creston	M. V. Ashby
Danville	Sherman Matthews
Dubuque, R. F. D	Hon F. N. Knoll
Dunlap	Hon. B. F. Roberts
Gruver	E. Dawson
Elliott	C. B. Hamilton
Emerson	D. B. Nims
Fort Dodge	R. W. Blaine
Fruitland	R. T. Hummel
Geneva	Wm. H. Thompson
Harlan	H. B. Kees
Hesper	G E. Dillingham
Humeston	Hon. S. H. Moore
Independence	Geo. H. Wilson
Indianola	H. D. Guthrie
Iowa City	Edward Hummer
Ireton	J. M. Sherman
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Madrid	Geo. Swisher
Manson	J. D. Skinner
Marshalltown	Hon. S. B. Packard
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Monroe	J. A. Dibel
Nevada	Geo. C. White
Northwood	T L. Bolton
Orange City	H. J. Vande Waa
Owen	Hon. J. W. Bird
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Rossville	T. B. Wiley
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Spirit Lake	E. E. Arey
State Center	E. P. Thompson
Stuart	W. W. Bailey
Tama	W. G. Malin
Van Horne	Spencer Smith
Van Wert	Ed. Warden
Winterset	H. A. Kinsman
West Branch	Wrigley Smith
West Union	H. B. Blackman
Wilton	Thos. Boot
Wiota	I. S. Coomes

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIII. MARCH, 1902. No. 3.

NOTES.

In respect to population Iowa is eleventh in the list of states and territories of the United States. In area Iowa ranks twenty-fourth. In percentage of arable soil compared to the area this state is easily first.

* * *

The present area of the United States, territories and insular possessions is 3,690,822 square miles, or about one fourteenth of the land surface of the earth. Only three countries, the British Empire, the Russian Empire and the Chinese Empire have unquestionably a greater area than the United States, and these are the only countries having a greater population. Including Alaska and the islands, the total population June 1, 1900, was 84,233,069.

* * *

A news special states that during a thunderstorm on night of March 10, Mr. Charles Pierce, residing near New Hartford, Butler county, was killed by lightning. It was the first thunderstorm of the season.

* * *

It is said that birds serve as weathercocks when they are perched on trees or bushes, as they usually face the wind if it blows with sufficient force to ruffle feathers.

* * *

An instrument for indicating and recording the approach of thunderstorms is in use at St. Ignatius College, Cleveland, Ohio. The apparatus comprises a relay, a sounder, a coherer, two condensers, a choking coil, two batteries of two and four dry cells, a clock with recording cylinder, and a copper collector fixed to the tower roof. The action of the storms upon the recorder is as follows: If, at some distance from the receiving station, there is a violent discharge of electricity within a cloud, the electrical oscillations it occasions will impinge upon the collector on the roof and close the coherer circuit. The waves, however, pass the coherer without obstruction, thereby building bridges for the battery current in this circuit. The relay in the coherer circuit is energized, and closes the recorder circuit in the usual manner.—*Scientific American*.

* * *

The spectrum of lightning, which has been photographed at Harvard university, through a telescope provided with an objective prism, is not always the same, but curiously resembles the spectra of new stars, such as that in Perseus. Many of the lines appear to be due to hydrogen.—*Exchange*.

* * *

At Portland, Texas, experiments have been made with Beaumont oil as an exterminator of insects. It has been found effective as an insecticide, and not harmful to plants when applied in the form of emulsion.

* * *

The largest rainfall on earth has been recorded at Cher Punji, on the bay of Bengal, but the most violent thunderstorms ever observed are probably those of French Guiana. At Cape Orange, some forty miles south of Cayenne, a French naval officer saw the rills of the coast hills turned into waterfalls by a cloudburstlike storm, while the crashing thunder peals were incessant and often almost deafening, so much so, indeed, that some of the sailors began to mutter long forgotten prayers.—*Exchange*.

* * *

With his electro-magnetic gun, Prof. Birkeland, who has been experimenting at Christiana, expects to hurl 1,000-pound projectiles much farther than they can be thrown by explosives.—*Exchange*.

* * *

The great West, according to the census figures, now produces 90 per cent of the gold, silver and copper output of the United States, 75 per cent of the iron and cereals, 65 per cent of the swine, 50 per cent of the milch cows, and 60 per cent of all other cattle in the land. Of manufactured products, the city of Minneapolis alone sends to market 16,000,000 barrels of flour every year, and Elgin sends 3,000,000 pounds of butter. The Great Lakes bring forward on their surface 150,000,000 bushels of grain every year, and the Detroit river floats four times as much tonnage as the Suez canal. Chicago starts by rail for the markets of the east 150 tons of provisions every hour in the day. In the territory embraced in the "Louisana purchase," for which this government paid $15,000,000, the states now existing produce every year grain to the value of $345,000,000, and the people hold real estate the total value of which is placed at $3,500,000,000. These figures give some idea of the wondrous value of the great West, after less than a century of development under American management. In mining, agriculture and industrial pursuits it stands today without a rival in the world, and its prosperity has really but just begun to manifest itself. Another century of intelligent labor will transform it into an empire of productiveness, the like of which has never before been seen.—*Exchange*.

THE WORK OF THE WEATHER BUREAU IN 1901.

The excellent service rendered by the Weather Bureau during the past year has been recorded by its chief in the report which he has just submitted to the Secretary of Agriculture. The Bureau and its staff have time and time again demonstrated their usefulness, notably during the Galveston hurricane, one of the most destructive tornadoes that ever swept the country.

The work of the year has been more or less a continuation of

that previously begun. Better means for obtaining ocean forecasts by international co-operation have been obtained. Three additional forecasting districts have been established. The last appropriation bill passed by Congress provides for three additional forecast officials, who are to take charge of these districts. The line of work pursued in previous years by the climate and crop service divisions was continued. Unfortunately, few persons realize how complete is the system adopted by the Bureau for the dissemination of information to the crop growers. Paid and skillful officials to the number of 1200 outside of Washington report on all matters concerning weather, crops, climate, and statistics; at the central office in Washington 200 officials alone are employed; 180 fully equipped meterological stations are centered over the United States and its dependencies, each conducted by trained officials; and in every state and territory a central observatory is located, to which all subordinate officers in the state report, and to which all volunteers give their information. The telegraph circuits of the Bureau have been equipped with ingenious devices for the rapid distribution of daily meteorological reports. Temperature and rainfall reporters telegraph their data daily from the growing fields to certain cotton, corn and wheat centers. Storm-warning display men are stationed along the Atlantic, Gulf and Pacific coasts and in the lake region. A weather bureau man is to be found on the floor of every important board of trade or exchange in the country. He publishes weather and crop information, and charts, the weather report on a large map.

Particular attention has been given to the distribution of forecasts by means of the rural delivery. There are now 365 centers. Some 42,000 families in the farming districts are supplied with the latest weather protection. The rural free delivery places the frost and cold-wave warnings in the hands of those who can make the most valuable use of them.

In wireless telegraphy the Bureau has endeavored to secure a more powerful transmitter, a sensitive receiver, and a selective means whereby messages can be differentiated. The first of these problems has been successfully solved; the second is nearing a successful solution; and the third, although well demonstrated theoretically, has not been fully tested in practice.

The experiments conducted by the grape growers in France and Italy for the purpose of preventing hailstorms, by the use of explosives fired from especially designed cannon, has attracted the attention of the Bureau. It is the opinion of scientists both in America and Europe that hailstorms cannot be prevented by such means. With the experience of a few years ago with our own rainmakers before it, the Weather Bureau sees no reason for expending thousands of dollars in uselessly cannonading the heavens.

Of the minor work conducted by the Bureau, mention should be made of the installation of sixty new storm-warning towers and of the inauguration of the study of meteorology in the schools and colleges of the country.—*Scientific American*.

CLIMATE OF THE KLONDIKE.

The following article from the January number of the Monthly Weather Review, issued by the Meteorological Bureau of the Dominion of Canada, gives some interesting data relative to the climate of Dawson and the Klondike:

A somewhat broken series of observations at Dawson and various other places in Yukon Territory between 1895 and 1898, and a continuous series at Dawson during the past three years, afford data for estimating with a fair degree of accuracy the average climatic conditions of the Klondike. The average annual mean temperature is about 22°; the mean of the three summer months is about 57°, July being 61°; and of three winter months—16°, with January—23°. Spring may be said to open towards the end of April, the last zero temperature of the winter usually occurring about the 5th of this month. May, with an average temperature of 44°, is by no means an unpleasant month and the 23rd is the average date of the last frost of spring. Daily observations during five summers indicate that on the average the temperature rises to 70° or higher on 46 days and to 80° or higher on 14 days; 90° was recorded in Dawson in June, 1899, and 95° in July of the same year. These temperatures with much bright sunshine and an absence of frost during three months, together with the long days of a latitude within a few degrees of the Arctic Circle, amply account for the success so far achieved by market gardeners near Dawson in growing a large variety of garden produce, including lettuce, radish, cabbage, cauliflower and potatoes, and warrant the belief that the hardier cereals might possibly be a successful crop both in parts of Yukon Territory and in the far northern districts of the Mackenzie River Basin. August 23rd would appear to be the average date of the first autumnal frost, the temperature rapidly declining towards the close of this month. Although night frosts are not infrequent in September, the month as a whole is mild with a mean temperature of 42°. October may be fairly termed a winter month, the mean temperature being but 22°.5 and the first zero of winter recorded on the average about the 18th. Ice usually begins to run in the Yukon about the second week but it is not until quite the end of the month or early in November that the river is frozen fast. The temperature on the average during a winter falls to 20° below zero or lower on 72 days, to 40° below or lower on 21 days, to 50° below or lower on 7 days, and to 60° below or lower on two days. In January, 1896, 65° below was registered at Fort Constantine, and in January, 1901, 68° below was recorded at Dawson.

Observations of rain and snow have until the close of last summer been very fragmentary, but it is probable that the summer rainfall near Dawson is usually between seven and nine inches, and that the total snowfall of the autumn and winter is between 50 and 60 inches.

Dawson being situated near the river, with high hills or mountains on all sides, is well protected from the winds, and a feature of the town, and indeed of the neighboring country, is the long periods of calm weather which occur.

DESTINATION OF THE SUN.

More than a century ago Sir William Herschel was able to fix roughly what we call the apex of the sun's way in space, or the point among the stars toward which they were directed. Herschel found that a comparison of old stellar observations seem to indicate that the stars in a certain part of the sky were opening out, as it were, and that the constellations in the opposite part of the heavens seemed to be drawing in or becoming smaller. There can be but one reasonable explanation of this. We must be moving toward that part of the sky where the stars are separating. Just so a man watching a regiment of soldiers approaching will see at first only a confused body of men. But as they come nearer, the individual soldier will seem to separate, until at length each one is seen distinct from all the others.

Herschel fixed the position of the apex at a point in the constellation Hercules. The most recent investigations of Newcomb, published only a few months ago, have, on the whole, verified Herschel's conclusions. Later investigators have increased the precision of our knowledge, until we can now say that the present direction of the solar motion is known within very narrow limits. A tiny circle might be drawn on the sky to which an astronomer might point his hand and say: "Yonder little circle contains the goal towards which the sun and planets are hastening today." Even the speed of this motion has been subjected to measurement and found to be about ten miles per second.

The objective point and the rate of motion thus stated exact science holds her peace. Her genuine knowledge stops, and we can proceed further only by the aid of that imagination which men of science need to curb at every moment.

But let no one think that the sun will ever reach the so-called apex. To do so would mean cosmic motion on a straight line, while every consideration of celestial mechanics points to motion on a curve. When shall we turn sufficiently upon that curve to detect its bending? It is a problem that we must leave as a rich heritage to generations that are to follow us. The

visionary theorist's motion of a great central sun controlling our own sun's way in space must be dismissed as far too daring. But for such a central sun we may substitute a central center of gravity, belonging to a great system of which our sun is but an insignificant member. Then we reach a conception that has lost nothing in the grandeur of its simplicity, and is yet in accord with the probabilities of sober mechanical science. We cease to be a lonely world and stretch out the bonds of a common relationship to yonder stars within the firmament.—*Popular Science Monthly.*

CAUSE OF HAZY SKIES.

In a reply to a letter, asking the cause of autumn haze, the Chief of the United States Weather Bureau recently prepared a letter, part of which is quoted in what follows: The dry haze is undoubtedly due to fine particles of dust. The finest dust is composed of one or all of the following substances, namely, fine particles of soil or the dead leaves of plants, smoke or ashes from wood fires, salt from ocean spray, the shells or scales of microscopic silicious diatoms, germs of fungi, spores of ferns, pollen of flowers, etc. In the still air of the damp nights these dust particles settle slowly down, and the morning air is comparatively clear. During the daylight the sun warms the soil, which heats the adjacent air, and the rising air currents carry up the dust as high as they go. Under certain conditions which are named in the letter the layer of dust reaches higher and higher every successive day. During long, dry summers in India it reaches to 7,000 feet with a well-defined upper surface that is higher in the daytime than at nighttime. This is a general explanation of dry haze weather and applies to Indian summer also. The reason why we have more of such weather in the autumn is because there is then less horizontal wind and less rising air.—*Scientific American.*

REMARKABLE AURORA AT ALTA, IOWA.

About 9 o'clock in the evening of March 29, 1902, a bright auroral beam was observed in the southeast sky at an altitude of about 30 degrees. When first seen it was more or less obscured by light clouds and its true nature was hard to determine. It was a perpendicular, pale, narrow streak of light, about 5 degrees in length and about one-half degree in width, with the star γ in the constellation Virgo almost exactly in the middle of the beam. About 20 minutes later the clouds cleared away and the beam was a beautiful object, resembling strongly a fine comet of a pale greenish-white color; ten minutes later it reached its maximum brightness, when it was a deep yellow to orange color, and had moved about a degree further north. Underneath, toward the horizon, was a dark region, above which was a faint auroral glow. Five minutes later the phenomenon disappeared and did not re-appear again. Its position in the southeast quadrant of the sky was unusual, and many people supposed the light to be a comet. It is a noteworthy coincidence that a large bright region of faculæ was observed nearly at the east limb of the sun in North heliographic latitude 30 degrees, the following day.

DAVID E. HADDEN.

April 1, 1902.

MARCH WEATHER IN THE UNITED STATES.

Extracts from National Climate Crop and Bulletin.

In the Pacific coast states and middle and southern Plateau regions the month averaged colder than usual, the average daily deficiency ranging from three to five degrees over eastern California, portions of Oregon and the greater part of the middle and southern Plateau regions. In the southern states the temperature averaged nearly normal, although most stations show a slight excess, except at Key West, Fla., where it averaged one degree below normal. Over the northern portion of the country east of the Rocky mountains the month averaged decidedly mild, especially from the Missouri valley to the New England and middle Atlantic coasts, where the daily excess ranged from six to ten degrees, being most marked at the northerly stations.

The precipitation in March, 1902, was lighter than usual in the central Missouri, upper Mississippi and central Ohio valleys, over the northern portions of the Lake region, on the Atlantic coast from southern New Jersey to south Carolina, along the central and west Gulf coasts, and over the central and northern Plateau districts, including central California. The deficiency amounted to more than one inch in eastern North Carolina and southeastern Virginia, in the central Ohio valley, along the central and west Gulf coasts, and over limited areas in the Lake region, central Missouri valley, and northern Plateau districts. There was more than the average precipitation for March in New England, the northern portions of the middle Atlantic states, the east Gulf states, over the northern portion of the central and west Gulf states, and from northern Texas northward over the eastern Rocky mountain slope, including the upper Missouri and Red River of the North valleys. In the east Gulf states and northern New England the precipitation was unusually heavy, exceeding the average from one to five inches in New England and from two to eight inches over the greater part of the east Gulf states, a small area in extreme western Florida receiving from thirteen to twenty-eight inches. The rainfall on the Pacific coast was also in excess of the average, except in central California, the excess ranging from one to three inches from northern California along the immediate coast to the Puget sound region.

At the close of the month there was a small amount of snow on the ground over limited areas in the mountain districts of West Virginia and Pennsylvania and also over scattered areas in the lower Lake region and upper Missouri valley.

The weather conditions of March were generally favorable for farming operations in the states of the Missouri, upper Mississippi, and Ohio valleys, and on the Atlantic coast north of North Carolina. The month was also favorable in Florida, Texas and Oklahoma, but over the greater part of the central and east Gulf states it was unfavorable, largely on account of excessive rains. Throughout the central and east Gulf states farm work is from two to three weeks late, and in many sections much land has been badly washed. On the Pacific coast the month was cool, and the season is generally backward.

There has been a very general and in some sections a marked improvement in the condition of winter wheat in the states of the central valleys, although much of the late sown is in poor condition, and some will be plowed up for other crops. The cool weather on the Pacific coast has retarded the growth of winter wheat. In California some damage has been done by heavy rains, but, on the whole, the crop is in promising condition. In Oregon the condition of the crop is less promising than usual, especially in the eastern part of the state. An improvement is indicated in Washington, although considerable reseeding was necessary.

Some spring wheat was sown over the southern portion of the spring wheat region at the close of the month.

Oat seeding is well advanced in the states of the Missouri valley, and is progressing in the Ohio valley and middle Atlantic states. Fall sown oats in the southern states have been winter killed to a great extent.

Corn planting has begun as far northward as Kansas and Missouri, and preparations for planting are in progress farther north. In Texas the bulk of the corn crop has been planted and some is being cultivated. Considerable planting has also

been done in the central and east Gulf and south Atlantic states.

In Texas and Florida cotton planting is well advanced, but in Georgia, Alabama, Mississippi, and Louisiana none has yet been planted, and very little ground has been prepared owing to heavy rains.

The general outlook for fruit, excepting peaches, is encouraging.

CLIMATOLOGY OF THE MONTH.

BAROMETER—The mean pressure for the month was 29.94 inches; highest observed 30.59 inches at Davenport and Des Moines on the 17th and 18th; lowest, 29.07 at Dubuque on the 1st; range for the state, 1.52 inches.

TEMPERATURE—The monthly mean temperature for March, as shown by records of 101 stations, was 39.1°, which is 5.9 above normal. The monthly means by sections were as follows: Northern section, 36.9°; Central section, 39.3°; Southern section, 41°. The highest monthly mean was 44.5° at Thurman; lowest, 34.9° at Larchwood. The highest temperature reported was 79° at Winterset on the 25th; lowest, 12° below zero at Estherville on the 17th. The average monthly maximum was 69.4°; average monthly minimum, 1.5° below zero, The greatest daily range was 46° at Sibley, Monticello and Thurman; average of greatest daily ranges, 34.6°.

PRECIPITATION.—The average precipitation for the state was 1.45 inches, as shown by records of 121 stations. This amount is .30 inch below normal. The averages by sections were as follows: Northern section, 1.20 inches; central section, 1.73 nches; Southern section, 1.42 inches. The largest amount reported was 4.33 inches at Cumberland; least amount, 0.13 of an inch at Algona. The greatest daily amount reported was 3.00 inches at Cumberland on the 10th. The average number of days on which .01 or more precipitation was recorded was 7.

WIND AND WEATHER.—Prevailing direction of wind, southeast; highest velocity, 58 miles per hour at Sioux City on the 16th. Average number of clear days, 9; partly cloudy, 11; cloudy 11.

ATMOSPHERIC PRESSURE

STATIONS.	Mean barometer reduced	EXTREMES			
		Highest reduced barometer	Date.	Lowest reduced barometer.	Date
Davenport	29 94	30 59	18	29 09	1
Des Moines	29.97	30 59	17	29 23	1
Dubuque	29 56	30.57	18	29 07	1
Omaha, Neb	29.92	30 59	17	29 34	1
Keokuk	29.96	30 53	17	29 22	1
Sioux City	29 92	30 56	17	29 31	1
Means	29.94	30.59	17,18	29.07	

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	7370	38	W	16
Des Moines	8646	40	W	16
Dubuque	6430	28	NW	17
Keokuk	7620	38	W	30
La Crosse, Wis	6629	32	W	16
Omaha, Neb	8471	37	NW	30
Sioux City	13590	58	NW	16

WEATHER AND CROP CONDITIONS.

March was warmer than usual, the mean temperature ranging from four to seven degrees above the normal. Wintry weather of considerable severity prevailed from the 1st to the 4th and from the 15th to the 19th, but the balance of the month was mostly springlike and unusually favorable for early farm operations. The soil was in excellent condition for plowing, and seeding of spring wheat and oats was well advanced before the close of the month. The season opened from ten days to two weeks earlier than the average in this section. The cold wave and high wind, prevalent from the 16th to the 18th, caused some damage to winter wheat in the southern and central counties, and to spring seeding in all parts of the state; but the aggregate of injury was not heavy. The average precipitation was below normal, but there was ample moisture to facilitate plowing and for germination of grain. Grass and winter grain would have made better growth if the rainfall had been more copious.

OBSERVERS' NOTES.

ALBIA—*E. R. Reeve.* Heavy fog on the 7th. On 13th plowing and sowing in operation. Heavy thunder on 15th at 6 A. M.

ALTA—*David E. Hadden.* March was generally pleasant, with much wind, especially on 14th to 16th. Some seeding of wheat and oats during last week in the month.

AMANA—*Conrad Schadt.* On the 14th sowing wheat begun, but was stopped by cold snap beginning on 16th; work resumed on 24th.

ATLANTIC—*J. W. Love.* Robins appeared on 9th and bluebirds on the 10th. First thunder-storm on 10th.

BONAPARTE—*B. R. Vale.* First half mild, but two severe cold periods in last half. Soil very dry.

BRITT—*Geo. P. Hardwick.* Snow on first two and last two days, but otherwise the ground was bare. Very high winds the 15th, 16th and 26th. Wheat and oats sown 24th to 27th.

CENTERVILLE—*James S. Hamilton.* Oats about all in and ground very dry for the time of the year. Roads fine. Feed and water scarce.

CLINTON—*Dr. Luke Roberts.* The month commenced with a typical March day—a genuine infant blizzard Temperature quite moderate up to 17th, when there was a sudden drop from thirty-five degrees to one above zero. After two days of vigorous winter, the balance was warmer. There were six storm days, with an aggregate of 2.19 inches, or .35 of an inch below normal. The maximum velocity of wind was 26 miles on hour on the 16th; total wind movement 5,680 miles—a little below normal. The mean temperature was 39.5 degrees, or 6 6 above normal. The number of clear days was six; partly cloudy 7, and cloudy 18.

COLUMBUS JUNCTION—*Prof. H. E. Simpson.* Ice went out from junction of Iowa and Cedar rivers March 6th.

EARLHAM—*Geo. Phillips.* A fine month for March; considerable farming done with ground in good condition; some grass in pastures for stock.

ESTHERVILLE—*Leslie Littell.* March came in and went out like a lion. Sudden changes from spring days to wintry conditions. There were flowers in the woods and frost flowers on windows.

FAYETTE—*R. Z. Latimer.* Robins came on 10th; seeding was finished on 27th and some gardens were made. Month went out blustery.

FOREST CITY—*J. A. Peters.* Some wheat sown on 12th; oats seeding begun on 24th; ground frozen on 31st.

GRAND MEADOW—*F. L. Williams.* Plowing begun on 28th and soil worked fairly well; feed for stock scarce in this section.

GRINNELL—*A. O. Price.* A dry March. Sod plowing begun earliest in many years; oats and wheat sown and gardens being made.

GRUNDY CENTER—*Ed. S. King.* Some seeding and sod plowing done; ground dry and rain needed.

GUTHRIE CENTER—*W. F. Brann.* Seeding begun about the 26th; fall wheat looks well but not much sown.

HOPEVILLE—*M. T. Ashley.* Most of oats sowed; plowing for corn begun; some gardens made.

KEOSAUQUA—*J. H. Landes.* Last week of the month was fine farming weather; oats are all sown.

OLIN—*Nathan Potter.* Some plowing and seeding done in March; cold and disagreeable at close of month.

OVID—*H. C. Miller.* Oats about all sown during the last week; some early potatoes planted and gardens made.

PACIFIC JUNCTION—*H. H. McCartney.* On 16th a bright parhelia was observed shortly after sunrise; very brilliant sunrise on 30th.

RIDGEWAY—*Arthur Betts:* Warmest March on record here, 17 dates frostless; 229 hours of sunshine; anemones almost in bloom on 14th, but the only cold wave about that time checked their growth; many were in bloom on Easter; fifty peals of thunder were heard on the 10th; some plowing and seeding done.

STORM LAKE—*Prof. M. L. Fuller:* Lake cleared of ice in twenty-four hours on the 14th; froze again on 16th, remained till the 21st. A fine month for preparing ground for farming, but little over half the normal precipitation, which is 1.51 inches. Month has been drier but four times in eighteen years.

TIPTON—*Geo. W. Barclay:* On the 11th larks, robins and blackbirds were seen. On the 12th commenced plowing sod and seeding.

WASHTA—*H. L. Felter:* Some wheat sown as early as the 20th, and considerable seeding done; ground in good condition.

ERRATA IN FEBRUARY REVIEW.

COLUMBUS JUNCTION—Total precipitation recorded .91 inch on pages 8 and 11 should have been .92 inch.

MONTICELLO—Mean temperature recorded 14.6 degrees on page 7, should have been 15.6°.

PERRY—Amount of precipitation on the 28th, recorded .28 inch on page 11, should have been .20 inch.

CLIMATOLOGICAL DATA FOR MARCH, 1902.

NORTHERN SECTION

STATIONS.	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT. Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	PRECIP., IN INCHES Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)	Number rainy days	SKY Number clear days	Number partly cloudy days	Number cloudy days	Prevailing direction of wind	DATES OF THUNDER-STORMS.
Algona	Kossuth	1,213	9	37.1	†6.4	66	25	- 6	17	32	.13	-1.50	.08	0.8	3	7	19	5	SE	
Alta	Buena Vista	1,513	7	36.9	†7.3	70	25	- 4	17	30	.87	-1.02	.34	1.5	8	9	13	9	NW	14
Alta (near)	Buena Vista										.80		.29		7					
Britt	Hancock	1,236		36.6		67	25	- 7	17	37	.46		.6	0.8	7	7	18	6	SE	
Charles City	Floyd	1,012	10	37.0	†6.5	67	26	- 7	17	31	2.19	† .61	1.10	2.0	5	2	19	10	SES	
Clear Lake	Cerro Gordo	984		38.0		69	27, 28	- 8	17	38	.65		.25	2.0	5	13	12	6	SW	
Cresco (a)‡	Howard	1,280	29	35.6	†9.8	64	26	- 7	17	26									SE	
Decorah	Winneshiek	875	8	37.6	†5.6	66	27	- 5	17	32	1.17	- .31	.62	2.0	7					
Dows	Wright	1,142		36.8		66	25, 26	- 7	17	35	2.12		.77	1.0	8	19	2	10	SE	11
Elkader	Clayton	600	20	38.4	†7.5	66	27	- 4	17	37	2.17	† .39	.75	.5	7	4	9	8	SENW	10
Estherville	Emmet	1,298		35.2		72	25	-12	17	35	.73		.20	2.0	6	9	13	9	NW	
Fayette ‡	Fayette	1,000	11	36.7	†5.8	66	26	- 6	17	35	2.27	† .17	1.19	3.8	8	6	11	14	SE	10.15
Fonda	Pocahontas	1,232									1.09		.54	1.0	7	11	14	6	NW	
Forest City	Winnebago	1,220		35.5		65	26	- 8	17	31	.20		.10	T	2	10	8	13	W	
Grand Meadow	Clayton	1,180	10	36.2	†5.1	64	27	- 6	17	27	2.73	† .68	.90	4.5	9	4	10	17	NW	
Greene	Butler	943		37.2		68	25	- 6	17	34	1.94		.62	4.0	7	6	15	10	E	11
Hampton	Franklin	1,000	11	37.6	†8.6	68	26	- 5	17	34	2.88	† .87	1.24	3.0	9	5	20	6	SE	9.10
Humboldt	Humboldt	1,095	8	39.0	†3.9	68	25	- 4	17	32	.86	† .86	.39		9	24	1	6	SE	10
Larchwood‡	Lyon	1,465		34.9		60	25			34	1.81		.90		3	21	2	8	S	
Larrabee‡ (a)	Cherokee	1,366	10	35.8	†5.2	67	14, 25	- 3	17	36	.63	-1.25	.32	1.2	6	10	13	8	SW	10.15
Le Mars	Plymouth	1,224		37.2		68	25	- 5	17	33	.65		.50	T	2	11	13	7	S	
New Hampton	Chickasaw	1,166		36.4		66	26	- 8	17	30	1.91		.66	1.0	5	8	5	18	NW	
Northwood	Worth	1,222		37.0		62	13, 26	- 7	17	38	.55		.15	.5	7	7	16	8	SENW	11
Osage (a)	Mitchell	1,184	10	36.8	†8.3	66	26	- 7	17	30	1.19	- .26	.47	4.4	10	2	15	14	SE	10
Plover	Pocahontas	1,426		36.8		70	25	- 5	17	38	52		.15	1.8	6	14	6	11	SE	
Primghar (a)	O'Brien	1,800		37.4		68	25	- 5	17	33						19	0	12	NW	
Ridgeway	Winneshiek	1,215		38.1		67	26	- 6	17	33	1.85		.62	1.1	12	11	11	9	SES	10.11. 14 15
Rockford	Floyd										.85		.60	T	2	15	11	5	SE	
Ruthven	Palo Alto	1,435									.60		.25	2.0	5	13	9	9	SE	
Sibley (c)	Osceola	1,506	8	35.4	†5.0	66	24	- 5	17	46	.50	- .67	.15	2.5	6				SE	
Sioux Center	Sioux			35.4		65	25	- 6	17	43	1.19		.40	5.5	9	10	7	14	S	15
Storm Lake	Buena Vista	1,440	12	36.0		65	25	- 5	17	38	.86	.51	.33	.3	6	14	9	8	NW	15
Washta	Cherokee	1,157									.65		.50	T	3	17	8	6	SE	
Waverly (a)	Bremer	942		37.4		69	26	- 5	17	32	2.05		.69	1.7	12	8	9	14	S	11
West Bend	Palo Alto	1,197	8	37.2	†7.3	69	25	- 3	17	35	.41	1.29	.11	.5	8	7	12	12	NW	26
West Union	Fayette	1,115									2.28		1.00	1.0	4	11	0	20	NW	
Average				36.9	†6.7	66.8		-5.8		34.3	1.20	- .15		1.7	9	10	11	10	SE	

CENTRAL SECTION

Amana	Iowa	721	25	39.2	†8.1	70	26	-1	17	31	1.45	- .53	.71	T	8	6	13	12	S	10, 15, 26
Ames	Story	926	21	40.1	†7.7	70	25	-1	17	37	2.70	†1.31	1.61	.5	8	9	12	10	NW	11
Baxter ‡	Jasper	998		39.4		73	25, 26	0	17	38	.90		.25	.5	6	15	6	10	SE	
Belle Plaine ‡ (b)	Benton	828	11	38.0	†5.6	69	26	-2	17	32	3.45	†1.38	.75	.5	7	3	23	5	SE	
Buckingham	Iowa										1.60		1.02	T	4	5	20	6		
Carroll	Carroll	1,265	11	40.2	†9.0	75	25	-2	17	37	2.33	- .15	1.13	3.0	7	13	14	4		10, 26
Cedar Rapids	Linn	733	19	9.6	†6.8	68	26, 27	-2	17	31	1.75	† .33	.71	.2	6	6	3	22	SE	
Clinton	Clinton	609	10	39.7	†3.0	67	25, 26	1	17	31	2.19	- .36	1.08	T	6	5	8	18	NE, SW	10, 26
Davenport	Scott	529	31	40.2	†5.4	66	26	0	17	25	1.76	- .41	.99	0.1	8	3	12	16	W	
Delaware	Delaware	1,083	10	36.6	†5.7	65	27	-4	17	28	1.78	- .03	.91	.5	7	6	14	11	SW, NW	
Denison (a)	Crawford	1,180	8	38.8	†6.7	70	25	-5	17	37	1.60	- .14	.59		8					1, 15, 26
Des Moines	Polk	861	24	40.5	†5.5	71	25	02	17	32	1.15	- .17	40	0.6	10	5	20	6	NW	
De Soto	Dallas	866		41.4		68	25	3	17	39	1.97		1.17	.7	7	12	8	11	NW	
Dubuque	Dubuque	655	29	39.4	†6.4	65	27	-3	17	31	1.76	- .51	72	1.4	10	5	11	15	SE	11, 12, 15
Fort Dodge	Webster	1,126		38.0		68	25	-3	17	41	2.15		1.40	T	4	9	11	11	NW	
Galva (b)	Ida	1,290	8	37.8	†4.0	72	25	-4	17	36	.22	-1.05	.11	0.1	3					
Gilman	Marshall	1,053									.80		.28	T	4	10	8	13	SE, NW	
Grinnell	Poweshiek	1,023	11	38.6	†5.5	69	26	0	17	28	1.52	- .06	.51	.4	9	5	11	15	S	11
Grinnell (near)	Poweshiek			38.4		70	25	-2	17	32	1.18		.35		7	6	10	15	SE, NW	10, 11, 26
Grundy Center	Grundy	976	10	37.6	†5.5	68	26	-4	17	32	2.08	† .75	1.02	T	10	9	7	15	SE	10, 11, 26
Guthrie Center	Guthrie	1,077		39.3		72	25	0	17	40	1.86		1.63	1.5	5	10	12	9	SE	10
Harlan	Shelby	1,192		39.2		71	25	0	17	35	2.01		.91	T	8	4	18	9	SE	10, 11, 15
Independence	Buchanan	921	39	37.0	†6.6	70	26	-7	16	39	1.51	- .23	.50	0.7	6	6	16	9	SE	9, 10, 26
Iowa City	Johnson	644	11	39.4	†4.2	70	26	0	17	37	1.29	-1.10	.72	T	5	6	14	11	S	
Iowa Falls	Hardin	1,107	8	36.5	†4.8	67	26	-5	17	34	2.15	† .89	.98	1.0	9					10, 11, 15
Jefferson	Greene	1,052									1.21		1.15		7				SE	
Le Claire	Scott	576									2.52		.91	0.7	8					
Logan	Harrison	928	36	40.4	†6.4	72	25	2	17	38	.43	-1.44	.33	T	2	18	3	10	SE	24
Maquoketa	Jackson	688	8	39.1	†3.4	65	26	-1	17	32	2.23	- .21	.80		6	11	5	15	SE	
Marshalltown	Marshall	947	11	39.2	†7.3	72	26	-2	17	30	1.37	- .17	.72	T	9	12	8	11	SE	11, 15
Monticello	Jones	925	47	38.4	†6.5	67	27	-6	18	46	1.72	- .67	.75	T	4	9	7	15	SW	
Mt. Vernon	Linn	847		38.3		68	27	-4	17	32	1.73		.62	1.1	11	8	6	17	NW	10, 15
Newton	Jasper	592	14	38.3	†3.9	68	25, 26	-1	17	32	1.01	- .34	.43	T	5	9	14	8	NW	
Odebolt	Sac	1,356		39.0		70	25	-4	17	33	.99		.40	0.8	7	18	2	11		10, 26
Ogden	Boone	1,211		39.4		69	25	-1	17	38	1.87		.60		8	17	2	12	SE	10
Olin	Jones	760		38.4		65	26	-3	17	33	1.89		1.09	1.5	7	7	9	15	SE	10, 15, 26
Onawa	Monona	1,053		40.0		70	25	0	17	38	1.23		.35		12	12	6	13	NW	10, 26, 28
Perry	Dallas	975		39.8		71	25	1	17	34	3.47		1.80	0.1	8	11	5	15		10, 11,
Rockwell City	Calhoun	1,219		36.2		70	25	-2	17	35	1.60		.75	2.0	6	19	2	10		
Sac City (b)	Sac	900	22	38.5	†7.3	69	25	-2	17	32	1.18	- .43	.72	0.8	5					
Scranton	Greene	1,172		37.7		72	25	0	16, 17	31	1.41		.97	T	4	14	11	6		11
Sioux City	Woodbury	1,122	13	38.4	†7.4	70	13	-2	17	45	.50	- .66	.10	1.5	12	8	11	12	NW	15, 25
Tipton	Cedar	807		40.5		65	26, 27	0	17	30	3.25		1.50	T	5	6	4	21	E	10, 11, 26
Vinton *	Benton	800	11	38.0	†5.6	67	26, 27	-1	17		1.59	- .10	.97	T	3	13	0	18	SE	10, 24
Waterloo	Black Hawk	862	22	37.5	†4.6	68	26	-4	17	40	2.29	† .91	1.10	.5	7	8	12	11	NW	
Wilton Junction	Muscatine	683		40.0		67	25, 27	0	17	32	2.67		1.00	T	6	7	14	10	NW	
Whitten	Hardin	1,036		37.2		68	26	-5	17	31	1.71		1.10	T	4	8	8	15	SE	11
West Branch	Cedar			39.2		67	26, 27	0	17	31	1.93		.44	T	6	2	19	10	SE	12
Average				39.3	†5.9	69.0		-1.6		34.3	1.73	- .13		0.9	7	9	10	12	SE	

CLIMATOLOGICAL DATA FOR MARCH, 1902--CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC. IN INCHES.				Number rainy days.	SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	....	39.8	.....	72	25	1	17	36	.71	.....	.46	T	2	3	18	10	SE	
Albia	Monroe	945	....	41.0	.....	73	25	2	17	34	.91	.....	.30	T	4	5	5	21	SE	15
Atlantic	Cass	1,164	10	40.2	†6.8	72	25	2	17	41	2 08	† 23	1.07	1.5	7	3	10	18	NW	10, 17, 15
Belknap(*a*)	Davis	877	....	41.0	.....	71	26, 27	3	17	31	1.59	.....	.40	1.0	9	....	..	..	SE	
Bonaparte	Van Buren	.....	10	40.6	†2.2	72	25	4	17	33	1.84	-1.04	1.30	T	5	....	...	....	....	
Burlington	Des Moines	544	....	42.1	.....	73	25	5	17	31	2 52	.....	1 27	T	7	8	12	11	SE	10, 30
Bussey	Marion	.....	..	.....	.....	.....	.....	...	....	.....	.66	.....	.36	T	2	....	..	....	.....	
Centerville	Appanoose	1,013		41.2	.....	72	25	3	17	34	1.20	.....	.25	T	7	....	....	....	.....	
Chariton	Lucas	1,042	....	40.4	.....	72	25	3	17	31	1.10	.....	.37	1.5	9	6	13	12	E	10, 26
Clarinda	Page	1,069	11	41.8	†6.9	74	25	4	17	41	.92	-.79	.35	2.0	5	12	12	7	NW	15, 25
College Springs	Page	.....	10	.....	.....	73	25	....	.....		1.95	† .15	.55	....	4	15	4	12	SE	
Columbus Junct‡	Louisa	595	...	40 0	.....	69	25	2	16, 17	33	2.06	.....	97	T	9	10	9	12	SE	10, 15, 26
Corning	Adams	1,127	9	38.6	†1.9	70	25	3	17	37	1.08	- 64	40	1.0	5	10	10	11	SE	10
Council Bluffs	Pot'wat'mie	990	..	42 2	.....	78	25	4	17	40	.56	.....	.30	T	4	12	10	9	NW	
Cumberland	Cass	.....	....	.....	.....	....	....	.....	.....	.....	4.33	.....	3.00	4.0	5	12	6	13	S	
Danville	Des Moines	715	....	.....	..	.....	.....	.....	.....	.....	2.47	.....	1.17		8	7	24	0	....	
Earlham	Madison	.....	....	39.6	...	72	25	1	17	42	1.33	.....	.45	1.0	7	12	6	13	S	10, 11
Eldon	Wapello	630	...	40.8	.....	73	26	4	17	36	1.24	.....	.61	T	8	11	5	15	E, NW	10
Emerson	Mills	1,053	....	.....	...	.....	.....	.....	.....	....	52	.....	.12	..	2	....	....	..	.....	
Fairfield (*b*)‡	Jefferson	...	....	39.8	.....	73	25, 26	3	17	32	1.33	.....	.80	T	7		....	.	.....	
Fort Madison	Lee	516	53	.....	.....		.....	.....	.....		2.67	-.10	1.75	....	8	4	7	20	S	12
Glenwood	Mills	957	31	42.4	†9.1	74	25	3	17	42	1.92	† 55	.80	T	4	0	26	5	NW	
Greenfield	Adair	.....	10	39.4	†5.4	69	25	0	17	35	1.54	-.86	.41	1 0	8	12	10	9	NW	10
Hopeville	Clarke	.....	....			.....	.....	...	.....		.98	.. ..	.35	..	7	....	....		....	
Indianola	Warren	969	10	40 4	†3.8	71	25	2	17	35	1.12	†.19	.68	.3	7	6	8	17	SE	10, 15, 26
Keokuk	Lee	619	30	42.2	†4.5	71	25	6	17	28	2.24	† 23	1.52	1.0	10	6	11	14	SE	10
Keosauqua (*a*)	Van Buren	644	9	41.7	†2.7	78	26	5	17	37	1.85	-.64	1.20	T	6	....	..		.....	
Lacona	Warren	.....	....	.....	.....	.....	.....	.....	.....	.....	1.75	..	.75	1.2	7	5	20	6	.....	
Lenox (*a*)	Taylor	1,250	....	39.8	.....	70	25	1	17	32	.83	.. ....	.28	.5	5	17	7	7	S	
Mt Ayr	Ringgold	1,236	8	40.2	†3 8	72	25	2	17	35	.69	-1.41	.21	T	7	7	10	14	SE	10
Mt Pleasant	Henry	729	....	39.2	.....	70	26	2	17	33	1.93	.....	1.04	.8	9	11	12	8	NW	
Omaha, Neb.	Douglas	1,113	32	41.8	†6.3	71	25	2	17	34	.70	-.74	.22	0.6	8	6	16	9	SE	10, 11, 15, 25, 26
Oskaloosa	Mahaska	843	18	38.6	†4.3	71	25, 26	2	17	35	.97	-1 01	.31	.8	7	10	2	19	SE, NW	
Ottumwa	Wapello	630	7	41.6	†2 7	72	25, 26	5	17	37	1.22	-.88	.28	1.0	6	9	9	13	SE	
Ovid	Wayne	992	8	40.7	†3.3	72	25	3	17	33	1.12	-1.07	.55	T	4	8	1	22	S	10
Pacific Junction	Mills	960	....	41.8	.....	73	25	4	17	37	2.13	.....	.96	.2	4	6	21	4	SE	10, 15, 26
Red Oak	Montgom'ry	1,033	....	41.8	.....	67	25	6	17	32	1.76	.....	.89	1.5	6	2	21	8	SE	10, 26
St. Charles	Madison	1,070	....	40.8	.....	73	25	2	17	33	1 08	...	.35	1.5	11	11	9	11	NW	
Sigourney	Keokuk	768	....	41.5	.....	73	25, 26	1	17	36	.96	.... .	.15	1.3	7	8	20	3	SE, NW	10, 15
Stockport	Van Buren	.....	....	.....	....	.....	.....	.....	.....	.....	1.61	.....	.69	T	9	7	2	22	S	10
Thurman	Fremont	..	....	44.5	.....	78	10, 26	4	17	46	1.15	.....	.40	....	5	12	9	10	SW	
Villisca	Montgom'ry	1,058	8	41.8	†4.6	77	25, 29	2	17	38	.92	-1.22	.45	....	4	6	18	7	NW	10, 14, 25
Wapello	Louisa	578	....	41.0	.....	68	25	6	17	26	2 39	. .	1.05	..	8	8	9	14	SE	10, 26
Washington	Washington	769	11	.....	....	....	... .	..	.....	.....	1.57	- 68	.70		5	....	....	....	SE	
Winterset	Madison	1,129	10	41.3	†7.1	79	25	2	17	36	1.05	-.78	.50	T	5	15	2	14	SE	10
Woodburn	Clarke	961	...	.....	.....	.....	.....	.....	.....	.....	.92	...	.40	....	4	12	5	14	NW	
Average		.....	.....	41.0	†4.7	72.4	.....	3 0	.....	35 2	1.42	-.55	...	1.2	6	8	11	12	SE	
Av. for the state		.....	....	....	39.1	†5.8	69.4	.....	-1.5	... .	34.6	1.45	-.28	....	1.3	7	9	11	11	SE	

§Means determined from 7 A. M., 2 P M, and 9 P. M. observations, and maximum and minimum are taken from eve readings. †Means determine d from 7 A. M. and 7 P. M. observations. ‡Received too late to be computed with means. *a*, One day missing; *b* , two days, etc.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MARCH, 1902.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mean.
Afton	Max	33	29	35	39	43	47	47	54	58	61	59	52	64	62	55	37	21	41	50	41	49	55	61	64	72	65	68	61	53	43	43	50.4
	Min	17	12	22	21	20	31	34	31	35	35	44	41	29	38	28	13	1	8	27	35	33	31	31	42	41	52	52	38	34	25	28	29.3
Albia	Max	35	31	32	40	47	47	44	48	54	58	60	53	65	62	53	38	20	40	39	49	50	57	58	65	73	71	71	63	50	43	37	50.1
	Min	19	18	23	25	23	33	37	34	32	46	48	42	31	41	36	14	2	9	26	35	35	31	33	43	45	55	40	44	33	30	30	32.0
Algona	Max	35	27	28	35	42	47	50	50	57	56	58	55	62	59	49	21	18	37	48	41	50	55	57	57	66	62	61	55	52	42	38	47.5
	Min	15	7	15	16	17	32	30	31	36	41	35	35	30	39	21	0	-6	6	21	31	33	35	33	40	37	46	36	30	30	28	28	26.7
Alta	Max	23	28	39	34	42	45	52	55	58	55	59	52	63	60	52	26	16	42	48	39	39	55	57	54	70	52	64	58	46	38	34	46.9
	Min	13	4	19	14	17	31	32	29	39	42	34	35	31	44	26	2	-4	6	28	30	32	31	30	39	40	42	33	34	27	25	27	26 9
Amana	Max	37	27	32	36	45	48	46	41	51	50	55	50	58	57	53	35	16	36	38	47	49	56	59	62	65	70	65	57	52	44	38	47.5
	Min	22	17	20	24	24	32	37	34	28	42	48	44	27	39	35	11	-1	6	26	35	36	36	28	41	41	48	35	44	34	31	37	30.8
Ames	Max	36	32	39	39	47	49	49	54	56	56	55	52	66	60	55	38	18	38	47	39	51	55	58	63	70	66	69	59	52	41	36	50.1
	Min	18	13	32	21	21	34	35	32	32	44	43	39	29	38	32	6	-1	10	37	33	34	35	30	41	48	51	38	41	34	28	30	30.1
Atlantic	Max	32	32	34	39	45	47	50	59	61	60	57	57	67	64	47	30	22	42	53	41	53	56	61	59	72	62	67	63	50	40	38	50.4
	Min	18	12	22	26	16	34	35	34	40	49	40	38	26	43	20	7	2	9	20	36	33	30	30	41	41	51	38	39	32	27	27	27.9
Baxter	Max	40	30	32	41	45	52	48	45	54	55	57	53	65	59	57	38	20	38	47	38	50	56	60	66	73	73	68	62	52	47	36	50.2
	Min	18	15	20	21	20	22	35	32	30	44	44	40	27	38	29	8	0	5	26	34	33	32	30	40	38	40	38	40	38	39	33	26	28	28.5
Belknap	Max	35	30	35	37	43	45	46	43	54	60	59	51	59	59	54	36	20	32	38	50	50	54	58	60	71	71	66	60	54	45	..	49.2
	Min	19	16	20	21	22	27	36	33	30	41	47	40	30	36	33	17	3	3	24	32	32	32	30	40	41	41	35	42	32	28	..	33.8
Belle Pl'ne	Max	38	26	31	38	43	48	45	44	48	50	53	48	58	54	55	.	..	34	40	42	48	52	58	62	65	69	65	62	..	40	38	48.4
	Min	22	16	18	20	22	26	32	35	35	..	47	36	26	35	..	11	-2	4	20	28	33	34	35	38	39	40	36	37	33	27	30	27.7
Bonaparte	Max	33	30	33	37	46	48	43	42	54	60	61	50	61	60	54	36	22	36	39	52	48	54	60	66	72	71	69	64	50	45	39	49.5
	Min	21	17	21	23	23	29	36	34	29	42	50	40	29	39	36	22	4	7	26	34	37	34	33	41	45	53	36	46	33	30	32	31.7
Britt	Max	32	24	32	41	43	48	50	46	57	51	57	49	60	59	48	22	13	36	49	41	52	53	57	61	67	65	64	54	49	40	37	47.0
	Min	15	15	17	15	25	28	33	30	33	38	38	33	23	39	20	2	-7	1	25	31	34	33	29	40	37	45	30	31	29	24	27	26.2
Burlington	Max	37	34	33	35	50	51	44	45	53	63	63	54	62	62	53	40	22	34	40	54	47	58	62	68	73	67	70	61	55	42	38	50.6
	Min	23	18	25	24	25	31	37	35	34	45	54	40	31	40	40	22	5	9	21	35	39	37	34	44	54	50	40	51	36	32	32	33.6
Carroll	Max	32	37	35	39	49	50	53	62	61	56	60	56	66	61	55	26	21	41	51	44	54	57	60	58	75	62	66	63	50	46	35	51.0
	Min	15	10	20	19	17	34	35	30	39	45	38	35	29	42	20	4	-2	7	28	34	31	30	33	37	49	55	26	37	31	25	27	29.4
Cedar Rap	Max	41	26	30	35	45	48	49	42	51	51	57	50	60	59	53	37	15	34	38	44	48	54	59	62	63	68	68	59	51	45	38	47.7
	Min	22	18	19	24	25	33	39	34	34	44	49	43	29	40	36	10	-2	9	25	34	34	35	30	42	42	45	40	45	35	31	32	31.5
Centerville	Max	44	36	36	40	45	46	44	46	55	61	61	53	62	62	51	39	25	38	39	51	52	55	60	65	72	70	68	61	55	44	37	50.7
	Min	20	20	23	22	23	32	35	33	..	45	48	44	32	39	31	23	3	8	27	35	35	32	30	43	43	54	34	42	32	29	30	31.6
Chariton	Max	34	32	33	40	47	47	45	53	56	60	60	52	63	62	54	37	20	38	40	46	51	57	60	64	72	67	67	62	52	44	37	50.1
	Min	18	16	22	24	21	31	38	33	35	45	46	42	28	40	32	14	3	7	28	35	34	30	30	42	42	50	35	41	33	27	30	30.7
Charles Cy	Max	34	23	30	35	42	46	48	46	50	49	54	58	57	57	54	35	11	33	42	43	44	51	51	58	63	67	66	59	50	40	40	46.0
	Min	18	12	16	20	22	29	32	30	35	37	41	35	26	36	28	5	-7	5	24	33	35	36	32	39	37	44	37	39	37	27	29	28.0
Clarinda	Max	27	33	42	42	50	50	50	61	67	68	60	57	70	65	46	33	19	44	58	47	53	60	64	56	74	66	71	71	49	43	45	52.9
	Min	20	12	23	27	21	34	33	31	39	48	42	37	29	42	24	15	4	5	31	36	36	36	32	45	45	46	31	38	34	26	31	30.8
Clear Lake	Max	32	39	30	48	43	48	51	44	54	54	62	54	61	60	50	25	30	34	45	36	47	65	53	59	62	68	69	69	62	48	44	49.9
	Min	15	10	15	16	15	32	33	31	30	37	39	34	28	37	23	4	-8	4	22	30	31	34	30	38	35	40	35	36	30	26	25	26.0
Clinton	Max	37	30	33	35	46	49	48	48	53	57	63	51	56	60	54	35	16	35	44	48	51	53	64	65	67	67	66	64	55	47	44	49.7
	Min	23	19	21	23	22	27	35	31	33	39	48	38	25	35	31	14	1	6	23	33	36	31	31	40	41	40	35	43	35	31	31	29.7
College Sp	Max	31	35	41	38	45	48	56	58	66	70	62	56	67	64	54	36	22	48	58	47	48	58	65	56	73	58	68	63	48	47	40	52.6
	Min	9	10	20	24	19	24	34	30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	44	40	31	39	34	24	26	....
Colum. Jc.	Max	33	34	30	38	36	48	45	48	54	56	60	50	61	60	50	29	19	38	37	50	48	55	63	66	69	68	70	68	52	52	39	49.2
	Min	22	20	20	23	22	30	34	32	32	43	48	40	31	40	45	2	2	8	28	33	36	32	30	40	42	49	44	40	34	29	26	30.9
Corning	Max	27	29	35	37	43	45	46	54	53	61	59	53	63	61	54	33	21	40	51	40	50	54	60	57	70	53	66	49	46	42	42	48.2
	Min	16	10	20	25	22	33	34	31	38	46	43	36	31	33	24	13	3	8	28	34	30	30	29	39	41	45	29	38	34	24	28	28.9
Co. Bluffs	Max	25	33	38	39	48	51	53	60	63	61	66	55	70	67	58	29	22	49	58	48	54	54	65	53	78	64	66	64	49	43	45	52 5
	Min	19	11	27	29	19	33	36	35	43	53	41	39	30	40	21	14	4	9	30	37	39	39	37	45	49	48	34	39	33	28	29	31.9
Cresco	Max	24	20	28	34	45	45	..	38	49	48	53	48	55	56	52	28	13	31	43	38	42	50	51	58	56	64	63	54	48	38	38	43.7
	Min	18	15	16	20	30	33	..	32	32	38	43	34	27	36	26	2	-7	4	23	28	33	34	33	36	36	40	38	36	32	28	28	27.4
Davenport	Max	36	27	29	35	45	48	46	44	52	60	61	50	57	57	55	38	14	32	39	46	45	54	59	62	65	66	66	62	52	45	41	48.0
	Min	23	19	22	25	26	33	37	35	33	45	50	38	32	42	36	14	0	10	25	35	35	36	40	41	41	46	43	47	38	31	31	32.5
Decorah	Max	31	20	35	37	43	49	49	40	52	48	52	48	57	56	50	32	12	33	43	37	48	57	62	59	64	60	66	58	50	39	40	46.0
	Min	20	15	17	24	23	30	34	32	33	42	39	33	25	35	30	4	-5	7	25	33	32	34	37	39	43	38	40	49	34	29	31	29.1
Delaware	Max	36	25	28	35	43	46	48	42	48	47	51	46	54	56	50	30	16	30	38	39	45	51	57	58	60	65	62	54	50	42	38	44 9
	Min	20	16	15	21	21	29	34	33	33	38	45	37	26	36	30	9	-4	5	20	30	31	33	35	36	39	42	36	40	32	28	35	28.3
Denison	Max	31	30	31	37	45	49	55	57	60	56	68	54	66	68	56	32	18	41	52	40	50	..	59	66	70	62	66	58	47	48	35	50.0
	Min	15	5	22	22	19	31	35	30	38	47	37	35	24	31	24	9	-5	5	31	35	..	31	32	40	35	49	33	35	31	27	26	27 6
Des Moines	Max	31	32	32	41	46	51	48	54	57	59	59	53	64	61	52	26	19	39	46	41	52	55	59	62	71	66	66	60	49	41	36	49.3
	Min	20	14	23	25	21	34	38	33	38	48	44	37	32	42	26	9	2	10	29	36	36	35	34	44	44	48	39	41	36	29	32	31.7
De Soto	Max	35	31	32	39	45	50	53	54	57	59	58	52	61	60	55	36	19	40	50	42	52	54	60	61	68	65	64	60	52	43	37	49 8
	Min	20	14	25	25	24	35	39	35	40	50	45	42	32	46	32	12	3	11	30	37	36	36	34	45	46	54	48	43	36	30	32	33.1
Dows	Max	35	26	28	37	44	48	48	49	54	51	55	50	61	57	51	28	15	34	44	37	47	51	54	59	66	66	64	56	49	40	37	46.5
	Min	16	9	18	19	18	31	31	34	33	40	40	34	26	36	24	2	-7	4	25	32	33	32	30	30	38	45	38	37	32	26	27	27.2
Dubuque	Max	36	26	31	35	45	49	49	45	50	57	58	50	56	57	48	38	14	31	39	43	46	51	59	62	63	63	65	59	52	44	40	47.1
	Min	23	18	21	24	24	35	37	32	34	42	46	44	30	40	32	7	-3	10	26	35	37	36	34	41	41	44	42	44	37	33	33	31.0
Earlham	Max	31	34	34	40	46	47	47	57	57	60	60	53	67	6.	56	37	20	39	48	42	50	57	60	61	72	65	68	60	53	43	36	50 4
	Min	12	12	22	24	10	30	35	28	36	45	42	40	25	41	26	9	1	6	28	35	33	29	27	41	40	52	29	38	33	26	28	29.8
Eldon	Max	34	29	34	37	47	47	43	41	55	59	61	51	61	61	53	40	23	37	38	51	50	57	60	67	71	73	69	60	54	44	37	50.1
	Min	2.	19	21	24	24	30	36	33	30	41	49	43	27	39	38	17	4	8	26	35	37	34	28	41	44	54	31	44	34	32	31	31.5
Elkader	Max	29	30	36	39	46	50	53	42	53	47	56	48	61	60	51	32	17	36	42	38	46	50	60	62	61	62	66	60	54	43	41	47.7
	Min	21	21	17	17	21	29	38	30	37	38	44	35	24	40	32	9	-4	7	24	33	34	33	33	37	40	43	39	38	32	29	31	29 0
Estherville	Max	30	2[illegible]	27	34	40	45	48	53	56	57	50	58	52	53	50	25	15	35	56	49	52	56	57	60	72	63	72	65	48	46	35	47 0
	Min	10	3	10	12	10	10	28	28	34	34	30	33	30	30	25	-1	12	0	26	25	32	25	25	35	35	45	43	25	26	25	23	23.6
Fairfield	Max	34	28	34	38	46	48	43	41	52	60	60	50	61	60	53	32	22	37	38	51	49	55	61	67	72	73	..	69	..	44	39	48.8
	Min	21	18	21	21	23	30	35	33	31	43	47	39	29	38	32	17	2	12	26	34	37	33	33	41	46	51	..	37	..	28	32	30.7
Fayette	Max	33	25	32	36	43	48	49	40	53	47	51	49	58	60	54	30	15	33	40	37	49	54	56	58	60	66	65	57	49	41	40	46.1
	Min	20	15	16	20	22	30	32	30	30	34	42	36	23	34	30	5	-6	4	22	32	32	32	36	37	38	42	37	38	31	26	28	27 3
Forest City	Max	32	23	28	36	41	46	48	45	53	49	57	51	61	59	49	22	14	34	43	37	48	49	56	57	63	65	62	56	40	41	35	45 2
	Min	14	9	16	15	17	29	35	35	33	39	39	35	26	38	10	1	-8	2	23	31	32	34	32	43	36	40	31	29	29	28	26	25.8
Ft. Dodge	Max	34	24	31	39	45	48	52	55	59	60	59	53	64	60	55	48	20	37	48	40	53	52	55	60	68	67	65	60	55	45	30	49.7
	Min	15	9	18	19	20	15	35	30	34	39	36	31	23	40	21	3	-3	4	30	31	32	30	24	25	36	50	35	35	30	30	25	26 2
Galva	Max	31	29	31	35	..	50	55	56	60	60	59	..	65	62	53	18	18	41	52	50	50	54	60	50	72	61	65	59	47	39	38	49.0
	Min	14	6	20	19	..	32	32	30	37	40	32	..	26	42	15	2	-4	6	29	30	32	30	36	37	37	47	32	29	27	25	28	26.6
Glenwood	Max	31	32	40	39	48	52	53	62	57	63	57	56	69	66	62	43	23	45	56	53	57	55	63	58	74	68	67	63	49	48	44	53.5
	Min	19	10	25	27	19	35	36	28	40	51	41	40	34	43	20	11	3	13	30	37	33	36	35	43	45	48	35	37	32	27	30	31.2
G. Meadow	Max	32	28	31	39	41	46	48	40	49	47	50	47	54	54	49	28	14	33	40	36	43	50	55	59	58	63	64	54	49	40	39	44 5
	Min	19	15	15	20	21	30	39	31	32	38	38	36	28	37	28	5	-6	6	22	32	35	33	38	37	36	40	38	38	32	27	28	28.0
Greene	Max	35	25	31	35	41	48	49	42	52	46	54	50	61	57	51	30	17	36	39	36	45	53	53	53	59	64	68	65	56	51	45	46.3
	Min	20	16	17	2.	22	33	34	33	31	38	41	35	27	36	29	5	-6	5	22	32	32	33	32	39	37	44	36	37	33	27	28	28 6
Greenfield	Max	34	30	37	37	44	47	49	55	59	62	58	58	62	62	54	34	18	40	50	39	48	53	59	60	69	62	66	60	48	47	38	49.6
	Min	15	11	19	25	17	30	35	30	37	46	43	42	39	39	27	9	0	5	28	35	32	29	30	36	40	52	35	38	33	25	27	29 3
Grinnell	Max	36	27	30	37	43	46	45	41	50	52	55	49	59	57	52	34	17	34	38	40	48	52	56	62	68	60	65	59	50	42	38	46 8
	Min	20	17	20	21	23	22	36	34	31	44	46	40	31	39	33	10	0	6	25	34	32	34	34	40	40	50	41	41	34	28	30	30 3
Grin'l (nr.)	Max	37	27	31	37	42	46	46	40	50	50	55	49	60	59	53	31	16	37	40	40	48	52	58	63	70	68	67	65	55	42	37	47.5
	Min	19	16	20	21	21	30	35	34	30	42	45	40	28	37	31	7	-2	5	25	35	34	33	31	39	40	50	37	40	33	26	30	29.4
Grundy C'r	Max	36	26	31	38	44	48	47	43	49	51	51	51	60	56	52	31	8	34	41	35	48	53	55	61	66	68	66	59	49	42	39	46.7
	Min	21	16	19	19	20	32	34	31	30	42	42	37	28	38	30	6	-4	5	24	33	33	32	32	38	38	43	35	39	32	26	28	28.4
Guthrie Cr	Max	35	32	32	40	44	49	49	56	59	60	58	53	65	61	55	40	20	39	49	44	51	56	60	61	72	67	68	61	53	41	33	50 4
	Min	18	10	12	21	19	35	36	30	40	47	36	38	27	42	24	0	0	9	25	35	32	31	28	41	43	41	28	36	30	24	21	28 2
Hampton	Max	34	25	30	39	45	49	51	43	54	47	55	51	63	58	48	30	15	35	45	37	48	57	56	61	66	68	67	62	50	40	40	47.4
	Min	17	13	19	20	20	32	33	32	31	35	40	37	29	36	30	4	-5	5	24	32	32	33	30	39	35	45	36	37	33	27	28	27.7
Harlan	Max	29	28	34	36	44	48	51	57	61	57	57	53	65	62	54	22	19	42	54	42	52	55	61	58	71	61	63	59	47	41	37	49.0
	Min	16	9	22	25	18	30	34	30	38	46	41	38	37	43	19	8	0	8	29	35	33	34	30	42	43	40	30	38	32	27	27	29.4
Humboldt	Max	49	33	42	40	46	53	57	55	70	65	66	..	63	61	54	26	18	38	48	40	52	54	56	58	68	64	66	60	54	41	38	51 2
	Min	15	9	18	18	16	29	33	30	32	40	38	31	25	38	26	4	-4	6	25	32	32	31	30	38	38	48	34	34	30	25	28	26 7
In'pen'nce	Max	36	23	28	36	42	47	48	39	48	48	52	48	57	57	52	32	13	32	37	37	45	53	56	60	62	70	61	58	48	43	..	45 7
	Min	14	6	18	23	24	30	34	30	29	37	44	38	26	36	40	7	-5	5	22	34	33	32	35	37	39	44	38	33	32	28	29	28 4
Indianola	Max	34	32	34	41	45	41	47	54	56	58	60	52	64	63	55	36	20	40	46	40	52	56	59	64	71	66	69	62	48	42	36	50 0
	Min	18	14	23	22	21	32	36	32	30	46	45	41	29	40	29	10	2	7	17	36	34	31	31	41	45	54	40	39	34	27	30	30.8
Iowa City	Max	37	27	36	37	45	49	46	42	53	51	58	51	62	61	56	36	17	37	27	50	49	58	64	68	69	70	69	64	53	45	39	49.0
	Min	22	17	17	27	25	30	33	30	33	41	48	42	25	36	36	11	0	6	21	27	36	33	28

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MARCH, 1902—CONTINUED.

STATIONS.		DATE.																													March.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Keokuk	Max	30	28	32	35	46	51	44	43	56	68	63	48	62	60	59	28	18	36	40	54	48	52	60	66	71	70	68	64	48	43	39	49.4
	Min	24	20	22	25	26	32	38	36	34	44	56	41	34	41	43	25	6	12	27	36	41	37	37	44	48	55	42	51	37	34	33	34.9
Keosauqua	Max	40	34	35	38	47	49	44	42	58	60	62	53	63	65	58	40	24	35	39	55	50	56	62	71	..	78	70	64	55	46	40	51.1
	Min	34	20	20	25	24	24	37	35	42	32	51	42	27	42	40	22	5	7	27	35	38	35	27	45	..	55	33	46	35	31	33	32.3
Larchwood	Max	33	38	39	37	40	45	48	50	56	58	60	64	53	51	54	20	15	20	31	42	48	55	58	56	60	58	56	58	53	56	58	47.4
	Min	10	13	15	13	15	20	28	30	..	..	..	30	35	40	7	-1	..	4	10	..	26	35	36	..	..	42	..	20	28	30	28	22.4
Le Mars	Max	28	29	30	34	46	47	50	54	60	59	59	53	67	62	52	15	15	43	50	45	53	56	60	55	68	61	56	56	45	39	37	47.6
	Min	15	5	22	18	18	31	30	28	38	38	34	33	29	44	13	1	-5	10	29	30	34	32	33	35	45	45	40	29	25	25	27	26.8
Lenox	Max	32	29	35	38	44	46	..	55	59	62	60	57	64	62	54	38	22	41	49	40	47	54	59	57	70	62	66	60	53	42	41	49.9
	Min	16	10	23	24	19	32	..	30	36	45	43	41	30	40	26	12	1	9	28	34	33	34	33	42	43	51	32	39	34	24	28	29.7
Logan	Max	27	30	37	37	46	52	55	54	61	62	58	56	67	67	57	27	21	45	55	45	57	56	62	54	72	64	67	62	50	43	38	51.1
	Min	15	9	18	21	17	33	32	34	39	44	40	38	29	29	20	10	2	10	31	37	43	36	32	45	44	48	34	37	32	36	25	29.8
Maquoketa	Max	35	29	30	37	47	48	49	46	51	52	59	51	57	58	53	37	15	32	38	44	48	56	61	63	64	65	64	64	57	46	43	48.4
	Min	23	17	18	23	24	27	35	31	32	33	48	41	25	35	35	10	-1	6	23	33	35	31	37	40	42	43	35	42	35	32	32	29.8
Marsh'lt'n	Max	39	28	31	40	45	49	42	45	50	49	51	50	56	54	54	34	17	37	44	45	54	50	51	63	70	72	69	61	54	46	57	48.6
	Min	20	16	20	21	22	33	35	33	30	43	43	40	29	40	31	7	-2	7	25	34	34	33	29	40	40	49	41	41	34	28	31	23.9
Monticello	Max	40	30	29	36	45	50	51	50	51	50	56	49	58	58	53	35	18	40	49	48	49	55	60	63	64	65	67	60	50	45	38	48.8
	Min	23	17	18	22	22	30	34	32	33	35	35	42	25	35	35	10	-3	-6	22	30	29	34	39	38	39	42	34	26	33	30	29	27.9
Mt. Ayr	Max	30	30	38	40	44	46	45	56	61	65	58	53	64	63	54	35	24	40	48	43	48	56	60	60	72	64	69	61	52	42	40	50.4
	Min	16	12	22	25	21	29	35	30	34	44	44	42	29	38	23	15	2	8	26	34	38	34	34	38	43	51	35	39	34	23	28	29.9
Mt.Ple's'nt	Max	35	30	36	35	44	49	45	45	55	55	62	53	58	60	55	38	23	34	40	50	52	53	60	67	70	69	66	63	52	45	40	49.6
	Min	20	15	21	20	21	24	34	31	30	39	48	34	25	35	35	11	2	4	21	31	34	31	29	37	43	48	34	43	32	28	29	28.7
Mt.Vernon	Max	36	26	31	41	48	47	46	41	48	47	46	48	60	58	46	32	16	34	36	45	49	61	64	65	66	67	68	63	58	49	36	47.7
	Min	17	10	16	21	23	31	35	33	32	40	46	40	28	35	32	9	-4	3	22	32	32	33	35	39	40	43	37	37	38	29	29	28.9
NewH'pton	Max	35	22	32	36	41	46	47	45	51	45	53	53	57	56	53	30	13	32	40	36	43	54	53	58	59	66	63	57	48	44	36	45.4
	Min	17	15	16	21	21	31	31	30	35	35	41	37	27	27	28	3	-8	4	22	32	32	35	34	45	35	41	45	37	33	26	26	27.5
Newton	Max	38	30	32	40	43	48	47	44	51	52	55	50	55	55	55	35	18	36	41	41	50	54	57	61	68	68	67	61	55	44	36	48.0
	Min	18	15	20	21	21	29	34	32	30	30	45	40	27	37	30	7	-1	4	25	34	33	32	31	39	39	51	37	40	32	27	27	28.6
Northwood	Max	32	26	31	39	47	50	47	46	52	49	65	56	66	56	47	25	19	33	44	38	50	65	52	57	62	66	63	57	50	41	36	47.3
	Min	16	14	15	19	20	32	33	32	30	30	35	34	28	35	24	3	-7	4	22	31	33	35	32	38	35	42	36	35	30	27	26	26.6
Odebolt	Max	32	30	32	35	44	46	53	57	59	58	59	54	64	61	54	54	20	40	51	44	55	56	59	55	70	63	65	59	47	39	36	49.9
	Min	15	9	20	21	18	32	34	30	40	42	35	35	32	43	18	4	-4	7	29	35	33	32	30	39	43	50	37	31	30	25	28	28.1
Ogden	Max	36	34	31	40	45	50	49	55	56	56	55	52	66	60	58	35	20	38	50	40	50	57	60	60	67	65	67	59	31	24	28	50.3
	Min	16	10	20	20	17	31	35	32	33	43	40	37	28	37	24	4	-1	7	27	31	32	31	32	41	40	51	33	39	31	24	28	28.4
Olin	Max	36	29	31	34	42	48	48	44	51	52	60	50	53	57	53	38	15	51	41	43	50	44	58	62	62	65	62	59	52	45	40	46.9
	Min	33	13	18	22	24	28	35	34	33	39	46	44	26	36	38	5	-3	6	30	33	35	34	31	40	41	44	35	44	33	31	31	30.0
Omaha, N.	Max	24	32	37	37	48	51	54	60	64	65	58	55	69	64	55	27	21	46	56	47	53	57	63	53	71	59	66	60	49	40	42	51.1
	Min	19	10	27	28	22	38	34	29	46	49	40	41	37	48	21	11	2	15	34	37	34	39	39	45	47	49	40	36	33	28	31	32.5
Onawa	Max	25	35	37	39	49	50	58	59	61	59	63	57	68	65	59	23	24	44	53	49	50	59	63	56	70	64	66	63	50	43	37	51.5
	Min	17	7	23	25	19	33	32	29	39	41	33	33	30	45	17	7	0	10	29	36	33	34	31	43	45	47	30	32	28	26	27	28.4
Osage	Max	..	32	31	35	41	47	47	42	50	52	55	50	57	57	50	26	14	32	43	37	44	53	51	57	61	66	63	57	49	44	37	46.0
	Min	..	15	14	20	21	33	34	32	31	37	38	36	27	37	26	5	-7	3	23	32	33	35	32	36	37	42	35	36	32	27	27	27.6
Oskaloosa	Max	37	30	33	38	45	49	45	45	53	52	60	54	63	64	50	36	20	39	28	47	50	55	60	65	71	71	68	60	51	41	37	48.9
	Min	20	17	22	22	23	30	35	33	30	43	48	43	28	38	36	12	2	6	25	34	35	30	29	40	43	52	33	43	32	29	29	30.3
Ottumwa	Max	37	31	34	33	45	48	44	43	54	58	60	60	58	62	54	38	26	47	39	50	51	55	58	65	72	72	64	46	35	32	33	32.6
	Min	23	19	24	24	25	28	38	35	32	40	50	30	31	40	38	19	5	10	27	35	38	37	34	42	46	55	40	47	53	44	41	50.9
Ovid	Max	33	34	35	45	49	46	44	54	56	60	60	53	63	61	52	37	24	38	41	49	49	60	60	63	72	68	68	41	32	25	28	30.5
	Min	18	15	22	23	20	29	31	36	33	45	47	41	30	38	31	14	3	8	27	37	33	57	54	64	67	73	64	62	54	43	44	52.8
Pacific Jct.	Max	28	34	41	39	47	52	52	58	67	69	57	55	67	65	54	33	23	41	57	50	57	54	64	67	74	64	64	37	32	25	32	30.8
	Min	20	11	26	24	23	30	27	30	40	52	43	39	30	40	22	13	4	12	31	38	36	37	34	45	43	47	31	37	32	42	35	49.3
Perry	Max	34	31	31	39	45	48	49	54	57	55	56	52	64	62	54	31	19	40	49	38	52	56	59	61	71	65	68	41	33	28	30	30.3
	Min	18	12	23	22	21	33	31	31	34	47	43	38	30	44	27	8	1	10	27	35	34	32	32	42	42	53	35	32	30	45	35	48.2
Plover	Max	28	23	31	42	43	46	51	53	59	50	59	51	62	61	47	18	17	39	50	48	52	55	59	54	70	61	65	28	26	23	21	25.5
	Min	16	5	20	13	14	28	23	29	30	44	32	33	24	35	44	0	-5	3	25	27	28	32	29	32	42	48	30	56	43	47	35	48.2
Primghar	Max	30	..	30	35	45	50	42	54	58	53	59	57	65	64	51	15	16	40	42	43	52	58	52	59	68	65	61	33	25	37	25	26.5
	Min	12	3	20	15	0	32	14	30	27	43	34	34	32	44	13	0	-5	8	28	30	33	32	33	38	41	40	34	58	48	46	40	50.4
Red Oak	Max	31	30	45	37	43	47	49	54	58	62	62	53	62	61	57	40	22	42	54	46	54	54	56	56	67	63	62	42	35	30	32	33.3
	Min	20	14	27	28	22	34	37	32	43	49	43	41	32	44	25	17	6	17	33	39	36	36	36	45	47	56	35	42	54	45	42	48.0
Ridgeway	Max	35	31	36	41	42	48	49	42	53	50	56	49	60	60	53	30	17	34	43	37	45	56	55	65	64	67	66	36	33	26	29	28.2
	Min	19	16	18	20	23	30	34	34	34	43	41	35	27	37	28	4	-6	4	24	34	33	34	35	35	36	40	36	58	48	40	32	47.4
Rockwell C	Max	34	30	31	38	45	45	50	52	52	53	58	53	63	60	35	25	12	39	51	40	53	54	57	60	70	63	66	34	28	19	22	24.9
	Min	15	9	21	19	18	23	30	31	32	32	35	35	31	31	21	3	-2	8	25	32	19	20	30	39	35	46	36	..	..	45	43	45	....
Ruthven	Max	30	33	40	26	40	43	50	50	53	52	56	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	29	29	28	....
	Min	8	10	13	10	18	21	34	39	40	38	39	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	60	50	41	36	49.2
Sac City	Max	33	32	30	39	33	46	53	58	60	56	60	55	60	60	55	23	19	40	50	38	51	55	58	56	69	65	65	34	30	25	28	27.7
	Min	15	9	20	..	..	..	33	30	35	43	43	35	30	42	19	3	-2	8	26	32	32	32	30	39	42	45	35	64	48	43	37	50.7
St. Charles	Max	34	35	32	44	47	47	47	58	57	60	60	54	65	63	53	32	22	41	48	38	50	56	61	68	73	67	70	39	44	27	30	30.9
	Min	21	14	23	24	22	33	37	32	38	46	44	41	32	41	28	11	2	8	27	30	33	31	31	41	43	43	41	58	50	40	36	47.7
Scranton	Max	22	31	39	40	45	48	50	56	50	60	56	56	63	60	33	21	19	41	52	39	45	55	60	60	72	63	66	32	26	28	28	27.7
	Min	10	12	20	22	30	30	26	34	32	42	33	31	42	30	5	0	0	20	28	33	33	31	35	42	42	35	35	..	56	38	33	47.0
Sibley	Max	14	33	27	35	43	46	49	56	61	53	61	53	65	61	55	9	17	38	47	41	52	58	59	66	..	..	61	..	21	25	25	23.8
	Min	12	3	18	14	16	31	31	28	37	34	34	33	28	43	9	-2	-5	6	26	28	33	32	30	40	..	..	35	62	55	49	40	53.5
Sigourney	Max	37	30	36	39	44	48	45	39	52	50	57	50	62	60	54	38	19	39	39	54	54	59	64	69	73	73	71	43	32	29	30	29.5
	Min	19	16	19	21	22	31	35	32	30	42	47	42	27	37	34	12	1	4	24	33	32	33	29	37	40	51	35	54	41	37	35	45.4
SiouxC'nt'r	Max	26	28	29	32	42	43	47	50	56	49	55	52	63	60	53	12	15	41	46	42	52	55	57	51	65	59	59	32	24	24	26	25.4
	Min	14	4	20	13	10	29	31	28	35	36	33	33	30	43	10	-5	-6	6	28	30	34	34	32	41	43	42	32	56	45	38	35	47.6
Sioux City	Max	22	28	33	35	49	50	49	56	61	52	59	55	70	62	54	14	16	44	49	44	50	54	58	51	68	57	62	31	27	28	29	29.2
	Min	17	6	25	23	21	34	34	29	40	42	33	33	35	47	9	5	-2	12	31	34	35	37	38	44	47	44	62	56	45	37	33	45.7
Storm L	Max	29	28	29	34	41	43	49	54	54	53	58	57	58	57	52	16	17	37	46	38	47	52	54	53	65	63	62	29	27	25	27	26.3
	Min	13	5	19	16	16	32	32	29	36	40	33	34	32	41	14	0	-5	9	26	31	31	33	31	39	40	44	37	70	50	53	46	57.4
Thurman	Max	28	33	41	39	55	55	56	69	65	78	75	57	74	73	58	39	28	45	56	68	67	56	71	56	73	78	68	38	33	27	31	31.6
	Min	21	12	21	28	13	33	37	30	42	52	43	40	28	48	24	16	4	13	32	40	35	35	34	45	46	48	29	63	55	47	43	49.0
Tipton	Max	39	29	32	35	45	52	47	46	53	52	62	52	56	59	56	45	18	34	40	45	47	54	58	62	64	65	65	45	33	32	31	32.0
	Min	25	17	18	23	24	41	37	34	48	42	48	45	30	37	42	15	0	8	24	33	35	35	34	35	40	41	40	75	77	50	48	55.3
Villisca	Max	32	32	40	40	47	49	51	58	60	64	64	56	67	67	52	43	32	45	60	56	53	53	62	68	77	67	70	38	34	24	27	28.3
	Min	18	9	16	25	17	29	35	30	50	46	40	40	27	40	32	14	2	7	30	26	18	18	28	36	42	47	32	64	53	46	42	49.1
Wapello	Max	37	30	29	37	44	45	42	41	57	62	60	54	55	59	58	40	22	34	39	48	45	54	60	65	68	65	66	47	27	34	33	33.0
	Min	25	20	25	24	25	32	36	34	34	40	53	41	42	39	31	20	6	12	26	34	37	33	34	39	42	49	40	41	52	45	41	46.1
Waterloo	Max	33	25	30	36	44	48	49	41	51	52	52	50	60	59	54	30	15	34	36	37	47	55	54	60	63	68	66	69	33	29	29	28.9
	Min	20	15	20	21	23	32	35	29	30	40	46	22	20	23	30	8	-4	6	24	32	34	34	32	40	39	44	39	57	51	..	37	46.7
Waverly	Max	35	25	31	37	44	48	49	40	51	51	53	50	59	58	53	31	16	34	42	36	45	54	56	62	62	69	66	40	35	28	29	28.0
	Min	20	16	20	22	24	33	36	31	30	..	43	37	27	37	30	6	-5	7	25	33	34	34	34	40	38	45	38	57	50	42	37	48.1
West Bend	Max	34	29	29	36	43	46	51	52	58	48	59	52	62	59	50	26	24	38	49	40	52	56	58	58	69	63	64	28	29	24	28	26.2
	Min	16	9	17	18	15	29	32	29	34	35	35	33	27	39	22	7	-3	5	25	29	33	34	28	39	35	47	35	61	..	44	41	47.8
West Br'ch	Max	36	29	30	37	42	48	46	42	52	50	58	50	59	60	53	37	16	35	37	48	46	55	60	63	65	67	67	38	33	32	31	30.5
	Min	22	17	18	24	24	30	36	34	34	41	49	41	27	36	37	13	0	5	24	34	35	34	29	41	42	48	37	58	53	43	40	46.6
Whitten	Max	32	27	30	36	43	48	54	44	52	51	52	51	59	57	52	20	11	30	43	38	48	52	55	62	66	68	65	38	32	25	24	27.8
	Min	18	14	17	19	19	30	33	32	30	41	41	37	27	37	36	5	-5	3	23	32	32	33	31	39	38	47	34	62	54	41	42	49.4
Wilton Jc	Max	35	35	33	35	44	50	47	44	53	52	61	52	58	60	60	40	18	37	45	48	48	55	62	65	67	61	67	45	38	31	30	30.7
	Min	23	16	17	23	22	28	36	34	33	40	50	39	26	35	39	15	0	5	23	38	34	33	33	45	41	47	38	62	57	49	37	52.1
Winterset	Max	45	33	35	44	49	49	49	60	63	60	54	55	57	65	57	37	26	44	49	42	43	52	62	64	79	66	70	39	35	26	29	30.5
	Min	21	13	24	23	22	32	31	38	45	43	41	40	31	35	26	14	2	9	27	35	34	32	34	40	43	52	35	..	..	..	..	..

DAILY AND MONTHLY PRECIPITATION FOR MARCH, 1902.

STATIONS.	DAY OF MONTH.																															TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton										25				T	T		T			.46				T						T		.71
Albia	T		T				T			.30		T			.23	T				.23				T		.15				T	T	.91
Algona	T									T	T			.03	T	T				T	.02			T		T				.08	T	.13
Alta	.03		.02							.18				.15	.02									05		.34		T		.05	T	.87
Alta (near)	.10									.10					.20										.04	.29		.02		.05		.80
Amana	.01	T								.71	.34	.01			.05	T	T			.05	T					.21		T		.03	T	1.45
Ames	T									.23	1.6				.10	.05				.46						18				.04	03	2.70
Atlantic	.15									1.07	.02				.47					.08				.09		.20		T				2 08
Baxter										.25	.25				.05					.10						.20				.05		.90
Belknap	T						.05			.55	05	.40			.05	T	[illegible]			.10						.29				T	.05	1.59
Belle Plaine	55									.75	.65				20					.30				T		.55				.48		3.45
Bonaparte							.10			.20		1.30			05				.17											T		1.84
Britt	02									.06					.16	T	T				04			T	T	.12				.04	.02	.46
Buckingham	T									1.02						T				.19	T					.30				09	T	1 60
Burlington	T	T					05		.01	.08	.20	1.27		.09							T					.82				T		2 52
Bussey	T									.30															.30					T		.66
Carroll	.15			.15						1.13	.35				27	T								T		.24				04	T	2.33
Cedar Rapids	.02	T								.71	.43	T			.05	T	T			.12	T			T	T	22				T		1.75
Centerville	.11						.14			.25		13			.28											.24				T	.05	1 20
Chariton	.05							T		.37		T			16	T	T			.11	05			T	.05	.21				07	03	1 10
Charles City	T	T								1.10	.35				.19	T				.45		T				10				T	T	2.19
Clarinda	05									.23					.35	T				T				13	.16					T		.92
Clear Lake	.10									25	.20				T	T				.05				T		T				05	T	.65
Clinton	.03						01			.30		1.13			T					.11						.61						2 19
College Spring											.50				.50	T								40		.55				T		1.95
Columbus Jct	.06						.07			.2	.01	.07			.10	T			T	.23	T					.33		.01		T	T	2.06
Corning	.10									40					10	T	T			T				35		.13				T	T	1.08
Council Bluffs	T									T					21						.03			.02	.30					T		.56
Cumberland	.40							01		3.00			.40												.52					T		4 33
Danville	.10						10			.08	.05	1.17	.05	.2		T	T			T	T	T				.70		T	T	T		2 47
Davenport	.01	.01	T				T	T		.18	09	.98			.09	T	T			T	.01				T	.39			T	T	T	1 76
Decorah	03	.04								.48	.62				.21		T			[illegible]				T		11				T		1.77
Delaware	.04									.91	.18				.27	T				.04						.32		.02			T	1.78
Denison	.10									.59	.11				.14	T				1				.07		35		.16	.08			1 60
Des Moines	.03	T	T	.02						.15	.25	T			.10	T	[illegible]			.31	T	T		T	.08	18				.02	T	1.15
De Soto	T			T						.10	1.17					.05				.50				T	.03	.10				.02		1 97
Dows	T									77	.46				[illegible]					.50		05			.05	.15				.05	T	2 12
Dubuque	.05	.04	T							.53	.19	.02			.38	.01	.05			.10	T	T				41				T		1.76
Earlham	08									25	.38				.06	T				.45				T	0	.07				T		1.33
Eldon	08						.04	T		.30	.09	.6			.02	T	T			01										.01		1.24
Elkader	.05									.72	.15				.2					.12	02					.30						2 17
Emerson	T									.42										.10						T						.52
Estherville	.20		T								.10	.09		T	.16						T			T		.13	T	T		.05	T	.73
Fairfield	.05						.05			.30		.80			.09		T			.04						.10						1 33
Fayette	.05	T								.74	45				.24	.10	T			.30	T				.06	.27				T		2.27
Fonda	07	T	T							.54				.10	.18	.03				.02				T				T		25	T	1.09
Forest City	T	T								.10						T				T				T		.10	T		T		T	.20
Fort Dodge	T									1.40	.28				.22	T														T	.25	2.15
Fort Madison	T	T	T				.16			.05		1.75			.12	T				.25	T					.10		T		T		[illegible]
Galva	01							.11		.10			T	T	T										T			T				.22
Glenwood	T									.80	.02			.35		T								T		.75		T		T		1.92
Grand Meadow	.05	.05								.70	.90				.29	.03				35				.03		.33		T		T	T	2.73
Greene	.04									.62	.43				.12	.04				.55						14				T	T	1.94
Greenfield	.09									.34	41				.12	.05				.23	T			.16		.14			T	T	T	1.54
Grinnell	01	T								.51	30				.20		.02			.20				01		15				.12	T	1.52
Grinnell (near)	T									.35	.20				.18	T				20	T				.02	[illegible]				T	.03	1.18
Grundy Center	.01	.01								25	1.02			T	.11	.01				[illegible]				T		.35				01	.05	2.08
Guthrie Center			T	.05						.79	.84				.10					.08				T		T		T		T		1.86
Hampton	03								.12	1.08	.16			T	.12					46	10			06	.10					.05		2 28
Harlan	.15	T								91	.12				.32	T	T			T	T			08	T	.30		.03	T	.01	T	2.01
Hopeville	.02									.35					.03	T				.22	T			.02		32				02		.98
Humboldt										.39	02				.22					.07	.01	.03				.04				.02	.01	.86
Independence	06	T								.50	.30				.15	T	T			.23						.27				T		1.51
Indianola	.01			01				T		.68	.01				.15	T	T				T			T	T	.25				.01	T	1.12
Iowa City	T	T					T	T	T	72		.15			.13					.03						.26				T		1 29
Iowa Falls	T									.98	24				.22	T	T			.44	T	.06		.02	.01	.15				.03	T	2.15
Jefferson	T		T						1.15						T					.03											.03	1 21
Keokuk	.09	T	T				.16			T	.42	1.10			.08	T	T			.16	.01	T				.10		T	.02	10		2.24
Keosauqua	.10	T	T				T	.10	T	.17		.20			.05	T	T			.23				T						T		1.85
Lacona	.10									.75					.25	T	.25					T		.20	T					10	.10	1.75
Larchwood	.75																							.16	90							1 81
Le Claire	.13	03	T					T			.30	.91	34			18	T	T		T		T					.61				.02	2 52
Le Mars	.50														T	T								T		.15		T		T	T	.65
Lenox	.05									.23					.25					.18				.07						T		.83
Logan																								.10	.33					T		.43
Maquoketa	T									.80	.10	.43			.20					10						.60						2 23
Marshalltown	01	T								.70	.72				.18	05				.10						.07				.11	.03	1.37
Monticello	T								T	.75	.37	T			.30										T	.30						1.72
Mount Ayr										.15					.07	T				21	02			.07		14				.03		.69
Mt. Pleasant	.05	.03					.05	.07		.2	T	1.04			.09		T			.30						.10				T		1 93
Mt. Vernon	.05	.01							T	.62	.28	.07			.16	01				.10					T	.39		.02		.12	T	1.73
New Hampton		T									.58	.66				.08	T				.10						.52					1.94
Newton										.43	.12				.22					10						.16				T		1 01
Northwood	05									.11	.15				.07	T				T		.09		T	.02	.06				T	T	.55
Odebolt	.08									.40					.20					T				.08		.13			.04	.06		.90
Ogden			.02							.60	45				18					.36					.13	.10				.07		1.87
Olin	06	T						T	T	1.00		.08			.32	T				.01						.28		T		.05	T	1.89
Omaha, Neb.	0	01		T						.01	.19				.22	T	T			T	T			.03		.15		T		.02		.70
Onawa	.14			T						.20	.35				10	.02	.01				.02			.02		.16		.17	.03	.01		1 23
Osage	.02	.01								.33	.04				.20	T				.47				T	.04	.06		.01		T	.01	1.19
Oskaloosa	.02	.05								.31		T			.14		T			18	T			T	.25					.02		.97
Ottumwa	.10						.06			.30		28			.10											38						1.22
Ovid	T	T								.55		T			.18					.22	T			T		19				T		1.12
Pacific Junction	02									.95					.25											.90				T		2.13
Perry			.01	T						83	1.80				.16	T				.37	T			T	.03		.07			.21		3.47
Plover	.10		T						.05						.15	T						.03			T	11				.08		.52
Red Oak	.15									.89	.01				.30					T				07		28				T		1.76
Ridgeway	.04	.01								.62	.33			T	28	.04			.01	.19	.03	T	T		.15	.14	.01			T	T	1.85
Rockford										.60						T				.25												.85
Rockwell City										75	25									.10						.20		.10		.20		1.60
Ruthven	05		.12							.25				T										T		.15				.03	T	.60
Sac City	T		T							.72	.09					T				T				.01	T	.28		T		.08	T	1 18
St. Charles	05		03							.28	.01				.08	01	.01			.35				T	.02	.10				.08		1 05
Scranton	T		T								.97				.26	T				.10				T	.08					T	T	1.41
Sibley	.10		T	.05						T	.10				.05	05								15		T	T		T	T	T	50

DAILY AND MONTHLY PRECIPITATION FOR MARCH, 1902—CONTINUED.

STATIONS.	DAY OF MONTH. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL.
Sigourney	.08	T	....	....	....	..	T	....	T	.45	....	.04	....	....	.05	T	T	....	....	.15	...	....	....	T	....	10	....	T	....	08	...	.96
Sioux Center	20	....	.05	20	....	....	....	....	....	40	....	....	....	....	.05	T	....	....	....	.....	....	.....	....	.05	09	T	12	03	....	....	....	1 19
Sioux City	06	T		01	....	....	....	....	....	.03	.01	....	....	....	.05	T	T	....	....	03	.02	....	....	.09	.01	.08	T	.09	T	.02	....	.50
Stockport	.10	T	....	..	..	....	03	.08	.01	.26	T	.69	....	....	.24	T	T	....	....	.15	T	....	....	T	....	.05	....	T	T	T	T	1.61
Storm Lake	.01		T	T	..	....	....	....		33	T	....	....	....	21	T	T	....	....	....	T	....	....	.02	....	.22	T	T	....	.07	T	.85
Thurman	.05	..	....	T	..	....	..	....	T	.20	.40	....	....	....	.30	T	....	....		..	T	....	....	T	....	20	.	T	....	T	....	1.15
Tipton	T	....	....	....	..	..	..	....	....	1 50	.50	75	....	....	.25	...	...	..	....	T	T	..	....	..	....	.25	....	....	..	T	...	3.25
Villisca	T	...		....	..	....	....	....	....	.23	....	....	....	.40	T	T	....	..	....	T	-	....	.19	....	.10	....	....	....	..	T	....	.02
Vinton	T	....	....	....	....	....	....		....	.55	.42	....	....	..	.23	..	....	....	....	T	....	....	....	....	.39		....	....	....	T	T	1 59
Wapello	.12		....		....	....	.05	.20	..	.14	....	1.05	....	....	.08	....	....	....	....	.17	T	....	....	....	....	.58	....	....	....	T	....	2.39
Washington	....	....	....	....	....	....		....	..	.40	.	70		..	.10	....	....	....	....	.12	..	....	....	....	....	.25	....	....	....	T	....	1.57
Washta	T		T	..		....	....		....	.05	....	....	....		T	T	....	..	....	T	....	....		T	.	.50	....	.10	....	T	....	.65
Waterloo	.03	T	....	..	....	....	....		....	.37	1 10	....		....	.17	T	....	..	....	.23	.03	....		....	....	.36	....	..	....	T	T	2 29
Waverly	.05	.03	....		....	....	....	..	....	.39	.69			..	.14	.05	....	....	....	.40	.01	....	....	....	.06	.20	....	....	....	.02	.01	2 05
West Bend	.05		T	..	....	....		....		.05	....	....	....	....	.11	T	....	....		.02	....	.05	....	.01	....	.07	....		....	.05	T	.41
West Branch	60	T	....	....	....	..	....	....	....	..	.26	.44	....	....	.18	T	....	....	....	.13	....	..	....	.	..	.32	....	T	.	T	T	1.93
West Union		....	..		....	....		..	....	1.00	1.00	.	....	..	.18	....	....	....	..		....	.10		.	..	....	....	....	....	..	....	2.28
Whitten	T	....	....	....	....	....		....	..	.19	.10	....	.....	....	T	T	....	....	....	.30	T	T	....	....	....	.12	....	....	....	T	T	1.71
Wilton Junction	01	....	....	....		....	T	..	.	64	....	1.00	....	..	....	T	....		....	.45	T	....	....	....	....	.49	....	....	....	.05		2.67
Winterset	.13	....	....	....		....	....	...		.16	....	....	....		.14	T	T	...	....	.50	....	...	T	....	....	.12	....	...	...	T	....	1.05
Woodburn	T			....	....	....			.40			..	....		.15	.....			....	.18	T	....	....	T	.19	....	...	....	....	T	...	.62



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Van Horne ..... Spencer Smith
Weldon ..... Ed. Worden
Winterset ..... H. A. Kinsman
West Branch ..... Wrigley Smith
West Union ..... H. B. Blackman
Wilton ..... Thos. Boot
Wiota ..... I. S. Coomes

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

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NOTES.

Prof. Bailey, of the astronomical observatory of Harvard College, has been sent to the observatory at Arequipa, Peru, to study the peculiarities of the planet Eros, which is the most remarkable of the minor planets, or asteroids, of the solar system. The observatory in Peru is one of the stations established by Harvard, and the conditions there will be most favorable for observations of Eros at the time of its opposition. Very careful work will be done by Prof. Bailey, with the best appliances obtainable.

* * *

It is interesting to notice that the United States Weather Bureau has recently been testing Prof. Fessenden's system of wireless telegraphy at Roanoke island, N. C. The wireless telegraph might be of especial use to the weather bureau, by enabling inaccessible or remote localities to be telegraphically reached without involving the expense of carrying and maintaining a wire or cable. Moreover, for the business of making weather reports only a few daily words are necessary, and in cases where no other business is forthcoming, a telegraph wire or cable might be prohibitively expensive The Fessenden system is particularly different fram the Marconi system in not employing a coherer for the detection of the incoming electric waves. The two systems also differ materially in other respects. It is interesting to observe that Prof. Fessenden is reported as stating that the waves of wireless telegraphy do not penetrate appreciably beyond one foot below the surface of the sea and three feet below the surface of the land traveled over. Pupin, we believe, takes a similar view.—*Electrical World and Engineer.*

* * *

The present area of the United States and insular possessions and territories amounts to 3,690,822 square miles, which is about one-fourteenth of the land surface of the earth. Only three countries, the British empire, the Russian empire, and the Chinese empire, have unquestionably a greater area than the United States, and these are the only countries having a greater population than the United States. Including Alaska and the islands under the flag, the total population June 1, 1900, was 81,233,069.

* * *

It has been discovered that electricity may be made serviceable in seasoning woods, preserving them from decay and rendering them measurably fire proof. By the force of an electric current the green timber may become quickly impregnated with the salts that are used to prevent decay and render the wood less liable to combustion.

* * *

At Reading, Pa., a refrigerating company has been organized and a plant is being constructed, to supply kitchens, larders and living rooms of residences with cool air to mitigate the high temperature of the mid-summer season. The coolness will be furnished to customers in form of anhydrous ammonia sent through pipes, after the manner of steam, hot water and gas distribution.

* * *

Electric heating has not as yet come into extensive use, except in electric cars, where only moderate warmth is required. But some progress has been made in an experimental way, and in localities where cheap water power can be utilized in operating a transmission plant the electric system may be made advantageous to the public. It is the cleanest form of heating that is known.

* * *

Science is superceding pure luck and chance in prospecting for the precious metals in the mining districts. The work is done by the aid of electric batteries, with ingenious arrangement of electrodes and instruments for measuring resistance of the currents at different portions of the surface. The instruments work with almost unerring certainty, and by this means the secret stores of golden wealth will be discovered.

* * *

Rural free delivery of mails is a double-headed benefaction to the people who are so fortunate as to be located on a route. They get the benefit of the prompt delivery of mails, and in order to secure this the condition is imposed that the roads must be kept passable at all times. The road improvement is really the better part of the new system.

* * *

Hon. L. G. Powers, chief statistician for agriculture of the twelfth census, estimates that the per capita consumption of wheat in the United States amounts to five and a half bushels per year. This is considerably above the estimates accepted by other writers on statistics of consumption and production.

* * *

As determined from the census returns for 1900 the center of population of the United is four miles east and two miles south of Columbus, Ind. That is about fifty mile south of Indianapolis. The point is marked by a stake, and the returns of the census of 1910 will cause the center to pull up the stake and move westward and a little northward, probably over the Illinois line a few mlles. It is sure to maintain its westward course for the next fifty years or more.

* * *

Two eminent scientists, one of whom is a professor in the medical institute and the other a house surgeon in a hospital, have invented a new apparatus for purifying vitiated air in crowded places where it is difficult to provide adequate ventilation. The process is an application of properties possessed by the compound sodium bi-oxide, which absorbs the carbonic acid gas that constitutes the impurity of the air.

* * *

Cattle finished off on corn ranging from 60 to 65 cents per bushel, are not oppressively dear at $6 50 to $7 00 per hundred pounds. If anybody is guilty of extortion in the meat business

it is not the farmer, who must fatten on high-priced feed or sell poorly fed animals. It appears to be an impracticable proposition to afford best cuts of meat at low prices when feed stuffs are at high figures.

OUR NATIVE PASTURE PLANTS.

Pastoral pursuits were among the first peaceful industries to engage the attention of man, and today the pastoral industries of the greatest nations surpass all others in importance and are second to none in actual money value. The great grazing regions of the world are the steppes of Russia, the pampas of South America, the almost boundless pastures of Australia (supporting more than 112 000,000 sheep and yielding one fourth of all the world's supply of wool), and the vast plains and mountain slopes of the interior of our own country. In a broad sense, these are the world's great pasture lands, and the pasturage they supply furnishes the bulk of the world's beef, wool, and other animal products entering into its commerce. The cattle, horses and sheep of the United States number over 100,000,000, valued at $1,829,000,000. The vast capital these represent is absolutely dependent upon the greatest of all our natural resources, our grasses and forage plants. These annually sustain industries valued at nearly $2,000,000 000, industries upon which the very existence of the human race is dependent. The figures giving the value of all our beef consumed at home and abroad, our mutton, our milk, butter and cheese, and the hides and wool, and numerous other animal products which minister to our pleasure and comfort, show a surprising multiplication of industries dependent upon our forage supplies. The amount of hay produced in the United States is estimated in round numbers at 70,000,000 tons—scarcely more than enough to feed our cattle, horses and sheep during three months of the year. This hay crop, valued at $400,000,000 must be supplemented by 210,000,000 tons from other sources. This amount, or seventy-five per cent of the hay and forage necessary to maintain our stock, is furnished by our pastures and grazing lands. The question of what does this pasturage consist is thus an exceedingly interesting one, and almost equally interesting, and even more important, is that of how shall this forage supply be maintained and its productiveness and feeding value increased.

While it is true that the bulk of our hay crop, possibly ninety-five per cent or even more, is composed of grasses and other plants introduced from foreign countries, it is equally true that the bulk of our pasturage is composed of grasses and fodder plants indigenous to the soil. It may be safely stated that ninety-eight per cent of our pasture plants are natives. This is especially true of the cattle ranges of the West. It will be seen, then, that our supply includes practically all of our native grasses; and many plants of other families upon which cattle depend more or less for subsistence—for the cattle range over all our wild lands, and the grasses with which these lands abound numbering throughout the country many hundreds of species, every one producing a mite at least of the general forage supply—may be classed with our native pasture plants. To enumerate them all would be wearisome; and we must be content to consider those regarded as of special importance, either on account of their abundance or adaptation to peculiar conditions. Our native pasture plants vary according to the soil and climate, especially as these are affected by altitude and latitude, and, owing to the breadth of our territory and dividing mountain chains, great variation also occurs with change of longitude. We can broadly classify our pasture plants into those of the wooded regions and those of the treeless areas; the former occur both upon the Atlantic and Pacific slopes, and the latter occupy the vast interior of the country.

The characteristic grasses of the wooded areas, or of those regions where the rainfall exceeds twenty-five or thirty inches, produce a continuous turf or sod, while those of the treeless plains and foothills of the mountain ranges in the interior and of the desert regions, the so-called bunch grasses, do not form a continuous sod, but grow in more or less scattered tufts or bunches. The Western stockman has long been familiar with these bunch grasses of the cattle ranges, and justly prizes them for their nutritious and fattening qualities, while the Eastern farmer knows only those grasses which make a clean, unbroken sod and a rich, succulent growth, such as is formed by Kentucky blue grass, the best and most highly prized of all turf-forming species. It is true that bunch grasses occur in the wooded regions of the East, and it is also true that turf-forming grasses are found in the arid, treeless regions of the interior, but such are the exception, and their presence does not conflict with the general statements here made.—*F. Lamson-Scribner in Department of Agriculture's Yearbook, 1900.*

RAINFALL AND WHEAT.

J. T. Willis investigated the relation of the rainfall to the wheat product per acre in South Australia for the six winter months (the growing season there) and found that for the seven best years there was a yield of 12.4 bushels of wheat with 18.5 inches of rain; for the next best years there were ten bushels of wheat with 15.4 inches of rain, and for the six worst years there were 6.6 bushels of wheat with 13.5 inches of rain. The product of wheat in the first case was nearly twice as great as in the last. If such a relation holds for the United States, it is easy to undeastand what great effect a general drouth may have on the food product. If the amount of wheat raised in the United States were reduced one-half, or even one-third by a year of deficient rainfall, it is easy to imagine an enormous strain on the business of the country, and with a succession of such years the effect might mean disaster. Such a deficiency in the wheat supply, with wheat at eighty cents a bushel, would mean for a single year a direct loss in wealth of more than $100,000,000; it would mean that nearly all the wheat which is usually shipped abroad would be needed at home; it would mean that thousands of railroad cars and ships, which ordinarily transport this grain, would lie idle; that hundreds of men, who usually handle this grain in transport, would be out of employment; that farmers in large numbers would be unable to meet their obligations; and consequently that banks and business of all kinds would suffer.—*Popular Science Monthly.*

AGRICULTURE IN ALASKA.

Writing in the *National Geographic Magazine*, C. C. Georgeson, of Sitka, special agent of the Department of Agriculture in charge of Alaska investigations, says that a traveler may go from one end of the Yukon to the other in summer without seeing snow. On the other hand, vegetation, large forests and such delicacies as wild raspberries, red currents, huckleberries and cranberries will be found in profusion. In places the grass grows as high as a man's head. Mr. Georgeson mentions thirty or forty places along the coast, at the Sitka and Kenai experiment stations and at many points in the interior, where practically all of the cereals of the temperate zone, most of the vegetables and a considerable variety of cultivated flowers have been grown with much success for several years. The Chamber of Commerce at Dawson exhibits fine barley, oats and wheat that have been grown there. Fine spring wheat has been raised at Sitka for three years past. At Rampart, 65 degrees north latitude, winter rye sown in the fall came out in the spring in perfect condition, though the temperature fell to 70 degrees below zero in the winter; the grain matured by the first of August. Barley sown in May of 1901 was ripe by the middle of August. Oats and potatoes thrive in many places. Cattle are kept at every considerable settlement, except Nome. The Alaska Commercial Company has for many years kept cattle, sheep and Angora goats at Kokaik, they requiring but little feed or shelter, except in an occasional storm during winter. In Mr. Georgeson's opinion Alaska can furnish home-

steads of 320 acres each to 200,000 families. She has abundant resources to support a population of at least 3,000,000 persons. At present settlers can get title to land only at a prohibitive cost, and Alaska will not be settled as long as this condition prevails. Stock raising must be a leading branch of Alaska farming, and 320 acres of land is the least amount which a settler should have to make farming a success.—*Ex.*

STRUCK TWICE BY LIGHTNING, AND LIVES.

The Creston *Gazette* reports the remarkable experience of Mr. Geo. Schweers, of that city, who was the victim of two severe lightning strokes on the night of April 25th, and survived to describe his sensations and is making a rapid recovery. Mr. Schweers was walking rapidly homeward during the prevalence of a furious storm, and was stricken to the earth and rendered unconscious by a bolt of lightning resembling a ball of fire, which struck a large tree a few feet distant from the walk. The heavy rainfall restored him to consciousness, and after a time he was able to walk slowly homeward, though partially paralyzed from the shock. Upon reaching the doorstep of his home a second bolt descended close by and he was again overcome and rendered unconscious for another short period. After being restored, it was discovered that his hair and eyebrows were singed and the exposed portion of his skin was blackened by the flash that struck him down. It was a phenomenal event and a marvelous escape from death.

WEATHER AND CROP CONDITIONS.

The month of April was slightly cooler and much drier than usual, the abnormal conditions prevailing for the most part through the first and second decades. The last decade was seasonably warm, and copious showers mitigated the protracted drouth. The worst features of the month were the frequent dust storms and strong gales, which caused considerable damage to windmills, trees and light structures, and wrought some damage to newly seeded grain crops in exposed localities, by uncovering the grain or blowing the loose soil into drifts. The conditions, however, were generally favorable for field work, and more than usual progress was made in seeding and preparing the ground for planting corn. In southern localities the planters were started about the 28th to 30th of April. The germination of small grain was retarded by the cold and dry weather in the first half of the month, but there was considerable moisture below the dry surface to quicken growth when the soil became warmer during the last decade.

At the close of the month the grain crops were making a fair stand and the crop outlook was generally promising. The foliage and bloom on fruit trees appeared very near the normal period. There was a fair prospect for apples, plums and cherries, but peach buds were not in evidence, and the smaller fruits did not give promise of full average crops. Pastures and meadows were late in starting, but the growth was fairly good at close of April. On the whole the crop season made a favorable start, and farm work has been more than usually favored by weather conditions.

CLIMATOLOGY OF THE MONTH.

BAROMETER—Mean pressure for April, 29.98 inches; highest observed, 30.42 inches, at Sioux City on the 7th; lowest, 29.10, at Sioux City on the 25th; range for the state, 1.32 inches.

TEMPERATURE—The mean temperature for the state, as shown by records of 114 stations, was 48.2°, which is about 1.3° below the normal for April. The highest monthly mean was 53.1°, at Thurman, and the lowest 44.2°, at Estherville. The means by sections were as follows: Northern section, 46.3°; central section, 48.1°; southern section, 50.3°. The highest temperature reported was 96° at Clarinda, on the 20th; lowest, 9°, at Larrabee, on the 7th. The average monthly maximum was 87.5°; average monthly minimum, 18.9°. The greatest daily range was 59°, at Glenwood; average of greatest daily ranges, 39.5°.

PRECIPITATION.—The average precipitation for the state, as shown by records of 130 stations, was 1.71 inches, or 1.50 inches below normal. The averages by sections were as follows: Northern section, 1.34 inches; Central section, 1.60 inches; Southern section, 2.19 inches. The largest amount reported was 4.15 inches at Bonaparte, Van Buren county; least amount reported, .40 of an inch at Glenwood. The greatest daily rainfall reported was 2.95 inches, at Sioux Center on the 25th. The average number of days on which .01 inch or more of rain fell was 5.

WIND AND WEATHER.—The prevailing direction of the wind was N. W.; highest velocity reported 74 miles per hour, from the north at Sioux City on the 25th. The average number of clear days was 14; partly cloudy, 11; cloudy, 5.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced	EXTREMES			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	29.94	30.29	14	29.24	25
Des Moines	30.00	30.40	7	29.18	25
Dubuque	29.96	30.35	14	29.21	25
Omaha, Neb	29.96	30.32	7	29.13	25
Keokuk	29.98	30.26	21	29.29	25
Sioux City	30.01	30.42	7	29.10	25
Means	29.98	30.42	7	29.10	25

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	6672	40	S	22
Des Moines	7789	48	W	23
Dubuque	6072	34	NW	26
Keokuk	6957	48	SW	22
La Crosse, Wis	6933	36	N	26
Omaha, Neb	7115	52	NW	25
Sioux City	10387	74	N	25

OBSERVERS' NOTES.

ALTA—*David E. Hadden.* A dry and windy month, with gales and dust on the 11th, 21st and 22nd. On the afternoon of the 25th a gale blew down windmills, trees, etc, Fine aurora during early morning of the 11th, showing colored effects, streamers, curtains, etc.; the maximum display was at 1 to 2 a. m. Ground in excellent condition for farm work all the month.

AMES—*T. S. Hunt, I. A. C.* Highest windstorm occurred on the 22nd; the air being darkened with dust. Considerable seed uncovered.

BONAPARTE—*B. R. Vale.* 4.15 inches of rain fell the last half of the month. From January 1st to April 1st the amount was 2.94 inches; and yet only the surface of the soil is wet. Grass and grain starting.

BRITT—*Geo. P. Hardwick.* Month dry with high winds and dust storms; vegetation made slight start; ground in fine condition for cultivation; farm stock generally thin in flesh.

CHARITON—*S. H. Mallory.* Severe electric storm, high wind, rain and hail during the night of the 24th and 25th.

CLARINDA—*A. S. Van Sandt.* High wind and dust storms on 20th, 21st, 22d and 25th.

CLINTON—*Dr. Luke Roberts.* Solar halo on 3d; lunar halo on 19th and 20th; thunderstorms on 24th and 25th. The 21st was warmest April day I have recorded, the mean being 74 8°. The rainfall was 1 36 inches below normal; mean temperature 0.7° below normal; movement of wind, 5,020 miles, which is 420 miles below normal, but greater than for the last four Aprils.

COLUMBUS JUNCTION—*Prof. H. E. Simpson.* A very clear, dry month, until the drouth was well broken on the night of 24th by heaviest rain in nearly two years. High winds and dust storm caused much discomfort here and suffering in the regions of Cone and Muscatine Island.

CORNING—*Jerome Smith.* An unprecedented dust storm from 11 A. M. till 8 P. M. on the 22d. Violent southwest wind on the 25th from 3 to 10 P. M.

EARLHAM—*George Phillips.* A good April for farm operations; trees beginning to come into leaf at close of month.

ESTHERVILLE—*Leslie Littell.* First half of month dry and cool, with frost every night; last half warmer, with fine rains.

FAYETTE. *R. Z. Latimer.* The 11th and 22d were noted for heavy dust storms; many windmills were blown away. Seeding of small grain was begun March 27th and continued into April.

FOREST CITY—*J. A. Peters.* A very windy month; much of the grain that was sown in March did not come up till after the rain on the 25th and 26th. Ground mostly ready for corn planting at close of month.

GREENFIELD—*J. G. Culver.* Very strong westerly gales 21st to 25th; several barns and cribs and a large brick dry-house destroyed on the 25th; dust storms almost equal to spring of 1880.

GRUNDY CENTER—*Ed. S. King.* A good month for work, but too dry for best growth of crops; corn ground nearly all plowed before May 1.

HARLAN—*C. A. Reynolds.* The roads have been excellent, but dust storms were unusual and very disagreeable.

JEFFERSON—*Isaac Young.* On the 21st a cloudburst and wind scooped out seventeen acres of oats on farm of E. Burchmiller in Bristol township. It made a clean sweep of the field.

KEOSAUQUA—*J. H Landes.* Late rains have given the crops much needed moisture and vegetation is growing rapidly. Everybody happy, because the long drouth is broken.

LEMARS—*S. E. Cole.* Storm on the 25th, began with thunder shower at 3 a. m; heavy wind at 4 p. m and hail, with snow at 6 p. m.

LOGAN—*Mrs. M. B. Stern.* Dry and windy; heavy winds on the 22nd and 25; windmills destroyed and buildings unroofed.

OLIN—*Nathan Fetter.* Precipitation, 1 30 inches; all vegetation backward; some corn planted during last week in April; fruit blooms all right yet.

OVID—*H. C. Miller.* On the 4th solar phenomenon at 7 a. m.; one-fourth circle directly above sun with concave side up in clear sky; on the 22nd dust storm all day; could see but short distance.

PRIMGHAR—*O. R. Bailey.* On the 25th a very heavy wind and rain; much damage done to small buildings and windmills.

RED OAK—*J. S. Cole.* On the 21st, 22nd and 25th wind and dust storms; wind very high south-west afternoon of 25th.

RIDGEWAY—*Arthur Betts.* The most sunny April on record —317 hours. Dandelions in bloom on the 15th; awful gales on 11th and 22nd, breaking down large trees and blackening an almost cloudless sky with dust; at end of month grass and grain were growing finely.

STORM LAKE—*Prof. M L. Fuller.* Dust storm on 11th and 22nd, the latter very severe. On the 25th violent gale, damaged light buildings.

WASHTA—*H. D. Fetter.* Plum trees partly in bloom on the 30th; terrible gale with rain of 1.50 inches on the 25th.

WEST BEND—*Ph Dorweiler.* Many windmills wrecked by wind on the 25th and 26th.

ERRATA IN MARCH REVIEW.

CEDAR RAPIDS—March. Total precipitation recorded, 1.75 inches on pages 8 and 12, should have been 1.55 inches.

FAIRFIELD—March. Total precipitation recorded, 1.33 on pages 9 and 12, should have been 1 42 inches.

FT MADISON.—March. Total precipitation recorded, 2.67 inches on pages 9 and 12, should have been 2.57 inches.

LARCHWOOD.—March. Total precipitation recorded, 1.81 inches on pages 8 and 12 should have been 1.14 inches.

WEST BRANCH—March. Total precipitation recorded. 1.93 inches on pages 8 and 13, should have been omitted.

WAVERLY.—March. Mean minimum temperature recorded 28.0 degrees on page 11, should have been 28.9 degrees. Mean temperature recorded, 37 4 degrees on page 8, should have been 37.8 degrees.

RELATED REPORT.

SHELDON.—March. Mean temperature, 36.8°; highest 68° on the 25th; lowest, 6° on the 17th; greatest daily range, 44; total precipitation, .56 inch; greatest in 24 hours, .20 inch; total snowfall, 1 9 inches; prevailing direction, south. Number of clear days, 13; partly cloudy, 5; cloudy, 13; rainy, 11.

CLIMATOLOGICAL DATA FOR APRIL, 1902.

NORTHERN SECTION

STATIONS.	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES				Number rainy days	SKY			Prevailing direction of wind	DATES OF THUNDER-STORMS.
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)		Number clear days	Number partly cloudy days	Number cloudy days		
Algona	Kossuth	1,213	9	46.7	-1.3	86	21	16	7	37	1.10	- 2.84	.80	...	2	13	14	3	NW	18, 25
Alta	Buena Vista	1,513	7	46 0	-1.4	82	20	16	7	35	1.51	- 2.53	.88	..	6	13	13	4	NW	
Alta (near)	Buena Vista										1.48		.85		3					
Britt	Hancock	1,236		45 3		89	21	14	7	42	.95		.41		4	9	18	3	NW	
Charles City	Floyd	1,012	10	46.5	-0 4	89	21	19	7	37	1 05	- 2.33	.55		4	6	20	4	W	
Chester	Howard			45 2		86	21	18	6	38	.86		.32		6	18	10	2	NW	
Clear Lake	Cerro Gordo	984		48.5		85	21	15	7	43	.78		.30	T	3	15	13	2	NW	
Cresco (b)	Howard	1,280	29	45 0	†0 6	88	21	17	7	42	1 00	- 1.59	.80		2				NW	
Decorah	Winneshiek	875	8	47.1	-2.1	86	21	20	7	42	1.27	- 2.05	.84		4					
Dows	Wright	1,142		45 6		88	21	14	7	42	1 38		1.08		4	19	8	3	NW	25
Elkader	Clayton	600	20	46.0	-2 0	88	21	22	3	41	.97	- 1.59	.83		3	9	19	2	NW	5, 18, 21, 25
Estherville	Emmet	1,298		44.2		81	21	13	7	42	2 05		1.97	T	2	17	8	5	S	25
Fayette	Fayette	1.000	11	45.4	-1 8	87	21	19	7	41	1.13	- 2 49	.90		4	19	7	4	NW	5, 25
Fonda	Pocahontas	1,232									2 68		1.71		4	19	6	5		25
Forest City	Winnebago	1.220		45.2		88	21	16	7	49	.92		.72		3	14	9	3	W	
Grand Meadow	Clayton	1,180	10	46.1	-1.1	88	21	19	7	4	1.36	- 2.22	.93		4	10	14	6	NW	
Greene	Butler	943		46 8		8	21	19	7	39	.83		.64		3	5	19	6	W	
Hampton	Franklin	1,000	11	4' 4	†0 6	50	21	18	7	41	1.07	- 3.06	.96		3	9	17	4	NW	
Humboldt	Humboldt	1,095	8	47.0		88	21	16	7	40	1.58	- 2.45	1.08		4	21	6	3	NW	
Lansing	Allamakee	011		48 4		87	21	21	3.7	40	1.08		.60		6	10	12	8		4, 25
Larrabee (b)	Cherokee	1,366	10	45.2	-3 3	84	20	9	7	40	.35	- 3 28	.31		4	15	11	4		25
Le Mars	Plymouth	1.224		46 2		84	20	15	7	40	2.68		2.53	T	2	12	13	5	NW	25
New Hampton	Chickasaw	1,166		46.8		86	21	22	2.8	36	1 04		.80		4	2	12	6	NW	
Northwood	Worth	1,222		46 4		87	21	17	7	40	1 20		.75	T	4	7	15	8	NW	25
Osage	Mitchell	1,184	10	45 4	†0.6	88	21	18	7	43	1.11	- 1.79	.42	T	5	8	15	7	S	25, 28
Plover	Pocahontas	1.426		45 2		90	21	13	8	51	1 43		.57		6	16	6	8	S	
Primghar	O'Brien	1.800		47 3		78	21	14	7	37	1.10		1.10		1	19	0	11	SW	
Ridgeway	Winneshiek	1,215		47 0		88	21	18	7	41	1.16		.67		8	16	10	4	S	5, 21, 22, 25, 29
Rockford	Floyd										.75		.35		3	21	5	1	NW	
Ruthven	Palo Alto	1,435		47 7		82	21	11	7	39	1.43		.80		3	14	10	6	NW	
Sheldon	O'Brien	1 406		46.0		83	20	12	8	43	.79		.60	T	4	15	10	5	NW	
Sibley	Osceola	1,506		45.4		82	20	13	7	43	1 54		1.25	T	4	7	18	5	SW	
Sioux Center	Sioux			45.8		85	20	12	7	31	3.37		2.95	T	5	19	6	5	W	
Storm Lake	Buena Vista	1,440	12	45.8		78	20, 21	15	7	37	1 86	- .63	1.32	T	4	17	8	5	SE NW	25
Washta	Cherokee	1,157									2.00		1 50	T	2	20	8	2	S	
Waverly	Bremer	942		47.4		88	21	20	7	36	1.04		.88		5	12	13	5	NW	5, 20, 25, 26
West Bend	Palo Alto	1,197	8	46.7	†.05	87	21	16	7	40					4	10	14	6	NW	25, 26
West Union	Fayette	1,115									1 41		1.41		1	22	0	8	NW	
Average				46.3	-0 9	85.9		16.2		40.5	1 34	- 2 25		T	4	14	11	5	NW	

CENTRAL SECTION

Amana	Iowa	721	25	48 7	*0.3	88	21	23	7	38	1 83	-1.11	1.30	..	9	16	10	4	NW	5, 25
Ames	Story	926	21	8.6	-0.6	87	21	20	7	42	2 31	- .54	1.77		7	16	10	4	SE	
Baxter	Jasper	998		48.2		92	21	19	7,8	42	3 21		2 25	..	1	14	11	5	NW	
Belle Plaine	Benton	828	11	47 8	-1.8	87	21	21	7	37	2 57	- .93	1.50		8	4	25	1	NW	
Buckingham	Iowa										1.45		1 12		4	12	17	1		
Carroll	Carroll	1,265	11	48.5	-0 3	90	21	18	7	38	1.38	-1 49	.75		5	15	8	7		17, 25
Cedar Rapids	Linn	733	19	49.3	*5 5	90	21	24	7,8	34	1.30	-1 86	1.11		4	15	7	8	NW	
Clinton	Clinton	609	10	48 5	-2 4	88	21	22	3	41	1.45	-1.74	1.01		7				NW	25
Davenport	Scott	529	31	49 5	-0 7	86	21	25	8	31	1.40	-1.3	.88	T	7	15	11	4	W	22, 25
Delaware	Delaware	1,083	10	48.4	-0.3	8,	21	22	7,8	31	1.26	-2 12	1.11		4	9	19	2	NW	
Denison (a)	Crawford	1,180	8	47.1	-2 2	80	20	16	7		1.19	-3.98	65	T	6	22	4	4	N	17, 25
Des Moines	Polk	861	24	49 6	-1.4	89	21	23	8	36	1 55	-1 40	1 15	T	6	8	19	3	NW	18, 20, 25
De Soto	Dallas	866		50.8		88	21	22	8	35	1.00		.57		4	21	4	5	NW	
Dubuque	Dubuque	655	29	48.0	-0.1	85	21	24	7	35	1.11	-1.82	71	T	6	11	13	6	NW	5, 18, 25
Fort Dodge	Webster	1,126		46 4		88	21	14	8	42	2.10		1.80		2	17	6	7	SW	
Galva	Ida	1,290	8	47 5	-1.8	88	20	15	7	41	1.29	-2 31	80		3	23	1	6	N	
Gilman	Marshall	1.053									2 67		1 98		8	9	15	6	S	
Grinnell	Poweshiek	1.023	11	48 0	-2 7	85	21	21	7	31	2 82	- .91	2 15		9	10	13	7	S	25
Grundy Center	Grundy	976	10	46.8	-2.0	82	21	18	7	37	1.70	-2 .0	1 15		7	16	10	4	NW	5, 20, 25
Guthrie Center (e)	Guthrie	1,077		44.2		88	21	20	3	37	.88		.30		5	8	18	4	NW	
Harlan	Shelby	1,192		48.7		87	20	18	7	41	.96		.41		6	7	17	6	NW	25
Independence	Buchanan	921	39	46.2	-1 0	86	21	20	7	36	1.14	-1 30	1.00		4	16	12	2	NW	20, 25
Iowa City	Johnson	644	11	49.5	-1 3	90	21	22	8	45	1.91	-1.27	1 03		6	12	14	4	NW	
Iowa Falls	Hardin	1,107	8	46 1	-0 9	89	21	18	7,8	41	1 10	-3.12	.84	T	5	17	9	4	NW	25
Jefferson	Greene	1,052									.83		.75		3				SE	
Le Claire	Scott	576									1.63		85		9					
Logan	Harrison	928	36	51 0	-0 9	90	20	19	7	40	1 08	-1.90	.50		5	21	2	7	NW	8, 25
Maquoketa	Jackson	688	8	47.8	-0.5	86	21	21	21	43	1.69	-1.53	1.19		4	17	7	6	NW	
Marshalltown	Marshall	947	11	48.6	-0.5	90	21	20	7	38	2 05	-1.58	1.44		7	11	14	5	SE	23, 25
Mt. Vernon	Linn	847		48 6		86	21	21	8	39	1.30		.90		6	16	9	5		25
Newton	Jasper	592	14	47.9	-0 7	85	21	20	7	34	2.79	- .71	2.21		6	11	18	1	NW	
Odebolt	Sac	1,356		48 0		85	20	16	7	38	1.13		33		5	22	3	5		
Ogden	Boone	1,211		48.8		85	21	18	7	42	1.23		.88		6	22	3	5	NW	
Olin (a)	Jones	760		46 2		85	21	21	8	38	1 30		1 07		6	15	13	2	N	25
Onawa	Monona	1,053		50 2		89	20	16	7	41	2.50		1.15		6	23	2	5	NW	
Perry	Dallas	975		49.4		91	21	21	7,8	38	.86		.33		7	10	13	7		
Rockwell City	Calhoun	1,219		46 6		87	21	18	7	37	1.65		.95		3	20	3	7		
Sac City	Sac	900	22	47.7	-2.0	84	21	17	7	34	1.28	-2.09	.46		5	15	10	5	NW	22
Scranton	Greene	1,172		48 7		83	20, 21	18	6	40	1.11		.72		3	17	8	5	NW	
Stuart	Guthrie			50.2		83	21	20	7	44	1 40		1.00		3	21		9	NW	
Sioux City	Woodbury	1,122	13	48 0	-2.0	85	20	17	7	34	1 29	-1 55	.76	T	7	11	12	7	NW	15, 18, 25
Tipton	Cedar	807		48.8		86	21	18	18	36	2 45		1 25		4	11	11	8	W	
Toledo	Tama	856	7	48 7	-2 2	90	21	20	7	38	1.91	-1.51	1.50		7	23	3	2	SE	
Vinton *	Benton	800	11	48.0	-0.9			23	7		.91	-2 24	.91		1	27	2	1	NW	25
Waterloo	Black Hawk	862	22	47.3	-3 0	87	21	20	7	35	1 28	-1 20	1.02		5	14	13	3	NW	
Wilton Junction	Muscatine	683		48 8		87	21	22	8	38	2 14		1.09		5	19	5	6	W	25
West Branch (f)	Cedar			44.8							1.63		.81		7	8	21	1	NW	
Average				48 1	-1 0	87 1		19.8		38 0	1 60	-1.69		T	5	15	10	5	NW	

CLIMATOLOGICAL DATA FOR APRIL, 1902—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC. IN INCHES.				Number rainy days.	SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	....	50.2	.....	90	21	20	7	34	1 85	.....	1.10	..	4	6	19	5	SE	
Albia	Monroe	945	.	51.2	.....	93	21	23	8	35	2.85	.....	1 80	..	6	6	21	3	NW	
Atlantic	Cass	1,164	10	49 2	†0.2	90	23	17	8	39	1.37	-2 16	.79		5	4	18	8	NW	25, 27
Bedford (*a*)	Taylor	1,301	..	49.7	.....	91	20	20	2,7,8	43	1.50	.....	.78	..	5	.....	...	..	S	
Belknap	Davis	877	....	49.1	.....	88	21	22	8	41	3 58	.....	2.40	....	5	21	7	2	NW	
Bonaparte	Van Buren	.....	10	50.4	-1.6	88	21	23	8	37	4 15	† .35	2 01	.	5	...	.	....	.....	
Burlington	Des Moines	544	....	51.4	.....	88	21	25	8	37	3.21	.....	2.04	..	6	15	10	5	SE, NW	20, 25
Bussey	Marion	....	..	.....	.....	.....	.....	...	.....	.....	1.49	....	.94	..	5	...	....	....	...	
Centerville	Appanoose	1,013		51.6	.....	89	21	19	8	34	2.46	.....	1.87		4	14	11	5	.....	24
Chariton	Lucas	1,042	....	49.0	.....	87	21	22	7	34	3 42	.....	2.55	..	7	11	12	7	N	25
Clarinda	Page	1,069	11	51.3	-0.7	96	20	23	2,7	44	1.79	-1.45	.81	T	7	11	15	4	NW	21, 25, 28
College Springs	Page	.....	10	49.4	-1.3	.....	... .	20	7		1.11	-2 95	52	....	6	16	13	1	SW, NW	
Columbus Junct	Louisa	595	...	51.0		88	21	25	3,11	36	2.32	.....	1 90	....	6	15	11	4	SW	18, 20, 25
Corning	Adams	1,127	9	48 2	-2.9	90	20	18	8,9	41	1.56	-2 00	1.03	...	9	11	15	4	NW	5, 28
Council Bluffs	Pot'wat'mie	990	..	51.8	.....	93	20	20	7	42	1.29	.....	.47		7	15	5	10	NW	
Cumberland	Cass	.....	....	.....	.....	.....	.....	.....	.....	.....	.51	.....	50	...	2	15	4	11	SW	
Danville	Des Moines	715	....	....	.....	....	.....	....	.....	....	3.85	.....	2 76	..	4	16	0	11	.....	
Earlham	Madison	.....	....	48 4	.....	89	21	14	9	40	1.07	.....	.62	..	5	15	10	5	NW	25
Eldon	Wapello	630	...	50.0		88	21	20	8	42	2 91		2.29	..	5	19	1	10	NW	20, 25, 28
Fort Madison	Lee	516	53	....	.....	....	.....	.....	.....		3.48	†.26	1.73	....	7	9	15	6	W	18, 20, 22, 24, 25
Glenwood	Mills	957	31	51.6	†2.8	94	20	19	7	59	.40	-2 13	.30	..	2	4	26	0	NW	
Greenfield	Adair	.....	10	49 1	-1.7	88	21	18	7,8	43	1.23	-2.37	.45	T	6	22	7	1	NW	16, 25, 26, 28
Hopeville	Clarke	.....	....	.....	.....	.....	.....	..	.....		1.59	. ..	1.25	. .	4	....	...	..	.....	24, 25
Indianola (*c*)	Warren	969	10	48.8	-3.3	84	21	20	8	35	1 61	-2.20	1 07	...	8	...			.....	20, 24, 28
Keokuk	Lee	619	30	51 5	-1.5	89	21	6	8	32	3.13	- 05	2.12	..	7	14	12	4	NW	18, 20, 22, 25, 26
Keosauqua	Van Buren	644	9	51 2	-1.8	90	21	20	8	43	3.27	-1 25	1.94		6	....	....		....	
Lacona	Warren	.....	....	.....	.....	. .	.... .	.....	.....	.....	2.50	..	.80	..	6	8	18	4	.....	
Lenox	Taylor	1,250	....	49.4	.....	90	20	18	7	41	1 02	.....	.57	..	4	21	2	7	NW	
Leon (*a*)	Decatur	.....	....	52.8	.....	88	21	22	7	35	1.85	....	1.04	....	4	....		....	....	
Mt Ayr	Ringgold	1,236	8	49.4	-2 8	91	20	20	7	43	2 27	-1.49	1.25	....	8	10	13	7	NW	
Mt Pleasant	Henry	729	....	49 9	.....	88	21	20	8	41	3.29	.....	2.18		5	14	12	4	SE	
Omaha, Neb	Douglas	1,113	32	52.2	†1.2	92	20	22	7	39	.85	-2.21	.30	T	9	9	16	5	SE	22, 25, 27
Oskaloosa (*a*)	Mahaska	843	18	48.0	-2 2	83	21	17	8	41	3.31	† 57	2.26	...	6	21	2	7	NW	20, 25
Ottumwa	Wapello	630	7	50.9	-2 6	87	2	25	8	34	3.08	-.80	1.98		4	16	10	4	SE	
Ovid	Wayne	992	8	50.3	-2. 3	88	21	20	7,8	38	2.55	-1.09	1.37		8	11	0	19	NW	
Pacific Junction	Mills	960	....	50.5	.....	94	20	19	7	41	.92	.....	.56	....	8	10	18	2	E	
Red Oak	Montgom'ry	1,033	....	50.6	.....	84	20	24	7	31	1.01	.....	.33	T	7	5	25	0	NW	25, 28
St. Charles	Madison	1,070	....	50.6	.....	89	21	21	7,8	42	1 53	..	1.18	T	5	14	14	2	.....	27
Sigourney	Keokuk	768	....	50.2	.....	91	2	20	8	43	3.84	....	2.65	..	8	17	13	0	NW	25
Stockport	Van Buren	....	...	.....	.....	...	.....	.....	.....	.....	3.33	.....	2.26	....	6	13	5	12	NW	20, 25, 28
Thurman	Fremont	...	....	53.1	....	94	20	21	7	42	.83	.....	.45	....	7	16	9	5	NW	
Villisca	Montgom'ry	1,058	8	49.8	-2.2	95	20	8	7	57	1 98	-1.96	1.08	....	8	13	16	1	SW	25, 26, 28
Wapello (*b*)	Louisa	578	....	51 8		84	21	27	6	39	3 61	....	2.48	....	5	..	....	....	W	20, 22, 25
Washington	Washington	769	11	47.0	-5 3	89	21	23	7,8	41	2.66	- 05	1 80	..	5	....	....	....	NW	
Winterset	Madison	1,129	10	50.4	-1.0	90	21	22	8	38	1.15	-3.28	.65	.	4	14	11	5	NW	
Woodburn	Clarke	961	..	.....	.....		.....	.....	.....	.....	1.96	...	1 40	....	4	22	4	4	NW	
Average	.....		....	50. 3	-1.6	89.5	... .	20 7	.....	40.1	2.19	-1. 38	..	T	6	13	12	5	NW	
Av. for the state	.....	.....	...	48.2	-1.2	87.5	.....	18.9	... .	39.5	1.71	-1.77	....	T	5	14	11	5	NW	

§Means determined from 7 A. M., 2 P. M, and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Means determined from 7 A. M, and 7 P. M. observations. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR APRIL, 1902.

STATIONS.		DATE.																													Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Afton	Max.	..	50	51	60	65	60	50	56	58	56	58	55	58	60	63	61	69	67	66	68	90	76	57	74	77	54	74	70	68	78	64 0
	Min.	29	30	27	28	38	38	20	22	38	30	32	30	27	35	33	39	36	45	33	48	65	42	29	35	43	39	37	48	49	47	36 4
Albia	Max.	43	48	51	61	65	64	53	54	64	65	59	58	62	62	61	63	71	69	67	70	00	77	60	71	75	58	73	69	66	70	64.0
	Min.	29	30	29	30	39	40	24	23	35	38	37	32	28	32	33	39	36	50	37	45	63	46	33	40	53	41	39	51	49	49	38.3
Algona	Max.	39	44	49	50	66	57	44	53	58	59	53	51	54	56	58	58	67	65	65	76	86	71	58	70	56	58	69	72	67	69	59 6
	Min.	22	20	21	27	35	35	16	23	35	37	33	32	25	22	35	40	36	41	28	46	52	41	27	34	50	34	40	46	40	40	33.8
Alta	Max.	36	42	44	59	53	55	46	50	58	56	53	53	56	56	56	56	66	65	64	82	68	67	55	72	58	55	72	74	62	74	58 8
	Min.	27	19	22	30	36	30	16	22	35	36	28	29	29	28	33	38	34	40	30	47	52	33	24	37	35	33	41	45	39	44	33.1
Amana	Max.	41	45	50	58	61	61	48	49	62	64	16	54	57	58	58	60	69	67	62	70	88	76	58	65	68	63	68	66	64	72	61.3
	Min.	28	28	24	25	39	38	23	25	26	31	33	35	25	32	30	36	31	46	37	42	58	49	33	29	52	40	34	52	51	45	36 1
Ames	Max.	37	45	53	56	61	57	47	52	60	58	56	54	57	60	16	55	69	65	69	73	87	84	58	68	69	57	71	73	68	74	61.6
	Min.	26	23	25	30	36	37	20	22	34	30	35	32	28	31	35	41	37	44	32	52	68	42	29	30	51	39	37	..	42	44	35.6
Atlantic	Max.	37	48	53	59	70	63	47	52	58	58	60	59	58	63	59	61	69	68	67	90	87	74	59	73	75	59	75	75	70	77	64.1
	Min.	30	25	25	25	35	33	19	17	36	36	30	27	21	34	32	39	26	46	31	51	63	37	28	37	46	37	36	49	39	41	34 4
Baxter	Max.	39	48	54	55	62	63	43	57	60	58	58	57	60	60	58	60	69	70	65	74	92	82	58	68	72	59	69	68	65	74	62.6
	Min.	25	24	24	28	36	35	19	19	32	33	33	28	24	29	32	31	33	44	32	45	59	40	29	30	51	33	36	44	45	43	33.9
Bedford	Max.	41	53	51	58	66	67	54	51	56	..	60	58	57	60	58	.	70	69	69	91	86	74	59	72	78	60	72	65	69	78	64.3
	Min.	27	20	32	25	37	37	20	20	37	32	28	28	26	34	20	37	27	47	33	52	68	39	..	33	39	34	36	50	43	49	35.
Belknap	Max.	43	46	49	58	60	62	45	50	61	66	57	56	58	59	58	60	67	63	64	70	88	76	76	70	74	57	70	67	67	74	62 6
	Min.	28	30	26	26	35	38	23	22	30	31	33	31	28	35	28	33	34	46	30	42	58	50	32	34	43	40	37	47	47	46	35 6
Belle Pl'ne	Max.	41	45	48	58	66	60	44	50	60	65	55	57	58	60	63	59	68	66	50	70	87	78	57	66	68	59	61	68	63	70	61.3
	Min.	26	27	26	28	33	35	21	22	28	33	31	33	27	30	32	36	33	44	34	40	50	43	30	40	43	38	35	41	50	44	34 4
Bonaparte	Max.	44	48	51	60	58	68	51	49	64	70	60	59	60	59	61	60	70	71	67	68	88	78	60	69	74	62	70	62	69	73	63.8
	Min.	30	30	26	29	36	38	25	23	29	33	35	33	26	39	29	33	33	46	37	44	58	51	34	34	51	42	36	50	49	48	36 9
Britt	Max.	37	42	51	56	72	51	44	53	64	57	51	55	53	57	62	59	69	57	68	74	89	68	55	70	57	55	72	71	64	70	60 1
	Min.	22	19	20	21	27	32	14	15	30	30	31	31	22	23	32	40	30	36	27	42	50	39	24	31	43	29	30	43	39	39	30 5
Burlington	Max.	42	48	55	60	58	64	54	48	67	72	61	58	68	59	60	59	69	70	65	65	88	79	61	67	75	64	69	62	73	76	63.9
	Min.	31	33	29	32	39	39	27	25	30	38	36	34	29	39	33	37	36	50	41	44	57	54	35	37	52	42	40	51	51	50	39.0
Carroll	Max.	37	50	55	60	67	60	52	50	60	55	58	59	60	61	59	60	70	65	62	82	90	76	62	75	71	58	74	75	69	76	63.6
	Min.	27	21	23	27	28	35	18	20	35	38	30	27	22	30	34	35	34	40	31	47	56	38	25	37	43	34	38	48	40	42	33 4
Cedar Rap	Max.	40	44	50	58	62	59	44	48	62	63	55	54	55	55	59	58	63	68	61	70	90	79	59	66	67	66	69	67	64	71	61.0
	Min.	28	28	26	29	43	42	24	24	28	34	36	33	29	34	31	37	34	39	38	34	58	50	33	32	50	49	38	52	51	45	37.6
Centerville	Max.	49	47	51	58	61	65	53	53	61	63	59	57	58	62	59	59	68	69	66	73	89	78	58	70	75	59	67	65	66	75	63.1
	Min.	30	33	31	31	38	45	25	19	30	38	36	34	32	36	31	39	40	50	39	50	69	45	33	40	53	44	46	52	52	52	39 9
Chariton	Max.	40	47	50	57	68	61	50	52	59	61	58	56	58	59	57	62	63	67	65	74	87	75	57	70	75	57	72	66	66	75	64.1
	Min.	28	30	27	28	37	37	22	29	35	32	34	30	26	25	23	32	32	46	35	47	66	42	30	37	44	38	38	50	48	47	35 8
Charles Cy	Max.	35	43	48	52	65	58	47	51	58	58	56	56	57	55	57	53	64	64	62	72	89	81	55	66	64	59	69	72	64	66	59.9
	Min.	25	22	24	25	34	36	19	24	26	29	33	32	24	27	27	38	34	45	30	42	52	44	30	32	48	35	34	43	41	38	33.1
Chester	Max.	40	52	53	64	53	41	50	53	55	51	50	50	53	54	55	55	64	64	63	67	86	80	54	64	57	57	68	66	60	58	57.9
	Min.	24	24	22	30	34	18	22	24	33	33	34	33	22	26	22	38	35	42	28	40	48	48	31	23	43	48	30	42	43	33	32.4
Clarinda	Max.	45	55	55	62	60	64	51	53	59	53	62	60	61	60	60	63	73	68	72	56	89	71	61	74	79	63	75	72	72	80	65.9
	Min.	27	20	32	28	36	39	20	24	37	34	32	30	29	38	32	40	31	47	36	52	67	40	32	34	39	39	38	51	48	50	36.7
Clear Lake	Max.	39	54	62	55	72	67	56	53	68	60	56	65	69	62	55	56	71	70	71	73	86	72	65	75	64	64	71	69	71	72	64.7
	Min.	22	19	23	27	34	34	15	20	28	37	32	30	26	25	30	39	36	42	28	9	47	40	25	31	47	31	38	43	40	37	32.3
Clinton	Max.	38	47	53	52	60	66	44	51	65	70	58	56	57	58	58	62	69	70	61	65	88	79	60	68	65	60	70	73	72	73	62 3
	Min.	31	27	22	23	32	38	25	24	28	31	34	33	28	31	25	32	30	46	44	32	55	46	35	27	47	37	34	51	52	40	34 7
College Sp	Max.	46	55	50	60	66	63	51	56	56	51	63	58	59	62	60	61	72	..	..	..	..	65	38	30	42	44	37	41	52	52	52	37.3
	Min.	24	24	32	30	35	35	20	27	37	34	23	29	28	45	34	38	34	45	35	50	65	88	74	59	69	75	62	71	75	75	69	65.2
Colum. Jc.	Max.	58	45	55	60	63	65	52	51	66	68	58	58	60	61	62	60	69	68	66	65	46	..	51	33	42	52	34	38	55	51	48	36 9
	Min.	33	35	25	29	40	37	26	26	30	37	25	33	29	36	30	39	34	46	39	46	..	88	71	58	72	75	58	72	67	69	77	61.7
Corning	Max.	39	47	49	59	55	60	46	50	54	53	56	56	55	59	58	61	69	67	56	90	88	71	58	72	75	58	72	67	69	77	61.7
	Min.	26	25	29	29	37	35	20	18	18	30	31	29	24	35	30	41	32	41	34	49	66	38	30	38	38	38	38	48	43	47	34.8
Co Bluffs	Max.	45	48	53	63	69	60	48	49	60	67	60	62	53	60	58	62	72	65	70	95	88	76	60	75	78	61	78	79	70	81	65 7
	Min.	29	24	29	32	39	30	20	30	38	40	30	48	32	31	28	42	36	45	38	53	69	35	30	40	37	40	43	50	45	52	37 8
Cresco	Max.	32	39	48	..	65	53	49	52	..	55	52	49	51	53	58	54	63	65	58	69	88	74	64	65	53	53	66	68	60	59	57 7
	Min.	26	24	24	..	36	30	17	22	..	23	33	31	27	27	30	30	35	35	30	40	46	40	32	29	43	35	34	49	40	37	32.3
Davenport	Max.	38	46	50	56	57	63	41	47	63	66	57	55	57	53	56	56	66	67	62	66	86	74	57	66	70	58	66	65	67	71	60 1
	Min.	31	31	30	32	40	39	25	25	32	39	38	37	36	35	32	40	38	49	41	41	58	43	35	37	50	39	41	52	55	50	38.9
Decorah	Max.	34	41	54	57	67	57	58	56	60	60	53	52	54	56	60	54	63	65	63	68	86	82	57	64	57	56	69	72	63	56	59 8
	Min.	29	27	22	27	38	39	20	26	28	31	37	34	24	27	25	41	38	44	36	43	50	40	37	29	44	38	33	44	46	36	34 4
Delaware	Max.	35	45	45	55	62	57	40	50	60	62	58	53	53	53	59	57	66	68	58	64	84	77	52	64	59	59	66	68	68	68	58.8
	Min.	27	25	25	26	32	38	22	22	27	32	32	31	28	20	26	36	34	46	36	38	55	49	33	30	47	36	36	47	41	41	34.1
Denison	Max.	37	44	48	60	66	58	46	53	59	58	56	56	55	56	57	57	69	65	65	86	83	..	..	26	38	..	33	42	49	41	42	33.0
	Min.	30	22	22	28	35	34	16	19	37	39	26	28	22	31	35	41	34	41	31	45	..	..	26	38	..	33	42	49	41	42	34.0
Des Moi'es	Max.	39	46	51	55	64	60	47	51	56	56	58	56	59	61	56	59	67	67	64	82	89	72	56	69	71	58	72	68	67	74	61.7
	Min.	28	27	29	30	39	35	24	23	38	34	37	34	31	36	38	40	36	47	34	48	69	38	31	33	41	38	40	49	46	50	37.5
De Soto	Max.	39	45	50	62	68	58	48	54	63	55	57	54	56	59	61	60	63	66	63	76	88	77	57	69	73	57	73	71	68	75	62.3
	Min.	29	24	28	30	45	43	23	22	41	37	37	35	29	37	41	43	38	50	36	50	67	43	33	34	50	41	39	53	49	49	39 4
Dows	Max.	36	45	49	52	65	54	45	50	59	57	53	55	55	55	56	53	67	65	62	71	88	80	55	66	62	60	67	66	66	70	59.5
	Min.	22	21	23	26	34	34	14	20	30	31	28	28	22	28	32	39	32	41	28	42	53	38	26	32	47	27	34	44	38	40	3 8
Dubuque	Max.	35	41	51	56	62	60	40	50	63	64	55	50	53	52	55	55	64	64	60	62	85	76	56	64	61	57	66	68	67	64	58.7
	Min.	31	30	27	30	43	37	24	26	31	37	38	39	33	42	32	42	37	49	43	42	55	41	35	35	46	40	40	54	52	45	38.6
Earlham	Max.	39	48	52	58	69	60	46	52	55	57	60	59	58	61	59	61	70	69	65	81	89	74	56	70	76	58	73	67	68	76	62 9
	Min.	29	25	23	25	39	38	20	14	35	33	30	28	23	33	33	32	30	46	32	46	63	40	29	29	44	37	34	49	40	42	34.0
Eldon	Max.	43	48	52	59	60	66	52	51	63	66	59	57	58	61	59	58	70	71	65	68	83	78	60	70	75	65	72	67	66	76	63 4
	Min.	29	32	28	25	39	31	24	20	31	29	35	27	35	37	28	33	28	49	38	42	64	52	34	29	53	42	34	51	49	46	36 5
Elkader	Max.	36	44	56	58	66	61	45	55	65	63	56	56	64	50	60	56	67	71	65	69	88	..	60	63	62	58	70	72	62	72	61 3
	Min.	30	25	22	24	41	38	23	24	27	30	35	34	23	24	23	35	35	46	38	37	52	49	35	26	44	38	33	45	49	37	30 8
Estherville	Max.	38	43	47	51	65	50	45	53	53	52	52	53	55	55	60	65	67	65	64	77	81	69	53	69	55	57	70	71	65	70	58 8
	Min.	23	19	17	22	24	30	13	16	36	30	32	31	21	19	25	35	27	43	25	45	40	41	25	28	36	32	36	42	40	38	29.7
Fayette	Max.	35	43	53	56	63	58	43	52	60	60	58	53	53	54	58	54	68	65	61	67	87	81	56	66	60	56	67	69	62	69	59.6
	Min.	25	24	21	23	37	35	19	22	21	29	31	22	25	22	24	31	31	45	33	38	51	40	32	..	43	32	30	44	43	31	31 3
Forest City	Max.	36	44	51	50	59	42	45	51	58	57	57	55	54	54	55	57	67	63	63	77	88	79	54	67	59	57	32	33	44	39	39	31 5
	Min.	22	20	23	29	29	32	16	21	29	32	25	29	26	27	29	39	32	38	27	42	50	39	25	31	47	32	33	44	39	39	31 5
Ft. Dodge	Max.	35	46	51	53	65	57	55	55	60	59	55	56	55	60	57	55	67	67	66	70	88	78	55	70	67	62	65	72	68	74	61.4
	Min.	23	20	20	21	32	33	16	14	35	30	34	29	20	26	29	39	32	45	26	40	49	40	20	28	50	38	31	40	40	38	31.5
Galva	Max.	38	43	47	63	64	55	47	56	61	58	55	54	56	56	61	60	68	60	67	88	81	71	58	76	64	58	75	78	68	72	62.1
	Min.	29	19	19	25	25	34	15	21	37	34	31	39	22	27	32	36	31	36	30	47	55	34	24	54	42	29	36	44	39	42	2.9
Glenwood	Max.	44	51	54	62	73	64	62	55	58	59	60	65	69	64	59	64	73	69	73	94	87	80	62	75	78	62	76	77	72	84	67.5
	Min.	27	24	29	34	37	37	19	26	29	38	33	32	29	37	31	39	30	31	35	35	70	39	31	37	39	36	40	50	45	45	35 6
G. Meadow	Max.	34	39	49	54	64	55	40	50	58	62	54	51	52	51	56	55	66	69	60	65	88	79	56	64	55	53	65	69	60	67	58 0
	Min.	28	25	24	23	37	36	19	23	28	35	32	31	27	27	26	36	37	45	34	45	47	47	33	32	42	33	45	43	45	37	34 2
Greene	Max.	36	45	52	54	68	55	45	53	61	59	51	50	55	59	58	56	67	65	66	74	88	78	57	69	59	59	72	72	64	72	60.6
	Min.	25	23	24	27	25	36	19	22	28	30	33	31	24	20	30	38	24	45	30	41	53	45	28	30	50	35	35	44	41	40	33.0
Greenfield	Max.	38	42	44	60	67	60	45	53	65	55	57	56	56	60	62	62	69	67	67	82	88	78	59	73	77	56	73	70	73	76	63 0
	Min.	27	26	24	28	38	36	18	18	36	36	31	29	27	34	36	40	36	44	31	45	62	40	27	30	45	38	39	43	45	46	35.2
Grinnell	Max.	40	43	47	55	59	59	44	48	58	59	55	54	56	55	56	55	66	64	59	68	85	75	54	65	66	56	66	65	62	70	58.8
	Min.	26	26	24	30	40	36	21	23	32	39	34	32	23	32	32	39	37	58	33	46	60	57	32	34	52	39	42	51	48	45	37.2
Grundy C'r	Max.	39	45	51	57	61	61	48	51	61	57	56	58	58	56	57	55	69	68	61	69	82	75	57	65	64	60	66	68	63	70	60.4
	Min.	25	23	22	27	39	34	18	21	28	31	31	30	24	24	29	35	32	45	30	41	56	43	29	30	50	38	34	46	43	41	33.3
Guthrie Cr	Max.	46	41	43	51	62	46	..	45	50	55	..	49	52	..	46	48	58	55	65	72	88	..	52	61	..	52	63	62	59	61	55.4
	Min.	24	21	20	23	35	36	26	26	33	33	32	26	23	30	35	38	32	41	29	46	59	36	26	61	36	38	36	37	41	41	33.1
Hampton	Max.	37	45	55	55	68	57	47	52	62	58	52	56	59	62	60	56	70	65	67	73	90	77	57	68	60	57	68	65	66	74	61.3
	Min.	24	22	25	30	35	35	18	21	28	35	31	30	27	20	30	39	34	43	30	42	49	40	27	32	49	39	36	44	40	40	33 4
Harlan	Max.	39	45	49	60	68	59	45	55	60	57	58	55	56	59	61	59	68	65	66	87	85	76	55	72	73	56	72	66	66	75	62.7
	Min.	30	25	25	27	27	36	18	24	37	35	33	30	26	35	30	37	30	45	32	49	59	35	27	34	37	37	37	48	42	46	34.7
Humboldt	Max.	38	44	48	52	65	56	46	54	61	58	54	56	56	57	50	56	78	67	65	77	47	52	38	21	33	48	34	38	42	40	40	32 2
	Min.	21	20	20	22	30	32	16	18	35	34	32	28	22	25	33	40	34	43	23	47	52	86	80	55	61	62	62	67	67	62	..	58.8
In'pen'nce	Max.	36	43	50	55	61	57	44	49	58	57	53	55	55	56	55	56	66	67	63	72	86	80	55	61	62	62	67	67	62	..	58.8
	Min.	26	24	24	26	37	39	20	21	26	33	32	32	27	26	27	36	31	45	32	39	50	40	32	..	47	36	34	47	44	39	33 0
Indianola	Max.	38	47	52	56	66	61	48	52	56	..	58	57	60	60	59	..	68	67	65	75	88	72	58	71	58	73	..	68	68	75	62.1
	Min.	28	26	24	28	..	39	22	20	34	..	39	32	25	34	30	38	..	42	33	48	67	42	35	36	39	..	37	51	48	47	35.4
Iowa City	Max.	42	47	55	60	61	62	48	52	66	65	56	56	59	62	61	58	68	68	66	70	90	78	57	69	69	66	72	68	66	77	63 2
	Min.	30	29	24	25	41	39	24	22	26	33	36	35	27	34	28	33	28	48	39	42	55	44	34	30	51	40	34	50	49	45	35 8
Iowa Falls	Max.	36	43	49	54	65	56	45	51	60	58	53	57	56	57	58	54	68	65	65	72	89	72	55	69	65	55	69	65	63	73	60.1
	Min.	24	22	24	25	36	31	18	18	26	28	31	29	24	26	26	37	32	44	31	42	53	39	27	28	47	39	33	45

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR APRIL, 1902—CONTINUED.

STATIONS.		DATE																													Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Keokuk ...	Max...	43	49	45	57	60	65	44	47	61	68	66	58	57	56	58	60	68	66	65	68	89	73	58	67	76	59	69	63	73	75	....	61.1
	Min ..	33	34	33	32	39	41	29	26	34	38	40	36	34	40	34	39	36	47	43	45	60	61	36	40	54	47	40	51	52	54		40.9
Keosauqua	Max...	45	49	52	62	60	67	70	55	64	71	62	60	60	61	61	62	72	71	68	70	00	78	62	70	77	65	71	71	71	77	....	65.8
	Min...	31	32	26	29	37	40	27	20	32	30	37	34	26	28	27	36	30	49	38	41	66	51	35	30	42	43	34	34	51	47	....	36 5
Lancing. ..	Max ..	42	47	58	57	65	60	50	54	67	64	58	53	58	58	57	56	66	69	63	68	87	84	65	62	61	58	69	69	68	66	....	62.0
	Min ..	28	25	21	25	37	38	21	25	28	30	35	27	25	25	29	40	32	42	37	40	47	00	42	28	43	36	35	44	50	36	..	34 7
Larrabee..	Max..	39	43	44	61	..	67	49	52	58	54	54	56	56	57	58	62	68	62	.	84	73	62	59	73	57	57	73	77	66	76	....	61.6
	Min ..	17	15	19	27	..	30	9	22	35	30	14	17	24	24	34	35	28	24		48	43	35	22	37	35	32	16	42	38	42	....	29.8
Le Mars...	Max..	41	43	46	61	65	54	45	52	61	57	55	55	56	56	56	60	69	65	66	84	74	74	55	70	60	57	72	72	65	75	..	65.0
	Min ..	28	19	2.	3	33	28	15	26	35	17	30	28	21	21	34	36	30	40	27	49	56	34	25	40	32	31	41	42	40	45	..	32 5
Lenox.....	Max ..	38	48	49	58	65	60	54	49	56	52	59	55	56	61	60	60	70	67	67	90	78	58	73	77	58	74	67	69	77	....	..	62 9
	Min...	26	25	29	23	36	36	8	23	36	35	30	27	29	36	35	40	33	45	34	49	66	41	28	37	40	38	38	49	46	47	..	46 0
Leon	Max .	60	..	63	59	62	62	56	51	57	58	58	55	57	59	60	59	67	67	66	84	88	77	59	72	77	58	72	76	68	77	...	67 0
	Min...	40	..	33	29	38	41	22	23	38	31	33	32	30	33	35	38	37	46	36	49	62	48	31	38	45	41	39	50	50	49	...	41.6
Logan.....	Max...	43	48	51	64	70	60	49	54	60	58	60	58	59	62	60	62	75	78	80	90	84	76	60	72	75	59	75	78	69	83	..	65.7
	Min..	30	24	25	30	38	40	19	25	22	26	22	26	28	38	40	38	35	45	51	66	56	37	28	40	42	35	41	50	44	47	..	36 3
Maquoketa	Max. .	28	47	53	56	61	65	48	51	66	67	56	56	58	56	60	56	69	71	64	65	86	80	59	64	65	63	67	68	71	72	....	61.9
	Min..	28	27	23	35	39	23	22	25	29	5	34	24	26	28	28	31	26	42	41	48	55	54	38	21	26	39	31	50	51	39	....	33.8
Marsh'lt'n.	Max..	40	47	54	56	62	60	48	52	61	59	55	57	61	53	59	58	70	68	65	73	90	80	58	69	67	60	70	70	66	75	...	62.1
	Min...	26	25	24	27	38	35	20	21	30	40	35	33	26	29	31	39	36	46	33	45	58	45	30	31	50	38	37	48	45	43	....	35.2
Monticello.	Max...	33	40	52	62	57	60	57	62	65	68	..	..	..	..	..	..	..	..	..	..	..	..	..	31	35	33	38	40	37	39	....	....
	Min...	29	24	29	23	37	37	21	20	25	29	..	..	..	..	..	..	..	..	..	..	..	..	..	73	58	65	74	63	69	76	..	63.3
Mt. Ayr....	Max..	35	50	50	59	64	61	51	49	56	54	58	56	58	62	59	59	68	67	67	91	89	..	..	.8	39	31	37	48	49	49		35.6
	Min ..	25	25	32	26	35	37	20	23	36	33	31	28	30	16	35	36	33	43	34	48	66	..	..	70	75	62	70	69	60	73	..	63 9
Mt.Ple's'nt	Max..	46	45	52	59	63	66	57	51	63	70	59	58	57	61	61	60	70	72	64	68	85	78	81	29	49	40	31	47	48	44	....	35.9
	Min..	39	39	8	30	34	35	23	20	28	35	35	32	24	35	27	30	30	48	37	42	55	78	81	69	66	59	60	67	67	77	....	62.1
Mt.Vernon	Max..	40	48	54	59	58	63	40	53	68	68	55	55	62	57	64	59	68	68	68	72	86	78	82	69	66	59	66	67	67	77	....	63.1
	Min...	29	26	24	27	38	39	22	21	29	36	32	28	26	31	29	35	34	42	36	40	55	48	34	35	48	35	35	50	48	44	....	33 1
NewH'pton	Max...	24	43	51	53	63	55	46	51	57	56	51	53	54	54	56	..	64	66	62	70	80	78	54	64	59	56	64	68	52	58	...	58.6
	Min.	25	22	25	28	34	35	33	22	30	33	32	30	38	29	28	37	33	43	30	40	50	45	30	43	45	34	32	42	45	41		34.9
Newton....	Max...	37	45	50	57	62	60	48	52	61	59	54	56	58	58	58	57	68	66	62	86	68	83	63	67	65	57	70	69	65	68	...	61.4
	Min ..	26	24	24	29	38	36	20	21	33	34	33	30	27	32	31	37	34	43	.2	86	59	43	23	34	51	37	56	49	47	46	...	35.4
Northwood	Max..	35	46	53	53	68	52	49	52	66	56	50	53	60	60	57	63	70	69	67	90	68	87	65	59	67	56	61	60	63	66	...	60 8
	Min...	23	20	28	26	29	35	17	22	28	30	32	32	25	25	29	39	37	39	30	40	47	39	27	31	45	33	36	42	40	37	...	32.1
Odebolt....	Max...	38	47	51	61	68	58	50	52	61	68	55	56	60	62	59	58	69	66	67	85	83	71	57	71	65	57	72	76	71	78	....	63.2
	Min...	29	21	22	29	38	34	16	21	24	36	32	29	22	30	29	26	31	41	30	48	51	38	25	35	45	35	36	47	40	41	..	32 7
Ogden....	Max...	38	58	53	55	65	60	55	51	60	60	60	60	59	60	58	60	75	65	65	76	88	26	60	70	80	59	72	70	68	74	....	63 8
	Min...	25	22	24	26	35	32	18	20	36	6	30	26	32	31	34	40	31	31	31	45	58	41	16	16	18	37	36	47	42	44	....	33 7
Olin..	Max...	39	42	48	55	61	61	50	46	49	64	50	54	53	53	56	55	65	67	62	67	85	28	56	66	65	64	58	..	63	68		58 8
	Min...	30	27	24	25	36	39	24	22	25	30	32	32	25	30	27	35	29	45	37	45	55	44	31	28	48	33	30	..	47	40		32.7
Omaha, N.	Max..	44	47	52	63	68	59	49	46	60	58	61	55	56	60	56	59	7	66	68	92	85	75	60	72	75	59	72	76	67	80	....	63.7
	Min..	28	28	29	38	41	38	22	33	39	40	37	35	34	40	45	44	43	50	10	5	72	38	33	46	36	41	47	52	46	52	....	40.7
Onawa.....	Max...	41	51	16	63	67	63	56	50	64	61	61	60	63	64	59	64	73	69	68	89	84	70	63	70	70	63	74	76	74	79	..	65 5
	Min...	29	22	21	33	36	37	16	26	30	37	31	28	25	32	39	34	32	45	31	50	68	36	27	40	38	34	39	50	42	41		35 0
Osage.....	Max..	35	43	51	52	65	52	43	53	61	55	49	52	54	56	55	56	57	56	59	63	88	81	53	68	57	55	69	70	68	66	....	58 9
	Min .	25	22	25	27	30	36	18	21	29	31	31	32	35	26	27	34	34	38	29	43	45	43	29	29	46	31	34	41	41	37		31 9
Oskaloosa.	Max..	42	47	51	59	63	63	47	55	64	65	58	57	56	63	61	62	69	68	63	84	..	60	70	63	58	70	..	60	73	..	61 2
	Min...	27	28	21	26	38	36	22	17	32	30	31	30	26	35	30	36	30	46	35	45	59	45	32	29	51	39	33	49	43	43	.	34 9
Ottumwa ..	Max...	41	56	50	59	60	64	48	50	60	66	60	58	57	58	58	59	68	68	63	89	87	78	57	69	67	61	70	69	65	73		62 3
	Min ..	29	32	29	30	40	42	28	25	37	34	36	35	32	38	33	40	34	52	39	48	62	40	30	37	54	43	40	53	54	50	...	9 5
Ovid.....	Max ..	47	54	56	61	64	66	51	52	60	61	60	60	65	64	60	61	69	71	7	74	78	45	50	71	75	61	72	65	70	75	..	64 7
	Min ..	28	31	29	28	35	35	20	20	37	32	31	28	26	35	33	34	34	45	33	46	65	43	28	35	44	40	36	50	46	49	....	35 9
Pacific Jct.	Max...	44	50	53	62	72	60	54	44	60	58	61	56	59	65	54	62	73	69	70	84	87	74	60	75	79	61	75	77	70	82	....	65 4
	Min...	26	23	28	31	35	35	19	26	38	37	28	26	29	37	35	37	30	45	35	51	66	47	30	35	36	36	40	50	44	4	..	35 6
Perry.....	Max	38	46	51	58	62	60	47	53	69	68	18	58	64	60	60	60	72	68	67	79	91	75	10	71	72	58	75	77	70	..	..	63 3
	Min...	28	25	25	29	38	33	21	21	38	34	34	29	25	33	36	40	34	41	30	48	60	40	29	33	47	28	26	48	45	45	..	38 0
Plover....	Max ..	52	44	48	55	62	48	44	55	64	55	60	54	55	55	63	64	70	66	67	79	90	..	6	71	60	56	70	71	64	72	....	61 5
	Min .	21	18	19	20	32	31	14	13	35	29	28	28	23	20	23	37	30	37	25	47	46	55	23	20	48	37	32	40	37	40	....	30.0
Primghar .	Max.	37	44	45	61	64	57	47	53	63	62	59	55	55	16	55	63	70	65	65	..	78	71	..	..	..	..	..	..	70	74	60	73
	Min...	27	18	21	31	36	33	13	31	35	38	30	37	34	26	35	39	33	37	28	47	56	36	28	37	40	33	40	43	45	45		34.2
Red Oak...	Max..	42	49	50	59	66	67	52	53	55	53	53	57	55	55	58	60	59	68	65	66	84	83	3	66	70	74	57	68	72	77	...	61 9
	Min ..	20	26	32	34	41	40	24	31	39	39	34	33	32	40	37	44	34	48	38	53	64	40	33	39	41	30	44	52	48	51	...	9 5
Ridgeway .	Max ..	36	45	54	55	65	59	44	56	61	57	54	54	58	55	57	54	66	70	66	75	88	77	59	67	56	63	70	69	63	68	..	60.7
	Min ..	21	25	23	28	35	34	18	32	30	35	33	33	26	26	30	38	32	44	30	42	47	28	32	28	43	35	31	43	43	36	....	33.2
Rockwell C	Max...	38	45	48	56	60	55	45	54	59	59	55	55	56	58	58	55	68	66	64	70	87	63	55	71	66	56	72	75	60	75	..	62 4
	Min...	23	23	22	28	34	34	18	19	31	34	31	34	25	28	30	29	34	39	3	55	50	34	25	35	49	36	36	43	40	45	..	32 9
Ruthven ..	Max .	42	48	49	51	64	58	45	52	57	58	56	54	56	55	59	59	67	66	62	77	82	72	55	68	63	56	69	74	7	61		60 7
	Min. .	35	19	20	30	39	32	11	21	..	42	41	48	25	27	33	30	32	38	28	45	48	84	70	57	70	65	58	72	75	58	....	44 7
Sac City....	Max ..	37	45	48	59	64	56	47	50	59	58	55	52	56	55	59	59	67	65	81	84	70	57	70	65	58	72	72	75	70	75	....	61 0
	Min ..	27	20	22	30	35	34	17	21	36	32	32	31	..	28	34	39	36	42	0	67	59	8	26	30	46	35	37	41	40	42		34 4
St. Charles.	Max.	41	48	51	60	67	67	48	52	57	58	59	59	60	63	60	61	70	69	65	78	80	72	72	72	74	59	74	68	69	75	....	63 7
	Min..	29	30	24	29	39	40	21	21	37	38	47	31	28	39	37	41	37	43	35	47	66	38	30	30	42	38	9	49	48	48	....	37 6
Scranton ..	Max.	38	45	50	58	66	58	54	52	61	58	56	55	58	60	60	58	70	67	67	80	82	63	67	74	74	60	74	76	73	78	....	62 8
	Min .	23	25	..	32	37	38	20	20	36	32	26	26	31	32	40	37	..	37	..	64	10	27	31	37	38	40	43	43	48	..	..	34 0
Sheldon ...	Max ..	39	45	41	60	64	52	48	54	61	58	55	55	58	57	57	63	70	60	67	83	77	62	56	72	60	57	72	76	57	74	..	61 0
	Min ..	32	25	19	29	29	32	22	12	35	34	23	25	22	21	22	24	31	35	24	45	59	34	22	36	..	33	37	45	40	39	....	30 9
Sibley	Max...	37	44	44	59	64	51	49	53	52	57	50	54	56	55	60	61	70	66	66	82	79	64	55	72	61	55	72	76	69	73	..	60 0
	Min...	27	18	19	25	28	33	13	21	16	16	30	28	26	25	32	28	27	36	21	45	59	34	23	35	34	32	36	46	30	31	..	30 8
Sigourney .	Max ..	44	50	59	62	67	67	48	55	63	68	58	61	63	67	67	63	73	69	67	71	91	78	60	73	73	60	73	76	66	80	....	65 4
	Min.	27	26	21	27	39	35	21	20	28	31	34	26	26	33	28	30	31	47	35	36	60	45	31	30	50	49	33	49	51	41	....	31.0
SiouxC'nt'r	Max ..	38	41	43	59	62	55	48	53	61	61	58	53	53	54	57	57	60	69	63	80	85	75	59	55	50	61	59	69	70	65	74	59 7
	Min..	30	20	21	31	34	29	12	24	22	36	28	27	25	25	34	36	33	39	27	40	55	34	23	38	16	31	9	47	41	44	....	31 9
Sioux City.	Max..	40	43	47	61	64	54	47	45	59	57	55	55	56	56	52	59	71	65	65	85	86	58	58	68	60	59	72	73	64	78		60.1
	Min ..	31	23	24	37	38	27	17	32	7	39	36	28	27	28	39	8	39	43	41	52	54	34	28	16	32	35	45	51	41	43	..	31.0
Stuart.....	Max ..	40	40	41	60	66	54	60	54	58	56	58	60	57	62	62	64	68	67	65	80	88	25	56	72	72	55	74	71	65	75	....	62 1
	Min ..	30	24	24	28	32	38	20	36	36	38	37	30	34	36	35	8	40	46	33	36	60	..	38	36	40	45	37	48	36	48	..	6 1
Storm L...	Max ..	36	42	44	18	61	55	45	49	56	56	52	52	54	54	54	55	65	64	61	78	78	71	53	67	61	54	69	71	64	7	..	58.5
	Min ..	27	17	20	31	37	35	16	24	35	38	0	10	25	25	25	5	36	40	29	48	55	34	25	38	39	34	41	45	38	43	....	31 2
Thurman..	Max...	44	54	52	73	71	72	72	53	65	67	67	73	64	68	64	68	..	78	79	94	87	77	63	74	73	60	73	73	69	80		69.4
	Min...	29	22	32	35	37	55	21	25	38	40	31	27	29	30	32	39	28	48	37	52	67	39	29	33	7	26	40	52	44	43	....	36 8
Tipton	Max ..	40	41	50	58	62	68	52	48	62	68	58	55	56	55	62	60	68	69	64	83	86	83	63	65	68	70	69	67	70	70	....	60 7
	Min ..	29	28	21	27	40	44	19	18	28	44	33	35	22	32	26	35	32	42	33	40	56	18	33	32	52	40	53	52	52	45	...	36 9
Toledo. ...	Max..	42	45	54	59	63	58	50	58	65	59	55	60	60	63	61	60	72	68	65	71	90	76	69	68	66	59	69	68	68	73	..	61 2
	Min .	25	26	23	28	31	35	20	21	27	29	34	31	21	38	39	34	34	39	31	43	56	61	31	30	42	38	34	49	47	42	...	34 2
Villisca....	Max .	43	52	52	6	69	56	51	54	56	54	60	58	58	64	64	58	72	70	72	93	90	89	60	75	72	60	74	71	72	73	..	65.3
	Min ..	25	20	30	25	35	27	18	20	37	42	30	25	25	6	30	36	30	45	35	38	63	42	28	43	40	37	37	49	42	48	...	56.3
Wapello...	Max ..	41	55	60	56	59	58	.	68	71	62	..	59	65	60	63	10	72	68	70	65	84	70	64	66	70	62	65	62	71	73	...	61.1
	Min ..	32	29	23	42	39	27	.	31	40	37	..	6	22	39	33	40	33	50	41	13	8	52	35	30	40	41	8	51	51	49	....	31.5
Washin't'n	Max ..	43	48	53	59	63	65	46	49	65	68	58	59	60	59	62	66	71	68	65	67	89	72	59	69	62	59	68	65	69	74	...	64 1
	Min ..	27	27	33	25	..	34	30	20	25	32	34	30	24	..	29	32	30	35	..	39	..	39	30	31	..	38	34	..	49	44	....	32 9
Waterloo..	Max	41	44	51	57	62	60	42	49	59	59	53	56	58	56	59	59	63	66	62	71	82	75	57	65	61	62	65	68	67	70	..	60.0
	Min ..	26	24	24	26	40	42	20	24	27	33	33	1	27	28	28	32	34	49	33	42	52	45	31	30	48	37	37	50	43	40	....	34 6
Waverly ...	Max .	38	43	51	55	65	57	49	52	60	57	53	55	56	57	59	54	68	69	63	72	88	80	57	67	60	61	68	70	65	70	...	60 6
	Min...	26	24	21	27	38	8	20	25	27	32	34	.	25	30	2	32	35		33	41	53	44	30	31	49	36	31	49	42	41	....	34 3
West Bend	Max ..	38	44	50	51	67	56	45	56	63	59	54	57	56	59	59	..	68	67	67	78	87	70	57	72	60	58	71	74	67	74	....	61.5
	Min...	24	25	21	21	28	32	16	17	35	33	31	30	23	22	30	30	33	40	21	44	47	37	24	30	44	35	45	40	41	41	....	31.9
West Br'ch	Max ..	43	48	52	57	57	64	48	49	64	69	58	55	58	57	60	58	69	68	63	70	..	..	..	..	..	..	..	..	..	..	....	....
	Min. .	19	29	24	25	40	39	23	23	25	30	35	34	26	32	25	30	28	48	36	41	..	..	..	..	..	..	..	..	..	..	....	....
Wilton Jc .	Max...	46	46	52	60	59	60	43	48	63	69	57	55	57	59	62	69	69	70	65	68	87	76	63	63	71	53	69	70	68	73	.	62.0
	Min.	31	29	30	25	37	30	23	22	27	32	35	45	32	32	25	33	31	46	38	40	56	63	37	30	45	41	34	52	44	47	..	35 7
Winterset..	Max ..	37	45	51	58	68	62	52	52	59	57	59	57	57	60	60	60	69	68	67	82	90	78	63	72	73	57	75	69	67	76	....	63 3
	Min..	29	27	25	30	39	39	22	22	37	36	34	35	30	35	35	11	37	48	34	40	69	48	25	35	49	47	37	49	45	46	..	37 6
.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....
.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.

DAILY AND MONTHLY PRECIPITATION FOR APRIL, 1902.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	....	....	....	....	....	....		T	.09	..	..	..	....		.10		....	....	....	....	....	....	....	1.10	....	....	.56	....	....	..	1.85
Albia	..	....	....	....	..	..	..	....	....	.08			....	..	...	T	..	....	....	.40	....	04	....	..	1.80		....	.49	.04	....	..	2.85
Algona	..	....	....	....	....	....			....	..	....	....	....		.30	..	....	....	....	....	---				.80	....	....	....	..	....	....	1.10
Alta		..		T	T	....	....	....	.25		....		....	..	.11	.23	....	.01	....	....	....	....	....	....	.88		....	....	..	..	..	1.51
Alta (near)	...	....	..	....	....	..	....	....	.18			....	....	....	.45		....	....			..	....	....	....	.85	....	..	..	....	....	....	1.48
Amana	....	....	....	....	.08	..	....	....	..	.04	....	....	....	....	....	.01	....	.10	....	.12	....	08		..	1.20	.06	....	.04		....	....	1.83
Ames	....	....		..	.03	....		....	....	.04	.	....	....	....	..	.18		.04	....	.18	....		T	..	1.77	.07	....	....	T	..		2.31
Atlantic	....	..	....	....	..	....	....		.09	.12	....	....			25	.04	.			....	....	....	..	....	.79	....	.08	....	....	....	....	1.37
Baxter	....	....	....	....	....	....	....	....	....	.20	.	....	....	..	..	....	..	.25	....	.10	..	..	....	..	2.25	.25	..	.16	....	....	....	3.21
Bedford	....	....	..	..	....	....			....	26	....	....	..	....		.05	....	....	....	....	.		..	....	.28	.13	..	.78	..	....	..	1.50
Belknap	....	..	....	....		.05		..	....		....	....	....	..	....	T	..	....		.35		T		..	2.40	....		.64	.14	....	....	3.58
Belle Plaine	....	....	....	..	.25	....	..	....	..	.02	....	..	..		T	.15	....	.20	....	.20	....		....		1.50	.20	T	..	....	.05	..	2.57
Bonaparte		..		....			....	....		....	....			....	..	.07	..			.45		.17	..	....	2.01		..	1.45	....	..	..	4.15
Britt	....	..	....	....	....	....	..	..	....	....	..	....	....		T	.41	....	.02			....	....	..	..	.31	.21	....		....	....	....	.95
Buckingham	....	....		..	.02	....	..	....	..	04	..	....		....	T	T		T	....	.27		..	....	..	1.12			....	....	T		1.45
Burlington	....	T	....	.	T		....	....	..	....		....	..		..	T	..	.01	..	.45	....	31	....	....	2.04	..		.30	.10	..	..	3.21
Bussey	....	..	....	....	....	....	.	..		..	.04	....	..		....	....	.	....	08	....	..	....		.80	.14		33	.10	....	..	..	1.49
Carroll	....	....		....	T	....		....	.12		..	....	....		T	.16	.10	..		....	..	....		....	.75	.25	T	..	....	..	....	1.38
Cedar Rapids	..	....	..	....	.02		....	..	....	T	..	....	....	....		T	....	.07	....	.10	..	T		....	1.11	....	..	....	..	..	....	1.30
Centerville		....	....	....		T	....		..		....	....		..	....	.07	....	T	T	....	....	.	..	....	1.87	..	..	42	.10	....	..	2.46
Chariton	T	....	....	..	.03	....	..	....	....	.10	..	....	....	....		.07	....	....		02	....	....	..	....	2.55	.02	....	.63	....	T	..	3.42
Charles City	....	..	..	....	T	..	....	....	....	.	....	....	....		.12	.10	....		..	....	....	.	....	T	.55		....	....	.28	....	....	1.05
Chester	....	....	....	..	.03		....		....	....	....	....		....	....		.20	....	..	....	..	....	.05			18	.32	....	....	.08	....	.86
Clarinda	....	.	T	....	.04		..	....	.18	.09	....	..	....	..	....	.07		.	....	....	....	.....		....	.60	....	....	.81	T	..		1.79
Clear Lake		....	....	....	T	....	..	....	..	..	.	....	.		T	.21	....	.	....	....	....		....	....	.27	.30	....	.	....	....	....	.78
Clinton	....	....	....	....	.07	..	..	....		....	....		..	....		.	.	.03		02		.22	....	....	1.01	.10	....	....	....	....	....	1.45
College Spring	..	....	.52	..	....	....	..	....	.04	.12	.	....	....	....	....	.09	..	.	....	....	....	.	....	.26	..		....	.08	..	....	....	1.11
Columbus Jct	..	....		....	T	....	..	..	...	T	T	....		....	....	.02		T	....	.12		.03		....	1.90	....	...	.24	.01	....	..	2.32
Corning	.	....	....	..	.02	....	..		.13	10	..	....	....	....	....	.07	....	.04	....	....	T	.	....	....	1.03	.07	....	.10	T	....	....	1.56
Council Bluffs	...	...	....	..	..	..	..	.15	....	.12				....	.20		T	....	....	....	....	.04	....	.17	.47	....	.14	....	....	....	....	1.29
Cresco	....	....	.	....		....	....	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.80	.20	..	....				1.00
Cumberland	....	....	....	....	T	..	....	....	....	T	....	....	....	....	.01	....	..	....	....	....	....	....	....	....	.50		....	....	....	....	....	.51
Danville	....	T	..	....			....			....	T			....	....	T	..	....	....	40		....	T	....	2.76	T	..	.42	27	....	..	3.85
Davenport	T	T	....	....	01	T	....	..	....	T	..	..	....	....	....	T	..	.08	....	.07	....	.23	....	..	.88	.09	....	.04	T	T	....	1.40
Decorah	....	....	..	....	....	.05	....	..	....	....	..	..	....		....	.22	....	..		....	T	T	....	..	.84	.16	..	T	..		....	1.27
Delaware		....	....		.04	....	..	.	....	T	....		..		..		....	.07	....	T	....	.04		..	1.11	T	....	....	....	....	....	1.26
Denison	....	....	....	....	T		.	....	.09	....	....	..	..	....		.14		.10	....	....	..	T	....	..	.65	.18	.03	....	....	....	.	1.19
Des Moines	T	....	..	.	T	....	....	....	T	.12	....	....	....	..	T	04	.	01	....	T	....	..	....	....	1.06	.09	....	.23		....	....	1.55
De Soto	....	....	....	....	....		....	..		.12	..	..	....	..	T	T	....	..			....	..	..	..	.57	.02	....	.20	....	..	....	1.00
Dows		....	....		....		....	....	....		..	.		..	T	15	....	.03	....	T	....	..	....	....	1.08	.12		..	....	....	..	1.38
Dubuque	T	T	....	....	.01	.01	....	....		T	....	....	....	....	..	T	....	.25	....	....	....	.13	....	....	.69	.02			....	....	....	1.11
Earlham	....		....	....	T	....	..	....	....	.11	....	....	....	....	..	.02	....		....	..	....	..	....	....	.62	.10	....	.22	..		....	1.07
Eldon	....	....	....	....	....	T	....	....	....	..	..	....	....	....	....	01	....	T	....	.42		....	.	..	2.29		..	.18	.04	....	..	2.94
Elkader		....	....	....	T	02	....	....		..	..	.	....	....	....		....	T	..	..	T	T	..		.83	.12	....	..	....	..	....	.97
Estherville	T	....	..	....	....		....	....	.16	....	..	....		....	....	....	....	....	T	....	....	....	....	....	1.90	T	..	....	....	....	....	2.06
Fayette	....	....	....	....	.19	....	....	..	....	....	....	....	....	....	....	....	....	....		....	....	.04	..	....	.74	.16	....	....	....			1.13
Fonda	T	....	..	....	....	....	..	....	T	....	....	.	..	....	.24	.06	T	..	..	....	....	T	....	.64	1.74		....	....	....	....	..	2.68
Forest City	..	..	....	....	....	....	....		....	....	....	.	..	....	T	.20	....	....	..	.	..		T	..	.39	.33	....	..	....	....	....	92
Fort Dodge	..	....	..	....	....	....		....	..	....	..	....	....	....	T	T	....	....	....	....	....	....	....		1.80	.30	T	....	....	....	....	2.10
Fort Madison	..	..	..	.	T	....	..	....	..		..	..	..	....		....	....	.05		.45	....	.33	....	1.73	.34	...	.37	.21	....	..	....	3.48
Galva	...	....	....		.	....	..	....	..	....	T	....	.	.	T	.80	...	....	....	....	....	..	....	.25	.24	.	....	....	....	....	..	1.29
Gilman	..	..	....	T	.03	....	..	....	....	.05	T	..	....	....	T	.07	....	.10	..	.16	..	..	....	....	1.98	.18	..	.10	.	T	....	2.67
Glenwood	....	..	....		....	....	....	....	.	....		....	....	..	T	T	T	....	....		....		....		.10	....	.30	....	....	..	..	.40
Grand Meadow	...	....	..	....	.13	....		....	..	....	..			....	.03		....	T	..	..	....	T	....	....	.93	.27	....		..	..	....	1.36
Greene	....		....			....			....	..	....	....	....	....	T	.09	....	....	....	..	..	....	....	....	.61	10	....	....	....	....	....	.83
Greenfield	T	....	....	....	T	....		T	20	17	..	....	..	....	....	.12	....	....	....	....	....	....	T	T	.45	.07	T	.22	....	....	....	1.23
Grinnell	....	....	....		.01	....	....	....	..	T	..	....	....	....		.12	....	.17	....	.13		.05	....	....	2.15	.13	..	.05	.01		..	2.82
Grundy Center	T	....	....	....	.01		....	....	....	....	03	....	....	..	T	.15	....	.01	..	.30	....	....	....	....	1.15	.05	....	....	..	....	....	1.70
Guthrie Center		....	....	....	T	....	....	....	.14	.12	..	.	..	..	T	.08	....	T					....	.24	....	.30			....	..	....	.88
Hampton		..	..	T	.04	..	....	....	....	....	..		....	....	.07	..	....	....	....	....	T	T		..	.96	....	..	....	..	..	..	1.07
Harlan	T	....	....	..	T	....	....	T	.06	.03	....	....		....	T	.12	....	....	..		..	T	T	....	.33	.41	01			T	.	.95
Hopeville	..	....	....	....	....	T	....	....	T	05	....	....	....	....	....	.03	..	....	..		..	....	..	....	1.25	....	....	.25	T	....	....	1.59
Humboldt	....	....	....	....	....	....	.	....	..	..	....	....	....		T	.33	.....	....	....		....		..	..	1.08	.17	....	....	....	....	..	1.58
Independence	....	....	....	....	....	.04	....	....	....	.10	..		....	..				....	..	T	....	T	....	....	.80	.20	....	....	....	....	....	1.14
Indianola	.		....	....	02	01	....	....	08	.01	..	....	..	....	....	....	.04	T	..	.07			T	1.07	02	....	T	.29	T	....	.	1.61
Iowa City	....	..	....	....	T	....	..	....	..	05	.	..	..		.	T	....	.13	....	.29	....	.21	..	....	1.03		....	.20	T	....	....	1.91
Iowa Falls	T	....	....	T	T	....	..	....	....	.04	.	....	..	....	....	....	....	.04	..	.02	....	T	..	..	.84	.16	....	..	T	T	....	1.10
Jefferson		....	....	....	T	....	....	.	....	.03	.		..		.05			....	..	....	....				.75		....	....	....	....	....	.83
Keokuk	....	..	..	....	T	T	....	..		....	.01	....		..	..	T	....	.11	....	.22	....	.08	..	..	2.12	....	....	.52	.07	....	....	3.13
Keosauqua				....	....	.01	..	....	....			....	....	....	....	T	..	T	....	25	....	.27	....	....	1.91	....	....	.63	.17		..	3.27
Lacona	....	....	....	....	T	....	....	....	....	.10	....	....	....	....	....	.10	..	....	..	.10	....	..	....	....	.80	.75	....	.65	..	T	..	2.50
Lancing	....	....	....	....	.05	.10	....	....	....	....	....			....	..	.05	..	..	....	....	..	.06	.	....	.22	60	....	....	..	....	..	1.08
Larrabee	....	....	....	T	....	....	....	.19	....		....	....	....	....	.05	....	....	....	....	.	..	....			31	....	....	....	....	T	....	.55
Le Claire	..	....	....	....	.01	.04	..	....	....	....	T	....	....	..	..		T	.04	.02	....	.02	....	.20	....		8	.4	....	.01	..	....	....	1.60
Le Mars	..	..	....	....			.	.15	....	....	....	....	....	....		....	....		....	..	....		....		2.53			....	....	....	....	2.68
Lenox	..	....	....	....	T	....	.			.05	....	....	..			T	....	..	..	....	T	....	..	....	.57	.09	....	.31	..	....	....	1.02
Leon	.03	....	.	....	....	T	..	....	....	05	....	..	....	..	....	T	..	.01		....	.	....	....	....	.72	T	....	1.04	....	....	....	1.85
Logan	..	....	....	....	....	..		.27	....	....		..	....	..	.07	....	....	....	....	..	....	.02	....	..	50	.22		....	....	.		1.08
Maquoketa	....	..	....	....	T	....	....	..	.	T	.	....	....	..	....	..	....	.08	....		....	.35		....	1.19	....	....	.07	....	....	....	1.69
Marshalltown	..		..	..	.13			..	....	.10	....	....	....	....	....	.09	....	.06	....	.06	....	..	....	....	1.44	17			....	..	..	2.05
Mount Ayr	.	T	..	...	.24	....	....	....	.05	.07	....	....	.	....		.06	..	T	.	....	....	....	....	....	.45	.05	.10	1.25	..		...	2.27
Mt. Pleasant		....	....	....	1	....	..	....	....	T	....	....	..	..	....	T	....	T	..	.30		.39	....		2.18		....	.3	.12		....	3.29
Mt. Vernon	....	..	....	....	.02	....	....	....	....	.01	....	....	....	....		T		.07	....	.12	T	.18	....	T	.90	T	....	T		T	....	1.30
New Hampton	....	....		.	....	....	..	....		....	....	....	....	....	T	....	.15	....	.	....	....	....	....	.	.80	.06	.	....	.03	....	....	1.04
Newton	....	....	....	....	T		..	....	....	.06	....	..	....		....	.07	..	.09	....	.24	..	....	....		2.21	.12	..	....	....	..	..	2.79
Northwood	....	....	....	....	T	..		....	....	....	....	....	....	....	.03	.11	....	....	....	....	T	T	....	T	.37	.75			..	..	..	1.26
Odebolt	....	....	....	....	....	....	....		10	....	....		....		.12	.33	....		....		....	T	....	..	.	.33	.25	....	.	....	....	1.13
Ogden	....	....		....	....	..	....	....	....	.08	....	....	....	....	T	.04	05	....	....		....	....	....	....	.83	.10	..	....	.08	....		1.23
Olin	T		....	....	.02	....	....		....	.01	..	....	....	....	....	T	....	.02	....	.02	..	.16	..	....	1.07	T		....	....	....	....	1.30
Omaha, Neb	..	....	....	T	T	....	---	.02	.14	.09	...	....		....	.05	.14	....	T	..	..	..	.03	..	.	.14	.16	T	.08	....	....	....	.85
Onawa	....	....	....	....	....	....	....	.04	.30	..	....	....	....	....	.12	.20	....	....	..	....	....	....	....	....	1.15	.70	T	..	....	..	....	2.50
Osage	....	....	..	....	....	.	....	....	..	....	....	....	....	....	.01	17		....	..	....	..		....	T	.37	42	..	....	.14	....	....	1.11
Oskaloosa	....	....	....	..	.04	..	....	....	....	.04		....	....	....	....	T	T	....	..	.38	....	T	..	....	2.26		.53	.06	..	....	....	3.31
Ottumwa	..	..	..	....	....	....	....		....	....	....	....	..	....	....		..			.40	.	20	..	....	1.98	....	..	.50	....	....	....	3.08
Ovid	....	....	..		.05	....			....	.00	....	....	....	....	....	.03	....	.04	....		..	T	..	1.37	.27	....	.13	61	....	....	....	2.55
Pacific Junction	....	. .	....	....	....	....	....	T	.03	.08	....	....	....	....	T	03	..	....	....		T	.02	....	....	.45	.11	T	.19	.01	....	....	.92
Perry	..	....	..	..	....	....	....	....	....	1.	...	....	....	....	T		....	.03		.01	....	....	....	....	.32	.33	....	....	.62	....	....	.86
Plover	....	....	....	....	....	....	..	....	.06		....	...	....		03	.23	....	....	....	..	..	.04	..	..	.57	.50	....	....	....	....	....	1.43
Primghar	....	....	..	....		...	..	..	....	....		....	..	....	..	....	....	....	....	..	....		....	....	1.10			....	....	....	....	1.10
Red Oak		.....	....	....	T	....	..	....	.22	.12	....	....	..	....	....	.02	....		....	..	....	T	T	T	.33	25	T	.06	T	.01	....	1.01
Ridgeway	T	....	....	..	.01		....	....	....	....	....	....		....	.01	28	....	.01		..	T	.01	....	T	.67	.15		T	.02	T	....	1.16
Rockford	....	....	....	....	....	....	..	T	....	..	..	....	....	....	..	.25	....	..	....	....	....	....	....	..	.35	....	....	.15	....	....	.	.75
Rockwell City	....	....	....	....	..	..	....	T	....	.	..	..	..	....	....	.45	....	..	....	....	....		.		95	25	....	....	....	....	..	1.65
Ruthven	....	....	....	....	....	....	.	....	.18	....	..	....	....	....	T		....	....	....	.	....	....	....	....	.45	.85	....	....	....	....	....	1.43
Sac City	T	....	..	T	T	....	....	....	.16		....	..	....	....	.06	.28	..	T	..	....	....	T	....	....	.46	.32	T	..	..	....	....	1.28
St. Charles	T	...	..	...	.01	....	..	....	....	....	....	....	....	....	....	.03	....	....	..	....	....	....	....	..	1.18	.06	T	.25	T	....	....	1.53
Scranton	....	....	....			...	....		T	T		....	..		.20		T		....	....	....	....	....	.72	.19	...	....	....		....	1.11

DAILY AND MONTHLY PRECIPITATION FOR APRIL, 1902—CONTINUED.

STATIONS.	DAY OF MONTH. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL.
Sheldon	T			T	T	T									.05	T		.03				T	T	T	.60	.08						.76
Sibley	.04			T	T				.21						T	T		T							1.25	.04						1.54
Sigourney					T					.05						T		.03		.20		14			2.65	.08		.68	.01			3.84
Sioux Center									.18	T					.16			.06				02			2.95		T			T		3.37
Sioux City				.01	T			.08	.14						.27	.03						T	T	T	.74	.02				T		1.29
Stockport	T	T			T					T						.10				.27			.16		2.26		T	.48	.06			3.33
Storm Lake	T			T	T				.17	T					T	.37		T				T			.75	.57						1.86
Stuart					T					25															1.00	15						1.40
Thurman			T	T	T			.03	.04	.08					T	15		T			T	.06	T	T	45	T	T	T	.02			.83
Tipton					.10					T						T		.50		.10		.50			1.25							2.45
Toledo																.05		.08	.10			.05			1.50	.10	.03					1.91
Villisca				T	.06				.11	10						.10									1.68	.23	T	.28	.05			1.98
Vinton										T						T				T		T			.9	T						.91
Wapello																T		T		.48		.35			2.48			18	.12			3.61
Washington																				.25		.20			1.80	.21		.20				2.66
Washta	T			T	T			T							.50							T			1.50							2.00
Waterloo					.11					T					T	.03		T		.05	T	T			1.02	.07						1.28
Waverly					.05					T					.05					.04					.88	02						1.04
West Branch						.13				T						T		.09		.23		.17			81	.10		.12				1.65
West Union																		T				T			1.41							1.41
Wilton Junction																		.39		.25		.18			1.09			.23				2.14
Winterset					T				T	.10						T									.65	.10		.30				1.15
Woodburn					T					.10						.06									1.40			.40				1.96

Precipitation Chart April 1, 1902.



Vol. XIII. MAY, 1902. No. 5.



MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

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U. S. WEATHER BUREAU, ASS'T DIRECTOR.

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BERNARD MURPHY, STATE PRINTER
1902.

THE IOWA WEATHER AND CROP SERVICE

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Cumberland	Agent C. B. & Q. Ry
Danville	Agent C. B. & Q. Ry
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Lansing	Jacob Ackerman
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Larrabee	H. B. Strever
Lenox	J. L. Hurley
Le Mars	Dr. T. E. Cole
Leon	Millard F. Stookey
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Rockford	J. R. Waller
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Storm Lake	Prof. M. L. Fuller
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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIII. MAY, 1902. No. 5.

IOWA CROP REPORT, JUNE 1, 1902.

NUMBER OF ACRES, AND AVERAGE CONDITION JUNE 1ST, OF THE STAPLE FARM CROPS.

Reports of county and township correspondents show the following results as to the number of acres and average condition on June 1st, of staple farm crops at the outset of the crop season of 1902:

CORN.—The total number of acres planted appears to be 9,208,980,—an increase of 521,500 acres, or about 6 per cent, as compared with the acreage of 1901. The average condition of corn in respect to stand and vigor of plant on June 1st was rated at 97 per cent, as against 90 per cent on the corresponding date last year. Due consideration should be given to the fact that since June 1st both the acreage and condition of corn have been materially lowered by the excessive rains in extensive areas of the state, causing damaging erosion of slopes and flooding of bottom lands. In view of this condition a revised estimate of the acreage of this important crop will be called for on July 1st.

WHEAT.—The acreage of winter wheat is shown to be only 48.449 acres, which is very nearly the amount returned by township assessors last year. The number of acres of spring wheat is placed at 1,152,985 acres, which is 14,695 acres above the area seeded in 1901. The condition of winter wheat is rated 96 per cent, and spring wheat 99 per cent.

OATS.—Acreage, 3,770,620 acres,—a decrease of 28,600 acres, compared with last year. The average condition of the crop is placed at 98 per cent, as against 89 per cent at same date last year.

BARLEY.—Number of acres, 594,670; decrease, 9,490, compared with last year. Condition, 100 per cent, as against 93 in 1901.

RYE.—Number of acres, 53,150,—a slight decrease; condition, 99 per cent.

FLAX.—Number of acres seeded, 94,760; decrease, as compared with last year, 9,380 acres. Condition of crops, 98 per cent, as against 89 per cent at corresponing date in 1901.

POTATOES.—Acres planted, 138,484,—an increase of 2,184 acres. Condition, 103 per cent, as against 95 per cent June 1, 1901.

MEADOWS.—Number of acres, 2,515,000; decrease since last year, 176,550 acres. Condition June 1st, 96 per cent, as against 90 per cent last year.

PASTURES.—Number of acres, 7,820,140 acres, a decrease of 287,300 acres, compared with last year.

CONDITION OF LIVE STOCK.—Cattle, 96 per cent; sheep, 97; hogs, 96; spring pig crop, 92; horses, 97; foals, 98.

CONDITION OF FRUIT.—Apples, 70 per cent; plums, 72; cherries, 70; pears, 70; peaches, 40; grapes, 72; strawberries, 80; raspberries; 71; blackberries, 67.

The correspondents estimate an average of about 7 per cent of last year's corn crop in the hands of the producers.

WEATHER AND CROP CONDITIONS.

May was warm and showery, affording a marked contrast to the preceding month. The average daily excess of temperature was about four degrees, and the average excess of rainfall was 1.42 inches. There was unusually great inequality in the distribution of rainfall, ranging from .87 of an inch at Washta, Cherokee county, to 18.04 inches at Grand Meadow, Clayton county. The area of the marked deficiency was limited to a small portion of the northwest district. The northern section received the heaviest rainfall, and the eastern half of that section the bulk of that amount. But the soil was very dry, and in excellent condition to absorb and retain a goodly portion of the copious moisture; and despite the interruption of frequent rainy days the work of planting corn progressed rapidly between showers, so that before the close of the month the corn area was practically planted. The seed was generally good, and a fair stand of corn was secured, with not more than the usual amount of replanting. Cultivation was begun early, and in portions of the state where the rainfall was about normal, or less than normal, the crop was most thoroughly cleaned and made most satisfactory progress. As a whole corn was rated in high condition on June 1st.

The copious rains, though not so favorable for corn planting and cultivating, were highly favorable to grass in pastures and meadows, and caused a heavy growth of all small grain crops. Except in portions of the northwest district spring wheat, oats and barley showed a tendency to rankness, causing some apprehension of damage by lodging and rust. The potato crop was generally very promising at close of the month, and garden truck was seldom in better condition at the corresponding date.

Secretary Greene, of the State Horticultural Society, issued for June 1st the following summary as to condition of fruit: Apples, 65 per cent; American plums, 51; cherries, 40; currants, 70; grapes, 70; red raspberries, 42; black raspberries, 57; blackberries, 47; strawberries, 63 per cent.

ERRATA IN APRIL REVIEW.

CENTERVILLE.—Mean temperature recorded 51.6 degrees on page 8, should have been 51.5 degrees.

STUART.—Mean temperature recorded 50.2 degrees on page 7, should have been 49.2 degrees.

PLOVER.—Minimum temperature recorded 55 degrees on the 22d, on page 10, should have been 35 degrees.

TABLE No. 1—IOWA CROPS 1902—NUMBER OF ACRES BY COUNTIES.

COUNTIES.	Winter wheat—acres.	Spring wheat—acres.	Corn—acres.	Oats—acres.	Rye—acres.	Barley—acres.	Meadows—acres	Pastures—acres	Flax—acres.	Potatoes—acres
Adair	173	12,465	103,070	30,109	30	625	31,920	95,040	.....	1,740
Adams	700	5,580	71,680	17,875	160	650	25,590	73,740	.....	826
Allamakee	1,190	5,220	39,800	38,800	1,790	5,860	32,290	94,260	550	1,390
Appanoose	320	.....	56,060	6,930	820	.....	37,720	108,390	.....	560
Audubon	.....	22,810	92,680	33,430	60	2,850	21,640	62,620	.....	930
Benton	50	2,800	124,860	66,600	80	15,870	32,540	93,680	.....	1,490
Black Hawk	15	860	95,900	55,300	970	8,650	26,900	79,950	30	1,710
Boone	60	7,390	117,060	46,130	430	800	19,690	74,720	.....	1,140
Bremer	50	890	62,950	51,850	310	1,690	19,920	75,290	1,490	1,500
Buchanan	13	600	88,710	48,370	110	2,790	30,960	87,870	270	1,490
Buena Vista	.....	10,570	115,890	56,110	150	7,120	16,920	70,170	.....	2,000
Butler	.....	2,900	110,340	72,610	1,000	3,920	18,780	87,690	.....	1,480
Calhoun	.....	12,320	118,880	57,500	210	4,690	11,860	66,880	810	1,255
Carroll	.....	23,120	123,180	54,750	155	3,270	19,430	73,120	90	2,050
Cass	215	20,850	113,550	35,250	145	1,000	25,870	27,610	.....	2,500
Cedar	320	970	117,760	40,110	580	10,470	36,290	84,270	.....	1,280
Cerro Gordo	.....	3,810	90,120	72,950	530	6,000	21,750	67,380	3,450	1,450
Cherokee	.....	28,810	119,970	47,780	.....	7,060	20,480	77,280	320	1,572
Chickasaw	.....	2,070	54,820	59,110	130	5,520	21,790	65,710	6,510	1,120
Clarke	210	90	57,400	15,690	125	190	36,650	80,510	.....	470
Clay	350	8,100	99,700	40,580	770	25,080	17,040	67,000	1,950	1,170
Clayton	750	6,060	88,500	61,320	1,950	6,430	37,280	135,110	310	2,160
Clinton	160	2,730	123,440	42,420	1,350	4,010	29,400	103,510	.....	1,410
Crawford	.....	43,170	122,940	38,830	90	3,300	30,150	106,190	.....	1,770
Dallas	230	6,490	103,770	38,330	240	800	23,860	85,940	.....	1,150
Davis	630	.....	55,480	18,940	1,460	.....	45,650	114,090	.....	670
Decatur	930	.....	63,310	17,820	300	40	37,320	103,040	.....	640
Delaware	25	1,210	100,320	41,380	410	5,470	37,830	96,910	50	1,320
Des Moines	2,660	200	68,480	26,000	2,310	120	19,010	61,580	.....	1,520
Dickinson	.....	16,930	42,640	20,380	200	24,650	6,970	35,070	5,150	560
Dubuque	.....	3,180	67,440	47,960	920	2,060	34,170	91,260	.....	2,290
Emmet	.....	15,760	54,570	25,650	150	17,560	9,200	37,230	2,575	2,460
Fayette	165	2,620	99,410	65,880	350	6,860	50,170	14,510	2,300	2,160
Floyd	19	1,950	87,470	65,610	550	8,110	21,050	62,200	4,110	1,760
Franklin	.....	6,200	99,180	75,930	420	4,090	18,930	63,520	1,230	1,150
Fremont	3,300	4,800	121,510	14,400	640	810	21,730	52,460	.....	1,000
Greene	120	5,090	106,310	48,880	100	2,880	18,730	65,860	190	1,120
Grundy	73	8,630	103,920	52,300	80	13,310	21,880	66,620	140	1,900
Guthrie	107	11,840	84,540	33,700	105	1,495	23,640	72,810	.....	1,060
Hamilton	30	8,980	103,170	54,280	90	1,170	17,020	73,460	230	1,170
Hancock	.....	12,580	84,500	16,720	410	5,800	16,520	51,430	4,180	920
Hardin	.....	13,890	98,470	54,430	85	2,030	19,410	79,870	250	1,200
Harrison	40	41,550	123,240	13,840	190	570	7,820	88,960	.....	1,770
Henry	1,480	160	70,820	25,640	1,940	400	21,180	81,540	.....	710
Howard	24	1,890	52,650	58,510	60	5,190	38,910	55,300	7,190	1,100
Humboldt	.....	17,090	63,120	33,290	40	2,270	12,590	43,110	1,660	790
Ida	.....	23,380	88,940	30,130	30	4,010	21,110	52,890	.....	1,020
Iowa	250	2,090	99,030	38,640	225	6,280	39,370	92,810	.....	1,316
Jackson	160	3,120	81,010	39,920	1,730	3,240	40,010	132,590	.....	1,390
Jasper	50	11,420	102,600	40,950	210	660	25,950	91,290	.....	2,730
Jefferson	1,089	260	78,690	21,710	2,090	1,140	23,360	99,890	.....	750
Johnson	520	1,050	116,320	38,940	1,680	3,330	38,950	103,570	.....	1,580
Jones	.....	1,150	84,520	32,210	560	4,090	38,480	106,760	.....	1,070
Keokuk	660	840	108,850	35,780	2,030	2,930	34,280	96,180	.....	1,160
Kossuth	.....	28,690	129,800	82,820	470	17,460	17,400	90,500	4,780	1,410
Lee	9,970	.....	59,620	23,300	2,610	.....	34,500	92,360	.....	1,660
Linn	50	1,550	106,540	47,850	320	1,850	45,270	110,950	.....	1,940
Louisa	2,020	510	74,940	24,260	2,510	360	14,360	63,710	.....	890
Lucas	350	210	59,720	13,300	800	220	38,380	84,580	.....	510
Lyon	.....	61,670	77,280	27,320	.....	47,320	5,690	38,630	910	1,320
Madison	230	6,250	90,100	23,500	280	1,350	37,130	104,910	.....	1,260
Mahaska	520	2,460	103,180	32,950	50	830	26,230	93,310	.....	1,420
Marion	425	4,810	105,350	29,820	720	930	1,070	102,490	.....	1,190
Marshall	.....	15,400	115,540	45,740	70	2,160	28,300	77,610	90	1,640
Mills	450	12,870	104,400	11,880	320	240	16,670	61,590	.....	1,160
Mitchell	.....	2,980	64,920	43,180	360	11,940	30,600	56,550	7,510	1,670
Monona	.....	34,340	119,380	13,560	250	4,110	3,860	96,880	210	1,340
Monroe	302	110	46,610	10,130	950	320	30,880	99,870	.....	540
Montgomery	690	15,900	95,900	12,380	160	230	20,300	64,730	.....	1,000
Muscatine	390	2,160	72,280	21,050	1,460	6,390	21,810	68,420	.....	2,870
O'Brien	.....	26,090	107,630	41,160	90	29,350	15,170	62,280	1,910	1,240
Osceola	.....	25,310	56,540	28,540	.....	39,770	10,270	27,920	2,360	810
Page	6,929	7,450	131,650	21,900	550	1,310	15,360	85,000	.....	1,070
Palo Alto	.....	8,210	79,650	47,790	470	10,280	7,580	60,340	2,890	1,210
Plymouth	.....	98,410	137,220	42,800	240	8,100	13,510	82,830	650	3,310
Pocahontas	.....	7,750	106,020	51,890	430	7,760	10,300	71,180	2,480	1,300
Polk	150	11,600	112,900	32,580	130	.....	22,440	73,240	.....	2,390
Pottawattamie	485	46,820	215,730	28,690	450	540	30,950	122,560	.....	3,150
Poweshiek	.....	2,970	114,060	44,270	115	3,720	37,500	111,910	.....	1,400
Ringgold	310	54	88,740	22,670	280	330	51,290	107,530	.....	760
Sac	100	13,010	126,090	41,580	85	8,400	21,190	72,400	200	1,270
Scott	445	8,200	81,730	23,160	720	26,200	23,060	62,220	.....	4,870
Shelby	.....	36,250	119,950	24,500	70	2,610	29,220	72,010	.....	1,610
Sioux	50	83,360	125,720	41,500	.....	33,210	10,870	55,150	685	1,470
Story	.....	4,430	110,010	49,100	510	970	21,210	69,230	.....	1,060
Tama	.....	10,300	118,140	45,120	110	26,340	30,670	95,420	.....	1,590
Taylor	2,595	410	85,080	18,120	580	1,130	33,830	86,820	.....	1,180
Union	70	610	66,140	18,130	130	290	36,770	78,030	.....	1,120
Van Buren	2,940	.....	50,190	18,250	1,580	.....	34,930	108,350	.....	490
Wapello	730	170	60,850	18,020	1,170	350	30,890	89,780	.....	1,440
Warren	90	6,940	96,590	21,870	350	1,110	34,340	93,440	.....	1,230
Washington	780	325	98,400	38,970	1,160	3,630	31,720	93,260	.....	840
Wayne	90	.....	73,090	16,630	520	.....	59,100	105,840	.....	525
Webster	.....	12,490	111,290	66,110	190	2,090	12,240	81,820	520	1,320
Winnebago	.....	20,750	48,870	33,920	60	4,070	11,410	42,240	3,220	780
Winneshiek	150	7,620	72,770	68,460	200	11,790	39,600	83,010	8,430	1,340
Woodbury	.....	58,780	143,930	25,250	140	2,500	11,630	72,110	540	1,480
Worth	.....	5,590	38,880	46,280	190	8,830	17,450	51,090	10,410	1,500
Wright	.....	11,540	83,060	58,450	130	4,450	15,270	56,010	1,930	1,050
Totals for state	48,449	1,152,985	9,208,680	3,770,624	53,150	594,070	2,515,000	7,820,140	94,767	138,484

THE NEW AGRICULTURE.

From an interview with James Wilson, secretary of agriculture, at Columbia, Mo.:

"Agriculture is in its infancy. We have not yet begun. It is a new subject; so new, in fact, that its possibilities cannot now be comprehended. It is a vast field, and only the smallest part of it has yet been covered. It is true that agriculture has already developed rapidly, and the influences of the industry are great and far reaching, but the idea I wish to convey is that so little has yet been accomplished, in comparison with what may be done, that even those familiar with the subject will find it difficult to fully comprehend the full importance and meaning of the new agriculture. The government is devoting special attention to the subject, and at present there are agricultural experiment stations in every state in the Union.

"New institutions for the advancement of the study of husbandry are being established. While there are many agricultural colleges in the country that are doing great work for the advancement of scientific husbandry, by giving the farmers an opportunity to educate their sons in the science of agriculture, it is to be regretted that it is not given more attention by state universities. The study of agriculture should be a part of the university training and should be taken up on entering school and continued until graduation. The earlier the study is taken up the better. It should not only be taught in the universities, but in the minor schools and colleges. I believe that even as a primary study it would be productive of much good, and, in fact, the instruction should begin with the very beginning of a child's education.

"There are specialists of many kinds in the various departments of agriculture, but in none of them is so much special study required as in agricultural colleges. The study of husbandry covers such a broad field that a student, in order to be qualified for becoming himself an instructor, must be a specialist in many ways. The study of chemistry and its relations to the composition of the soil is by itself a vast field for special study. I am much pleased with the recent work of many of the agricultural colleges, but many of them can doubtless be much improved."

MAGNETIC DISTURBANCE CAUSED BY THE EXPLOSION OF MONT PELEE.

(From the National Geographic Magazine.)

In explosive violence the eruption of Mont Pelee was to Krakatoa but the bursting of a bubble. Krakatoa was heard distinctly 3,000 miles away; the sound of Mont Pelee penetrated only two hundred. Krakatoa sent its dust round the globe; the dust of Mont Pelee was carried less than 300 miles. But in one very important respect, the electrical phenomena accompanying the explosion, Mont Pelee apparently surpassed Krakatoa; for the first time in the history of volcanic eruptions, so powerful electro-magnetic waves were shot out by a bursting volcano that magnetic needles 2,000 and 5,500 miles away were disturbed for many hours.

Mr. O. H. Tittmann, superintendent of the United States coast and geodetic survey, reports that the magnetic needles at the coast survey magnetic observatories at Cheltenham, Maryland, at Baldwin, Kansas, and also in the Hawaiian Islands, were disturbed on the morning of May 8th at the time of the volcanic explosion at Pelee. The needles are very delicately suspended, and register automatically by photographic means the minutest variation in the direction and intensity of the earth's magnetic force. The magnetic disturbance began at the Cheltenham observatory at a time corresponding to 7:53, St. Pierre local mean time, and at the Baldwin observatory 7:55, St. Pierre time. Reports from St. Pierre state that the explosion of Mont Pelee occurred a few minutes before 8 o'clock in the morning. A clock in St. Pierre was stopped at 7:50 A. M. The magnetic disturbance was thus almost instantaneously recorded at the survey observatories. The needles were disturbed again on May 20th, at the time of the second eruption of the mountain.

The disturbance of the magnetic needles was plainly due to magnetic effects, and was in no sense caused by purely mechanical vibrations. It is the first instance that magnetic effects caused by the eruption of distant volcanoes have ever been recorded at magnetic observatories. Mechanical vibrations of magnetic needles caused by earthquakes have been previously noted. For instance, the Guatemalan earthquake on April 18, 1902, caused a distinct mechanical vibration of the magnetic needles for at least one-half an hour, but no magnetic disturbance was registered. The distinct magnetic effect of the morning of May 8th pulled the magnetic needles aside from their usual direction for many hours.

Dr. L. A. Bauer, head of the magnetic work of the survey, has not yet received information from the observatory at Sitka whether any magnetic disturbance was registered at this point at the same time, nor has he received information from foreign observatories. Until such information is received, of course we cannot state definitely that the remarkable magnetic disturbances registered on the mornings of May 8th and of May 20th, at Cheltenham and Baldwin, were due to the eruptions in the West Indies, but the very remarkable coincidence in time makes this conclusion probable.

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure for May, 29.94 inches; highest observed, 30.36 inches, at Dubuque, on the 9th; lowest, 29.33 inches, at Sioux City, on the 19th; range for the state, 1.03 inches.

TEMPERATURE.—The mean temperature for the state, as shown by records of 107 stations, was 63.8 degrees, which is about 4.1 degrees above the normal for May. The highest monthly mean was 67.8 degrees, at Keosauqua, and the lowest 59 0 degrees, at New Hampton. The means by sections were as follows: Northern section, 61.8 degrees; central section, 64.0 degrees; southern section, 65 6 degrees. The highest temperature reported was 97 degrees at Sigourney, on the 20th; lowest, 25 degrees, at Cresco, on the 10th. The average monthly maximum was 88.7 degrees; average monthly minimum, 38.4 degrees. The greatest daily range was 50 degrees, at Pacific Junction; average of greatest daily ranges, 37.7 degrees.

PRECIPITATION.—The average precipitation for the state, as shown by records of 127 stations, was 5.39 inches, or 1.42 inches above normal. The averages by sections were as follows: Northern section, 6.69 inches; Central section, 5 02 inches; Southern section, 4.46 inches. The largest amount reported was 18.04 inches, at Grand Meadow, Clayton county; least amount reported, .87 inch at Washta. The greatest daily rainfall reported was 5.45 inches, at Grand Meadow, on the 18th. The average number of days on which .01 inch or more of rain fell was 13.

WIND AND WEATHER.—The prevailing direction of the wind was southeast; highest velocity reported, 50 miles per hour, from the south, at Sioux City, on the 20th. The average number of clear days was 10; partly cloudy, 12; cloudy, 9.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	29.95	30 29	9	29 56	18
Des Moines	29.96	30 34	9	29 51	18
Dubuque	29 98	30.36	9	29.56	18
Omaha, Neb	29.90	30 26	27	29 38	19
Keokuk	29.94	30.21	9	29 56	18
Sioux City	29.93	30.28	26	29 33	19
Means	29.94	30.36	9	29.33	19

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	6512	26	W	6
Des Moines	7379	38	W	21
Dubuque	5812	28	SW	22
Keokuk	5841	32	W	23
La Crosse, Wis	.....	.....	.....	.....
Omaha, Neb	6880	30	SW	21
Sioux City	11193	50	S	23

OBSERVERS' NOTES.

ALTA—*David E. Hadden.* May was wet and cloudy, with cool nights; light frost noted in low places on morning of 27th; all crops were looking fine at close of month; plums and cherries were injured by heavy rains while in bloom, and yield will be light.

ATLANTIC—*J. W. Love.* Two brilliant "moon dogs" at 1 A. M on 19th. There was not a clear day in the entire month; light frosts on 27th and 28th.

AUDUBON—*Frank Mott.* The storm of the 19th was quite destructive. On the 17th a small tornado passed about ten miles southwest of this place. Clipping from the Audubon *Republican* gives details of this storm It was from 100 to 300 yards wide and about three miles in length of track. Property destroyed estimated at $10,000, and happily no lives were lost. The storm appeared about 5:30 P. M. as a whirlwind of dust. There were two whirling columns visible at the outset, but they soon merged forces and swept everything in their limited range. It was a typical "twister," though small and not long-lived. Everything in its pathway was left plastered with mud.

BONAPARTE—*B. R Vale.* A good month for corn culture and growth of small grain; rains came too late to make good meadows; pastures fair.

BRITT—*Geo. P. Hardwick.* The storm periods were from 1st to 6th, and from 17th to 24th. Excessive rains occurred in the county. On 2nd hail fell sufficient to whiten the ground. On 24th a small tornado was observed in southwest part of county; amount of damage was slight.

CHESTER—*C. H. Meredith.* On the 4th, thunderstorm with heavy rain and much damage to crops On 17th cloudburst one mile north of station, causing high water, and much stock was drowned. Total at station for May, 14.62 inches.

DECORAH. The records show for the month 11.63 inches of rainfall, but these figures do not tell the full story of disaster by flood, caused by a sudden downpour amounting to 3.35 inches, on May 21st. Prior to that date the total was far above normal. The soil was saturated, so that the heavy rain of the 21st was all poured into the streams and carried swiftly away. In Decorah the depression known as Dry Run became a raging torrent, causing higher water and greater damage to property than was ever known before in the history of that city. Two lives were lost, adding a tragic element to the sudden and fearful visitation. The damage to property has not been estimated, but it must have amounted to many tens of thousands, judging by the reports published in Decorah *Republican*, of May 22nd.

FOREST CITY—*J. A. Peters.* Plum trees in bloom on the 5th; small grain and corn looking well at close of month.

GRUNDY CENTER—*Ed S. King.* The best kind of growing weather for crops; meadows look extra fine in spite of a dry April.

INWOOD—*Ch. Erickson, Jr.*—Weather generally good for crops; some need of rain the last few days.

JEFFERSON—*Isaac Young.* On evening of the 20th the edge of a severe hailstorm passed over Rippey; hailstones as large as hen's eggs fell in great numbers, causing some loss of windows.

LANSING—*Jacob Ackerman.* On the 21st the heaviest flood visited this section that has been known in many years.

LARRABEE—*H. B. Strever.* At end of month vegetation was suffering for rain; light frost on the 27th.

LEON—*Millard F. Stookey.* On Thursday evening, May 1st, between 4:30 and 5:00 o'clock, a tornado formed south and west of Van Wert, and moved into Clarke county; much property was destroyed and several persons were injured.

OLIN—*Nathan Potter.* A very favorable month for all farm work; just rain enough to put everything at its best.

OSAGE—*G. D. Pattengill.* The rainfall (9.58 inches) has been more than double the normal for May at this station. A record of rainfall in this county, kept continuously since February, 1880, shows but one month that exceeded the present, namely, September, 1881, when a fall of 11.01 inches was recorded.

RIDGEWAY—*Arthur Betts.* Temperature average 1.5° above normal. Waterfall excessive; 279 hours of sunshine; thunderstorms on 16 days; last frost on April 24th; violets May 2d.

WASHTA—*H. L. Felter.* A very dry May in south part of Cherokee county. Total rainfall at this station 0.87 inch.

WEST BEND—*Ph. Dorweiler.* Month favorable for farmers; corn all planted and mostly coming up. On the 3rd and 4th severe windstorms blew over some barns and windmills.

GRAND MEADOW—*F. L. Williams.* Rainfall for the month at this station 18.04 inches. Of that amount 5.45 inches fell on the 18th, the heaviest ever recorded for a single day at this point. About 7:30 P. M, on the 3d a small "cyclone" passed over this section, blowing down fences, roofs and apple trees. Much damage has been done by floods by the greatest rainfall ever known in a single month.

BELATED REPORTS.

WHITTEN—April. Mean temperature, 46.8 degrees; highest, 89, on the 21st; lowest, 18, on the 7th; greatest daily range, 36; total precipitation, 1.93 inches; greatest in 24 hours, 1.66, on the 25th; total snowfall, trace; prevailing direction, northwest. Number of clear days 14, partly cloudy 9, cloudy 7, rainy 8.

CRESCO—December. Mean temperature, 15.4 degrees; highest, 40 degrees, on the 1st; lowest, 29 degrees, on the 14th; greatest daily range, 40; prevailing direction, northwest; number of clear days 15, partly cloudy 4, cloudy 12.

CLIMATOLOGICAL DATA FOR MAY, 1902.

NORTHERN SECTION

STATIONS.	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT. Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	PRECIP., IN INCHES Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)	Number rainy days	SKY Number clear days	Number partly cloudy days	Number cloudy days	Prevailing direction of wind	DATES OF THUNDER-STORMS.
Algona	Kossuth	1,213	9	62.8	†4.4	87	18	38	10	35	5 49	†1.89	1.23	....	12	6	19	6	SE	2, 22
Alta	Buena Vista	1,513	10	61.4	†3.8	86	18	38	11, 27	34	4 31	†.09	2.08	..	15	5	20	6	S	2, 3, 10, 17, 19, 20, 21, 24
Alta (near)	Buena Vista	....	....	.....		....	.....	.....	.....	.....	3 68	.....	1 55	....	12	....	....		.....	
Britt	Hancock	1,236		62.0	.....	88	20	37	7	43	6.36		2.21	....	13	5	20	6	SE	1, 2, 3, 17, 19
Charles City	Floyd	1,012	10	62.0	†5 3	86	18	35	10	38	9 19	†3.42	1 75	....	11	7	21	3	ESE	
Chester	Howard	.....	....	60.6	....	88	2	35	9, 10	38	14.62	....	3.30	....	12	8	12	11	SE	4, 17, 20, 21
Clear Lake	Cerro Gordo	984	..	62.4		91	2	35	10	41	6.85	.....	1.75	....	12	7	19	5	SE	21
Cresco (a)	Howard	1,280	29	59.8	†3.3	84	18, 27	25	10	30	9.27	†5.90	2.70	....	11	....	....	....	SE	
Decorah	Winneshiek	875	8	62.4	†2.6	91	19	37	10	33	11.63	† 8.43	3.35	....	19	....	..	....	.....	
Dows	Wright	1,142	....	61 4	.....	84	20	34	1	39	4 38		1 15	..	11	14	5	12	SE	12, 19, 21, 24
Elkader	Clayton	600	20	64.1	†3 5	91	18, 20	35	10	41	11.81	† 8.10	3.10	...	16	12	16	3	SE	1, 2, 3, 4, 10, 12, 17, 18, 20, 21, 22, 23
Fonda	Pocahontas	1,232	....	...	.....	....	.....	.....	.....	.....	6.16	.....	2.04	....	9	9	14	8	SE	2, 3, 5, 16, 19, 20, 21, 23, 24
Forest City‡	Winnebago	1,220	...	61.4	....	86	20	36	10	40	7.10	.....	3.46	....	10	8	6	17	S	
Grand Meadow‡	Clayton	1,180	10	61.6	.....	88	18	32	10	36	18.04	....	5 45	..	15	7	14	10	SE	
Greene	Butler	943	....	63 1	.....	88	2, 18, 20	37	10	39	7.38	.....	1.78	....	15	6	9	16	E	
Hampton	Franklin	1,000	11	62 4	†5.4	88	2	37	10	34	7.45	† 3.69	1.40	....	14	6	20	5	SE	2, 3, 17, 18
Humboldt	Humboldt	1,095	8	63.1	....	90	18	37	27	36	3.51	- .17	.88	....	13	11	10	10	SE	
Inwood	Lyon	.....	..	...	....		.....	.....	.....		7.75	.....	2.00	....	11	17	9	5	S	2, 3
Lansing	Allamakee	632		63.0	.....	88	20	33	10	35	11.36	.....	3.25	....	15	14	9	8	.....	2, 3, 4, 6, 10, 13, 17, 18
Larrabee	Cherokee	1,366	10	62.4	†4 8	87	18, 21	33	27	40	3.26	- 61	2.11	..	5		...		SE	1
Le Mars	Plymouth	1,224	....	62.6	.....	86	18, 20	34	27	40	1.46	.....	.60	....	8	8	19	4	S	17, 18, 21
New Hampton	Chickasaw	1,166		59.0	.....	83	18, 20	37	10, 11	33	12 04	.....	2.65		15	10	9	12	NW	
Northwood	Worth	1,222	....	61.0	.....	84	2, 18	35	10	35	9 46	.....	3.70	....	12	8	11	12	SE	2, 3, 4, 8, 17, 19, 20, 24
Osage	Mitchell	1,184	10	61.0	†4.9	87	18	35	10	32	9.58	† 5.49	2.30	..	16	6	6	19	SE	1, 2, 3, 10, 12, 17, 19, 20, 21, 22, 24
Plover	Pocahontas	1,426	..	61.5	.....	89	18	36	27	40	4.79	.....	1.31	....	9	10	3	18	SE	24
Primghar	O'Brien	1,800	....	61 2	....	86	18	35	26	36	2.20	.....	1.50	....	4	15	0	16	SW	
Ridgeway	Winneshiek	1,215	....	61.8	.....	87	2	34	10	35	9.59	.....	2.71	..	24	10	15	6	S	1, 4, 9, 10, 12, 16, 24
Rockford	Floyd	.....	..		.....		.....	.....	.....	....	5.25	.....	1 53	....	6	24	6	1	SE	2, 3, 9, 17
Ruthven	Palo Alto	1,435		60 6	.....	87	18	36	28	41	6.31	.....	2.00	....	7	10	11	10	S	2
Sheldon	O'Brien	1 406	....	60.8	.....	87	18	32	3	44	4.81	.....	3.20	...	10	9	10	12	S	
Sibley	Osceola	1,506		60.8	.....	88	18	35	27	37	2 56	.....	1.78	....	9	6	21	4	SE	
Sioux Center	Sioux		...	62.2	..	88	20	38	11	38	3.77	....	2.27	....	9	11	14	6	S	3, 10, 23
Spirit Lake	Dickinson	1,458	..	60.5	.....	85	17	37	9	31	4 95	.....	1.15	..	8	7	8	16	SE	
Storm Lake	Buena Vista	1,440	12	60.9	.....	82	17, 18	37	11, 27	30	4 22	† .75	2.38	....	13	8	15	8	SE	1, 2, 3, 17, 19, 20, 21, 24, 25
Washta	Cherokee	1,157	..	.....	.....	.....	.....	.....	.....	.....	.87	.....	.50	....	7	13	15	3	SE	
Waverly	Bremer	942	....	63.2	.....	87	22	36	10	34	9.50	.....	3.05	....	17	5	15	11	SE	1, 2, 3, 12, 18, 23, 24
West Bend	Palo Alto	1,197	8	62.5	†4.1	90	17, 18	37	27	37	2.97	† .16	.80	....	14	5	15	11	S	1, 2, 3, 6, 10, 12, 18, 19, 20, 21, 23, 24
West Union	Fayette	1,115	....	.....		.....	.....	.....	.....	.....	11.83	.....	3.00	....	11	..	....	...	SE	
Average				61.8	†4.2	87.1		35.3		36.6	6.69	† 3.26			13	10	12	9	SE	

CENTRAL SECTION

Amana	Iowa	721	25	64 7	†5.1	91	20	42	7, 10, 27, 28	38	5.30	†1.10	1.41		12	9	14	8	SE	1, 2, 3 4, 10, 12, 18, 20 21, 22 23
Ames	Story	926	21	64.2	†5.2	88	18	41	11	36	6.69	†2.85	1.63	....	16	13	13	5	SE	12, 20
Baxter	Jasper	998		63 6	.....	89	19	39	27	38	4.95	....	.85	...	11	9	9	13	SE	
Belle Plaine (a)	Benton	828	11	63.4	†5.2	91	21	41	7, 10, 11, 27	37	7.13	†3.09	1.25	..	14	5	18	8	E	
Buckingham	Iowa	....	...	.....	.....		.....	.....	.....		3 78	.....	.64	...	13	....	..	....	.....	
Carroll	Carroll	1,265	11	64.2	†5 7	92	18	38	27	37	2.58	-1.75	.82		13	10	4	17	.....	1, 6, 7, 19, 20, 21, 22, 24
Cedar Rapids	Linn	733	19	65 4	†6.4	91	18	40	10	42	4.61	† .13	1.20	....	17	12	9	10	S	
Davenport	Scott	529	31	65.0	†3 9	90	20	40	10	41	4.57	† 24	1.15	....	12	14	6	11	E	1, 2, 4, 12, 13 17, 18, 20, 21, 23, 31
Delaware	Delaware	1,083	10	61.5	†3.6	87	20	34	10	42	7 49	†3 67	1.85	....	16	6	21	4	S	
Denison (a)	Crawford	1,180	8	62.8	†2.8	87	12	37	27	41	2.69	-1 55	.91	..	11	....		....	S	
Des Moines	Polk	861	24	64.7	†3 7	88	12	44	11	33	4.69	† .09	1.22	....	14	6	16	9	SE	1, 4, 12, 16, 17, 19, 20, 21, 22, 23, 24
De Soto (a)	Dallas	866		67 2	....	89	20	44	11	33	3.26	.....	.95	...	10	..	....	....	.....	
Dubuque	Dubuque	655	29	63.4	†2 4	88	20	36	10	35	8.67	†4 42	2.08	....	17	7	14	10	SE	1, 2, 3, 10, 12, 13 17, 18, 21, 22, 23
Fort Dodge	Webster	1,126	..	63.4	...	88	18, 20	36	27	44	2 89	.....	76	....	8	7	8	16	SW	
Galva (b)	Ida	1,290	8	63.4	†3.2	88	17	35	27	42	2.53	-1 02	.85	....	6	15	7	9	S	
Gilman	Marshall	1,053	..	....	.....	....	.....	.....	.....	....	4.41	.....	.75	....	16	..	....	...	S&SW	
Grinnell	Poweshiek	1,023	11	64.0	†4 6	88	24	42	11	33	4.92	† .35	.98	....	12	9	9	13	S	2, 4, 5, 12, 19, 21
Grundy Center	Grundy	976	10	62.4	†4.3	87	18	39	9-10	40	7.11	†2 70	1.43	..	17	8	15	8	SE	1, 2, 3, 12, 18, 19, 20, 21, 22, 23, 24, 25
Guthrie Center	Guthrie	1,077	..	60.2	.....	87	18	37	27	45	3.30	.....	.96	....	15	8	17	6	SE	
Harlan	Shelby	1,192	....	64.0	.....	88	12	39	27	38	3 31	.....	.53	..	14	3	18	10	SE, S	1, 17, 20, 21, 22 23, 24, 26
Independence	Buchanan	921	39	61 8	†2.4	85	18, 20	35	10	38	10.46	†6.45	3 70	....	13	..	..	..	SE	3, 4, 10, 12, 17, 20
Iowa City	Johnson	644	11	66 3	†6.7	95	20	40	10	44	3 75	- .40	1.30	....	12	8	14	9	S	
Iowa Falls	Hardin	1,107	8	62 1	†3.1	88	18	38	10	38	5.85	†2.21	1.36	....	12	7	9	15	SE	3, 4, 12, 18, 22,

CLIMATOLOGICAL DATA FOR MAY, 1902--CONTINUED.

CENTRAL SECTION—CONTINUED.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC., IN INCHES.					SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.		
Jefferson	Greene	1,052	...	.....	.....	....	.....	.....	.....	.....	4.68	.....	1.37	....	11	....	.	....	SE	21, 23, 24
Le Claire	Scott	576	...	.....	.....	....	.....	.....	.....	.....	5.17	....	1.20	...	14	....	....	....	.....	4, 5, 20
Logan	Harrison	928	36	65.4	†4.6	90	17	41	2	36	2.88	-1 51	.77	.	15	10	8	13	SE, SW	
Maquoketa	Jackson	688	8	65.5	†4.8	89	20	37	10	34	5.73	†1.78	1.26	...	13	12	12	7	SE	
Marshalltown	Marshall	947	11	64.8	†6.2	91	18, 20	41	10, 11	41	7.65	†3.20	2 72	....	17	6	20	5	SE	2, 3, 4, 12
Monticello	Jones	625	47	64.6	†5 4	89	3, 21	35	11	36	5.81	†1 94	1.35	....	10	16	7	8	SW	
Mt. Vernon	Linn	847	..	64 5	.....	92	20	36	10	45	4.49	.....	1.30	.	14	10	6	15	NW	
Odebolt	Sac	1,356	..	64 2	.....	88	2, 3, 17, 18	37	27	42	2 30	.....	.61	..	11	11	15	5	.....	
Ogden	Boone	1,211	....	64 0	.....	89	18	40	27	34	6.53	.. ....	1.86	....	12	13	6	12	SE	
Olin	Jones	760	....	64.7	.....	88	20	40	7	33	5.59	.....	1.28	....	10	.	.	....	.....	1, 3, 17, 18, 21, 22, 23
Onawa	Monona	1,053	....	66.4	.....	89	3	39	27	40	1 48	.....	.33	....	10	21	8	2	SE	6, 15, 19, 21, 24, 26
Perry	Dallas	975	...	6:.6	.....	90	18	40	27	36	6 25	.....	2 30	.	13	7	12	12	.....	17, 20, 21, 22
Rockwell City (*a*)	Calhoun	1,219	....	62.0		86	17, 20, 21	36	27	38	4.90	.....	1.50	....	11	12	12	7	.....	
Sac City (*a*)	Sac	900	22	63 6	†4.6	88	18	39	11, 27	36	3 63	-.55	.71	....	11	8	14	9	SE	
Sioux City	Woodbury	1,122	13	64.0	†4.0	87	20	38	27	38	1.27	-2 25	.59	.	13	7	14	10	SE	3, 18, 21, 24
Stuart	Guthrie		....	65 4	...	90	12	40	13	39	6.12	.....	1.71	....	10	14	0	17	SE	
Tipton	Cedar	807		61 7	.....	88	2, 20	40	10, 27	41	5 85	.....	1 25	..	10	8	12	11	SE	1, 2, 4, 10 13, 18, 21, 22, 23
Vinton	Benton	800	11	64.0	†5.2	88	18, 20	40	10	.....	6.64	†2.92	1.28	..	14	....	....	...	SE	12, 17, 20, 22
Waterloo	Black Hawk	862	22	63 3	-0 2	87	18, 20	36	10	35	8 54	†4 91	1.92	....	20	9	11	11	SE	
Wilton Junction	Muscatine	683	..	64.2	....	92	20	40	10, 15, 27	45	4 85	.....	1.60	....	9	13	8	10	SE, NW	2, 23
Whitten	Hardin	1,036	..	63.2	.....	89	20	38	10	39	6.69	.....	1.80	...	10	10	8	13	SW	3, 4, 5, 18, 19, 20, 22, 23, 24
West Branch	Cedar	.....	....	.....		....	.....	.....	.....	...	3.97	.....	.97	...	14	4	26	1	SE	4, 13
Average		....	....	64.0	†4.3	88.9	.....	38 8	.....	38 5	5 02	†1.42	...	....	13	9	12	10	SE	

SOUTHERN SECTION.

Afton	Union	1,212	....	66.0	.....	90	12	40	9	37	7.31	.....	1.91	..	14	2	22	7	SE	
Albia	Monroe	945	..	67.6	.....	91	20	44	7	32	5.48	.....	1.55	..	12	6	12	13	SE	1
Atlantic	Cass	1,164	10	64.2	†5.8	90	2.12	34	7	48	4.48	† 16	1.70		14	0	16	15	SE	3, 12, 20, 21, 22, 23 24
Audubon *a*	Audubon	1,301	..	64.0	.....	90	12	39	11, 27	35	4.64	.....	1.01	...	16	12	11	8	SE	12, 17, 20
Bedford	Taylor	....	....	65.2	.....	89	3	37	7	37	5.13	.....	1.42	....	10	5	18	8	SE	
Belknap	Davis	877	....	65.0	.....	89	20	43	7, 13, 27	36	2 63	....	1.20	..	9	17	9	5	S	
Bonaparte	Van Buren	.....	10	66.8	†4.5	92	20	43	7, 28	33	2.69	-1.36	.92	....	8	....	..	....	.....	
Burlington	Des Moines	544	....	67.4	.....	91	18	44	7, 10, 15	38	3.17	.....	.99	....	10	12	10	9	NW	
Bussey	Marion	....	..	.....	.. .	....	.....	..	.....	.....	5 45	.....	1.13	..	12	....	..	....	.....	
Centerville	Appanoose	1,013		66.8	.....	90	20	45	11	28	3.27	.....	1.21	....	10		....		S	5
Chariton	Lucas	1,042	....	65.4	.....	87	12, 20	42	27	40	5 60	.....	1.63	..	16	6	9	16	S, SE	4, 13, 21
Clarinda	Page	1,069	11	65.4	†4.6	93	12	40	7	47	7 18	†2 59	1.45	....	12	14	9	8	SE	
College Springs‡	Page	.....	10	.....	.....	.....	.....	.....	.....	.....	7.86	†3 31	1.55	....	10	....	....	....	.....	
Columbus Junct	Louisa	595	....	66.8		92	18	42	10	42	4.81	.....	1.65	..	9	14	10	7	SE	1, 2, 3, 4, 24
Corning	Adams	1,127	9	64 6	†4.3	89	12	42	7, 27	40	5 87	†1.22	1.66	....	16	7	17	7	SW	12, 17, 19, 20, 21, 22, 23, 24
Council Bluffs	Pot'wat'mie	990	....	66.2	.....	93	12	43	7, 11	38	3.33	.....	.84	....	10	7	16	8	S	
Cumberland	Cass	.....	....	.....	.....	.....	.....	.....	.....	.....	2.26	.....	.78	....	8	20	3	8	S	
Danville	Des Moines	715	....	.....	.....	....	.....	.....	.....	.....	4 15	.....	.87	....	9	11	10	10	.....	
Earlham	Madison	.....	....	63.2	.....	87	12	37	28	38	3 75	.....	.84	....	13	9	8	14	SE, S	12, 17, 19, 20, 21, 23, 25
Eldon	Wapello	630	....	67.0	....	92	20	40	7	36	1.97	.....	.94	....	8	21	1	9	S	3
Emerson	Mills	1,053	....	.....	.....	...	....	.....	.....	....	5.52	.....	2 00	....	6		.	....	.....	
Fairfield ‡ *c*	Jefferson	.....	...	66 2	.....	92	19	42	7, 27	38	2.45	.....	.73	....	7	12	10	9	SE	
Fort Madison	Lee	516	53	.....	.....	.....	.....	.....	.....	.....	4.37	-.02	1.61	....	9	5	14	12	S	1, 2, 3, 4, 6, 20, 23
Greenfield	Adair	.....	10	63.8	†4 2	87	12	40	27	36	6.76	†2.33	1.13	....	19	8	11	12	S	1, 3, 4, 5, 6, 12, 14, 16, 19, 20, 21, 22, 24
Hopeville	Clarke	.....	....	...		.....	.....	....	.....	.....	4.70	.....	1.72	....	13	...	.....	....	.....	
Indianola	Warren	969	10	65.2	†4.8	83	20	42	27	36	5.54	† 80	1.33		14	4	10	17	SW	1, 4, 12, 17 19, 21, 22, 23, 24, 26
Keokuk	Lee	619	30	67 7	†4.7	92	20	45	11	37	3 63	- 64	1.28	....	12	12	11	8	SW	1, 2, 4, 13, 20, 21, 23, 24
Keosauqua	Van Buren	644	9	67 8	†5.7	93	20	40	9	44	2.14	-1.59	.98	....	11	....	....		.....	
Lacona	Warren	.....	....	.....	.....	....	.... ..	.....	....	...	7.20	.....	1 25	....	15	7	17	7	.....	
Lenox	Taylor	1,250	....	64.4	.....	87	12	41	7, 27	33	4.71	.....	1.00	.	13	14	8	9	SE	
Leon	Decatur	.....	....	66.7	.....	88	12	43	27	33	3 76	.....	80	..	16	13	11	7	E	
Mt Ayr	Ringgold	1,236	8	64.6	†2 4	88	12	40	7	39	5.13	-.64	1.50	....	15	6	14	11	SE	
Mt. Pleasant	Henry	729	....	64.6	.....	93	20	39	28	41	3.70	.....	1.12	....	11	13	13	5	SE	
Omaha, Neb	Douglas	1,113	32	66.0	†4.3	92	12	43	11	30	2.88	-1.26	.79	....	13	7	12	12	SE	4, 9, 12, 17, 19, 20, 21, 22, 23, 24 25
Osceola (*d*)	Clarke	1,130	....	64.7		88	12	42	27	35	6 69	.....	1.38	..	16	10	9	12	SE	
Oskaloosa	Mahaska	843	18	63.6	†3.7	84	17	42	7	36	3 72	†-.01	.86	...	10	14	3	14	.... ..	3, 21
Ottumwa	Wapello	630	7	67.4	†4 4	91	20	46	7, 11	32	3 90	-.97	1.10	..	8	11	7	13	SE	
Ovid	Wayne	992	8	64.8	†1.5	88	12	40	27	35	4.83	†1.41	1.48	..	15	7	6	18	S	
Pacific Junction	Mills	960	....	66.2	.....	93	12	39	7	50	3 65	.....	.71	....	12	6	18	7	SE	
Red Oak	Montgom'ry	1,033	....	65.6	.....	87	12	41	8	34	4.66	.....	2.15	....	13	6	17	8	SE	12, 21, 22, 23
St. Charles	Madison	1,070	....	65.4	.....	89	12	43	11	36	5.19	.....	1.11	....	17	12	11	8	SE	
Sigourney	Keokuk	768	....	66.6	.....	97	20	40	7, 8, 27	46	4.21	.....	.96	....	10	15	14	2	SW	4, 21, 22
Stockport	Van Buren	.....	....	.....	.....	.....	.....	.....	.....	.....	2 88	.....	.88	..	11	11	7	13	S	
Thurman	Fremont		....	66.5		91	12	39	7	44	4 61	.....	1.15	....	11	13	8	10	SW	
Villisca	Montgom'ry	1,058	8	65.3	†3.9	91	12	40	2, 27	44	5 11	†1.23	1.46	..	10	6	16	9	SW	4, 5, 13, 14, 23, 24
Wapello (*b*) ‡	Louisa	578	....	65 5	....	88	20	41	7	32	3.27	.....	1.15		8	....	...	....	SE	
Washington	Washington	769	11	64.4	†3 4	91	18, 20	40	7, 10	43	2.58	-.95	1.22	....	8	...		....	SW	
Winterset	Madison	1,129	10	64.3	†3.9	87	18	40	11	42	5.19	†.63	.97	...	15	7	13	11	S	
Woodburn	Clarke	961	...	.....	.....		.....	.....	.....	....	4 68	.....	1.25	....	13	11	10	10	SE	
Average		....	....	65.6	†4.3	90.1	.....	41 1	.....	38.1	4 46	†0.35	....	....	12	10	11	10	SE	
Av. for the state		.....	....	63.8	†4.3	88.7	.....	38.4	.....	37.7	5.39	†1.68	.....	...	13	10	12	9	SE	

§Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Means determined from 7 A. M. and 7 P. M. observations. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MAY, 1902.

STATIONS.		DATE.																														Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton.....	Max...	79	86	87	75	61	62	76	78	75	75	75	90	74	62	60	82	87	87	82	88	88	83	80	82	82	74	71	80	80	74	79	77.9
	Min..	57	53	67	52	52	51	47	45	40	53	43	53	61	53	47	48	62	65	64	65	62	60	60	60	56	55	41	44	49	54	57	54.1
Albia.....	Max..	71	88	86	75	62	62	76	80	72	77	73	91	83	64	62	81	90	91	89	94	85	85	77	82	80	77	69	75	81	70	75	78 8
	Min...	56	59	69	56	55	55	44	55	45	50	45	53	59	52	46	53	62	71	68	69	62	63	63	62	57	57	43	46	54	55	60	56 3
Algona	Max..	74	81	77	64	65	58	78	69	60	55	62	75	67	66	65	77	86	87	83	86	85	85	83	83	80	67	67	80	80	74	79	74 2
	Min..	52	48	55	45	51	48	45	54	39	38	39	51	51	52	46	51	59	60	66	59	67	58	58	55	54	46	40	46	51	52	55	51.4
Alta	Max...	78	82	79	61	59	57	75	72	61	51	62	80	68	67	61	78	86	86	78	79	80	79	80	84	71	61	66	75	76	70	76	72.2
	Min...	54	48	56	46	52	46	42	46	39	40	38	52	54	53	44	50	60	64	58	59	60	57	58	57	51	45	38	46	48	49	59	50.6
Amana ...	Max...	69	83	81	70	66	62	74	77	65	55	66	86	70	65	65	77	86	89	86	91	85	83	76	81	77	69	65	73	79	75	76	74.9
	Min..	50	54	64	57	53	56	42	53	44	42	43	48	59	52	41	53	59	64	70	65	66	65	61	60	58	55	42	42	51	52	63	54.5
Ames	Max...	71	84	87	74	63	58	78	76	66	57	70	85	71	70	62	81	87	88	86	86	83	78	80	84	85	72	67	76	80	75	74	75.9
	Min...	55	50	59	51	49	51	42	54	43	44	41	51	58	55	46	50	60	58	61	61	62	62	58	55	55	53	43	43	52	51	53	51.4
Atlantic ...	Max...	80	90	85	79	59	59	75	76	72	70	67	90	70	62	56	80	89	87	81	86	84	75	78	81	82	67	70	76	77	72	78	75.9
	Min...	58	42	59	53	50	50	34	54	46	50	41	54	60	54	47	46	64	68	63	66	61	59	56	60	50	54	38	38	44	51	57	52.5
Audubon ..	Max...	80	86	87	80	59	58	77	80	70	69	68	90	67	65	58	80	84	85	79	84	83	75	79	82	80	67	71	76	77	70	76	75.5
	Min...	..	..	59	50	50	49	43	52	41	46	39	66	57	53	45	45	63	66	61	63	60	60	58	57	52	52	39	49	44	50	56	52.6
Baxter.. ..	Max..	68	84	85	..	64	63	75	79	63	58	68	88	70	70	60	79	85	86	89	87	83	80	75	83	79	64	65	74	77	71	75	75.1
	Min...	53	50	52	55	47	52	42	53	41	44	41	50	59	52	44	50	60	62	64	60	63	62	60	56	55	53	39	44	50	49	55	52.8
Bedford. ..	Max...	83	85	89	78	66	63	74	80	75	75	70	88	70	71	63	79	85	84	79	85	81	79	78	79	81	68	68	74	75	70	79	76 8
	Min..	46	49	66	55	55	50	37	50	48	50	44	57	62	55	45	51	64	68	63	66	63	58	54	59	53	53	40	41	45	54	58	53.5
Belknap...	Max...	72	85	84	74	63	66	80	80	68	79	79	80	75	79	61	78	88	87	87	89	84	82	76	78	75	68	68	75	77	72	74	76.9
	Min.	45	51	63	55	54	54	43	50	44	47	44	44	43	49	45	52	58	67	66	65	61	61	60	68	55	54	43	45	49	51	57	53.1
Belle Pl'ne	Max...	67	81	80	..	68	63	72	77	61	55	65	85	70	64	63	72	85	89	90	90	91	83	..	78	71	63	65	72	78	75	78	74.2
	Min...	45	52	61	55	51	53	41	50	43	41	41	48	50	51	43	50	56	60	68	65	66	64	62	58	56	55	41	44	50	52	60	52 6
Bonaparte.	Max...	70	87	84	76	76	66	75	80	70	78	69	90	78	65	65	79	88	91	89	92	84	85	78	83	81	74	69	76	81	70	75	78.2
	Min...	54	60	63	59	56	56	43	50	45	45	45	49	62	51	45	56	59	70	68	68	69	64	63	59	55	55	44	43	49	52	60	55.4
Britt.....	Max...	72	86	78	62	68	58	74	69	62	50	65	76	76	67	68	80	82	86	81	88	85	83	79	81	75	66	69	77	79	76	77	74.0
	Min...	48	43	55	47	48	48	37	53	38	38	38	49	54	53	42	52	58	57	63	60	63	59	58	51	54	45	47	43	46	45	54	49.9
Burlington.	Max...	71	87	83	78	67	67	75	80	68	75	72	88	78	65	67	80	86	91	88	89	86	84	78	82	80	70	63	74	78	73	73	77.5
	Min...	66	63	65	63	56	59	44	53	50	44	45	50	61	51	44	51	69	69	69	66	68	65	64	62	57	55	49	46	55	56	62	57.3
Carroll	Max...	79	89	87	82	65	60	72	79	65	59	68	87	72	69	65	87	85	92	87	89	84	80	82	83	80	67	71	76	77	71	75	76 9
	Min...	55	52	62	52	51	48	41	53	40	45	39	50	55	55	45	45	58	58	64	60	65	60	57	58	50	51	38	42	47	48	57	51.6
Cedar Rap.	Max...	70	87	83	70	66	65	74	77	69	55	63	89	70	67	63	77	85	91	87	90	84	84	78	83	77	70	70	73	81	74	76	75.7
	Min...	48	55	63	58	55	54	44	55	45	40	42	47	58	52	45	52	60	63	70	67	61	65	63	60	60	55	45	47	55	54	63	55.0
Centerville	Max...	76	85	84	78	62	61	69	69	..	60	70	88	..	62	60	81	89	89	87	90	86	85	77	79	79	77	66	73	76	70	72	75.9
	Min...	53	60	66	57	52	55	50	48	50	53	45	62	61	52	48	53	62	78	66	73	63	63	62	64	64	56	47	53	56	58	62	57.8
Chariton...	Max...	73	84	84	74	61	63	74	77	85	78	70	87	80	64	59	80	86	86	83	87	82	82	75	79	79	71	66	74	76	68	73	76.1
	Min...	55	55	65	56	55	53	42	53	45	50	44	55	61	52	46	51	62	70	65	65	62	60	62	60	54	55	42	44	50	55	54	54.8
Charles Cy.	Max...	69	85	78	72	80	61	72	72	64	55	60	76	70	65	65	76	83	86	81	84	80	80	81	82	75	76	66	75	79	74	75	74.1
	Min...	48	50	55	50	42	50	41	55	40	35	38	48	56	49	43	50	57	59	68	60	65	67	61	55	55	49	41	42	53	52	50	51.1
Chester.. .	Max...	72	88	78	62	62	60	77	70	..	53	59	72	62	65	64	71	80	84	80	84	80	80	72	78	72	..	70	74	78	78	72	71.2
	Min...	46	50	55	48	46	50	39	52	35	35	37	45	48	46	40	50	55	54	67	64	58	64	56	56	55	42	40	42	56	50	60	49.2
Clarinda...	Max...	84	88	86	76	61	61	79	82	76	76	70	93	67	63	58	83	88	86	80	89	83	82	81	85	83	71	70	76	80	72	82	77.8
	Min...	49	50	65	54	54	49	40	49	50	48	45	46	61	55	51	50	53	67	62	64	62	59	58	59	54	53	41	42	46	51	57	53.0
Clear Lake	Max ..	70	91	77	61	70	60	80	85	59	50	59	75	70	70	64	75	82	85	82	85	84	82	75	81	80	70	72	78	81	78	73	71.5
	Min .	45	50	55	48	47	47	44	54	37	35	38	46	54	48	40	46	57	61	64	58	61	60	60	56	54	47	42	45	50	52	56	50.3
Colum. Jc.	Max...	72	88	85	75	65	63	79	76	65	63	65	90	70	67	64	79	88	92	89	91	81	86	85	85	73	78	68	76	82	76	75	77.4
	Min...	52	61	66	60	55	55	53	45	45	42	45	48	58	49	43	51	58	71	70	67	61	61	65	60	56	65	45	46	54	56	62	55.8
Corning ...	Max...	79	87	85	76	61	60	72	65	72	72	71	89	69	69	58	79	87	85	80	84	80	76	28	77	79	66	67	75	76	71	77	74 9
	Min...	58	47	67	56	53	48	42	50	45	48	43	54	61	52	49	47	63	67	63	64	61	59	58	66	57	54	42	43	50	52	67	51 4
Co. Bluffs..	Max..	85	90	90	.	63	63	78	77	76	71	71	95	68	66	58	83	89	89	80	90	85	75	83	84	80	68	72	77	78	72	84	78 0
	Min...	53	52	60	53	54	46	43	50	49	47	43	60	61	54	52	52	65	70	60	68	59	60	60	60	56	47	43	45	50	53	60	54.4
Cresco.. .	Max...	71	80	72	60	65	58	71	70	55	41	60	70	70	65	66	73	79	84	80	..	84	78	80	75	78	71	64	64	71	76	75	70.2
	Min...	44	54	55	50	55	50	43	55	35	25	30	35	50	45	40	50	55	60	60	..	58	60	63	60	56	55	53	39	47	46	54	49.4
Davenport.	Max...	70	87	80	74	67	65	73	78	57	52	64	86	68	64	63	75	83	89	87	90	82	82	78	81	79	65	66	72	79	74	74	74.3
	Min ..	47	60	63	60	57	55	46	56	43	40	42	45	57	50	44	52	58	65	70	70	66	66	65	63	60	55	44	47	59	58	62	55.6
Decorah....	Max...	74	84	83	62	68	58	73	79	59	53	62	72	70	66	67	71	81	86	91	84	87	80	80	79	73	63	63	73	79	77	78	73.4
	Min...	46	53	52	48	43	50	42	46	39	37	38	53	55	48	41	50	56	57	60	62	61	64	62	58	57	48	44	46	56	54	65	51.4
Delaware..	Max...	72	81	80	65	66	60	72	74	59	48	61	83	69	62	60	72	81	85	82	87	80	81	74	80	75	67	63	75	77	76	77	72 4
	Min...	45	54	57	50	47	51	42	52	38	34	39	41	55	48	39	49	54	59	64	61	64	63	59	56	54	49	40	43	52	51	60	50.6
Denison...	Max...	79	85	86	81	68	58	74	75	66	..	65	87	..	65	62	78	85	83	79	84	82	76	78	81	75	65	67	72	76	79	75	75.4
	Min...	39	44	45	49	50	47	42	52	41	45	40	54	55	55	46	50	57	65	50	59	59	59	60	55	52	51	37	41	49	50	58	50.2
Des Moines	Max...	72	86	86	75	60	62	75	80	63	61	68	88	68	63	59	78	85	87	82	87	84	79	76	80	80	65	67	71	76	68	75	74.5
	Min...	56	54	61	53	52	48	44	56	46	45	44	55	61	54	47	53	60	68	67	64	62	63	62	61	58	52	44	46	52	55	59	54.9
De Soto....	Max...	70	85	88	80	62	61	75	78	70	69	70	74	..	67	62	80	87	88	83	89	87	83	80	82	80	73	69	78	80	79	80	77.0
	Min. .	58	55	63	54	54	55	47	58	48	50	44	62	..	57	50	53	65	72	70	69	67	65	63	59	59	58	46	45	54	59	63	57.4
Dows	Max...	67	81	78	69	64	67	73	70	59	55	62	80	70	64	61	76	83	81	81	84	82	78	77	80	74	64	72	80	75	70	74	72.6
	Min...	34	45	54	47	47	42	40	53	40	37	38	50	55	52	43	57	57	58	57	58	63	61	55	53	53	45	36	41	52	50	57	50.1
Dubuque...	Max .	72	85	80	63	69	64	73	76	55	45	60	81	71	64	61	70	80	87	84	88	80	81	76	80	76	64	64	71	78	77	75	72.6
	Min ..	45	68	59	56	53	54	46	52	41	36	42	46	57	51	44	50	59	63	68	68	65	62	62	60	60	51	46	47	57	56	62	54.1
Earlham...	Max ..	77	86	84	77	60	59	75	78	68	73	69	87	71	64	58	78	84	84	79	85	84	79	77	80	79	65	69	75	77	71	76	75.1
	Min ..	50	42	62	50	49	50	41	53	42	49	41	41	49	54	45	46	62	67	64	63	62	59	57	56	52	54	38	37	46	50	56	51.2
Eldon	Max ..	73	89	86	80	63	65	76	81	75	77	71	90	82	64	62	82	88	91	89	92	88	85	78	81	80	75	68	75	81	72	73	78.5
	Min..	55	57	66	59	57	57	40	50	47	47	45	49	62	51	45	55	60	70	69	67	68	63	63	58	57	57	44	43	46	51	61	55.5
Elkader....	Max ..	75	86	82	64	71	61	77	78	60	52	66	85	73	68	65	77	85	91	86	91	85	84	80	86	80	69	71	78	82	78	76	76.2
	Min ..	45	55	57	55	44	54	41	51	40	35	39	44	57	50	43	50	57	61	68	61	65	65	62	57	57	51	40	43	52	51	62	52.0
Fairfield...	Max...	71	87	85	78	64	64	74	78	69	69	70	88	79	..	63	79	83	90	92	..	84	84	77	81	78	70	74	..	80	72	74	77.2
	Min...	53	58	65	58	56	56	42	51	45	46	44	50	51	..	49	55	59	63	67	..	69	67	63	57	55	55	42	.	50	51	61	55.1
Forest City	Max...	70	85	82	70	64	59	70	68	57	52	58	77	70	65	63	78	78	85	81	86	83	79	76	80	76	66	66	75	76	73	76	72.4
	Min...	50	45	55	46	50	47	40	53	38	36	38	48	53	50	42	51	58	58	67	60	60	60	60	53	53	46	41	44	50	51	57	50.3
Ft. Dodge.	Max..	78	85	82	80	64	57	74	74	67	59	74	83	77	68	64	79	87	88	85	88	84	78	78	80	75	70	69	75	77	74	76	75.8
	Min ..	53	42	56	47	49	50	45	52	38	45	42	39	55	53	45	50	60	61	61	61	64	59	58	60	58	49	36	39	48	46	57	51.0
Galva.....	Max..	79	85	85	63	64	61	80	..	..	67	84	71	67	59	83	84	88	87	80	85	82	81	80	85	73	65	71	77	77	72	79	76 3
	Min	50	42	55	45	48	45	42	..	..	43	49	54	53	45	50	50	61	65	55	58	59	57	58	54	56	44	35	36	48	47	61	50.6
G. Meadow	Max...	70	82	72	62	68	62	75	77	55	40	63	80	70	73	62	72	82	88	83	85	81	83	77	82	75	62	67	74	78	73	72	72.7
	Min...	47	57	58	52	41	50	41	54	38	32	38	44	54	46	49	48	56	58	61	60	63	62	60	58	55	48	41	45	34	55	60	50.6
Greene. ..	Max...	70	88	76	65	67	59	75	73	60	53	65	78	73	68	66	80	86	88	86	88	84	81	78	81	76	67	68	77	80	78	78	74.6
	Min..	48	49	55	51	45	50	42	55	40	37	39	48	57	50	41	52	59	59	66	58	64	63	61	55	55	49	40	44	55	52	60	51.6
Greenfield.	Max...	78	85	86	80	58	70	72	75	70	72	67	87	70	64	56	75	85	85	80	84	85	80	75	75	82	78	63	73	71	68	67	74.8
	Min..	56	50	63	50	51	50	48	52	43	50	41	54	58	50	45	47	51	56	60	61	63	64	58	57	52	55	40	45	50	55	60	52 7
Grinnell...	Max...	67	82	80	71	64	62	72	76	62	55	64	84	68	63	60	76	84	86	84	87	80	80	82	88	77	70	63	72	76	71	74	73.5
	Min...	51	55	61	55	52	54	44	54	43	44	42	51	60	53	44	51	60	69	69	65	66	64	63	61	57	54	43	46	53	53	60	54.6
Grundy C'r	Max...	66	83	79	70	67	51	74	75	60	..	64	86	70	65	60	70	84	87	84	86	82	79	76	80	75	63	66	73	77	72	73	73.6
	Min..	49	49	55	53	47	51	40	52	39	39	40	46	52	53	40	50	56	61	64	60	63	63	60	54	55	50	40	44	51	56	57	51.3
Guthrie Cr	Max..	72	86	83	..	58	..	72		..	..	67	79	..	72	61	79	85	87	84	85	84	78	80	83	78	69	69	75	78	73	76	77.6
	Min...	42	43	57	48	48	45	39	53	42	43	39	34	56	52	44	45	44	64	60	62	59	58	55	54	50	50	37	38	45	49	55	48.7
Hampton..	Max...	70	88	75	65	67	58	77	73	61	54	61	78	75	66	64	78	86	87	84	87	83	81	78	82	75	67	71	77	78	73	75	74.0
	Min...	50	50	56	50	46	49	44	54	39	37	39	47	56	51	40	51	56	60	66	53	64	62	59	52	55	49	42	45	53	50	51	50.8
Harlan.....	Max..	80	85	86	79	61	58	74	76	74	64	66	88	73	64	58	81	86	86	79	87	85	78	80	81	78	69	72	77	77	75	79	76 0
	Min...	58	47	61	51	51	50	37	49	45	48	40	52	57	55	47	49	63	66	62	63	60	58	56	57	53	54	39	41	44	47	54	52.1
Humboldt.	Max...	78	84	78	66	66	57	76	72	65	58	66	81	71	68	66	80	88	90	87	88	86	82	80	83	74	65	68	71	81	74	75	75.0
	Min..	53	48	55	48	54	47	40	58	40	40	38	49	55	52	46	50	58	62	63	59	66	63	58	52	52	45	37	41	51	51	55	51.2
In'pen'nce.	Max'..	72	82	78	75	68	61	72	73	60	54	62	83	71	64	62	74	83	85	81	85	78	78	74	78	75	69	63	72	76	73	..	72.7
	Min...	39	53	55	53	46	51	39	54	39	35	39	45	57	49	40	49	55	60	67	60	62	63	60	55	56	51	41	44	50	50	63	51.0
Indianola..	Max...	72	86	83	74	61	62	75	77	70	68	71	89	71	64	60	79	87	87	83	88	82	80	76	81	79	69	68	74	79	74	77	75.7
	Min...	55	56	63	53	51	51	43	54	44	49	43	53	61	54	47	51	60	70	66	63	62	63	61	60	56	56	42	46	52	54	58	54.7
Iowa City..	Max. .	74	90	84	74	70	64	75	78	68	60	71	90	78	68	67	82	89	93	90	95	85	84	79	84	78	67	68	77	83	79	78	78.2
	Min...	48	54	63	59	53	57	42	53	45	40	47	46	61	49	43	54	58	64	69	61	69	64	63	59	57	55	43	43	52	50	62	54.4
Iowa Falls.	Max...	72	85	79	61	67	58	73	72	63	52	66	83	71	65	64	80	86	88	81	87	82	79	78	80	74	65	64	75	77	74	75	73.5
	Min...	52	47	56	51	47	44	40	51	39	38	39	48	56	52	43	51	59	60	65	59	64	62	58	52	54	48	39	41	51	50	55	50.7
Keokuk ...	Max...	72	86	85	80	66	67	74	79	65	83	69	89	78	64	55	79	86	90	88	92	85	82	78	80	78	68	66	74	78	70	73	77.1
	Min ..	55	62	66	62	59	59	46	55	50	46	45	52	63	52	46	57	63	70	70	70	70	65	63	60	60	58	51	48	56

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MAY, 1902—CONTINUED.

STATIONS.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mean.
Larrabee	Max	79	84	76	63	63	61	82	68	61	57	67	84	70	70	63	82	86	67	81	84	87	85	82	84	72	67	75	78	79	77	80	75.3
	Min	52	44	55	46	52	48	43	51	40	44	38	49	54	52	44	49	60	63	60	58	57	55	53	55	48	40	33	42	45	50	59	49.6
Le Mars	Max	80	85	78	62	60	62	78	75	61	56	64	80	70	69	64	77	85	86	79	86	85	82	84	83	73	64	70	77	80	72	78	74.4
	Min	54	45	54	45	52	45	42	51	41	42	38	54	54	54	41	50	63	66	65	60	59	56	58	56	51	44	34	40	44	52	60	50.7
Lenox	Max	78	85	84	76	61	60	73	76	71	74	69	87	69	62	57	78	84	83	79	84	80	77	77	77	77	69	65	72	74	71	76	74.4
	Min	57	52	66	52	53	51	41	51	46	49	43	55	61	54	48	49	62	67	63	65	62	60	60	61	56	55	41	46	50	53	57	54.4
Leon	Max	77	84	86	80	62	63	75	..	74	77	74	88	83	65	60	82	86	87	81	87	82	81	83	80	81	73	71	73	79	78	75	77.7
	Min	53	55	64	55	56	54	44	..	46	54	45	55	63	54	49	52	63	67	63	66	63	61	63	61	58	58	43	46	51	53	57	55.7
Logan	Max	83	89	88	81	61	63	78	81	79	66	68	89	82	67	60	80	93	89	82	87	88	87	83	87	80	65	70	77	81	80	81	78.2
	Min	60	41	64	52	53	49	42	49	45	48	43	53	57	54	43	47	55	69	60	59	61	59	54	60	51	48	54	50	51	52	52	52.7
Maquoketa	Max	73	85	80	74	70	65	75	78	..	50	63	85	76	65	63	74	82	88	85	89	82	84	77	82	79	69	69	74	79	76	75	75.5
	Min	44	57	62	57	54	56	42	50	41	37	41	40	55	46	41	49	55	62	67	64	64	65	62	57	57	54	40	40	53	48	61	55.5
Marsh'lt'n	Max	69	85	84	75	70	62	77	79	68	58	67	90	73	70	62	81	89	91	88	91	86	83	78	83	78	71	68	75	81	74	77	76.9
	Min	53	50	57	54	47	53	43	54	42	41	41	49	59	54	44	52	59	63	61	60	62	63	60	55	56	53	42	43	52	50	59	52.6
Monticello	Max	82	88	89	60	68	70	75	70	65	60	55	86	80	84	78	79	82	80	87	88	89	85	78	72	75	74	70	68	70	72	70	75.8
	Min	48	52	54	55	50	48	41	42	38	38	35	41	50	53	57	60	68	70	72	75	70	70	60	55	52	50	40	42	45	60	62	53.3
Mt. Ayr	Max	79	85	83	73	60	63	79	73	77	76	73	88	78	64	58	81	87	86	81	87	80	79	77	79	80	70	68	75	77	70	80	73.7
	Min	57	58	63	53	53	51	40	45	47	51	43	53	61	54	49	49	62	64	62	63	62	59	60	61	56	50	41	45	49	53	56	55.5
Mt. Ple's'nt	Max	71	84	85	79	65	67	73	77	71	70	68	86	79	66	66	80	88	89	86	93	85	82	78	83	78	76	66	75	79	80	76	77.4
	Min	49	57	61	56	54	55	40	44	41	41	40	45	58	46	46	52	55	66	64	63	65	62	60	54	52	54	42	39	43	47	58	51.8
Mt. Vernon	Max	73	88	83	72	69	66	76	80	67	51	68	89	74	69	67	79	86	89	86	92	84	83	74	84	80	63	71	75	81	77	76	76.5
	Min	45	55	61	57	51	51	41	52	41	56	40	44	57	47	39	54	50	62	66	65	62	62	61	62	58	54	43	44	52	53	61	52.5
NewH'pton	Max	71	81	72	64	68	59	73	71	56	51	60	77	71	65	62	74	81	83	79	83	78	79	75	78	73	67	..	73	76	73	73	63.2
	Min	44	49	54	50	44	44	40	53	49	37	37	45	45	47	41	41	56	56	65	59	62	62	59	57	55	47	40	..	61	50	59	48.7
Northwood	Max	70	84	75	67	65	58	76	70	59	50	59	76	69	66	63	71	80	84	80	82	80	80	76	78	73	66	65	73	76	73	74	71.5
	Min	47	45	54	48	48	49	41	54	37	35	38	47	53	47	41	50	55	58	65	59	65	62	60	54	56	47	41	46	52	50	57	50.5
Odebolt	Max	79	88	88	67	62	59	78	79	65	59	68	87	71	70	63	82	88	88	84	85	85	81	84	86	75	72	75	80	81	78	80	77.0
	Min	55	46	58	48	51	49	44	55	40	47	39	50	56	54	41	50	60	66	54	57	61	59	59	56	51	51	37	41	50	46	63	51.3
Ogden	Max	75	84	82	80	60	60	75	80	60	60	71	85	75	68	60	80	87	89	85	85	85	78	80	87	78	70	69	75	80	71	76	75.2
	Min	55	50	60	50	51	51	42	52	43	46	41	55	50	56	47	50	54	65	58	61	64	63	60	58	55	54	40	45	51	53	60	52.9
Olin	Max	72	81	80	77	68	65	73	75	63	..	..	..	72	68	63	73	82	87	83	88	83	82	81	80	73	67	64	72	78	77	78	75.6
	Min	44	55	62	57	52	55	40	47	42	..	..	..	57	49	41	50	55	61	66	64	65	65	62	59	57	54	42	43	50	50	62	53.8
Omaha, N.	Max	84	88	86	63	60	61	76	78	74	69	69	92	71	63	58	78	86	85	77	87	83	73	79	81	80	66	68	73	76	67	80	75.2
	Min	62	58	63	52	54	51	49	57	50	47	43	62	60	56	51	53	66	69	63	69	60	63	62	66	58	55	45	51	54	55	60	56.8
Onawa	Max	85	88	89	83	61	64	80	81	70	67	69	88	82	67	63	81	85	87	79	88	84	81	83	84	78	71	71	78	80	79	79	78.2
	Min	60	48	63	49	53	48	41	55	45	49	41	56	58	57	47	51	65	68	65	62	62	57	63	60	52	53	39	44	64	62	60	54.6
Osage	Max	69	83	76	61	65	58	73	71	..	49	61	74	71	66	64	73	81	87	79	83	81	80	74	79	74	67	65	74	77	74	76	72.2
	Min	47	49	54	48	45	50	42	54	38	35	38	45	54	46	40	50	54	55	65	58	59	62	60	54	53	44	40	42	52	49	60	49.7
Osceola	Max	73	85	82	..	58	58	73	75	..	76	69	88	..	..	..	78	80	86	..	83	..	77	73	78	73	71	76	73	75	68	74	75.1
	Min	57	57	56	52	54	54	44	53	45	48	44	53	58	54	46	48	54	62	65	64	70	62	62	61	56	55	42	46	51	53	57	54.3
Oskaloosa	Max	69	84	79	70	60	60	67	75	67	60	65	84	73	65	61	73	84	82	83	82	83	79	77	73	72	70	62	73	79	74	75	72.9
	Min	53	57	63	55	54	55	42	53	43	47	43	48	58	51	44	51	58	68	68	67	64	64	63	65	55	55	41	40	51	50	60	54.2
Ottumwa	Max	72	86	85	79	63	63	73	78	74	67	68	86	81	63	61	78	88	89	87	91	86	86	84	80	79	72	72	74	78	72	74	76.9
	Min	56	64	70	59	57	58	46	47	49	50	46	54	63	53	53	57	64	70	70	69	64	64	62	60	59	58	56	47	55	56	63	58.0
Ovid	Max	74	84	83	73	61	63	76	78	69	79	71	88	77	63	59	79	86	85	83	87	81	81	76	78	81	71	70	75	75	67	71	75.0
	Min	56	55	62	55	55	53	42	51	44	50	45	53	62	52	47	50	62	69	65	66	63	61	62	60	54	55	40	45	50	53	56	54.6
Pacific Jct.	Max	86	92	91	81	61	63	75	82	73	68	73	93	70	63	58	81	88	89	82	88	86	77	83	82	81	78	72	78	79	73	82	78.4
	Min	60	42	66	53	53	49	39	49	50	57	44	57	61	55	51	51	64	66	62	65	59	57	57	59	54	55	40	43	47	50	59	54.0
Perry	Max	80	87	87	79	61	58	77	80	65	60	72	88	75	72	62	83	89	90	84	88	86	80	81	83	79	66	70	79	82	76	78	77.3
	Min	55	51	61	51	50	51	42	54	44	48	42	52	60	57	47	49	63	67	68	63	63	63	61	59	50	54	40	45	50	53	59	53.9
Plover	Max	80	82	71	72	65	58	76	72	63	55	66	82	71	70	66	81	80	89	84	87	83	86	84	84	75	61	69	79	70	76	75	75.0
	Min	40	43	50	45	40	50	42	41	37	40	37	45	56	48	45	48	61	62	60	55	62	54	55	51	50	42	36	47	46	44	46	48.0
Primghar	Max	76	82	75	63	63	61	75	75	60	53	63	77	63	68	61	68	85	86	78	85	83	84	83	75	63	73	72	77	78	72	78	72.7
	Min	55	45	56	45	52	41	43	50	40	42	36	50	51	49	45	43	62	54	63	59	58	53	56	68	40	35	76	45	48	50	60	49.8
Red Oak	Max	79	85	84	80	62	62	72	75	74	69	65	87	68	64	60	77	83	83	80	84	81	75	77	78	76	73	66	71	74	73	77	74.6
	Min	61	52	70	51	56	52	43	41	50	51	42	58	62	55	51	53	65	69	67	68	63	62	62	63	58	58	46	58	52	51	61	56.5
Ridgeway	Max	73	87	73	65	69	60	74	74	56	49	60	74	71	66	65	72	78	83	86	84	78	81	78	78	74	61	73	78	78	77	80	72.7
	Min	44	52	56	52	42	49	42	54	36	24	37	45	55	45	39	50	54	58	66	60	63	64	61	58	56	49	42	56	53	54	62	50.9
Rockwell C	Max	78	82	85	..	61	55	75	70	60	..	65	84	70	67	60	80	85	85	81	86	86	79	75	75	70	61	68	60	79	75	76	73.6
	Min	52	48	56	47	50	45	45	54	39	43	38	59	55	51	45	48	48	63	57	60	61	56	58	56	50	46	36	43	49	46	56	50.3
Ruthven	Max	76	81	76	63	64	58	71	74	60	54	60	75	67	67	64	76	86	87	80	84	84	83	80	79	75	64	68	77	78	75	74	73.1
	Min	53	48	51	45	45	48	44	56	38	39	37	50	53	51	45	50	50	..	..	..	..	58	56	53	51	46	37	36	50	53	59	48.2
Sac City	Max	79	82	85	72	66	64	77	74	67	55	65	82	75	67	63	80	85	88	80	86	84	80	82	84	..	69	67	76	85	76	73	75.8
	Min	55	48	57	48	52	48	44	54	40	45	39	51	55	54	45	49	60	65	56	57	67	58	59	..	53	40	39	44	49	49	59	51.3
St. Charles	Max	75	88	85	75	60	62	76	72	69	74	70	89	69	62	59	79	86	87	83	87	83	80	74	80	80	67	66	75	77	70	77	75.4
	Min	56	57	64	52	51	51	45	54	44	48	43	53	61	53	46	50	64	69	66	64	62	62	61	62	57	56	42	57	52	55	58	55.3
Scranton	Max	84	89	88	60	61	59	80	79	66	60	70	87	70	66	65	83	87	88	80	88	85	78	85	85	77	66	71	80	76	72	77	76.3
	Min	51	58	50	50	49	44	53	41	41	40	42	57	55	47	43	55	65	60	65	53	60	58	58	54	52	40	45	50	48	50	63	51.5
Sheldon	Max	75	84	73	62	62	58	75	67	57	54	61	77	70	70	57	75	86	87	81	87	86	85	84	84	78	63	70	72	78	75	81	73.4
	Min	54	40	32	43	50	46	42	51	38	42	37	50	52	50	45	48	58	63	61	48	56	54	58	54	50	41	36	45	47	48	58	48.3
Sibley	Max	77	79	71	63	63	60	78	65	55	53	62	73	69	68	58	77	86	88	77	85	87	87	86	84	76	60	72	79	81	71	80	73.5
	Min	52	42	49	43	50	47	42	48	37	42	37	49	49	49	45	49	49	63	52	52	55	53	56	52	47	52	35	40	45	50	58	48.0
Sigourney	Max	73	91	86	73	67	82	78	80	69	68	75	93	81	72	72	84	92	94	96	97	90	86	79	86	82	60	70	79	85	77	79	80.5
	Min	50	57	63	55	53	53	40	40	41	44	43	47	59	50	41	52	57	67	66	61	62	62	63	59	58	54	40	42	50	48	59	52.8
SiouxC'nt'r	Max	79	84	76	60	60	60	76	69	58	55	61	75	69	69	62	76	86	87	80	88	85	83	82	82	72	65	74	78	70	71	80	73.6
	Min	54	46	51	45	52	46	46	51	39	43	38	52	53	50	46	50	60	66	65	58	58	54	59	54	52	44	39	45	48	52	59	50.8
Sioux City	Max	83	86	87	61	61	61	80	75	68	67	64	82	69	66	60	77	86	85	78	87	84	83	82	83	72	63	70	76	76	68	78	74.8
	Min	61	47	51	47	56	47	49	50	45	44	40	58	55	55	48	52	65	67	59	66	60	57	61	62	54	47	38	44	52	54	60	53.2
Spirit Lake	Max	57	58	59	60	60	68	76	..	62	52	59	74	66	67	62	76	85	86	80	83	83	81	82	76	74	61	70	75	65	75	79	70.6
	Min	45	45	46	47	49	47	46	42	37	38	37	50	53	49	46	50	59	65	67	57	63	57	57	54	61	45	39	45	53	54	59	50.4
Storm L	Max	74	80	78	60	59	56	73	70	58	54	61	80	68	66	59	74	82	82	76	81	79	78	78	81	70	64	66	73	74	67	72	70.7
	Min	54	50	54	46	52	47	45	53	39	41	37	52	53	53	43	49	60	61	56	57	61	58	59	59	52	45	37	48	53	52	59	51.1
Stuart	Max	80	86	85	77	65	58	73	77	70	72	72	90	70	70	68	82	89	88	82	87	85	80	80	81	82	75	74	82	80	76	75	77.8
	Min	50	53	61	50	50	51	44	54	52	44	41	51	40	42	45	45	60	60	60	61	62	60	59	60	64	45	41	55	54	50	45	51.9
Thurman	Max	83	89	88	81	70	61	80	81	77	71	73	91	72	65	60	80	88	85	83	89	84	75	82	80	79	74	70	76	77	69	80	77.8
	Min	61	45	68	53	54	50	39	52	50	55	45	60	62	56	52	51	65	68	62	70	60	60	58	59	56	55	41	42	46	55	60	55.2
Tipton	Max	72	88	80	76	65	66	73	72	70	55	64	85	..		61	71	84	87	87	88	82	85	78	87	76	68	65	77	78	71	76	75.4
	Min	58	58	61	58	54	56	44	52	42	40	41	44	52	48	41	52	56	65	68	62	64	65	63	62	57	55	40	44	52	52	62	54.0
Villisca	Max	83	84	87	78	72	62	70	79	75	75	68	91	75	64	58	80	88	81	82	86	83	79	82	83	82	74	68	73	76	71	78	77.0
	Min	58	40	50	53	52	50	52	46	47	53	43	55	59	53	49	50	63	64	62	65	60	58	63	65	55	55	40	42	41	51	61	53.6
Wapello	Max	68	84	80	76	62	63	71	77	68	64	67	..	..	62	60	75	84	87	84	88	83	80	77	78	78	71	69	78	78	72	71	74.3
	Min	52	63	66	60	57	56	41	54	49	42	45	..	..	50	48	55	56	70	70	68	69	66	65	60	58	58	48	46	54	55	63	56.7
Washin't'n	Max	70	87	83	66	..	65	74	79	62	62	68	89	68	66	62	78	88	91	88	91	85	84	78	81	79	66	66	74	80	72	73	76.2
	Min	50	58	62	56	52	50	40	49	42	40	41	46	58	48	40	51	57	68	67	64	67	62	60	57	54	52	40	42	48	50	59	52.6
Waterloo	Max	72	81	79	66	69	61	77	79	62	54	62	82	71	65	67	77	84	87	84	87	81	80	75	82	78	71	66	75	80	74	76	74.3
	Min	48	51	56	54	47	51	42	52	41	36	40	48	58	51	40	51	58	61	68	60	67	64	61	57	58	49	41	45	53	51	61	52.3
Waverly	Max	70	84	79	65	69	61	75	71	62	56	61	81	70	65	63	76	83	86	83	86	83	87	76	81	75	70	65	74	78	73	75	73.7
	Min	49	50	55	53	48	50	46	56	41	36	39	49	57	51	43	51	59	61	69	60	65	64	66	58	57	51	42	41	54	53	61	52.8
West Bend	Max	68	84	78	62	66	59	77	71	63	54	64	81	70	70	69	81	90	90	85	85	83	82	82	82	75	63	70	78	80	77	78	74.7
	Min	52	47	45	44	51	50	42	53	39	40	39	48	..	52	47	52	56	61	59	57	65	59	58	51	57	44	37	44	51	49	59	50.3
Whitten	Max	76	82	80	68	67	60	74	72	65	54	68	87	72	65	63	80	88	88	87	89	82	80	79	80	75	74	67	77	80	77	78	75.3
	Min	42	48	54	50	47	50	39	54	40	38	39	48	57	41	41	51	59	60	67	60	63	72	58	52	55	49	39	44	49	60	58	51.1
Wilton Jc	Max	65	85	81	62	63	63	74	78	68	52	60	83	72	67	64	78	79	90	88	92	85	85	82	85	78	67	68	75	75	63	81	74.8
	Min	47	53	64	58	55	58	42	50	43	40	42	43	58	47	40	48	58	60	67	65	67	63	65	59	60	55	40	45	55	52	63	53.6
Winterset	Max	70	87	85	..	60	61	74	76	75	70	69	88	75	65	60	80	86	87	84	86	85	78	75	80	78	77	66	74	77	75	77	76.0
	Min	40	45	60	50	50	56	45	54	43	50	40	50	57	52	45	49	61	67	62	64	61	60	60	60	55	55	41	46	49	54	50	52.6
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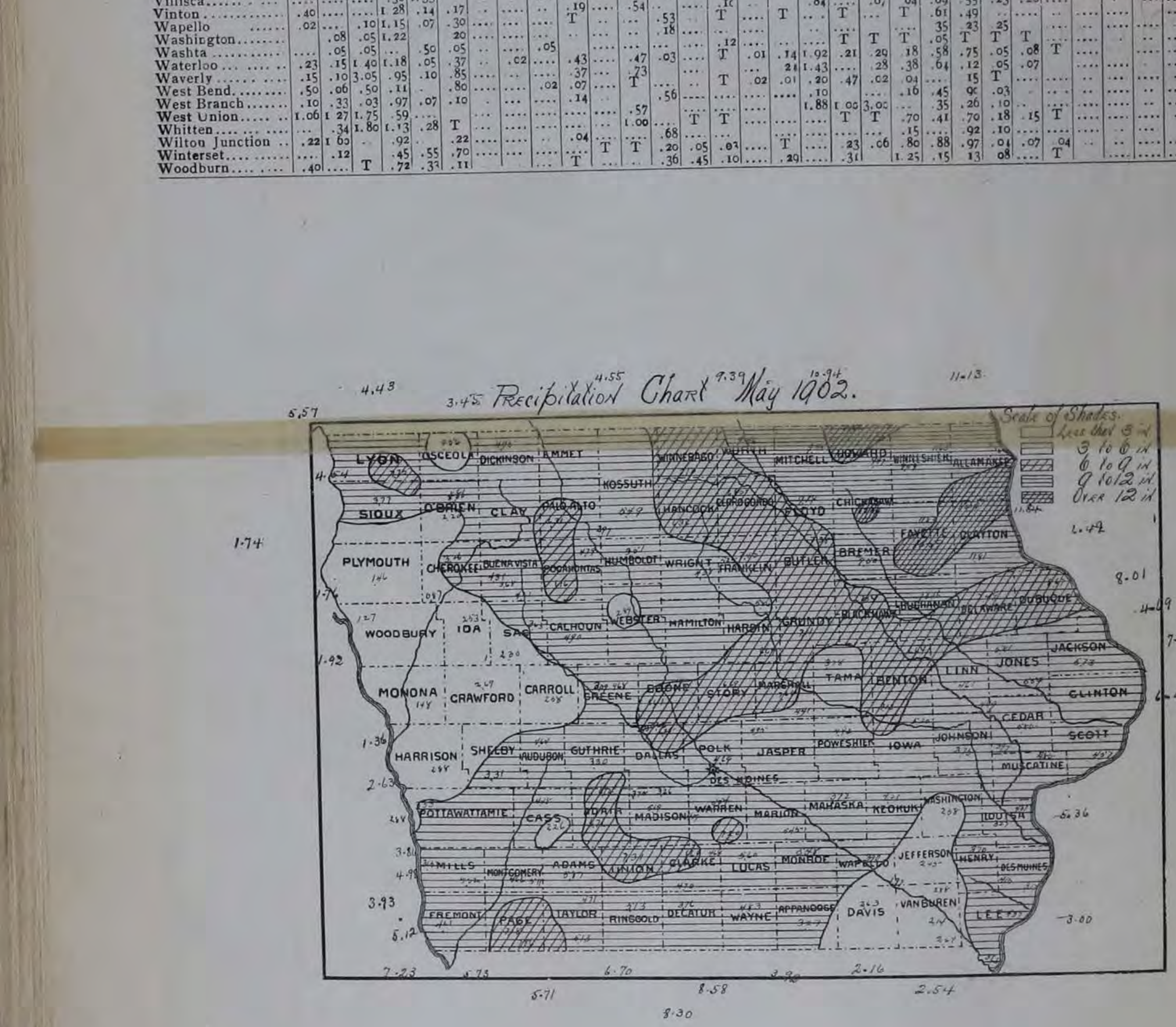
DAILY AND MONTHLY PRECIPITATION FOR MAY, 1902.

STATIONS.	DAY OF MONTH.																														TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	.61	....	....	1.44	.41	.65	....	....	....	....	.11	....	.28	.48	.02	....	T	....	.23	....	1.91	.62	.36	.09	.16	....	....	....	....	....	.05	7.31
Albia	.43	....	.04	1.55	.21	....	....	....	....	T	....	....	.43	.13	.19	....	....	....	.04	....	.30	1.13	.93	.08	....	....	....	....	....	....	T	5.48
Algona	.30	1.23	.75	....	.90	....	....	....	T	.03	....	....	....	....	....	.70	.25	....	.50	20	....	.03	.50	....	....	....	....	....	....	....	.10	5.49
Alta	....	....	2.22	....	.53	.04	....	....	.01	.09	....	T	....	....	.08	.07	.02	....	1.05	.10	.01	....	.02	.04	.03	....	....	....	....	....	....	4.31
Alta (near)	....	1.55	.18	..	.50	..	....	..	.07	....	....	....	T	....	.07	....	.07	....	.98	.06	T	..	....	.12	.08	....	....	..	....	....	....	3.68
Amana	.58	.78	.24	1.41	.03	.13	....	....	....	.05	....	....	.30	....	....	....	....	.07	....	....	....	.82	.84	.02	....	....	....	....	....	....	T	5.30
Ames	.01	.36	.25	.19	.18	1.63	....	....	T	.04	....	.36	T	....	T	....	.05	....	.10	.59	1.19	.19	1.39	.04	.12	....	....	....	....	....	T	6.69
Atlantic	....	..	.18	.05	62	....	....	T	....	....	....	.11	.09	.75	.11	....	....	....	....	.21	1.70	.19	.1	.21	.08	....	..	....	....	....	.07	4.48
Audubon	..	.16	....	.01	.50	.26	.	....	T	....	....	.31	.21	.02	.06	..	1.01	....	.21	.20	.77	.32	.24	.26	....	.06	..	....	....	....	..	4.64
Baxter	....	.85	....	.15	.40	.35	....	....	..	....	..	.45	.15	....	....	....	56	....	.16	.58	.48	..	.82	....	....	....	....	....	....	....	....	4.95
Bedford	T	....	..	.23	1.42	....	....	....	....	..	....	.46	....	.62	.10	....	....	....	.21	....	1.00	T	.50	48	....	....	..	..	....	....	.11	5.13
Belknap	..	....	....	.48	.15	.10	.	....	....	....	....	....	.10	.13	T	....	..	....	....	..	.10	1.20	.32	.05	.	T	....	....	....	..	....	2.63
Belle Plaine	.50	1.25	1.20	.20	.20	.50	....	....	....	.03	....	....	.50	.	.20	....	.05	..	....	.55	....	.70	.90	.35	....	..	....	....	....	....	....	7.13
Bonaparte	.42	.05	....	.37	.20	.30	....	....	....	....	....	.	.05	....	....	....	....	....	....	....	....	.58	.22	....	....	....	....	....	....	..	....	2.69
Britt	.12	.32	1.35	.35	.18	.70	....	....	.08	.06	....	T	....	....	....	....	2.21	.30	T	..	.36	....	.32	.01	....	....	....	....	....	....	..	6.36
Buckingham	.45	.07	27	.14	.43	..	....	....	....	.12	....	.38	....	....	..	....	.64	....	.42	....	.36	.02	.33	13	....	....	....	....	....	....	....	3.78
Burlington	.05	.07	.16	.46	.09	.83	.	....	....	....	....	....	.13	....	..	....	....	....	....	....	.17	.99	.22	....	....	T	....	....	....	....	T	3.17
Bussey	.20	.32	.41	1.12	.44	....	....	....	..	....	....	.98	.04	....	.07	....	.12	....	....	1.13	.44	.2	....	....	....	....	....	....	....	..	..	5.45
Carroll	.24	.07	....	....	....	.82	....	....	.02	.02	....	.02	....	....	....	....	.64	.	.06	.03	.20	.20	....	.25	..	..	....	....	....	....	....	2.58
Cedar Rapids	.21	.25	.53	.38	.13	.. .	....	T	.04	.07	....	....	.51	.	.04	....	.06	1.14	....	....	.46	.23	.33	.02	.04	....	..	....	....	T	.17	4.61
Centerville	T	....	....	.13	.25	.	....	....	....	....	....	....	.07	.08	.18	....	....	....	....	....	.33	1.22	.71	.10	....	....	....	....	....	....	.17	3.27
Chariton	.18	....	.16	.64	.73	.16	....	....	....	T	T	....	.47	.15	.14	....	.31	..	.19	.25	1.63	.16	.46	.03	.03	T	....	....	....	....	....	5.60
Charles City	.	.02	.95	1.30	T	1.30	..	....	T	.23	....	1.56	.08	....	T	....	T	1.75	....	.45	1.25	....	T	.24	....	T	....	....	....	....	....	9.19
Chester	.04	.18	.60	3.30	....	1.02	....	....	....	.75	....	1.30	....	....	....	....	2.50	....	....	1.03	2.72	....	....	....	.	....	....	....	....	..	14.62
Clarinda	.11	..	....	20	....	1.45	....	....	....	....	....	....	.69	.35	.20	T	T	....	.95	.91	.85	....	1.10	.04	.27	..	....	....	....	....	....	7.18
Clear Lake	....	.10	1.75	.45	T	.60	....	....	T	.10	....	T	....	....	....	T	.76	1.10	....	.25	1.40	.15	.10	.15	T	....	....	....	....	....	....	6.85
College Springs	.04	....	..	1.12	1.55	....	....	....	....	....	....	1.04	.10	.40	....	....	....	....	1.00	....	1.26	.67	.68	....	....	..	..	....	....	....	....	7.86
Columbus Jct	.72	.07	T	1.65	.10	.23	....	....	....	T	....	....	.56	....	T	T	T	....	T	....	T	.70	.10	.68	....	..	....	....	T	....	T	4.81
Corning	T	T	T	.48	.60	.52	..	T	....	....	....	.21	.35	.20	.06	....	.05	....	.64	.08	1.66	.67	.15	.15	.02	....	....	....	....	....	.03	5.87
Council Bluffs	....	.....		.21	.84	....	....	....	....	....	....	..	.16	.67	.07	..	..	..	.08	....	.45	.3	.09	.45	....	....	....	....	....	....	....	3.33
Cresco	....	.03	1.04	1.00	1.00	....	....	T	....	.50	....	....	....	....	....	....	.20	2.00	..	....	.2	2.70	.20	T	.60	....	T	....	....	....	T	9.47
Cumberland	....	.10	....	.47	T	....	....	....	....	....	....	.01	T	.46	....	....	....	....	....	.22	.78	.12	.10	....	..	..	....	....	....	....	....	2.26
Danville	.68	.20	.24	.87	.17	.50	....	....	..	....	....	....	.37	T	....	....	....	....	....	....	....	80	32	....	....	....	....	....	....	....	T	4.15
Davenport	.04	.84	....	1.15	T	.59	....	....	..	.05	..	....	.99	....	T	T	.03	.01	. .	.	.17	.46	.23	T	....	T	....	....	....	T	.01	4.57
Decorah	.15	.45	1.34	1.35	.02	1.10	....	....	.01	.42	....	.44	.27	....	T	.04	.52	.85	....	.55	3.35	.37	T	.33	....	.03	....	....	....	....	.04	11.63
Delaware	.10	32	.86	1.15	.27	....	T	....	....	.74	....	.24	....	....	.23	....	1.85	....	....	.02	.18	.33	.85	.09	.18	T	....	....	....	....	.02	7.49
Denison	T	..	....	.	.55	.50	....	..	.03	....	....	....	....	T	.13	.02	.04	.	.91	T	.17	T	.03	.28	.. .	.03	....	..	....	....	....	2.69
Des Moines	.22	.01	T	.07	.27	.61	.	T	T	T	T	.17	.12	T	T	.02	.75	...	.02	T	1.16	.06	1.11	T	.07	....	....	..	..	....	....	4.63
De Soto	T	.11	....	.10	.28	.70	....	.	T	....	T	.09	....	T	T	....	.22	....	.03	....	.95	....	.70	....	.08	....	....	....	....	....	....	3.26
Dows	T	....	.80	.60	.72	....	....	....	T	....	....	.04	..	....	T	..	T	.13	T	1.15	.55	.01	.06	.20	.09	..	....	....	....	....	....	4.38
Dubuque	.02	.20	.27	.64	T	.27	T	....	....	.86	....	.05	1.07	....	T	.08	....	2.06	....	....	.87	.16	1.70	.38	.01	.02	....	....	....	....	.0	8.67
Earlham	.06	....	....	.22	.28	.76	.	T	....	..	T	.10	.47	.07	.04	T	.17	....	T	....	.84	....	.49	T	.19	.06	....	....	....	....	....	3.75
Eldon	T	T	T	.22	.23	T	....	....	..	....	....	....	.04	.05	T	....	....	....	....	....	....	94	.32	.06	....	....	....	....	....	....	.11	1.97
Elkader	.25	.60	1.50	.90	....	.30	.	.02	....	.70	....	.50	.30	....	....	.02	.02	3.10	....	.90	2.00	.23	.47	....	....	....	....	....	....	....	....	11.81
Emerson	....	....	....	....	1.00	....	. .	....	....	....	..	....	..	2.00	....	....	....	..	....	1.26	.60	.32	....	.34	.	....	....	..	..	....		5.52
Fairfield	.11	....	.	.30	....	.06		.	.	T	....	....	.73	.	....	.	....	....	....	....	....	.51	.35	.39	....	....	....	....	....	....	....	2.45
Fonda	....	2.04	.54	....	.94	....	....	..	T	T	T	....	T	....	.02	.77	..	....	1.04	.61	.10	....	.07	T	....	....	....	....	....	....	....	6.16
Forest City	T	.58	3.46	....	.08	.75	....	....	T	.10	.	T	....	....	....	....	.98	.80	....	T	....	.20	.12	....	.03	....	....	....	....	....	....	7.10
Fort Dodge	..	T	.50	.62	.20	.76	..	....	T	T	T	T	....	....	....	....	T	....	....	....	.48	.08	.05	....	.20	....	....	....	....	....	....	2.89
Fort Madison	T	.20	.10	.59	.12	1.61	....	....	....	....	....	....	T	.10	T	..	....	....	....	.19	T	1.22	.21	T	....	T	....	....	....	....	T	4.37
Galva	....	....	.48	.15	.45	....	....	.	....	....	....	....	....	....	....	....	.35	....	.85	T	T	....	....	.25	T	....	....	....	....	....	....	2.53
Gilman	.12	62	.07	.26	.14	.42	....	....	T	T	T	.10	.06	T	.06	....	.06	....	.41	20	37	.75	71	T	T	.06	T	T	..	T	....	4.41
Grand Meadow	....	.64	1.67	1.87	....	.61	..	....	....	1.52	....	....	59	.	....	T	.12	5.45	....	.14	3.42	.25	.60	.11	....	1.01	....	....	....	T	.03	18.04
Greene	.	.06	1.10	.46	.06	1.55	....	..	....	.28	....	.17	....	.	....	....	....	1.78	.10	.36	.85	.20	.12	.21	.08	....	....	....	....	....	....	7.38
Greenfield	.19	T	T	.70	.19	1.13	....	....	....	....	....	.03	.40	.25	.09	.28	.10	.02	.85	.75	.91	.27	.30	.21	.01	.01	....	....	T	T	T	6.76
Grinnell	.27	.62	.01	.15	.69	....	....	....	T	....	.	.46	....	....	.02	..	.07	....	72	.98	.4	.52	....	....	....	..	....	....	T	T	4.92
Grundy Center	.16	.48	.75	1.43	.17	.41	....	....	T	.11	....	.13	.19	....	T	....	T	.71	35	.22	.23	.60	1.00	.14	.03	T	....	....	....	....	....	7.11
Guthrie Center	.08	....	.08	.	.24	.41	....	.	....	T	T	.17	.08	.04	.03	T	.44	....	.10	.02	.96	.20	.22	.23	....	T	....	....	....	....	....	3.30
Hampton	.05	.58	.98	....	1.40	....	....	.	.39	....	.04	.07	....	T	....	....	.07	1.24	.32	.32	.84	.11	.70	....	....	.	....	....	....	....	.34	7.45
Harlan	.0	....	....	.09	.50	.32	....	T	.03	T	....	T	.10	.46	.15	....	.53	....	T	.11	.17	.27	.23	.34	.	T	....	....	....	....	....	3.31
Hopeville	.03	....	T	.15	.34	.33	....	....	....	T	....	.	.32	.57	.01	..	.03	....	....	.71	1.72	.12	.1	.21	.. .	....	....	....	....	....	T	4.70
Humboldt	.12	.	.87	.88	....	.65	....	....	.02	.06	....	T	....	....	....	....	.02	.01	....	....	.08	.10	.30	.18	.12	....	....	....	....	....	....	3.51
Independence	.20	.12	1.60	1.00	.30	....	.	.	T	.50	....	.82	....	....	....	....	....	3.70	....	.40	.90	.60	.20	.12	....	....	....	....	....	....	....	10.46
Indianola	.67	T	T	.72	.08	....	....	T	T	T	....	.28	.12	.05	T	T	.81	....	T	.25	1.07	.05	1.33	.02	.07	....	.01	....	....	....	....	5.54
Inwood	....	2.00	1.50	....	1.00	50	....	....	....	.20	....	....	..	....	.20	....	.50	.75	....	.50	.50	.10	....	.77	....	....	....	....	....	....	....	7.75
Iowa City	....	.17	.10	.80	.11	.08	....	....	....	.01	....	....	.38	....	T	....	.	.13	....	....	.17	.42	1.30	....	....	....	..	....	....	....	.05	3.75
Iowa Falls	T	T	.80	.73	.22	1.21	....	....	T	.20	....	.29	T	..	T	..	T	.17	.09	1.36	.51	T	.20	.08	T	T	....	....	....	....	T	5.85
Jefferson	1.05	....	.03	.55	1.07	....	..	....	T	....	....	.05	..	....	.02	....	.05	....	....	....	1.37	.08	.23	18	....	....	....	....	....	....	..	4.68
Keokuk	.01	.08	....	.02	.06	.36	....	....	....	....	....	....	.20	.	T	....	....	....	....	.03	.04	1.28	.37	.37	..	T	....	....	....	....	.28	3.63
Keosauqua	.20	.03	.01	.15	.26	.18	....	....	....	.	....	....	.02	T	T	....	....	....	....	.07	T	.98	.2	.05	....	..	....	....	....	....	....	2.14
Lacona	.25	....	1.00	1.25	.50	.	....	....	T	T	....	....	.40	.10	.10	....	....	....	.40	.35	.75	.65	1.00	.25	.10	.10	....	....	....	T	T	7.20
Lansing	.09	.30	.83	1.28	....	.65	.10	....	....	.75	....	.08	.40	....	....	T	.80	2.10	....	.25	3.25	.15	T	..	.30	....	....	....	....	....	....	11.36
Larrabee	.19	2.11	T		.75	....	....	..	T	....	....	....	....	....	.11	....	....	....	.10	....	T	....	....	....	....	....	....	....	....	....		3.26
Le Claire	....	.69	....	.20	.80	1.20	.42	....	....	T	.08	.	.81	....	....	.02	.14	23	....	....	....	.25	.22	.08	....	....	....	....	....	....	.03	5.17
Le Mars	....	50	..	.	.60	....	....	....	....	.05	....	....	....	....	....	.12	.05	.06	....	....	.04	....	....	....	T	.04	....	....	....	....	....	1.46
Lenox	T	....	....	.85	.23	.66	....	....	....	....	....	....	.33	.21	T	....	.12	....	.07	....	1.00	.20	.64	.11	04	....	....	....	....	....	.25	4.71
Leon	.09	.02	.08	.01	.24	.44	....	T	....	....	....	..	.10	.22	.04	....	.36	....	.45	.20	.80	19	.33	.13	....	....	....	....	....	....	T	3.76
Logan	..	....	....	.09	77	..	....	....	.09	....	. .	....	.12	.30	.10	.04	.09	....	.53	.15	.06	.25	.12	.15	.02	....	....	....	....	....	....	2.88
Maquoketa	.30	.18	....	1.26	....	.31	....	....	....	.36	....	....	.50	....	.06	....	....	1.14	..	....	.15	.15	1.25	.02	..	T	....	....	....	....	.05	5.73
Marshalltown	.06	30	.28	1.07	.15	.45	.	....	T	.09	.08	.30	.14	....	....	....	....	....	.11	.20	80	75	2.72	.07	.08	....	....	....	....	....	....	7.65
Monticello	..	....	1.10	....	.04	24	....	....	....	.47	....	.33	....	....	....	....	....	1.35	....	....	.50	.89	.29	....	.60	....	....	....	....	....	T	5.81
Mount Ayr	.05	....	T	.15	.27	.43	T	T	T	....	....	..	.12	.50	.03	....	..	....	.25	50	1.50	.31	.37	.16	.09	....	....	....	....	....	.36	5.13
Mt. Pleasant	1.12	.06	T	.15	.24	.36	....	....	....	....	....	.	.51	T	T	....	....	....	....	.16	.02	.74	29	.05	..	....	....	....	....	T	T	3.70
Mt. Vernon	T	.25	.25	1.30	.02	.10	T	T	....	.03	T	....	....	T	....	.02	....	.73	....	T	.57	40	.75	.05	.01	.01	....	....	....	....	T	4.49
New Hampton		.20	1.50	1.42	....	1.00	....	....	....	.40	....	.68	.20	....	....	1.40	.35	....	1.35	2.65	.55	.05		.24	....	....	....	....	.05	....	12.04
Northwood	....	.22	2.07	1.07	T	.49	....	....	T	.43	....	.09	..	....	....	....	3.70	.30	....	.31	.58	T	.14	.10		T	....	....	....	....	....	9.46
Odebolt	.05		.08	.17	.28	53	..	....	.05	....	....	.12	....	....	....	....	....	....		.61	.10	....	.08	.21	T	....	....	....	....	....	....	2.30
Ogden	....	1.86	.10	.52	....	.95	....	....	....	.30	....	.40	....	....	T	....	.05	....	....	.95	1.07	.08	.08	.24	.27	....	....	....	....	....	....	6.61
Olin	.26	....	1.00	.50	.03	T	....	....	....	.05		....	1.00	....	T	....	....	1.28	..	....	.57	.65	.23	T	....	T	....	....	....	....	T	5.59
Omaha, Neb	....	..	T	.6	.69	.10	....	T	T	....	....	....	.15	.51	.19	T	.13	....	.07	T	.35	.21	.10	.02	.17	T	....	....	....	....	....	2.88
Onawa	....	....	....	.02	.33	.23	....	....	.03	....	....	....	T	....	.20	....	....	....	.03	....	.20	..	.12	.26	.	.06	....	....	....	....	....	1.48
Osage	....	.11	2.30	1.05	....	.93	..	....	....	.13	....	.25	.05	..	....	....	1.18	.64	.04	70	1.60	.14	.07	.21	0.18	T	....	..	....	..	T	9.58
Osceola	.07	....	.	.83	.40	.30	....	.01	....	T	T	.06	.75	.26	.03	.55	....	....	.07	.62	1.38	1.12	.13	.13	..	....	....	....	....	....	....	6.69
Oskaloosa	.44	....	.42	.51	.29	..	....	....	....	T	....	.73	..	....	.07	....	.03	....	T	....	.75	.11	.37	T	....	....	....	....	....	....	....	3.72
Ottumwa	....		....	.94	.30	....	....	....	....	....	....	..	.70	20	....	....	....	....	....	....	....	1.10	.61	....	..	.01	....	....	....	....	.04	3.90
Ovid	15	....	53	33	.26	07	....	....	....	....	....	....	.06	.33	.25	....	.03	....	.66	.26	1.35	.13	.30	.12	....	....	....	....	....	....	T	4.83
Pacific Junction	....		.	.2	.49	.13	....	....	....			.30	.37	.71	.09	....	....	....	....	.10	.35	.46	....	.25	19	....	....		....	....	....	3.65
Perry	T	.03	.02	.11	.20	2.30	....	....	.01	....	T	T	.02	T	T	T	.16	....	T	1.80	.88	.02	.57	....	.13	.	.	....	....	....	T	6.25
Plover	41	....	1.14	.46	.61	....	....	....	.02	....	....	....	....	....	....	.07	....	....	.41	....	T	....	.36	1.31	..	....	....	....	....	....	....	4.79
Primghar	....	1.50	.25	....	.35			....	.10	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.20
Red Oak	T	..	....	.15	.38	.15	T	....	....	....	....	.50	.10	.55	.01	....	....	....	T	.02	2.15	.02	.09	.28	.23	....	.	....	....	....	T	4.66
Ridgeway	.11	.06	.80	1.42	.97	.01	....	....	.04	.34	.01	.10	.01	....	.22	.02	2.38	.33	.22	.16	1.57	.04	.08	.45	.01	.01	....	....	.	....	.13	9.59
Rockford	....	1.00	.53	....	....	..	.	..	.50	....	....	T	..	....	....	....	1.20	....	.52	.50		....	....	....	....	....	....	....	....	.		5.25
Rockwell City	.60	.	1.20	.30	.40	1.50	....	....	T	.05	....	....	....	....	....	.	.20	....	.20	T	.20	....	.05	.20	T	....	....	....	....	....	....	4.90
Ruthven	....	.24	2.00	.57	....	.65	....	....	.15	....	....	....	....	....	....	....	....	....	....	1.10	....	....	1.60	....	....	....	....	....	....	....	..	6.31
Sac City		....	.37	.42	.30	.58	....	....	.07	....		T	....	....	....	T	.71	....	.70	.20	.15	.06	.07	T	.	....	....	....	....	....	....	3.63
St. Charles	02	....	....	.40	.42	.37		T	....		.52	.23	.86	.06	.01	....	.01	....	.02	.10	1.11	.57	87	....	.03	.01	....	..	....	....	T	5.19

DAILY AND MONTHLY PRECIPITATION FOR MAY, 1902—CONTINUED.

STATIONS.	DAY OF MONTH. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL.
Scranton	.25	T	.30	...	.77	....	....	....	T	...	....	.15	T	..	.10	.01	.03	T	T	T	.63	.36	....	.26	...	....	....	....	..	....	....	3.09
Sheldon	....	.02	3.20	1.00	.32	.08	....	....	.06	T	T	T	T	....	T	T	.18	....	T	04	T	....	T	T	T	....	....	....	....	....	....	4.81
Sibley	.15	T	1.78	.04	.38	.27	..	T	.08	.18	....	.04	....	....	T	T	T	....	T	T	T	....	.46	....	....	....	....	....	....	....	....	2.56
Sigourney	.44	.09	.95	.42	.22	.06	....	T	T	T	....	....	.34	T	T	T	T	T	T	.03	....	.16	.96	.5	.22	T	T	....	....	....	....	T	4.21
Sioux Center	T	.06	2.27	.31	.3-	...	....	....	T	.35	..	20	...	....	.09	....	..	T	.03	.06	...	.05	....	.11	.09	..	T	..	....	....	....	....	3.77
Sioux City	.01	...	.09	.04	.14	.19	....	....	.01	..	...	.03	..	....	.16	T	.03	T	.06	.03	T	....	.85	....	..	.	.	....	....	....	....	....	1.27
Spirit Lake	.49	1.00	1.15	...	.32	..	...	....	.26	..	..	T	....	....	T	....	....	....	.90	.03	T	....	.88	.24	.03	....	T	....	....	....	T	T	4.95
Stockport	.35	.10	.03	.39	.23	.15	....	...	..	T	....	....	.2.	T	T	....	..	....	....	.28	....	....	....	.03	....	T	....	....	....	....	....	....	2.88
Storm Lake	.0	....	2.38	....	.33	.19	....	....	T	.03	....	T	....	....	.07	T	.23	....	.72	.02	.03	....	.06	.11	T	.04	..	....	....	..	....	....	4.22
Stuart	.72	...	....	.07	1.25	...	....	..	....	...	....	28	.08	T	...	.25	....	....	1.71	.50	.67	....	.59	....	....	....	....	..	....	....	....	....	6.12
Thurman	....	.	T	1.15	.52	.08	....	....	....	....	..	.15	20	.40	.10	....	T	....	T	T	.91	.14	.76	.20	T	T	....	.	....	..	T	4.61
Tipton	.50	.75	T	.50	T	.25	....	....	....	.10	...	..	.50	.	T	....	....	.50	....	...	1.00	.50	1.25	....	....	....	..	....	....	..	....	5.85
Villisca	....	....	....	.30	1.33	....	T	T	....	....	..	..	.33	.57	T	....	T	.13	....	.33	1.46	....	.23	20	.23	....	....	....	....	..	....	....	5.11
Vinton	.40	....	....	1.28	.14	.17	..	....	..	.19	....	.54	..	....	.10	..	T	.84	....	.67	64	.69	.55	.23	.20	....	....	....	....	....	....	..	6.64
Wapello	.02	...	.10	1.15	.07	.30	....	....	....	T	..	...	..	.18	....	..	....	....	..	....	....	....	35	.23	.25	T	....	..	....	....	..	....	3.27
Washington	....	.08	.05	1.22	....	20	....	....	....	....	..	....	....	....	....	....	....	....	....	T	T	T	.05	T	T	T	....	....	.	..	....	....	2.58
Washta	....	.05	.05	...	.50	.05	..	....	.05	....	....	....	....	....	.12	....	..	....	....	T	....	T	.61	.49	..	....	..	....	....	....	....	....	0.87
Waterloo	.23	.15	1.40	1.18	.05	.37	..	.02	....	.43	....	.47	.03	....	T	.01	.14	1.92	.21	.29	.18	.58	.75	.05	.08	T	....	....	....	....	T	8.54
Waverly	.15	.10	3.05	.95	.10	.85	....	..	....	.37	...	.73	....	...	....	...	21	1.43	....	.28	.38	.64	.12	.05	.07	....	....	....	....	....	....	.02	9.50
West Bend	.50	.06	.50	.11	.	.80	....	....	.02	.07	....	T	....	..	T	.02	.01	.20	.47	.02	.04	....	15	T	....	....	..	....	..	....	....	....	2.97
West Branch	.10	.33	.03	.97	.07	.10	.	...	....	.14	..	..	.56	....	....	....	....	.10	....	....	.16	.45	90	.03	.	..	..	....	..	....	.03	3.97
West Union	1.06	1.27	1.75	.59	....	....	...	....	....	....	....	.57	....	....	....	....	....	1.88	1.00	3.00	..	.35	.26	.10	..	....	....	....	..	....	..	11.83
Whitten	...	.34	1.80	1.13	.28	T	...	....	....	....	...	1.00	....	T	T	....	....	....	T	T	.70	.41	.70	.18	.15	T	....	....	....	...	....	6.69
Wilton Junction	.22	1.60	-	.92	.	.22	....	....	..	.04	....	....	.68	....	....	....	....	....	....	....	.15	....	.92	.10	....	....	....	..	...	....	....	4.85
Winterset	....	.12	.	.45	.55	.70	....	....	....	....	T	T	.20	.05	.03	....	T	....	.23	.06	.80	.88	.97	.04	.07	.04	..	..	....	....	....	....	5.16
Woodburn	.40	....	T	.72	.33	.11			...	T	...	..	.36	.45	.10	....	.29	....	.31		1.25	.15	13	08	....	T		....	....	....	T	4.68



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BERNARD MURPHY, STATE PRINTER
1902.

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Iowa Falls	J. B. Parmelee
Jefferson	Isaac Young
Keokuk	*Fred. Z. Gosewisch
Keosauqua	Prof. J. H. Landes
Knoxville	Casey & Belville
Lacona	Agent C. B. & Q. Ry
Lansing	Jacob Ackerman
Larchwood	Ralph Twamley
Larrabee	H. B. Strever
Lenox	J. L. Hurley
Le Mars	Dr. T. E. Cole
Leon	Millard F. Stookey
Logan	Mrs. M. B. Stern
Maquoketa	Frank Keeney
Marshalltown	Branch S. Jones
Monticello	C. E. Heisey
Mooar	Thos. T. Brady
Mount Vernon	Rev. J. W. Hubbard
Mt. Ayr	A. F. Beard
Mt. Pleasant	Dr. Frank T. Stevens
Murray	Agent C. B. & Q. Ry
New Hampton	R. H. Gurley
Newton	Hon. J. P. Beatty
Northwood	Dr. J. H. Darey
Odebolt	E. Starner
Ogden	E. Sayre
Olin	Hon. Nathan Potter
Omaha, Neb	*L. A. Welsh
Onawa	C. G. Perkins
Ovid	H. C. Miller
Osage	G. D. Pattingill
Osceola	Mrs S. Lewis
Oskaloosa	Jos. Boyd
Ottumwa	Dr. J. F. Herrick
Pacific Junction	Agent C. B. & Q. Ry
Pella	B. A. Viersen
Perry	J. A. Harvey
Plover	J. S. Smith
Primghar	P. R. Bailey
Red Oak	J. S. Cole
Ridgeway	Arthur Betts
Rockford	J. R. Waller
Rockwell City	C. M. Randall
Ruthven	F. M. Fitzgerald
Sac City	J. A. Sodestrom
St. Charles	C. W. Minard
Scranton	E. A. Olive
Sheldon	J. B. Frisbee
Sibley	H. G. Doolittle
Sigourney	Mrs. R. F. Ashbaugh
Sioux Center	Jacob de Ruyter
Sioux City	*U. G. Purssell
Spencer	S. Gillespie
Spirit Lake	W. C. Drummond
Stockport	C. L. Beswick
Storm Lake	Prof. M. L. Fuller
Stuart	A. S. Raber
Thurman	C. R. Paul
Tipton	G. W. Barclay
Toledo	Lulu G. Bookwalter
Vinton	T. F. McCune
Villisca	C. E. Matteson
Wapello	Geo. W Schofield
Washington	Wm. A. Cook
Washta	H. L. Felter
Waterloo	M. L. Newton
Waukee	E. J. Leonard
Waverly	H. S. Hoover
Whitten	Dr. Frank P. Butler
Wilton Junction	J. M. Rider
Winterset	Prof. E. R. Zeller
West Bend	Phil. Dorweiler
West Union	J. M. Lisher
Woodburn	C B. McDonough

*U. S. Weather Bureau

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Van Horne	Spencer Smith
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West Branch	Wrigley Smith
West Union	H. B. Blackman
Wilton	Thos. Boot
Wiota	I. S. Coomes

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIII. JUNE, 1902. No. 6.

SEASONABLE NOTES.

J. S. Trigg, of the Rockford Register, says: "The year 1857 was so wet all through the West that it came about that corn was worth $1.00 per bushel, and hay only $1 50 per ton."

* * *

Observation of climate and crops in Iowa, extending over a period of a third of a century, leads to the conclusion that greater damage has been wrought by excess of rainfall in the critical period of crop growth and the harvest season, than from the occasional visitations of severe drouths in this favored portion of the Mississippi valley. This state as a whole never experienced a regular famine-breeding drouth, or anything near a total failure of crops. The most destructive drouth came in 1894, but the total cereal output of that season amounted to 256,000,000 bushels, and the total value of soil products was over $137,000,000. The grain and forage was very superior in quality, and there was no distress caused by shortage. On the other hand our very wet seasons bring a great bulk of vegetation, generally somewhat deficient in quality; and if excessive rains continue through the harvest season the aggregate of loss becomes almost incalculable. It is impossible to ripen the cereal crops and the hay crop and save them in good order without a good long period of dry weather and sunshine in midsummer and the early fall. The best crops in Iowa have been grown and secured in seasons when the rainfall was about or a little below the normal in the period of ripening and harvesting. There is a measure of truth in the old proverb: "Farmers are scared to death in very dry seasons and starved to death in very wet seasons." The golden mean between the extremes is what we should be thankful for, and that is what we have in Iowa oftener than seasons of great ex cess or deficiency.

* * *

Conditions have not been exactly favorable this season for renewed discussion of the old question as to change of climate, the effects of forests on rainfall, and the probable retrogression of this region towards the desert type. It will come up again, however, when the pastures begin to get short and the hot winds blow,—not this year but some other year.

* * *

Dry years conserve fertility, while excessively wet seasons leach the soil and carry away the best elements of plant growth. On this point J. S. Trigg says in his farm notes: "The greatest loss to those sections of the Mississippi valley which have been visited with such tremendous floods this season has not been in the crops or bridges destroyed, but rather in the loss in soil fertility by erosion over millions of acres of choice farm land, every farmer contributing not a little of the best part of his farm to the rushing waters which carried it off in solution to the ocean."

In a season like the present the farmers who have silos are in clover,—or rather the clover may be saved in good order in the silo whether wet or dry. When the harvest time is wet it is easier to can the fodder than to cure it. For all seasons, in fact, the silo is a valuable adjunct to a farm where stock must be fed during nearly half the year.

* * *

No, there are no reasonable grounds for the conclusion that the climate is changing, and that all our summers are going to be very wet in the years to come. We shall have enough good old-fashioned dry seasons to keep the soil in its place and prevent washing all our fertility away to the Gulf.

ELECTRIC SHOCKS.

(American Manufacturer.)

Three papers on this subject, recently read before the Institution of Electrical Engineers, should, at the present juncture be read with general interest. The first details quite a number of experiments with shocks at 500 volts pressure, and in that connection it is shown that alternating currents are many times more painful than direct currents, the sensation, however, being of a different nature. The dangers of shocks at that pressure have been largely exaggerated and misunderstood by laymen. The writer points out that dry wood and dry boots, without large nails, offer so strong a resistance to electric current that it is quite safe to touch an overhead trolley wire whilst standing on a dry tram-car, or even when standing on the ground or on the rails—this he states from his own personal experience However, in wet weather the case is largely altered, but even the boots must be very thoroughly saturated to permit enough current to pass to produce a severe shock. With third-rail electric railways a like immunity exists, as, with dry and sound boots, scarcely anyone can feel a shock whilst standing with one foot on the live and the other on a track rail. A shock is experienced with damp or wet boots, but neither the sensation nor the degree of wetness of the boots can be measured with any accuracy. It is further demonstrated that the conditions under which 500 volts shocks cause death are very exceptional indeed. The author of the second paper, in dealing with cases of shock received up to 2,000 volts pressure, arrives at the conclusion that in spite of recent agitation, there is really nothing more dangerous in the alternating system than in the direct current. It is in effect solely a question of voltage, and of the conditions being favorable. As a great number of conditions are required to be favorable, it would appear to be really difficult to get killed, even with a high voltage. Practically speaking, in fact, the chances of danger are no greater than in other occupations.

IOWA CROP REPORT JULY 1, 1902.

CONDITION OF STAPLE FARM CROPS JULY 1ST, AND REVISED ESTIMATE OF THE ACREAGE OF CORN.

Reports received from county and township correspondents of the Iowa Weather and Crop Service, July 1st, make a better showing of the average condition of the staple crops than has been anticipated, in view of the heavy and frequent storms, low temperature and cloudy weather prevalent the larger part of June. The reports bear evidence of being made on conservative lines; and they are made by men who have had many years experience as crops reporters.

CONDITION OF CROPS JULY 1st. Corn 92 per cent, a decline of 5 points since June 1st: winter wheat, 96; spring wheat, 97; oats, 95; rye, 98; barley, 97; flax, 99; potatoes, 108; hay crop, 99; pastures, 107; apples, 65; plums, 50; grapes, 65.

At the corresponding date in 1901, the averages were as follows: Corn, 90 per cent; winter wheat, 98; spring wheat, 93. oats, 85; rye, 95; flax, 94; barley, 93; potatoes, 92; hay crop, 76; pastures, 80; apples 51; plums, 70; grapes, 90.

REVISED ESTIMATE OF CORN ACREAGE.

The blanks issued for the July report called for a revised estimate of the acreage of corn, compared with the number of acres harvested last year; and reporters were requested to make due allowance for reduction of acreage as the result of excessive storms and floods since June 1st. The tabulated reports show a material reduction, the revised aggregate for the state being 8,693,900 acres, which amount is 504,780 acres less than the estimates of the previous month. These figures as given by counties will stand as the basis of figures as to the final output of the corn crop for the current season.

REVISED CORN ACREAGE, 1902.

COUNTIES.	Number of Acres.
Adair	103,170
Adams	73,730
Allamakee	41,150
Appanoose	56,050
Audubon	90,030
Benton	122,460
Black Hawk	91,250
Boone	108,540
Bremer	59,950
Buchanan	82,080
Buena Vista	107,460
Butler	101,950
Calhoun	111,030
Carroll	123,180
Cass	108,390
Cedar	113,480
Cerro Gordo	93,570
Cherokee	112,470
Chickasaw	53,190
Clarke	53,680
Clay	96,070
Clayton	82,610
Clinton	121,090
Crawford	123,350
Dallas	110,150
Davis	64,920
Decatur	62,160
Delaware	86,760
Des Moines	66,520
Dickinson	43,400
Dubuque	64,870
Emmet	52,090
Fayette	89,010
Floyd	81,650
Franklin	95,290
Fremont	118,040
Greene	98,340
Grundy	93,140
Guthrie	82,960
Hamilton	94,330
Hancock	83 690
Hardin	91,850
Harrison	120,830
Henry	68,790
Howard	50,630
Humboldt	58,920
Ida	87,710
Iowa	97,110
Jackson	75,120
Jasper	94,800
Jefferson	75,110
Johnson	108,920
Jones	84,520
Keokuk	103,670
Kossuth	117,890
Lee	60,730
Linn	108,710
Louisa	72,800
Lucas	54,340
Lyon	77,280
Madison	90,100
Mahaska	99,280
Marion	103,470
Marshall	102,940
Mills	101,470
Mitchell	60,130
Monona	119,480
Monroe	46,160
Montgomery	94,720
Muscatine	66,360
O'Brien	102,640
Osceola	59,230
Page	124,470
Palo Alto	76,750
Plymouth	133,250
Pocahontas	106 010
Polk	109 710
Pottawattamie	205,920
Poweshiek	110,800
Ringgold	88,780
Sac	120,140
Scott	77,940
Shelby	115,380
Sioux	120,980
Story	102,390
Tama	106,890
Taylor	83,470
Union	64,910
Van Buren	50,190
Wapello	62,050
Warren	91,320
Washington	95,590
Wayne	73,010
Webster	108,050
Winnebago	48,870
Winneshiek	64,830
Woodbury	141,110
Worth	36,210
Wright	82 250
Total for the state	8,693,780

WEATHER AND CROP CONDITIONS.

June, 1902, was an abnormal month in respect to temperature, amount of rainfall and excess of cloudiness. The daily average temperature for the state was about 5 degrees below normal, and the daily average of the last decade was about 11 degrees colder than the first decade of the month,—a reversal of usual conditions. At the central station the records show only 49 per cent of sunshine for the month, and about 75 per cent of mean relative humidity. On the mornings of the 21st and 22d frost was observed at numerous stations, with some damaging results in the N. W. district. The average rainfall was 7.16 inches, which is 2.90 inches above normal. The heaviest amounts were recorded in the central district, and the lowest in several counties of the N. W. district. One striking feature was the fact that showers fell in some portion of the state every day in the month. The average number of clear days for all stations of record was only 8, as against an average of 22 cloudy or part cloudy days. As a result of these abnormal weather conditions farming operations were greatly retarded, and in the wettest portions field work was wholly impracticable except at short intervals between showers. On the river bottoms in the central counties many thousand acres of corn, small grain and meadows were flooded and the crops practically ruined. But despite all the drawbacks fully three fourths of the corn acreage had been fairly well cultivated, and the average condition of early planted fields was promising at the close of the month. The oats crop grew unusually rank on rich lands in all sections where the rainfall was at or above normal, and there was a tendency to rust. At the close of the month oats and spring wheat were filling well, and were standing up remarkably well though bulky in straw. Winter wheat, rye and clover harvest was begun, but the wet weather was unfavorable for securing hay and grain. Potatoes, pastures and garden vegetables made great advancement. The wet weather was very favorable for new seeding of grasses.

SEVERE JUNE STORMS.

Numerous local windstorms of considerable severity occurred during the month, causing an unusually large aggregate of damage to buildings, windmills, and trees. There were no reports indicating the development of a tornado at any place during the month, or of the loss of human life.

The most widespread and destructive storm of the month occurred in the early morning of the 25th, from 1 to 3 o'clock. It originated in eastern South Dakota, and expended the greater part of its force in that state, though a large measure of damage was wrought in the northwestern counties of Iowa. The following items are copied and condensed from the Sioux City Journal of June 26th: "Reports show the path of the storm covered a space about fifty miles wide and extended from Pierre, S. D., to a point near LeMars, Iowa. Within its track there is not a community that has not suffered a property loss. The storm was in the nature of a fierce tropical gale, which swept across the stricken country with unabated fury for over an hour. It varied in velocity from seventy to eighty miles an hour, and at times reached a maximum velocity of ninety miles an hour. Store fronts and plate glass windows were unable to withstand the strain, and houses were unroofed, barns and corn cribs overturned, and throughout the entire section there is not a windmill standing.

The storm struck Sioux Center, Sioux county, about 1:15 a. m. and raged about two hours. A large amount of damage resulted in that place and vicinity. Among the more valuable buildings destroyed were the Dutch Reformed Church, a large hardware store, a livery barn, and a grain elevator containing 2,000 bushels of grain. In that vicinity three other churches were demolished. At Hawarden and vicinity the storm was very heavy and the damage amounted to thousands of dollars. Rock Valley, Sioux county, and Inwood, Lyon county, were in the pathway of the storm and suffered considerable damage. The force of the storm was largely spent when it reached LeMars, but in Plymouth county at the north it was severe and destructive.

CLIMATOLOGY OF THE MONTH.

BAROMETER.—The mean pressure for June was 29.90 inches; highest observed, 20.27 inches, at Sioux City and Des Moines on 21st and 22d; lowest observed, 29.36 inches at Davenport on the 25th; range for the state, .91 of an inch.

TEMPERATURE.—The month was unseasonably cool, especially in the last half. The daily mean temperature, as shown by records of 113 stations, was 65.2 degrees, which is 4.8 degrees below the June normal. The means by sections were as follows: Northern section, 64.0°; Central section, 65.4°; Southern section, 66 3°. The highest monthly mean was 69.2° at De Soto; lowest, 60.2° at Cresco. The highest temperature reported was 97° at Keosauqua on the 10th; lowest, 32° at Sibley on the 22d. The average monthly maximum was 89.9°; average monthly minimum, 38.4°. The greatest daily range was 42° at Larrabee. Average of greatest daily ranges, 33°.

PRECIPITATION.—The average precipitation for the state, as shown by records of 120 stations was 7.16 inches, which is 2.90 inches above normal. The averages by sections were as follows: Northern section, 5.54 inches; Central section, 8 11 inches; Southern section, 7.83 inches. The largest amount reported was 16.04 inches at Grundy Center; least amount reported, 1.46 inches at Sheldon. The greatest daily rainfall reported was 6.60 inches at Buckingham on the 5th. The average number of days on which .01 inch or more of rainfall was reported, 14.

WIND AND WEATHER.—Prevailing direction of wind, southeast and northwest; highest velocity reported, 48 miles per hour from the west at Sioux City, on the 15th. The average number of clear days was 8; partly cloudy, 11; cloudy, 11.

ATMOSPHERIC PRESSURE

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	29 89	30 20	23	29 36	25
Des Moines	29.93	30 27	22	29 46	25
Dubuque	29 92	30.19	23	29.42	25
Omaha, Neb	29.88	30 26	21	29 51	25
Keokuk	29.88	30 20	22	29 41	25
Sioux City	29.92	30.27	21	29 53	12
Means	29.90	30.27	21&22	29.36	25

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	5237	34	SW	12
Des Moines	5830	32	NE	10
Dubuque	4789	34	SW	12
Keokuk	5026	36	N	10
La Crosse, Wis	5230	32	NW	20
Omaha, Neb	5871	36	NW	14
Sioux City	8933	48	W	15

OBSERVERS' NOTES.

ALGONA—*C. D. Pettibone.* Great growth of grass and small grain during the month.

ALTA—*David E. Hadden.* Wind of almost hurricane force occurred shortly after midnight on the morning of the 25th,

about four and one-half to five miles north of Alta, breaking trees, moving barns off foundations, etc. June, 1902, was unusually cool, wet and cloudy. Light frost in low places on 21st.

ATLANTIC—*J. W. Love*. Severe electrical storm, with .70 of an inch of rain in fifteen minutes, on the 21st. Frost on 21st, but did not seem to do any damage. Last half month cool and wet.

BELKNAP—*A. W. Rankin*. Crops are standing excessive rain remarkably well; oats going down some, but with good weather a fair crop is assured.

BONAPARTE—*B. R. Vale*. Precipitation for month 9.94 inches, and 16.78 inches since April 20. August, 1898, gave us 10.55 inches—the only month exceeding this in last twelve years. A very cool, cloudy and wet month.

BRITT—*Geo. P. Hardwick*. Cool and wet—unfavorable for cultivation of corn; pastures and potatoes good; short fruit crop except strawberries; this place has been comparatively free from wind storms.

CENTERVILLE—*Jas. S. Hamilton*. Rain, 6.97. The month brought no severe storms of wind or rain.

CLARINDA—*A. S. Van Sandt*. Rainfall on the 5th, from 5 P. M. to 6:35 P. M., 4.20 inches, causing much damage to sidewalks and bridges in town; the excessive rain extended eight miles north, fourteen miles south, six miles east and fourteen miles west.

CLINTON—*Dr. Luke Roberts*. June, 1902, broke all recorded amounts of rainfall for the last twenty-four years. 9.90 inches of rainfall in this locality in any one month is considered extraordinary. The number of storm days was also excessive, there being 17. This was equaled once in June during the above mentioned period, and that was in 1893, when there was a precipitation of 9.30 inches of water. A normal amount of rainfall for June in this locality is 4.67 inches, so that the last June record was in excess 5.23 inches, which might be considered a very liberal amount for any full month.

There were five storm days during the month which brought over one inch of rain each. With all this excess of waterfall we ought to feel grateful that it was spread out over so many days that it would have time to find its way into the soil and subsoil, for it was needed, instead of giving a raging flood as has been the case in many parts of the country. We read of large extent of territory being deluged, devastating whole farms and districts, so that entire crops were totally destroyed. The maximum velocity of the wind was 13 miles an hour, being much below normal.

9.90 inches of rainfall is over one-fourth of an average yearly rainfall, that being about 34 inches. The total amount of rainfall for May and June was 15 94 inches, crowding hard onto a six months' normal precipitation, This, however, has been exceeded once; in 1892 the total rainfall for May and June was 17.80 inches, being fully up to a half year normal

The maximum temperature for the month was 94 degrees, being 1.9 degrees below normal, and the minimum temperature was 40 degrees, or 2.8 degrees below normal, and occurred on the 28th. The mean temperature for the month was 66.1 degrees, or 3.7 degrees below normal, and the coldest June during the last twenty-four years. The mean temperature of the first decade was 68 5 degrees, second decade 70 degrees and third decade 59.7 degrees.

This shows that the last of the month was colder than the first. I cannot recall a year when the temperature averaged as cold during the summer solstice as in 1902. The warmest spell of the month was from the 10th to the 15th inclusive, the average being 74 degrees.

EARLHAM—*George Phillips*. An unusually cold and wet June. Frost the 21st and 22d, but no damage was done; there were thirteen thunder-storms, and a brilliant electrical display the night of the 25th.

FOREST CITY—*J. A. Peters*. Light frost on 22d did some damage to corn on low land; very wet and cold for corn.

GRAND MEADOW—*F. L. Williams*. Month cold and wet, with little sunshine; corn very small and poor color; grain heavy and lodging badly.

GREENFIELD—*J. G. Culver*. Oats on rich lands lodging; no clover saved yet; corn in fair condition but beginning to yellow.

GRINNELL—*A. O. Price*. And the rains descended more or less for eighteen days; moist for corn, but fine for grass and potatoes.

GRUNDY CENTER—*E. S. King*. A very wet month with a total of 16.14 inches. Rain fell on twenty-four days; on the 6th and 12th very heavy downpours did much damage; small grain heavy and rusting; corn yellow and weedy; good grass crop.

GUTHRIE CENTER—*W. F. Braun*. Too much rain for small grain and cultivation of corn; oats heavy and wheat rusting badly.

HUMBOLDT—*H. S. Wells*. Rain 8 00 inches and well distributed; only damage has been on low ground; corn improving slowly; other grain and grass good.

INWOOD—*Chris. Erickson*. The heavy windstorm of the 25th did great damage to windmills, barns and trees; corn shows effects of heavy frost on 20th and wind the 25th.

LARRABEE—*H. B. Strever*. Light frost on morning of the 21st. A severe windstorm occurred 2 to 3 A. M. on 25th; a few houses were partly unroofed, several barns were blown off their foundations and windmills generally blown down.

LOGAN—*Mrs. M. B. Stern*. The month has been remarkable, not so much for the amount of rain as for the cloudy weather and number of showery days; no bad storms.

MONTICELLO—*C. E. Heisey*. Continued rains made corn yellow on low ground; small grain looking fine; oats lodged in many places.

OLIN—*Nathan Potter*. Cloudy weather, with frequent thunder showers and low temperature, especially last half of the month,

PACIFIC JUNCTION—*H. H. McCartney*. Electric disturbances remarkably light in this vicinity so far this season.

RIDGWAY—*Arthur Betts*. Coolest June on record here, almost like May; 267 hours of sunshine; on many days the solar rays were apparently devoid of heat; rain on eighteen dates; much of the corn looks yellow.

SIBLEY—*H. G. Doolittle*. Frost on 21st on low ground; also on 22d, injuring corn and gardens seriously.

SIOUX CENTER—*J. de Ruyter*. Severe wind-storm at 1 A. M. on 25th; hundreds of barns were totally destroyed, but only a few dwellings; no loss of life. Loss in town, 20,000; crops damaged by storm; corn very backward

STOCKPORT—*C. L. Beswick*. Severe wind-storms on 10th and 11th unroofed buildings and damaged trees. It began raining on 27th and did not stop until morning of 30th.

SPIRIT LAKE—*W. C. Drummond*. On morning of the 21st, although the mercury indicated 38 degrees, in some localities it froze corn and garden vegetables. Last ten days cold and disagreeable.

TIPTON—*George W. Barclay*. June was noted for severe thunder-storms, the number of cloudy and rainy days and low average minimum temperature. Rainfall for four months, 19 05 inches.

VILLISCA—*C. E. Matteson*. Small grain damaged by excessive rains; corn needs sunshine and warmth.

WHITTEN—*Dr. Frank P. Butler*. Iowa river the highest it has been for thirty years; could go from Mill to Union in a boat on the 12th.

CLIMATOLOGICAL DATA FOR JUNE, 1902.

NORTHERN SECTION

STATIONS	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT							PRECIP., IN INCHES				Number rainy days	SKY			Prevailing direction of wind	DATES OF THUNDER-STORMS
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)		Number clear days	Number partly cloudy days	Number cloudy days		
Algona	Kossuth	1,213	9	65 0	-1 9	90	14	41	21	33	4 10	† .52	1.20	..	9	5	22	3	SE	
Alta	Buena Vista.	1,513	10	62.4	-6.7	88	4, 10, 14	38	21	28	6 59	†1 23	3 92	...	14	8	20	2	NE, NW	
Alta (near)	Buena Vista.	....	....	.....	.....	....	.....	....	.....	.....	6.73	.....	3 02	..	12	....	....	....	.....	
Britt	Hancock	1,236		64 0	...	90	14	36	22	35	3.87	.....	1 28	..	13	4	19	7	SE	
Charles City	Floyd.	1,012	10	67.8	-0.8	96	14	39	22	31	8.36	†3.47	2.33	...	13	9	10	11	.....	
Chester	Howard	.....	....	62.8		83	6, 14, 15	37	22	31	5.74	...	1.58	....	10	12	6	12	NW	
Clear Lake	Cerro Gordo.	984	...	64 4	...	90	10	42	21, 22	29	5.30	.....	1.05	....	11	13	13	4	SE SW NW SW	
Cresco (a)	Howard.	1,280	29	60.2	-6.1	82	8	38	22	37	4.12	-1.01	1.80	....	7		....		.....	
Decorah	Winneshiek	875	8	63 9	-4 5	82	10, 11, 14	41	22	26	5.35	†1.00	1.75	..	17	..	....	....	.....	
Dows	Wright	1,142	....	64.4	.....	87	14	38	22	35	5.82	....	2.30	....	12	6	13	11	SE	
Elkader	Clayton	600	20	65.4	-4.1	91	10	39	22	36	12.46	†8.57	4 10	....	11	10	16	4	NW	
Fayette	Fayette.	1,000	11	63.3	-5.1	87	10	37	22	32	8.81	†2 71	2 42	....	15	11	9	10	NW	
Fonda	Pocahontas.	1,232	....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	....		....	...	..	.....	
Forest City	Winnebago	1,220	....	63.4	.....	85	14	40	21, 22	28	5.85	....	1.51	....	12	10	8	12	W	
Grand Meadow	Clayton.	1,180	10	61.0	-3.9	85	4	40	22	30	6.55	†1.31	1.20		14	7	15	8	NW	
Greene	Butler	943	....	65.3	.....	90	14	38	22	34	5.67	....	1.10	.	16	6	11	13	SE	
Hampton	Franklin	1,000	11	64.4	-3 5	88	14	41	22	38	8.30	†3.33	2.84	..	14	3	18	9	SE	
Humboldt	Humboldt	1,095	8	65.3	..	90	6, 16	39	24	36	8 00	†4 39	5.00	....	14	15	4	11	SE	
Inwood	Lyon	.....	..		.....	.....	.....	.....	.....	.....	2 85	....	1.50	....	6				S	
Lansing	Allamakee	632		65.6	.....	86	11, 14	40	22	31	3.52	.....	1 00	..	10	9	12	9	.....	
Larrabee	Cherokee	1,366	10	64.5	-5.1	90	14	34	21	42	4.79	-1.37	3 21	....	11	5	22	3	SE	
Le Mars	Plymouth	1,224	....	64 8		91	14	38	21	35	4 63	....	3.25	..	9	11	16	3	NW	
New Hampton (b)	Chickasaw	1,166		63.1	.....	82	10	39	22	29	7.38	.....	1.50	....	16	6	13	11	SE, NW	
Northwood	Worth	1,222	....	63.0	.....	84	14	41	22, 23	27	6.96	....	2.00	....	16	3	9	18	S, NW	
Osage	Mitchell.	1,184	10	62.6	-7.0	81	4, 10	41	22, 23	32	7.60	†3 38	1.69	..	16	3	9	18	S, NW	
Plover	Pocahontas.	1,426		62.6	.....	92	14	31	22	36	7.24	.....	3 34	....	15	9	11	10	SW	
Ridgeway	Winneshiek	1,215	....	64.7	.....	88	14	43	21 22	31	5 94	.....	2 22	...	18	8	16	6	S	
Ruthven	Palo Alto	1,435		64.6	.....	91	14	37	22	34	3.30	.....	1.18	....	3	....		...	S	
Sheldon (a)	O'Brien	1 406	....	63.8	.....	92	14	35	21, 22	40	1 46	...	.50	...	14	11	4	15	.....	
Sibley	Osceola	1,506		63 6	.....	94	14	32	22	40	1 89	.....	1.07	....	8	5	18	7	SE	
Sioux Center (a)	Sioux	.....	..	65 0	.	91	14	37	21	37	1.63	.....	.52		7	14	9	7	S	
Spirit Lake	Dickinson.	1,458		64.8	.....	89	14	38	21	29	2.98	....	1.65	.	8	6	11	13	N	
Storm Lake	Buena Vista	1,440	12	63 2	.....	87	14	38	21	29	5 37	† .85	3 07	....	15	7	15	8	S	
Washta	Cherokee	1,157	...	.....	.....	.....	.....	.....	.....	...	3.54	.....	1.23	....	13	8	20	2	.....	
Waverly (a)	Bremer	942	...	64.2	.....	85	10, 14	40	22	28	5.77	.....	1.85	..	16	4	16	10	NW	
West Bend	Palo Alto	1,197	8	61.8	-3.4	90	4, 10, 14	39	21, 22	36	4.39	† .53	1.63	.	13	7	13	10	SE	
West Union	Fayette	1,115	....	.....			.....		.....	....	6.36	.....	1.55	....	11	....	..	....	NW	
Average				64.0	-4.3	88.0		38 4		33.0	5.54	†2.03		....	12	8	13	9	SE, NW	

CENTRAL SECTION.

Amana	Iowa	721	25	65.8	- 3.8	88	12, 14	41	22	28	6.86	† 2.39	1.21	...	17	6	16	8	NW	
Ames	Story	926	21	65 8	- 4.2	89	14	42	22	28	10.02	† 5.58	1.72	....	22	11	9	10	SE	
Baxter	Jasper	998		64.8	.....	89	10	42	21	32	10.76	.....	1 30	....	19	5	12	13	SW	
Buckingham	Iowa	....	....	.....	.....	....	.....	...	.....	....	13.56	.. ..	6.60	....	18	5	25	....	.....	
Carroll	Carroll	1,265	11	64.8	- 5.2	92	14	38	21	39	9 34	† 5.16	3.10	....	16	10	4	16	.....	
Cedar Rapids	Linn	733	19	66.4	- 4.2	89	11, 14	44	22	27	5.57	† 1.57	.86	...	18	10	6	14	NW	
Clinton	Clinton	609	10	66 3	- 5.2	94	14	40	22	33	9.90	† 5.12	1.36	....	14	5	17	8	E, NW	
Davenport	Scott	529	31	66.3	- 4.4	90	12	46	21	25	7.55	† 3.41	1 51	....	18	8	14	8	NW	
Delaware	Delaware	1,083	10	63.5	- 5.3	87	12	39	22	33	6.62	† 2.34	1.36		14	6	17	7	NW	
Denison	Crawford	1,180	8	64 2	- 4 5	89	14	40	21, 22	34	4.62	† 1.67	89	....	15	18	4	8	N	
Des Moines	Polk	861	24	65 8	- 5 2	90	10	43	22	26	7.27	† 2.19	2.15	...	17	4	13	13	SW	
De Soto	Dallas	866	..	69.2	.....	93	10, 14	42	22	29	6.02	.....	1.55	....	17	15	7	8	NE	
Dubuque	Dubuque	655	29	65 0	- 5.0	88	12	45	22	25	6.97	† 2.19	1.21	..	15	4	10	16	NW	
Fort Dodge (f)	Webster	1,126	..	64.0	.....	90	17	31	21	46	.....	..	.....	....	....	....	....	....	SW, NW	
Galva (c)	Ida	1,290	8	65.3	- 3.9	89	14	36	21	43	7 01	† 3.33	3.80	....	6	...		...	S	
Gilman	Marshall	1,053	..	.....	.....	.....	.....	.....	.....	.. .	7.00	.....	1 26	...	23	5	6	19	S	
Grinnell [near]	Poweshiek	.....		65.1	....	86	15	42	21	24	9 39	...	2.10	...	18	6	10	14	SE	
Grundy Center	Grundy	976	10	64.0	- 5.8	86	14	39	22	30	16.04	†12 02	5.15	..	24	4	17	9	E	
Guthrie Center	Guthrie	1,077	..	64.6	.....	92	14	35	21, 22	37	6.99	....	2 02	....	13	6	17	7	SE	
Harlan	Shelby	1,192	....	65.8	.....	91	10, 14	40	22	40	7.87	. ..	3 00	.	17	3	18	9	S	
Independence (c)	Buchanan	921	39	63 4	- 3.6	84	14	41	22, 23	27	9 03	† 4.23	2.50	....	14	12	12	6	N	
Iowa City	Johnson	644	11	66.5	- 4.7	91	12	42	22	30	7.46	† 3.78	1.31	...	18	7	11	12	W, NW	
Iowa Falls	Hardin	1,107	8	64 0	- 4.7	88	14	38	21	32	10.01	† 6.39	4.40	....	16	10	9	11	.....	
Jefferson	Greene	1,052	...	.....	.....	...	.....	....	.....	.....	9.21	.....	3.55	....	18	..	....	....	SE	
Le Claire	Scott	576	....	.....	.....	.....	.....	.....	.....	.....	10 62	.....	1 90	..	17	....	....	....	.....	
Logan	Harrison	928	36	66.1	- 5.6	93	10	40	19	35	7.52	† 2.01	1 38		15	12	6	12	E, SE	
Maquoketa	Jackson	688	8	65.0	- 6 1	90	10, 12	39	22	34	8.67	† 2.33	1.54	..	18	11	12	7	NE	
Marshalltown	Marshall	947	11	64 2	- 4.9	92	11	41	22	33	12.31	† 8 40	2.11	....	21	..	..	...	NW	
Monticello	Jones	925	47	65.9	- 2.9	90	12	39	21	30	9.78	† 5.32	1.88	....	14	4	13	13	SW	
Mt. Vernon	Linn	847	..	65.5	.....	89	12	41	22	32	8.10	.....	1.85		18	8	10	12	N	
Newton	Jasper	592	14	64.3	- 6.3	86	10, 14	43	22	25	8 87	† 4 81	1 82	....	17	9	11	10	NE, SE	
Odebolt	Sac	1,356	..	65.6	.....	94	14	38	21	40	6.23	.....	2 25	....	12	15	7	8	.....	
Ogden	Boone	1,211	...	66.1	.....	90	10 14	40	21, 22	34	7.86	.....	2.07	...	20	17	0	13	SE	
Olin (b)	Jones	760	....	64 8	.....	88	12	39	22	30	6.63	.....	1 10	....	15	5	20	5	.....	
Onawa	Monona.	1,053	....	68.8	.....	94	14	42	21	38	5.50	.....	1.40	....	14	20	1	9	SE	
Perry (a)	Dallas	.....	...	66.6	.....	91	10, 14	41	22	39	8.72	.....	1.60		20	9	5	16	.....	
Rockwell City	Calhoun	975	...	64.0		90	10, 14	38	21	33	6.12	.....	4.05	...	9	13	11	6	.....	
Sac City	Sac	1,219	22	65.9	- 5 8	91	14	40	21	39	5.63	† .54	1.74	....	14	10	11	9	.....	
Scranton	Greene	900	....	66.0	...	90	14	41	20	33	6.77	....	1 81	....	13	13	12	5	.....	
Sioux City	Woodbury	1,172	13	65 6	- 4 4	94	14	41	21	34	2.22	- 1.61	.51	....	15	8	10	12	NE	
Stuart	Guthrie	1,122	....	66.7	.....	92	10, 14	42	21	34	6.13	.....	1.75	..	12	..	....	....	N, SW	
Tipton	Cedar	.....		63 8		87	12	40	22	28	8.35	.....	1.50	..	19	3	12	15	SE	
Vinton *	Benton	807	11	64 9	- 5 0	88	10	50	22	.....	8 26	† 4.72	2.30	..	15	13	5	12	NW	
Waterloo	Black Hawk	800	22	64 6	- 8.2	88	10	40	22	31	6.81	† 3.21	1.34		19	11	10	9	SE	
Wilton Junction	Muscatine	862	...	67.2	.....	93	12	39	22	32	8.33	.....	1.25	....	15	3	7	20	NW	
Whitten	Hardin	683	...	64.4	.....	88	4	39	22	31	11.52	.....	2.40	....	18	8	9	13	SE	
West Branch	Cedar	1,036	...	.....	.....	...	.....	.....	.....		6.88	.....	2.08	....	18	3	20	7	NW	
Average				65.4	- 5.0	89 8		40 5		32.5	8.11	† 3.80		....	14	9	10	11	NW	

CLIMATOLOGICAL DATA FOR JUNE, 1902—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	PREC., IN INCHES. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	SKY. Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.	DATES OF THUNDER-STORMS.
Afton	Union	1,212	....	67.2	....	93	10, 11, 14	43	22	33	4.88	.....	1.12	....	19	5	13	12	SE	
Albia	Monroe	945	..	66.0	.....	94	10	44	21, 22	26	7.93	.....	2.34	....	19	5	15	10	SE	
Atlantic	Cass	1,164	10	65.8	-4.0	93	10, 11	38	21, 22	42	6.89	†1.04	1.83	....	12	3	14	13	SE	
Audubon	Audubon	1,301	5	65.2	-4.3	92	14	38	21	44	5.86	†2.60	1.54	....	18	11	11	8	NE, SE	
Allerton	Wayne	.....	..	66.8	.....	93	11	42	21, 22	32	7.15	....	1.64	....	16	6	14	10	SW, NW	
Bedford	Taylor	...	....	66.2	...	93	11	40	21, 22	32	10.62	.....	4.26		17	5	15	10	NE	
Belknap	Davis	877	....	65.6		90	10	42	22	31	8.90	.....	1.44	..	17	12	9	9	N	
Bonaparte	Van Buren	.....	10	66.8	-6.3	93	10	42	22	34	9.94	†5.66	1.65		14	...	...	...	.....	
Burlington	Des Moines	544	..	67.8	....	91	12	42	22	30	11.65	.... ..	2.38	....	19	7	8	15	NE, SW	
Bussey	Marion	...	.....	....	.....	....	.....	.....	.....	.....	5.89		1.25	..	8	.	..	..	.....	
Centerville	Appanoose	1,013		66.2	-5.8	94	11	42	22	32	6.97	†3.13	1.50	....	17	.	...	...	.....	
Chariton	Lucas	1,042	....	65.6	.....	90	10, 11	40	22	27	7.19	.....	1.46	....	23	4	12	14	S	
Clarinda	Page	1,069	11	66.9	-5.0	96	10	41	21	34	11.64	†6.59	5.25	..	16	10	11	9	SE	
College Springs	Page	.....	10	.....	.....	.....	.....	.....	.....	....	9.61	†5.23	2.80	...	15	....	....	....	.....	
Corning	Adams	1,127	9	6.54	-5.0	92	11	41	21, 22	31	5.70	†1.34	1.33	..	13	11	11	8	SE	
Council Bluffs	Pot'wat'mie	990	..	67.1	.....	96	10, 11	42	17	41	9.84	.....	2.36	....	17	9	5	16	S	
Cumberland	Cass	.....	....	.....		...	.....	...	.....	.....	6.06	.....	1.60	..	13	15	6	9	S	
Danville	Des Moines	715	....	.	.....	.....	.....	...	.....		12.74	.....	3.65	....	21	8	6	16	....	
Earlham	Madison	.....	....	64.4	.....	91	10	36	22	39	5.55	.....	1.46	....	18	10	4	16	S	
Eldon	Wapello	630	...	63.7	....	94	10	41	22	34	6.72	.....	1.38	....	17	....	....	...	S	
Emerson	Mills	1,053	....	.....	....		.....	.....	.....	.....	6.90	.....	2.95	....	6	....	....	....	.....	
Fairfield	Jefferson	....	.	6.60		90	11	39	22	34	9.34	...	1.98	....	20	3	14	13	NW	
Fort Madison	Lee	516	53	.....	.....	.....	.....	....	.....		9.05	†4.77	2.19	....	14	2	14	14	SW	
Greenfield	Adair	.....	10	65.1	-5.7	90	10	39	21	31	6.29	†1.08	1.28	....	17	12	10	8	S	
Hopeville	Clarke	.....	....	.....	.....	....	.....		.....	.....	5.67	.....	1.16	..	17	....	...	...	.....	
Indianola	Warren	969	10	65.2	-4.6	90	10	43	21, 22	....	.....	.....	.....	..	....	....	....	....	.....	
Keokuk	Lee	619	30	68.3	-4.3	93	12	46	22	29	7.59	†3.10	1.76	....	15	4	16	10	N	
Keosauqua	Van Buren	644	9	68.2	-5.1	97	10	42	22	37	9.13	†5.19	1.83	...	18	....	.	..	.....	
Lacona	Warren	.....	....	.....	.....	.....	.....		.....	.....	6.25	.....	1.40	....	16	6	19	5	....	
Lenox	Taylor	1,250	....	67.0	...	89	11	40	21	25	5.99	.....	2.35	....	11	10	9	11	.....	
Leon	Decatur	.....	....	67.7	.....	93	10	43	21	30	7.72	...	1.70	..	18	9	13	8	S	
Mt Ayr	Ringgold	1,236	8	65.9	-5.1	93	10	41	21	32	8.18	†3.58	1.80	....	18	6	13	11	.....	
Mt. Pleasant	Henry	729	....	65.4	.....	92	12	36	22	37	10.96	.....	1.60	..	16	8	19	3	NW	
Omaha, Neb.	Douglas	1,113	32	67.3	-5.3	95	10	46	21	29	7.32	†1.95	1.57	....	16	5	13	12	SE	
Osceola	Clarke	1,130	....	64.2	.....	87	14	42	22	29	5.37	.....	1.03	....	16	7	5	18	SE	
Oskaloosa(a)	Mahaska	843	18	65.6	-4.3	91	10	40	22, 23	29	7.24	†3.24	1.84	....	18	9	4	17	.....	
Ottumwa	Wapello	630	7	67.6	-5.3	90	10	45	22	26	8.42	†5.02	1.71	..	15	3	4	23	E	
Ovid	Wayne	992	8	65.6	-5.7	89	10	40	21	27	6.04	†2.21	1.41	..	18	4	4	22	S	
Pacific Junction	Mills	960	....	67.7	.....	95	10	40	21	43	6.64	.....	1.79	....	16	6	19	5	SE	
Red Oak	Montgom'ry	1,033	....	67.0	....	89	11	44	20, 22	26	8.90	.....	3.52	....	16	4	20	6	SE	
St. Charles	Madison	1,070	....	66.2	.....	90	10, 14	43	21	27	6.71	.....	1.27	....	19	12	6	12	SE	
Sigourney	Keokuk	768	....	66.6	.....	96	10	40	22	37	8.61	.....	1.53	....	19	10	18	2	NW	
Stockport	Van Buren	.....	....		...	.....	.. ....	.....	.....	.....	9.71	.....	2.50	..	18	6	6	18	NW	
Thurman	Fremont	....	....	67.8	.....	96	10, 11	40	20	37	9.66	.....	1.85	....	11	16	4	10	SW	
Villisca	Montgom'ry	1,058	8	65.9	-5.1	93	10	40	21	32	7.37	†2.48	1.50	....	14	7	11	12	SW	
Wapello	Louisa	578	....	65.6	.....	87	11	42	21	26	7.87	.....	1.66	....	18	8	15	7	NW	
Washington	Washington	769	11	64.0	-9.7	90	10	39	22	32	7.68	†4.56	2.08	....	16		....	....	NW	
Winterset	Madison	1,129	10	64.6	-4.4	89	10	42	21	33	6.90	† .73	1.57	....	17	6	11	13	S	
Woodburn	Clarke	961	..	....	.....	.....	....	.....	.....	.....	6.60	.....	1.60	....	18	7	13	10	NW	
Average		....	....	66.3	-5.3	92.0	.....	41.2	.....	32.4	7.83	†3.31	....	..	16	8	11	11	SE	
Av. for the state		.....	....	65.2	-4.9	89.9	....	40.0	.....	32.4	7.16	†3.06	.....		14	8	11	11	SE, NW	

§Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc.

DATES OF THUNDERSTORMS.

NORTHERN SECTION.

Algo a, 2, 10, 22, 24.
Alta, 2, 5, 10, 11, 12, 4, 17, 24, 25.
Elkader, 1, 2, 5, 10, 12, 13, 1 , 18, 25.
Fayette, 2, , 1 , 12, 15, 24, 2 .
Inwood, 25.
Larrabee, 7.
Le Mars, 11, 25.
Northwood, 2, 3, 10, 11, 2, 15, 18.
Osage, 1, 2, 5, 1 , 12, 13, 14, 17, 24, 25.
Ridgeway, 2 5, 6, 9, 15, 2 .
Sioux Center, 12, 5.
Storm Lake, 5, , 10, 11, 12, 13, 14, 17, 21, 26.
Waverly, 10.
West Bend, 2, 10, 12, 14, 17, 24.

CENTRAL SECTION.

Amana, 1, 2, 4, 5, 10, 11, 12, 13, 25, 27.
Ames, 11, 12, 25.
Baxter, 25.
Carroll, 1, 3, , 7, 12, 15, 18, 19, 25, 27.
Clinton, 5.
Grinnell, 1, 2, 5, 6, 1 , 12, 18.
Grundy Center, 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 18, 19, 25.
Guthrie Center, 5.
Harlan, 2, 5, 6, 7, 12, 13, 1 , 1 , 25, 27.
Independence, 2, 5, 10, 12, 18.
Davenport, 1, 2, 4, 6, 10, 11, 12, 13, 25, 27.
Des Moines, 1, 2, 6, 10, 11, 13, 18, 2 , 27.
Dubuque, 1, 2, 3, 6, 10, 11, 12, 13, 15, 25.
Iowa Falls, 5, 10, 11, 12, 18.
Marshalltown, 6, 11, 12, 25.
Mt. Vernon, 1, 2, 4, 25.
Olin, 1, 2, 3, 4, 6, 10, 11, 12, 13, 15, 25, 27.
Onawa, 5, 7, 15, 18, 19, 2 , 27.
Perry, 11, 12.
Sioux City, 5, 11, 12, 14, 17, 25.
Tipton, 1, 3, 4, 6, 10, 13, 20, 25.
Vinton, 5, 10, 11.
Wilton Junction, 11.
Whitten, 5, 6, 10, 11, 12, 13, 14, 15, 18.
West Branch, 1, 6, 11, 12.

SOUTHERN SECTION.

Atlantic, 5, 6, 15, 1 , 25, 27.
Allerton, 6.
Burlington, 1, 6, 7, 11, 13, 27, 28.
Chariton, 2, 6, 11, 13, 1 , 2 , 27, 2 .
Corning, 5, 6, 7, 11, 27.
Earlham, 1, 6, 7, 10, 11, 12, 1 , 14, 15, 18, 19, 25, 27.
Eldon, 1, 6, 13, 15, 20, 25, 27.
Greenfield, 1, 5, 6, 7, 10, 11, 12, 18, 22, 25.
Indianola, 1, 2, 7, 11.
Lenox, 5, 6, 11.
Keokuk, 1, 2, 6, 7, 10, 11, 13, 15, 19, 27, 28.
Mt. Pleasant, 10.
Oskaloosa, 10, 11, 24.
Red O k, 5, 11, 12, 18, 27, 28.
Sigourney, 1, 2, 3, 6, 10, 11, 12, 13, 14, 15, 25, 27, 28.
Stockport, 1, 3, 6, 7, 11, 13, 14, 17, 19, 20 23, 28.
Omaha, 5, 7, 10, 12, 14, 17, 18, 27.
Villisca, 1, 2, 5, 6, 7, 11, 12, 13, 14, 16, 27, 23.
Wapello, 1, , 11, 12, 13, 14, 19.
Washington, 2.
Winterset, 6, 14, 24.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JUNE, 1902.

STATIONS.		DATE.																														Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton.....	Max...	85	83	90	84	85	84	75	79	82	93	93	86	83	93	72	74	80	70	73	67	67	69	81	83	75	77	68	60	58	72	....	78.2
	Min...	64	68	57	64	61	62	57	47	50	63	65	67	65	65	64	50	50	52	51	51	44	43	51	58	63	47	51	52	56	52	....	56.3
Albia.....	Max...	85	85	85	80	84	81	79	75	78	74	87	89	74	90	83	67	72	72	66	64	63	58	68	72	67	69	58	57	60	66	....	74.3
	Min...	63	72	62	64	62	62	59	49	54	69	63	70	64	67	66	52	53	52	51	53	44	44	52	59	63	47	51	53	54	54	....	57.6
Algona	Max...	79	87	83	84	76	84	76	79	82	83	77	75	83	90	83	69	80	75	70	69	62	67	70	76	72	65	63	68	65	70	..	75 6
	Min...	62	63	55	59	61	61	54	46	53	61	59	61	61	65	61	47	51	50	50	53	41	43	48	55	59	45	53	52	49	58	....	54.5
Allerton...	Max...	84	83	85	77	81	80	76	78	81	91	93	89	78	88	83	74	75	73	71	66	65	67	75	78	76	72	65	59	68	66	....	76 6
	Min...	63	70	62	63	61	61	57	49	49	62	64	70	64	66	66	51	54	57	50	52	42	42	52	58	63	47	52	53	53	53	....	56 9
Alta	Max...	82	82	82	88	70	79	67	73	79	88	79	75	77	88	66	68	78	68	69	64	63	59	71	76	66	66	65	68	59	71	....	72.8
	Min..	62	62	52	58	62	60	50	45	52	63	59	58	60	66	55	48	50	50	50	47	38	41	50	54	50	47	52	51	49	49	..	52.0
Amana ...	Max...	79	81	80	84	80	75	75	73	77	87	81	88	80	88	84	73	77	69	74	66	62	69	72	74	74	69	65	60	60	71	.	74 9
	Min...	65	66	62	59	56	65	60	49	49	63	61	65	68	66	65	52	51	59	51	54	46	41	46	59	61	47	52	53	53	54	....	56.6
Ames	Max...	83	87	86	86	80	82	80	76	80	86	78	79	77	89	79	70	77	68	68	65	62	62	67	73	69	70	68	64	64	79	....	75.1
	Min...	64	64	59	61	60	60	57	49	52	64	60	65	63	66	65	51	49	52	52	52	44	42	51	56	62	48	53	55	54	52	..	56.4
Atlantic...	Max...	84	88	90	85	78	83	74	78	77	93	93	86	77	92	84	75	79	73	63	66	66	62	77	82	75	72	66	62	56	72	....	76.9
	Min...	64	72	48	62	62	61	57	43	51	63	61	65	65	65	64	47	48	51	47	51	38	33	50	59	53	43	52	53	52	51	....	54.6
Audubon ..	Max...	83	87	88	87	76	81	74	74	77	90	86	85	78	92	79	73	80	70	70	67	67	65	76	80	75	70	70	62	55	74	....	76.4
	Min...	63	71	53	60	61	60	59	46	65	46	62	63	63	65	53	47	50	50	50	49	38	48	51	51	48	46	46	52	51	50	...	53.9
Baxter.. ..	Max...	79	82	82	83	77	79	77	74	78	89	80	87	78	87	82	74	81	72	70	66	64	67	68	71	75	68	67	61	58	73	....	75.0
	Min..	63	64	56	61	60	60	57	46	49	59	59	63	60	63	62	50	49	52	49	51	42	40	50	56	61	46	51	53	52	53	....	54.7
Bedford. ..	Max...	82	84	88	79	83	80	73	69	76	92	92	82	76	87	78	75	71	71	70	67	65	63	75	79	77	79	66	62	60	70	....	75.7
	Min.	65	70	56	61	60	60	58	45	49	64	69	68	66	66	62	50	51	59	53	52	40	40	50	58	61	48	52	54	59	53	..	56 6
Belknap...	Max...	82	85	82	78	80	80	77	71	75	90	85	88	83	87	88	73	76	73	70	66	67	70	70	72	76	69	62	58	64	65	....	75.4
	Min...	62	67	59	60	60	59	63	48	51	59	60	65	63	64	60	62	62	52	49	50	44	42	50	52	56	48	49	51	52	53	....	55.7
Bonaparte.	Max...	82	85	84	80	82	83	75	74	78	93	86	91	83	90	80	75	75	74	76	66	65	71	71	73	76	74	64	63	64	66	....	76 5
	Min...	64	69	62	62	60	62	60	48	50	59	60	69	64	66	65	53	56	59	53	53	45	42	52	59	60	48	52	52	51	54	....	57.1
Britt.....	Max...	78	85	83	84	73	84	70	78	80	83	83	76	83	90	80	73	79	71	76	65	63	73	70	76	68	68	73	70	68	79	....	76.1
	Min...	63	68	51	55	59	59	52	43	46	60	54	61	58	65	58	47	47	49	46	49	39	36	41	56	50	43	51	52	48	49	....	51 8
Burlington.	Max...	80	86	84	84	83	82	76	74	76	90	85	91	85	87	84	74	75	78	75	64	64	70	70	74	77	72	65	60	63	76		76 8
	Min...	64	70	63	63	60	63	62	50	56	60	60	70	67	66	69	56	65	62	56	57	47	42	51	59	61	50	54	52	55	55	....	58.8
Carroll	Max...	83	88	89	90	74	85	74	74	78	89	79	81	78	92	71	72	80	72	70	61	68	62	73	78	72	69	72	62	60	73	....	76.0
	Min...	60	70	50	58	60	59	58	43	52	62	61	64	62	62	63	48	47	50	48	50	38	39	48	50	60	45	51	53	50	48	....	53.6
Cedar Rap.	Max...	82	80	81	83	79	76	75	73	78	86	81	89	80	89	85	73	77	72	74	65	62	69	72	74	68	65	62	60	72	73	....	75.2
	Min...	65	67	64	62	54	64	62	52	53	65	63	66	67	66	66	55	53	59	53	56	46	44	45	58	50	53	54	54	54	60	....	57.6
Centerville	Max...	84	85	87	79	81	80	76	74	75	92	94	91	82	87	74	74	74	67	74	66	65	65	72	75	76	72	67	58	63	71	....	76.0
	Min...	63	70	61	64	61	60	59	47	51	63	62	62	61	65	66	54	51	57	53	52	43	42	52	53	62	45	52	51	53	53	.. .	56.4
Chariton...	Max...	83	87	81	78	80	80	75	74	74	92	90	87	77	87	82	72	75	67	70	66	65	61	73	76	75	71	64	58	59	68	....	75.0
	Min...	60	70	58	65	62	60	58	47	51	63	63	70	64	66	64	49	51	54	50	52	45	40	50	59	62	46	50	53	52	53	....	56.2
Charles Cy.	Max...	78	84	82	80	78	82	82	72	78	83	83	80	90	96	82	70	75	70	70	65	60	70	69	70	68	65	64	67	63	72	....	73.3
	Min..	64	70	56	53	56	63	62	48	52	64	58	53	62	74	55	43	43	45	40	55	43	39	41	55	60	45	39	52	53	50	...	60.4
Chester.. .	Max...	75	76	77	78	72	83	82	73	76	82	80	77	80	83	83	70	74	61	72	65	60	68	73	77	67	67	63	68	66	75	....	73.5
	Min...	65	52	50	54	52	62	50	45	50	68	60	58	60	70	62	48	45	52	44	50	42	37	42	48	58	43	46	50	47	47	..	52.2
Clarinda...	Max...	84	88	91	84	85	82	76	76	81	96	95	81	76	91	80	75	79	67	68	70	69	62	79	84	79	77	68	62	61	72	..	77.9
	Min...	64	61	56	61	62	61	56	47	49	62	68	69	68	64	60	50	51	54	52	51	41	43	51	57	57	49	52	54	54	53	....	55 9
Clear Lake	Max ..	76	83	81	85	73	83	72	75	78	90	84	71	80	84	79	75	76	70	77	64	61	74	66	73	69	69	66	70	66	78	..	75 1
	Min .	63	66	55	56	56	60	54	56	54	63	57	60	60	63	60	47	50	51	51	42	42	45	56	57	45	50	51	47	47	..		53.8
Clinton	Max...	70	88	82	85	81	86	73	74	78	90	85	93	85	94	84	77	80	78	77	70	63	72	77	76	77	71	65	60	67	72	..	77.8
	Min...	62	64	62	57	51	64	52	49	48	62	61	63	65	64	64	57	49	55	50	48	45	40	44	56	57	46	48	57	55	54		54.8
College Sp.	Max...	..	..	..	..	..	62	57	49	52	63	68	69	62	65	63	48	55	54	53	53	42	49	50	57	53	52	52	53	53	52	....	....
	Min...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	68	65	65	65	75	81	80	78	65	64	61	68	..	...
Corning ...	Max..	83	85	88	69	83	79	70	73	78	91	92	82	79	88	77	71	78	64	68	65	75	72	76	69	74	72	65	58	58	68	..	75.0
	Min...	61	66	54	60	62	62	57	45	54	..	67	68	65	65	61	59	50	52	52	52	41	41	52	59	60	45	52	52	53	52	....	55.9
Co. Bluffs..	Max...	86	90	77	88	83	82	80	75	80	96	96	83	78	91	75	74	83	67	68	67	68	64	78	86	75	75	68	60	60	71	....	77.5
	Min...	64	68	51	64	63	61	53	48	54	65	70	69	67	68	65	52	42	40	53	46	44	47	52	54	55	50	54	55	54	53	....	56.7
Cresco.. .	Max...	74	76	75	78	72	80	..	82	75	78	77	75	78	81	73	67	74	66	68	62	60	66	72	72	65	60	66	66	64	70	..	70 1
	Min ..	64	64	55	54	53	57	..	45	52	52	60	63	60	65	61	48	50	54	46	48	41	38	45	45	45	44	44	44	49	49	..	50.2
Davenport.	Max...	73	85	82	84	79	81	71	73	75	89	83	90	81	87	79	74	76	74	73	65	63	68	70	73	74	59	61	57	61	70	....	74.6
	Min...	64	71	64	63	54	65	55	50	57	65	63	69	66	65	64	57	59	59	54	53	46	46	48	58	58	50	54	52	54	55	..	58.0
Decorah....	Max...	75	78	78	78	74	79	73	70	78	82	82	77	77	82	64	58	52	48	56	48	49	44	41	47	57	55	47	50	53	52	53	....	54 9
	Min...	66	69	60	53	53	63	53	50	55	65	62	61	62	64	58	52	48	56	48	49	44	41	47	57	55	47	50	53	52	53	....	54.9
Delaware..	Max...	75	78	79	80	75	76	70	72	73	85	81	87	80	86	79	71	75	69	75	67	61	71	75	73	70	65	64	59	62	70	....	73.4
	Min...	63	65	60	57	50	60	54	46	50	61	60	61	62	63	62	50	49	56	47	53	41	39	42	55	57	44	48	51	50	51	....	53 6
Denison...	Max...	82	85	83	84	78	79	71	71	78	86	82	79	76	89	79	69	81	72	68	65	64	62	73	77	73	66	67	63	57	70	....	74.3
	Min...	62	58	49	59	62	58	54	42	55	62	62	64	63	66	63	47	47	51	47	49	40	40	50	59	60	45	52	53	52	50	..	54.0
Des Moines	Max..	83	85	85	82	79	80	70	73	76	90	83	86	76	88	74	72	76	67	68	66	63	62	70	74	74	69	67	57	57	70	....	74.1
	Min. .	65	70	59	65	62	62	55	50	54	65	64	66	66	68	61	55	54	54	53	51	46	43	51	58	58	50	53	54	54	54	.	57.4
De Soto....	Max...	85	88	90	89	85	84	77	80	81	93	85	87	80	93	90	72	81	77	71	67	65	69	76	81	76	72	70	63	57	72	....	78 5
	Min...	67	73	69	66	66	65	60	51	55	66	68	68	67	69	68	53	52	55	54	53	54	42	55	62	65	51	54	55	54	54	....	59.8
Dows	Max .	80	83	79	81	75	80	75	72	77	83	78	73	77	87	80	73	80	82	77	68	68	73	68	77	74	67	73	68	69	79	....	75.9
	Min ..	63	69	50	56	58	59	54	40	50	62	57	61	60	66	55	48	50	50	47	50	41	38	48	58	53	43	50	53	52	48	...	53.0
Dubuque...	Max ..	72	79	79	81	76	75	69	71	74	86	82	88	80	85	76	73	76	66	73	65	6.	68	72	70	72	66	66	60	65	73		73.3
	Min ..	66	60	66	60	51	65	54	50	55	64	61	61	66	66	61	56	53	61	54	52	47	45	49	57	58	50	51	53	53	53	....	56.7
Earlham...	Max ..	83	80	87	80	88	81	75	75	77	91	89	85	78	90	82	73	78	69	69	66	65	64	74	77	73	71	65	59	56	73	....	75.8
	Min..	63	70	50	50	49	50	57	44	50	61	62	63	63	65	64	48	44	51	47	50	39	36	50	52	60	44	50	52	51	51	....	52.9
Eldon	Max ..	84	85	84	83	83	83	78	75	77	91	87	91	83	85	85	74	75	70	74	67	65	70	73	75	75	71	66	57	63	68	....	76.8
	Min ..	63	70	61	61	62	61	60	49	49	60	61	70	65	61	65	53	53	58	52	53	46	41	53	59	51	48	51	54	54	54	....	56 6
Elkader....	Max...	78	76	83	84	79	81	63	77	79	91	87	82	85	89	76	77	78	69	70	68	64	75	79	73	74	70	70	68	65	78	....	76.5
	Min...	61	66	60	54	52	52	58	46	49	64	60	64	60	65	64	51	50	56	48	55	44	39	44	56	60	45	48	52	55	53	....	54.4
Fairfield...	Max...	82	85	83	80	81	82	..	73	75	93	90	..	83	89	81	77	76	73	74	68	67	72	73	72	79	73	66	57	62	67	....	76.2
	Min...	64	70	61	62	61	59	..	47	51	59	60	..	64	55	65	52	55	58	50	53	44	39	53	58	61	46	51	53	54	54	....	55.7
Fayette....	Max..	76	79	80	83	77	78	70	74	79	87	81	82	80	86	79	71	76	67	70	65	63	69	72	72	70	66	65	65	65	73	....	74.0
	Min ..	64	64	58	53	52	60	55	43	48	62	60	62	61	63	60	51	42	54	45	48	42	37	42	55	54	44	46	51	51	51	..	52.6
Forest City	Max..	76	82	79	81	70	80	73	73	78	83	78	74	80	85	78	70	75	68	70	68	68	66	71	70	67	67	67	64	74	....	73.2
	Min .	63	68	64	57	59	60	54	46	51	61	51	61	62	65	60	47	47	49	49	52	40	40	43	56	58	45	50	52	48	50	....	53.7
Ft. Dodge.	Max...	82	85	87	82	77	80	79	72	77	86	80	..	..	..	52	46	42	50	40	..	..	34	50	45	.	.	56	44	51	51	48	..	50 4
	Min...	62	47	54	60	55	59	54	41	52	60	56	..	..	82	89	74	75	81	..	72	66	58	62	75	80	71	..	..	68	69	75	....	76.9
Galva.....	Max...	83	86	86	88	84	80	74	74	78	85	80	80	82	89	74	75	81	..	72	66	58	62	75	80	71	..	..	68	69	75	....	76.9
	Min..	61	63	45	57	61	60	70	42	52	62	60	59	62	46	61	44	48	..	42	53	36	39	50	57	55	..	..	57	59	50	..	53.7
G. Meadow	Max...	79	74	84	85	72	78	70	71	76	86	79	76	80	84	75	70	74	70	70	63	63	70	72	71	67	65	63	65	63	73	....	72.8
	Min..	67	62	57	55	55	60	52	47	52	62	59	61	61	63	61	50	49	49	48	48	42	40	46	50	53	45	47	50	52	52		53.2
Greene. ...	Max...	81	83	81	85	75	83	73	77	79	84	82	78	83	90	82	74	79	72	70	67	64	72	71	75	70	70	69	73	64	78	....	76.1
	Min...	66	70	56	55	58	62	57	46	52	61	58	62	62	65	62	50	48	54	47	55	43	38	41	57	60	45	49	52	53	49	....	54.5
Greenfield.	Max...	82	83	84	84	79	78	77	76	75	90	87	83	87	87	80	78	72	70	69	61	60	73	75	72	70	69	66	62	55	70	....	75.2
	Min. .	63	69	53	60	64	61	57	46	52	62	64	67	65	65	60	48	50	50	51	40	39	50	57	51	49	50	42	52	51	55	.	55.0
Grinnell(n)	Max..	78	78	79	80	80	78	74	71	75	85	84	80	77	85	86	70	77	75	70	66	61	66	66	71	72	66	68	63	58	66	..	73.5
	Min...	64	66	61	63	61	59	57	50	53	64	60	63	65	67	65	52	53	52	53	54	44	42	52	58	62	50	53	53	53	53	....	56.7
Grundy C'r	Max...	79	81	80	83	75	77	75	72	75	85	81	82	78	86	79	71	75	66	70	75	61	69	68	71	73	67	63	61	57	72	..	73 6
	Min...	64	68	56	59	57	60	56	47	50	63	59	61	63	66	63	49	51	52	47	53	43	39	42	54	61	46	50	50	50	52	....	54.4
Guthrie Cr	Max..	83	86	86	88	78	80	69	74	78	93	85	83	79	92	85	74	80	74	70	67	66	64	74	78	74	75	69	64	56	72	....	76.4
	Min...	60	68	49	57	59	59	54	44	58	61	69	63	61	64	59	45	44	49	44	47	35	35	47	53	56	50	49	50	50	47	....	52 9
Hampton..	Max...	79	83	83	84	74	80	73	75	78	85	81	72	79	88	80	71	76	71	70	65	62	69	66	73	70	70	68	68	61	77	....	74 4
	Min...	63	65	55	57	58	60	58	47	51	63	57	62	61	65	63	50	49	52	49	54	42	41	54	54	61	46	51	53	53	48	....	54.5
Harlan.....	Max'..	85	87	86	86	80	84	81	77	81	91	87	86	83	91	79	77	81	73	68	65	67	66	79	83	75	72	68	63	56	75	....	77.7
	Min...	63	70	46	58	62	59	54	42	48	60	62	64	63	64	62	48	49	51	47	50	41	40	49	58	61	44	51	53	51	51	..	54.0
Humboldt.	Max...	74	75	82	88	83	90	83	83	77	74	80	86	80	78	80	90	82	70	80	74	69	66	73	75	69	57	61	45	54	49	....	76.1
	Min...	50	55	62	68	49	54	61	59	55	..	50	59	50	52	60	66	62	48	50	52	49	54	42	39	51	65	65	61	..	..	..	54.5
In'pen'nce.	Max. .	74	78	78	80	75	74	72	70	74	83	79	81	78	84	62	64	62	50	49	54	48	54	44	41	41	54	59	46	48	53	..	54.4
	Min...	64	67	57	57	52	61	56	46	51	62	61	61	62	64	62	50	49	54	48	54	44	41	41	54	59	46	48	51	54	54	....	75.2
Indianola..	Max...	83	84	85	82	80	81	79	75	77	90	85	85	76	87	83	73	..	75	68	66	63	64	72	75	73	69	64	59	57	70	....	75.2
	Min...	65	70	58	64	64	62	58	48	52	63	64	66	65	67	66	51	..	..	52	52	43	43	51	59	60	49	51	54	52	53	..	57.2
Iowa City..	Max...	80	80	83	86	83	78	71	75	77	90	85	91	80	90	79	77	78	69	76	68	64	71	73	75	76	72	65	65	60	74	..	76 4
	Min...	62	69	62	59	53	63	58	48	49	63	63	67	68	64	67	58	53	58	53	53	46	42	46	58	60	47	52	52	53	54	....	56.7
Iowa Falls.	Max...	82	84	82	85	74	80	79	73	76	84	79	80	80	88	76	68	78	68	71	64	62	70	69	74	69	70	69	64	61	75	....

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JUNE, 1902—CONTINUED.

STATIONS.		DATE.																													Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Keosauqua	Max..	85	88	88	80	83	81	79	77	80	97	88	93	87	93	83	77	77	75	77	70	67	72	74	75	78	71	65	60	66	69	....	78.7
	Min..	63	71	63	62	62	63	61	49	51	60	61	64	67	66	60	53	55	59	53	54	45	42	53	59	62	47	53	54	55	55	..	57.8
Lansing. ..	Max...	78	77	82	83	79	81	79	70	77	85	86	84	82	86	72	79	76	76	76	76	70	70	72	75	73	72	70	69	70	78	..	76.8
	Min...	67	67	62	52	52	65	58	45	54	67	58	61	65	65	56	54	48	58	50	45	42	40	43	45	62	45	47	50	50	55	....	54 2
Larrabee ..	Max...	86	85	85	89	77	86	..	76	83	88	80	82	82	90	74	75	78	72	73	67	68	64	77	80	75	69	73	72	68	80	....	77.7
	Min...	60	65	43	55	61	58	52	42	51	59	53	58	59	65	56	41	47	46	48	47	34	38	50	57	55	42	53	49	46	48	.....	51.3
Le Mars. ..	Max...	86	86	81	87	79	87	74	74	84	90	82	78	80	91	80	71	79	71	71	65	65	56	74	80	76	67	69	71	65	73	..	76.0
	Min ..	60	70	46	56	61	57	54	44	54	60	54	60	59	65	59	45	51	49	49	51	38	42	48	58	60	46	53	51	48	50	....	53.0
Lenox.....	Max ..	82	83	83	78	80	77	74	73	75	88	89	80	76	80	80	70	75	72	67	63	63	61	73	78	71	71	85	58	59	66	....	77.2
	Min ..	64	69	59	63	62	61	57	48	54	61	66	68	66	65	64	50	51	52	52	52	40	45	52	59	64	50	50	52	52	52	...	56 7
Leon	Max ..	84	84	88	86	85	82	80	75	78	93	91	87	77	89	84	74	76	70	71	72	65	66	76	79	75	74	71	60	61	69	....	77 4
	Min...	64	70	62	67	61	63	59	50	62	63	65	71	65	67	67	52	52	57	52	53	43	44	53	59	53	49	53	54	54	54	....	58.0
Logan.	Max.,	86	90	88	89	80	79	72	73	82	93	93	88	80	93	80	72	80	74	65	63	64	61	76	82	75	73	69	..	59	73	....	77.7
	Min...	60	62	53	56	60	67	56	44	47	64	65	62	65	62	63	50	55	50	40	43	45	43	47	58	60	50	51	52	53	50		54.5
Maquoketa	Max...	72	81	82	81	78	79	72	74	75	90	86	90	81	86	81	71	76	72	75	66	65	73	74	74	76	68	66	62	64	74	....	75 4
	Min..	65	62	63	55	51	64	59	48	46	60	63	61	64	63	66	54	48	57	46	54	44	39	41	50	58	46	48	51	53	53	..	54.7
Marsh'lt'n.	Max...	83	79	84	86	78	79	76	75	73	80	92	87	82	90	85	77	80	72	74	67	51	44	41	51	56	62	46	52	54	52	53	55 5
	Min...	61	67	57	60	59	59	59	43	52	64	59	62	64	65	64	51	50	52	49	51	44	41	51	56	62	45	47	50	50	55	....	75.9
Monticello.	Max..	78	79	82	80	79	75	72	75	79	88	85	90	85	86	85	82	75	75	72	70	69	70	68	74	72	68	70	68	60	65	....	77.7
	Min...	60	62	60	59	59	57	52	47	60	70	79	80	65	70	65	58	52	49	46	44	39	42	48	45	48	51	50	55	53	52	....	55.9
Mt. Ayr...	Max...	84	84	87	82	82	80	73	71	77	93	90	84	76	88	76	73	77	66	70	65	64	66	75	81	75	75	68	55	60	71	..	75.7
	Min...	63	67	58	64	60	61	56	47	51	61	61	66	65	64	62	50	52	54	50	51	41	44	51	57	61	49	51	52	52	52	..	56 1
Mt.Ple's'nt	Max...	81	81	81	86	84	85	77	71	79	91	88	92	83	89	84	73	79	76	79	77	66	63	72	76	79	71	62	59	63	70		77.8
	Min...	60	58	57	58	56	57	58	46	46	54	57	64	60	62	59	50	52	56	49	43	42	36	49	55	57	43	46	49	50	55	..	53.0
Mt.Vernon	Max...	78	77	84	86	80	80	70	76	75	91	86	89	79	87	80	78	76	66	75	66	69	73	72	71	71	73	63	60	61	76	....	75 5
	Min...	62	64	62	57	52	62	57	48	52	64	60	64	67	64	61	52	55	58	51	55	42	41	41	56	58	40	51	51	52	53	....	55.5
NewH'pton	Max...	75	77	77	80	73	79	71	71	75	82	83	81	81	83	62	45	..	48	46	51	41	39	43	54	54	..	44	50	49	49	....	72.8
	Min...	63	66	56	54	58	60	53	46	50	62	64	61	61	63	62	45	..	48	46	51	41	39	43	54	54	..	44	50	49	49	....	53.4
Newton ...	Max...	78	78	82	80	78	75	76	72	76	86	81	81	75	86	80	70	76	75	68	65	62	63	65	70	70	68	64	62	57	68	....	73.0
	Min...	63	65	59	62	62	60	57	49	51	63	59	63	63	66	62	51	52	51	52	53	41	43	51	51	61	48	52	53	52	52	..	55.6
Northwood	Max ..	83	85	83	85	74	82	68	75	79	90	87	84	86	90	80	71	81	73	74	65	63	63	64	80	70	66	63	67	68	71	....	72.3
	Min ..	61	62	50	57	57	58	55	44	50	..	58	63	65	65	61	45	48	50	49	49	38	40	48	50	49	45	51	52	50	48	..	53.8
Odebolt....	Max..	86	90	90	92	87	83	69	75	82	90	85	84	83	91	90	85	83	81	72	66	68	67	77	81	81	73	74	70	72	72		79.7
	Min...	48	70	50	55	61	53	55	44	53	64	62	64	61	61	63	45	54	50	50	52	38	40	50	58	55	46	53	53	51	50	....	53.6
Ogden... .	Max...	85	86	84	83	79	82	80	76	78	90	85	80	79	90	85	74	80	73	73	78	65	65	70	76	74	68	70	66	60	75	....	77.2
	Min...	60	65	54	52	52	62	58	46	52	64	62	66	63	65	66	50	51	53	50	52	40	40	50	59	54	50	50	56	54	53	..	55 0
Olin..	Max...	75	82	79	80	78	79	..	75	85	..	82	88	83	86	78	74	76	71	67	75	63	63	72	74	73	63	63	60	61	70	....	74 4
	Min...	63	64	63	59	52	63	..	48	62	..	62	67	67	65	65	54	50	58	56	48	43	39	42	56	49	45	50	63	52	53	....	55 3
Omaha, N.	Max...	85	88	91	84	80	79	73	72	79	95	93	81	76	89	71	71	80	69	66	65	65	62	75	80	73	75	66	60	58	69	....	75.6
	Min..	64	70	61	68	64	62	57	52	68	66	70	68	66	69	61	53	57	54	51	54	46	51	53	60	61	55	53	55	54	54	....	59.0
Onawa.....	Max...	88	83	90	89	86	85	84	78	84	90	87	85	80	94	89	75	83	76	66	65	70	68	78	83	83	80	73	70	64	71	....	80.1
	Min...	63	71	52	63	65	62	56	47	55	65	65	69	65	67	63	49	51	51	53	53	42	46	51	61	61	60	54	64	54	51	....	57 6
Osage.....	Max...	75	77	78	81	72	80	74	72	77	81	77	72	80	84	76	69	76	68	70	62	60	68	71	71	67	64	67	48	50	47	48	72.6
	Min...	64	67	54	53	56	55	55	49	45	63	57	61	60	64	61	46	48	52	47	52	42	41	41	55	57	45	48	50	47	48	....	52 7
Osceola....	Max...	84	80	75	75	75	..	75	73	73	85	85	79	..	87	..	68	72	71	70	65	62	65	73	74	63	68	60	57	59	72	....	72 1
	Min...	64	71	59	65	61	54	47	53	53	56	61	..	69	65	65	66	65	49	49	53	52	43	42	51	54	60	47	51	52	53	....	56 2
Oskaloosa .	Max..	82	83	82	80	81	76	75	72	75	91	..	85	77	88	82	71	76	69	72	65	63	65	69	73	75	70	64	58	60	..	..	74.2
	Min...	61	69	61	62	63	61	59	47	51	62	61	69	64	67	66	52	64	56	52	..	44	40	40	58	61	47	50	51	53	54	....	56.9
Ottumwa ..	Max...	82	86	80	76	80	84	78	72	76	90	87	89	80	88	84	73	75	72	71	68	64	66	78	73	75	70	68	58	62	63	..	75.6
	Min...	65	74	64	66	64	63	62	53	54	64	63	71	67	67	69	55	56	60	56	55	48	45	54	60	60	52	54	55	55	55		59.5
Ovid..	Max...	82	83	84	75	79	80	77	75	75	89	87	86	76	86	79	76	74	66	70	66	67	67	72	75	77	72	64	58	61	65	...	74.8
	Min...	62	70	59	65	62	60	57	46	52	62	63	70	63	66	63	49	50	56	51	52	40	42	50	58	62	47	52	53	53	53	..	56.3
Pacific Jct.	Max...	88	90	92	83	84	81	79	74	80	95	94	89	79	89	85	72	82	76	66	67	69	66	76	83	73	78	72	62	60	72	....	78.7
	Min...	63	70	49	64	63	60	60	46	51	63	67	69	67	67	64	50	53	55	50	53	40	45	51	57	64	49	52	54	53	53		56.7
Perry.....	Max...	85	86	88	87	..	82	..	75	80	91	83	83	80	91	75	74	81	78	70	67	66	69	73	79	74	71	69	64	57	75	..	76.9
	Min...	64	71	55	63	64	63	57	47	52	52	63	66	64	67	65	50	51	53	52	53	44	41	51	58	62	48	53	56	53	52	..	56.4
Plover.....	Max ..	83	87	83	88	72	73	82	68	76	85	77	80	80	94	78	72	80	72	71	65	64	62	73	67	70	67	78	70	65	65	....	75.2
	Min ..	58	59	57	53	60	60	56	..	42	55	54	63	59	61	58	40	44	46	44	46	35	33	42	52	52	41	46	47	43	48	..	49 9
Red Oak...	Max..	82	84	84	81	80	77	75	69	75	88	89	85	77	86	75	71	79	74	71	64	63	62	72	78	76	71	71	62	59	63	...	75.0
	Min...	66	72	58	66	66	63	58	51	55	66	70	72	68	68	66	55	56	54	54	44	46	44	54	61	66	54	54	56	55	54	....	59 1
Ridgeway..	Max...	76	79	79	82	72	83	71	74	80	86	82	75	79	88	77	75	76	71	74	64	62	72	77	72	72	66	71	66	66	75	....	71.7
	Min...	65	69	57	55	53	62	53	48	52	64	63	60	62	65	60	50	51	54	52	51	43	43	46	57	57	47	49	54	49	51	....	54.7
Rockwell C	Max ..	83	85	83	85	74	82	68	75	79	90	87	84	86	90	80	71	81	73	74	65	63	63	64	80	70	66	73	70	60	70	....	75.6
	Min ..	61	62	50	57	57	58	55	44	50	..	58	63	65	65	61	45	48	50	49	49	38	40	48	50	49	45	51	52	50	48		52.4
Ruthven ..	Max...	82	86	81	84	74	83	81	74	82	85	76	73	79	91	86	70	79	76	69	64	62	62	69	75	73	65	67	79	65	73	..	75.6
	Min...	63	69	52	57	60	62	53	40	54	63	57	61	60	65	59	43	51	48	49	52	35	37	47	55	62	43	53	51	50	51	....	55.5
Sac City....	Max...	84	85	85	88	76	82	85	74	80	88	86	80	78	91	81	87	81	75	69	67	64	60	75	76	71	69	69	67	60	72	...	76 9
	Min...	62	70	50	58	60	59	55	46	53	62	60	64	62	65	64	50	48	51	52	53	40	41	49	57	60	47	52	53	52	51	...	54 9
St. Charles.	Max...	83	84	85	86	79	80	72	74	75	90	89	85	75	90	76	72	78	69	68	65	63	65	71	76	76	69	64	56	58	69	....	74.7
	Min...	65	71	70	65	63	62	65	48	53	63	64	67	65	66	66	51	52	52	53	52	43	44	51	59	63	49	51	53	52	53	....	57.7
Scranton ..	Max...	85	87	86	85	74	85	70	75	88	87	85	84	80	90	75	77	81	74	69	69	69	65	70	74	72	70	69	62	68	72	..	76.5
	Min...	70	54	60	62	61	60	47	50	62	61	65	63	65	64	49	50	51	51	52	41	44	49	60	60	47	52	55	52	50	55	....	55.4
Sheldon . ..	Max..	85	88	82	88	83	86	..	76	84	90	80	76	82	92	..	75	73	73	73	67	65	56	35	35	50	56	48	43	52	50	47	48	....	70.8
	Min. .	60	70	48	54	62	60	52	36	50	50	54	59	52	63	57	41	42	48	45	56	35	35	50	56	48	43	52	50	47	48	....	50.9
Sibley	Max...	81	87	84	87	76	78	78	77	85	79	77	80	82	94	82	76	77	74	70	65	65	63	76	81	68	66	72	71	67	76	....	76 6
	Min ..	61	67	47	53	59	60	51	37	52	56	54	58	57	63	56	41	45	46	45	50	35	32	46	53	53	43	52	51	48	49	....	50.7
Sigourney .	Max...	85	84	87	89	86	82	74	77	79	90	89	92	84	92	82	78	81	70	80	69	65	73	75	76	77	75	71	58	60	74	....	78.7
	Min....	63	67	60	59	58	59	58	45	50	59	60	65	63	64	58	50	50	54	47	50	42	40	50	56	61	44	48	41	51	52	....	54.5
SiouxC'nt'r	Max ..	85	83	84	89	85	86	74	77	85	88	79	78	82	91	75	74	77	72	71	64	64	61	76	81	..	65	69	70	65	75	..	76.7
	Min ..	61	70	53	56	63	63	52	49	48	61	55	54	58	64	59	46	49	49	52	52	37	44	47	55	..	47	53	52	49	49	....	53 4
Sioux City.	Max..	87	85	83	87	74	85	68	74	82	88	83	78	80	94	71	70	78	70	68	54	65	63	76	80	71	67	68	70	61	70	....	75.2
	Min...	64	67	49	62	63	62	55	45	53	65	61	65	62	67	57	48	54	51	53	50	41	48	52	62	54	49	55	54	51	52	....	55.9
Spirit Lake	Max..	81	84	80	88	70	83	82	78	76	72	73	74	84	80	75	76	78	72	70	61	62	64	70	77	70	70	72	72	70	78	....	75.0
	Min. .	63	65	58	59	60	60	60	61	58	56	57	59	50	68	55	53	50	47	49	44	38	40	44	55	50	55	55	52	48	57	....	54.5
Storm L...	Max...	80	83	81	84	..	78	72	71	78	83	7.	75	76	87	80	67	77	68	65	64	61	57	70	74	70	65	65	67	59	70	....	72.7
	Min...	61	69	52	58	60	61	55	45	54	62	58	58	61	65	59	46	52	48	48	51	38	41	49	57	54	45	52	51	48	48	...	53.5
Stuart..	Max ..	83	87	90	88	84	86	72	77	81	92	88	80	82	92	80	75	72	72	66	70	68	72	75	83	80	80	70	70	55	76	....	78.5
	Min ..	63	69	56	63	62	61	56	48	52	63	65	63	61	66	60	50	50	51	50	51	42	44	44	48	50	52	50	50	52	51	....	54 9
Thurman..	Max...	85	86	89	82	83	83	77	76	82	96	96	85	88	90	87	80	82	76	66	65	69	65	68	78	83	76	74	63	60	73	.	78.8
	Min..	64	72	51	62	62	61	59	46	57	67	68	72	67	66	65	50	53	53	52	40	45	45	50	52	58	50	53	54	53	53	....	56 7
Tipton	Max...	78	82	78	85	78	77	72	71	74	86	80	87	79	85	85	76	76	70	76	65	62	68	72	73	72	67	62	59	61	61	....	74.1
	Min...	63	70	63	60	52	64	64	50	57	62	62	67	66	65	65	54	52	58	57	54	44	40	44	57	60	45	52	50	53	54	....	53.4
Villisca....	Max...	84	87	86	81	84	81	73	74	75	93	92	80	83	90	82	73	79	74	63	67	67	61	75	83	73	68	66	..	59	....	77.3
	Min .	64	63	54	60	62	60	58	45	55	61	68	70	67	65	63	47	48	53	52	53	40	46	56	50	62	48	49	52	52	53	...	54 5
Wapello...	Max..	76	82	79	79	79	80	79	72	77	87	86	84	77	83	78	72	71	69	68	68	63	69	68	70	70	68	64	59	60	62	....	73.3
	Min...	63	70	63	64	58	60	63	50	51	63	61	62	67	65	67	56	61	61	54	56	42	45	51	59	60	49	54	48	55	55	....	57.8
Washin't'n	Max ..	80	82	81	82	80	79	71	72	75	90	83	89	78	87	72	72	75	68	71	66	64	63	67	71	75	69	62	57	60	68	...	73.8
	Min ..	63	68	60	60	57	60	62	46	50	58	58	66	63	63	61	50	53	52	48	50	41	38	48	56	54	45	49	50	50	52	...	54.3
Waterloo..	Max ..	77	80	82	84	76	77	68	75	77	88	82	82	79	86	80	71	77	66	72	65	62	70	68	71	72	66	67	62	61	77	....	74 0
	Min ..	65	68	59	53	55	63	55	47	54	64	62	63	62	65	64	51	49	54	48	55	45	40	42	55	60	46	49	54	53	53	..	55 1
Waverly ...	Max ..	76	80	79	81	75	78	..	71	77	85	81	81	81	85	77	70	75	71	71	65	62	68	69	72	70	66	65	63	61	72	...	73.3
	Min ..	64	68	60	55	56	.	59	48	50	63	61	64	63	65	64	53	50	55	48	56	44	40	42	55	61	46	50	53	53	52	....	55.1
West Bend	Max...	82	89	84	90	76	82	72	77	82	90	77	81	83	90	81	72	80	71	73	66	63	66	71	77	70	67	70	72	67	77	...	76.6
	Min...	63	69	50	54	60	60	50	43	54	62	55	63	61	65	57	46	47	50	49	52	39	39	47	53	55	43	53	51	47	51	....	52.9
Whitten. ..	Max...	83	82	83	88	79	79	73	75	78	87	80	80	80	87	79	71	78	74	71	65	64	70	70	74	71	73	69	62	58	73	....	75.2
	Min...	64	65	56	60	59	58	57	45	48	62	57	60	61	64	60	49	49	50	48	51	42	39	49	55	60	45	51	51	45	50	....	53 7
Wilton Jc .	Max ..	77	79	82	88	83	85	76	76	77	90	85	93	85	90	85	75	80	77	78	70	70	71	75	77	77	70	65	60	72	77 8		
	Min. .	64	68	63	59	53	63	62	48	47	62	62	67	66	65	67	54	53	63	50	55	47	39	51	57	60	45	52	52	54	49	....	56.6
Winterset..	Max...	83	86	87	85	85	79	78	72	76	89	87	89	77	88	85	70	77	72	67	66	64	63	72	77	77	69	68	62	57	68	....	75.7
	Min...	64	70	54	69	64	60	57	48	54	63	63	67	64	64	65	50	50	52	51	51	42	44	50	57	60	49	50	52	50	57	....	56.4
.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....
.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....
.....	..	..	..	..	..	..	..	..	..	.

DAILY AND MONTHLY PRECIPITATION FOR JUNE, 1902.

STATIONS.	DAY OF MONTH.																															TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	.28	....	.10	....	..	1.12	.61	....	....		..	.04	.11	.12	.10	.07	....	.35	.43	....	....	.10	.10	.05	.02	..	.18	.40	.65	.02	....	4.88
Albia	2.34	.04	.23	..	....	.56	.35	..	....	....	....	.10	.45	.55	.17	....	.04	.14	.4	.10	..	T	.64		.12	....	.27	.86	.50	.02	..	7.93
Algona	.07	....	....	....	.20		T	....	...	.90	.65	.27	....	1.20		....	....	T	....	T	....	....	.30	.48	....	....		.	.03	....	....	4.10
Aller on	.55	.02	.83	....	..	.50	.38	....	....	..	.0	.04	.79	.31	T	T	T	.10	.55	.37	...	T	.14	T	....	....	.45	1.64	.43	T	..	7.15
Alta	....	..	....	..	.14	....	.15	..	..	....	....	3.92	.14	.07	..	....	.70	..	.1	....	..	.58	.22	....	.24	.21	.04	..	.05	....	....	6.59
Alta (near)	....			....	.12	....	.09	....	....	..	...	3.02	.30	.19	..	....	.59	....	.19	....	..	1.40		...	.51	.18	.07	.	.07	....	..	6.73
Amana	1.00	.70	.02	....	....	.77	.02	...	.	..	1.21	.68	.12	.16	T	..	..	....	.17	T	....	....	....	.07	.62	.03	.11	.22	.9	.06	....	6.86
Ames	.16	T	.43	....	.19	1.35	.18	....	..	1.10	.68	.19	.18	.44	.10	..	....	.70	.22	.20	..	.07	.35	.46	1.00	.05	.17	.07	1.72	T	..	10.01
Atlantic	....		..	....	.91	.23	.48	....	....	....		.31	..	T	.18	.05	.25	..	.95	....	....	....	....	....	.70	....	.34	.66	1.83	....	..	6.89
Audubon	.06	T	..	..	.49	.63	.98		..		..	.10	.01	T	.15	....	.	.23	.37	.02	..	.15	.50	.03	.06	....	.23	.23	1.54	.02	....	5.86
Baxter	1.25	.25	....	....	..	1.30	.10	....	..	1.00	1.03	.80	.70	.10	...	.	..	.75	.16	..	.	.05	.50	.20	.95	.05	.20	.15	1.25	..	..	10.76
Bedford	.15	.56	....	....	3.10	1.16	.58	....	..			.20	.03	....	.21	.01	...	.36	1.28	....	....	.06	.01	.01	...	..	1.28	1.06	.56	...	..	10.62
Belknap	.90	..	1.40	....	...	1.00	.40	....	....	....		.18	.71	.34	.24	....	..	.15	.40	.33	....	....	.46	.	.0	...	.30	1.44	.54	.04	..	8.90
Bonaparte	1.00		.25		....	.60	1.10	....	....	..	1.65	....	.73	.04	.09		..		....	.57	....	....	.11		.15		1.65	1.50	.50	....	....	9.94
Britt	.20	T		...	.10	..	.07	...		.45	.25	1.28	.04	...	.78	....	..	.10	T	.09	....		T	T	.44		....	....	.04	.03	....	3.87
Buckingham	.19	.98	....		6.60	....	.10	....	....	.72	1.52	.06	.32	.17	....	..	...	.82	.26	.01	..	....	....	....	.22	.01	.08	.20	1.18	.07	....	13.56
Burlington	2.38	....	.16	.04	.	.74	.70	.01	....		1.17		.25	.30	.09	..	.04	T	.06	.62	....	....	T	.62	.33	...	1.02	2.34	.74	.03	....	11.65
Bussey	1.25		.	..	....	.85	....			....	.80	.50	...		..	...	..	...	.44	....	....		.62	....	....		.83	....	.6	....	...	5.89
Carroll	.14	1.04	....	....	3.10	....	.37		....	...	T	.28	.02	.04	1.20	....	..	.5	.20	T	....	....	1.64	.10	.42	T	.08	.04	...	1.07	....	9.34
Cedar Rapids	.34	.40	....	.47	.83	.04	.06	....	..	.86	.08	.47	.18	.03		..	..	..	.10	.02	....	....	.27	.51	T	.13	.06	.72	....	..	....	5.57
Centerville	.33	....	1.50	.02	....	.29	.26	.06	...	....	....		.98	.15	....		....	.08	...	.80	..	.26	....	.05	.05	...	1.00	.70	.35	.09	....	6.97
Chariton	1.46	.02	.53	....	....	.84	.33		....		.16	.09	.97	.70	.08	.05	.02	.09	.42	.10	....	.11	.33	.05	.04	..	.22	.95	.46	.02	..	7.19
Charles City	.25	.30	....	.	.53	.10	.05	....	....	.05	.75	.98	...	.73	....	..	.07	....	T	T	..	....	..	2.33	1.8		..	....	.37	...	..	8.36
Chester	.26	.48	1.00	.53	....	....	.22	....	..	....	.10	.95	.	.06	.76		..	....	....	..	....	..	..	..	1.58	....	....		...	....	....	5.74
Clarinda	.55	.78	....	....	....	5.25	.59	....	..	....	..		.10	T	.11	..	.07	.40	1.26		...	.12	....	...	..	..	.72	.83	.86	....	..	11.64
Clear Lake	.65	....	.75	....	.25	....	T	....	..	.12	.25	1.05	.10	.20	.90		.	..	T	T	..		..	T	.98	T	....	....	.05	..	....	5.30
Clinton	.54	....	1.20	.78	..	1.08	.06	..	..	....	.6	....	1.12	1.36	....	....	..	....	....	.13	...	....	....	1.24	.20	....	.19	.54	.8	....	...	9.00
College Springs	1.25	.50	....	..	....	2.80	.51	..	....	...	.02	.31	.15	...	....	.02	....	.30	.22	.25	....	.10	....	....	....	....	1.00	1.54	.64	..	....	9.61
Corning	.29	...	.05	....	.10	1.33	.55	....	....	..	.02	.14	T	..	T	T	.	.93	.43	T	....	.02	....	T	....	T	.33	.41	1.10	..	....	5.70
Council Bluffs	T	....	....	...	2.02	.12	2.36	...	....	....	....	.31	.06	.15	.03	.11	.60	.02	.81	.01	....	.07	....	....	.01	..	.29	.71	2.16	....	...	9.84
Cresco	.23	.50	....	....	.35	T	....	....	..	T	.20	.80	T	T	....	....	..	T	....	..	....		T	....	1.80	..	...		.22	...	....	4.12
Cumberland	.18	....	...	.42	.92	....	.74	..	..	..	...	.02	T	.35	..	.07	.46	.60	....	..	...	....	....	...	.33		.05	.31	1.60	...	....	6.06
Danville	3.65	.08	.42	....	..	.57	.27	....	....	....	1.50	.10	.23	.20	.27	..	.15	.07	.10	.12	.08	....	T	.15	.65	T	2.06	1.44	.48	.15	..	12.74
Davenport	.52	.03	.30	.02	.	.71	.04	....	..		1.51	.05	.95	.68		....	...	....	.09	.19		....	....	.17	.31	..	.19	1.30	.44	.05	.	7.55
Decorah	.54	.06		....	.03	.80	.10	....	....	.02	.13	.73	.18	.2	.13	....	....	.10	....	..	T	....	.09	.07	1.75	....		....	.35	.04	....	5.35
Delaware	....	.72		..	....	.89	.07	....	....	....	.71	1.36	.10	.14	.08	..	..	.04	.08	T		....	...	.97	.33		....	.17	.96	....	...	6.62
Denison	.22	.42	....	....	.18		.51	....		....	T	.41	T	...	.03	....	....	.58	.19	.05	..	.13	.33	.05	.40	T	.23	....	.89	....	..	4.62
Des Moines	.11	.01	....	....	T	2.15	.15	....	..	T	.03	T	.13	.07	.02	....	....	.83	.29	T	....	.15	1.21	.06	.15	....	.15	.23	1.53	T	....	7.27
De Soto	.10	T	....	...	T	.56	.18		....		.09	T	.13	.08	.09	....	.	.82	.42	T		.23	1.14	.04	.19	....	.20	.19	1.55	.01	...	6.02
Dows	.31	...	....		.56	.18	.38	..	....	.35	.85	2.30	....	.08	.06		....	T	T	.10	....	....	....	T	.40	T	T	..	.30	T	....	5.82
Dubuque	.22	1.16	T	...		.99	.18	....	..	T	.60	1.14	.07	.09	.03		....	T	T	.07	....	....		.52	.54		T	.13	.47	.76	....	6.97
Earlham	.14	..		....	...	.49	.22	....	....	T	....	.0	.05	.06	.15	T	...	.82	.6	.05	..	.28	.67	.03	.12	.	.25	.11	1.46	.02	..	5.55
Eldon	1.38	..	.29			.45	.28	....	....		.33	..	.41	.25	.83	....	.05	.04	.38	.05	.	....	.16	T	.03	..	.45	.77	.57	....	....	6.72
Elkader	.35	.48	....	....	....	4.10	..			.45	....	1.51	1.65		1.10		....	.10	....	...	....	....		.75	1.35	.	....	....	.62	....	....	12.46
Emerson	..	....	..	...	1.50	.	2.9	.	....	....	..		....	.20	....	.		....	.10		.75	....	....	....	....	....	....		1.40	....	....	6.90
Estherville		.05	.96	..	T	.18	.06	.11	.	....	.53	.02	.12	.18	.85	..		.09	....	.04	..	....	....	.27	1.51	.03	.08		...	.09	....	5.61
Fairfield	1.84	....	.21		....	.02	.15	..	....	.21	1.98	..	.35	.29	.18	..	.02	.08	.2	.26	...	..	.15	.17	.34	..	.42	.86	[illegible]	[illegible]	....	9.34
Fayette	.12	.33	..		....	1.80	T		....	.04	.41	1.54	.88	.40	.41	..	....	T	.04	.02	....	....	....	.18	1.65	....	..	..	.64	.02	..	8.81
Forest City	.60	....	..		.14		.09	....	....	.76	.23	1.21	T	....	.84		....	.89	....	.09	...	....	T	T	1.54	T	..	....	.04	.03	....	5.85
Fort Madison	[illegible]		.15	T	....	....	.79	....	....	1.77	T		.21	.21	.35	.02	....	....	.55	.07	...	.05	....	T	T	..	.74	2.19	.65	T	....	9.05
Galva		....	....		1.35		.13	.	....	....	....	3.80	....	....	.10	....	..	...	....		....	.91	.72	....	..	..	....	....	..	....	....	7.01
Gilman	.29	.45	....	.02	.02	.61	.08	....	..	.97	1.26	.42	.20	.12	.14	..	....		.12	.02	....	.08	.22	.12	.46	.04	.17	.21	.91	.04	...	7.00
Grand Meadow	.14	.56	..	..	1.08		.04	..		.32		1.13	..	1.02	.11	..	....	.04	.03	.10			.18	T	1.20	..	...	.	.60	....	....	6.55
Greene	.30	....		....	.62	.20	.08	....	..	.13	.72	1.10	.05	...	.53	....	...	.05	.12	.05	....		....	.10	.42	....	....	....	.50	.10	..	5.67
Greenfield	.29		...	....	.01	.58	.42	..	..	T	T	.02	.97	...	.36	T	..	.78	.57	T	.02	.27	.25	T	.15	T	.15	.11	1.28	.04	....	6.29
Grinnell (near)	.74	1.70	....	....	..	1.57	.03	.	..	...	1.35	.75	.09	.16	.03	....	.	.06	...	....	T	T	.40	.25	1.02	.03	.15	.16	.84	.06	..	9.39
Grundy Center	.43	.06	.16	.24	1.58	3.20	.07	....	...	.40	.78	5.15	.49	.46	.07	..	.	.40	.25	.0	....		.03	.10	.21	.03	.05	.02	1.66	.05	...	16.14
Guthrie Center	.52	T	..	...	.95	....	.51		....	....	T	T	T		.19	....	....	.24	.41	.05	....	.35	.76	T	.12	....	.33	.54	2.02	T	....	6.99
Hampton			....	....	.73	....	.10	....	.29	2.84	1.83	.17	.94	.47	..		.08	...	.14	....	.		.01	.33	....	T	..	....	.34	....	....	8.30
Harlan	T	T	.	...	3.00	.42	.43		..	T		.13	.10	....	.18	.01	...	.40	.57	.02	....	T	.09	.05	.26	T	.33	.25	1.02	.01	....	7.87
Hopeville	.36	.90	....		....	1.16	.38	....	....	....	T	.02	.05	.18	.22	.05	.	.33	.60	....	....	.2	....	.02	.01	..	.22	.58	.38	....	....	5.67
Humboldt	...	T	.28	.38			.30	....	....	....		...	.48	5.0	T	....	.34	.		.33	.26	T	..	.02	.11	.08	.25	.06	....	.11	....	8.00
Independence	.02	.50	....	....	.25	2.50	.08	....	....	1.50	T	.75	.45	.08	....	...		.40	.10	T	...	....	...	1.00	.20	T	....	T	1.20	..		9.03
Inwood	....	....	...	.35	..	....	.25	....	..	....	....	.25	...	....	....	....	....	....			...	.25	....	....	1.50	.25	....	..	....	....	....	2.85
Iowa City	.65	...	.18	T	..	1.20	.08	..	....	...	1.31	.08	.38	.68	...	....		.12	.21	.03	.04	....		.20	.70		.19	.40	.94	.07	....	7.46
Iowa Falls	.29	T	....	T	1.39	.32	.03	....	..	.28	1.28	4.40	.07	.76	.09		....	.16	.23	T	....	....	.08	.01	.21	T	T	....	.41	....	....	10.01
Jefferson	.35	.20	..		1.55	....	.25	....	...		.27	.18	.15		.08	....	....	.23	.22	.05	....	..	2.05	.	.62	.01	.20	.10	.70	...	....	9.21
Keokuk	1.16	....	.36	T	.	.80	.28	.06	....	....	.88	....	.31	.55	.30	..	T	....	T	.55	..		.03	.03	....	....	.50	1.48	.28	....	..	7.59
Keosauqua	.63	T	.31	T	.01	.30	1.36	...	....	...	1.00	....	.35	.10	.60	..		.02	.07	.72	...	T	.13	.03	.03		1.11	1.83	.52	T	..	9.13
Lacona	1.10	.40	....	....		1.40	....	....	...	....	.10	.10	.10	.10	.40	.10	T	.60	....	..	....	.10	.60	....	...	..	.30	.15	.60	.10	...	6.25
Lansing	..	.35	...	...	..	.47	.10		....		....	.65	.08	.32	....	..		.15	....	.10	...	.	....	..	1.00	....	....	...	.30	....	....	3.52
Larrabee	.		....	...	.01	....	.17		....	T	3.21	....	.03	.16	T	....	.02	....	.16	.02	....	.49	...	.42	..	.10	...		....	..	....	4.79
Le Claire	.02	.41	.30	....	1.20	.53	1.90	T	....	....	1.01	.02	.89	.8	.13	T	...	....	....	.13	T	....	..	.55	.31	T		1.81	.02	.58	..	10.62
Le Mars	....	....	....	....	.08		.03	..	....	..		3.25	..	.10		....	..	..	.10	....	....	.6	..	...	.20	.20	.12	....	T	....	....	4.68
Lenox	T	....	.98	...	.05	2.35	.47	.	....	..	T	....	.13	....	.05	T	..	.50	.61	....	..	T	..	....	..	....	.25	.15	.42		.	5.99
Leon	.06		.02	...	....	1.70	.52	....	...	....	T	T	.40	1.58	.07	T	.03	.10	.56	.18	....	.09	.12	.02	.01	....	.45	1.43	.38	T	....	7.72
Logan	....	....			1.38	.12	.47	..	....	....	....	1.00	.17	....	.55	.02	..	.62	.75	.05	....	.08	....	.61	.33	....		1.35	.02	....	..	7.52
Maquoketa	.88	.33	.19	.13	....	.85	.38	..	.		.76	.23	1.09	.37	....	....	....	....	.11	.10	....		...	1.54	.61	....	.13	.16	.57	.23	...	8.67
Marshalltown	.50	.50	..	....	.23	1.54	.10	....	..	....	2.17	2.11	.68	.23	.01	....	..	.82	.18	.06	..	T	.26	.21	.70	.06	.18	.19	1.50	.02	....	12.31
Monticello	.64	1.10	.15	T	T	1.10	.56	....	....	1.88	.15	.60	..	.11	...	....	T	....	.25	T	..	T	1.13	.80	T	T	T	T	.18	.93	....	9.78
Mount Ayr	.14	.01	.30	..	....	1.8	.40	....	.		.03		1.10	.05	.15	.02	..	.17	.78	1.02	..	.07	..	.02		....	.71	1.01	.40	..	....	8.18
Mt. Pleasant	1.60	..	....	....	....	.53	.48	.		2.32	....	.03	1.11	.10	.18	...	..	.03	.05	.34	..	....	.03	.30	.43	....	.45	1.38	1.60	T	....	10.96
Mt. Vernon	1.85	.20	.10	1.55	....	1.13	.12	.	T	..	.72	.20	.05	.15	....	..	..	....	.16	.01	....	....	..	.20	.50	T	.10	.08	.92	.06	....	8.10
New Hampton	.26	.55	.12	...	....	.50	....	....		.06	.56	.96	.54	.01	.46	....	.	.12	....	.05	..	.05	....	1.24	1.50	....		....	.40	....		7.38
Newton	.72	.39	....	....		1.82	.08	....	....	....	1.30	.56	.44		.04	....	....	.32	.25	....	....	T	.67	.22	.45	..	.16	.10	1.32	.03	..	8.87
Northwood	.79	.16	.15	....	.20		.12	..	....	.08	.20	1.05	T	.03	2.00	....	..	.02	..	.03	..	.	....	.59	1.52	....	..	....	.04	.08	..	6.96
Odebolt	....	.10	..	..	2.25	....	.2	....	....	....	....	.20	T	...	....	....	....	1.56	.07		...	.37	.67	.08	.05	.08	....	..	.55	.05	....	6.23
Ogden	.14	.03	....		.20	2.07	.23	....	....	..	.30	.05	.50	.37	.08	..	..	.30	.25	.05	....	.11	.94	.20	.82	....	.20	....	1.00	.02	....	7.86
Olin	.67	.58	.12	T	..	.95	..	....	....	...	1.10	.12	....	.45	.02	....	....	T	.14	....	..	....	....	.81	.75	T	.12	.10	.70	....	......	6.63
Omaha, Neb.	.03	....	...	....	.83	1.09	.52	....	....	..	..	.4	.04		.11	.11		.83	.78	T	..	.07	....	.01	....	T	.39	.50	1.57	.02		7.32
Onawa	....	....	....		.59	.03	.80	....	....	....	....	.08	....	...	.80	....	.15	.77	.28	.05	..	.03	....		T	.28	.20	....	1.40	.04	..	5.50
Osage	.32	.23	.42	..	.24	....	.17	....	..	.05	.27	.92	.05	....	1.40	...	....	.04	....	.09	....	..	....	1.55	1.69	....	....	....	.10	.06	....	7.60
Osceola	1.00	.78	.24	....	..	.42		....	..	....	.5	T	.24	...	..	...	.12	1.03	.55	.	...	.10	.11	.05	....	.01	.70	.02	.45	....	....	5.37
Oskaloosa	1.84	.10	....	....	..	.97	.23		..	.15	.32	.51	.36	.57	.10	....	..	.04	.39	....	..	T	.42	.10	.27	....	.04	.51	.32	T	..	7.24
Ottumwa	1.71	....	.74	....		.40	....	.73	....	....	.25	.43	1.02	.71	.12	..		.10	.	.50	....	.	.05	.	.09	..	....	1.07	.50	....	...	8.42
Ovid	.8	T		....	....	.63	.36	....	..	....	.33	.04	.18	.54	...	..	.06	.14	.68	.14	....	.05	.17	.03	.07	....	.22	1.19	.40	....	....	6.04
Pacific Junction	..	....	.02	..	.43	.81	1.00	...	....	...	.02	T	.15	.02	.35	.05	T	.91	.63	....	...	.09	....	.01	....	....	.32	.04	1.79	....	....	6.64
Perry	.21	.04	..	....	.19	1.60	.33	..	....	....	.10	.14	.09	T	..	....	....	1.00	.27	.30	..	.28	1.55	.10	.41	.02	.29	.16	1.60	.04	..	8.72
Plover	.15	.50	....	..	.17		.22	....	..	.04	1.11	3.34	.09	.06	.	....	.85	....	.11	....	....	....	.12	.03	.30	T	....	...	.15	T	....	7.24
Red Oak	.12	.10	...	..	.91	1.00	3.52	....		..	T	.07	.03	.05	.39	T	.	.59	.42	T	..	.04	..	.02	....	T	.21	.02	1.38	T	....	8.90
Ridgeway	.20	.42	....	....	.30	.16	.17	..	.01	.18	.01	1.05	.04	.06	.52	....	.03	....	....	.07	....		.14	.0	2.22	....	....	..	.33	....	....	5.94
Rockwell City	....	.20	..	....	4.05	....	.12	..	..	.10	....	.40	.20	....	....	....	....	.60	....	....	....	....	....	....	..	....	.15	...	.30	...	....	6.12
Ruthven	..	....	....	...	T	....	....	.	....	.	1.12	....	....	....	1.03	....	...	....	....	...	....	....	....	....	1.18	....	....	....		...	....	3.30
Sac City	..	....	....	..	1.74	....	.16	....	....	..	T	.67	.13	T	.	..	....	.35	.08	T	....	.53	1.19	.09	.05	.10	.08	.	.34	.12	....	5.63
St. Charles	.30	.18	....	....	T	.84	.40	....	....	....	....	.05	1.27	.32	.08	T	....	.62	.50	.06	...	.20	.53	.02	.01	..	.20	.13	.95	.02	....	6.71
Scranton	.36	1.45	....	....	T	....	.20	....	....	....	....	T	.61	.08	....	....	....	.40	....	.24	....	1.81	.12	....	.61	T	.12	.05	.62	....	....	6.77
Sheldon	.01		....	....	.04	.	.05	....		.01	....	.37	....	.12	.	T	....		......	.02	.03	.02	.05	.10	.50	.10	....	....	.04	....	....	1.46

DAILY AND MONTHLY PRECIPITATION FOR JUNE, 1902—CONTINUED.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sibley	.04	..	....	..	T	...	.06	....	....	.02	.11	.28	...		.14	....	....	....	.	T	..	T	..		1.07	.07	...	....	T		..	1.89
Sigourney	.96	...	.07	..	....	1 53	.20	...	..	....	1.02	.20	.98	.68	.03	....	....	.14	.34	03		T	.20	.3	.3	....	.18	.69	.62	.06	..	8.61
Sioux Center	T	..	....		....	....	.03	....	....	T	...	.52	...	...	.33	....	...	....	.07	....	..	.14	.24		...	.3c	...	...	T	....	....	1.63
Sioux City		....	....	....	.35	....	.15		..	....		.29	T	.04	.13		T	.	.07	.02		.05	.12	.11	.17	.10	.11	....	.48	.9	....	2.22
Stockport	1.25	T	55	....	...	.45	.53	...	....	T	1.40	.02	.60	.28	T	T	.03	.02	T	.50	....		.15	.08	.01	T	.10	2.50	.47	.02	....	9.11
Storm Lake			....	...	.15	....	.21	..	....	....	T	3.07	05	.02	.06	....	...	.35	14	T	...	.47	.37	T	.17	.17	.04	...	.04	.06		5.37
Stuart	.36	T	....	..	...	.50	.30	...		..	....	T	.15		25	...	.38	.50		....	..	....	1.10	....	.48	...	.25	.17	1.75	...	....	6.13
Thurman	...	T	....		1 75	1.30	52	..	....	....	T	T	.2	....	.35	.15	...	1.85	.94	T	....	T	..		..	..	.?2	.12	1.62	....	....	9.66
Tipton	1.10	....	.35	T		1.25	25			....	1.50	.10	1.25	25	T		....	T	T	.1C	....	....	....	.25	.3c	....	.10	.35	.6c	.6c	....	8.35
Villisca	.6c	.c8	...	....	1 20	.75	.84	....	....	T	T	.10	T	.20	....	..	....	63	.53		....	.08	....	.02	T	....	.36	.5c	1.50	...		7.37
Vinton	.30	.47	.	.23	2.30		.37	.	..	.75	82	T	.63	.1(	....	.....		.c8	.26	T	....	.	....	.1C	.31		40	....	1.14		...	8.26
Wapello	1.co	....	.34	T	..	.53	.10	..	....	..	1.66	.12	1.co	.50	.1C		....	.01	.15	.08	....	....		.c6	.66	....	.34	.70	.50	.02	...	7.87
Washington	.66	....	.18	....	...	.64	.5c	..	.	..	2.08	.15	95	.26	.2	....	..	.10		.38	....		.05	.06	.24	..		.52	T	.68	....	7.68
Washta	....	T	...	....	.15	....	.12	...	..	...	1.2	.20	.13	.1C	....	..	.1C	....	.15	....	..	.8	....	....	.10	.14	.07	....	.16	....	..	3 54
Waterloo	.06	.20	...	.	.35	1.34	.08	....	...	.07	.02	1.1'	.3(	.20	.14	...	....	.14	.14	T	....	....	....	.14	.22	...	.05	.02	1.23	.04	....	6.81
Waverly	.19	.18	....	..	.35	46	.	....	..	.10	1.8'	.48	.03	.0'	.11	....			05	.04				.69	.36		....	....	.80		....	5.77
West Bend	.13	.14	....	..	.12	....	.06	..	....	.85	....	1.63		....	.38	....	....	.46	.03	....		T	T	.04	.45	.02		...	.08	....		4.39
West Branch	.66	.01	.1C	T	....	2.08	.10	..	....	....	.8'	.12	.58	.21	.04	..	..	.c8	.08	.10	..	....	....	.30		....	.20	.35	.72	.20		6.88
West Union	.11	.77	...	....	1.11		.07	....	-	30	.63	.30	.14	....	....	....	....		....	....	....	....	.61	1.55		....	.	....	....	.71		6.36
Whitten	.46	.48	.26	...	1.5c	1.82	.c8		...	T	1.co	2.40	.42	.40	....	....	....	.52	.22	03	...	T	T	.56	.18	.02	.04	T	1.13	T	....	11 52
Wilton Junction	.92	....	...	.27	...	1.25	.17	-	....	....	1.21	.22	1.20	.27	....		...	..	....	.29	....	....	....	.22	60	....	.25	.7	.68	.07	....	8.33
Winterset	.04	....	....	....	....	75	.3'	..	....	.05	....	T	.12	.46	.10	....	....	1.35	59	.07	....	.1C	.64	.04	....	..	.34	.29	1.57	.05	...	6 00
Woodburn	.86	.82	....			1.60	.45	....	....	....	.07	.03	.25	.25	.07	.10	....	.53	.51	T	....	.30	....	07	01		.25	T	.41	.02		6.60

Vol. XIII. JULY, 1902. No. 7.



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DES MOINES:
BERNARD MURPHY, STATE PRINTER
1902

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MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIII. JULY, 1902. No. 7.

IOWA CROP REPORT, AUGUST 1, 1902.

Reports of crop correspondents of the Iowa weather and crop service show the following average condition of the staple farm crops, August 1st.

Corn, 93 per cent; spring wheat, 84; oats, 83; barley, 89; flax, 91; hay, 100; potatoes, 107; apples, 66; plums, 51.

In 1901 at the corresponding date, the averages were as follows: Corn, 55 per cent; spring wheat, 84; oats, 75; barley, 83; flax, 74; hay, 70; potatoes, 34; apples, 35; plums 40.

WEATHER AND CROP CONDITIONS.

July 1902 was about normal as to temperature, the state average being about 73 degrees; but the month broke all July records in respect to high average amount and distribution of rainfall, the frequency of showers with heavy downpours and severe windstorms, and the wide extent of damaging floods from overflow of all the principal streams of the state. The average precipitation was 8.67 inches, which is about 5 inches above normal, and the reports of all stations of record show an excess. As in the preceding month of June, the records show a measurable amount of rainfall every day during the month, at one or more stations. These adverse conditions greatly retarded the cultivation of late corn, and harvesting the matured crops of hay and small grain. The saturated grain fields were rendered too soft for operation of harvesting machinery. The heavy storms of rain and wind caused lodgment of oats, wheat, barley and grass to a much greater extent than was ever known in previous years, and this added greatly to the labor and difficulty in securing the heavy burdens of grain and hay. There has been, therefore, a much larger per centage of loss of acreage and damage to quality of these crops than was ever known in this state in recent years. But despite these unusual drawbacks, by strenuous labor between showers, the farmers of Iowa secured a large amount of hay in fair condition, and the small grain crops have been put in shock or stack with much less loss than seemed imminent during the prevalance of the heavy storms. Corn in upland fields that have been well tilled is in very promising condition, being bulky and heavily eared. Despite the unusually large loss of acreage, the total output for the state will be above the average of the past decade, if seasonable weather prevails in the balance of the season. Potatoes have exceeded all recent records. All kinds of garden truck have made heavy growth. Apples have suffered materially from windstorms, and the crop is below the average.

CLIMATE AND COMMERCE.

Figures compiled from the treasury bureau of statistics for the fiscal year ended June 30th, relative to the exports of breadstuffs, provisions and beef, afford a basis for measurement of the effects of adverse climatic conditions of the season of 1901 upon our foreign commerce. The drouth of last year was far-reaching in its effects, as shown by the marked reduction in the exportation of corn and other agricultural products from the principal ports. In corn and cornmeal there was a decrease amounting to 186,000,000 bushels as compared with the shipments of the preceding year. In oats and oatmeal there was a marked reduction. The reduction in value of the exports of breadstuffs, clearly traceable to the drouth, amounted to $75,000 000. In beef and beef cattle there was also a shortage amounting to $11,000,000 in the value of exports. The climatic conditions, by the reduction of our normally large surplus, materially affected our usually heavy balance of trade for the year.

SEASONABLE NOTES.

The following press dispatch, giving details of a fatal shock by lightning, illustrates the danger of contact with wires, rods, or iron windmills during the prevalence of thunderstorms:

CARROLL, July 18.—A daughter of Garrett Simon, living four miles east of Carroll, was killed by lightning during yesterday's storm. The young lady was at the well, over which there is a high windmill, when the storm came up. The storm was accompanied by a terrific electrical display. While the girl was watching the storm lightning struck the gearing of the windmill and followed down the wire which is used to throw the mill in and out of gear to a bolt in the framework about five feet from the ground. From the bolt the lightning shot out, striking the young lady in the head and killing her instantly. Her clothing caught fire, but was extinguished quickly by the rain, which had begun falling. The face was burned and blistered by the intense heat.

* * *

The sun, drawing its attendant planets, is journeying through space at the rate of eight to twelve miles a second. Its path is often supposed to be orbital, and to extend around the cluster of stars known as the pleiades in a period of millions of years. From observations on 280 stars, studying their approach or recession with the spectroscope, Prof. W. W. Campbell has placed the point towards which we are now heading in the constellation Hercules, nearly nineteen degrees south of Alpha Lyra or Vega.—*Ex.*

* * *

F. Rovessi, a French botanist, states that an abundant fruiting usually follows a year of drouth, and that a very wet season is followed by one of small fruit production. This is due in a large degree to the maturing of the branches which carry the floral buds, and in the ripening of these branches the water which they contain plays an important part. It is stated that branches arising directly from the trunk or occurring in the interior of the top contain a large amount of water, and as a result are poorly matured at the end of the growing season. These branches suffer severely on account of the winter's cold, and as a result many are destroyed, and the tree naturally pruned. It is claimed that the location of the flower-bearing

branches conforms to the same rule. They are most numerous on the slender branches in which the water conduction is limited, on account of the distance of transfer, and they are also most numerous if the branch assumes a vertical position, in which by the added action of gravity there is a diminution of water content. In this manner the form of the tree, as well as the location of the flower-bearing branches, is determined by conditions influencing the maturity of branches, and the maturing of branches, as well as the number of flowers and fruits, depends to a great degree upon the amount of water which the plant receives.

* * *

Editor Trigg, of the Rockford *Register*, says: "If the removal of the timber in the north country provoked the drouths of the past five years somebody must have set out a couple of trees up there this spring."

* * *

Don't shed tears on account of the weather, be it wet or dry. They add to the humidity in wet weather, and are too salty for irrigation of crops in a drouth.

* * *

It is reported that hailstones nearly three pounds in weight fell during a recent storm at Jessore, in Bengal. Stones of that sort generally fall in some other place—if at all.

* * *

The rainfall variations of the nineteenth century have been traced by Herr Hann from the monthly and yearly means of Padua, Klagenfurt and Milan. The rainfall of the driest year was from 42 to 62 per cent. of the general mean, and that of the wettest year was 151 to 152 per cent. There were 34 dry years and 29 wet years. A 35 year period, corresponding to that of Bruckner, seems to be shown, the wet years—as recorded since 1725—having been 1738, 1773, 1808, 1843, 1878, while the extremes of drouth were reached in 1753, 1788, 1823, 1859 and 1893.—*Exchange*.

* * *

While the recent hail in the vicinity of Denver did some harm, the amount of good it did more than compensated for it. The scourge of grasshoppers with which the city was threatened was destroyed in a few minutes. After the hail the fields east and south of the city, which were being devasted by the pests, were found to be carpeted with dead grasshoppers. There were hardly enough of them left to make a showing. Gardeners and ranchmen east of the city unite in saying that as an effective cure for grasshoppers they will take an active hailstorm every time. Alfalfa fields which two weeks ago were threatened with total destruction by the hoppers are now coming up green and fresh and full crops are assured. Hereafter when threatened with a grasshopper plague the Arapahoe farmer will pray for hail.—*Denver Times*.

STORMS PRODUCED BY COUNTER ATMOSPHERIC CURRENTS.

On the front of an advancing cold wave there is often a long band of rain area stretching from the Great Lakes to the Gulf of Mexico, but without cyclonic formation, the precipitation being in fact caused by the upward lift of a warm southerly current which overflows the wedge-shaped cold wave in its southward movement. This is a dynamic uplift by overflow, instead of by vortical gyration, and it is sufficient to cause condensation and precipitation by the mechanical action of an underflowing stratum of very low temperature. * * * * In the summer season, local thunderstorms are quite as likely to happen in the midst of an area of high pressure as in that of low pressure, but here the vertical convection distinctly exists and arises from a superheating of the lower strata. If buoyancy of the lighter air is the principal cause of the gyration of cyclones, then we should expect to find a similar rotatory motion developed in the formation of cumulus clouds and thunderstorms in hot summer weather, when the vertical component is evidently strong. But, on the contrary, while the ascension of the heated air is clearly visible in these clouds, there is usually no evidence of gyration of the cyclonic type. * * * * * * It can be proved conclusively from observations that two counter currents flow together at the places where tornadoes are formed, where the tropical hurricanes are generated, and also where the cyclones of the middle latitudes are produced. These currents are especially active in the strata one or two miles above the ground, and this is probably the reason why they have not received due attention in constructing the theory of storms. It may be concluded that the local overheated central region does not exist in cyclones as the chief cause of their motion, and that the theories fail which depend upon it.—*Review of Ferrel's and Oberbeck's theories of the local and the general circulations, by Prof. F. H. Bigelow, in the Monthly Weather Review for April, 1902.*

THE INFLUENCE OF SUN SPOTS.

Since the discovery of the periodicity of sun spots a large place in scientific literature has been occupied by articles tending to establish some connection between this and variable terrestrial phenomena. It is natural that it should be inferred that any considerable change in the sun must bring about numerous direct or indirect consequences upon the earth, but one who has given the subject no attention will be startled to find that the following list contains but a portion of the terrestrial phenomena asserted, on more or less authority, to be influenced by the sun-spot cycle: Magnetic and electrical conditions, including the aurora borealis; air temperature; barometric pressure; humidity; the winds; cloudiness; rainfall; depth and quantity of discharge of rivers; retreat and advance of glaciers; number of shipwrecks; bank failures and commercial crises; the crops; prices of grain; famines; wars, and even flights of butterflies.

It would probably be easier to show that the number of articles concerning sun spots in scientific periodicals has an 11-year period than to prove all the above-mentioned relations to the general satisfaction.

The question before us is this: Through what physical connection is the presence of sun spots associated with variations in terrestrial magnetism and with meteorology? * * *

Almost without exception, writers on this subject who have ventured an opinion have attributed these meteorological changes to alterations in the amount of the solar radiation. There seems to be a preponderance of suggestion that the sun radiates more at sun-spot maximum, although there are not wanting many who hold precisely the contrary opinion.—*The relation of the sun-spot cycle to meteorology, by C. G. Abbot in the Monthly Weather Review for April, 1902.*

REVOLUTIONIZING FARM LIFE.

(*Des Moines Register-Leader.*)

Public attention is usually occupied with events that are of the day, and that pass. Great changes that are fundamental often go on unnoticed. To-day a great change, amounting to a revolution in farm life, is in progress. The rural telephone, rural free delivery, and the trolley lines are bringing so many of the advantages of the town to the country that the rising generation will never be able to realize how its fathers lived. The older men can still recall the old farm village, remote from railways, where year after year everything centered about the petty affairs of an isolated community, neighbor's children marrying neighbor's children, and making new homesteads on the

borders of the old. A day's journey by team was an extended trip, and a visit to the city an event of widespread interest. The railway and telegraph ruined this old-time village. But the revolution they worked a generation ago was nothing compared to the revolution that is now going on, a revolution that will in ten years make the farm the ideal home of the well-to-do.

To-day more than 4,000,000 farmers in the United States have daily mail delivered at their doors. This is the report of the assistant postmaster-general. As a result of this daily mail they are sending out an average of two letters where before they sent one. When rural free delivery was first proposed it was ridiculed as a fad, a new means of squandering the public money. It is now in operation in every state in the Union excepting Montana, where mountainous roads thus far have made it impracticable. Even in Alaska there is a route from Nome to Gold River. The department estimates that with the present month 8,600 routes will be in operation, averaging twenty-five miles in length. It is safe to predict that during President Roosevelt's term every thickly settled farm section will have its daily mail.

The rural telephone is not so far along as rural mail delivery, and the trolley line is only being experimented with in the west. But who will venture that in ten years all the important farm roads of Iowa will not be lined with wire and many of them laid with tracks?

Hitherto it has been the dream of the farmer to save enough to enjoy at last the conveniences and luxuries of town life. Already the change may be noticed. They are building their new homes on the farm. With the facilities they now enjoy the town does not present so many attractions. The change is most fortunate. When in states like Iowa the men who have made their money out of the soil spend it in improving and beautifying their farm homes we shall present to the world the truly ideal community.

TABLE SHOWING RAINFALL AT McGREGOR, IOWA, SINCE 1894.

YEAR.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1895	1.26	.61	.78	1.05	2.44	2.55	1.87	2.31	3.10	.70	1.96	2 14	20 77
1896	.66	.34	.77	5.12	6.03	4.75	2.39	2.81	4.80	2.37	1.90	.40	33.34
1897	2.89	.99	1.68	2.54	1.62	5.43	3 09	.84	5.13	1.06	.95	1.36	27.58
1898	.86	1.28	2.56	3.02	2.37	1 70	4.32	2.16	2.62	4.39	1.60	.38	27.26
1899	.54	1.56	2.09	1.71	3.91	6.07	2.36	3.27	1.29	2.68	.91	3.06	29.55
1900	.65	1.02	1.93	3.50	3.60	1.77	6 83	2.05	3.37	5.10	2.56	.45	32 83
1901	.77	.93	3.13	1.04	2 13	2.60	2.29	1.01	4.77	2.94	.91	.60	23.12
1902	.61	.95	2.57	1.59	11.86	....	...	...	....	....	....	....	.....

FRANK LARRABEE.

In a note accompanying the above table Mr. Larrabee says: "I notice the average rainfall for the past eight or nine years has been below normal some six inches, which may account for so many springs and wells going dry and so many forest trees dying.".

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 29.95 inches; highest observed, 30 39 inches at Sioux City on the 10th; lowest observed, 29.63 inches, at Sioux City on the 16th; range for state, .76 inch.

TEMPERATURE—The monthly mean temperature for the state, as shown by records of 108 stations, was 73 1°, which is 0.6° below normal. By sections the mean temperatures were as follows: Northern section, 71.9°; central section, 73.3°; southern section, 74.2°. The highest monthly mean was 76 5° at Keokuk; lowest monthly mean 70.2°, at Alta, Fayette, New Hampton and Northwood. The highest temperature reported was 99°, at St. Charles on the 17th; lowest temperature reported, 41°, at Clinton on the 1st. The average monthly maximum was 92.9°; average monthly minimum, 50.9°. Greatest daily range, 43° at Plover; average of greatest daily ranges 30.4°.

PRECIPITATION—Average precipitation for the state, as shown by records of 125 stations, was 8.67 inches, which is 4 99 inches above normal. The averages by sections were as follows: Northern section, 8.35 inches; central section, 8.84 inches; southern section, 8.82 inches. The largest amount reported was 13 57 inches, at Odebolt; least amount reported, 4.87 inches, at Keokuk. The greatest daily rainfall reported was 6.25, inches, at Ovid on the 17th and 18th. Average number of days on which .01 of an inch or more was reported, 13.

WIND AND WEATHER—Prevailing direction of the wind, southwest; highest velocity reported, 47 miles per hour, from the south, at Sioux City, on the 5th. Average number of clear days, 14; partly cloudy, 10; cloudy, 7.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	29 95	30.27	10	29 72	16
Des Moines	29.96	30.35	10	29.71	5
Dubuque	29 96	30.31	10	29.67	16
Omaha, Neb	29.92	30 37	10	29 63	5
Keokuk	29.96	30.25	10	29 78	16, 18
Sioux City	29.93	30.39	10	29 63	16
Means	29.95	30.29	10	29.63	16

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	4646	33	N	16
Des Moines	5956	36	W	7
Dubuque	4166	30	NW	16
Keokuk	4820	25	W	25
La Crosse, Wis	5011	30	SW	5
Omaha, Neb	5393	46	NE	12
Sioux City	8137	47	S	5

OBSERVERS' NOTES.

ALTA—*David E. Hadden.* Month cool and very wet—12 24 inches. A severe thunderstorm, accompanied by wind of almost hurricane force, on early morning of the 5th, and another late in the afternoon of same day, damaged shade trees windmills, etc., and caused grain to lodge badly.

AMANA—*Conrad Schadt.* The Iowa river rose again very high this month, doing damage by inundating crops. A very destructive windstorm passed from west to east at 3:45 P. M. on the 8th of July. It was a straight blow or squall, about one and a half miles wide, with one or more small "twisters" within its limits. A barn belonging to Wenzel Jerusha was demolished, and a man who had taken refuge therein was killed. It is reported that thirteen barns and one house were destroyed in the pathway of the storm, within a distance of sixteen miles. Tapering clouds were observed and roaring heard with terrific thunder. Many trees were uprooted or broken in groves and orchards. The last decade was favorable for harvesting.

AUDUBON—*Frank Mott.* Destructive flood in the valley of the Nishnabotna. Oats are badly down.

BONAPARTE—*B. R. Vale.* Rain 8.06 inches, following June with 9 94, making a total of 18.00 inches for the two months. This exceeds the record of 1898—the wet year—by about 6

inches. The following figures from records at this station showing rainfall for June and July, and totals for the two months and the full year, were furnished for publication in the Bonaparte *Record:*

YEAR.	JUNE.	JULY.	JUNE AND JULY.	ANNUAL.
1891	3.55	4.64	8.19	———
1892	3.93	4.79	8.72	39.92
1893	4.27	2.40	6.67	32.30
1894	1.82	.19	2.01	25.81
1895	2.95	5.27	8.22	31.98
1896	2.30	6.63	8.93	36.47
1897	6.43	2.91	9.34	26.97
1898	9.01	3.15	12.16	54.45
1899	1.65	22.8	8.93	26.87
1900	2.73	1.95	4.68	31.81
1901	2.26	.94	3.20	16.34
1902	9.94	8.06	18.00	*27.68

*To August, 1902.

BRITT—*Geo. P. Hardwick.* A showery month, but no severe winds here, though several heavy storms passed nearby; much uncut tame hay at close of month; ground too soft for harvesting machinery; fruit crop short.

CHARITON—*S. H. Mallory.* Following records show rainfall at this station for July, during past eight years:

1902	10.07 inches	1898	6.94 inches
1901	4.25 inches	1897	1.74 inches
1900	6.29 inches	1896	9.06 inches
1899	7.20 inches	1895	4.33 inches

CLINTON—*Dr. Luke Roberts.* The meteorological conditions of July, 1902, were in marked contrast with those of 1901; the former being over wet and cool, and the latter over dry and hot. The number of days on which a measurable amount of rain fell was 16. This beats any July record, but the last preceding June went one better. Total precipitation was 7.79 inches. This amount of rainfall has been exceeded but once in any July preceding, and that was in 1879, when there was 8.07 inches, being in excess of July, 1902, rainfall by only .28 of an inch, but the rainfall for 1879 only covered seven days, thus averaging over an inch for each rain day. The normal July rainfall is 4.12 inches.

The maximum temperature for the month was 95 degrees, occurring on the 17th, being two degrees above normal. The minimum temperature was 47 degrees, occurring on the 1st, being one degree below normal. The mean temperature was 73.4 degrees, being only two-tenths of a degree below normal. The warmest July was in 1901, giving a mean temperature of 80.2 degrees, and the coolest July was in 1882, with a mean of 68.8 degrees, giving a range of 11.4 degrees. There were 12 days with maximum temperature, 90 degrees or above. The first decade was the warmest.

The per cent of cloudiness was 48, being 14 above normal. There were 8 clear days (last year 20), 16 part cloudy and 7 cloudy.

The last decade of the month only gave .54 hundredths of an inch of rain, the cloudiness diminished and temperature rose, thus giving more favorable conditions for the growing crops and securing such as are ready for harvesting. The month closed with brightened prospects for a liberal harvest, especially in corn. The oats crop in eastern Iowa has been much damaged by lodging, but nearly a normal yield will be secured. The outlook at the close of July for plentiful harvests in the United States as a whole was inspiring. In Iowa, the copious precipitation during the month has established a normal condition of moisture in the soil, replenishing the exhausted water courses that feed the springs.

□ EARLHAM—*George Phillips.* First half of month cloudy and wet; grain badly lodged and much hay spoiled; close of month brought better weather; no threshing done yet.

GRAND MEADOW—*F. L. Williams.* The wettest and worst season for haying ever known here; hardly a load that was not rained on; small grain harvest very late and grain badly lodged; no oats cut before the 31st.

GRINNELL—*A. O. Price.* July breaks the records for rain. Even the hillsides are so wet as to stall reapers.

GRUNDY CENTER—*E. S. King.* Small grain generally saved except on lowest ground; corn above average; harvest two weeks late.

HAMPTON—*E. C. Grenelle.* The heaviest rainfall for July since government records were begun here, in June, 1888.

HARLAN—*C. A. Reynolds.* The Nishnabotna valley was overflowed and bridges washed out, and access to the city almost impossible on the 8th, 9th and 10th.

HUMBOLDT—*H. S. Wells.* Rain, 8.81 inches. Much tame hay to make at close of the month; wheat and oats nearly all cut and some stacked; stock suffers greatly from flies and mosquitoes.

LOGAN—*Mrs. M. B. Stern.* Heavy rains caused much damage by overflowing meadows and corn fields on low ground.

MONTICELLO—*C. E. Heisey.* Lots of hay ruined by frequent rains; oats in some fields hardly worth cutting, corn on high ground never looked better.

MT. PLEASANT—*Frank S. Stevens.* Great damage to crops by high water; Skunk river reached the highest mark since 1851.

RIDGEWAY—*Arthur Betts.* A warm, wet month; only exceeded in temperature by July, 1901, and August, 1900, and in rainfall by last May. Thunderstorms on 14 days; sunshine 302 hours, or 65 per cent; at close of the month farmers are reaping an abundant harvest.

SIGOURNEY—*Mrs. R. F. Ashbaugh.* A most terrific thunderstorm on night of 13th and 14th, with 3.47 inches of rainfall. No serious damage.

STOCKPORT—*C. L. Beswick.* Severe electrical storm and heavy rainfall on 14th between midnight and 4:30 A. M.; 4.40 inches of rain; lightning killed several head of stock and struck several buildings.

STORM LAKE—*Prof. M. L. Fuller.* Precipitation 10.49 inches, which has been equaled but once in 18 years, viz: in June, 1891, when 14.70 inches fell. On the 8th to 9th 4.80 inches fell, and this has been equaled but once at this station, viz: on June 21, 1891, on which day 7.78 inches fell.

TIPTON—*Geo. W. Barclay.* The first and second decades of July were very wet. Prospect good for a "bumper" corn crop; oats and hay above average.

VILLISCA—*C. E. Matteson.* A month of heavy rainfall and difficult harvest, but a fine prospect for corn except on low lands.

WEST BEND—*Ph. Dorweiler.* Wettest month on record here. Much hay and grain spoiled.

BELATED REPORT.

COLUMBUS JUNCTION—June, mean temperature, 61.4°; highest, 92°, on the 12th; lowest, 30°, on the 22d; greatest daily range, 41°; total precipitation, 7.77 inches; prevailing direction, west; greatest rainfall in twenty-four hours, 1.44 inches on the 11th; number of clear days, 12; partly cloudy, 9; cloudy, 9; rainy, 16.

CLIMATOLOGICAL DATA FOR JULY, 1902.

NORTHERN SECTION.

STATIONS	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT							PRECIP., IN INCHES				Number rainy days	SKY			Prevailing direction of wind
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)		Number clear days	Number partly cloudy days	Number cloudy days	
Algona	Kossuth	1,213	9	72.6	-1.0	94	16	51	10	30	6 03	†3.80	1.11	..	10	13	14	4	SE
Alta	Buena Vista	1,513	10	70.2	-2.2	90	16,30	49	10	29	12.24	†8 64	4 08	..	16	15	10	6	S
Alta (near)	Buena Vista	.....	....	.....	.....	.....	.....	.....	.....	.....	12.37	.....	4 01	..	14	....	....	....	.....
Britt	Hancock	1,236	...	72 4	....	92	16,30	48	10	31	6.83	.....	1.59	...	14	5	19	7	S
Charles City	Floyd	1,012	10	72.6	-0.8	98	30	51	21	40	7.92	†5.16	1.80	....	10	9	15	7	SW
Chester	Howard	.....	....	71.4	.....	92	16	46	10	32	6.21	.....	1.37	...	12	17	2	12	NW
Clear Lake	Cerro Gordo	984	....	73.2		96	16,30	50	11	40	9.15	.....	2.40	....	13	17	9	5	SW
Decorah	Winneshiek	875	8	71.4	†1.1	90	14	52	10	29	8.43	†6.04	2.34	....	16	....	...	....	.....
Dows	Wright	1,142	....	72.4	...	94	4,5	50	10	34	12.19	.....	3 90	....	15	15	8	8	.. ....
Elkader	Clayton	600	20	73.8	†0.1	95	30	50	21	36	8.10	†3.99	1.85	..	17	16	12	3	SE
Fayette	Fayette	1,000	11	70.2	-1.5	92	30	49	21	32	9.07	†5 92	2.57	....	16	12	9	10	SW
Grand Meadow	Clayton	1,180	10	70.9	†0.8	90	3	52	10	32	10.70	†7.06	2 60	....	16	11	12	8	SW
Greene	Butler	943	..	73.2	.....	93	30	50	10	32	8.79	.....	2.08	....	10	14	8	9	SE
Hampton	Franklin	1,000	11	72.6	†0.9	94	30	52	10	34	10.95	†7.62	3.22	....	17	7	18	6	SW
Humboldt	Humboldt	1,095	8	72.6	.....	94	16,30	52	10	28	8.81	.....	2.52		14	16	10	5	SE
Lansing	Allamakee	632	....	73.0	.....	94	30	52	1,21	34	6.87	....	2 00	.	11	18	5	8	.....
Larrabee	Cherokee	1,366	10	72.5	...	93	12,30	47	10	36	7.19	†3.25	2.26	..	13	15	11	5	SW
Le Mars	Plymouth	1,224	...	71.6	...	92	30	46	10	35	7.08	.....	1.60	....	13	15	11	5	S
New Hampton(*b*)	Chickasaw	1,166	..	70.2	.....	90	16	50	10	29	8.19	.....	2 64	..	16	14	13	4	S
Northwood	Worth	1,222	....	70.2	...	89	16	50	1	27	8.48	.....	1.31	....	15	11	13	7	SW
Osage	Mitchell	1,184	10	71.1	†1.2	90	30	49	10,21	32	6.31	†2.91	1.72	....	14	7	11	13	S
Plover	Pocahontas	1,426	..	70.6	.....	95	16,30	44	2	43	9.94	.....	1.90	....	14	15	9	7	S
Ridgeway	Winneshiek	1,215	....	74.0	.....	95	30	55	10,21	33	9.34	.....	2.43	....	19	14	10	7	S
Rockford	Floyd	.....	..	...	...	...	.....	....	.....	.....	6.97	.....	1.30	...	10	21	7	3	SE
Ruthven	Palo Alto	1,435	..	72.0	.....	92	30	48	10	33	8.80	.....	2 00	....	11	18	4	9	S
Sheldon	O'Brien	1 406	....	71.2	.....	90	30	47	10	31	5 90	.....	2.22	....	10	16	6	9	S SW
Sibley	Osceola	1,506	..	71.0	†0.7	92	16,24,29	45	10	40	5.58	†2 57	1.59	....	12	14	12	5	SW
Sioux Center	Sioux	...	....	71.0	.....	90	25	53	10,11	30	5.64	...	1.83	....	8	16	5	10	S
Spirit Lake	Dickinson	1,458	.	72 8	-1.3	93	24	53	8	36	5.41	†3.04	1.20	....	8	9	20	2	S
Storm Lake	Buena Vista	1,440	12	70.9	.. .	90	30	49	10	27	10.49	†6 70	4 80	..	15	16	9	6	S
Washta	Cherokee	1,157	..	.....	.....	.....	.....	.....	.....	...	10.02	.....	2.55	....	14	11	15	5	SE
Waverly	Bremer	942	....	72.0	.....	91	16,30	53	21	27	7.07	.....	2.39	...	13	12	12	7	S
West Bend	Palo Alto	1,197	8	72.2	0	93	16	54	10,21	28	8.36	†5.40	1.47	.	15	11	14	6	S
West Union	Fayette	1,115	....	.....	....	....	.....	.	.....	....	8.42	.....	2.62	....	10	17	0	14	SW
Average	.....	...	.....	....	71.9	-0.2	92.4	.....	49 9	.....	32.7	8.35	†5.15	.....	....	13	14	10	7	S

CENTRAL SECTION.

Amana	Iowa	721	25	73.9	† 0.2	92	17	51	1	24	6.17	† 2.06	1.32	...	11	12	11	8	SW
Ames	Story	926	21	72 8	- 2.2	94	16	53	20	34	8.06	† 3.61	1.98	....	17	22	5	4	SE
Baxter	Jasper	998	...	73.0	.....	95	16	51	10	28	6.60	.....	1.25	....	10	9	14	8	SW
Buckingham	Iowa	...	....	.....	.....	.....	.....	.....	.....	.....	7.66	.....	1.93	....	12	8	20	3	.....
Carroll	Carroll	1,265	11	72.2	- 0.9	95	16	47	10	35	9.52	† 6.30	2.15	....	15	22	1	8	.....
Cedar Rapids	Linn	733	19	74.7	† 0.1	94	16, 30	53	1	30	7.52	† 3.77	1.73	...	14	17	4	10	SW
Clinton	Clinton	609	10	74 2	† 0.1	95	17	41	1	34	7.79	† 4.45	3.25	....	16	8	16	7	SW
Davenport	Scott	529	31	75.0	- 0.3	92	17	53	1	31	6.38	† 2.74	2.45	....	15	16	9	6	SW
Delaware	Delaware	1,083	10	71.4	- 0.2	90	30	49	1	31	5.97	† 2.67	.96	.	13	13	13	5	S
Denison	Crawford	1,180	8	73 4	† 0 6	93	16	48	10	30	11.34	† 7.60	2 14	....	15	21	6	4	S
Des Moines	Polk	861	24	74 5	† 1.5	93	16	54	1	25	5.95	† 2.45	2.40	....	13	6	16	9	SW
De Soto	Dallas	866	..	76.1	.....	94	16	56	10,21	27	7.86	.....	1.64	....	11	22	6	3	SW
Dubuque	Dubuque	655	29	73.4	† 1.6	90	16	53	1	30	6.80	† 2.39	1.48	..	16	6	16	9	S
Fort Dodge	Webster	1,126	...	72.2	.....	94	30	50	21	31	.....		.....	....	....	13	9	9	SW
Galva (*o*)	Ida	1,290	8	71.8	- 1.7	92	30	51	10,21	35	10.39	† 6.97	3.90	....	14	....		....	S
Gilman	Marshall	1,053	...	.....	.....	.....	.....	.....	.....	.. .	7.88	.....	1 75	...	12	11	13	7	S
Grinnell [near]	Poweshiek	.....	..	72.1	....	88	16,30	53	1	22	11.57	....	3.00	....	11	9	11	11	SW
Grundy Center	Grundy	976	10	72.2	† 0.4	92	16,30	50	10	27	8.74	† 5.01	1.58	..	13	11	11	9	S
Guthrie Center	Guthrie	1,077	..	73.0	.....	95	16	48	10	34	9.27	....	3 62	....	13	6	21	4	SW
Harlan	Shelby	1,192	....	73.6	.....	95	17	50	10	34	12.63	.....	3.42	.	14	7	18	6	S
Independence	Buchanan	921	39	71 0	- 0.2	89	16	50	1	28	9 51	† 5.22	1.60	....	11	19	9	3	S
Iowa City	Johnson	644	11	74.5	† 0.6	94	17,30	50	1	29	6.89	† 2.76	1.38	...	11	15	11	5	S
Iowa Falls	Hardin	1,107	8	71.9	- 0.4	92	2	51	10	28	11.28	† 8.46	2.89	....	14	....	....	...	S
Jefferson	Greene	1,052	...	.....	.....	...	.....	....	.....	.....	10.65	.....	3.75	....	18	..	....	....	SE
Le Claire	Scott	576	...	.....	.....	....	.....	.....	.....	.....	7 57	.....	1.97	..	14	....	....	....	.....
Logan	Harrison	928	36	73.4	- 1.4	95	16	49	10	31	11.34	† 6.48	2 50		14	14	11	6	SE
Maquoketa	Jackson	688	8	72.8	- 2 7	92	30	45	1	31	8.80	† 5.61	1.25	..	14	20	5	6	SW
Marshalltown	Marshall	947	11	74 3	† 1.9	96	30	52	10	30	7.69	† 3.35	1.55	....	14	10	15	6	SW
Monticello	Jones	.....	47	74.4	† 1.5	92	30	49	1	30	7.80	† 3.66	1.95	....	10	7	14	10	SW
Mt. Vernon	Linn	847	..	73.9	.....	95	17	51	1	31	7.20	.....	1.34	.	12	15	4	12	.....
Newton	Jasper	592	14	72.4	- 2.4	91	16	52	10	23	7 91	† 4 72	1 55	....	11	16	10	5	S
Odebolt	Sac	1,356	..	73.7	.....	95	16	47	10	34	13.57	.....	2.10	....	13	18	5	8	.....
Olin	Jones	760	....	72.6	.....	90	14, 15, 17	49	1	29	8 47	.....	2 13	....	9	12	15	4	W
Onawa	Monona	1,053	....	74.4	.....	94	16	52	10	28	13.48	.....	3.92	....	19	20	5	5	SE
Rockwell City‡	Calhoun	1,219	....	71.4	..	94	16	51	10	34	9.85	.....	2.10	..	9	21	4	6	.....
Sac City	Sac	900	22	72.0	- 4.1	94	16	50	10	33	12.61	† 8.88	3.97	....	14	19	3	9	S
Sioux City	Woodbury	1,122	13	73.8	† 1.2	92	30	50	10	29	5.03	† 1.63	1.59	....	14	13	11	7	S
Stuart	Guthrie	.....	....	74.5	.....	94	16	53	10	28	10.34	.....	2.14	...	10	25	0	6	S
Tipton	Cedar	807	..	73 0	..	92	17	50	1	28	8.90	.....	1.75	..	12	9	15	7	SE, S
Vinton *	Benton	800	11	73.0	- 0 2	91	16,30	58	20	.....	8 75	† 6.16	2.09	..	14	22	1	8	SE
Waterloo	Black Hawk	862	22	72 7	- 5.1	94	30	52	10	29	10.61	† 6.63	3 45		13	14	7	10	SW
Wilton Junction	Muscatine	683	....	75.2	.....	96	17	52	21	30	8 46	.....	1.90	....	11	5	14	12	SW
Whitten (*a*)	Hardin	1,056	....	73.3	.....	93	16,30	49	10	31	8.45	.....	1.78	....	9	17	8	6	SW
West Branch	Cedar	.....	...	.....	.....	....	.....	.....	.....		7.68	.....	1.84	....	12	5	24	2	SW
Average	.....	....	....	73.3	- 0.5	93.1	.....	50.6	.....	29.8	8.84	† 4.73	.....	....	13	14	10	7	SW

CLIMATOLOGICAL DATA FOR JULY, 1902--CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC., IN INCHES.				Number rainy days.	SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	....	75 0	.....	95	16	52	10	31	8.67	.....	2.96	....	9	12	13	6	SE	
Albia	Monroe	945	...	72.2	.....	86	16, 17, 25	51	21	24	8 82	..	3 45	....	13	16	10	5	SW	
Atlantic	Cass	1,164	10	73.4	† 0.6	94	16, 30	50	21	37	9.36	† 5.79	2.30	...	13	4	17	10	SW	
Audubon	Audubon	1,301	....	73.0	- 0.2	94	16, 30	50	10	30	8.72	.....	1 89	...	12	20	5	6	SW	
Allerton	Wayne	.....	..	74.2	.....	93	16, 30	51	1	27	8.77	.....	5.41	...	11	4	22	5	SW	
Bedford	Taylor	.....	....	73.6	.....	94	30	51	21	32	7.63	.....	2 22	....	11	10	16	5	S	
Belknap	Davis	877	....	73 2	.....	96	29	48	1	32	6.68	....	2.44	....	12	17	12	2	S	
Bonaparte	Van Buren	.....	10	75.0	- 0 9	94	17	50	1	34	8 06	† 4.32	2.08	....	9	...	..		.....	
Burlington	Des Moines	544	....	75 8	.....	93	24	60	22	28	6 27	.....	1.79		16	16	8	7	SW	
Bussey	Marion	....		.....	.....	....	.....	.....	.....	.....	7.26	.....	3 10	..	4	...	....	....	.....	
Chariton	Lucas	1,042	....	73.8	.....	91	16, 30	52	1, 25	26	10.07	.....	3.53	....	15	12	14	5	S	
Clarinda	Page	1,069	11	75.0	- 0.8	95	16	53	10, 11	32	8.02	† 3.69	2 87	..	16	15	14	2	S	
College Springs	Page	.....	10	74 3	- 0.1	93	30	54	10	28	9.91	† 4.57	3.30	....	12	21	8	2	SW	
Columbus Jct.	Louisa	595	....	.....	...	95	30	.....	....	.....	10.90	.....	4 00		14	24	4	3	SW	
Corning	Adams	1,127	9	73.2	- 0.3	92	15, 16	51	21	27	8.72	† 4.69	2 65	....	10	15	11	5	SW	
Council Bluffs	Pot'wat'mie	990	...	75.0	.....	97	16	54	8, 9, 10	29	10.23	.....	2 69	....	14	13	6	12	SE	
Cumberland	Cass	.....	....	.....	.....	.....	.....	.....	.....	....	8.99	.....	2.62	...	7	22	2	7	S	
Danville	Des Moines	715	....	.....	...	....	.....	.....	.....	.....	7 73	.....	2.11	....	12	23	3	5	.....	
Earlham	Madison	.....	....	72.5	.....	92	16	50	11, 21	31	8.46	.....	2.19	...	14	11	11	9	SE	
Eldon	Wapello	630	....	7.50	.....	95	30	50	1, 12	37	5.63	.....	1.62	....	10	23	0	8	S	
Emerson	Mills	1,053	....	.....	..	...	.....	....	....	.....	8.47	.....	4.00	....	6	....	..	...	.....	
Fairfield	Jefferson	.....	..	75 4	† 0.6	95	17	50	1	30	11.40	.....	4 20	....	13	13	17	1	SW	
Fort Madison	Lee	516	53	.....	.....	...	.....	.....	....	.....	7.91	† 4.01	2.17	..	16	4	18	9	SW	
Greenfield	Adair	.....	10	72.2	- 1.8	90	16	50	1	30	10.87	† 6 43	2.29	.	12	13	12	6	S	
Hopeville	Clarke	.....	....	..	.....	..	.....		.....	.....	7 89	.....	2.67	.	10	...	..	...	.....	
Indianola(*b*)	Warren	969	10	73.4	- 0.8	92	16	53	1	32	.....	....	...	....	....	....	..	....	.....	
Keokuk	Lee	619	30	76 5	- 0 5	94	17	54	1	23	4.87	† .54	2.13	...	11	13	14	4	SW	
Keosauqua	Van Buren	644	9	76 0	- 0.4	95	17, 30	50	1	31	6 43	† 2.61	1.83	....	11	...	.	....	.....	
Knoxville	Marion	910	....	74.6	- 0.9	92	16, 30	52	1	27	8 23	... ..	2,60	....	9	17	6	8	SW	
Lacona	Warren	.....	....	....	.....	...	.....	.....	.....	.....	8 50	.....	3.50	..	10	7	16	8	.....	
Lenox	Taylor	1,250	....	72 6	.....	91	16	53	10	24	7.86	.....	2.72		13	19	8	4	S	
Leon	Decatur	.....	....	75.0	.....	92	16	53	1	29	10.11	.....	4 16	....	14	20	6	5	S	
Mt Ayr	Ringgold	1,236	8	74 0	- 1.2	93	30	53	10	29	7.44	† 2 61	2.58	....	13	8	18	5	SW	
Mt. Pleasant	Henry	729	....	75 8		95	17	55	22	31	8.70	.....	2.50	....	13	6	24	1	SW	
Omaha, Neb.	Douglas	1,113	32	74.8	- 1.4	96	16	56	10	25	7.28	† 2 65	1.91	....	13	13	11	7	S	
Osceola	Clarke	1,130	....	73.6	...	91	16, 30	51	1	28	10.33	.....	3.80	....	14	15	7	9	NW	
Oskaloosa	Mahaska	843	18	73.4	- 1 3	92	30	51	1	25	7.71	† 3.99	3.13	....	11	20	0	11	SW	
Ottumwa	Wapello	630	7	75.8	† 0.2	92	17	58	1, 10	20	7.32	† 3.07	3.81	....	5	11	15	5	SE	
Ovid	Wayne	992	8	73.6	- 1.7	91	16, 30	52	1	27	11.57	† 8.04	6.25	....	14	8	8	15	S	
Pacific Junction	Mills	960	....	75.0	.....	94	16	52	10	28	9 88	.....	4.70	....	13	9	16	6	S	
Red Oak	Montgom'ry	1,033	....	74.1	.....	90	16	56	21	22	11.19	.....	6.02	....	10	11	16	4	SE	
St. Charles	Madison	1,070	....	73.8	.....	99	17	53	1	31	12.77	.....	4.24	....	14	16	8	7	SW	
Sigourney	Keokuk	768	....	75.0	.....	97	17, 29, 30	49	1	34	11.03	.....	3 47	....	11	21	9	1	NW	
Stockport	Van Buren	.....	....	.....	...	.....	.....	.....	.....	....	9 34	.....	4.40	...	15	13	8	10	SW	
Thurman	Fremont		....	75 1	....	94	15, 16	52	2	32	8 80	....	3 93	....	10	16	7	8	SW	
Villisca	Montgom'ry	1,058	8	74.1	† 0.1	93	16	52	11	26	10.52	† 5.97	3.45	..	11	18	7	6	SW	
Wapello	Louisa	578	....	73.5	.....	88	17, 30	52	11	24	8.11	.....	3.07	..	15	16	13	2	SW	
Washington	Washington	769	11	72.5	- 3 1	91	16, 17	48		23	7.80	† 3 96	2 50	...	10	....	....	...	SW	
Winterset	Madison	1,129	10	73.6	† 0 2	91	16	55	1	27	11.08	† 5 77	3.44	..	12	12	12	7	S	
Woodburn	Clarke	961	..	...	.....	....	.....	...	.....	.....	9.83	.....	3.55	....	13	14	11	6	SW	
Average	.....	...	....	74.2	- 0.7	93.1	.....	52.2	.....	28.7	8.82	† 4 33	.....	....	12	14	11	6	SW	
Av. for the state	.....	.....	....	73 1	- 0 5	92 9	.....	50.9	.....	30.4	8 67	† 4 74	.....	....	13	14	10	7	SW	

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. §Not supp'ied with self registering instruments.

DATES OF THUNDERSTORMS.

NORTHERN SECTION.

Alta, 1, 2, 4, 5, 8, 9, 11, 17, 23, 25, 30.
Dows, 2, 3, 5, 6, 8, 9, 17, 18, 19, 20, 21, 23, 24, 25, 26.
Elkader, 2, 3, 5, 6, 8, 16, 17, 22, 30.
Northwood, 2, 5, 6 12, 24, 25, 30.
Osage, 2, 3, 5, 6, 8, 24, 25, 30.
Ridgeway, 2, 3, 5, 6, 8, 14, 15, 16, 17, 19, 22, 24, 25, 30.
Sioux Center, 3, 4, 5, 8, 12, 25, 30.
Storm Lake, 1, 2, 4, 5, 8, 9, 17, 23, 25, 30.
Waverly, 2, 3, 6, 8, 9, 16, 17, 25, 31.
West Bend, 2, 6, 12, 14, 25, 30, 31.

CENTRAL SECTION.

Amana, 2, 8, 13, 14, 17, 18.
Ames, 6, 8, 9, 18, 24.
Carroll, 2, 5, 6, 7, 9, 12, 17, 25.
Davenport, 2, 3, 6, 7, 8, 9, 14, 16, 17, 18, 24, 25, 26, 27.
Des Moines, 2, 3, 6, 8, 9, 13, 17, 18, 24, 25, 26.
Grinnell (near), 2, 3, 4, 6, 7, 8, 9, 13, 14, 18, 26.
Grundy Center, 2, 3, 6, 8, 9, 23.
Harlan, 2, 3, 5, 6, 7, 8, 9, 12, 14, 17, 18, 20, 26, 30, 31.
Independence, 17.
Iowa Falls, 2, 3, 6, 8, 9, 17, 19, 21, 25.
Jefferson, 1, 2, 5, 6, 8, 9, 12, 13, 17, 18.
Mt. Vernon, 3, 8, 9, 18, 26, 27.
Olin, 2, 3, 6, 8, 16, 17, 22, 23, 25, 26.
Onawa, 1, 2, 3, 5, 8, 9, 14, 17, 18, 20, 26, 30.
Sioux City, 1, 2, 3, 4, 5, 6, 8, 13, 17, 19, 30.
Tipton, 3, 6, 7, 9, 14, 16, 17, 18, 26, 27.
Waterloo, 2, 3, 23.
Wilton Junction, 18, 24, 25.
West Branch, 3, 17.

SOUTHERN SECTION.

Atlantic, 1, 5, 7, 8, 12, 17, 18, 25.
Audubon, 5, 26.
Allerton, 14, 17, 18.
Chariton, 14, 17, 24.
Columbus Junction, 1, 2, 3, 6, 7, 8, 9, 10, 14, 17, 19, 20, 21, 27.
Corning, 2, 6, 7, 8, 9, 12, 17, 18, 19, 26.
Earlham, 2, 6, 7, 9, 13, 17, 18, 26.
Greenfield, 2, 5, 6, 7, 8, 9, 12, 14, 17, 18, 23, 24, 25, 26.
Keokuk, 1, 2, 7, 9, 14, 17, 18, 21, 25, 26, 27, 31.
Oskaloosa, 2, 8, 9, 14, 17, 19.
Omaha, 1, 2, 4, 5, 6, 7, 8, 9, 12, 17, 18, 19, 25, 26, 30, 31.
Red Oak, 2, 8, 9, 14, 17, 18, 24, 26.
Sigourney, 2, 6, 8, 9, 14, 17, 18.
Stockport, 1, 2, 3, 7, 8, 9, 14, 17.
Villisca, 1, 7, 8, 9, 12, 14, 17, 19, 24, 25, 26, 27, 30.
Wapello, 11.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JULY, 1902.

STATIONS.		DATE.																															Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Alton.....	Max...	77	90	92	88	89	90	86	89	76	82	85	90	90	92	92	95	92	75	78	75	85	84	90	90	91	85	82	89	91	94	87	86.8
	Min...	54	66	69	69	69	66	60	65	62	52	55	59	63	65	63	67	65	64	65	57	55	57	63	66	63	63	63	69	65	67	67	63.1
Albia.....	Max...	..	79	82	81	83	83	82	72	71	72	76	84	73	82	81	86	86	72	73	72	75	80	84	83	86	84	72	80	85	85	85	79.7
	Min...	53	64	72	72	72	63	71	68	63	55	58	62	61	66	68	72	69	66	65	59	51	60	63	66	68	65	65	66	68	70	67	64.8
Algona	Max...	76	85	88	89	85	85	83	79	69	76	81	86	87	88	87	94	86	76	67	74	82	85	88	88	91	80	80	84	90	94	83	83.4
	Min...	56	63	61	71	65	62	62	65	59	51	53	56	66	65	56	71	66	63	61	54	56	59	62	68	64	63	57	60	67	70	63	61.8
Allerton...	Max...	73	86	89	85	87	87	84	89	77	77	81	86	88	88	90	93	92	78	77	74	82	85	86	88	89	86	79	87	88	93	87	84.7
	Min...	51	65	69	69	70	63	64	64	63	55	56	59	64	66	69	72	65	63	67	59	56	58	62	67	65	64	67	65	65	67	67	63.8
Alta	Max...	74	82	85	80	81	82	79	70	68	74	78	85	82	84	84	90	81	68	67	74	78	80	85	85	88	73	77	82	86	90	82	79.8
	Min...	56	64	64	69	61	60	59	63	53	49	54	56	60	61	59	70	64	61	60	56	54	57	62	68	62	62	58	59	67	65	63	60.5
Amana ...	Max...	70	84	88	89	88	83	85	87	77	76	78	85	89	88	86	91	92	77	74	72	80	83	86	89	89	85	77	84	89	91	85	83.8
	Min...	51	64	67	70	72	65	69	65	64	55	58	61	69	66	65	68	70	66	65	58	53	57	59	65	68	68	64	63	64	68	67	64.0
Ames	Max...	70	84	89	86	86	87	85	80	72	79	82	90	86	88	85	94	88	73	74	74	81	83	86	87	89	81	80	85	89	93	85	83.6
	Min...	55	55	55	..	66	62	62	60	63	54	58	57	65	64	65	71	68	66	64	53	57	58	63	66	65	64	64	61	67	67	62	61.9
Atlantic ...	Max...	75	85	83	84	85	85	81	81	70	78	81	87	87	90	90	94	91	77	76	76	87	84	88	87	89	83	79	87	88	94	88	84.4
	Min...	57	66	71	71	71	62	58	65	64	51	52	59	65	61	63	71	66	65	64	55	50	55	60	68	67	61	61	61	67	67	65	62.5
Audubon ..	Max..	75	86	88	84	84	88	82	76	71	78	81	88	88	90	88	94	92	78	75	75	84	84	90	90	92	82	80	88	90	94	87	84.6
	Min...	56	65	68	71	62	60	59	64	61	50	54	57	60	62	63	73	66	65	63	58	54	55	61	66	63	60	62	61	65	66	65	61.5
Baxter.. ..	Max...	70	82	88	85	85	82	80	82	77	78	79	85	88	83	85	95	93	75	75	74	82	84	85	88	88	85	80	85	89	91	88	83.6
	Min..	52	62	68	70	71	62	64	64	62	51	56	58	63	66	62	70	65	65	63	58	54	56	61	66	66	64	63	61	65	66	65	62.5
Bedford. ..	Max...	73	84	83	83	85	85	81	86	79	77	80	85	81	89	91	91	82	78	76	75	83	82	87	87	82	86	81	82	84	94	88	83.2
	Min.	58	62	76	71	71	64	62	66	65	54	54	60	62	64	65	71	67	65	64	63	51	59	62	66	66	64	64	65	67	66	67	63.9
Belknap...	Max...	72	81	89	86	87	86	91	87	77	76	79	85	87	84	85	89	92	80	80	74	82	83	85	87	88	86	78	85	96	91	85	84.3
	Min...	48	62	71	73	67	63	67	65	62	55	55	57	60	60	65	69	69	65	65	58	55	58	60	60	65	65	65	64	64	65	66	62.0
Bonaparte.	Max...	70	86	90	88	89	89	85	90	75	78	80	88	90	90	88	91	94	80	81	73	83	83	86	92	90	88	79	86	90	93	89	85.7
	Min...	50	65	70	69	72	65	68	68	64	58	55	60	66	63	68	68	66	67	69	60	55	57	60	63	66	67	67	67	65	68	69	64.4
Britt.....	Max...	76	86	89	88	84	87	85	83	71	78	80	87	91	88	86	92	87	78	68	74	82	83	89	91	90	85	86	85	88	92	85	84.3
	Min...	55	62	67	70	67	62	59	63	58	48	52	55	64	61	55	70	65	65	60	54	51	56	59	67	64	63	56	56	65	67	63	60.6
Burlington.	Max...	70	84	89	88	89	88	85	88	75	75	79	85	88	85	85	91	91	79	80	74	79	83	84	93	90	85	80	83	88	92	91	84.4
	Min...	61	65	69	67	72	68	71	69	67	63	69	61	69	64	70	79	70	63	67	62	68	60	64	65	66	70	66	67	68	70	73	67.2
Carroll	Max...	77	86	89	85	82	85	82	76	71	78	81	88	87	89	87	95	82	75	72	77	86	84	88	88	90	80	82	88	93	92	89	84.0
	Min...	55	50	65	70	62	60	60	64	64	47	52	53	64	65	60	72	65	62	62	57	52	55	60	65	66	60	58	57	65	65	59	60.4
Cedar Rap.	Max...	70	85	90	90	90	88	85	85	77	76	78	86	91	90	87	94	92	75	72	70	80	85	86	90	93	86	81	83	91	94	85	84.7
	Min...	53	64	66	71	73	65	67	66	65	58	60	62	70	67	68	64	67	65	65	59	56	58	60	67	69	68	65	64	65	70	68	64.7
Chariton...	Max...	74	85	88	84	86	86	82	87	78	76	79	86	86	87	86	91	89	79	77	73	80	80	84	85	86	84	79	86	87	91	86	83.5
	Min...	52	65	70	70	71	63	65	66	63	54	59	60	65	65	65	72	77	65	65	58	55	60	62	66	52	64	64	64	67	79	63	64.1
Charles Cy.	Max...	68	83	92	88	89	86	84	77	83	77	78	85	88	87	88	93	86	80	73	73	79	83	85	93	86	81	82	85	89	98	91	84.2
	Min...	54	60	67	70	65	63	60	64	63	50	58	58	62	63	55	53	70	64	62	56	51	55	57	65	65	65	59	54	64	70	65	60.9
Chester...	Max...	68	80	85	85	82	80	83	78	80	76	83	84	89	88	88	92	86	80	67	70	82	84	82	85	88	79	83	84	86	90	85	82.3
	Min..	63	60	63	68	70	68	68	60	62	46	56	55	60	61	64	60	63	63	55	55	50	54	56	62	65	63	58	61	61	63	63	60.5
Clarinda...	Max...	74	88	91	86	87	90	85	91	80	80	84	91	91	93	94	96	89	81	79	77	84	85	90	87	91	86	81	88	91	95	90	86.9
	Min...	58	68	70	70	71	63	63	64	62	53	53	59	63	65	66	68	67	65	62	58	52	59	62	65	64	62	63	65	66	67	65	63.2
Clear Lake	Max...	67	79	85	88	82	81	81	79	72	89	90	94	95	92	90	96	90	77	67	77	90	93	96	87	82	77	87	95	94	96	92	85.8
	Min...	55	60	65	70	63	61	64	64	63	56	50	54	62	61	53	65	66	63	60	54	54	60	58	60	64	62	58	56	64	68	64	60.6
Clinton....	Max ..	74	85	92	92	91	91	91	91	78	80	81	87	91	89	86	89	95	78	78	68	80	87	85	90	92	89	80	85	90	94	88	86.0
	Min .	41	61	65	70	71	66	72	78	65	60	55	55	64	66	65	57	65	63	64	59	52	53	58	59	64	67	64	62	62	65	67	62.3
College Sp.	Max...	79	86	90	80	85	81	81	89	78	77	80	85	87	89	92	87	88	78	77	75	80	85	87	87	88	82	80	86	89	93	89	84.1
	Min...	58	63	70	70	71	71	61	61	64	54	56	62	66	65	70	68	68	64	63	58	64	62	62	67	65	62	64	66	67	70	66	64.5
Colu'bus J.	Max...	72	87	90	90	91	90	88	90	77	78	81	87	90	87	86	90	92	93	82	74	73	83	84	90	90	90	78	87	92	95	93	86.0
	Min...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.....
Corning ...	Max..	73	85	87	85	85	84	81	86	70	75	80	82	86	89	92	92	87	78	76	74	80	81	86	84	87	78	76	84	87	91	84	82.9
	Min...	57	67	71	77	70	63	60	67	63	52	53	59	65	65	65	70	66	65	63	55	51	58	61	66	67	61	62	64	67	68	68	63.4
Co. Bluffs..	Max...	75	89	90	85	88	88	83	75	69	78	83	89	91	93	95	97	90	75	78	76	83	86	91	85	91	77	81	88	93	95	89	85.4
	Min...	57	67	73	74	68	64	63	54	54	54	56	60	63	74	69	74	68	64	63	60	56	63	66	65	66	64	62	66	75	78	65	64.7
Davenport.	Max...	70	83	89	88	89	88	89	88	76	76	76	87	90	85	86	90	92	77	76	67	80	82	84	87	89	86	77	81	88	91	87	83.7
	Min ..	53	64	67	74	74	68	73	69	66	62	61	63	70	67	70	59	66	67	67	60	55	61	64	69	70	70	65	66	67	72	72	66.2
Decorah....	Max...	72	78	88	87	86	82	81	78	77	68	76	82	86	90	83	89	86	76	68	68	78	80	81	84	86	82	80	84	85	88	82	80.8
	Min...	53	62	73	72	73	64	62	63	60	52	62	58	58	66	58	60	62	64	62	57	54	56	58	62	68	65	63	59	60	70	64	61.9
Delaware..	Max...	72	78	88	87	87	82	89	85	75	77	76	85	87	89	86	87	89	68	70	64	78	80	87	88	88	85	78	83	88	90	92	82.2
	Min...	49	61	64	68	69	62	64	64	63	52	56	57	65	64	59	56	62	60	60	55	50	55	56	64	67	65	61	59	61	66	63	60.5
Denison...	Max...	75	84	87	83	83	83	83	75	68	75	79	86	85	85	86	93	86	75	71	74	80	82	87	87	88	80	78	84	88	91	83	85.3
	Min...	56	64	66	61	61	60	53	63	62	48	55	60	66	62	60	68	63	62	63	58	51	56	63	69	66	62	57	60	69	78	66	61.5
Des Moines	Max...	71	85	89	85	86	86	82	78	74	76	79	87	85	91	85	93	91	75	75	75	81	81	85	87	88	81	80	86	88	91	88	83.4
	Min...	54	65	73	73	72	64	65	66	64	58	61	62	67	69	69	74	69	67	63	60	58	61	64	67	65	65	65	65	69	70	69	65.6
De Soto....	Max...	75	87	92	89	90	90	86	81	76	77	85	82	91	92	90	94	90	75	77	76	83	85	89	90	91	85	81	89	90	93	85	85.7
	Min. .	57	67	74	74	74	67	66	68	65	56	58	61	70	69	69	73	68	65	67	61	56	61	65	70	71	67	66	66	69	72	71	66.5
Dows	Max...	79	84	92	94	94	90	84	87	87	78	79	85	85	87	84	92	88	70	67	72	80	83	84	85	87	84	80	82	87	82	90	83.9
	Min...	55	61	66	71	60	60	60	65	62	50	56	58	65	63	58	66	66	63	61	54	55	57	59	60	66	59	60	58	65	64	68	61.0
Dubuque...	Max .	70	81	87	87	87	84	88	85	78	79	76	85	88	88	86	90	87	69	69	66	79	81	86	87	88	84	81	84	86	90	83	82.5
	Min ..	53	63	67	63	73	65	67	67	65	61	61	61	68	68	67	60	63	64	64	56	54	58	61	66	70	69	64	64	64	70	66	64.3
Earlham...	Max ..	73	84	88	84	85	85	82	85	75	77	81	87	85	89	85	92	89	76	75	75	80	81	86	86	87	82	80	85	88	91	86	83.4
	Min ..	52	65	69	70	70	62	60	65	62	51	50	56	60	63	62	70	66	65	64	57	50	54	61	64	65	61	61	61	65	65	64	61.6
Eldon	Max ..	71	85	90	89	89	89	84	89	75	80	79	87	90	90	89	93	94	81	80	74	84	83	86	90	92	89	78	87	92	95	92	86.0
	Min..	50	65	70	71	69	63	70	69	64	56	54	50	64	62	67	73	67	66	67	61	55	58	64	66	67	68	66	66	64	64	70	64.1
Elkader....	Max ..	75	82	90	91	90	85	87	80	80	82	77	89	91	92	92	94	92	69	72	69	86	85	90	91	92	90	88	90	92	95	88	86.0
	Min ..	54	62	66	71	73	65	63	64	65	53	55	57	62	63	58	58	67	62	63	55	50	55	57	63	66	67	63	60	59	67	64	61.5
Fairfield...	Max...	70	87	92	91	91	90	87	90	78	80	80	89	92	88	86	93	95	81	81	80	84	84	87	89	91	90	79	88	91	94	91	86.7
	Min...	50	65	65	68	71	64	70	68	64	56	54	60	64	63	67	70	68	66	66	60	54	57	61	65	66	68	67	66	66	68	71	64.1
Fayette....	Max...	70	81	82	..	..	.	80	82	77	78	77	85	88	88	87	91	86	68	69	69	80	84	83	87	87	83	82	84	88	92	83	81.8
	Min...	52	61	52	..	..	..	62	62	60	50	53	58	61	61	55	59	64	62	61	52	49	54	55	63	58	63	61	58	60	68	63	58.5
Ft. Dodge.	Max..	72	83	88	86	84	85	83	85	86	84	86	85	90	88	86	93	93	72	69	70	80	82	87	88	90	78	84	85	90	94	85	84.1
	Min ..	53	62	62	70	60	60	58	59	60	59	60	58	59	57	57	71	68	63	60	58	50	55	59	62	60	62	58	54	67	68	63	60.4
Galva.....	Max..	..	88	87	84	85	85	83	75	71	76	80	87	85	89	86	91	84	72	71	73	86	83	88	88	90	76	87	85	89	92	84	83.1
	Min .	..	56	64	70	61	60	57	62	58	51	..	56	65	60	59	72	64	62	62	56	51	53	61	68	66	61	55	59	66	63	64	60.6
G. Meadow	Max...	73	78	90	85	84	84	80	80	78	78	75	82	85	86	85	88	86	68	67	68	73	80	82	85	85	82	80	82	85	89	83	80.9
	Min...	54	60	65	65	72	63	64	63	61	52	56	59	64	62	56	56	67	62	60	55	57	57	57	63	64	64	61	61	60	65	62	60.9
Greene.....	Max...	71	84	90	88	87	82	83	80	82	80	80	86	88	87	89	92	89	69	71	74	84	85	88	90	89	83	85	89	91	93	86	84.4
	Min..	54	62	67	70	72	63	61	64	60	50	56	59	63	62	58	66	70	64	62	57	52	55	57	65	66	64	62	59	64	69	65	61.9
Greenfield.	Max...	71	83	85	87	86	83	81	85	75	71	75	83	85	85	86	90	88	77	76	71	79	84	84	68	67	62	62	62	63	64	69	65	62.4
	Min...	50	65	68	70	67	63	60	66	63	52	55	58	57	63	63	65	68	65	65	56	60	54	68	67	62	62	62	63	64	69	65	62.4
Grinnell(n)	Max...	69	81	86	85	86	81	80	79	72	71	75	82	84	81	80	88	86	73	72	69	78	80	83	85	85	80	78	80	85	88	83	80.2
	Min...	53	63	68	75	72	63	67	64	63	54	60	62	62	62	65	70	67	66	64	58	57	59	63	67	66	65	63	63	66	69	67	64.0
Grundy C'r	Max...	71	82	85	89	87	87	81	80	72	76	77	81	87	87	86	92	87	71	72	70	80	81	85	88	87	83	80	84	88	92	86	82.5
	Min. .	52	62	65	69	71	62	64	65	62	50	57	58	66	63	60	68	63	63	63	57	53	57	58	65	67	62	62	60	64	67	65	61.9
Guthrie Cr	Max..	73	85	90	86	85	86	85	81	76	76	82	88	87	89	87	95	91	78	75	77	81	83	88	90	91	82	81	86	90	94	86	85.9
	Min...	54	62	68	68	62	60	57	62	59	48	50	55	62	60	61	70	66	64	62	57	49	49	60	64	64	60	59	58	64	65	64	60.1
Hampton..	Max...	69	83	88	86	85	87	82	78	72	79	81	86	88	87	87	93	86	71	68	73	84	83	86	89	85	80	84	86	89	94	83	83.1
	Min...	55	61	66	71	68	62	63	64	64	52	57	57	68	62	60	59	70	63	62	56	54	60	58	66	66	63	60	58	64	68	66	62.0
Harlan.....	Max..	81	91	90	86	86	87	88	88	77	81	83	88	91	90	91	93	95	81	75	73	83	85	89	88	91	80	82	88	89	92	85	86.0
	Min...	57	65	70	71	62	60	56	63	63	50	52	56	63	60	64	72	64	63	63	56	52	55	55	65	63	60	60	62	64	66	64	61.2
Humboldt.	Max...	75	84	88	87	83	84	84	78	68	76	80	85	86	88	86	94	86	76	70	74	82	83	86	88	90	75	81	84	89	94	84	82.8
	Min...	55	64	68	72	63	62	62	65	62	52	53	58	68	65	58	72	70	64	60	56	54	57	62	68	64	63	60	58	67	70	64	62.5
In'pen'nce.	Max'..	67	79	85	85	85	81	81	80	77	75	74	82	86	87	84	89	87	68	70	69	78	78	82	85	86	84	79	83	87	85	83	80.7
	Min...	50	61	64	68	71	63	63	65	63	52	57	59	65	63	61	61	64	62	62	56	52	55	55	64	66	65	61	61	62	66	64	61.3
Indianola..	Max...	72	85	89	85	88	84	82	82	73	72	81	87	85	89	86	92	89	73	72	..	82	81	..	86	88	83	79	91	88	87	85	81.6
	Min...	53	64	71	71	71	63	66	67	63	64	59	55	65	67	65	72	68	65	65	..	55	59	..	63	71	65	64	75	68	66	65	65.1
Iowa City..	Max. .	74	85	90	90	91	89	87	88	79	80	81	87	90	87	89	92	94	77	76	71	82	84	87	90	91	87	82	87	92	94	88	85.8
	Min...	50	63	66	69	71	64	73	67	64	57	55	58	68	65	66	65	68	64	64	58	53	56	60	63	66	68	65	63	63	68	68	63.2
Iowa Falls.	Max...	71	92	87	86	84	83	82	78	71	77	78	86	86	86	86	91	87	71	70	72	80	82	85	88	89	79	83	86	88	90	84	82.5
	Min...	53	62	66	70	69	63	61	64	58	51	54	57	66	62	60	70	61	62	60	57	52	59	58	65	65	62	61	57	64	67	65	61.3
Keokuk ...	Max...	69	88	90	88	89	90	84	91	76	75	80	86	90	87	88	94	94	85	80	73	80	82	85	89	91	86	83	83	91	93	91	85.5
	Min...	54	65	73	74	75	74	72	70	67	64	59	64	70	66	71	72	72	68	69	62	57	61	65	68	70	71	62	68	70	71	73	67.6

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JULY, 1902—Continued.

Station.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mean.
Lansing	Max	75	80	88	91	87	85	85	82	80	78	78	86	91	89	85	92	90	76	69	70	83	83	83	88	83	84	86	86	89	94	90	84.3
	Min	52	62	68	72	74	65	65	62	65	55	55	57	57	65	55	60	73	65	61	56	52	55	55	62	65	65	60	57	59	70	70	61.8
Larrabee	Max	83	91	90	85	85	87	87	76	73	83	83	93	83	87	89	90	88	72	72	78	83	88	91	90	92	79	83	88	90	93	88	85.4
	Min	57	63	65	68	62	60	58	60	57	47	52	57	61	61	57	68	64	59	58	56	52	54	60	67	63	59	53	57	65	67	58	59.6
Le Mars	Max	78	85	87	85	85	84	83	74	70	77	82	89	84	89	87	89	81	69	73	75	80	84	87	88	89	75	77	85	89	92	85	82.6
	Min	56	64	66	67	63	60	57	65	58	46	52	54	62	61	59	71	64	61	59	57	52	55	60	69	67	62	56	61	69	70	60	60.7
Lenox	Max	72	84	85	82	84	84	81	85	79	73	77	84	84	85	88	91	86	74	74	71	77	79	83	83	85	78	76	81	85	88	84	81.4
	Min	57	65	70	70	70	62	60	66	63	53	57	60	66	65	67	72	69	64	63	57	54	60	63	68	65	63	63	65	68	70	66	63.9
Leon	Max	74	87	93	89	87	87	85	88	89	78	82	87	87	90	90	92	91	81	77	77	81	82	86	86	83	85	81	86	88	91	91	85.6
	Min	53	67	70	70	71	64	63	65	61	56	58	58	64	66	68	72	69	66	67	58	57	57	63	68	66	61	66	65	66	68	68	64.4
Logan	Max	75	85	88	80	85	85	82	81	72	77	83	81	89	87	91	95	92	77	72	76	82	85	89	88	92	80	82	86	90	94	92	84.3
	Min	54	65	70	72	65	59	58	60	64	49	53	66	58	61	65	75	65	65	62	57	54	58	63	67	65	61	60	61	64	72	68	62.5
Maquoketa	Max	69	82	88	88	88	86	89	86	79	79	78	81	89	88	87	89	90	75	75	68	81	83	86	89	90	88	80	86	80	92	85	84.0
	Min	45	62	65	69	70	64	68	65	64	60	55	54	65	66	61	58	64	63	64	60	50	53	57	60	66	68	62	62	61	64	65	61.7
Marsh'lt'n	Max	71	84	91	89	89	86	85	85	76	79	80	87	91	91	88	95	92	71	76	74	83	86	90	92	93	86	82	87	93	96	90	85.7
	Min	51	62	66	70	71	62	65	65	63	52	58	50	66	61	63	71	67	65	63	58	53	57	59	65	66	65	63	63	65	68	66	62.9
Monticello	Max	73	82	88	89	88	85	85	83	82	84	87	88	89	88	85	90	88	84	82	80	77	78	85	88	87	85	82	88	89	92	88	85.3
	Min	49	62	62	62	65	67	62	60	72	75	75	75	70	69	63	69	70	62	52	58	53	52	58	60	63	65	63	61	65	60	60	63.6
Mt. Ayr	Max	76	85	89	85	87	86	81	87	..	78	80	85	86	88	91	92	89	79	76	74	82	82	87	87	87	85	82	87	90	93	87	84.8
	Min	56	65	69	69	69	62	61	64	65	53	56	58	63	69	62	70	67	63	61	58	55	57	62	66	64	62	63	63	66	67	67	63.1
Mt. Ple's'nt	Max	83	88	92	94	91	92	92	91	79	79	82	90	90	86	91	90	95	83	80	79	81	85	85	91	92	90	82	89	92	93	90	87.6
	Min	57	63	66	69	70	61	67	65	65	57	56	62	65	62	67	65	65	75	65	59	63	55	59	62	65	65	65	64	63	72	68	64.0
Mt. Vernon	Max	71	81	88	83	88	86	86	85	78	81	79	89	91	89	90	92	95	77	74	69	81	82	86	90	87	89	82	88	92	93	91	85.2
	Min	51	61	64	68	71	63	66	64	63	55	59	58	64	64	63	62	66	63	64	57	53	56	60	67	66	66	63	62	61	68	71	62.6
NewH'pton	Max	71	79	84	83	82	78	80	78	76	76	75	82	86	84	84	92	86	70	66	70	..	79	82	81	85	79	80	81	85	89	82	80.2
	Min	54	60	65	65	70	62	60	62	62	50	56	57	62	61	55	61	..	..	63	54	..	52	57	63	65	63	60	59	61	67	63	60.2
Newton	Max	68	81	88	80	86	82	82	81	73	74	76	85	85	86	85	91	81	71	72	70	78	80	85	87	88	82	76	82	85	90	85	81.3
	Min	53	62	63	63	70	61	67	64	60	52	58	65	62	65	65	70	70	65	61	58	56	61	64	67	68	64	62	61	66	67	67	63.6
Northwood	Max	70	79	84	85	8.	80	80	76	73	75	75	81	84	83	83	89	85	72	69	70	77	80	81	82	86	78	78	81	85	88	81	79.7
	Min	50	61	67	70	67	62	61	63	61	53	52	58	61	62	56	63	65	63	60	55	55	57	57	63	61	61	57	59	63	70	54	62.8
Odebolt	Max	..	88	89	85	81	88	84	82	72	81	84	90	90	91	90	95	93	78	74	78	85	86	91	91	94	85	84	89	92	95	89	86.4
	Min	56	65	61	72	61	61	60	61	60	47	55	57	65	61	60	72	65	62	63	57	55	55	61	69	66	61	55	56	57	64	63	61.0
Olin	Max	68	82	88	88	88	85	87	80	78	76	78	84	88	90	90	88	90	79	75	69	77	83	82	86	87	85	77	80	88	89	85	82.9
	Min	49	62	61	68	72	65	67	65	65	56	57	56	66	65	66	59	64	64	61	59	50	55	57	62	65	68	64	61	63	67	67	62.4
Omaha, N.	Max	73	88	90	85	85	86	82	85	69	76	80	87	88	90	91	96	87	74	77	75	79	84	87	81	88	76	79	84	89	92	86	83.7
	Min	50	67	74	75	63	63	63	67	62	56	61	63	69	65	72	77	65	65	63	60	60	63	68	72	67	61	61	67	71	67	67	65.8
Onawa	Max	76	88	88	86	86	87	86	83	70	77	84	89	89	93	93	94	90	72	74	76	82	85	89	87	90	83	78	87	91	91	87	84.7
	Min	58	65	72	72	62	62	62	65	62	52	56	61	66	63	66	74	66	64	62	58	56	60	65	61	70	65	60	65	70	71	65	64.1
Osage	Max	69	80	87	86	83	81	82	78	74	77	78	84	88	87	87	92	87	70	67	71	81	82	86	87	87	81	81	85	88	92	83	81.9
	Min	53	61	67	69	68	62	59	61	61	49	52	56	61	61	56	61	67	63	62	56	49	56	60	63	64	63	57	57	63	67	64	60.3
Osceola	Max	74	84	90	85	87	86	81	87	76	76	80	87	86	88	87	91	89	77	77	74	70	81	86	85	88	82	78	85	88	91	85	83.5
	Min	51	67	71	71	71	63	68	65	63	54	56	59	63	66	67	69	70	65	57	58	56	57	62	65	66	65	64	64	65	68	67	63.6
Oskaloosa	Max	69	83	88	87	87	84	82	87	77	77	78	84	87	85	85	90	91	76	75	72	80	82	84	87	89	83	77	84	89	92	86	83.1
	Min	51	63	69	70	72	63	72	65	63	56	55	61	65	64	61	71	63	65	65	57	55	58	62	66	67	65	64	64	65	68	65	63.8
Ottumwa	Max	70	84	89	83	89	87	81	89	76	74	77	84	88	85	85	9	92	78	78	72	79	81	83	86	88	84	77	63	88	92	86	83.8
	Min	58	66	72	71	74	75	74	72	66	58	50	65	69	65	70	74	72	68	68	62	59	63	65	63	70	69	68	68	69	72	71	67.8
Ovid	Max	72	85	87	84	86	85	80	87	78	77	78	85	86	87	87	91	90	79	78	76	81	78	81	85	85	87	78	85	87	91	90	83.5
	Min	52	64	70	70	70	63	65	65	63	53	57	58	64	67	65	71	65	65	67	57	55	60	62	66	65	63	66	64	66	68	66	63.7
Pacific Jct.	Max	76	89	89	91	89	87	85	88	75	79	8.	88	90	91	93	94	89	78	78	70	82	85	90	88	93	82	78	87	90	93	86	85.8
	Min	57	67	72	72	71	62	60	65	64	52	55	60	67	64	68	73	68	65	61	59	51	60	64	69	67	64	64	65	63	70	63	64.2
Plover	Max	84	87	87	86	85	85	83	79	70	76	8	87	88	87	85	95	87	72	65	74	81	85	90	88	90	82	84	90	90	95	82	84.0
	Min	48	44	60	66	60	59	55	65	58	45	47	53	64	63	54	66	65	58	57	53	48	53	55	64	63	58	53	58	60	63	58	57.2
Red Oak	Max	73	83	85	84	83	85	83	84	71	74	78	83	85	85	88	90	85	77	74	71	77	80	83	82	87	82	70	82	85	88	85	81.7
	Min	60	68	72	73	73	66	63	68	65	57	57	61	68	67	71	74	71	68	65	60	56	63	66	70	69	65	66	68	70	72	70	65.5
Ridgeway	Max	70	80	86	90	85	81	88	73	76	81	87	90	89	92	93	94	87	71	70	74	86	83	90	90	83	84	87	90	92	95	85	85.0
	Min	56	61	67	72	73	64	64	65	65	55	57	60	62	61	61	67	70	66	63	56	55	58	60	66	69	65	62	61	63	70	65	63.1
Ruthven	Max	74	85	85	85	83	85	82	81	69	76	81	88	82	88	84	86	86	74	65	75	82	82	87	88	90	80	80	81	90	92	84	82.4
	Min	56	63	65	71	63	63	62	65	57	48	55	55	66	61	56	72	65	62	59	57	59	58	62	69	62	60	54	61	67	70	63	61.6
Sac City	Max	75	85	88	84	82	86	82	75	69	76	81	88	85	88	87	94	81	74	69	75	81	83	89	89	90	72	80	86	89	93	85	82.7
	Min	57	64	65	72	62	61	60	65	61	50	54	58	68	64	60	73	66	62	62	57	55	57	62	67	62	62	57	57	56	65	64	61.4
St. Charles	Max	73	89	90	88	87	85	87	83	73	74	80	88	88	87	88	92	99	73	73	72	80	82	85	86	87	82	77	85	87	92	88	83.7
	Min	53	65	71	74	62	63	63	58	63	54	57	59	59	67	68	73	68	65	65	59	56	60	64	66	67	64	61	65	69	70	68	63.8
Sheldon	Max	75	84	86	87	82	83	87	71	73	77	80	88	85	90	86	92	85	76	70	77	82	82	86	89	88	75	78	83	89	90	89	82.8
	Min	57	63	63	62	63	62	58	65	57	47	52	51	62	63	53	71	60	60	59	57	52	55	61	67	63	60	52	53	66	70	58	59.5
Sibley	Max	76	84	87	84	84	85	84	76	72	79	83	90	83	91	87	92	87	66	69	79	84	84	89	82	90	78	81	87	91	88	90	83.2
	Min	55	63	63	69	62	62	54	66	56	45	48	50	60	63	52	67	58	60	59	56	52	53	59	65	65	60	51	55	67	70	58	58.8
Sigourney	Max	74	86	90	93	91	90	87	92	80	83	83	9	94	88	91	94	97	81	78	73	85	83	92	92	95	90	84	91	97	97	90	88.2
	Min	49	62	64	66	68	61	69	64	62	53	54	59	64	61	61	60	67	64	65	59	52	55	60	63	64	63	62	61	63	65	65	61.9
SiouxC'nt'r	Max	78	85	85	84	84	81	..	80	73	79	81	87	84	88	86	88	82	68	68	74	79	82	86	86	90	75	81	84	88	89	85	82.0
	Min	57	64	66	63	65	62	58	57	57	53	53	55	54	63	57	70	63	61	60	57	56	57	62	68	67	61	54	58	69	70	61	60.6
Sioux City	Max	77	85	88	85	85	86	85	73	70	76	82	91	88	91	87	90	83	68	74	76	81	83	87	88	89	72	77	84	91	92	86	83.6
	Min	58	65	70	67	63	63	66	68	57	50	59	62	68	65	65	78	62	61	62	57	57	64	68	71	68	62	57	67	71	70	65	64.1
Spirit Lake	Max	76	80	85	84	84	82	82	80	81	80	82	89	87	88	91	90	92	78	75	76	79	86	92	93	92	82	76	86	89	90	92	84.5
	Min	56	64	65	70	64	64	59	53	54	58	56	54	61	64	55	70	70	72	60	54	56	55	62	67	61	60	56	59	67	60	62	61.0
Storm L.	Max	72	81	84	81	80	82	78	72	68	73	78	85	86	85	83	89	82	69	68	74	70	79	84	85	86	72	77	82	85	90	83	79.7
	Min	57	63	65	69	61	62	64	63	59	49	58	58	65	61	60	73	67	61	61	56	55	59	64	68	66	62	57	63	68	65	62	62.1
Stuart	Max	76	85	91	88	85	88	86	79	76	77	83	85	88	91	89	94	93	80	77	77	78	80	91	90	92	85	83	88	90	93	85	85.3
	Min	55	64	70	70	70	62	60	66	63	53	60	62	65	65	66	73	65	65	64	59	55	60	67	66	67	62	62	63	66	67	63	63.7
Thurman	Max	70	88	88	87	88	88	85	88	82	80	85	87	89	02	94	94	89	79	78	76	81	85	88	85	88	80	79	87	89	92	87	85.6
	Min	62	67	73	72	72	62	60	67	64	53	53	60	67	62	67	74	68	65	64	58	52	62	63	70	69	61	54	66	70	70	64	64.6
Tipton	Max	73	84	85	85	85	83	89	87	75	74	77	83	87	84	81	87	92	75	75	68	76	82	83	85	87	87	76	80	87	90	84	82.2
	Min	50	63	65	70	72	64	66	65	65	55	60	60	68	68	65	62	64	68	65	59	54	56	60	64	68	70	68	64	65	68	63	63.9
Villisca	Max	74	83	85	88	86	83	85	88	81	80	79	85	87	88	91	93	88	78	77	75	78	82	88	87	87	82	79	84	87	91	86	84.0
	Min	58	67	63	70	71	68	65	72	64	57	52	58	57	64	67	69	67	65	63	56	62	67	66	65	64	62	62	65	67	67	65	64.2
Wapello	Max	74	74	85	85	85	86	83	85	85	71	73	82	85	81	80	87	88	75	75	72	75	78	81	84	86	84	74	82	84	88	87	81.1
	Min	57	57	68	71	71	70	72	71	61	62	52	62	69	65	69	67	72	67	69	61	55	61	65	67	63	71	69	66	67	72	73	65.9
Washin't'n	Max	69	84	89	87	88	85	84	81	76	75	85	84	88	85	84	91	91	78	75	70	80	81	83	86	88	85	76	83	88	90	87	83.0
	Min	48	61	65	68	69	63	69	66	62	55	54	58	63	61	65	65	65	61	62	55	51	57	60	63	66	65	64	62	64	67	68	62.0
Waterloo	Max	68	79	87	88	88	83	82	81	76	76	77	85	91	90	88	93	90	70	70	70	81	82	85	87	89	86	81	85	90	94	88	83.2
	Min	53	62	65	70	71	63	66	65	64	52	57	59	65	63	60	65	63	63	63	56	53	56	56	64	67	66	63	60	64	68	65	62.2
Waverly	Max	70	79	86	87	86	81	81	79	76	75	77	82	87	87	86	91	86	71	68	71	78	81	83	89	87	82	80	84	87	91	84	81.6
	Min	54	62	60	70	72	63	63	64	64	54	56	59	63	68	60	64	60	64	62	57	53	57	57	67	67	66	63	60	65	68	67	62.5
West Bend	Max	78	84	87	86	85	85	81	77	69	76	80	86	86	85	85	93	85	74	66	67	81	83	88	88	89	81	82	84	88	92	83	82.6
	Min	..	63	66	71	64	62	61	65	59	54	56	58	65	63	57	71	67	63	61	55	54	58	61	67	63	62	56	57	66	70	63	61.9
Whitten	Max	73	80	87	87	87	83	84	83	72	77	80	88	89	89	88	93	91	73	..	75	80	84	89	91	91	92	85	85	91	93	90	85.0
	Min	53	61	65	68	70	61	60	64	59	49	55	57	64	64	62	70	60	62	..	56	52	59	59	66	63	67	64	60	65	67	66	61.6
Wilton Jc.	Max	77	86	89	90	85	87	90	90	81	79	80	87	93	89	87	90	96	83	80	71	82	85	88	91	93	92	83	85	91	94	89	86.5
	Min	55	63	67	70	73	65	73	65	65	57	56	58	67	65	65	60	68	65	62	61	52	57	59	63	73	67	63	65	63	68	69	63.8
Winterset	Max	73	85	88	87	85	85	84	83	79	79	79	85	84	87	85	91	83	73	75	79	79	80	84	85	86	84	..	84	87	90	86	83.3
	Min	55	65	70	70	70	65	61	67	62	53	55	58	70	65	66	71	66	65	64	56	56	58	63	65	66	68	63	65	67	69	67	63.9

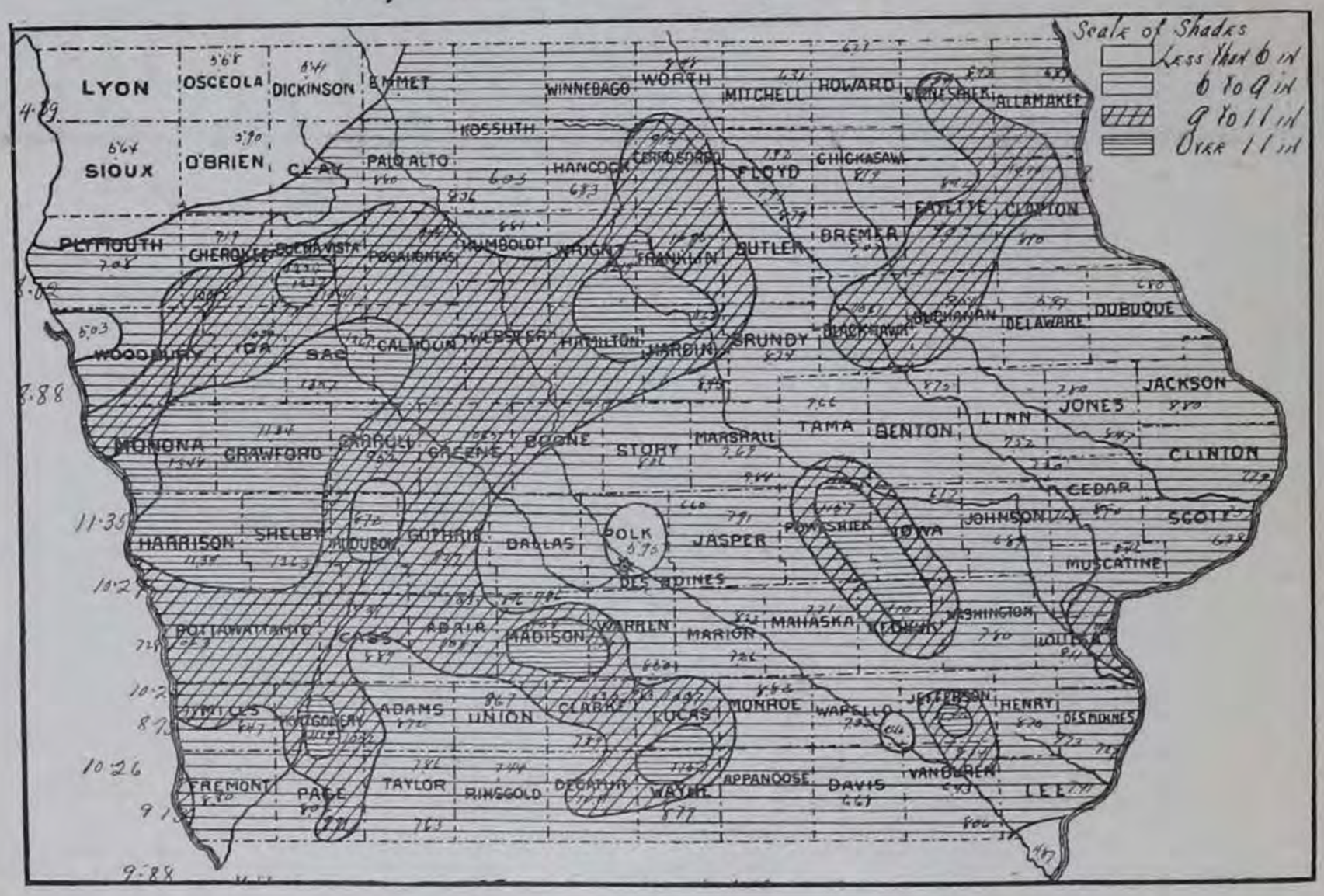
DAILY AND MONTHLY PRECIPITATION FOR JULY, 1902.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	.47	..	..	..	.95	.39	.10	2.96	..	....	....	.20	....	..	....	.11	2.80	....	....	....	....	....	....	....	T	.69	....	..	....	....	8.67
Albia	.05	1.06	.12	....	..	.45	....	T	2.10		..	.04	.09	.20	....		.80	3.45	.02	....	....	....	..	T	....	.30	'14	....	..	....	..	8.82
Algona	....	1.05	.50	....	.30	.80	....	1.00	.60	....	.40	..	....	....	....	....		..		....	....		....	...	1.11	.02	.	....	....	.25	....	6.03
Allerton	.12	.68	....	....	..	.44	.09	.15	.83	....	....	....	....	.33	....	...	1.33	4.08	..	....	T	..	.		..	.60	.12	....	....	....	....	8.77
Alta	....	1 43	.29	.29	.82	.55	..	4 08	1.21		.34	....	....	....	....	....	....	.15	.84	.06	....	....	....	....	1.46	.29	....	....	....	.43	..	12.24
Alta (near)	1.41	.60	..	.91	.69	....	..	4.01	1.33	..	.19	....	..		....	....	.12	.05	.77	.18	....	....	....	....	.95	.29	....	....	....	.86	....	12.37
Amana	....	.30	.35	..	....	.30	T	.94	1.10	....	....	....	....	.41	....	....	.48	1.32	....	.5	.	....	....	....	....	.01	.43	....	....	....	....	6.17
Ames	T	.98	.02	....	.11	1.00	.01	1.98	1.18	..	....	.01	.22	T	....	....	.10	.81	.44	T	.04	....	....	.33	....	.66	.09		T	..	.05	.	8.06
Atlantic	1 33	.39	....	....	.70	.38	.22	2.30	.48	..	....	.07	..	....	....	..	1.39	.50	....	.04	....	....		..	.44	1.12	....	T	..	....	....	9.36
Audubon	....	.48	....	....	1.05	1.78	.28	1.89	1.19	..	....	.14	..	....	....	....	.27	.93	.11	04	..	..	..	..	....	.56	..	..	..	..	..	8.72
Baxter	...	.70			...	.50	.20	1.25	1.00	....	....	....	.50		....	....	.75	1 00	T	....	.30	..			..	.	.40	....	..	..	....	6.60
Bedford	....	61	....	...	...	.51	45	.28	2.04	....	.05	..	....	.86	...	..	.18	2.22	....	....	....	..	....	T	..	.4	...	.02	....	..	....	7.63
Belknap	.20	1.17	.02		....	.13	....	1.06	.09	.02	....	....	....	.9	....	....	.23	2 44	.11	.	...	....	..	T	....	..	.22	..	....	....	....	6.68
Bonaparte	.07	.76	..	....	.	....	....	.48	1.10	....	....	....	..	1 75	..		.82	2.08		....	....	....	....	..	..	1.20	.25	.75	....	....	....	8 06
Britt	....	1 50	.43	....	.24	1.03	....	.65	.34	....	....	.17	..		....	....	....	.09	.31	.28	....	....	....	....	..	.06	....	..	..	.05	.39	6.83
Buckingham	....	1.93	1.22	....	....	1.19	..	1 25	.64	.	....	....	.04	....	....	....	65	.32	.20	.04	.03	....	....	....	....	....	.15	.	..	..	..	7.66
Burlington	.09	.75	.05	..	....	.01	.03	.96	.42	.05	....	....	....	1.41	....	....	.44	1.79	'67	T	....	.44	....	....	....	.02	.13	.01	....	....	....	7.27
Bussey	T	....	....	....	.85	....	....	....	2 48		....	....	.83	....	....	...	3.10	....	..		....		....	....	....	....	....	....	....	....	....	7.26
Carroll		1.75	T	....	1.14	1.70	.25	....	2 15	....	..	.25		....	....	....	....	....	1.78	....	....	....	T	....	..	.38	..	....	.12	....	..	9.52
Cedar Rapids	.02	1.45		..	.39	1.64	....	1.73	.21	....	....	....	.05	....	T	..	1.07	.07	.23	.12		....	....	..	.03	.36	.15	....	....	....	..	7.52
Centerville	....	.18	.71	....	....	.14	....	.73	.95	.08	....	..	....	.13	..	..	....	3 27	.25	....	....	....	..	.38	..	....	.18	....	....	....	....	7.00
Chariton	.02	.55	T	..	....	.32	02	15	3 53	..	....		.12	1.17	....	....	45	2.58	.02		....	..	....	.81		.21	.09	.03	....	..	....	10.07
Charles City	....	1.45	1.60	....	T	1.40	.07	.15	.70	....	..	....	..	....	....	....	T	....	.30	1.80	....	....	....	....	.20	.25		....	..	....	T	7.92
Chester	....	1.26	.18	....	.22	.58	.03	..	.22	.10	....	....	....	....	....	.70	....	....	....		....	.16		....	1.37	.09		....	..	..	1.30	6 21
Clarinda	.50	.30	....	..		.45	.61	..	2.00	.	....	.05	....	.07	..	..		2 87	.07	....		....	....	.07	.77	.17	..	.07	.02		....	8.02
Clear Lake	.....	2 40	.70	....	.25	1.00	....	.75	20	....	....	.....	....	....	..	....	.	.05	.40	.35	....	..	....	1.80	1.10	.15	....	..	.	T	....	9.15
Clinton	....	.20	.53	....	....	.45		.53	.63	....	....	....	....	.39	....	.93	.16	3.25	2 15	.03	....	.05	.13	....	.01	.03	.32	....	....	....	....	7 79
College Springs	.15	.85	....	....	..	.47	.54	.32	3.30	....	....	....	....	.42	....	..	.14	2.62	.02		....	..	....	....	....	.80	....	....	....	.28	....	9.91
Columbus Junction	.07	.43	.00	....		.75	.70	.45	1.14	.55	....		....	.60	..	....	58	.	4 00	.72	.40	..	....	.	T	.	T	.45	....	..	..	..	10.90
Corning	....	1.06		..	T	1.18	28	.08	1.58		....	.11	..		....	....	T	2.65	.17	T		....	.	T	.	1.40	.21	..	....	....	....	8.72
Council Bluffs	.15	.39	....	...	1.74	.25	.35	2.26	1.06	. .	....	.13	..	....	....	....	2 69	.36	.02	....	..	....	....	....	.38	.05	....	..	....	.42	.	10.23
Cumberland	T	1.60	....	....	....	.26	....	.70	2.60	....	....	....	....	....	....	..	2 23	....	....	....	....	....	....	....	1.00	.60	....	....	....	....	....	8.99
Danville	.12	.17	.29		....	.07	.37	.3	.74	....	..		....	1.37	..	.....	1.11	2.11	.78	T	....	....	....	....	....	.30	T	....	....	....	....	7.73
Davenport	....	.22	.33	....	....	.20	.02	.09	1.11	01	....	..	....	.27	....	.83	.48	2.05	.08	.02	..	....	..		....	.22	.35	..	....	....	....	6.30
Decorah	1.00	.33	..	....	....	.37	.54	.02	.20	....	....	....	..	.13	....	1.03	....	.24	.40	2.34	..	46	....	....	....	.83	.10	.05	..	....	.39	8.43
Delaware	....	.54	.41	..	....	.96	....	.48	.91	.	..	....	....		....	.79	.27	.64	.01	.23	..	.03	..	.		.12	.58	....	....	....	....	5 97
Denison	....	1.50	.21		1.03	1.56	.13	2 14	30	....	....	.28		.87	..	..	87	.86	.25	.14	....	....	....	....	....	1.11	....	....	....	.09	....	11.34
Des Moines	..	.16	T	....		.44	.38	1.07	1.39	..	....	....	.01	.01	....	....	.25	1.21	.17	T	....	....	....	.41	....	.34	.10	....	....	.	....	5.95
De Soto	....	.30	....	....	....	.44	.71	1 64	1.60	....	..	T	.18	....	....	....	.33	1.17	.34	....	....	T		..	....	.59	.56	....	....	....	....	7.86
Dows	....	1.05	2.90		.32	3 90	....	1.20	.80	....	....	....	....	....	....	....	.03	.27	04	.17	.02		T	.34	.09	1.02	T	....	....	.04	.	12 19
Dubuque	....	.37	.70	....	.01	.44	.10	.49	.52	T	....	....	....	.02	....	1.48	.38	.89	.03	.23	....	T	....	....	....	.01	1.07	....	....	....	.01	6.80
Earlham	T	.46	T	....		.85	.25	1.13	1.19	....	....	.12	.03	T	..	....	.36	1.91	.30	.02	.04		....	....	....	.76	.04	T	....	....	....	8.46
Eldon	05	69	....	....	....	....	....	.02	1.19	....	....	....	....	1.62	....	....	.37	1.48	.13	....	....	....	....	....	....	.06	.02	....	....	....	....	5.63
Elkader		1.24	.14	....	....	.53	.14	.30	.36	..	....	....	....	....	....	.66	.07	.70	.06	1.85	....	1.05	.11	....	....	.46	.18	....	....	....	.25	8.10
Emerson	1.27	....		....	.75	....	....	1.85	....	....	....	....	.35	....	....	..	4.00	T	T	....	....	....	....	....	.25	....	....	..	....	....	....	8.47
Fairfield	.11	.62	.09	....	....	.16		.21	1.43	..	....	....	....	4 20	....	....	.73	2.71	.08	..	.84	....	....	....	....	.23	.35	....	....	.53	....	11.40
Fayette	..	.75	.45	...	.50	.24	.46	.46	.49	....	T	....	....	....	....	.65	.14	.41	.03	2.57	.81	....	....	....	.23	.35	....	....	.53	....	....	9.07
Fort Madison	.20	1.20	....		....	T	T	.22	.78	....	....	....	....	1.12	..	....	.47	2.17	T	T	T	....	....	T	.05	1.45	.25	T	....	....	....	7.91
Galva	1.41	.37	.20	.48	....	....	3.90	.60	..	....	.10	....	....	....	....	.20	.10	.41	.05	....	....	....	.....	..	.82	....	....	....	....	1.20	....	10.39
Gilman	....	.17	T	....	..	.68	.32	1.75	1.25	....	T	....	.64	.04	....	....	.30	.99	.50		....	..	....	....	..	.14	1.10	....		....	....	7.88
Grand Meadow	....	.80	.40	..		.45	36	.36	.28	....	....	....	....	....	....	.80	02	.69	.03	2.60	....	.58	.40	..	2.38	.45	....	..	....	.10	....	10.70
Greene		1.06	1.08	....	.03	1.53	.95	.53	..	....	....	....	....	....	....	....	T	.32	.09	1.63	....	..	....	....	T	.56	....	....	....	....	....	8.79
Greenfield	T	2.34	T	...	T	.43	27	1.03	2.29	...	....	.01	T	T	...	....	1.05	1.98	.25	T	....	..	T	....	.94	.11	.17	...	....	....	..	10.87
Grinnell (near)	T	.33	...	...	....	.66	.65	1.31	2 50	....	....	....	T	3.00	....	....	.30	1.65	.05		..	....	..	....	..	.25	.87	....		....	....	11.57
Grundy Center		1.48	.94	....	..	.02	..	1.58	1.27	....	....	....	T	.04	....	..	.80	.58	.10	.02		....	.83	....	....	.02	.16	....	....	....	....	8.74
Guthrie Center	T	.92	....	....	.36	1.08	.22	2 93	.69	....	....	.25	.19		....	....	T	1.32	.28	.11	T	..	....	....	.66	.26	....	....	....	T	....	9.27
Hampton	1.01	3 22	.20	.03	2.33	.87	....	1.32	.03	....	..	....	....	.03	....	....	.04	.25	.29	2	T	....	....	.02	.95	.10	....	....	....	.01	....	10.95
Harlan	T	2 05	T	..	.36	1.90	.35	3.42	.88	....	....	.18		.04	..	....	1.13	.88	.03	.18	....	..	....	.		1.19	T	....	....	T	.04	12.63
Hopeville	T	.60	....	....	....	.86	.43	.12	2.20	..	....		T	.10	....	....	....	2.67	T	....	....	....	....	....	.01	.90	..	....	....	..	....	7.89
Humboldt	....	2.52	.24	....	.90	1.18	....	1.01	.95	....	....	.35	....	....	....	..	.02	....	.60	.34	.01	....	.	....	.59	.05	.	....	....	.05	..	8.81
Independence	....	.83	1.40	....	..	1.25	.	.75	.90	....	....	....	..	....	....	.	1.20	65	..	.10	....	1.60	....	....	..	.03	.80	....	....	....	....	9.51
Iowa City	....	1.28	.31	....	..	19	.08	.66	1.38	..	....	....	....	.77	....	..	.30	1.32		.13	..	....	....	....	....	....	47	..	..	....	....	6.89
Iowa Falls	..	1.20	2.89	....	.03	2 35	....	1.17	.39	....	....	....	T	....	....	T	.90	.76	.16	.02	.10	....	....	T	.63	.05	.63	..	..	T	....	11.28
Jefferson	..	1.25	....	....	....	2 70	.05	....	3.75		....	.20	.33	....	....	....	....	.72	.85	.02	....	.08	.05	....	58	.01	....	....	....	.05	....	10.65
Keokuk	.27	.52	..		....	..	.10	....	.70	T	....	....	....	.20	....	....	.06	1 93	.20	....	.12	....	.	....	.08	.69	....	T	....	....	T	4.87
Keosauqua	.08	.80	....	....		....	.16	.78	.69	..	....	....	....	1.00	....	....	.45	1.83	.06	....	....	....	....	.08	.	T	.50	....	....	....	....	6 43
Knoxville	T	.41	..	....	..	.34	....	.45	2 60	....	....	....	....	.72	.	....	1 04	2 40	.04	....	....	T		....	....	T	.23	....	....	.	..	8.23
Lacona	..	.30	....	....	....	.40	T	....	3.20	..	....	....	.10	.20	....	....	.50	3.50	....	..	T	..	.10	..	.10	....	.10	-	..	....	....	8.50
Lansing	..	.40	.22	....	....	.96	35	.22		....	....	....	..	....	....	1.50	....	.15	....	2.00	....	.52	....	....	.25	.30	....	....	....	....	....	6.87
Larrabee	2.26	....	.09	.52	.51	....	....	1.53	.37	....	....	.	....	....	....	....	T	.20	.56	.09	....	....	....	....	.71	.28		....	....	.07	....	7.19
Le Claire	.01	.01	.71	....	....	.01	.50	....	.78	.02	.	..	....	.61	..	.56	....	1.97	.53	T	T	....	..	..	....	.03	1.81	.02	..	....	....	7.57
Le Mars	....	1.30	.13	....	.05	.35	....	1.60	.85	..	....	.45	..	....	....	....	.30	.10	1.00	.10	....	....	....	....	.55	.30	....	....	....	....	....	7.08
Lenox	....	.55	....	....	....	.97	.27	.21	2.70	..	....	.07	....	....	....	....	....	2.15	....	.02	....	....	....	.02	....	.31	.50	.02	....	....	..	7.86
Leon	.11	44	....	....	..	.25	.23	.16	1.97	..	....	.08	....	1.00	....	....	.39	4.16	.01		T	....	....	....	....	1.09	.20	.02	....	....	....	10.11
Logan	....	1.90	.07	..	1.52	1 42	.49	2.50	.57	....	....	.05	.37	....	..	....	1.10	.98	.02	....	....	..	..	....	....	.31	..	....	....	.04	....	11 34
Maquoketa	.25	.28	.75	....	....	.70	.51	1.25	.68	....	....	....	....	.18	..	1.00	1 20	.75	.03	....	....	..	.08	....	....	....	1.14	....	....	....	....	8 80
Marshalltown	....	.92	.8	....	....	1 00	.04	1.55	1.31	..	....	....	.10	.05	....	....	.33	.67	.66	.10	....	..	....	....	....	.07	.20	....	....	....	....	7 69
Monticello	.30	1.95	....	....	..	.87	1.50		..	....	....	....	.15	..	.76	....	72	.70	T	....	..	.35	....	....	T	T	.50		....	T	....	7.80
Mount Ayr	.11	.60	....	....	....	80	.38	.38	1.96	....	..	.06	....	05	....	.....	.08	2 50	.05	....	....	T	....	....	....	....	.45	.02	..	....	....	7.44
Mt. Pleasant	.12	.77	.08	.02	....	....	.18	.28	1.34	.20	....	....	....	2.50	....	....	.45	1 80	.54	..	T	....	..	....	....	.48	....	....	....	....	....	8.70
Mt. Vernon	T	.40	1.33	..	T	.36	.26	.96	.90	....	....	....	....	.16	..	T	.15	1.34	T	.05	....	....	....	....	....	.46	.83	....	....	....	....	7.20
New Hampton	....	1.03	.64	....	.01	1.00	.85	.42	.43	....	....	....	....	....	....	....	.03	.17	.01	2 64	....	.02	....	....	.70	.15	.04	....	....	....	.05	8.19
Newton	....	.29	..	....	....	.55	.12	1.55	1.55	....	....	....	....	.46	....	....	.13	1.35	.05	....	....	....	....	....	....	.95	.91	....	....	....	....	7.91
Northwood	....	1.31	.40		.81	.98	....	.44	.05	....	....	.21	....	....	....	....	....	.08	.87	.60	....	....	....	1.22	1.23	.14	.04	....	..	.10	..	8.48
Odebolt	..	1.78	1.84	...	2.10	.90	....	1.80	1.50	....	....	....	..	....	....	....	....	1.00	.37	.45	.06	....	....	....	....	.87	.21	....	..	.69	....	13 57
Olin	....	1.93	....	....	....	.91	..	2.13		..	....	....	....	.10	....	.80	.65	.64	.	....	....	.61	....	....	....	.70	....	....	....	....	....	8.47
Omaha, Neb	T	.57	....	.	T	1.63	.26	.06	1.85	....	..	.02	.	.06	....	....	.53	1.01	.01	.01	..	....	....	..	..	46	T	T	..	T	.75	7 28
Onawa	.01	2.60	23	.02	3.92	.23	.13	1.47	.55	....	....	..	....	.57	....	....	.90	.62	.07	.40	.18	....	..	.04	..	1.12	....	....	.40	.02	13.48
Osage	....	1.44	.17	....	.25	1.21	....	.43	.08	..			..	..	....	....	....	.2	.63	1.09	....	T	..	.02	.23	.20	.03	....	....	.26	....	6.31
Osceola	...	1.3	..	....	....	.46	.14	.28	3.00	..	.04	.02	1.37		..	....	....	3.80	.30	.03	.04	....	....	.02	....	.02	.50	..	....	....	....	10.35
Oskaloosa	T	1.00	....	....	..	.36	....	.55	2.10	....	..	T	.18	1.11	....	....	.17	3.13	.15	....	....	....	....	....	..	.02	.02	....	....	....	....	8.79
Ottumwa	....	....	..	..		....	....	..		1 25	..	....	1.63	....	....	....	59	3.81	.04	....		....	....	....	....	....		....	....	....	....	7.32
Ovid	.10	.54	....	....	....	.40	.05	.10	2.64	....	....		..	.33	....		1.02	5.23	.04	....	.12	..	....	01	....	.90	.09	....	....	....	....	11 57
Pacific Junction	.01	1.11	..	..	.03	1.28	.19	.06	1.43	.		T	....	.17	....	....		4.70	.10	T	....	....	....	T		.65	....	.02	..	....	.13	9 88
Plover	....	1.56	.54	.04	.34	1.56		1.90		....	....	.45	..	.04	....	....	T	.54	.86	....	..	.....	.03	T	.87	.19	.		....	1.02	....	9.94
Red Oak	T	1.23	....	. ..	.13	.51	.18	.05	1.79	....	....	.36	....	.34	..	....	T	6.02	T	T	....	....	....	T	..	.54		T	....	....	....	11.19
Ridgeway	.09	1 47	.14	....	.05	.66	....	.09	.10	....	....	....	....	.02	.03	.72	....	.21	.10	2 43	....	1.00	.02	.02	1.06	.12	....	....	....	1.01	....	9.34
Rockford	....	1.00	.92	.25	1.30	.80	....	.92	.	....		....	....	....	....	....	T	.05	1.15	....		....	....	....	.55	T	....	....	....	.03	..	6.97
Ruthven	..	2.00	1.00	.43	....	1.25	....	....	.68	....	....	.76	..	....	....	....	....	.46	.40	.15	....	....	....	....	....	1.20	....	..	..	.47	....	8.80
Sac City	..	2.24	.56	....	1.11	95	T	3.97	.17	....		.52		....	....	..	.30	.49	.49	.17	....	....		....	1.35	.10		....	....	.18	12.61
St. Charles	....	.26	....			.82	.07	.81	4.24	..	....	.21	.20	.88	....		1.90	2.73	.17	.0	....	....	....	....	....	20	.27	....	....	....	.	12.77
Sheldon	....	1.53	2.22	T	.26	.12	....	.45	.24	....	..	.21	..	....	....	....	....	....	....	....	..	..	..	..	.77	.08	....		....	.01	....	5.90
Sibley	....	1 13	.20	....	1.59	.02	....	.27	.84		..	.45	....		....	....	.	.08	.81	.07	....	..	..	..	.05	.07		....	T	....	..	5.58
Sigourney	T	1.02	.05	....	....	.17	....	.66	1.97	....	....	....	..	3 47	..		.30	3.06	.01		....	..	....	....	....	.26	.06	....	....		....	11.03
Sioux Center	....	1 83	.27	.95	....		....	.53	.82		..	.27	....	....	.	....	T	....	.85	T	..	..	....	....	T	.12	....	....	....	T		5.64
Sioux City	.01	1.59	.10		.1	.23	....	.90	49	....	....	....	....	T	..	....	.55	.10	.12	.25	....	..	....	....	.	.44	....	....	....	.10	.02	5.03
Spirit Lake	T	1.20	....	....	..	....	....	.60	.70	..	....	.50	....	.03		..	T	.33	1 00	....	T		....	....	1.05	T	....	....	....	T	....	5.41

DAILY AND MONTHLY PRECIPITATION FOR JULY, 1902—CONTINUED.

STATIONS.	DAY OF MONTH. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL.
Stockport	.20	.55	.06			.01	.36	.10	70	---	..		---	4.40	....	....	.96	1.31	.31	T	.08	01	..	..	....	.11	.18	....	....	....	....	9.34
Storm Lake	...	1.52	.12	.07	.87	.18	T	2.72	2.09	....		.27	---	T	...	....	.03	.18	.58	.03	-	..	T		1.05	.19	..	....	..	.59	....	10.49
Stuart	....	2.14	...	....	..	.83	.19	.95	.86	...	....	....	T			...	T	1.70	.34	.08	.....	...	...	T	.80	1.45	...	....	....	....	....	10.34
Thurman	.06	.45	....	....	T	.35	.8/	.16	2.08	..		..	---	T	..	....	T	3.98	.40	T	....	...	...		....	.40	T	.05			..	8.80
Tipton	T	.35	1.75	....	..	.30		.50	1.00		....	....		.75	.	T	1.00	1.50	.60	.65	....	....	....		....	.25	.25	....	....	....	....	8.90
Villisca	1.31	---	T	..	T		.76	.09	1.96	..	....	.40	....	T	....	..	..	3.45	.15		....		....	.10	.95	.90	.45	T	T	..		10.52
Vinton	35	2.09	....	T	1.04	.09	....	1.17	1.48	...	...	....	.03	....	....	....	.68	.79	.04	.15	..	T	.20	....	29	....	.35	...	....	..	....	8.75
Wapello	.05	.67	.05			01	.20	.12	2.04	.08	...	....	. .	67	....	.05	.57	3.07	23	08	....	....	..	.	...	T	25	....	....	..	..	8.11
Washington	....	.60		....	....	.62	...	.33	.45					80	....	...	T	2.50	02	.86	.50	....	...	...	.	....	.12	....	....	..	....	7.80
Washta	..	1.27	.30	.20	1.83	2	....	2.55	1.40		.16	....	.02			....	T	12	.48	.45	....	....	....	...	.66	30			...	T	....	10.02
Waterloo	.	2.35	3.17	...		98	.25	02	.62	....	T	....	..	T	....		.13	.84	.01	.25	T	....	.75	..	....	.11	.23	....	....	....	....	10.61
Waverly	....	1.04	2.39	....	..	1.04	.07	.67	3.	....	....	....	....	....	....	.01	01	.4	.01	.65	....	T		....	....	.03	.30	....	....	....		7.07
West Bend	....	1.3.	.64	.02	.18	.70	...	....	1.47	....	....	.38	....	1.		..	T	.70	.74	.44	...	.	....	....	1.09	.5	....	....	....	.47	.06	8.36
West Union	.84	82	..	....	.59	.07	-	.7.		...	....	....		...	.89	T		.4	2.62	...		....	....	...	.55	53	-	...	....	.36	....	8.42
Whitten	....	1.78	63	.	T	1.23	....	1.25	1.32	....	....		....	T	....		1.11	.67	....	.17	..		....	....	....	.29	....	....	...	1	.	8.45
Wilton Junction		34		...	....	61	....	.43	.95	....	..	....	....	1.26	....	...	.9	1.90	1.35	T	....	.	....	....	....	.17	.55	....				8.46
Winterset	T	.40	..	...	....	1.06	.15	.74	3.44	...	....	.07	...	.32	....		90	3.00	.26	T	T	.	...	..		.37	.17	....	....		...	11.08
Woodburn	T	.47	....	....		.60	.10	.16	2.44	..	...	.10	1.0	.28	...	.	3.55	.25	T		68	...	...		....	16		.04	....	T	...	9.83

Precipitation Chart for July 1902.



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DES MOINES:
BERNARD MURPHY, STATE PRINTRR
1902.

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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIII. AUGUST, 1902. No. 8.

WEATHER AND CROP CONDITIONS.

The characteristic features of the months of June and July were continued throughout the larger part of August, with prevalence of cool, cloudy and showery weather, making it altogether the wettest and most unfavorable season for cultivation of crops and harvesting hay and grain that has been experienced in Iowa for the past thirty-three years The mean temperature of August, 69.1°, was about 2° below normal, and the average rainfall, 5.58 inches, was 3.51 inches above the normal amount. Cool nights, cloudy days, frequent showers, excessive humidity of the air and saturated soil, retarded the ripening of corn and rendered it well nigh impossible to carry on the usual harvest operations. At the close of the month corn was about two weeks later than usual, with rank growth of stalks and very heavily eared The late planted portion of the crop was green as in June, and its immature condition indicated the need of a full month of warm and dry weather to bring it to the stage to withstand killing frosts. The oats crop suffered greatest damage in shock and stack, and a very large percentage has been ruined. Spring wheat was injured, but the total loss was not so great. Barley was discolored and much of it rendered unmarketable. The hay crop was badly damaged, but there has been partial compensation in the growth of unusually heavy aftermath. Potatoes have suffered materially by rot and blight of tops, greatly reducing the final output of one of the most promising crops ever grown in the state. Pasturage was very rank in growth, and the fields were unusually weedy. The wild hay crop will be materially lessened by excessive rains and floods Garden truck has made phenomenal growth, except in the line of melons.

CORN AND ITS BY-PRODUCTS.

When the chemists are finally through with their experiments on corn the farmer will rise up and proclaim with more enthusiasm than ever before that "corn is king" Wheat, oats and barley, and every other cereal will have been relegated each to its comparatively narrow sphere in the economic world, and the agricultural possibilities of the United States will have reached a stage of development far beyond the dreams of the wildest enthusiast.

Sixty years ago corn was considered fit only for the feed of animals and the production of bourbon whisky. Today it is the basis of thirty or forty manufactured products, each of which is daily proving a valuable article in the commercial world. Within the last two months a company has been organized with $80,000,000 capital in New York which is to deal in nothing else than corn—buying the shelled grain and manufacturing and selling its by-products.

In one year this concern—the Corn Products Company—will consume as much corn as all Europe buys in a small export year, and nearly half as much as Europe uses in a big export year The annual capacity of the company's factories is estimated at 75,000,000 bushels of corn, or 1,500,000 bushels a week, and all of this immense amount of grain will be utilized in by-products

It would be hard even in these enlightened days to convince the average farmer boy that the product of his labor in the hot summer days is more than feed for cattle and hogs, stuff to be run through a distillery, or perhaps the grist of a miller who manufactures cornmeal. Yet the corn field is the place from which are drawn such products as beer, corn oil, starch, sugar, rubber, mucilage, gumdrops, wall paper, soap, ink, salad dressing, and a dozen other materials which enter into the demands of everyday life.

The possibilities contained within a grain of corn began to unfold themselves nearly forty years ago, or thirty years after Thomas Kingsford, an English chemist, began to extract starch from corn in Colgate's factory at New Bergen, N. J. His researches set an example to other chemists, and today practically all the starch used in the United States is made from corn. Thirty years ago practically no glucose was produced in the United States, and now the exports alone amount to $8,000,000 or $9,000,000 annually, while the foreign product made from rice, wheat, potato and sago starches cannot compete with the home product.

There are four parts to a kernel of corn—the outer covering, the hull or bran; then the hard, flinty or glutinous part; then the starch, and last the little white point which extends through the tip and is called the germ.

Of the four parts the germ, about the size of a wheat kernel, is the most interesting, and, when its weight is considered, the most valuable. Its history is like that of the cottonseed, for only a few years ago it was looked upon as a nuisance and the starch and glucose manufacturers spent money to get rid of it. Machines cracked each grain, the mass was given a bath, and the light germ floated out, while the starch, bran and gluten remained behind.

After the chemists found that the despised little germ contained an oil worth more than any other constituent of Indian corn the waste ceased. Now the germs are put under hydraulic pressure of something like two tons to the square inch and the oil is squeezed out of them. The little coats of fiber left become a base for oil-cake and go back to the cattle.

Corn oil is of golden color, transparent, and so sweet and ure that it often serves as a substittue for olive oil. Unlike other vegetable oil, it will stand for years in any climate or temperature without changing its color or becoming rancid. For a barrel of 380 pounds the manufacturer in Chicago gets about $23, or six cents a pound—nice price for what was thrown away years ago.

Corn rubber has all the outward characteristics of India rubber, even to the odor. It is made of corn oil squeezed out

of the germs. The oil undergoes a sulphur treatment and a baking, and a rubber substitute results.

The main point in favor of corn-rubber is that itcan be sold for about one-tenth the price of Para rubber, which costs about $1 a pound. The corn rubber can be used in rubber boots, bicycle tires, sheet rubber, water proofing, rubber heels, linoleum—in nearly all classes of goods. Its greatest use is probably in machinery, as packing for valves. The fact that corn oil is not affected by the air again proves of value, for its rubber products resist oxidation, remain pliable and do not crack as do most of the rubber substitutes made from vegetable oils

The oil is also used for cattle feeding in corn oil-cake of which it forms about ten per cent. Little of this is fed to American stock, most of it going to Hamburg and Antwerp to be fed to European cattle.

Europe is a heavy consumer of corn oil and every year demands more. The first big shipments were in 1899 when Europe took $838 000 worth. The next year the export reached the value of $1,598,000, and last year it was $2,045,000. Vegetable oils enter largely in the manufacture of soft soap, and the Europeans find corn oil the most satisfactory, despite its price of $23 a barrel.

The size of the kernel considered, the principal constituent of corn is the starch. To extract that the shelled corn is placed in vats about a thousand bushels of corn to 8,000 gallons of water. In the water is a sma l portion of sulphuric acid, just enough to soften the kernel, loosen the glutinous matter and free the germ. After thirty or forty hours the water is drawn off to be evaporated so tha any of the corn it has absorbed may be recovered. In former years this water was wasted, now the phosphates and albuminoids in it amount to from one to one and one-half pounds to a bushel of corn that has been soaked It is then mixed with the by-products which sell as cattle feed.

The mass left behind after the water was drained off is run through mills, taking off the hulls, breaking up the glutinous matter and freeing the germs. The gluten, starch and hull are ground fine and passed over silk bolting-cloth.

The hull or bran remains on top, but the starch or gluten pass through. The gluten and starch get another bath and the starch, being the heavier remains behind. The starch is now in solid form, and after the last water is dried out the product is ready for the market.

In that state it may be used for the laundry, brewery or confectionery, or sold in the same can with baking powder, but it stands a good chance of staying in the factory and undergoing changes that will make it grape sugar, glucose or dextrin.

Dextrins are gums or paste To make of starch a substitute for gum arabic it is treated with nitric acid and then baked. As dextrin the starch fixes dyes and colors on fabrics, particularly calico, and also may be used in paper boxes, oilcloth, ink, wall paper, for gumming envelopes and stamps or whenever strong adhesive paste is required.

Glucose and grape sugar are the greatest single derivatives of cornstarch. To make glucose or grape sugar the starch is treated with muriatic acid, and after pressure the acid is neutralized by carbonate of soda. The acid is affixed to the sodium, forming common salt, and every trace of the carbolic acid remaining is carried off. By varying temperature, pressure and degree of acidity a variety of sugars can be produced. When the acid treatment or "conversion" is carried to the furthest grape sugar is produced. When the action is less complete a thick, colorless syrup, glucose, is produced To make a table syrup of glucose ten per cent. of cane syrup, sorghum or molasses is added.

The grape sugar taken from starch does not resemble cane sugar, for the large amount of water in the corn prevents crystalization or granulation. All the efforts to overcome this defect have failed. Now about all the waterfree sugar is used in the manufacture of beer and wine.

With the main body of starch and the germ of the kernel used, the hull, or bran, and gluten is left The gluten is dried in filter presses and in its dry state about one third of it is starch, which the chemists are unable to extract. As gluten meal it is fed to cattle and mixed with the bran it becomes gluten feed The cobs and husks are left behind for other uses, and the stalks have found their place as forage.—*Prof. Gudeman in "Flour and Feed" for July.*

NOTES.

A correspondent of the *Times-Republican*, writing from Waterloo, Iowa, says: "James Van Ordsol & Son, of Rowley, have an orchard that has yielded 300 bushels of apples, while last year it did not produce a bushel The trees which last year showed signs of dying are now bearing profusely. Mr. Van Ordsol thinks the apple crop in Iowa depends more on rain than anything else."

That proposition being accepted as true, it must be evident that irrigation of orchards in dry seasons will greatly increase the output of fruit. And it will pay.

* * *

Celluloid, for which such varied uses have been found, was originally produced as a substitute for fast vanishing ivory. The imitation itself is now imitated by the remarkable preparation of a Dutch inventor, who treats with acid and glycerine the waste pulp from the manufacture of potato flour and dries and grinds the resulting compound. Mixed with water, the powder is molded like plaster of paris, forming an easily worked substitute for ivory, bone, celluloid and other materials. —*Ex.*

* * *

Electric tests have shown Prof. T. C. Bose that the pulsation in plants is similar to that in man and animals. Poisons kill in the same degree, chloroform gradually lessens the pulsations, recovery follows anesthetics, and poisonous drugs stimulate the pulsations and benefit as in human beings. A continuation of these experiments, Prof. Bose believes, may yield some solution of the great problem of life and death.—*Ex.*

* * *

During the ten years ending with 1900 a systematic record of all Italian earthquakes was kept by the central meteorological office at Rome. Dr. A. Cancani finds that not less than 3,361 were noted, only those shocks perceptible without instruments being counted. The results seem to indicate that January and March are more liable to earthquakes than other months, and that the shocks occur most often in the first hour after midnight and are fewest between 5 and 8 P. M.—*Ex.*

* * *

One of the most remarkable and interesting products of German chemistry is the cubic inch of radium lately prepared for Professor Curie. It cost $2,000 and required the use of several tons of barium salts It shines like a lamp also exciting phosphorescence in other materials like zinc sulphide. So energetic is this action that a small particle lights up a mass of zinc sulphide a thousand times as large, and this phosphorescence continues a considerable time after removal of the radium —*Ex.*

* * *

The Chicago *Live Stock World* of September 4, said: "James Hall of Clarinda, Iowa, claims the distinction of hauling to market the first load of the 1902 crop of Iowa corn It was husked August 27, and sold at forty cents per bushel It was of the Golden Cap variety, and was remarkably well developed as to size of ear and grain and was hard enough to show that it is safe from frost. Mr. Hall said that he would get fifty bushels or more per acre from it."

SCARCITY OF BIRDS.

EDITOR MONTHLY REVIEW: This has been a very hard season on our Iowa birds, and I think most of them have been killed by the severe storms. After one storm in August many hundred dead birds were picked up in this town. The blue bird seems to have stood the weather the best of all the birds. Bluejays, blackbirds, woodpeckers, and all the snipe tribe are very scarce. Even the crow is not near as plenty as usual. Last season I could stand at my door and see thousands of blackbirds, today not one The yellowhammers that generally gather in the timber when the first cold "north wind" comes in September are not here I have been out this morning and counted the birds, I saw two yellowhammers, six bluejays, ten bluebirds, six swallows and one small sand-snipe. Last year I could see more than ten thousand birds any morning in the month of September. It may be that the reason they are not here is that there is no feed for them, but my judgment is that most of them have been killed by the storms —*John G. Smith*.

Algona, September 8, 1902.

CARRYING CAPACITY OF PIPE.

The following table gives the carrying capacity of culvert or drain pipe in gallons per minute:

SIZE OF PIPE	1 inch fall per 100 feet	2 inch fall per 100 feet	3 inch fall per 100 feet	6 inch fall per 100 feet	9 inch fall per 100 feet	1 foot fall per 100 feet	2 foot fall per 100 feet	3 foot fall per 100 feet
3 inch	13	19	23	32	40	46	64	79
4 inch	27	38	47	66	81	93	131	136
6 inch	75	105	129	183	224	258	364	450
8 inch	153	216	265	375	460	527	750	923
9 inch	205	290	355	503	617	712	1006	1240
10 inch	267	378	463	755	803	926	1310	1613
12 inch	422	596	730	1033	1273	1468	2076	2554
15 inch	740	1021	1282	18 8	2224	2464	3617	4467
18 inch	1168	1651	2022	2860	3508	4045	5604	7047
20 inch	1560	2054	2450	3450	4180	4850	6850	8410
21 inch	1699	2399	2940	4157	5100	5880	8251	10416
24 inch	2396	3387	4152	5871	7202	8303	11744	14466

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 29.97 inches; highest observed, 30.24 inches, at Dubuque on the 21st; lowest observed, 29.67 inches, at Davenport and Des Moines, on the 18th; range for state, 0 57 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 109 stations, was 69.1°, which is 2.0° below normal. By sections the mean temperatures were as follows: Northern section, 67.4°; central section, 69.2°; southern section, 70.6°. The highest monthly mean was 72.8° at Council Bluffs; lowest monthly mean, 65.2° at Dows. The highest temperature reported was 98°, at Perry, on the 19th; lowest temperature reported, 37°, at Sibley, on the 11th. The average monthly maximum was 91.2°; average monthly minimum, 45.0°. Greatest daily range, 46°, at Toledo; average of greatest daily ranges, 29.9°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 123 stations, was 6.58 inches, which is 3 51 inches above normal. The averages by sections were as follows: Northern section, 5.45 inches; central section, 6.76 inches; southern section, 7.53 inches. The largest amount reported was 15.47 inches at Columbus Junction; least amount reported, 1.57 inches, at Dubuque. The greatest daily rainfall reported was 6.96 inches at Allerton on the 25th and 26th. Average number of days on which .01 of an inch or more was reported, 11.

WIND AND WEATHER.—Prevailing direction of the wind, southeast; highest velocity reported, 44 miles per hour, from the northwest, at Des Moines, on the 19th. Average number of clear days, 11; partly cloudy, 11; cloudy, 9.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	29 96	30.18	24	29.67	18
Des Moines	29.99	30 23	11	29 67	18
Dubuque	29 99	30.24	21	29.70	7
Omaha, Neb	29.94	30 26	11	29 55	17
Keokuk	29.95	30.18	11	29 69	18
Sioux City	29.98	30.23	11	29 70	18
Means	29.97	30.24	21	29.67	18

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	4434	21	SE	19
Des Moines	5331	44	NW	19
Dubuque	3512	35	SE	20
Keokuk	4496	26	W	9
La Crosse, Wis	4206	29	NW	7
Omaha, Neb	5221	30	N	10
Sioux City	7890	38	NW	9

OBSERVERS' NOTES.

ALGONA—*C. D. Pettibone*. Most of small grain badly damaged; corn needs three weeks good weather in September to mature.

ALTA—*David E. Hadden*. August was unusually cloudy, cool and wet. The rainfall exceeded the twelve years' normal by 2.68 inches. The daily mean temperature was less than 1 degree below average for same period.

AMANA—*C. Schadt*. Cool, wet and unfavorable for the main work of the farmer, stacking and threshing. Much grain was spoiled. With favorable weather corn promises a bountiful crop.

AUDUBON—*Frank Mott*. Highest water of the season on 25th in the Nishnabotna river; grain in shock much injured.

BONAPARTE—*B. R. Vale*. Rain 8 12 inches, with 18 for July, and 33 inches since April 20th; corn continues green and growing.

BRITT—*Geo. P. Hardwick*. A rainy month, delaying harvesting, threshing and haymaking; grain badly grown in shock; potatoes rotting; corn uneven and late; too wet for plowing.

CHARITON—*S. H. Mallory*. Rainfall for August 8.23 inches. Record for past seven years as follows:

August, 1895	3 84 inches
" 1896	7 03 "
" 1897	0.69 "
" 1898	1.41 "
" 1899	4.51 "
" 1900	4.85 "
" 1901	0.61 "

CLINTON—*Dr. Luke Roberts*. Ninety-one degrees marked the maximum temperature for August, 1902, and 46 degrees was the minimum; the former was 5 degrees below normal and the latter just normal. In August, 1881, 1887 and 1890, the maximum temperature reached 101 degrees. During the last twenty-two years there were eleven corresponding months with a minimum temperature below that of 1902, the lowest of which was 40 degrees, occurring in 1893. The mean temperature of the warmest day, the 2nd, was 78 degrees, being 2.3 degrees below normal. The coldest day, the 23rd, gave a mean

of 61.3 degrees. The coldest August day in the last twenty-four years was the 22nd, in 1890, the mean being 55 degrees The mean temperature for the month was 68.4 degrees, being 2 1 degrees below normal. There were only three Augusts during the last twenty-four years that gave a lower monthly mean, and they were consecutive, occurring in 1883, 1884 and 1885.

The per cent. of cloudiness was 47, being 13 per cent. above normal. This high percentage has not been exceeded, in August, during the last twenty-four years, but was just equalled twice—1882 and 1891. There were nine storm days during the month, the aggregate precipitation being 4 08 inches, which is in excess of normal, 1.14 inches. The greatest precipitation during any twenty-four hours was 1 33 inches, occurring on the evening of the 19th, between the hours of 6 and 11, the principal part of which fell between 8:45 and 10 o'clock. This was a great storm, but Clinton being on the northern border did not get its full force as did those living a few miles south where it came in such sheets that man would suffocate in trying to breast it. A few cattle and hogs were reported drowned on the left bank of the Mississippi river, twelve or fourteen miles south of Clinton. This storm was accompanied with thunder and lightning and some wind. Some damage was done to corn on the low land, and also to cut grain not yet secured. The balance of the storms were light, but of some annoyance to farmers who were threshing in the field or stacking grain. No rain fell after the 25th and the weather was favorable to corn and other unmatured crops. The run of wind was light, total movement being 2,220 miles, which is but a little below normal. The prevailing wind was from the northeast and its maximum velocity did not exceed fifteen miles an hour, which was favorable to standing corn.

The greatest August rainfall was in 1885, when the total was ten inches, being precipitated during eleven different days. The least August rainfall was 0 47 of an inch, occurring in 1901.

COLUMBUS JUNCTION—*H. E. Simpson*. On 21st and 22nd water at the junction of Iowa and Cedar rivers stood at the highest stage since spring of 1881.

CORNING—*Jerome Smith*. Most severe electric storm of the season on night of 5th, from 10:45 P. M. to 12 M.

DENISON—*W. C. VanNess*. Nearly every storm during month was accompanied by lightning.

EARLHAM—*Geo. Phillips*. A very cloudy, wet August. Oats and timothy in shock nearly ruined. A brilliant electric storm on night of 14th.

GRAND MEADOW—*F. L. Williams*. Month was very wet for so light amount of rainfall. Stacking unfinished and little threshing done. Corn needs four weeks to ripen.

GREENFIELD—*J. G. Culver*. Light frost reported on 11th; rains damaged wheat and oats in shock materially; corn needs fifteen to twenty days to mature.

GRINNELL—*A. O. Price*. Over 28 inches rain during three summer months; aftermath never better.

GRUNDY CENTER—*E. S. King*. A rainy and bad month for harvesting. One fourth threshing done, one fourth grain in stack, and balance in shock and damaged badly; heavy aftermath in meadows.

GUTHRIE CENTER—*W. F. Brann*. Oats badly damaged by excessive rains; corn doing well.

HUMBOLDT—*H. S. Wells*. Rain 7.36 inches. Grain has suffered in shock and stack, and much hay spoiled.

MONTICELLO—*C. E. Heisey*. Much cloudy and wet weather prevented threshing; oats growing in shock and badly damaged.

MT. VERNON—*J. W. Hubbard*. A most remarkable August for thunderstorms and rainfall.

PACIFIC JUNCTION—*H. H. McCartney*. On night of 2nd, 11:30 P. M to 1 A. M., continuous fall of rain with hail falling throughout the shower. Extremes sometimes meet, but they appear to be a year apart; note last year's record, mean temperature 75 5°, and rainfall 1.26.

RIDGEWAY—*Arthur Betts*. Coolest August on record; 297 hours of sunshine. Rattlesnakes and blue racers more plentiful than in years.

WEST BEND—*Ph. Dorweiler*. Much damage by wet weather to grain in shock; corn backward; roads bad and streams high.

BELATED REPORTS.

CRESCO.—July, mean temperature, 70.5°; highest, 90° on the 16th; lowest, 49° on the 1st; greatest daily range, 31°; total precipitation, 8.41 inches; greatest in 24 hours, 2.00 inches on the 20th; prevailing wind direction, southwest. Number of clear days, 14; partly cloudy, 15; cloudy, 2; rainy, 10.

FOREST CITY.—July, mean temperature, 71.6°; highest, 92° on the 30th; lowest, 53° on the 10th; greatest daily range, 34°; total precipitation, 6 58 inches; greatest in 24 hours, 1 79 inches on the 2d; prevailing wind direction, southwest. Number of clear days, 17; partly cloudy, 5; cloudy, 9; rainy, 14.

SCRANTON.—July, mean temperature, 74.1°; highest, 96° on the 16th; lowest, 51° on the 9th; greatest daily range, 32°; total precipitation, 11.30 inches; greatest in 24 hours, 3.70 inches; prevailing wind direction, south. Number of clear days, 16; partly cloudy, 9; cloudy, 6; rainy, 8.

ERRATA IN JUNE REVIEW.

ALTA.—Mean temperature recorded, 62.4° on page 7, should have been 62.9°. Mean temperature recorded 52.0° on page 9, should have been 53.0°.

AMES.—Total precipitation recorded 10.02 inches on page 7, should have been 10 01 inches. Mean temperature recorded 65.8° on page 7, should have been 65 6°. Mean minimum temperature recorded 56.4° on page 9, should have been 56 1°.

CEDAR RAPIDS.—Highest temperature recorded 89° on the 11th and 14th, on page 7, should have been 12th and 14th.

GREENE.—Total precipitation recorded 5.67 inches on pages 7 and 11, should have been 4.67 inches.

GREENFIED.—Total precipitation recorded 6.29 inches on pages 8 and 11, should have been 6.27 inches.

GRUNDY CENTER.—Total precipitation recorded 16.14 inches on page 11, should have been 16 04 inches.

LENOX —Mean temperature recorded 6.70° on page 8, should have been 65.3°. Mean maximum temperature recorded 77 2° on page 10, should have been 73.9°.

MARSHALLTOWN.—Mean temperature recorded 64.2° on page 7, should have been 65 9°. Mean maximum temperature recorded 73.0° on page 10, should have been 76 3°.

OSCEOLA.—Total precipitation recorded 5.37 inches on pages 7 and 11, should have been 5.42 inches. Twenty-four hour rainfall recorded .11 inch on the 23rd, should have been .16 inch.

STOCKPORT.—Twenty-four hour rainfall recorded .15 inch on the 23rd, should have been .25 inch.

IOWA CITY.—Mean temperature recorded 66.5° on page 7. should have been 66.6°.

ERRATA IN MAY REVIEW.

OGDEN.—Total precipitation recorded 6.53 inches on page 8, should have been 6.61 inches. Twenty-four hour rainfall recorded .30 and .24 inch respectively on page 11, on the 10th, and 24th, should have been .03 inch and .25 inch respectively

CLIMATOLOGICAL DATA FOR AUGUST, 1902.

NORTHERN SECTION

STATIONS	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT							PRECIP., IN INCHES				Number rainy days	SKY			Prevailing direction of wind	DATES OF THUNDER-STORMS.
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)		Number clear days	Number partly cloudy days	Number cloudy days		
Algona	Kossuth	1,213	9	68.0	-1.3	86	1, 2	45	11	29	7.49	†4.65	1 50	....	9	10	16	5	SE	12,14,16,29,30
Alta	Buena Vista	1,513	10	66.9	-3.1	90	2	43	11	27	6.34	†2.58	2.54	....	13	6	19	6	SE	5, 10, 14, 16, 17, 19, 30
Alta (near)	Buena Vista	.....	....	.....		.....	.....		.. ....	.....	6.34	.....	2.31		13	...			.. ....	
Britt	Hancock	1,236		67.6	.....	89	19	45	11, 25	30	7.24		2.25		14	5	20	6	SE	
Charles City	Floyd	1,012	10	67 6	-2.6	88	3	47	11	31	6.71	†4 46	1.35	..	12	5	21	5	NE	
Chester	Howard	.....	....	65.6	.....	88	14	43	27	39	2 79	.....	.85	..	9	2	2	8	NW	
Clear Lake	Cerro Gordo	984	....	69 2	.....	94	1	45	10	39	4 60	....	1 00	....	9	12	11	8	SW	
Cresco	Howard	1,280	29	65.3	-3.3	84	2	46	11	22	2.80	- .09	.49		9	18	7	6	SE	
Decorah	Winneshiek	875	8	66.6	-3 1	88	30	43	12	30	1.78	† .40	.40	..	12	...	...		.....	
Dows	Wright	1,142	...	65.2	.....	86	2	46	11	25	11.10	..	5 00	....	13	15	10	6	SE	13, 15, 17, 19
Elkader	Clayton	600	20	69.6	-0 6	91	1, 2	47	12	34	2.14	- 71	.40	....	11	19	8	4	NW	18, 19
Fayette‡	Fayette	1,000	11	66.0	-2.0	91	4	43	12	31	4.92	†2.17	2 24	....	12	14	7	10	NE, NW	2, 15, 17, 18, 19
Forest City	Winnebago	1,220	....	67.5	.....	87	2, 3, 6	42	11	36	5.61	....	1.66	..	13	15	2	14	SW, W	
Grand Meadow	Clayton	1,180	10	67 2	-0.7	89	26	46	12	30	1.98	- .61	.34	...	12	14	7	10	SE	
Greene	Butler	943	.	68.2	....	90	1	47	11	32	8.24	.....	2.98	....	11	9	9	13	SE	
Hampton	Franklin	1,000	11	68.4	-0.3	89	2	46	11	29	5.77	†2.74	1.63	....	11	6	18	7	.....	
Humboldt	Humboldt	1,095	8	68.4	.....	88	2	45	11	26	7.36	†4.53	2.22	....	11	15	6	10	SE	15, 19
Lansing	Allamakee	632	....	68.6	....	92	2	45	12	32	3 18	.....	.90	....	9	17	7	7	.....	
Larrabee‡	Cherokee	1,366	10	68.5	-1.7	93	2	38	11	36	6 95	†1.25	2.51	..	10	4	22	5	SE	
Le Mars	Plymouth	1,224	.	68.2	...	93	2	41	11	33	3 65	.....	1 00	....	11	6	21	4	E	
New Hampton	Chickasaw	1,166		65.4	.....	84	2	44	11, 12, 13	24	3.72	.....	.90	....	13		....		NW	
Northwood	Worth	1,222	..	66.2	.....	83	2	46	11	24	5 88	.....	2 06	....	13	11	14	6	SE	2, 10, 15, 17, 19 29, 31.
Osage (*a*)	Mitchell	1,184	10	66.0	-0.1	85	1	45	11	28	4 18	†1.44	.83	..	12	8	10	13	S	2, 10, 17, 19, 30 31
Plover	Pocahontas	1,426		66.6	.....	88	2	38	11	34	9.48	.....	1.84	..	13	13	7	11	N	
Ridgeway	Winneshiek	1,215	..	69.4	.....	91	2	48	11	31	2.66	.....	.43	....	16	13	14	4	S	2, 9, 10, 15, 17, 18, 19, 20, 30, 31
Rockford	Floyd	.....	....	.....	.....	.....	.....	.....	.....	.....	6 12	.....	1.30	....	9	21	6	4	SE	9, 19
Ruthven	Palo Alto	1,435		68.1	.....	86	1, 2	42	11	32	9.23	.....	2 00	.	8	11	5	15	S	
Sheldon	O'Brien	1 406	....	67.4	...	89	2	40	11	38	6.14	... ..	1.65	....	14	5	11	15	S	12, 14, 17, 19, 25
Sibley	Osceola	1,506	....	67.8	.....	90	2	37	11	41	9.25	... ..	3.60	....	10	5	18	8	NE	19
Sioux Center	Sioux	....		68.2	....	89	2	42	11	30	5.05	.....	1.75		15	9	10	12	SE, S	9, 10, 14, 16, 30
Storm Lake	Buena Vista	1,440	12	67.4	.....	90	2	43	11	30	5.52	†2.86	1 79	....	13	13	8	10	E	10, 15, 17, 19
Washta	Cherokee	1,157	....		.....	.....	.....	.....	... .		3.91	.....	1.22	..	11	11	15	5	S, SE	
Waverly	Bremer	942		67 5	.....	87	2	49	11	25	4.57	....	1.40	..	12	8	16	7	NE	4, 10, 13, 15, 17 19, 30
West Bend	Palo Alto	1,197	8	67.8	-1.4	87	2	44	11	29	7.12	†4.53	1.54		14	9	11	11	NW	2, 10, 13, 15, 16 17, 19, 30
West Union	Fayette	1,115	....	..	.....	... .	.....	.....	....	...	2.02	.. ....	.40		8	....	....	....	E	
Average	....	....	....	67.4	-1.7	88.3	.....	44.1	....	30.7	5.45	†2.16	.....	..	12	11	11	9	SE	

CENTRAL SECTION.

Amana	Iowa	721	25	69.0	- 1.3	91	2	49	12	25	9.41	† 6.01	1.96	...	12	13	11	7	SE	4, 5, 10. 13, 15, 17, 19, 30.
Ames	Story	926	21	69.3	- 2.7	93	2	49	11	27	7.12	† 3.36	2.10	....	11	15	7	9	SE	2, 15.
Baxter	Jasper	998		69.0	.....	94	2	45	11	29	6.57	.....	1.90	....	8	10	12	9	NW	
Buckingham	Iowa	..	..	.....	.....	.....	.....	.....	.....	.....	10.13	.....	2.91	..	9	8	17	6	.....	
Carroll	Carroll	1,265	11	69.4	- 0.8	97	2	41	11	37	5.56	† 2 75	1 70	..	9	19	2	10		9, 10, 14, 17, 19, 25, 30.
Cedar Rapids	Linn	733	19	69.9	- 1.6	92	2	50	12	24	9.93	† 6.95	2.85	....	11	14	6	11	NE	
Clinton	Clinton	609	10	69.5	- 2.6	91	2	46	12	32	4.08	† 1.30	1.33	....	8	13	11	7	SE	5, 9, 10, 12, 13, 15, 18, 19.
Davenport	Scott	529	31	70.4	- 2.7	90	2	51	11	24	7.25	† 3.64	2.86		12	12	8	11	E	5, 9, 13, 17, 18, 19.
Delaware	Delaware	1,083	10	66.4	- 2.4	86	2	45	12	27	3 31	† .43	.66	..	10	13	14	4	S	
Denison (*b*)	Crawford	1,180	8	68.2	- 2.5	92	2	43	11	30	3.59	† .59	1.13		11	16	7	8	N	
Des Moines	Polk	861	24	70.4	- 2.6	94	2	50	11	26	7.82	† 4.34	2.53	..	13	5	14	12	SE	2,3,4,5,10,15, 17, 19, 20. 25, 30, 31.
De Soto	Dallas	866		71.2	.....	95	2	49	11	27	7.68	.....	3 53	....	10	17	7	7	SE	
Dubuque	Dubuque	655	29	68 5	- 3.5	89	2	50	12	28	1.57	- 1 35	.59		9	4	15	12	SE	10, 18, 19, 27.
Fort Dodge	Webster	1,126	..	67.7	....	90	2	43	11	32	.....		.....			19	4	8	SW	
Galva(*a*)	Ida	1,290	8	68.8	- 1.2	94	2	41	11	32	4.91	† 2 01	1.00		9	....	....	....	E	
Gilman	Marshall	1,053	..	.....	.....	.....	.....	....	.....	.....	6.94	.....	1.76	...	11	10	10	11	S	4, 13, 15, 17, 19, 30.
Grinnell (near)	Poweshiek	.....		68.6	.....	90	2	48	11	22	7 45	.....	1.75	....	13	10	11	10	SE	2, 3, 4, 5. 13, 15, 17, 19, 20, 30, 31.
Grundy Center	Grundy	976	10	68.3	- 1.5	89	2	45	11	32	9 81	† 6 82	2 85	....	14	9	11	11	SE	10, 13, 17, 18, 19 20, 30, 31.
Guthrie Center	Guthrie	1,077	..	67.9	....	93	2	41	11, 12	33	7.91	.....	3.64	....	11	6	19	6	SE	3, 14.
Harlan	Shelby	1,192	....	69.6	.....	94	2	41	11	31	3.32	.....	1 21	...	12	5	13	13	E	3, 5, 9, 10, 15, 16, 17, 20, 22, 25, 30, 31.
Independence (*a*)	Buchanan	921	39	67.3	- 0.8	88	2	46	12	26	4.42	† 1.28	1.30	....	9	15	9	7	NW	
Iowa City	Johnson	644	11	70.3	- 0.4	92	2	49	12	29	10 91	† 8.56	3.52	....	12	11	9	11	E	
Iowa Falls	Hardin	1,107	8	67.5	- 1.5	88	2	46	11	28	7.66	† 4.74	3.03	....	13	15	7	9	SE	13, 15, 16, 17, 19, 30, 31.
Jefferson	Greene	1,052	..	.....	.....	.....	.....	.....	.....	.....	8.27	.. ....	3 25	..	12	...	....	....	SE	3,4, 14, 15, 17, 19. 25, 30.
LeClaire	Scott	576	....	.....	....	.....	... .	.....	..... .	.....	6.50	.....	2.15	...	11		....		.....	
Logan‡	Harrison	928	36	71.1	- 1.0	91	3	42	11	32	5.36	† 1.48	2.85	....	10	13	10	8	SE	15.
Maquoketa	Jackson	688	8	68.6	- 3.0	91	2	44	12	32	3.57	† .79	1.10	....	11	14	10	7	SE	
Marshalltown	Marshall	947	11	70.0	- 0.6	94	2	46	11	31	7.87	† 5.25	2 15	....	14	3	22	6	SE	4, 17, 19.
Monticello (*a*)	Jones	.....	47	68.6	- 1 4	92	3	45	11	33	3.31	† .35	.90	....	8	....	..	....	SW	
Mt. Vernon	Linn	847	..	70.0	.....	93	2	47	11	30	10.65	.....	3.30	....	12	13	8	10	.....	10, 13, 17, 18, 19, 20, 25, 30.

MONTHLY REVIEW OF THE CLIMATOLOGICAL DATA FOR AUGUST, 1902--CONTINUED.

CENTRAL SECTION—CONTINUED.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC., IN INCHES.				Number rainy days.	SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly-cloudy days.	Number cloudy days.		
Newton	Jasper	592	14	68.6	- 3.2	90	2	47	11, 12	26	7.06	† 3.51	1.51	....	11	9	17	5	E	
Odebolt	Sac	1,356	...	70.2	.....	97	2	41	11	38	3.72	.....	1.00	....	9	17	5	9		
Ogden	Boone	1,211	....	70.2	.....	96	2	44	11	31	7.01	.....	2.59	....	7	17	1	13	SE	
Olin (*a*)	Jones	760	....	68.0	.....	90	2	46	12	25	5.34	.....	1.60	....	9	14	13	4	E	4, 10, 13, 15, 17, 18, 19.
Onawa	Monona	1,053	....	71.5	....	94	2	46	11	31	4.24	.....	1.57	....	13	20	4	7	NE	4, 9, 10, 12, 15, 17, 19, 22, 25, 30.
Perry (*a*)	Dallas	975	....	71.0		98	19	48	11	32	9.38	.....	3.10	....	12	...	....		.....	15.
Rockwell City	Calhoun	1,219	..	68.0	.....	94	2	43	11	31	7.82	.....	3.05		7	20	6	5		
Sac City	Sac	900	22	68.8	- 3.7	94	2	45	11	33	8.03	† 4.71	3.00	....	9	12	8	11	SE	
Scranton	Greene	1,172	.. .	69.2		95	2	46	10	33	5.70	.....	1.71	....	6	9	13	9		
Sioux City	Woodbury	1,122	13	69.8	- 2.2	95	2	46	11	30	2.19	- .70	.78	...	17	4	15	12	NE	8, 9, 14, 17, 19, 21.
Stuart	Guthrie		....	70.8	.....	95	2	45	25	30	8.17	.....	3.55	...	9	18	0	13		
Tipton	Cedar	807	..	68.1	.....	90	2	47	12	24	9.40	.....	2.25	..	13	12	12	7	E	9, 10, 12, 13, 15, 17, 18, 19, 20, 25.
Toledo	Tama	856	7	69.2	- 2.2	97	2	42	11	46	9.35	† 6.79	3.05	....	8	21	4	6	E	
Vinton* (*b*)	Benton	800	11	68.5	- 1.1	88	2	54	24	.....	8.03	† 5.82	2.83		7	..	....	....	SW	12, 30.
Waterloo‡	Black Hawk	862	22	68.8	- 5.6	90	2	48	11, 12	28	7.70	† 4.11	3.26		13	15	10	6	E	18, 19.
Wilton Junction	Muscatine	683	..	70.8	.....	93	2	47	12	31	7.60	....	3.08	....	10	11	6	14	E	5, 9, 10, 13, 14, 15, 17, 18, 19.
Whitten	Hardin	1,036	....	68.1	.....	91	2	45	11	36	6.98	.....	1.16		13	14	9	8	SW	4, 10, 13, 16, 17 19, 20, 30, 31.
Average			..	69.2	- 2.1	92.5		45.9		30.0	6.76	† 3.33			11	12	10	9	SE	

SOUTHERN SECTION.

Afton	Union	1,212	....	71.0	.....	96	2	46	11	30	5.80	.....	1.30	..	11	...	....	....	....	SE	
Albia (*a*)	Monroe	945	...	70.6	.....	90	13	43	11	30	7.27	.....	2.70	....	13	..	....	..		NE	3, 4, 10, 14, 20, 21, 25, 30
Atlantic	Cass	1,164	10	69.8	- 0.8	96	2	40	11	36	4.75	† 2.09	1.52	....	9	3	11	17	NE	
Audubon (*a*)	Audubon	1,301	....	70.5	.....	95	2	43	11	32	.....	.....	.....	..	....	..	....	....	.....		15
Allerton	Wayne	.....	...	71.0	.....	93	2, 4	47	11	32	11.06	.....	6.96	...	12	11	15	5	SW		3, 5, 9, 15, 26
Bedford	Taylor	.....	....	71.8	.....	94	4	45	11	29	7.38	.....	2.02	...	9	12	13	6	SE		3, 4, 15
Belknap	Davis	877	....	69.4	....	92	2	48	11	31	6.17	.....	1.05	...	12	12	13	6	S		
Bonaparte	Van Buren	.....	10	70.6	- 3.5	93	2	49	11	27	8.12	† 4.23	2.00	...	12	...	..	..	.....		
Burlington	Des Moines	544	...	71.6	.....	92	2	50	11	24	10.62	.....	2.29	..	13	13	9	9	SE		4, 5, 9, 17, 18
Charlton	Lucas	1,042	....	70.3	.....	92	2	46	11	29	8.23	.....	2.75	...	16	7	17	7	E		3, 15, 17, 25, 29
Clarinda	Page	1,069	11	72.5	- 1.3	95	2	45	11	32	6.76	† 3.41	1.62	....	11	10	17	4	SE		2, 3, 9, 22, 25, 26, 30
College Springs (*d*)	Page	.....	10	71.8	- 1.7	97	2	46	11	32	6.00	† 3.31	1.40	...	9	...	...	...	SE		
Columbus Jct ‡	Louisa	595	....	69.5	.....	92	2	50	8, 11	30	15.47	.....	2.95	...	19	14	7	10	SW		4, 5, 9, 12, 13, 15, 17, 18, 20
Corning (*a*)	Adams	1,127	9	70.3	- 1.7	92	2	43	11	33	7.83	† 4.70	1.96	...	12	11	15	5	E, SE		3, 5, 15, 16, 20, 22, 26, 31
Council Bluffs	Pot'wat'mie	990	...	72.8	.....	96	2	44	11	33	3.30	.....	1.33	....	10	8	15	8	NW		
Cumberland	Cass	.....	....	.....	....	.....	.....	.....	.....	.....	5.36	.....	2.50	..	7	20	4	7	SE		
Danville	Des Moines	715	....	.....	.....	.....	.....	.....	.....	.....	8.86	.....	2.17	....	10	19	7	5	.....		
Earlham	Madison	.....	....	68.4	....	94	2	42	11	35	8.54	.....	2.95	..	12	9	2	20	E		3, 5, 10, 15, 17, 25, 29, 30, 31
Eldon	Wapello	630	...	71.1	....	91	1	49	12	29	7.18	.....	1.58	...	13	16	5	10	E		4, 9, 10, 19, 20
Emerson	Mills	1,053	....	.....	.....	.....	.....	.....	.....	.....	5.05	.....	1.90	...	7	....	....	..	.....		
Fairfield	Jefferson	.....	...	70.9	.....	89	1, 18	51	12	29	9.54	.....	2.42		15	12	14	5	NE, NW		3, 4, 5, 9, 10, 17
Fort Madison	Lee	516	53	.....	.....	.....	.....	.....	....	.....	7.19	† 3.54	2.31	....	7	6	13	12	S		4, 5, 9, 10, 15, 17, 18, 19, 20
Greenfield	Adair	.....	10	69.0	- 3.2	89	2	43	11	30	5.77	† 3.18	2.01	...	12	15	12	4	S		2, 3, 5, 9, 10, 15, 16, 17, 19, 20, 25, 29, 30
Hopeville	Clarke	.....	...	....	.....	....	....	...	.....	....	8.37	.....	1.82	....	10	...	....	...	.....		
Indianola (*b*)	Warren	969	10	65.4	- 7.4	94	2	47	11	26	9.48	† 6.18	3.49	...	12	9	10	12	SE		4, 5, 15, 17, 19, 20, 25, 30, 31
Keokuk	Lee	619	30	72.2	- 2.8	96	2	52	11	27	6.93	† 3.88	1.74	....	10	11	16	4	E		3, 4, 5, 9, 10, 15, 17 18, 20, 25
Keosauqua	Van Buren	644	9	71.6	- 2.5	95	2	50	12, 24	30	7.10	† 3.75	1.32	..	13	...	...	...	.....		
Knoxville	Marion	910	....	70.3	..	94	2	49	11	28	8.03	.....	1.90	...	11	11	8	12	SE		
Lacona	Warren	.....	....	.....	.....	...	....	..	.....	.....	8.70	.....	4.00	....	14	6	19	6	.....		
Lenox	Taylor	1,250	....	70.2	....	90	2	47	11	23	6.85	.....	1.60	....	12	15	12	4	SE		6, 15, 16
Leon	Decatur	.....	....	71.4	....	92	2, 4	49	11	27	8.24	.....	1.85	....	12	16	13	2	SE		2 4, 9, 15, 25
Mt Ayr	Ringgold	1,236	8	71.0	- 2.0	93	2	46	11	27	9.09	† 6.08	2.20	...	13	8	11	12	SE		5,
Mt. Pleasant	Henry	729	....	70.0	...	92	2	47	11	28	10.06	.....	2.15	...	12	11	16	4	NW		3
Omaha, Neb.	Douglas	1,113	32	72.4	- 1.6	94	2	51	11	23	2.86	- .42	.92		11	5	15	11	SE		2, 3, 4, 5, 6, 14, 15, 16, 20, 22, 30
Osceola (*b*)	Clarke	1,130	....	70.7	.. ..	91	2, 4	47	11	27	7.26	.....	2.30	...	10	8	17	6	SE		14
Oskaloosa	Mahaska	843	18	69.2	- 1.9	91	2	48	11	34	7.57	† 4.84	2.53	...	13	14	5	11	SE		4, 15, 17, 19
Ottumwa	Wapello	630	7	71.7	- 2.1	91	2	53	11	22	6.42	† 3.07	1.38	...	13	12	13	6	E		
Ovid	Wayne	992	8	70.0	- 3.1	92	2	46	11	29	8.64	† 4.76	2.65	....	11	8	3	20	SE		
Pacific Junction	Mills	960	....	72.0	.....	93	2	45	11	29	5.15	.....	1.12	...	11	5	19	7	S		
Red Oak	Montgom'ry	1,033	....	72.1	....	89	2	51	11	21	5.71	.....	2.09		12	5	22	4	SE		3, 5, 9, 15, 20, 22, 25, 25, 30, 31
St. Charles	Madison	1,070	....	70.5	...	92	2	47	11	29	7.58	.. ....	3.03	....	17	12	9	10	NE, SE SW, NW		
Sigourney	Keokuk	768	....	70.4	....	95	1, 2	46	11	37	7.53	.....	1.30	..	14	15	15	1	SE		2, 3, 4, 5, 10, 15, 17, 20
Stockport	Van Buren	.....	....	.....	....	....	.....	...	....	.....	8.21	.....	2.38	...	15	10	4	17	SE		3, 4, 5, 9, 10, 15, 17, 18, 20, 26, 31
Thurman	Fremont	.....	....	72.0	.....	94	2	41	11	28	8.72	.....	3.10	.	6	16	6	9	NE		
Wapello	Louisa	578	....	69.0	.....	90	2	52	11, 12	25	9.55	.. ....	2.86	...	11	15	13	3	SE		4, 5, 9, 13, 15, 17, 18, 25
Washington	Washington	769	11	68.2	- 4.9	90	2	47	11	26	12.34	† 9.78	2.37	..	12	.	...	...	SE		
Winterset	Madison	1,129	10	70.0	- 1.4	91	2	47	11	35	8.35	† 5.28	2.95	...	12	13	12	7	S		
Woodburn	Clarke	961	....	.....	....	.....	.....	.....	.....	....	6.80	.....	1.32	....	11	10	6	15	NE		
Average		.....	....	70.6	- 2.6	92.7	.....	44.9	.....	29.1	7.53	† 4.22	.....	....	11	11	12	8	SE		
Av. for the state		.....	....	69.1	- 2.1	91.2	.....	45.0	...	29.9	6.58	† 3.24	.....	...	11	11	11	9	SE		

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. §Not supplied with self registering instruments. † Above normal.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR AUGUST, 1902.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mean.
Afton	Max.	90	96	84	94	84	80	86	86	86	71	75	79	89	81	84	83	84	85	87	84	80	76	74	78	73	74	80	84	80	81	76	82.1
	Min.	60	66	62	65	65	56	60	58	60	56	46	51	67	66	64	64	63	67	63	62	61	60	54	49	61	56	54	56	58	65	65	60.0
Albia	Max.	84	84	83	80	79	74	87	85	82	74	73	73	90	79	74	79	81	86	88	84	81	75	71	76	69	74	..	84	83	84	80	79.9
	Min.	61	68	69	67	68	56	63	58	62	58	43	53	67	66	64	62	64	67	64	61	61	60	55	52	60	58	..	55	61	66	67	61.2
Algona	Max.	86	86	78	82	80	80	82	81	84	77	74	66	75	73	70	76	77	80	82	75	74	75	77	73	69	75	82	80	76	82	76	77.5
	Min.	64	59	59	60	63	54	62	55	63	55	45	52	60	63	60	59	61	65	60	58	57	56	57	54	66	52	59	51	63	62	62	58 6
Allerton	Max.	88	93	81	93	81	78	85	84	82	73	72	74	92	82	85	80	85	89	86	84	83	75	70	77	72	72	80	84	81	79	79	81.3
	Min.	62	64	66	67	65	57	61	59	61	59	47	51	69	66	63	64	64	67	63	62	61	61	53	50	60	58	58	56	59	65	65	60.7
Alta	Max.	82	90	76	81	78	78	83	78	82	68	70	66	77	72	68	73	76	81	82	75	73	75	71	70	62	72	78	78	78	80	72	75.6
	Min.	63	65	59	62	59	51	59	55	62	51	43	52	62	60	60	63	60	66	59	59	54	58	57	54	54	54	58	60	63	63	57	58.2
Amana	Max.	86	91	85	83	81	76	83	80	77	73	70	70	75	78	71	77	72	85	84	77	76	75	73	75	67	76	80	80	80	83	78	78.0
	Min.	61	67	63	68	69	57	60	55	59	58	50	49	63	65	61	56	63	65	70	62	61	61	55	50	58	56	56	58	55	65	68	60.1
Ames	Max.	87	93	81	83	80	79	83	82	84	76	75	69	79	74	70	77	75	81	84	78	76	75	75	74	68	75	83	80	81	81	79	78.6
	Min.	59	66	62	62	70	55	65	57	61	55	49	56	64	65	61	60	62	67	62	61	60	60	55	50	58	55	58	57	59	65	64	60.0
Atlantic	Max.	88	96	..	87	81	80	88	83	87	75	76	74	87	77	73	80	82	77	88	82	83	77	73	73	67	73	81	83	81	79	79	80.3
	Min.	57	67	65	67	67	49	63	52	61	55	40	54	65	65	64	63	65	63	62	61	59	60	58	51	60	57	49	53	60	65	60	59.3
Audubon	Max.	87	95	82	86	81	81	86	84	87	72	75	72	..	.	..	..	..	..	.	..	..	..	..	..	.	..	..	83	82	83	78	82.1
	Min.	59	67	64	66	65	51	61	56	61	60	43	47	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	60	58	65	59	58.9
Baxter	Max.	87	94	85	81	83	79	85	81	81	75	72	69	81	75	74	76	75	85	86	79	78	76	75	76	66	75	82	82	84	83	79	79.3
	Min.	59	65	59	65	69	53	62	54	60	55	45	50	63	64	61	59	61	65	60	60	60	58	54	50	57	55	55	55	58	64	66	58.7
Bedford	Max.	89	93	85	94	80	79	86	85	86	75	74	76	92	82	82	81	84	81	82	88	86	80	72	74	82	76	80	82	80	79	81	82.1
	Min.	61	67	67	69	63	54	61	57	63	58	45	53	71	69	66	67	67	72	63	63	61	61	54	54	62	59	57	56	61	63	65	61.6
Belknap	Max.	88	92	84	88	81	86	84	87	79	74	79	73	88	79	75	77	79	88	84	83	79	70	71	71	70	72	79	80	83	80	81	80.1
	Min.	60	65	63	63	64	55	66	57	60	55	48	50	64	63	60	59	59	64	63	60	60	53	53	50	59	55	55	55	58	61	63	58 8
Bonaparte	Max.	89	93	89	86	82	78	86	83	82	71	73	73	89	80	76	78	81	86	85	85	81	72	72	76	67	73	81	82	85	83	84	80.7
	Min.	64	66	69	66	65	57	60	57	62	59	49	52	64	65	61	59	62	65	66	61	60	58	54	52	60	53	57	57	60	64	67	60.4
Britt	Max.	86	86	80	85	78	78	79	81	82	73	73	67	74	71	71	78	78	82	89	78	74	73	77	75	66	75	84	82	78	87	74	77.9
	Min.	59	65	59	60	63	51	63	51	61	55	45	50	60	61	60	57	61	65	61	57	57	55	54	51	45	52	57	58	61	62	61	57 4
Burlington	Max.	86	92	87	86	84	77	86	81	86	71	73	74	85	80	79	78	82	83	85	85	83	75	71	77	69	73	84	84	81	79	79	81.3
	Min.	62	69	69	65	66	60	62	59	64	60	50	53	83	66	65	61	64	63	66	63	63	61	55	55	60	59	60	59	62	66	69	61 9
Carroll	Max.	89	97	81	78	80	82	89	87	88	78	76	73	81	82	83	80	85	86	88	78	80	78	76	73	76	76	83	84	82	82	81	80 8
	Min.	59	65	61	64	63	49	64	50	60	54	41	51	62	63	61	62	60	66	67	58	55	59	56	50	60	49	54	55	60	61	58	58.0
Cedar Rap	Max.	87	92	87	85	83	77	84	80	78	75	71	72	74	75	70	77	71	85	83	77	77	75	71	76	68	76	82	82	83	84	79	78 6
	Min.	64	68	65	68	71	58	61	58	60	58	52	50	61	65	59	56	61	64	69	64	63	57	53	51	57	55	58	55	58	67	70	61.2
Chariton	Max.	87	92	83	89	82	79	85	84	82	75	73	72	88	79	77	77	79	86	87	84	80	75	70	75	70	72	80	82	80	79	79	80 1
	Min.	60	65	67	66	66	62	55	61	57	46	51	69	65	64	62	62	67	64	61	60	60	54	51	58	57	57	57	58	60	66	65	60.5
Charles Cy	Max.	86	86	88	82	85	76	82	79	75	75	72	65	76	77	68	78	78	80	84	78	77	73	74	75	71	77	82	80	81	79	78	78.0
	Min.	57	61	66	60	61	54	62	52	57	55	47	49	59	61	62	54	60	64	63	59	59	56	51	52	54	52	51	60	57	56	57	57 2
Chester	Max.	83	87	81	82	78	78	82	73	72	73	67	67	67	88	74	73	72	83	77	80	73	75	77	73	75	65	82	82	82	76	76	76.8
	Min.	52	65	57	56	63	50	61	48	51	55	45	44	56	58	60	70	56	62	57	53	54	48	52	47	59	47	43	52	67	62	60	54 5
Clarinda	Max.	91	96	85	94	84	83	90	88	88	75	77	78	92	81	90	84	85	81	90	88	88	82	72	74	80	70	85	85	83	84	82	84 o
	Min.	61	65	66	68	65	54	60	58	63	56	45	52	67	69	67	66	67	68	64	63	62	61	61	58	53	59	52	55	61	66	60	61.0
Clear Lake	Max.	94	88	92	87	82	79	93	87	78	80	67	78	71	73	74	79	82	84	83	79	81	84	84	84	84	86	92	84	82	83	74	81.7
	Min.	59	65	57	58	63	52	54	58	54	45	47	58	60	58	54	54	60	64	60	56	58	54	51	51	59	53	57	58	58	61	60	56.6
Clinton	Max.	89	91	86	89	85	79	86	81	83	72	72	77	79	76	73	78	73	86	84	84	81	77	75	79	70	79	84	84	87	86	84	8 .0
	Min.	66	65	65	66	64	54	56	52	59	58	49	46	60	64	65	59	53	56	63	67	62	59	57	53	48	54	54	53	53	55	62	65	58 0
College Sp.	Max.	87	97	89	93	80	82	84	85	85	75	72	46	55	70	68	66	..	..	..	..	65	62	62	60	55	68	59	58	55	64	67	65	61.9
	Min.	65	65	66	67	64	56	62	62	64	55	46	72	70	80	80	73	77	78	86	85	81	82	83	74	76	68	78	82	80	75	82	84	79.4
Colu'bus J.	Max.	91	92	86	81	81	77	84	72	80	71	55	50	65	60	60	55	60	63	55	61	65	60	52	54	55	56	58	60	61	65	68	59 6
	Min.	61	71	78	61	55	58	62	50	62	55	50	51	65	60	60	60	55	60	63	55	61	60	52	54	55	56	76	80	79	78	75	79 7
Corning	Max.	87	92	..	90	78	78	84	88	82	75	71	75	87	79	81	79	80	81	84	81	78	75	70	68	..	..	76	80	79	78	66	60.9
	Min.	59	67	66	67	62	56	62	55	62	56	43	54	70	68	65	65	66	69	61	63	62	60	59	52	60	57	55	57	60	62	63	83.1
Co. Bluffs	Max.	89	96	80	88	80	83	87	87	87	74	77	88	67	72	66	65	68	68	66	64	64	64	60	58	60	58	55	60	68	68	62	62 6
	Min.	62	70	69	69	63	50	63	60	65	55	44	66	68	66	60	71	73	73	79	74	74	71	69	74	74	67	76	80	79	80	80	75	74 0
Cresco	Max.	82	84	78	80	75	71	76	74	70	69	55	46	49	58	58	60	52	57	61	60	59	59	53	48	48	59	48	59	58	58	63	60	56.6
	Min.	61	64	58	58	..	51	60	58	59	55	46	49	58	58	60	52	57	61	60	59	59	53	48	48	59	48	59	58	58	63	60	56	56 9
Davenport	Max.	86	90	88	81	83	77	85	81	80	71	71	73	76	75	72	76	71	83	81	82	81	73	68	77	68	79	83	82	86	82	82	78 9
	Min.	67	69	69	68	67	59	63	60	62	60	51	54	61	66	61	56	60	65	67	64	64	60	58	55	60	59	60	60	62	68	65	61 9
Decorah	Max.	82	87	80	80	77	73	78	77	71	70	68	69	68	68	72	73	72	78	79	74	72	72	73	73	67	77	80	80	79	88	79	75.4
	Min.	60	67	61	60	63	55	61	55	60	58	50	43	58	62	61	53	57	63	62	60	66	55	47	51	58	50	57	60	55	58	62	57.7
Delaware	Max.	84	89	84	84	78	75	80	80	75	72	69	70	72	70	67	73	70	83	77	71	73	74	73	75	66	75	84	80	83	82	78	76.4
	Min.	60	64	59	61	66	52	58	53	55	56	46	45	58	60	57	49	55	60	63	61	58	55	51	49	55	49	58	56	57	65	60	56 5
Denison	Max.	85	92	83	77	79	80	85	82	84	78	72	70	79	76	69	73	79	82	85	76	73	76	71	71	66	73	79	81	80	80	76	77.8
	Min.	59	68	62	65	64	50	61	52	63	53	43	54	65	59	62	62	66	61	58	56	..	58	52	59	56	53	57	..	..	59	58 6
Des Moines	Max.	86	94	82	82	82	80	86	82	82	73	72	71	82	77	71	76	78	84	85	78	78	74	71	74	67	75	81	81	80	79	79	78.8
	Min.	63	68	68	67	69	58	65	60	62	57	50	55	66	66	64	62	63	68	64	63	63	62	58	54	58	58	60	61	62	68	63	62.1
De Soto	Max.	89	95	88	88	79	80	83	85	85	65	65	49	53	68	66	65	64	66	68	67	63	62	63	59	53	..	59	55	57	60	67	63	62.7
	Min.	63	71	69	69	69	59	65	58	65	65	49	53	68	66	65	64	66	68	67	63	62	63	59	53	67	75	82	80	80	81	..	75 6
Dows	Max.	82	86	73	28	..	76	79	79	78	72	69	65	74	71	67	74	74	81	80	76	74	73	72	74	67	79	84	82	84	82	80	76 8
	Min.	59	65	65	61	63	51	59	54	60	55	46	56	60	61	59	58	61	65	60	59	58	57	54	51	57	50	59	57	59	61	63	54 9
Dubuque	Max.	84	84	82	83	80	74	81	79	77	72	69	70	71	70	69	75	70	83	75	75	75	74	72	75	67	79	84	82	84	82	80	76 8
	Min.	65	68	66	67	67	58	62	57	60	58	51	50	61	64	62	54	58	63	65	65	61	58	57	53	56	51	60	59	59	70	62	60.2
Earlham	Max.	86	94	84	86	80	80	84	80	81	73	73	72	84	77	73	79	79	84	87	81	80	75	72	74	68	74	80	82	80	80	73	79.3
	Min.	51	65	64	66	64	52	61	52	56	54	42	50	65	65	63	62	65	62	61	53	59	61	53	54	59	50	51	53	55	62	63	57 6
Eldon	Max.	91	89	90	88	84	79	87	81	79	75	73	74	89	80	76	80	83	86	88	85	81	77	73	79	70	76	85	86	85	84	81	81 9
	Min.	62	68	70	68	61	57	60	55	61	58	50	49	64	66	62	59	63	67	67	61	60	60	54	50	59	58	55	57	56	64	67	60.3
Elkader	Max.	91	91	87	88	87	80	85	86	76	76	76	76	70	72	70	80	78	83	81	79	80	78	79	81	70	85	90	87	88	85	81	81.0
	Min.	59	65	59	69	67	55	59	53	57	59	48	47	60	62	61	50	57	62	62	61	58	56	49	50	56	51	57	67	55	67	64	58.2
Fairfield	Max.	89	85	88	87	85	80	88	82	78	73	76	72	87	78	73	78	81	89	87	86	83	75	73	77	69	75	83	83	85	85	82	81.0
	Min.	62	67	68	66	65	57	59	56	65	59	55	51	63	64	60	58	63	66	67	61	65	60	53	53	59	59	57	59	60	63	66	60.8
Forest C'ty	Max.	86	87	87	85	80	78	80	81	81	74	72	72	77	71	75	79	78	81	80	76	75	75	76	76	69	79	84	81	77	81	75	78.3
	Min.	59	64	64	58	62	51	57	53	58	55	42	48	49	47	60	56	59	62	62	59	59	55	53	52	59	53	60	60	62	60	66	56.7
Ft. Dodge	Max.	86	90	84	80	79	80	87	82	83	76	72	72	78	74	10	77	72	81	85	77	77	78	75	77	78	77	84	52	52	58	62	60	56 2
	Min.	58	58	56	63	63	50	62	50	53	48	43	49	67	60	59	61	58	64	61	58	55	54	54	51	52	51	52	84	80	80	80	75	..	78 9
Galva	Max.	86	94	82	85	80	81	85	81	85	82	73	69	79	72	69	76	78	86	85	80	76	75	78	53	60	55	55	69	63	65	56	.	.	58.7
	Min.	60	69	56	65	60	50	60	50	60	52	41	63	62	65	61	65	61	65	65	60	78	78	76	84	73	74	66	89	84	82	79	80	72	77.5
G. Meadow	Max.	82	86	85	87	77	74	78	78	70	70	74	74	73	72	79	50	57	61	60	61	58	54	50	49	56	49	59	56	58	65	61	50.3
	Min.	57	65	60	60	66	55	61	54	57	56	47	46	53	60	59	50	57	61	60	61	58	54	76	77	66	78	84	82	82	82	75	78 1
Greene	Max.	50	87	85	84	85	78	82	84	77	72	72	72	66	73	71	69	79	76	80	82	75	74	76	77	77	66	78	84	82	82	82	75	66	58.4
	Min.	58	67	61	61	65	53	63	53	58	56	47	48	61	62	60	55	62	65	63	59	59	57	52	52	58	51	58	60	57	64	66	58.4
Greenfield	Max.	85	89	85	87	81	82	84	82	81	80	73	70	74	85	74	77	78	82	84	79	76	74	76	77	68	72	77	78	79	80	73	78 8
	Min.	62	66	65	68	66	66	64	59	59	52	43	50	52	64	60	63	64	62	65	62	64	60	51	53	52	55	55	57	59	80	80	75	76 4
Grinnell(n)	Max.	84	90	85	78	78	76	81	77	78	77	69	74	75	74	73	74	72	73	81	84	74	72	70	71	72	70	76	78	79	81	82	83	77	78.2
	Min.	65	69	64	65	69	58	63	59	63	55	48	53	53	63	60	59	63	65	70	62	61	61	57	53	58	57	59	61	61	65	67	60 8
Grundy C'r	Max.	86	83	87	80	81	77	84	82	79	71	70	66	78	75	68	78	74	85	85	78	78	74	76	75	74	74	71	74	73	82	80	83	77	79 3
	Min.	54	66	58	65	65	52	62	54	59	54	45	49	61	62	59	56	61	65	62	61	60	58	57	54	57	54	49	50	56	63	59	56.5
Guthrie Cr	Max.	88	93	84	81	80	79	85	81	86	73	73	73	83	77	72	78	80	83	85	83	80	78	77	75	66	75	81	81	80	79	79	78 4
	Min.	55	65	62	63	65	50	58	50	63	53	41	41	63	52	60	60	61	66	61	58	56	..	58	52	59	56	53	57	..	..	59	58 6
Hampton	Max.	87	89	82	82	80	78	82	84	79	72	72	64	73	71	65	68	77	78	83	84	85	78	78	74	71	74	78	77	76	74	74	76	78 4
	Min.	61	66	61	60	65	53	62	55	57	55	46	49	60	61	60	57	61	64	64	59	59	57	53	51	58	51	59	59	57	64	64	58 3
Harlan	Max.	87	94	83	84	80	80	84	84	86	75	72	76	82	79	73	81	83	83	88	81	79	78	75	74	70	73	80	83	81	83	77	80.3
	Min.	58	66	63	66	66	50	59	54	62	53	41	51	65	63	63	62	65	63	64	60	59	60	59	52	60	56	53	54	60	65	58	59.0
Humboldt	Max.	85	88	79	82	78	78	82	79	81	78	71	67	76	.	68	72	70	86	..	80	78	76	75	74	67	75	80	82	79	82	79	77.5
	Min.	61	64	60	62	64	52	64	53	63	54	45	51	62	64	61	60	62	66	62	62	58	58	58	54	59	53	76	81	79	79	80	76	76.7
In'pen'nce	Max.	84	88	82	82	78	75	81	80	76	72	69	66	73	72	67	76	73	82	83	74	75	72	74	..	50	58	58	55	65	66	57.9
	Min.	59	65	60	63	68	54	59	55	57	56	47	46	59	61	58	52	59	63	65	60	59	63	58	54	50	..	50	58	58	55	65	66	73.8
Indianola	Max.	87	94	85	85	79	79	84	80	81	78	73	72	85	77	74	74	79	83	84	61	61	65	56	52	59	56	56	..	..	65	56	57.0
	Min.	69	69	67	65	66	56	63	59	61	52	47	54	68	66	64	57	63	67	64	61	61	65	56	52	59	56	80	85	85	85	86	87	80.4
Iowa City	Max.	89	92	78	85	82	77	84	83	81	72	71	73	77	62	62	64	69	68	63	60	59	56	56	57	58	65	68	75	84	60.2
	Min.	63	67	64	67	68	57	58	55	60	57	50	49	64	74	74	67	77	75	81	85	77	74	76	75	75	63	25	83	80	81	83	75	77.1
Iowa Falls	Max.	85	88	82	81	77	77	80	82	81	58	54	46	48	61	62	61	57	61	65	61	59	57	55	50	57	51	54	57	56	64	65	57.9
	Min.	57	66	59	63	66	52	63	51	58	54	46	76	88	80	77	78	83	82	86	85	82	71	69	77	71	73	81	61	60	65	68	83	84	80.9
Keokuk	Max.	88	96	87	88	85	78	85	82	83	70	72	76	88

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR AUGUST, 1902—CONTINUED.

STATION.		DATE.																													Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Knoxville	Max	88	91	87	87	80	78	84	81	81	77	71	73	83	78	69	78	79	85	84	80	76	75	71	75	66	76	80	81	81	81	77	79.2
	Min	60	67	68	67	67	57	67	57	62	57	49	55	62	65	64	61	63	67	67	62	62	50	54	62	59	57	57	59	59	62	67	61.4
Lansing	Max	89	92	..	88	83	79	83	78	81	70	74	..	69	70	73	78	77	81	80	80	77	77	77	76	78	84	..	84	87	85	88	79.9
	Min	60	65	65	58	65	55	65	60	52	54	50	45	58	60	65	52	55	63	65	60	60	62	47	47	52	50	54	62	55	60	60	57.4
Larrabee	Max	87	93	88	87	85	83	87	85	88	70	76	67	83	78	73	77	78	70	85	83	76	80	77	76	65	75	84	80	79	83	75	79.8
	Min	61	66	58	64	54	48	51	56	64	53	38	53	62	60	58	61	61	67	63	55	51	55	56	54	57	51	54	57	62	64	55	57.2
Le Mars	Max	85	93	78	85	80	82	85	82	83	70	73	70	78	75	70	74	80	82	83	81	76	77	76	72	66	74	80	79	80	81	74	78.1
	Min	59	68	58	63	58	49	59	50	64	52	41	53	63	61	62	62	64	59	58	52	58	60	62	59	58	53	60	64	65	54	58.4
Lenox	Max	84	90	85	88	78	77	83	81	81	76	70	71	86	78	80	77	79	80	83	83	79	75	69	71	75	70	78	79	77	78	75	78.6
	Min	64	68	65	66	61	58	62	60	63	57	47	55	70	67	65	65	70	65	63	63	62	61	58	52	59	57	56	59	61	68	65	61.8
Leon	Max	86	92	89	92	86	79	84	83	84	74	73	76	88	82	81	79	83	85	85	84	80	77	72	76	75	72	78	81	79	78	76	80.9
	Min	63	65	68	67	65	58	60	60	61	58	49	53	69	67	65	65	65	70	64	63	63	63	56	51	60	59	57	58	60	67	66	61.8
Maquoketa	Max	87	91	86	86	85	78	86	83	78	74	73	73	77	73	70	77	75	87	82	83	81	76	74	78	69	81	86	84	84	86	85	80.2
	Min	61	64	61	66	68	54	51	50	57	60	50	44	59	63	58	49	57	59	64	62	59	55	53	46	53	50	53	54	54	64	68	57.0
Marsh'lt'n	Max	89	94	88	84	88	80	87	84	83	76	73	69	79	77	74	79	74	80	86	80	79	78	78	78	70	78	86	81	84	85	80	81.0
	Min	59	66	60	65	60	54	61	54	58	55	46	49	61	62	60	57	61	65	63	62	61	59	56	50	58	54	55	58	57	63	66	58.9
Monticello	Max	86	90	92	90	88	85	84	83	78	72	72	68	70	72	74	77	70	88	87	76	77	78	78	77	74	77	82	85	84	79	..	82 0
	Min	61	65	66	68	63	55	56	52	52	47	45	47	52	58	54	52	54	55	62	59	57	54	50	49	48	47	52	55	52	58	..	55.1
Mt. Ayr	Max	89	93	84	92	82	77	85	85	83	74	73	77	90	82	83	82	86	79	86	86	83	80	72	75	80	73	81	83	80	80	78	81.7
	Min	62	66	65	67	61	55	59	56	61	57	46	51	68	66	64	64	61	63	62	62	60	63	55	51	58	57	55	58	59	66	65	60.4
Mt. Ple's'nt	Max	88	92	89	90	83	75	83	85	85	76	71	78	89	82	85	78	81	88	85	85	80	79	74	75	70	79	81	82	87	84	83	82 6
	Min	67	64	64	63	64	55	55	55	61	57	47	48	60	58	57	56	65	62	65	59	58	58	50	49	50	50	55	52	55	60	64	57.5
Mt. Vernon	Max	93	93	88	84	84	80	86	85	80	82	75	69	77	77	70	82	69	87	88	82	82	79	75	79	67	81	87	86	81	85	83	81.1
	Min	61	65	62	64	74	56	59	56	58	56	47	51	60	63	58	52	60	63	67	62	61	59	54	52	54	53	58	57	58	65	58	58.8
NewH'pton	Max	82	84	81	80	76	73	78	76	71	69	67	67	71	68	69	73	72	79	79	74	73	73	73	72	67	76	81	78	79	79	75	74.7
	Min	60	60	59	59	63	50	60	51	55	54	44	44	44	60	58	52	59	59	59	58	58	54	50	51	58	50	58	59	64	65	64	56.1
Newton	Max	86	90	83	79	78	77	81	82	80	76	70	72	79	76	74	74	73	82	87	75	74	72	71	73	65	73	79	80	80	80	74	77.1
	Min	61	68	64	64	69	55	62	57	60	56	47	47	53	64	60	58	62	64	63	61	62	59	56	51	56	56	68	69	59	65	65	60.0
Northwood	Max	81	83	77	80	77	72	78	77	73	71	65	64	72	69	71	74	75	79	79	74	71	72	73	73	68	76	79	78	78	80	76	74.7
	Min	61	65	61	59	64	53	62	55	58	56	46	48	58	61	60	55	60	65	62	57	58	56	51	52	59	52	59	60	58	62	60	57.8
Odebolt	Max	90	97	88	84	83	83	86	89	88	85	77	76	83	80	68	76	81	86	89	83	83	80	76	75	68	78	85	82	83	82	80	82.0
	Min	60	69	60	64	61	52	64	51	63	54	41	52	62	61	62	64	61	66	61	59	54	60	58	52	60	54	53	54	63	64	51	58.4
Ogden	Max	85	96	87	84	82	82	86	86	82	85	74	75	86	77	75	77	79	85	89	77	77	78	75	70	75	77	84	84	82	83	78	81.1
	Min	62	65	61	67	62	51	62	62	51	55	44	52	65	65	61	52	63	67	62	61	60	60	65	52	52	51	58	60	62	68	64	59.4
Olin	Max	83	90	82	87	80	75	81	78	78	70	67	74	75	75	73	75	74	84	82	77	74	73	70	71	72	70	79	77	83	83	..	77.1
	Min	62	67	63	67	68	56	56	53	57	57	48	46	61	65	60	53	59	63	66	63	59	59	54	49	50	55	70	57	57	63	.	58.8
Omaha, N.	Max	86	94	80	84	78	81	84	84	86	71	73	78	85	78	74	77	84	80	87	80	82	80	73	74	75	70	81	81	82	78	79	80.0
	Min	67	73	70	68	70	62	69	66	67	56	51	61	70	71	66	65	68	68	68	64	67	63	63	58	63	58	58	63	68	69	61	64 9
Onawa	Max	88	94	88	79	82	83	88	85	87	83	77	74	83	79	72	74	82	84	84	82	79	78	75	71	66	74	81	80	82	79	81	80 5
	Min	64	71	66	67	66	55	65	58	68	57	46	58	67	65	64	64	66	66	68	62	60	62	62	59	62	58	59	59	67	69	57	62.5
Osage	Max	85	84	78	80	..	78	78	78	73	70	68	67	70	68	71	76	75	80	78	74	72	74	75	75	65	78	84	81	78	80	74	75.6
	Min	58	66	59	57	..	52	65	53	56	56	45	47	58	60	60	53	58	64	60	56	58	54	48	49	57	49	56	60	56	62	63	56.5
Osceola	Max	87	91	..	91	82	79	86	84	82	..	73	73	88	78	80	79	80	85	86	83	79	76	72	77	70	73	80	83	..	79	78	80.5
	Min	61	65	65	66	65	56	61	59	60	56	47	51	68	67	64	61	65	68	63	..	61	61	54	50	..	57	56	57	59	65	66	60 9
Oskaloosa	Max	87	91	84	85	81	75	84	80	77	76	70	70	84	77	74	77	80	85	83	81	77	75	72	76	62	75	80	83	80	81	77	78.7
	Min	58	68	67	67	67	56	62	56	62	57	48	50	50	65	62	59	62	62	68	61	60	59	53	53	57	58	57	58	57	65	67	59.7
Ottumwa	Max	85	91	87	85	81	78	85	80	77	76	71	72	82	77	84	77	75	79	81	85	83	80	78	75	68	73	80	81	83	80	81	79.7
	Min	65	70	72	63	70	60	65	62	65	60	53	55	65	68	65	68	65	62	65	68	69	64	58	60	62	61	61	60	61	60	68	63.7
Ovid	Max	87	92	85	90	83	80	87	85	82	75	75	73	91	79	82	78	81	86	87	83	84	74	71	76	69	72	80	81	80	78	80	80 8
	Min	60	65	66	66	65	54	61	58	60	57	46	53	69	66	63	63	63	68	63	63	61	60	54	51	60	57	55	59	60	65	65	60.5
Pacific Jct.	Max	88	93	85	90	80	81	85	85	85	80	74	81	87	83	80	83	84	82	87	83	83	82	75	75	80	68	80	82	82	80	77	81.9
	Min	62	72	67	67	67	55	62	60	65	55	45	55	65	69	65	65	67	67	65	63	61	61	61	55	63	58	57	58	65	65	61	62 0
Perry	Max	89	96	85	82	82	80	86	83	86	..	74	72	83	78	73	78	77	83	98	80	..	78	75	75	69	75	81	82	82	82	77	80.7
	Min	62	68	65	76	69	55	64	57	64	52	48	54	65	64	63	64	64	67	66	58	..	61	58	54	60	58	55	59	61	68	64	61.4
Plover	Max	82	88	80	84	80	79	80	81	84	73	72	64	77	71	72	80	77	82	85	78	77	78	77	79	61	75	83	82	80	83	73	78 1
	Min	60	58	..	56	60	66	62	60	58	52	38	45	55	57	55	58	57	60	64	54	50	52	53	48	50	48	50	54	55	57	60	55.1
Red Oak	Max	84	89	87	87	82	78	84	83	82	80	72	77	86	80	80	80	81	78	83	82	78	76	72	73	76	70	78	78	78	79	73	79.5
	Min	65	72	71	70	70	60	64	62	67	60	51	59	69	71	68	68	69	68	68	66	65	64	63	58	64	59	58	59	65	69	63	64.7
Ridgeway	Max	89	91	86	81	86	79	80	83	78	71	73	68	74	71	77	81	79	81	80	80	78	72	82	77	69	81	85	85	83	88	82	79.7
	Min	63	65	62	61	65	56	62	57	60	56	48	50	58	62	60	54	60	64	62	60	62	54	51	55	60	52	61	61	60	65	64	59.0
Rockwell C	Max	85	94	80	81	80	80	70	80	80	74	73	70	79	77	69	79	79	80	87	78	75	79	75	75	66	75	80	83	82	80	75	78.1
	Min	67	65	58	60	63	51	58	59	60	58	43	50	61	59	60	61	60	60	59	58	65	60	63	63	55	52	55	52	55	56	48	57.9
Ruthven	Max	86	86	77	83	79	81	82	81	84	81	74	72	75	71	68	72	76	81	77	80	74	75	73	74	66	75	84	82	79	82	80	77.8
	Min	61	61	62	59	60	51	59	52	63	55	42	53	61	62	60	60	62	66	60	59	55	56	61	55	59	55	58	61	63	62	59	58.4
Sac City	Max	85	94	80	81	80	81	84	82	85	77	73	69	79	73	68	75	77	84	85	77	76	77	72	72	73	76	82	80	81	81	77	78.6
	Min	63	67	60	65	63	53	62	55	52	56	45	52	62	61	62	63	61	67	60	60	56	60	58	53	57	56	58	57	62	64	60	59.0
St. Charles	Max	87	92	82	87	80	78	84	84	83	79	72	76	87	77	73	77	79	85	84	82	78	75	71	75	67	73	79	81	79	79	77	79.4
	Min	63	68	69	67	66	56	64	60	61	56	47	54	70	66	64	62	63	68	65	63	62	61	57	51	60	56	56	60	61	68	66	61.6
Scranton	Max	87	95	81	75	84	84	87	81	88	70	80	73	81	76	67	76	75	84	84	78	74	75	73	74	70	75	81	82	80	74	80	78.8
	Min	67	63	65	60	54	60	57	62	55	46	54	53	64	62	63	60	65	68	60	58	60	57	53	60	55	58	57	62	65	60	65	59.7
Sheldon	Max	85	89	78	86	82	85	84	83	85	70	73	65	78	70	70	72	79	86	75	81	76	75	75	74	65	76	81	79	78	81	78	77.9
	Min	62	62	55	58	57	47	56	47	63	57	40	53	61	59	60	62	60	65	60	57	53	55	57	59	59	52	55	57	62	62	56	57.0
Sibley	Max	86	90	82	88	83	86	85	84	87	70	77	62	80	71	72	70	82	86	76	83	77	67	78	78	67	79	84	81	81	78	78	79.0
	Min	62	65	57	57	66	46	54	43	62	52	37	51	59	59	60	61	61	65	60	56	54	54	57	59	55	55	56	55	62	58	56	56.6
Sigourney	Max	95	95	90	91	84	80	88	90	80	74	73	77	89	84	72	82	86	91	90	85	83	82	79	80	63	82	87	88	86	87	81	83.7
	Min	58	65	65	64	61	54	60	53	58	55	46	48	61	64	58	54	54	54	68	59	57	57	52	50	49	56	53	55	56	61	66	57.2
SiouxC'nt'r	Max	85	89	79	87	84	83	83	83	83	69	72	68	79	72	69	74	80	82	81	79	75	76	76	73	66	74	81	78	81	82	75	78.0
	Min	65	66	59	60	59	51	60	55	63	53	42	54	62	60	59	63	62	64	60	58	53	56	59	62	60	55	58	56	64	63	55	58.5
Sioux City	Max	85	95	78	85	81	85	86	83	85	68	74	73	81	75	70	73	82	82	82	80	78	78	73	68	68	73	80	78	82	80	79	78.7
	Min	64	70	61	66	63	55	66	56	62	54	46	58	65	62	63	63	66	64	60	59	56	62	63	60	60	56	56	63	68	67	55	60.9
Storm L	Max	82	90	77	80	78	81	82	79	82	76	70	67	77	72	68	74	75	81	81	76	74	76	70	69	67	73	80	79	78	79	75	76.4
	Min	65	66	58	63	60	51	61	52	63	53	43	55	62	61	60	62	61	66	58	58	54	59	58	55	57	54	56	61	63	63	57	58.5
Stuart	Max	89	95	90	91	89	88	85	87	90	89	88	87	85	80	74	79	81	85	86	84	83	60	82	80	70	75	80	84	78	75	80	83.5
	Min	62	69	63	66	64	60	59	59	60	60	59	58	57	59	57	60	54	58	60	60	59	57	58	52	45	50	51	54	56	53	59	58.0
Thurman	Max	88	94	89	88	82	82	85	83	85	80	72	82	87	82	79	80	85	81	84	80	80	77	73	74	78	75	77	79	79	78	75	81 1
	Min	61	71	69	68	66	55	62	59	65	58	44	58	68	78	70	66	67	67	65	62	61	63	62	54	65	58	58	56	63	67	62	62.8
Tipton	Max	83	90	84	95	80	70	80	78	78	69	68	72	72	79	70	74	73	83	83	79	75	70	70	71	69	73	78	77	82	81	79	76.6
	Min	63	66	68	69	69	55	60	55	60	58	48	47	60	64	60	55	60	64	65	64	60	58	53	51	57	55	56	57	58	65	67	59.6
Toledo	Max	93	97	88	82	86	84	89	80	85	80	77	75	76	74	70	80	73	89	86	85	81	78	76	73	76	80	86	85	84	85	86	82.0
	Min	48	51	59	66	69	53	55	49	55	49	42	57	60	63	59	56	49	61	67	61	59	59	55	49	50	54	55	53	55	64	63	56.3
Wapello	Max	84	90	83	77	79	75	77	83	78	69	71	70	75	77	69	74	72	79	82	77	76	68	66	73	67	72	77	78	78	80	79	76.0
	Min	67	69	70	67	67	60	61	58	64	61	52	52	62	67	61	57	63	64	71	63	63	60	56	55	59	59	58	59	61	66	69	62.0
Washin't'n	Max	86	90	86	83	81	77	84	79	77	70	70	70	81	76	71	76	78	86	84	82	78	73	71	75	64	75	81	82	82	82	80	78.4
	Min	60	65	65	64	62	55	58	55	59	56	47	49	60	62	58	54	60	63	62	59	59	58	52	51	56	56	55	56	56	62	62	57.9
Waterloo	Max	86	90	83	82	83	79	85	82	77	75	72	67	77	72	70	78	75	86	85	78	77	76	76	77	67	78	85	83	82	83	78	78.8
	Min	59	66	61	64	68	54	64	55	57	55	48	48	60	62	59	54	61	64	66	61	61	58	52	50	57	50	57	64	56	65	67	58 8
Waverly	Max	84	87	82	80	80	75	81	80	74	72	68	66	73	71	68	77	73	81	81	74	74	74	74	75	68	75	82	80	79	80	75	76.2
	Min	60	67	62	63	67	55	62	55	58	57	49	50	60	61	59	55	61	65	64	60	69	59	53	52	57	52	57	60	57	65	66	58.8
West Bend	Max	83	87	77	82	78	78	80	81	82	75	71	66	75	70	70	76	76	79	84	77	75	77	76	75	66	75	83	80	78	81	73	77.0
	Min	63	63	59	60	62	51	61	52	63	55	44	51	61	63	61	58	62	65	61	58	56	56	58	54	60	57	58	58	62	63	63	58.6
Whitten	Max	89	91	86	85	85	79	82	84	89	75	72	68	77	72	71	76	70	83	83	75	74	75	76	74	70	75	81	80	82	82	75	78.6
	Min	59	66	56	58	67	52	61	53	53	53	45	49	59	62	58	57	60	63	60	66	59	60	56	51	58	51	55	59	58	65	66	57.6
Wilton Jc	Max	88	98	87	89	83	78	85	84	83	73	76	78	78	79	74	79	77	89	90	87	83	78	75	77	69	80	83	83	88	87	85	81.9
	Min	63	67	67	65	67	56	57	54	60	60	48	47	62	67	60	53	61	65	70	61	61	60	55	51	58	56	55	56	58	65	67	59.8
Winterset	Max	85	91	85	84	80	79	84	82	83	82	82	72	82	77	74	76	77	82	85	78	76	78	72	73	69	73	81	81	79	79	76	79.3
	Min	61	61	65	66	60	55	64	59	60	53	47	53	68	65	63	62	69	66	65	60	62	60	51	52	59	55	75	59	60	66	63	60.8

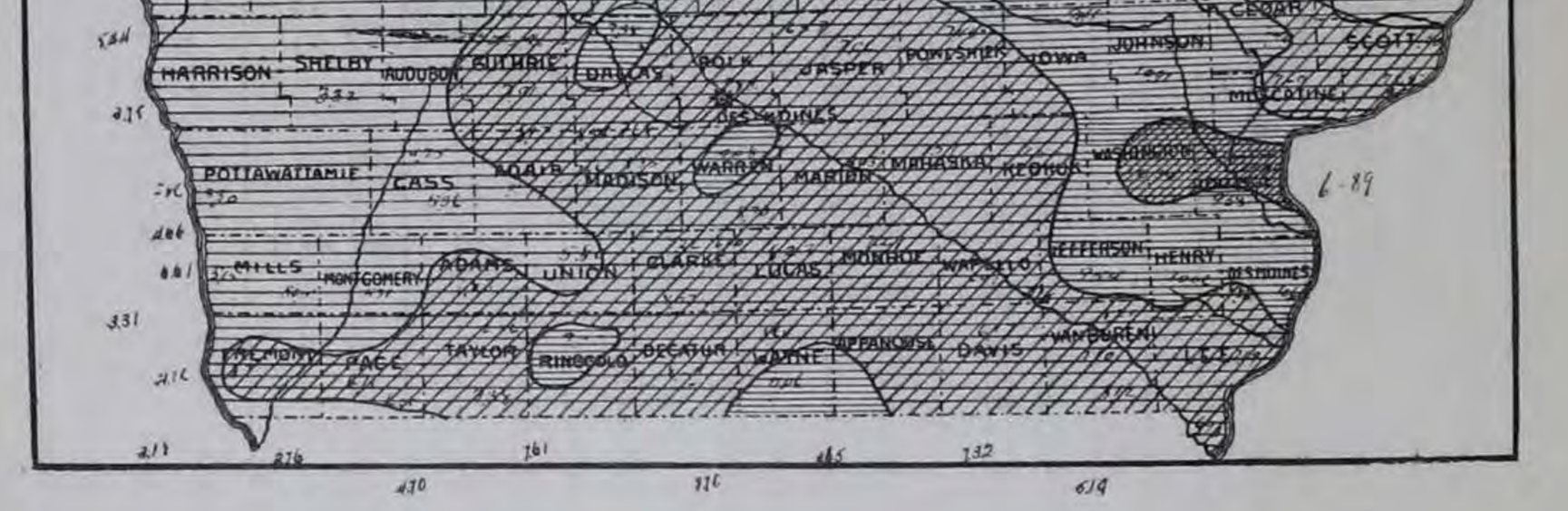
DAILY AND MONTHLY PRECIPITATION FOR AUGUST, 1902.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	..	.90		.81	....	....	....	.20	.14	....	....	....	..	1.00	T	....	.	.	.28	...	.32	....	T	1.30	.2:	....	....	....	.37	.28	5.80
Albia	..	..	.20	.20	.18	....	....	....	.45	.2c	....	....	....		1 55	....	2.70	....	.18	18	..	..	....	....	.58	.09	....	..	....	.0c	.07	7.27
Algona	1.10	..	....	....	....	....	..	....	T	.42	...	.22	....	.75		1.50	....	...	90	....		..	..	....	1.50	..	....	....	1.00	10	..	7.49
Allerton	....		.65	T	.95			....	.56	09		T		...	1.15	....	09	...		.0	....	.02	....	....	.26	6.70	..	....	..	.04	.45	11.06
Alta	...	T		.	T	..	....	....	T	.21	....	.28	....	...	1.10	.03	2.54	.03	.82	....	.11	....	T	.03	1.01	....	....	....	..	16	.02	6.34
Alta (near)	....	....	....		.07	....	....	....	34	.06	....	.26	....	.91	....	.03	2 3:		1.15		12	..	....	.06	.94	.	..	....	.06	03	....	6.34
Amana	..	.08		1.96	.03	...		....	T	58	....	.03	1.50	....	1.01	...	.93	1.32	....	.8	....	....	....	....	63	..	....	....	...	...	54	9.41
Ames		.4:	T	T	..	..	....	...	.01	.33	..	.01	....		2.10	.02	1 64		.37	T	....	..	..	..	.98	....	...	....	T	.3s	.90	7.12
Atlantic	....	....	.20	.06	..	..		....	.10	.10	....	....	....	..	1.52	....	....	....		07	.51		....	....	.72	..	....	....	....	1.47		4.75
Baxter		....	....	.25	....	....	....		T	65	....	T		....	1 90	T	1.65	.05	.45		...	....	....	....	1.00	...	...	....	....	....	.62	6.57
Bedford	....		42	1.32		....	....	....	.63	T			...	...	1 56	....	....	...		.23		.73	.05	..	....	2.02	..	....	T	42	.	7.38
Belknap	....	.	76	.50	.26	...	....	...	14	.93	....	....	....	....	1 02		1.05	...	...	.39	....	.20	...	....	.22	20			....	T	.50	6 17
Bonaparte	....	..	.15	2.00	1.15	....	....	..	.23	1.17	..	....	....	....	.67	....	1 13	.34	.23	22	....	..	....	....	....	.74	....	....	....	....	.09	8.12
Britt		.60	....	.02	....			....	.09	.38	...	.25	.01	..	.75	T	1.02	T	2.25	.	....	.	....		1.00	02	....	..	.03	.79	.03	7 24
Buckingham		.14	....	.01	.	....	.	....		.60		....	2.91	.	.87	....	1.64	....	1 74	.		..	....	....	1.04		....		....	1.18	....	10.13
Burlington	....	....	.20	2 29	.46	....	....	....	2.21	.78	T	....	30	....	.56		1.04	1 96		07	....	.	....	....	.09	65	.01	....	....	....	T	10 62
Carroll		....	T	T	..	..	....	....	.20	.30	....	T	..	....	1.70	T	.98	12	1 00	....	T	..	..	....	.82	....	....	....	....	.33	05	5 56
Cedar Rapids	.11	....	....	T	....	....	....	....	17	.19	..	2 85	....	.83	.05	.02	2.38		1.79	..	.	....	..	....	1.12				....	.42	....	9.93
Chariton	....	.02	.18	.01	2:	...		....	43	32		.01	...		2.75	...	1.85	....	.25	.28		.03			.40	.88	...	...	....	.31	.28	8.23
Charles City	....	.35	....	....	....	..	....		T	1.35	....	.15	.20	....	.60		1.22	.42	1.20	.02	....	....	....	....	.38	....		....	....	.55	.27	6 71
Chester	....	30	...		....	....	....	....	.11	.10		.37	.15	....	...	....	15	....		....	....	....	....	....	....	36	....			.40	.85	2 79
Clarinda	....	....	1.06	T	.90	....	....	..	.95	....	....		....		.46	..	.....	...		.35	....	.68	.c8	T	T	1.60		....	....	68	....	6.76
Clear Lake	....		....	T	...		....	...	35		15	.35		.50	....	....	1.00	....	.80	....	....	..	....	..	.60	..	..	..	..	.75	.10	4.00
Clinton	....	..	..	..	.06	..	....	....	.91	.69	...	....	.59	....	26	....	.13	T	1.33	..	..	....	...	....	.11	..	....	....	....	....	....	4.08
College Springs		....	.53		1.18	....	....	....	....	.01	....	....		....	1.28	.	..	....	.34		....	.90	....	....		1.40	....	....		.08	.28	6.00
Columbus Junction	....	.05	.65	.90	1.18				1 90	.9c	...	.25	1.65	.10	1.19	.10	1 95	2 95	.10	.30	....	T	....	....	.9c	.30	..	....	01		.09	15.47
Corning	..	T	.38	....	.62	...	....	....	14	.06	....	T	....	....	1.27	.25		....	....	.65	....	54	T	T	.8:	1.96	..		....	.17	.98	7 83
Council Bluffs	....	.27	T	.10	T	...	....	.03	.34	T	...			.09	.14	....	....	....	....	.29		1 33	....	..	.23	....	....	....	....	.48	....	3.30
Cresco	.30	....	....	..	..	..	..	..	.30	....	....	.42	..		.16		.17	T	.22	....		....	....	.	.28	....	....	....	....	.46	.49	2 80
Cumberland	..	....	.38	....		...		....	.01	....	....		....	2.50	....	T	T			.92	..	.23	....	.72	....	....	....	....	....	.60	5.36
Danville	....	T	.32	2.17	1.08		..	....	1.07	.84	T	T	...	...	.60	..	1 23	1.05	....	....	....	....	....	....	.07	.43	T	....	....	....	T	8 86
Davenport	....	T	....	T	1.25			....	.20	84		T	2.85	....	.45	..	.42	.24	.33	.28	....	....	....	....	29	.01	....	....	....		.04	7.25
Decorah	....	.26	..	.07	..	T	..	....	.05	06	....	.06	28	16	....		....	.04	.15	....	..	..	..	....	.08	....	..	....	....	.40	.17	1.78
Delaware	.	.15	.	T	....		..	..	.04	.11		....	36	....	.30	....	.56	.45	66	..	...	....	....	....	30	....	....	..	....	....	.38	3 31
Denison	....		T	.04	....	....	....	....	. 5	.34	....	08		.01	1 12	....	03		64			.04	.	02	1.12	..	...				....	3.59
Des Moines	....	.03	.53	.15	.03	....	....	....	.01	.36	....	T	01	....	2.53	T	2.02	T	.79	T	....	T		T	.63	T	..	....	..	12	.61	7 82
De Soto	....	T	.20	.04	.53	....	....	....	T	.28	....	T	....		3.53	..	1.3:	....	.31	.04	T	....	....	....	1.05	....		....	....	.35	....	7 68
Dows	....	.2:	....	.08	....	....	...		.07	.17	....	.04	5.00	..	1.56	....	1.02	....	8:	....	....	.02	..	....	1 63	T		....	..	.17	.28	11 10
Dubuque	....	.01	....	T	.	....	T	.	T	.59	....	T	.11		.15	..	05	..	.04	.33	....		..	....	.07	.. .	T	....	....	T	.12	1.47
Earlham	....		.18	T	.77		....	....	.02	.28	..	T		....	2.95		69	....	.25	.06	..	.03	....		.92	..		....	....	1.19	1.20	8.54
Eldon	....	.03	.06	1.31	.47	....	....	....	32	.75	..		.03	....	1.29	..	1.58	....	....	1.12	....	....	..	....	16	.03	....	..		.03	T	7.18
Elkader	.16	..	....	....	..	....	....	..	30	13	...	.05	.21		.2	...	.08	.35	.40	....					.13	....	....		....	....	.12	2.14
Emerson	....		.10		1.90	..	....	.25	...	....		....	....	....	.30				..		.75	....	....	T		..	....	T	.25	1.5c	...	5 05
Fairfield		.01	.46	2.42	.81	....	.. .	....	1.36	.96	....	.06	.07	..	.83	....	1 92	12	..	21	....	....	....	....	.06	.03		....	....	T	.22	9.54
Forest City	.17		.03		....	....	....	T	.21	....	....	.31	...	.58	.02	.45	.86		.75			..	....	..	.58	....	....	...	.02	1.08	.56	5 61
Fort Madison	....		...	1.20	....	.80		....	.08	1.11	....	T	T		....	.50	1.10	2.34	T	T	....	....	..		....	..	..			..	..	7.19
Galva	..	....	..		.60	....		....	T	80	..	.21	....	....	1.00	..	.80	...	70	.05	....		....	.70		...	....	..	.03	...	...	4.91
Gilman	.04	....	1 70	..	....		....		T	.20		T	.29	....	1.32	....	.87	.28	.55	..	....	..		....	.94	....	....	..		.12	.63	6.94
Grand Meadow		.21		.03	....	..			.17	.17	..	..	.27		.25		....	.11	.28						.15	....	....	....	....	.3c	.04	1.98
Greenfield	....		.12		47	....	....	....	.06	.46	....		....	T	1 56	T	.12		T	.24	T	.28	T	T	.62	.03	....	T	....	.47	1.54	5.77
Grinnell (near)	....	.06	.05	1.10	.20	....	..	....	.03	.45	....	T	.45	....	1.75	..	1.37	....	...	.20	....	....	T	....	.83	....	....		...	.15	.81	7.45
Grundy Center	..	.08		.05	..		....	....	.10	.6:	....	.02	2.26	....	.8:	....	.98	.63	2.85	.04	....	....	....	....	1.05	I		..	..	.14	.19	9.81
Guthrie Center	..	.05	.25	.24	....	....	....	....	.11	.26	....	T	....	....	3.64	T	.74		.49	T	....	T	....	..	1 46	..	..	....	..	.57	10	7.91
Hampton	.08		.01	....		....		....	.64	T	..	.24	....	.52	....	.68	.38		.61			....	....	....	1 63	....	....	....	.50	4!		5.77
Harlan	....	....	.26	T	T	..	....		.15	.19		1	...	..	.87	.01	.06	T	T	.01	....	.23	T	T	1.21		....	....	.05	27	.0:	3 32
Hopeville	....	...	.68	1.50		..	....	....	.18	.10	....	....	....	....	1.36	....			....	.3:	....	.17	T	..	1.82	1.78	....	....	....	.45	.	8.37
Humboldt	..	.97	....	....	...	..	....	....	.07	64	.	07	.10	....	2 22	....	57	....	1.20	.		.03	....	....	1.15	..	....			.34	....	7.36
Independence	....	.20	....	T	....	....	....		T	.32	....	.10	.30	....	.50	....	60	.70	1.30	....	....	....		....	40	....	....	....	....	1	....	4 42
Indianola		.02	10	.70	50	....			T	.23	....	T		....	3 49	.45	90		.53	.23	...	.02	....	....	.94		....	....	....	.46	.91	9.48
Iowa City	..	.09	T	1.28	.12	....	....	....	T	.76	....	T	2.20		.93	...	82	2 92	....	.72	....	....	....	....	.73	.14	..			....	.20	10.91
Iowa Falls	....	.10	....	.08	...	..			06	.16	.	.07	3 03	T	1 00	.07	.80	....	.42	...		T			1 08	..	....	....	T	.34	.36	7.66
Jefferson	..	....	..	10				....	.07	.27		T	....	..	1.45	...	3 25	....	.75	T	....	....	....	..	.67	....		....	....	1.71	..	8 27
Keokuk	....		16	1.58	1 28	..	....	....	.96	.73	.	...	.12	....	.29	.	.85	.41	T	I	..		....	....	T	55	..	..	....	....	T	6 93
Keosauqua		T	28	1.32	1 .2		....	..	.07	1.26	....	(	..		.75	1.04	.0	...	..	.21	....	.04		....	.06	.47	..	....	....	....	.25	7.10
Knoxville	....	T	.10	1.40	37	....	...	....	.10	.50		T	....	..	1 64	T	1.90	....	....	.42	....	T	..	....	.60		....	....	..	.65	35	8 03
Lacona		....	.1c	. 0	60		....	..	.10	.60	....	....		..	4.00	....	1.50	....	.10	.10	....	.10		...	.30	.30	...	....	....	.4c	.40	8.70
Lansing	..	.85		05	..	....	..	....	.10	.28	...	.22	.18		...		.90	.	30	....	....	....				....	....	....	....	.30		3.18
Larrabee	....	....	..	....	....	....	..		...	49		.05	...	1.27		01	1.25		.47	....	.01		T	.03	2 51		....	....	.05	.81		6.95
Le Claire		....	....	..	.73	T	....	....	....	1.31	.71	..	.93	....	.13	.02	15	.22	...	2 15	....		....	....	....	.13	..	....	....	....	....	.02	6.50
Le Mars	..	....	....		..	.		04	.03	.40	....	....	..	....	.10	.1c	..	..	.58		.2c	....	....	.05	1.00	....	....	....		.25	.90	3 65
Lenox	..	....	.13	....	1.00	..	....	....	33	.12	....	....	....	....	1 26	.15	....	....	....	35	..	.75	....	....	75	1.6o	..	....	....	.10	.32	6.86
Leon	...	....	.71		1 3:	....	....	....	1.46	49	.			...	1.65	....	03	T	....	.15	....	.09	....	..	.8	1 85		....	.	.11	.20	8 24
Maquoketa	....	T	....	....	...	....	.	...	04	1.10	....	T	63	....	.45	....	.16	.10	.12	70	....	..	....	....	.11	.09	....	....	....	..	.07	3.57
Marshalltown	.04	....	....	1.67	..	....	..	....	.33	.04	....	.02	.30	....	2.15	...	1.12	.07	.45	20	....	....	..	....	.73			....	....	.34	.41	7.87
Monticello	T	.15	....	T	....	T	...	....	T	.47		53	....	...	.63	....	40	....	.90	....	....	....	....	....	.18	....	....		T	.05	....	3.31
Mount Ayr	..	T	.36	.	2 20	....	....	....	1 60	.15	....	..	...	.	1.40	c7	....	T		.20		8:	.02	T	.04	.97	....	..	....	.c8	.16	9.09
Mt. Pleasant	.	...	.55	2 15	2.00	....	....	....	1.5c	1 cc	....	....	10	....	.75	...	1.55	05	.09	T		..			20	12	..	..	..	....	T	10.06
Mt. Vernon	....	.10	T	T	..	....	..	....	T	.78	.	.05	3 20	..	.67	....	25	1.05	.40	2.90	....		....	.	.84	.16	....	..	....	....	.25	10 65
New Hampton	....	.24	..	.01	....		....	....	.05	.90	..	.06	.11		15		.50	.16	.60	....	....	....	..	....	.23	....	..	....		54	.17	3 72
Newton	....	.10	...	.37	.21	....	....	....	T	.44	....	T	.88	....	(51	..	1.45	....	.37	..	..	....	....	.	.84		....	....	....	.12	77	7.06
Northwood	....	.34		.02		....	....	....	.09	.47	...	.40	07	..	.58	..	.19	0	.73		..				.45	....	....	....	T	47	2.06	5.88
Odebolt	....	....				....	....	....	.05	.21	...	.07	..		80	....	.30	..	.5c	....		.12		T	.67	....	..	....	....	1.00	....	3.72
Ogden	....	....	....	....	..	....	....	..	.	.27		....	....	....	2 25		2 59	...	12	...	..	....	....	....	9 7	....	..	..	....	.67	.16	7.01
Olin	..	.02	...	...	...	...	....	....	.43	1 00	....		.8c	....	....	79	.16	.14	1.60	...	..		....	....	.40	....	....	....	....	....	.	5 34
Omaha, Neb	....		28	T	04	....	....	....	.08	.10	...	.03	....		.29	....	1			.c8		.92	T	T	.46	T	....	..	....	49	09	2.86
Onawa			....	08	....			T	.0:	.25	....	.08	....	....	.77		.17		.50	....	....	.16	....	.02	1.57	....	....		01	.60	.02	4.24
Osage	..	.32	..		..			..	.08	8	....	.28	.05	....	38	....	.35	.01	.35	....	....	..	....		.35	....	..	..	....	.55	6	4 18
Oskaloosa		....	.37	2.50	25		....		21	46		T	.08		1.48	....	1.04	....	.17	.03	....	.	....	....	.49	...		....	..	.02	.47	7.57
Ottumwa	....	.01	.14	.67	.67	...	..	....	.7:	.6	....	..		....	1.3:	.	1.38		25	.11	.	.	....	....	.22	02	..	....	..		.22	6 42
Ovid	....		.88		.40	....	....		.45	40	....		....		1 49		1 48		...	.38	..	.02	...	....	50	2.15	....		...	.49	....	8 64
Pacific Junction	..		1 00	T	1.03	....		....	.22	.03		..	....	....	.25	..	...	..		1.12		.77	02	T	T	.1:	..	....	....	.31	.23	5 15
Perry	...	.13	07	.70	..	.	....		.09	.5c	....	...			3 1c	T	.77	...	.co		1.00	.	.	..	.66	T	..	....	....	.30	.06	9 38
Plover	....	.57	....	....	..	....	....	..		.48	...	.23	.84	.18	1.84	.06	1 68	....	1.30		.02	....	...		1.44	....	..	..	.11	73		9.48
Red Oak	...		.14	T	33	....	....	....	.12	.08	...	T	..	..	.29	....	....	...	.	2.09	..	.74	.c2	T	.05	.72	....	..	T	.2c	.93	5 71
Ridgeway		.11		.03	...	T	....		.08	.17	....	.30	.04	.01	.17	....	.14	.15	23	.02	.01			...	.15	....	....	...		.43	.42	2 66
Rockford	..	.25	....	....	...		.	....	...	1.20	....	..	.50	..	.48	....	....	....	1.30	....	1 30		....		.45		..	..	T	1.15	....	6.12
Rockwell City		T		....	....	....	....	..	...	.30	..	09			1.75	....	3 05		.47	....	...	..	..	..	1.01	....	..	..	....	....	....	7.82
Ruthven	.	.45	....	....	....	....	...	....	....		...	.41		T	1 15	....	1 35		1.00	...	....	....	....	....	2.00		....	....	....	1.82	1.05	9 23
Sac City	...	....	T	T	T	....	....	....	.08	.16	....	06	T	T	1.49	T	3 00	T	1.20	..	....	07	T	....	..	.75	....	....	T	1.22	....	8.03
St. Charles	....	.02	.14	.04	.19	....	....	....	.04	20		01	....		3 03	....	66	.02	.14	.25		.03	...		.29	.33	....	....	..	.59	1.60	7.58
Scranton	....	....	T	T	....	..	..	....	1	.5	..	T	....	....	1.54	T	1.71	....	.7	T		1		T	.62		..	....	.63	....	....	5 70
Sheldon	....	T	T	T	....	....	....	....	12	.28	..	68	.01	.45	01	T	1.47	.01	1.20	....	..	.10	..	T	1.65	..	....	....	.01	.14	.01	6.14
Sibley	....		....		...	....	....	....	T	:30	....	.32	....	.70	.12	.02	2.05	...	1 23		....	.02	....	T	.81		....	....	....	3 60	.08	9.25
Sigourney	....	.09	.11	1.02	.82	....	....	....	.14	1.12	....	T	.10	...	1.15	---	1.30	.08	....	.61	T	T			55	.07	..	...	....	T	.37	7.53
Sioux Center	....	T	T	05			....	.03	.36	.35	....	.37	..	.58	T	.05	.6	I	35	...	.c8	.18	T	.02	1.75	...		....	T	.23	.02	5.05
Sioux City	....	..	.01	T	T	T	...		.10	.02	.29	....	.06	....	.20	09	.06	.04	T	.17	...	.12	.08	.01	.01	.77	....	....	...	.13	.03	2.19
Stockport	....	....	.08	2.38	1.02	..	...	...	.20	1.65	....	.01	.01		.65	....	.73	28	.27	.25	....	T		....	.04	.40	...	T		T	.24	8.21

DAILY AND MONTHLY PRECIPITATION FOR AUGUST, 1902—CONTINUED.

STATIONS.	DAY OF MONTH.																															TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Storm Lake	....	T	T	T	.03	...	....	...	T	.75	..	.25	.01	T	1.00	.01	1.78	....	.65		....	.08	T	T	.86	T	....	....	.01	.08	.01	5.52
Stuart	....	....	.23	1.42				....	.25	T	....	T	...	T	3.55	..	59		.18	...	....		....		1.01	....	....	....	.60	.34		8 17
Thurman	...	....	...	T	1.6	....		....	T		....				T	....	T	....	....	1.56	....	.75	T	T	T	3 10	....	....	T	.30	1.40	8.72
Tipton		....	T	...	....	....	..	....	.30	.85	....	25	2.25	...	.65	...	.50	85	.75	2 25	....	...	....	....	.65				...	...	.10	9.40
Toledo	....	....	....	1.20	....	....	....		T	.58	..		1.10	....	1.80		3 05	....	.15	....	....		....	....	.67	...	....	....		.80	..	9.35
Vinton	....	....	...		....	....		...	T	.56		1.24		...	82	..	.86	...	2.83	....	....	....	....	....	1.08		....	....	....	.65	...	8.03
Wapello	....	T	T	1 08	35	....		...	1 00	.40	....	T	1.48	....	.72		90	2 86	...	.18		T		....	.52	T	....	...		..	.06	9 55
Washington	...	.02	.02	1.92	1.95	....	...	....	1 62	75	....	....	.60		....	1.53	1.60	1 27	.25	..	...	....	....	....	.48	..		...	....		.33	12.34
Washta	...	...		.11	..	...	....	....	.11	.2	..	.17	..	T	50	....	.12	....	1 22		.21	....	....	T	1.10	...		....	.05	.05	T	3 91
Waterloo		.18	....	.01	....	...	...		08	37	...	.05	.29	....	77	...	.70	.70	3 26	....	....	....	...	....	1.09	..	...	....	....	.06	.14	7.70
Waverly	....	.20	....	...		....	...	....	.05	67		.03	07	....	.40	....	70		1.40	.03	....	....	....	....	.54	....	..	....	....	.41	.07	4.57
West Bend		.66	T	.06	..	....	...	..	.02	.46		.23	.28	.02	1.0	.18	1.04	T	.80	...	..	01	....	....	1.54	....	....	....	T	.79	..	7.12
West Union	.20	....	....	.70	...		..	....	.30		....	.13		.29		12	.32		.26							....		....	....	.40	...	2.02
Whitten	..	....	...		..		..	..	07	.37		....	1.00		.84	.03	1 00	50	1.16	T		....	...	...	.62	.06	....		....	.46	.17	6.98
Wilton Junction	..	....		....	1.05		...	...	.20	.35	..		3.08		4	....	.60	.50		.43	...	...	....		.82		....	....	....	.10		7.60
Winterset	....	.06	.20	T	.39	...			.03	.34	...	....	....	....	2.95	....	.54		...	.45	....	....	...	....	.40	.12	...	..		.97	1.90	8.35
Woodburn			1 00		.16	....	....	....	.15	. 1		T			1.20		.48		.50	....	.04	...	T		.60	1.32			...	1 14		6 80

Precipitation Chart August 1902.



SEPTEMBER, 1902. No. 9.



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BERNARD MURPHY, STATE PRINTER,
1902.

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Waukee	E. J. Leonard
Waverly	H. S. Hoover
Whitten	Dr. Frank P. Butler
Wilton Junction	J. M. Rider
Winterset	Prof. E. R. Zeller
West Bend	Phil. Dorweiler
West Union	J. M. Lisher
Woodburn	C B. McDonough

*U. S. Weather Bureau

WEATHER-CROP OBSERVERS.

Reporting for the Weekly Bulletin.

Agency	J. H. Van Zandt
Albia	Wm. Mercer
Algona	J. H. Zanke
Allerton	James Piper
Alta	Jonas Cushman
Audubon	Hon. A. H. Edwards
Blairstown	T. H. Weil
Burt	R. Jain
Cedar Rapids	Hon. A. J. Fuhrmeister
Charles City	W B. Towner
Chariton	C. C. Burr
Clarksville	F. M. Russell
Correctionville	Hon. W. B. Chapman
Corwith	Wm. Oxley
Council Bluffs	L. Prouty
Creston	M. V. Ashby
Danville	Sherman Matthews
Dubuque, R. F. D.	Hon. F. N. Knoll
Dunlap	Hon. B. F. Roberts
Gruver	E. Dawson
Elliott	C. B. Hamilton
Emerson	D. B. Nims
Fort Dodge	R. W. Blaine
Fruitland	R. T. Hummel
Geneva	Wm. H. Thompson
Harlan	H. B. Kees
Hesper	G E. Dillingham
Humeston	Hon. S. H. Moore
Independence	Geo. H. Wilson
Indianola	H. D. Guthrie
Ireton	J. M. Sherman
Le Mars	Hon. Henry Schrooten
Madrid	Geo. Swisher
Manson	J. D. Skinner
Marshalltown	Hon. S. B. Packard
Martinsburg	W. B. Berridge
Mapleton	A. Lamb
Mt. Pleasant	W. S. Wright
Milton	Hon. E. C. Holland
Monroe	J. A. Dibel
Nevada	Geo. C. White
Northwood	T L. Bolton
Orange City	H. J. Vande Waa
Owen	Hon. J. W. Bird
Pittsburg	G. C. Duffield
Red Oak	Hon. C. L. Stratton
Rock Rapids	D. E. F. Merrill
Rossville	T. B. Wiley
Sageville	Hon. F. N. Knoll
Seymour	L. B. Sager
Shenandoah	Reuben Mullison
State Center	E. P. Thompson
Stuart	W. W. Bailey
Tama	W. G. Malin
Van Horne	Spencer Smith
Weldon	Ed. Worden
Winterset	H. A. Kinsman
West Branch	Wrigley Smith
West Union	H. B. Blackman
Wilton	Thos. Boot
Wiota	I. S. Coomes

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW
OF THE
Iowa Weather and Crop Service.

VOLUME XIII. SEPTEMBER, 1902. No. 9.

WEATHER AND CROP CONDITIONS.

The month of September was a fitting close of the most unfavorable crop season in Iowa since 1869. The daily average temperature for the month was 5.2 degrees below normal, and the average rainfal was 1.36 inches above normal, with a large percentage of cloudiness. Field work was much retarded by the saturated condition of the soil, and corn and other unripened crops made very slow progress toward maturity. The period of low temperature from 11th to 13th, with frosts and ice in all parts of the state, caused great injury to corn on low ground, the damage being the heaviest in the northern half of the state where the crop was least advanced. The reports indicate that the amount of soft corn, that will possess but little value except for immediate feeding, will be much greater than usual, ranging from 25 per cent in the southern section to above 60 per cent in the northern section. In bulk all field crops have been much above the average, but the quality has been much impaired, and a very large per cent of the small grain was practically destroyed The conditions have not been favorable for fall plowing and seeding Pasturage has been unusually heavy, though the quality of grasses was not up to the normal standard. The potato crop is better than was indicated by previous reports, and apples developed finely from effects of abundant moisture. An unusually large amount of forage has been grown, but the value of the fodder will be below the standard in feeding value. The output of sound corn will depend in a large measure upon conditions in October. A long period of drying weather is needed to dry out the crop preparatory to cribbing.

TWO ABNORMAL SEASONS.

The seasons of 1901 and 1902 represent climatic extremes in respect to temperature and precipitation. Last season was excessively hot and dry, breaking the records as to sustained high temperature; this season has been thus far unseasonably cool, and it will rank among the wettest seasons ever known in this state. The following tables will show the monthly averages of temperature and precipitation for the two years for the state, giving a striking exhibit of departures from the normal:

SEASON OF 1901, JANUARY 1 TO OCTOBER 1.

MONTHS.	TEMPERATURE DEGREES.		PRECIPITATION INCHES.	
	AVERAGES.	DEPARTURES FROM NORMAL.	AVERAGES.	DEPARTURES FROM NORMAL.
January	23.7	† 6.5	0.74	— 0.48
February	17.5	— 4.0	1 01	— 0.04
March	34 2	† 1.0	2.64	† 0.89
April	49.9	† 0.4	1.79	— 1.41
May	60.7	† 1.0	2.35	— 1.62
June	72.3	† 2.3	3.71	— 0.55
July	82.4	† 8.7	2.34	— 1.34
August	73.8	† 2.7	1.29	— 1.78
September	63.3	— 1.0	4 77	† 1.47
Totals			20.64	—4.86

† signifies plus.

SEASON OF 1902, JANUARY 1 TO OCTOBER 1.

January	22.4	† 5.3	0.88	— 0.34
February	17.6	— 4.1	0.73	— 0.33
March	39.1	† 5.9	1 45	— 0.30
April	48 2	— 1.3	1.71	— 1 50
May	63 8	† 4 1	5.39	† 1.42
June	65.2	— 4.8	7.16	† 2.80
July	73.1	— 0.6	8 67	† 4.93
August	69.1	— 2.0	6.58	† 3 51
September	59 1	— 5 2	4.35	† 1.36
Totals			37.92	† 11.71

† Signifies plus.

From the above records it will be seen that the average amount of rainfall for the state for the nine months ended September 30, 1902, was 11.71 inches above normal, and 17.28 inches in excess of the total for the corresponding period in 1901. The total for this year, thus far, is 37.92 inches, and for the six crop months it was 32 15 inches. Last year, during the crop months the amount was 16.25 inches, and of that amount 4 77 inches fell in September, when it was not needed for development of corn. In the four critical crop-growing months last year it was excessively hot and abnormally dry, while in the corresponding months this season it was unseasonably cool and excessively wet. The swing of the meteorological pendulum is strikingly illustrated in these two abnormal seasons.

NOTES.

The main iron electric light tower in San Jose, Cal., which is 220 feet in height, and may be seen from nearly all parts of Santa Clara Valley, will be used for the display of weather signals to farmers and fruit growers. Flags by day and colored lights at night will be used to give warning of the approach of frost, and thereby timely preparations may be made to save the fruit by the smudging method.

* * *

On some of the big grain ranches of the northwest straw is used as fuel to drive the engines, and the fires are fed by automatic appliances, the straw being carried to the fire box by steel conveyors.

* * *

According to the pomologist of the agricultural department the center of apple production in the United States has shifted since 1890 to a point west of the Alleghenies. The west is making steady advancement in general fruit growing as well as in the production of apples.

* * *

The pollen theory of hay fever has been proven by two German investigators to be untenable. The number of pollen particles in the air during the hay fever season is very small, an average of twenty-five to each cubic meter, and the nasal and throat secretions of hay fever patients show less pollen than those of healthy persons. Very few micro-organisms appear in the pollen. As to the bacteria that may excite hay

fever, little or nothing was learned, and it is still uncertain how such germs may be transmitted.—*Exchange.*

* * *

At a meeting of the American Institute of Electrical Engineers in New York city, President Scott said that since the organization of the institute, in 1884, the value of electrical installations in the United States outside of telegraph and telephone plants had increased from $1,000,000 to over $4,000,000,000. "The United States," he added, "with only one-fifth of the population of Europe and Great Britain, has two and one-third times the kilowatt capacity in power stations, and three and one-half the mileage of electric railways. The power houses in operation and under contract in New York city would replace all the central stations for lighting and power in Great Britain or Germany; they would operate all the electric railways of Great Britain and Europe combined; one alone would be sufficient for the railways of Germany, and the output of a single generator would run all the railways of Switzerland."

* * *

Iowa never had a dry year when the waste and loss of crops was equal to that of this wet one of 1902.—*Rockford Register.*

* * *

In Iowa about 30 per cent of the corn acreage lies in the southern third of the state, 45 per cent in the central third, and 25 per cent in the northern third of the state. Dividing the state into three sections running north and south, we find that the eastern third contains about 25 per cent of the total corn acreage of the state, the central third has 36 per cent, and the western third 39 per cent.—*Murray's Price Current.*

UNSEASONABLE WEATHER IN THE UNITED STATES.

The cause of unseasonable weather is not demonstrable. Neither is it possible in all cases to determine which of the general atmospheric conditions that are associated with unseasonable weather partake of the nature of cause and which of effect.

It has been observed that summer periods of low temperature are associated with barometric pressure below the normal and abundant rainfall, and that summer periods of excessive heat are associated with barometric pressure about or above the normal and a marked deficiency in rainfall. It has also been observed that winter periods of excessive cold are associated with barometric pressure above the normal and little or no precipitation, and that periods of high temperature in winter are associated with barometric pressure below the normal and rain or snow. It has been observed further that the general atmospheric conditions referred to are associated with areas of high and low barometric pressure that traverses the United States. In summer the atmosphere over regions subjected to unusual cold and abnormally heavy rainfall is dominated by areas of low barometric pressure, or general storms, that follow unusual tracks for the season, and the atmosphere over regions subjected to unusual heat is undisturbed by the passage of general storms, and is dominated by an extensive and almost stationary area of high barometric pressure. In winter periods of excessive cold are experienced in connection with areas of high barometric pressure of great magnitude that advance from the British Northwest Territory, and also in connection with general storms that follow abnormal southerly paths, and periods of unusually warm weather occur in connection with a succession of general storms that pursue abnormally northerly paths.

A study of the daily meteorological charts of the Northern Hemisphere shows that the general atmospheric conditions over the United States that are associated with unseasonable weather in any part of the country are, in turn, associated with atmospheric conditions that obtain over at least a great part of the Northern Hemisphere. The international charts show that when a period of abnormal weather prevails over a considerable area of the United States, there is a disarrangement of the normal distribution of atmospheric pressure over a great part of the Northern Hemisphere. They show that in the presence of unseasonable weather in any part of the Northern Hemisphere the so-called permanent continental and oceanic areas of high and low barometric pressure present abnormal aspects, and there is an interruption in the normal succession and progression of the areas of high and low barometric pressure of the middle latitudes —*Prof. E. B. Garriott, in the Monthly Weather Bureau for June, 1902.*

SUN SPOTS AND THE WEATHER.

It can hardly be doubted that systematic fluctuations exist in weather conditions. A succession of cold years is followed by several warm years, and a dry epoch follows a wet one. Can we connect these fluctuations with any known phenomenon, and do the variations recur with sufficient regularity to be called periodic and to admit of their being forecast?

Many attempts have been made to establish a connection between the periodicity of sun spots and the fluctuations in weather conditions. It is first necessary, however, to establish the sun-spot period. In the *Monthly Weather Review* for April, 1902, Prof. A. Wolfer, of Zurich, Switzerland, publishes a table showing the relative number of sun spots that have been observed each month since January, 1749. The numbers in the table have been plotted, and from the curves it appears that the so-called 11-year period, that is, the time between successive occurrences of maximum or minimum numbers of spots, is not a uniform interval, but has varied, since 1749, between 9.0 years and 13.6 years.

The duration of the period of increase of sun spots after a minimum, as also the duration of the period of decrease after a maximum, also shows a variation. Dr. Norman Lockyear, of England, thought the former had a cycle of 35 years, but Wolfer finds evidence that the periods of both increase and decrease have cycles of 55 years, and that the ratio between the two has the same cycle. He also finds that a short period of increase is followed by a high maximum of relative sun-spot numbers.

There are thus two sun-spot cycles with which to compare weather fluctuations: (1), the 11-year period in the relative sun-spot number, and (2), the 55-year cycle in the time of duration of the increase or decrease in the spot numbers. It can hardly be claimed that a relation has as yet been established between the 11-year period and the weather, and it will require many more years of observations than we now have to establish a relation with the 55-year period.—*Monthly Weather Review.*

BENEFITS OF THE WEATHER BUREAU.

(*The Homestead.*)

How many people ever stop to think of the relation existing between the weather bureau and farming? It may be safe to say that the majority do not think there is any relation whatever, except in so far as we are all more or less interested in the weather. In fact, there are many people who can talk of nothing else.

Everybody has some kind of an idea that the department of agriculture attends to the agricultural interests of the country —looks after what is needed, makes suggestions and experiments and publishes what is to many dreary reports in which it is often difficult to get farmers themselves interested. To the average human anything that contains columns of figures is of

little interest unless the figures have a personal relation to his own affairs.

The most interesting bureau nevertheless, under the department of agriculture, is the weather bureau. Without the facts being laid before them it would be rather difficult to convince those living in the interior of the country of the truth of this statement. Not that these people are indifferent to the weather itself, but they reason that no office or bureau or organization created by man can in any way have anything to do with the weather, either in creating it or regulating it. They are of much the same belief as the pious gentleman who would have nothing to do with lightning rods. He considered them devices for defying the power of the Almighty.

In the long ago it was a huge joke to be told that anyone could forecast the weather, and it was a greater joke to many for a good while after the predictions were begun, and some there are perhaps who consider it a joke even now. Still, after a careful record has been kept during the last five years it is shown that only 5 per cent. of the predictions have been unfulfilled. The sailing of ships are governed by what the weather man says and thus numerous lives and vast amounts of property are yearly saved. The storm that devasted Galveston three years ago was predicted by the weather bureau, but was unheeded, just as many similar warnings of danger have been unheeded and will so continue. In 1897 the great flood in the lower Mississippi valley was foretold two weeks in advance and the warnings of the approaching danger were repeated and it is estimated that at least $14,000,000 worth of live stock and farm products were saved in consequence of the precautions taken because of the predictions. Along the sea coast the storm predictions are listened to, for experience has shown the necessity.

Fruit growers are particularly benefited by weather predictions. There are some sections of the country where the fruit grower watches the storm signals as closely almost as the mariner watches the compass and by this means he saves sometimes his entire crop, at other times saving a large percentage of it. Shippers of delicate and perishable fruits are governed by the weather bureau. When a cold wave is predicted the fruit is not shipped until the danger is passed, otherwise without anything to govern the shipper's action the loss would in many instances be disastrous.

ELECTRIC TREATMENT OF SEED CORN.

According to a current newspaper paragraph a farmer residing in Marshall county, Iowa, achieved remarkable success this season by treating his seed corn to an electric bath a short time before planting. He filled a barrel with corn and water, placing a piece of zinc at top and bottom of the barrel; and then, by the aid of the electric light plant of Marshalltown, the contents of the barrel received an electric current of 500 volts, continued twenty minutes. After the corn was thoroughly dried it was planted in an upland field of average fertility, in which corn had been planted nine consecutive years. The crop was remarkable for the development of stalks, which attained an average of about eight feet in height, and the thirteen-acre field brought forth an average of about seventy bushels per acre. This is the story, in brief, of this notable experiment in electro-plating seed corn, and the story is given currency for what it is worth. It will serve, at least, as an illustration of the fact that this is distinctively an age of experimentation on all lines, and that there is a general belief in the marvelous potentiality of electricity. It should be stated, however, that a thirteen-acre field yielding an average of seventy bushels per acre is by no means very rare in Iowa. There has been a prodigious growth of stalks and ears this season in many favored localities, as a result of frequent showers. Possibly electricity has been a potent factor—who knows? We have certainly noted more than the usual amount of electrical force expended in the form of terrific thunderstorms, but it is not quite safe to assume that lightning was the potent factor in the production of big potatoes, squashes, grasses, cornstalks and weeds. And it would require very careful, painstaking and scientific experimentation, continued through several seasons, to give full assurance that the germs of any kind of seed may be quickened by treating them to electric shocks prior to planting. In the production of corn, especially, timeliness in planting, promptness and perseverence in cultivating, abundant sunshine, warmth and moisture at the critical stages of growth, with a fertile and friable soil, are the prime essentials. Careful selection and preservation of seed corn is vastly better than all attempts at awakening the sleeping germs by a shake-up with 500 volts of electricity. There is no dynamo that can beat the harrow and cultivator, strenuously applied to the cornfield in due season.

DESTRUCTIVE POWER OF LIGHTNING.

To the editor —On the 5th of September about 5 p. m. the writer, in company with a threshing crew of sixteen men, saw a terrific display of the power of electricity. Being driven from our work by a severe storm we took refuge in a large barn, a few rods distant from a small grove of burr oak trees. The tree nearest the barn was about 18 inches in diameter. The height of the tree was about 25 feet. During the storm the lightning flashes, though not more than usually frequent, were intensely bright and the thunder was peculiarly explosive, like discharges of heavy artillery. While a number of us were looking out of the barn door in the direction of the grove a blinding flash of lightning enveloped the tree above described, followed by an explosion, like dynamite, blowing the tree to splinters and scattering the debris over a half acre of ground. The direction of the flash was upward. The whole tree seemed to be lifted bodily several feet above ground and then blown to pieces. Two large pieces each weighing more than a man could comfortably carry, were blown about seventy-five feet, one to the northwest and the other to the northeast. These pieces were splintered, but held together at one end. The mass of debris in form of splinters, limbs and leaves, were thrown toward the northwest, northeast, southeast and southwest, with but little between those points. The explosion did not jar the earth, but seemed to be wholly in the air. Pigs within two and three rods of the tree were not hurt, but the men in the barn were more or less shocked. The flash, as shown by testimony of all the eye witnesses, was apparently upward and the tree seemed to be lifted bodily and then was blown to pieces. This class of timber growing in scattered groves, is very tough, hard and difficult to split with maul and wedge, and the explosive force must have been very great. A few rods distant, in the same grove, a tree about the size of the one described was struck during a storm in July, but the stroke was downward, the trunk was uninjured except where the electric current tore off the bark in its passage to the ground. From my observation I am led to believe that many strokes of lightning are from the earth upward. I should like to have the opinion of the editor of the Monthly Review as to this point.

Geo. W. Barclay,
Tipton, Iowa, Sept. 8th 1902. Vol. Observeer.

Note. Answering the above request for an expression of opinion relative to the upward motion of stroke, we would say that some of the ablest scientists sustain that view. In Bulletin No. 26 issued by the Weather Bureau and edited by Messrs. McAdie and Henry, we find the following paragraph:

"There is no reason to doubt that the discharge takes place sometimes from earth to cloud. That is to say, that while we now consider a lightning flash as something like the discharge of a condenser through its own di-electric, made up of excess-

ively frequent alternations, say something like 300 000 times per second, the spark or core of incandescent air may seem to have had its beginning at the earth's surface. That is to say the air gap breaks down first at a point near the earth."

A BAD YEAR FOR THEORIES.

The present season has disposed of a whole lot of fanciful theories as to the law governing droughts and rainfall. For years past the papers have teemed with articles based upon the assumption that the destruction of the forests of the country was diminishing the rainfall and producing disastrous droughts; that the drainage of the swamp lands and shallow lakes and the draining of the farms were largely responsible for the dry weather, and many there were who believed in these theories. Now here comes the summer of 1902 with such a general and unusual fall of rain during a four months' period all through the Mississippi valley region that all these fancy theories are completely exploded. The truth is that trees grow where rain falls, and the rain does not fall because the trees grow. The drainage of the soil does just as much to keep it moist in a dry time as it does to keep it dry in a wet one. Nothing which man does or can do can enlarge or diminish the rainfall or prevent floods or droughts in the smallest degree. At best man can only modify effects of both, and this he can do and does by drainage, conservation of moisture by proper tillage and tempering the force and aridity of the winds by planting forests, and by removing them can produce floods, dry up the springs, destroy the water powers and convert forest areas into bleak and desert territory, but he never runs the waterworks under any circumstances. The records of fifty or more years show that seasons or periods of extreme drought and excessive rainfall come in cycles; likewise seasons of extreme heat and cold. A season which gives the exact mean or average of heat, cold and precipitation is much rarer than one which goes to extremes in some form or other.—*J. S. Trigg in Rockford Register.*

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 29.97 inches; highest observed, 30.40 inches, at Des Moines, on the 13th; lowest observed, 29.49 inches, at Davenport on the 27th; range for the state, 0.91 inch.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 103 stations, was 59.1 degrees, which is 5.2° below normal. By sections the mean temperatures were as follows; Northern section, 57.9°; Central section, 59.3°; Southern section, 60.2°. The highest monthly mean was 62.6° at Burlington; lowest monthly mean, 55.0° at New Hampton. The highest temperature reported was 88°, at Denison; Sibley, Sigourney and Council Bluffs on the 2nd and 7th; lowest temperature reported, 23° at Galva on the 11th. The average monthly maximum was 82.5°; average monthly minimum, 31.7°. Greatest daily range, 50° at Galva; average of greatest daily ranges, 37.0°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 118 station, was 4.35 inches, which is 1.36 inches above normal. The average by section were as follows: Northern section, 3.63 inches; Central section, 4.49 inches; Southern section, 4.93 inches. The largest amount reported was 10 41 inches at Otumwa; least amount reported, 1 65, at Clear Lake. The greatest daily rainfall reported was 4.31 inches at Chariton on the 30th. Average number of days on which .01 of an inch or more was reported, 9.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 41 miles per hour, from the northwest; at Sioux City, on the 8th. Average number of clear days, 15; partly cloudy 6; cloudy 9.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced	EXTREMES			
		Highest reduced barometer	Date.	Lowest reduced barometer.	
Davenport	29 96	30.31	13	29 49	27
Des Moines	29.99	30 40	13	29 57	26
Dubuque	29 98	30.33	13	29.50	27
Omaha, Neb	29.96	30 36	12	29 55	26
Keokuk	29.97	30 35	13	29 56	27
Sioux City	29.98	30.37	12	29 64	26
Means	29.97	30.40	13	29.49	27

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	5331	24	SW	5
Des Moines	6664	31	SW	14
Dubuque	5174	26	SE	5
Keokuk	5311	28	W	5
La Crosse, Wis	5941	26	NW	6
Omaha, Neb	6603	32	N	8
Sioux City	9870	41	NW	8

OBSERVERS' NOTES.

ALTA—*David E. Hadden.* First killing frost on 12th; blue sunlight on 14th.

ATLANTIC—*J. W. Love.* September was very cool, with much rain the last ten days. Ice on 12th and 13th.

AUDUBON—*Frank Mott.* Rain of 23d caused streams to overflow.

BONAPARTE—*B. R. Vale* Rain, 3.51, keeping fields wet and practically no plowing done; corn maturing slowly; pastures excellent.

BRITT—*Geo. P. Hardwick.* The corn being late in maturing the frost of 12th and 13th cut short both corn and fodder; will be about half an average yield.

CLINTON—*Dr. Luke Roberts.* The mean temperature for September, 1902, was 58.8 degrees, being 3.1 degrees below normal. During the last twenty-four years there were five Septembers which gave a lower mean temperature, namely: 1879, 56.8 degrees; 1883, 57.4 degrees; 1888, 57.0 degrees; 1890, 58 5 degrees, and 1896, 58.3 degrees. The rainfall was 3.79 inches or 67 hundredths of an inch above normal. There were ten days on which a measurable amount of water fell, three of which gave copious amounts, 0.60 on the 5th, 1.25 on the 17th, and 1.09 on the 23d. There was little thunder and lightning on the 5th, 8th and 27th.

The departures from normal which made September gloomy and unlike the accustomed pleasant autumnal days, which are looked for in Iowa, can not be credited to its temperature or precipitation, but to its abnormal cloudiness and humidity. The record was broken in the high per cent of cloudiness and low per cent of sunshine. The number of cloudy days was 13, part cloudy 9 and clear 8. The per cent of cloudiness was 16 above normal. While the frequent small rains were beneficial to the soil, they, together with the above conditions, made it impossible to secure crops in good condition, or mature corn so as to be saved from further deterioration. In Clinton county corn has not been injured by frosts, but by other abnormal conditions, and at the close of the month there was no visible prospects for improved conditions before freezing weather will be liable to get in its damaging work on corn. The whole growing season has been one of anxiety and alarm. The

weather seemed unseasonable all the way along, drenching rains and frequent showers, cloudiness and chilliness. Crops that did well in growth were of inferior flavor or spoiled in an attempt to harvest in good condition.

Apples have done quite well in eastern Iowa, but on cutting them, even those of fair size and complexion, would reveal the habitation of worms. There is no crop which has escaped harmful influences. Green corn came the nearest to being excellent in flavor. Melons and the squash family were inferior in flavor.

CORNING—*Jerome Smith.* Heavy frost on 12th but no damage done except on low ground.

FOREST CITY—*J. A. Peters.* Eighty-five per cent of corn is soft and much of it worthless; too wet for fall plowing.

GUTHRIE CENTER—*W. F. Brann.* Frost and rain damaged corn 25 per cent; not much corn in shock; no fall wheat sown.

LOGAN—*Mrs. M. B. Stern.* The month has been unusually cold; frost did much damage to late corn.

RIDGEWAY—*Arther Betts.* Temperature 2.5 degrees below normal; 233 hours of sunshine. This place has not had killing frost yet, and delicate vegetation is green and beautiful. Corn slowly ripening; pastures fine.

BELATED REPORTS.

PRIMGHAR.—June. Total precipitation 2,10 inches. Greatest in 24 hours .70 inch on the 12th, 13th and 25th. Number of rainy days 3.

PRIMGHAR.—July. Total precipitation 5.46 inches. Greatest in 24 hours 1.00 inch on the 3rd. Number of rainy days 8.

ERRATA IN JULY REVIEW.

AUDUBON.—Mean temperature recorded 73.0° on page 8, should have been 73.2.° Mean minimum temperature recorded 61·5° on page 9, should have been 61.8°.

DENNISON.—Mean temperature recorded 73 4° on page 7, should have been 71.8°. Mean maximum temperature recorded 85.3° on page 9, should have been 82.1°.

GALVA.—Daily precipitation recorded .00 and .10 inch, on the 5th, and 17th, respectively on page 11, should have been .50 and .15 inch respectively.

MARSHALLTOWN.—Percipitation recorded .86 inch on the 3rd, on page 11, should have been .68 inch.

OSCEOLA.—Precipitation recorded 1.35 inches on the 2nd, on page 11, should have been .35 inch.

CLIMATOLOGICAL DATA FOR SEPTEMBER, 1902.

NORTHERN SECTION.

STATIONS	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT							PRECIP., IN INCHES				Number rainy days	SKY			Prevailing direction of wind	DATES OF THUNDERSTORMS.
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)		Number clear days	Number partly cloudy days	Number cloudy days		
Algona	Kossuth	1,213	9	59 0	-4.6	83	7	34	12	33	4.95	†3.13	1.55	....	6	8	16	6	SE	22, 2
Alta	Buena Vista.	1,513	10	56 7	-7.9	81	7	29	12	36	3.94	†1.93	1.17		10	16	8	6	S	5, 16, 26
Alta (near)	Buena Vista.	....	....	....	.....		....	.....	....	.....	3.71	.....	1.26	...	7	....		....		
Britt	Hancock	1,236		57.4	.....	81	7	27	13	38	3 41	...	1.40	....	9	10	11	9	NE	28
Charles City	Floyd.	1,012	10	58.8	-4.8	81	7	29	13	37	2.80	†0.52	.90	....	4	7	13	10	SE	
Chester	Howard .	.....	....	57.2	.....	80	7	26	13	42	2 56	.....	1.10		5	17	0	13	SW	
Clear Lake	Cerro Gordo.	984	....	58.6	.....	85	6	33	12	36	1.65	...	.60	....	6	11	12	7	SW	
Decorah	Winneshiek .	875	8	58.2	-5.0	79	7	31	13	35	3 86	†0 95	1.24	....	8	...	...	...		
Dows	Wright	1,142	..	57.8	.....	80	7	30	13	35	2.66	.....	1.30	..	9	19	3	8	S	
Elkader	Clayton	600	20	59.8	-2.4	86	7	30	13	43	4.12	†0.21	1.50		8	16	5	9	NW	5, 18, 17, 27
Estherville (*a*)	Emmet	1,298	....	55 4	.....	82	7	30	14	42	.....	....	.....	....	....	....	....	....	NW	
Forest City	Winnebago .	1,220		58.2	.....	82	7	30	13	38	3.95	.....	2.00		9	12	5	13	S	
Grand Meadow	Clayton.	1,180	10	57.6	-5.4	78	7	33	12	31	4 61	†1.72	1.78	..	7	12	6	12	NW	
Greene	Butler	943	....	58.2	...	82	7	32	13	37	4.00		1.55		9	14	6	10		
Hampton	Franklin	1,000	11	59 2	-3.2	84	7	34	12	35	4.67	†1.80	2.56	...	7	10	13	7	NW	
Humboldt	Humboldt	1,095	8	58 8	.....	82	7	31	13	36	3.15	†1.05	.75	....	9	20	4	6	SE	
Lansing	Allamakee	632		60.2	.....	83	1	28	13	39	3.00	.....	1.00	....	7	13	2	15		
Le Mars	Plymouth	1,224		58 2		83	7	26	13	43	4 67	.....	3.52	....	4	14	10	6	S	20
New Hampton	Chickasaw	1,166		55 0	.....	78	7	32	12, 13, 14	38	6.75	.....	3.80	....	9	10	8	12	NW	
Northwood	Worth	1,222		57.3	.....	78	7	35	12, 13	32	2 55	.....	1.38	..	8	14	6	10	NW	5, 17, 27
Osage	Mitchell.	1,184	10	57.0	-2.3	80	7, 21	34	13, 19	34	2.10	-1.28	.52	...	7	8	8	14	NW	5, 17, 26
Plover	Pocahontas.	1,426		55.6		83	7	25	13	38	4.19	....	1.13	....	8	17	2	11	N	
Ridgeway	Winneshiek .	1,215	....	60.0	.....	79	2, 7, 15, 16	34	13	38	3.33	.....	1.18	...	10	14	8	8	S. NW	5, 8, 17, 27
Ruthven	Palo Alto	1,435		58 0	.....	83	7	31	12	34	2 70	....	.96	...	6	13	5	12	NW	
Sheldon (*a*)	O'Brien	1 406	...	57 8	.....	85	7	28	12	38	3 31	.....	2 58	..	7		....	....	S	
Sibley	Osceola .	1,506	...	57.6	.....	88	7	28	13	38	3.98	....	2 62	....	7	19	4	7	NW	
Sioux Center	Sioux			57.8		84	7	30	12, 15	38	4 15	.....	3.25	...	5	18	5	7	S	1, 20, 27
Storm Lake	Buena Vista	1,440	12	58.1	.....	80	7	32	12, 18	31	3.11	†0.45	1.29		10	19	3	8	NW	17
Washta	Cherokee	1,157	....	.....	.....	.....	.....	.....	... .	.....	3 86		1.30	....	6	20	5	5	N	
Waverly (*a*)	Bremer	942		58 7	....	81	7	31	13	35	4 27	....	1 30	...	10	14	4	12	NW	5, 8, 17, 27
West Bend	Palo Alto	1,197	8	57.8	-3.7	82	7	32	12, 13	34	2 99	†0.83	1.27	....	7	13	8	9	NW	5, 20
West Union	Fayette	1,115	....	.....	.....		....	..	....	.....	4.89	...	2 04	....	5	....		....	NE	
Average				57.9	-4 4	81.8	.....	30 5	....	36.7	3 63	†1.03	.....		7	14	7	9	NW	

CENTRAL SECTION.

Amana	Iowa	721	25	59.7	-2.2	81	7	34	13	33	6.36	†2.99	3.12		10	14	6	10	NW	3, 5. 26
Ames	Story	926	21	59.8	-3.8	83	7	31	13	38	1 66	-1.85	.70	...	6	16	3	11	SE	
Baxter	Jasper	998		59 2		82	7	32	12	36	4.85	.....	1.41	..	8	15	6	9	NW	
Buckingham	Iowa		..		.....		.....	.....	.....		4.13	....	1.38	....	8	17	6	7		
Carroll	Carroll	1,265	11	59 6	-4.3	85	7	29	12	41	5.39	†3 20	1.80	....	8	17	3	10		5, 17, 20, 22, 27
Cedar Rapids	Linn	733	19	61 0	-2 4	83	7	38	12, 18	33	4 83	†1.88	1 50	..	8	11	8	11	SE, NW	
Clinton	Clinton	609	10	59 6	-5.8	83	7	31	13	37	3.79	† .80	1.25	....	10	8	9	13	W	5, 8, 22
Davenport	Scott	529	31	61 0	-4.0	83	7	36	13	27	3.20	† .14	1 33		10	10	7	13	W	5, 8
Delaware	Delaware	1,083	10	57 6	-4.2	78	7	32	12	31	3 56	† .20	1 20	....	9	14	7	9	S	
Denison	Crawford	1,180	8	59 6	-5 7	88	2	29	12, 13	41	4.02	†1.73	.98	...	8	19	3	8	S	27
Des Moines	Polk	861	24	59.7	-5.3	83	7	35	13	32	5 03	†1.94	1.96	....	8	9	10	11	SW	5, 26
De Soto	Dallas	866		60.2		81	7	34	13	31	5.76	....	1 55	....	8	19	2	9	NE	
Dubuque	Dubuque	655	29	59 4	-3.6	81	7	36	13	32	3.93	† .00	1.22	....	13	10	8	12	SE	3, 5, 8, 27
Fort Dodge	Webster	1,126		58.4	.....	84	7	27	13	41	.....	.....		....	....	17	2	11	NW	
Galva (*a*)	Ida	1,290	8	5.80	-0 75	82	7	23	11	50	3.68	†1.72	1 50	....	6	....	....	....	S	
Gilman	Marshall	1,053	...	.....	.....	.....	....	..	.....	..	3.85	.....	1.03	....	11	14	4	12	S	5
Grinnell (near)	Poweshiek	.....		59.0	.....	80	7	34	13	30	4 57	.....	1.40	....	10	15	4	11	NW	3, 5, 6, 27
Grundy Center	Grundy	976	10	59.0	-4.8	82	7	32	12	34	4.67	†1.81	1.56	...	11	16	3	11	NW	
Guthrie Center	Guthrie	1,077		58 4	.....	83	7	31	12, 13	36	5.49	.....	2.06	...	8	15	6	9	NW	
Harlan	Shelby	1,192	....	58.4		83	7	27	13	41	5.63	.....	2.74	...	10	14	8	8	NW	3, 5, 17, 20, 27
Independence	Buchanan	921	39	58.0	-2.0	81	7	29	13	37	3.27	-1.02	.90	...	6	15	5	10	NW	
Iowa City	Johnson.	644	11	61 0	-4.2	85	7	33	13	32	5.87	†3.17	3.27	....	12	14	5	11		
Iowa Falls	Hardin	1,107	8	56.9	-5.6	80	7	30	13	37	3.46	† .47	1.28		8	15	2	13	NW	5, 17, 27
Jefferson	Greene	1,052	..	.....	.....	.....	.....	.....	.....	.....	5 32	.....	3.07	....	7	....	....	....	NW	4, 26
LeClaire	Scott	576	...	.....	.....		.....	.....	.....	.....	3.67	.....	.98	..	11	..	....	....		
Logan ‡	Harrison	928	36	59.4	-6 9	82	7	28	13	42	3.40	† 34	1.08	...	8	20	2	8	NW	
Maquoketa	Jackson	688	8	59.6	-5 1	83	7	30	13	40	6.39	†3.61	3 60	....	12	17	3	10	NE	
Marshalltown	Marshall	947	11	59 6	-5.3	85	7	32	13	37	5.70	†3.57	1.52	..	11	16	3	11	NW	
Monticello	Jones	.....	47	57.8	-3.9	82	6, 7	31	13	38	4.82	†1.04	2.10	...	6	14	11	5	SW	
Mt. Vernon	Linn	847	..	59 8	....	82	7	34	12, 13	33	5.80	....	3 20	....	11	14	5	11	S	
Newton (*a*)	Jasper	592	14	58 7	-4.2	80	7	35	12, 13	31	4.95	†1.65	1.61	....	7	16	6	8	S	
Ogden (*a*)	Boone	1,211	....	60.7	.....	84	7	30	12	37	3 25	.....	1.45	....	7	....			SE	
Olin	Jones	760	....	58.2	.....	78	22	31	13	34	6.35	.. ....	3.42	....	8	11	11	8	SW	8
Onawa	Monona	1,053	....	61.4	....	87	7	33	12, 13	42	4.75	.....	1.12	....	10	23	2	5	NW	
Perry	Dallas	975	....	.....	...	....	.....	33	13	...	3.60	.. ..	1.66	....	7	15	7	8		
Rockwell City	Calhoun	....	....		.....	80	7	.....	.....	.....	3.91	.....	1.45	..	6	20	2	8		
Sac City	Sac	900	22	59.1	-4.8	83	7	32	12	36	3 09	† .00	1.19	....	7	19	1	10	SE, S	
Sioux City	Woodbury	1,122	13	59.9	-4.1	86	7	30	13	42	4.49	†2.12	2.70	...	6	13	5	12	NW	5 17, 20
Tipton	Cedar	807	....	59.7	.....	79	2	32	13	31	5.50	.....	2 35	....	8	14	6	10	W	
Toledo	Tama	856	7	59.4	-5.2	84	7	31	12	38	4.50	†1.39	1.20	....	11	15	4	11	NW	
Vinton*	Benton	800	11	58.5	-4.7	83	7	35	19	.....	3.39	† 67	1.05	....	8	20	2	8	NW	
Waterloo	Black Hawk	862	22	59.4	-6.6	83	7	33	12, 13	38	4.86	† .62	1 92	..	11	13	8	9	NW	27
Wilton Junct'n (*a*)	Muscatine	683		60.5	.....	82	7	32	13	35	3.98	.....	2.17	..	8	15	3	12	NW	26
Whitten	Hardin	1,036	....	57.8	....	81	7	31	12	35	3.49	.....	1.10	....	6	10	9	11	SW	5, 26
West Branch	Cedar	.....	...	...	.....	.....	.....	.....	.....	.....	5 20	.....	2.60	....	10	7	12	11	NE, SW, NW	
Average				59.3	-4.6	82.4		31.7		39.2	4.49	†1.29			9	15	5	10	NW	

CLIMATOLOGICAL DATA FOR SEPTEMBER, 1902—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC., IN INCHES.				Number rainy days.	SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	....	59.2	.....	82	7	32	12	34	7 32	.....	1.70	...	11	12	8	10	NW	
Albia	Monroe	945	...	61.0	.....	85	7	35	13	34	6.42	.....	2.83	....	10	16	2	12	SE, NW	
Atlantic	Cass	1,164	10	58.9	- 6.8	85	7	25	13	44	4.44	† 1.60	1.90	....	7	9	10	11	NW	2, 5, 20, 27
Audubon	Audubon	1,301	....	59.8	.....	84	7	30	12	35	4.98	.....	2.73	....	7	19	2	9	NW	4
Allerton	Wayne	.....	..	60.6	..	84	7	34	13	34	6.24	.....	2.29	....	9	14	8	8	SW, NW	5
Bedford	Taylor	.....	....	59.4	.....	83	7	28	13	41	4.70	.....	1.51	...	9	17	4	9	SE	
Belknap	Davis	877	....	59.2	.....	80	7	35	13	32	5.17	.....	2.30	....	12	15	9	6	NW	
Bonaparte	Van Buren	.....	10	61.2	- 7.6	84	7	33	13	35	3.51	- .89	1.10	...	7	....	....	....	....	
Burlington	Des Moines	544	...	62.6	..	85	7	34	13	33	2.77	.....	.75		11	12	5	13	S	
Chariton	Lucas	1,042	....	59.6	.....	84	7	33	13	32	9.10	.....	4.31	...	15	13	9	8	N	5, 26, 30
Clarinda	Page	1,069	11	59.9	- 7.7	87	7	31	13	43	4.72	† 2.59	1.63	....	8	16	7	7	NW	
Corning	Adams	1,127	9	58.5	- 7.9	81	7	32	12	34	5.01	† 2.74	1.50	...	8	16	4	10	NW	3, 5, 26
Council Bluffs	Pot'wat'mie	990	....	60.8	.....	88	7	33	13	41	2.21	.....	.57	...	9	10	7	13	SE	
Cumberland	Cass	.....	....	.....	.....	....	.....	.....	.....	.....	5.46	.....	1.40	...	7	19	4	7	S	
Danville	Des Moines	715	....	.....	.....	....	.....	.....	.....	.....	2.90	.....	.90	....	7	11	2	17	....	
Earlham	Madison	.....	....	58.1	.....	84	7	29	13	41	5.80	.....	2.76	....	10	20	0	10	NW	2, 5, 27
Eldon	Wapello	630	....	60.6	.....	86	7	31	13	39	5.25	.....	2.27	...	8	15	5	10	S	
Emerson	Mills	1,053	....	.....	.....	....	.....	.....	.....	.....	2.90	.....	1.20	....	5	....	..	....	.....	
Fairfield	Jefferson	.....	..	60.9	..	84	7	32	13	35	4.13	.....	1.32	...	12	12	8	10	NW	
Fort Madison	Lee	516	53		...	.....	.....	.....	.....	.....	2.29	- 1.56	.62	...	8	10	7	13	SW	
Greenfield	Adair	.....	10	58.8	- 7.3	80	7	33	12	29	6.30	† 3.27	2.38	....	12	18	5	7	NW	5, 16, 24, 29
Hopeville	Clarke	.....	....	.....	.....	.....	.....	.....	.....	.....	8.60	....	2.87	....	13	....	....	....	.....	
Keokuk	Lee	619	30	62.4	- 4.6	85	7	36	13	32	2.82	- .94	.58	...	10	14	5	11	NW	5, 8, 30
Keosauqua	Van Buren	644	9	61.7	- 6.3	85	7	32	13	35	4.16	- .97	1.56	....	11	...	..	....	.....	
Lacona	Warren	.....	....		.....	..	.....	.....	.....	.....	5.86	.....	2.07	...	8	...	....	....	....	
Lenox	Taylor	1,250	....	59.4	.....	81	7	34	13	33	4.25	.....	1.95	....	9	17	4	9	NW	
Leon	Decatur	.....	....	60.2	..	81	7	35	13	30	9.08	.....	3.84	..	12	17	6	7	SE	
Mt Ayr	Ringgold	1,236	8	59.8	- 8.4	82	7, 26	32	13	36	7.29	† 4.52	2.59	.	14	13	8	9	SE	24, 29
Mt Pleasant	Henry	729	....	60.5	.....	82	7	32	13	36	4.83	.....	1.50	...	8	13	8	9	NW	
Omaha, Neb	Douglas	1,113	32	62.0	- 2.8	86	7	39	12	32	1.52	- 1.40	.36	....	9	12	8	10	S	2, 5, 16, 17, 20
Osceola (*b*)	Clarke	1,130	....	59.8		83	7	35	12	31	7.89	.....	2.52	....	10	15	3	12	SE	
Oskaloosa	Mahaska	843	18	59.8	- 4.7	82	7	31	13	35	5.12	† 3.21	1.43	...	12	17	2	11	NW	
Ottumwa (*a*)	Wapello	630	7	59.8	- 8.1	79	16, 26	38	13	28	10.41	† 7.05	4.03	....	9	15	5	10	E	
Ovid	Wayne	992	8	60.4	- 7.4	83	7	33	13	43	7.57	† 3.83	3.60	...	12	16	1	13	NW, S	
Pacific Junction	Mills	960	....	60.6	.....	84	7	31	13	39	2.17	.... ..	.99	...	10	14	9	7	N	
Red Oak	Montgom'ry	1,033	....	60.9	.....	79	7	37	13	29	4.28	.....	1.64	....	9	9	15	6	SE	3, 5
St. Charles	Madison	1,070	....	60.5	.....	83	7	35	13	33	5.96	.....	1.44	....	12	18	5	7	SW	
Sigourney	Keokuk	768	....	60.4	.....	88	7	32	13	39	3.77	.....	1.21	....	8	15	9	6	NW	
Stockport	Van Buren	.....	....	.....		...	.....	.....	.....	.....	4.54	.....	1.75	....	12	14	3	13	NW	6, 16
Thurman (*a*)	Fremont		....	60.2	.....	84	7	29	13	40	4.46	.....	1.70	....	8	18	3	9	SW	
Wapello (*a*)	Louisa	578	....	61.0	...	80	7	36	13	29	4.65	.....	2.32	....	7	....	..	...	SE	
Washington	Washington	769	11	58.7	- 8.0	83	7	30	13	35	3.13	† .51	1.00	....	9	....	....	....	SW, NW	
Winterset	Madison	1,129	10	60.3	- 5.6	82	11	35	12, 13	34	5.83	† 2.73	1.80	...	8	18	4	8	N, S	
Woodburn	Clarke	961	..	.....		.....	.....	.....	.....	.....	7.10	....	3.20	....	7	18	2	10	SW, NW	
Average		.....	....	60.2	- 6.7	83.3	.....	32.8	.....	35.1	4.93	† 1.75	.....	....	10	15	6	9	NW	
Av. for the state		.....	....	59.1	- 5.2	82.5	.....	31.7	.....	37.0	4.35	† 1.36	...	....	9	15	6	9	NW	

*Means determined from 7 A. M., 2 P M, and 9 P. M. observations, and maximum and minimum are taken from eye readings. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. §Not supplied with self registering instruments. † Above normal.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR SEPTEMBER, 1902.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Mean.
Afton	Max.	72	78	62	69	80	77	82	69	69	78	65	58	67	74	74	79	70	65	68	72	69	67	66	60	62	78	69	71	63	61	69.8
	Min.	56	47	55	41	48	49	50	54	49	47	52	32	33	44	47	50	53	38	41	51	61	60	59	52	52	54	49	40	47	43	48.5
Albia	Max.	75	80	69	74	78	80	85	73	71	81	69	59	69	73	77	81	69	62	68	75	69	72	69	62	61	82	70	75	71	65	72.1
	Min.	58	53	56	43	48	51	54	52	45	51	51	36	35	45	52	53	54	43	42	51	60	60	60	..	51	56	50	41	49	48	49.9
Algona	Max.	75	81	73	69	64	77	83	82	68	69	61	55	62	70	74	80	72	64	62	60	72	69	73	67	79	78	69	69	68	61	70.2
	Min.	54	52	51	42	51	47	50	55	43	49	44	34	35	46	50	55	49	34	42	53	58	60	59	47	51	55	40	40	49	45	47.8
Allerton	Max.	75	77	69	75	78	79	84	77	70	81	70	58	67	72	74	79	69	65	68	73	70	68	68	62	63	81	74	74	71	64	71.8
	Min.	59	48	57	45	45	59	51	51	42	47	51	36	34	44	45	50	53	41	40	52	61	59	60	53	51	55	51	42	49	47	49 3
Alta	Max.	70	76	64	66	70	75	81	73	68	69	58	58	66	70	77	77	68	62	63	62	68	64	64	67	59	75	61	72	55	62	67.3
	Min.	50	49	45	38	50	43	47	47	38	50	38	29	30	48	54	56	43	35	43	53	59	59	56	46	52	53	45	41	47	38	46.1
Amana	Max.	72	76	66	68	71	76	81	74	67	78	64	53	63	71	75	75	73	64	64	69	68	76	69	59	60	75	68	69	69	62	69.2
	Min.	58	49	55	44	45	62	49	56	46	45	50	36	34	42	49	49	53	47	36	51	60	64	59	53	52	57	55	49	52	50	50.2
Ames	Max.	76	77	72	76	69	79	83	73	73	74	61	58	67	74	76	81	75	70	66	67	69	70	68	63	78	81	74	73	61	67	71.7
	Min.	38	49	55	43	47	48	47	55	44	56	46	34	31	41	53	51	54	39	38	53	60	60	59	53	53	56	49	38	45	44	48.0
Atlantic	Max.	76	79	69	70	74	80	85	73	73	78	64	61	69	74	77	81	71	69	69	70	69	66	64	66	61	81	64	76	62	64	71.4
	Min.	52	45	53	36	46	39	41	54	36	51	47	28	25	47	52	55	51	32	37	55	54	62	60	54	53	56	47	34	45	41	46.4
Audubon	Max.	75	80	67	72	67	80	84	72	72	77	65	61	70	73	77	80	70	69	69	69	68	56	65	68	60	70	72	79	80	80	72.2
	Min.	53	55	50	39	48	47	49	51	51	47	47	30	32	40	50	54	54	33	50	42	54	49	59	52	51	55	42	45	49	41	47.3
Baxter	Max.	75	76	69	69	70	78	82	75	70	77	62	57	69	71	75	79	69	65	66	70	67	72	70	62	66	79	73	71	65	69	70.6
	Min.	57	49	55	40	47	48	46	54	42	47	47	32	33	44	49	50	53	40	38	51	59	62	58	51	50	55	50	38	45	45	47.9
Bedford	Max.	74	73	70	73	73	80	83	72	72	79	65	60	69	74	76	80	72	74	69	64	70	70	68	58	62	81	70	76	65	65	71.5
	Min.	56	45	50	40	50	43	45	48	41	49	44	33	28	43	46	52	53	35	40	55	61	63	61	53	54	57	48	36	49	44	47.4
Britt	Max.	72	77	77	66	66	75	81	73	67	71	58	54	65	70	75	80	66	63	65	61	77	71	66	67	68	79	61	68	66	60	70.2
	Min.	53	47	51	39	48	44	42	49	39	47	41	30	27	43	49	55	49	35	38	54	59	62	55	46	51	55	48	36	46	40	45.9
Burlington	Max.	72	81	73	71	78	81	85	79	71	81	69	56	67	72	75	83	79	62	73	71	77	77	75	63	80	89	63	69	63	64	72.8
	Min.	60	51	57	46	52	59	54	55	46	49	53	40	34	43	47	50	61	52	40	50	61	63	62	57	55	57	55	52	54	54	52.3
Carroll	Max.	77	80	69	71	68	79	85	72	73	75	60	63	71	73	77	80	71	68	67	68	71	70	66	65	70	64	80	64	68	71	71.1
	Min.	52	49	53	37	48	43	52	62	39	51	45	29	30	48	53	57	50	34	39	51	58	61	60	60	55	55	46	38	45	40	48.0
Cedar Rap	Max.	73	78	69	71	70	78	83	74	67	80	66	56	65	73	75	77	74	65	66	69	71	76	70	60	59	77	69	73	72	64	70.7
	Min.	60	52	58	45	50	55	50	58	48	48	51	38	36	44	50	51	54	38	38	52	60	64	60	54	53	57	56	50	54	52	51.2
Chariton	Max.	73	76	69	71	75	78	84	73	70	79	59	50	60	72	74	78	70	66	67	72	77	70	67	60	62	80	73	73	69	69	70.4
	Min.	57	51	54	42	49	48	52	51	42	50	48	35	33	45	50	53	51	40	39	50	60	59	59	53	51	57	50	38	50	46	48.8
Charles Cy	Max.	75	75	68	68	60	75	81	73	65	72	65	52	55	72	76	77	68	65	67	68	69	70	70	68	68	77	72	63	65	61	68.9
	Min.	55	55	51	41	46	53	44	64	44	46	45	32	29	42	48	52	60	42	34	52	59	62	62	47	52	56	52	50	45	44	48.8
Chester	Max.	73	75	67	69	58	73	80	70	66	71	70	53	65	71	75	71	65	64	62	64	72	67	67	70	62	75	67	68	60	62	67.7
	Min.	64	47	50	40	44	45	38	56	42	44	42	30	26	42	47	51	49	44	31	58	57	60	58	43	55	59	48	45	45	44	46.6
Clarinda	Max.	77	82	72	74	80	82	87	70	75	81	66	64	74	76	77	81	66	72	70	71	68	68	66	61	63	84	68	80	58	69	72 7
	Min.	53	47	49	40	48	46	47	48	43	46	45	34	31	42	48	51	46	37	42	54	60	63	58	53	54	54	44	38	49	44	47.1
Clear Lake	Max.	76	80	69	63	76	85	70	70	71	60	65	65	71	72	75	80	67	74	64	67	75	70	67	71	68	82	72	74	57	65	70.7
	Min.	53	53	51	44	49	49	54	42	49	43	42	33	35	43	49	50	50	48	35	38	52	58	60	57	44	47	54	47	38	44	46.5
Clinton	Max	75	80	69	70	76	78	83	77	68	78	64	58	65	72	74	78	81	65	66	71	78	80	68	60	59	75	64	66	74	62	71.2
	Min	53	45	50	43	42	56	47	53	43	41	48	35	31	38	43	42	55	47	39	46	57	62	56	54	54	55	55	53	52	48	48.1
Corning	Max.	70	76	67	66	76	78	81	69	70	76	62	58	67	73	78	79	68	65	67	69	68	67	66	60	61	78	62	71	60	67	69.2
	Min.	55	49	52	38	50	49	47	49	41	51	45	32	33	45	53	52	50	36	42	55	50	63	59	53	52	56	47	37	49	44	47.8
Co Bluffs	Max.	75	82	68	70	73	85	88	69	77	77	62	61	74	80	80	83	78	72	75	71	68	70	66	72	66	..	81	79	60	66	73.4
	Min.	57	54	51	41	47	44	49	48	40	50	40	35	33	48	48	57	45	35	43	58	62	64	59	56	57	50	41	41	49	41	48.1
Davenport	Max.	73	77	68	69	73	78	83	74	67	78	62	55	62	69	72	77	77	64	65	70	73	76	68	59	59	75	67	69	73	64	69.9
	Min.	60	55	51	44	51	60	56	54	48	51	48	39	36	45	51	51	57	50	41	52	60	63	58	55	54	56	55	48	52	48	52.0
Decorah	Max.	75	72	69	67	65	67	79	72	63	71	75	52	62	70	73	77	70	63	62	64	67	70	64	64	67	66	75	74	66	62	68.1
	Min.	55	50	51	43	46	50	44	50	47	46	43	32	31	42	52	55	52	45	33	50	58	61	59	47	46	52	54	50	53	48	48.2
Delaware	Max.	70	74	64	69	65	74	78	73	65	76	61	52	63	70	73	74	76	64	63	65	68	75	69	58	57	71	65	71	69	61	67.8
	Min	55	48	53	40	43	53	47	54	42	45	47	32	33	39	48	45	52	43	35	47	57	62	55	48	47	55	50	50	52	48	47.5
Denison	Max.	73	88	71	68	70	79	83	74	71	74	60	59	70	74	77	80	72	64	68	68	70	66	69	78	61	78	77	75	64	64	71.5
	Min.	53	52	53	36	53	46	43	50	41	52	46	29	29	47	53	56	50	31	42	56	59	61	61	51	51	57	50	36	50	41	47.8
Des Moines	Max.	75	77	66	67	72	80	83	71	70	77	62	58	66	73	74	78	68	66	66	70	67	70	67	59	61	80	64	72	62	64	69.5
	Min.	58	52	55	46	51	50	51	53	45	52	48	37	35	48	55	55	50	41	42	52	61	62	58	54	52	58	49	41	49	46	50.2
De Soto	Max.	71	76	70	66	74	76	81	73	68	75	63	57	65	73	74	77	72	74	66	70	73	70	67	60	64	67	71	67	62	64	69.4
	Min.	60	50	58	44	53	51	50	58	48	54	52	37	34	50	54	57	54	40	37	54	64	64	57	54	54	57	51	40	45	45	50.9
Dows	Max.	71	75	68	65	68	71	80	73	67	72	61	52	64	71	74	73	70	64	63	64	70	70	67	65	61	78	73	70	59	60	68.0
	Min.	54	50	50	40	58	47	45	52	52	49	44	31	30	45	50	53	50	34	40	52	59	58	60	47	50	55	48	37	45	41	47.5
Dubuque	Max.	73	76	66	70	68	77	81	74	65	78	60	54	62	70	74	71	75	66	64	67	71	76	68	59	57	73	64	66	70	63	68.6
	Min.	57	51	52	45	48	56	51	54	47	46	45	36	36	44	51	50	55	50	38	48	59	63	56	51	51	55	56	53	54	49	50 3
Earlham	Max.	74	77	65	68	75	78	84	76	71	70	77	61	67	74	75	77	63	68	68	69	67	67	66	59	58	80	73	72	61	63	70.1
	Min.	55	45	54	38	46	46	43	44	42	45	57	31	29	38	47	51	51	36	33	50	60	60	58	52	50	53	49	34	43	42	46.1
Eldon	Max.	75	79	72	72	78	80	86	78	70	82	73	57	67	74	77	81	76	60	70	75	68	73	71	61	61	80	71	73	74	65	72.6
	Min.	55	47	57	43	45	56	47	52	45	45	51	36	31	40	46	48	55	45	39	51	50	60	60	54	52	55	52	43	45	50	48.5
Elkader	Max.	75	80	70	75	75	80	86	66	71	80	60	54	69	76	79	80	75	71	70	68	69	75	63	64	60	79	63	78	70	67	71.7
	Min.	53	46	56	41	41	49	43	55	45	41	45	32	30	37	53	52	52	50	32	48	58	63	58	48	51	56	58	51	51	50	48.0
Esterville	Max.	72	78	63	71	70	71	82	64	73	68	58	58	67	72	77	79	64	76	50	60	68	63	68	69	69	70	61	72	56	..	68.2
	Min.	52	51	50	40	39	49	48	49	45	43	39	34	31	30	44	39	47	33	32	34	45	57	57	49	42	43	44	34	34	..	42.6
Fairfield	Max.	77	78	73	71	77	80	84	79	71	80	70	59	66	74	74	80	78	61	67	73	73	75	70	60	59	78	68	72	74	63	72.1
	Min.	57	49	57	41	46	53	51	52	44	45	51	35	32	40	46	48	56	47	41	52	61	62	60	55	53	55	53	45	51	54	49.7
Forest C'ty	Max.	79	77	65	68	62	76	82	75	67	70	59	55	64	71	74	79	70	67	62	60	75	68	66	69	68	79	70	71	63	62	69.1
	Min.	53	50	50	40	48	45	44	57	41	47	43	32	30	45	50	54	55	35	41	53	58	60	60	46	50	54	47	43	47	40	47.3
Ft. Dodge	Max.	76	79	75	69	67	78	84	80	69	72	65	57	68	72	76	81	74	68	64	71	72	72	72	70	72	81	74	72	63	64	71.9
	Min.	52	47	51	38	49	44	43	55	38	46	43	29	27	46	45	54	49	32	38	36	58	60	58	47	50	51	46	34	42	40	44 9
Galva	Max.	79	77	--	74	70	78	82	..	75	70	60	58	69	66	77	79	72	62	66	68	69	66	66	66	61	78	61	73	62	68	69.7
	Min.	51	49	..	24	52	48	48	45	39	47	23	29	29	57	44	51	48	51	..	45	58	59	58	48	50	56	45	37	46	56	46.2
G. Meadow	Max.	70	75	65	67	63	74	78	64	65	73	60	55	65	69	73	73	65	63	63	64	70	65	65	60	71	64	65	66	60	60	66.6
	Min.	56	50	50	41	46	50	61	52	44	46	43	33	34	44	52	51	50	45	36	47	56	63	57	45	49	54	54	49	56	47	48.7
Greene	Max.	74	78	73	70	59	75	82	72	67	72	58	54	65	73	77	78	67	66	66	68	68	71	66	68	61	78	69	70	64	61	68.9
	Min.	55	50	54	40	45	47	45	54	43	46	45	33	32	43	48	52	52	38	35	54	59	63	62	47	52	57	52	40	42	44	47.6
Greenfield	Max.	72	73	69	67	78	72	80	68	70	74	68	58	65	71	74	70	69	62	67	70	67	67	67	61	60	75	60	69	65	60	68.3
	Min.	55	54	52	41	54	56	58	50	43	47	48	33	36	47	50	53	50	..	40	52	60	64	58	52	50	53	48	41	44	40	49 3
Grinnell(n)	Max.	72	75	70	66	70	72	80	73	67	75	60	57	64	70	74	76	70	62	65	69	67	71	69	58	58	76	73	65	66	63	68.4
	Min.	58	52	56	43	48	50	49	55	44	50	50	36	34	45	48	52	52	42	40	52	60	63	57	52	51	56	52	43	50	47	49 6
Grundy C'r	Max.	73	76	66	69	65	76	82	72	67	75	59	53	55	72	77	77	65	64	65	68	65	70	67	60	61	78	69	71	63	64	68.1
	Min.	56	49	53	40	45	47	48	53	42	48	47	32	33	45	50	51	52	39	38	50	58	63	58	48	50	55	53	50	48	45	47.9
Guthrie Cr	Max.	73	77	74	71	69	79	83	79	70	74	61	59	66	72	75	77	70	64	67	68	67	68	68	65	60	78	73	72	64	63	70.1
	Min.	53	45	50	36	44	44	47	61	38	58	46	31	31	47	45	60	51	32	41	52	49	51	50	55	53	54	50	36	46	43	46.6
Hampton	Max.	73	79	67	73	59	77	84	72	68	74	60	51	69	74	78	80	66	73	66	65	69	70	66	70	61	81	70	75	69	63	70.1
	Min.	55	52	54	41	48	49	51	54	43	48	46	34	35	46	51	52	50	38	36	52	59	62	60	48	51	55	51	40	45	42	48.3
Harlan	Max.	72	78	66	68	71	78	83	71	70	74	62	58	68	75	77	80	69	64	69	70	70	67	65	68	63	80	62	73	63	63	69.9
	Min.	54	46	53	37	48	45	45	53	43	44	45	29	27	45	50	53	50	31	41	54	59	62	60	53	52	55	46	36	48	40	46.8
Humboldt	Max.	72	78	74	68	64	76	82	76	68	70	60	55	65	71	75	80	70	63	64	60	73	70	68	68	64	78	73	69	68	62	69 5
	Min.	54	52	51	40	50	48	46	56	43	50	46	33	31	41	51	56	50	35	40	55	59	62	60	50	52	56	47	36	52	40	48 2
In'pen'nce	Max.	72	74	66	68	65	76	81	72	65	75	59	50	62	72	75	75	71	65	64	66	65	73	68	60	58	73	67	68	67	62	67.8
	Min.	57	48	54	42	45	47	44	55	44	43	49	32	29	41	47	48	53	44	37	49	57	62	62	49	49	55	56	46	52	48	48.1
Indianola	Max.	73	77	69	69	74	79	82	74	69	77	64	58	85	..	..	..	..	78	71	..	71	67	69	67	61	61	80	74	..	64	71.1
	Min.	57	47	56	43	48	51	52	54	44	52	50	36	..	..	..	..	..	53	49	..	57	61	60	59	53	53	56	50	..	49	42	51.3
Iowa City	Max.	73	79	67	75	73	78	85	76	68	79	68	57	65	73	76	79	79	68	69	72	68	78	68	58	60	79	67	76	77	64	71.8
	Min.	57	49	56	44	45	55	58	56	45	45	50	37	33	41	46	47	55	50	37	50	58	62	58	53	52	56	55	49	51	52	50.1
Iowa Falls	Max.	72	75	65	67	60	75	80	69	66	73	58	52	64	71	75	78	67	64	65	66	70	71	67	62	62	78	69	68	61	61	67.7
	Min.	55	48	49	41	46	46	43	51	41	46	40	32	30	45	47	52	46	38	37	51	59	62	59	49	51	56	45	36	39	42	46.1
Keokuk	Max.	75	79	73	69	78	80	85	80	69	80	64	56	64	69	73	80	78	62	67	69	77	73	75	60	62	78	58	73	74	64	71.5
	Min.	61	53	59	46	51	58	58	56	48	53	54	43	36	46	51	48	60	53	43	50	62	62	66	58	55	59	54	49	52	55	53.3
Keosauqua	Max.	75	80	73	72	78	80	85	80	71	80	68	62	67	73	74	80	77	75	69	73	73	73	75	62	61	79	72	73	74	65	73.3
	Min.	56	47	55	44	47	54	56	54	45	46	51	36	32	40	45	48	56	48	38	53	62	60	61	57	54	57	55	44	48	54	50.1
Lansing	Max.	83	78	73	74	69	72	82	78	69	76	70	58	67	73	78	76	77	70	65	69	66	68	68	70	67	74	73	75	70	65	71 9
	Min.	55	45	58	42	40	45	60	42	42	40	40	30	28	36	51	52	55	55	35	45	58	57	60	55	55	48	58	55	55	49	48.4
LeMars	Max.	72	80	71	67	71	77	83	74	70	70	59	59	69	74	78	78	72	64	68	65	69	68	69	69	64	72	64	75	62	63	69.9
	Min.	49	52	51	35	53	45	45	47	38	52	41	28	26	48	54	56	48	27	48	55	55	57	57	45	51	54	43	49	50	35	46.5

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR SEPTEMBER, 1902—CONTINUED.

STATION.		DATE.																													Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Lenox	Max	69	76	69	66	76	77	81	72	68	77	64	57	67	72	74	78	70	63	66	69	68	67	66	60	60	78	73	70	61	61	69.2
	Min	57	51	57	44	50	47	53	54	42	51	50	35	34	46	48	53	53	38	43	54	61	62	59	52	52	56	48	42	50	43	49.5
Leon	Max	71	75	72	66	78	77	81	74	68	78	72	57	64	72	72	78	71	64	67	72	70	68	68	62	63	78	74	69	68	64	70.4
	Min	58	51	58	45	48	51	52	54	44	51	51	38	35	45	47	51	54	41	42	53	61	60	61	54	53	55	50	42	49	46	50.0
Logan	Max	71	80	68	69	71	79	82	.	71	74	61	59	70	74	78	80	73	64	70	71	74	69	66	70	68	72	62	74	60	63	70 6
	Min	54	50	54	39	43	45	54	45	42	49	48	30	28	48	54	55	51	32	45	57	60	62	61	54	53	57	46	39	51	39	48.2
Maquoketa	Max	76	77	67	72	71	79	83	75	69	79	66	58	67	71	75	77	77	68	67	69	73	79	76	58	59	75	67	72	73	66	71.4
	Min	59	43	57	43	38	56	43	55	45	40	46	32	30	34	44	41	55	49	32	47	58	61	56	52	52	55	55	54	49	51	47.7
Marsh'lt'n	Max	75	79	70	71	71	79	85	75	71	79	64	56	69	74	79	80	69	68	67	70	70	72	68	60	62	80	62	74	61	65	70.8
	Min	57	48	55	41	45	48	53	55	43	47	49	33	32	44	56	51	52	40	36	49	53	63	58	51	50	55	53	40	46	45	48.3
Monticello	Max	80	78	70	72	78	82	82	78	75	78	80	55	64	68	65	77	78	75	70	75	77	68	60	58	63	70	65	68	62	70	71.4
	Min	47	45	55	42	43	48	47	45	44	43	42	32	31	35	38	37	58	42	38	35	37	50	50	52	48	45	47	49	52	51	44 3
Mt. Ayr	Max	73	78	68	70	79	78	82	72	70	79	65	58	68	74	75	80	70	68	69	75	75	68	68	60	62	82	70	73	65	63	71.1
	Min	56	50	55	41	48	49	51	50	42	49	48	34	32	41	47	50	53	38	43	52	60	61	59	52	52	55	48	41	49	43	48 4
Mt. Ple's'nt	Max	74	77	70	67	75	76	82	79	68	77	63	65	62	65	72	77	79	76	65	75	73	80	75	78	67	70	69	75	76	62	72.5
	Min	55	45	52	40	41	54	58	51	43	42	..	..	32	39	..	42	43	46	35	45	57	58	56	57	52	63	51	59	45	49	48.5
Mt. Vernon	Max	76	72	65	74	70	79	82	73	75	79	68	54	67	72	75	74	73	71	70	72	68	76	68	57	57	77	58	75	68	67	70.8
	Min	55	51	52	43	47	50	51	53	44	44	50	34	34	39	48	48	54	50	37	51	51	62	57	51	51	54	52	50	52	52	48.8
NewH'pton	Max	69	73	63	65	60	73	78	70	63	72	59	52	60	70	73	74	67	62	61	66	69	69	66	65	63	73	68	64	62	62	66.4
	Min	53	52	51	48	45	45	44	53	42	44	43	32	32	32	45	50	49	38	35	49	49	50	..	45	49	49	49	47	44	44	43 6
Newton	Max	70	74	..	66	70	75	80	73	68	76	64	64	64	71	74	76	71	63	65	69	67	70	68	66	60	75	..	66	64	61	68.7
	Min	57	50	56	43	43	47	49	55	43	48	49	35	35	43	50	51	54	41	40	52	59	62	58	51	50	50	50	47	48	45	48 7
Northwood	Max	70	75	70	65	60	74	78	74	64	69	60	52	62	70	73	76	67	62	61	65	70	67	67	66	64	75	71	67	62	60	67 2
	Min	54	51	51	41	46	48	46	54	43	45	45	35	35	42	46	52	48	46	37	52	58	61	59	45	50	55	50	40	45	42	47.4
Ogden	Max	80	79	75	72	69	80	84	78	69	76	70	60	69	77	80	80	..	76	70	75	70	70	70	66	65	81	78	76	71	64	73.4
	Min	55	51	53	39	51	44	50	50	45	51	40	30	32	47	51	55	..	38	43	52	60	63	61	51	51	55	49	37	48	42	48.0
Olin	Max	78	74	66	59	69	73	77	74	65	75	63	54	60	68	71	73	75	53	64	69	75	78	60	58	59	72	66	71	72	65	67.9
	Min	54	46	55	41	44	50	44	56	40	41	43	33	31	38	46	45	55	49	35	49	59	63	56	53	52	55	55	53	51	56	48.4
Omaha, N.	Max	73	80	69	69	72	83	86	73	75	74	61	59	72	78	79	80	68	69	70	69	67	69	65	70	64	79	65	76	60	66	71.3
	Min	58	56	55	47	57	51	58	56	46	57	50	39	40	51	56	59	50	40	49	59	62	64	61	57	58	52	48	48	50	44	52.6
Onawa	Max	78	81	77	71	73	83	87	80	78	76	68	65	75	76	79	79	75	66	70	66	70	67	67	77	66	73	68	75	67	66	73.3
	Min	54	54	55	43	55	45	51	58	41	52	59	33	33	48	53	57	50	35	46	59	60	61	61	51	54	54	45	43	49	39	49.6
Osage	Max	70	75	65	67	57	74	80	71	67	69	58	52	63	70	74	75	67	61	62	72	80	77	66	65	62	74	68	66	58	59	67.5
	Min	52	49	53	41	46	46	46	52	44	45	42	35	34	43	47	52	47	35	34	53	51	60	59	45	51	55	51	41	46	43	46.6
Osceola	Max	73	78	67	70	77	78	83	71	70	79	65	59	67	69	74	78	69	66	68	75	65	67	66	..	60	80	73	73	66	63	70.7
	Min	58	49	..	43	47	50	53	..	44	52	50	35	36	47	50	52	60	39	40	52	55	58	.	52	51	55	50	40	48	45	48.9
Oskaloosa	Max	71	77	69	69	74	78	82	72	68	78	65	55	65	75	76	78	70	62	67	74	68	74	68	58	62	79	73	70	71	63	70.4
	Min	57	49	57	42	48	51	49	54	45	48	50	36	31	40	49	51	53	42	40	52	61	60	58	53	52	58	52	41	50	49	49.2
Ottumwa	Max	..	75	77	69	63	75	75	75	68	73	69	56	64	73	75	79	73	60	68	73	69	72	70	61	61	79	71	69	72	63	66.4
	Min	..	61	53	58	53	49	62	55	49	54	55	40	38	45	52	52	55	46	48	54	62	62	60	55	54	58	55	47	53	51	53.1
Ovid	Max	77	76	71	72	77	79	83	72	71	80	69	60	76	71	74	79	70	70	69	72	68	68	69	62	61	81	73	75	69	67	72.0
	Min	58	50	58	41	46	48	52	52	41	48	49	34	33	43	48	51	53	39	41	51	61	59	61	53	51	55	50	40	50	45	48.7
Pacific Jct.	Max	77	78	72	69	75	81	84	73	73	76	63	60	70	76	78	80	74	71	69	70	70	66	70	70	66	80	65	75	60	63	71.8
	Min	56	51	51	40	53	44	49	57	41	49	49	32	31	46	56	57	35	45	57	61	64	63	53	55	56	56	46	39	50	39	49.4
Perry	Max	..	..	..	..	.	..	..	..	..	..	..	..	.	.	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	....
	Min	57	51	55	43	50	47	49	55	43	50	50	34	33	49	52	55	52	36	42	53	62	63	61	55	54	56	51	40	48	43	49.6
Plover	Max	80	74	65	68	67	78	83	70	73	71	60	55	63	71	75	72	67	73	68	62	71	70	65	69	61	72	71	70	61	61	68.5
	Min	45	46	44	32	44	40	50	55	35	42	36	26	25	40	46	55	40	27	34	50	50	55	56	41	45	55	42	33	46	32	42.6
Red Oak	Max	71	75	70	69	74	78	79	74	70	74	68	57	66	71	74	78	72	65	68	71	69	69	68	62	65	76	62	70	63	62	69 7
	Min	59	54	56	45	56	49	51	59	46	55	53	39	37	50	54	57	54	41	48	59	63	64	60	54	54	58	48	43	53	44	52.1
Ridgeway	Max	74	79	70	73	70	75	79	72	66	74	60	55	72	74	79	79	66	71	70	69	72	70	69	70	63	76	69	72	71	66	70.8
	Min	55	51	53	42	48	50	48	51	44	46	45	37	34	43	50	53	53	44	40	52	60	63	58	44	52	56	52	52	55	45	49.2
Rockwell C	Max	72	78	75	68	65	76	80	74	69	74	65	59	65	73	73	78	71	63	69	65	78	71	66	66	62	78	66	70	66	64	69.9
	Min	..	..	..	.	..	..	..	..	..	..	..	..	.	.	..	..	..	..	.	..	.	..	..	..	..	..	..	..	..	..	..	....
Ruthven	Max	77	77	73	72	70	77	83	76	70	70	63	57	68	74	78	78	74	63	59	59	68	64	69	68	56	73	62	71	65	63	69.2
	Min	51	54	51	39	54	47	50	47	39	52	40	31	34	49	51	54	46	34	41	54	58	58	56	46	50	50	45	40	47	38	46.9
Sac City	Max	73	79	71	69	67	77	83	75	70	70	60	59	69	72	77	79	74	65	65	65	71	67	65	67	61	78	67	73	67	62	69.9
	Min	52	50	53	40	49	48	47	55	42	50	46	32	34	48	53	56	51	34	40	53	60	60	60	60	52	55	46	38	45	40	48.3
St. Charles	Max	73	77	77	70	75	78	83	72	70	78	63	58	68	73	74	78	68	66	66	71	67	67	67	67	60	80	70	74	68	63	70.4
	Min	58	52	52	44	49	51	54	63	45	53	51	36	35	48	52	53	61	40	40	52	61	60	62	53	51	55	50	43	48	45	50.6
Sheldon	Max	75	81	72	68	73	78	85	77	73	71	59	60	70	72	78	80	74	67	61	80	74	67	61	68	70	..	67	64	78	65	70.3
	Min	49	53	47	35	50	45	47	53	38	49	38	28	32	50	51	58	47	29	43	52	57	56	55	44	..	52	43	38	45	34	45.4
Sibley	Max	78	82	71	71	73	76	85	75	72	71	58	62	73	78	80	81	71	69	57	61	64	60	68	70	59	65	67	78	61	65	70.2
	Min	49	49	48	36	52	40	43	53	39	48	39	29	28	48	50	55	45	31	41	51	57	55	55	43	45	52	43	37	44	33	44.9
Sigourney	Max	76	81	72	75	79	79	88	78	70	82	70	52	68	75	79	80	77	67	71	77	69	78	68	60	61	80	70	73	79	65	73.3
	Min	55	47	54	42	44	50	49	49	43	48	49	34	32	41	47	46	52	43	35	48	58	50	59	52	51	54	53	42	48	49	47.5
SiouxC'nt'r	Max	75	80	74	67	72	76	84	78	78	68	60	58	70	75	79	79	73	66	63	65	65	60	62	68	63	67	62	76	59	60	69.6
	Min	49	52	50	38	52	46	46	53	40	48	39	30	30	48	52	53	48	32	43	54	57	55	54	45	49	52	42	40	46	35	45.9
Sioux City	Max	75	83	69	68	73	80	86	76	74	71	60	60	72	75	79	80	73	65	69	64	68	64	68	71	66	70	65	77	60	66	70.9
	Min	53	57	49	37	57	52	51	53	44	53	42	33	30	50	56	59	46	31	47	58	60	60	56	48	55	52	43	47	49	39	48.9
Storm L	Max	72	77	71	67	70	76	80	75	69	70	61	52	67	70	76	75	70	62	63	63	68	65	65	68	63	74	62	72	62	63	68.3
	Min	51	54	51	38	51	46	52	53	40	52	45	32	36	50	54	56	48	32	43	53	58	58	58	46	51	55	45	42	48	39	47.9
Thurman	Max	74	78	71	60	75	80	84	74	73	64	65	65	69	70	76	80	..	65	69	68	72	68	64	61	66	79	62	76	66	65	70 7
	Min	58	50	56	40	56	44	46	54	40	50	48	33	29	50	55	58	54	34	45	58	61	64	61	55	56	57	48	39	50	43	49.7
Tipton	Max	70	79	68	65	72	74	77	76	65	75	70	56	62	68	70	78	75	62	64	70	73	76	70	60	62	72	68	71	70	65	69.4
	Min	56	48	55	43	47	56	59	55	45	45	50	33	32	42	50	58	56	48	37	50	58	62	50	50	52	56	55	53	50	50	50.0
Toledo	Max	81	72	76	71	74	77	84	74	66	77	61	55	66	73	77	78	71	67	67	70	67	73	67	61	60	79	69	72	69	66	70.6
	Min	59	49	51	39	47	49	46	54	44	48	48	31	32	44	49	52	53	40	35	50	59	64	58	52	51	54	54	42	45	48	48 2
Wapello	Max	71	74	69	70	72	74	80	72	68	79	69	56	63	70	73	76	73	62	66	68	69	74	70	61	..	72	68	66	70	63	69.6
	Min	60	51	58	48	49	60	58	51	47	50	54	40	36	44	46	47	61	54	40	53	66	63	61	55	..	55	54	53	55	55	52.3
Washin't'n	Max	73	76	68	69	74	77	83	76	68	79	62	55	64	72	74	77	75	62	66	71	68	75	68	..	59	77	62	72	74	64	70.3
	Min	55	48	50	41	45	52	48	49	42	46	45	34	30	40	46	46	50	46	36	48	57	59	55	50	50	54	51	47	49	45	47.1
Waterloo	Max	75	79	67	71	65	79	83	75	69	77	62	57	67	75	79	79	70	69	66	67	66	74	68	64	59	77	69	70	66	65	70.3
	Min	58	50	55	43	47	48	45	55	45	45	48	33	33	42	46	50	48	41	35	51	58	63	62	49	51	55	57	45	49	47	48.5
Waverly	Max	71	75	67	67	62	75	81	72	66	74	..	52	64	71	75	76	69	64	63	67	52	58	58	60	48	58	58	54	44	49	47	49 0
	Min	57	50	55	43	48	48	46	55	45	47	.	34	3	43	50	51	51	42	37	52	58	58	60	48	58	58	54	44	49	47	69.0
West Bend	Max	75	79	69	68	67	77	82	73	69	70	60	58	66	72	75	79	69	64	63	60	70	68	65	69	63	78	70	69	59	64	69.0
	Min	52	53	51	41	49	46	49	56	40	50	42	32	32	46	48	55	49	33	38	54	58	61	59	47	51	49	39	38	44	40	46.7
Whitten	Max	72	76	68	67	68	75	81	70	68	75	63	64	64	72	75	77	67	64	68	69	70	71	73	74	65	75	64	65	63	60	69.4
	Min	56	47	51	40	45	47	46	53	42	46	40	31	32	34	48	5	49	38	38	38	58	55	54	56	48	51	51	39	47	43	46.1
Wilton Jc	Max	75	78	71	70	76	77	82	78	68	78	65	58	67	72	74	77	80	75	67	73	82	67	..	60	77	75	67	76	76	64	71.6
	Min	55	49	55	43	46	57	44	58	45	44	48	34	32	38	44	46	58	53	36	50	59	59	..	53	57	53	55	56	52	50	49 4
Winterset	Max	74	77	72	69	74	78	82	76	70	76	67	59	68	73	75	79	72	65	69	71	69	66	65	61	61	80	75	74	65	65	70 9
	Min.	57	50	56	42	48	50	59	55	45	56	50	35	35	46	49	53	52	38	41	53	60	60	58	51	50	59	50	40	49	43	49.7

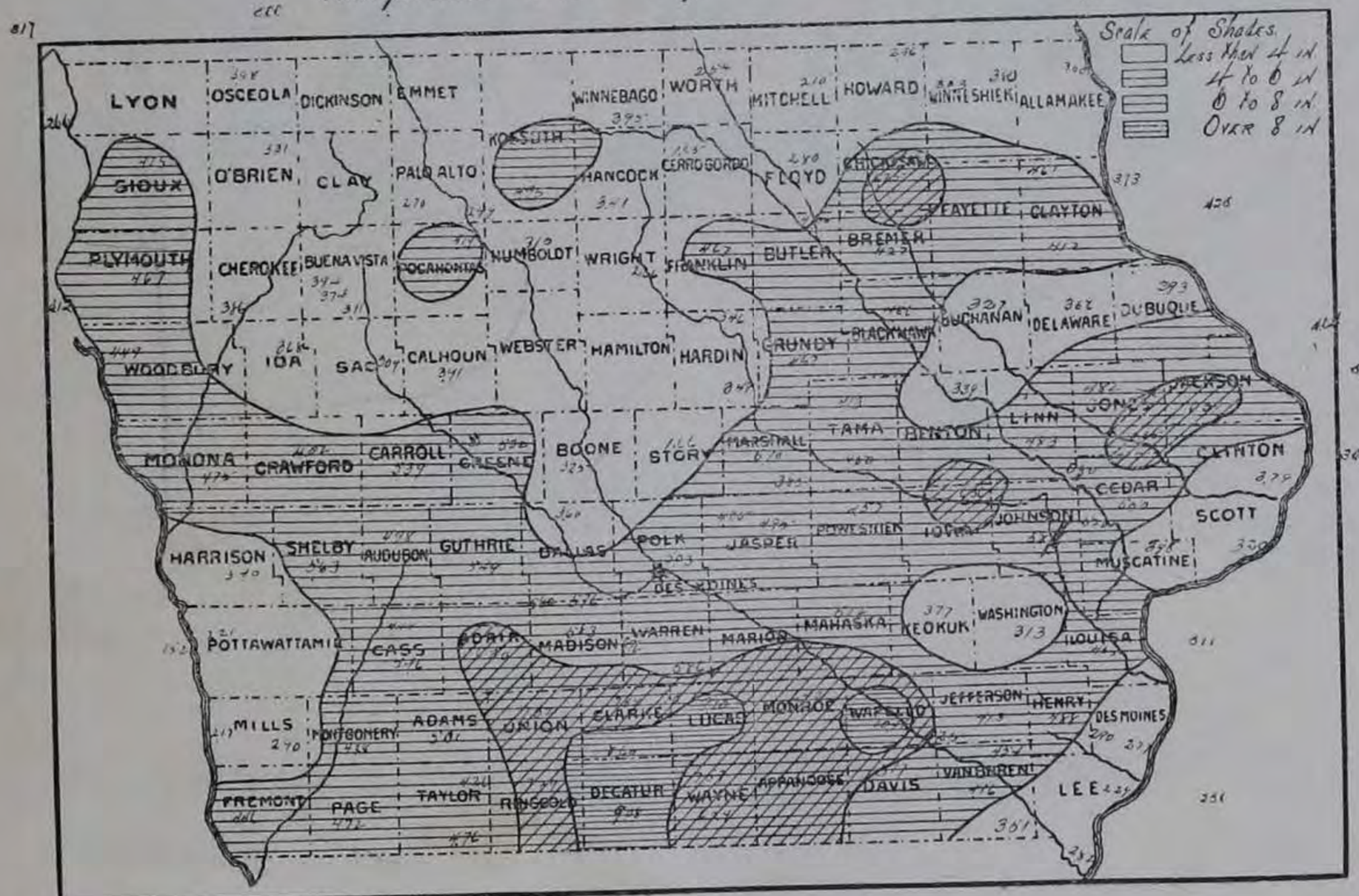
DAILY AND MONTHLY PRECIPITATION FOR SEPTEMBER, 1902.

STATIONS.	DAY OF MONTH.																															TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	..	....	.30	..	1.70	T	....	..	...	....	..	..	....	..	....	.....	.14	..		...	.11	90	1.31	.27	.03	T	.55	..	1.04	.97	....	7.32
Albia	....	..	...	....	.97	.04		T	...	...	....	....		....	..	....	.23	....	...	....	.14	.66	.30	.63	.07	...	.55	....	T	2.83	...	6.42
Algona	..	...	....	....	.10	....	....		....	..	....	....	....	...	...	....	.25	....	....	1.55		.70	....			....	.90	....	1.45		....	4.95
Allerton	....	...	...	....	1.00	....	....	T	.	..	....	....	..		..	....	.14	..	..	..	.02	43	.73	.63	T	....	1.00	....	.29	2.00	..	6.24
Alta	....		....	....	.08	....	....	....	....	..	..	..	....	....	....		.70	....	.02	.53	....	.72	.24		..	....	.48	....	1.17	....	....	3.94
Alta (near)	..	....			.09			....	....	..	....	..	..		....	....	.70	....	....	.57	....	.36	.49	....	....	.24	....	....	1.26	....	..	3.71
Amana	.	...	.03	..	56	.45	..	....	....	....	..	....	....	....	..	....	.12	....	....	....	.12	.41	3.12	.37	....	...	.30		T	.88	..	6.36
Ames	....	....	T		.21		....	....	....	....	....	....	..	...	....	....	.11	..	....	..	.05	....	.15	-	....	..	.25	....	1.90	....	....	4.44
Atlantic	..	.30	...	....	15	...	....	..	..	.	....			..	.15	....	1.17	.52	....	..	.05	.11	.36	2.73		....	....	...	....	1.11	.11	..	4.08
Audubon	....	....	....	....	.51	....	....	..	..	....	....	....		....	....	..	...	....	....	.05	....	....	.75	.68	.23	....	..	.50	....	.23	.95	....	4.85
Baxter	....	....		..	1.41	....	-		....	..	...	....	..	....	....	..	.10	...	....	....	....	75	.68	.23	....	..	.50	....	.23	.95	....	4.85
Bedford	....	..	.15	..	.28		....	T	....	....	T	...	..		...	....	.11		....	.19	T	.59	1.49	.21	..	....	.23	. .	1 51	..	....	4.76
Belknap	..	....	..	..	.50	.25		.05	-	...	.05	....	..	....		..	.28	....	....	....	.20	.26	.15	.40	.10	....	.62	....	....	2.30	....	5.17
Belle Plaine		....		....	....	....	...	...	....	....	....	....	....	..	....			....	....	...	..	..	....	....		....	....	...	....	....	....	....	.....
Bonaparte	....		....	....	..	.85	....	.12	..	....	.04	..	....	....	....	...	.30	....	....	....		.33	.77	....	....	....	..		1.10	....	3.51
Britt		....		....	.11	....	...	....	..	....		...	....	....	....	....	.12	....	..	.58	.04	.02	.20	....	..	...	....	1.40	.88	.06	..	3.41
Buckingham	....	....	T	....	.40		....	....	....	....	....	....	....			....	.33	.....	....	.07	T	.20	1.38		.02	....	.56		1.17	....	....	4.13
Burlington	....	....	....	.		.68	....	.35	....	....	.04	...			..	....	21	.02	..	....		.18	.35	.04	.12	....	.03	....	....	.75	....	2 77
Carroll	....	....		....	.10	...	....	....	..	..	...		....	..	....	..	1.12	....		.22	.20	....	1.80	...	....	....	1 13	...	.82	....	..	5.39
Cedar Rapids	....	....	....	....	1.50	....	T	.02	...	....	....	...	..	.	....	....	.06			T	26	1 16	90	....	...	.20	T	...	.73		....	4.83
Chariton	....	....	.01	..	93	07	....	.03	....	..	.02	...	....	....	....	..	.16	....	..	....	.10	43	1.23	.47	.01	...	.85	.03	.45	4.31	...	9.10
Charles City	....	....	....	..	.90	....	..	...	-	..	..	...	....	....	....	....	T	....	....	..	T	.30	....	....	T	...	.90	....	70	....	....	2 80
Chester		...		..	.52	...	....	...	....	....	....	....	..		...	....	.08	...	....	..	..	....	....	....	....		1.10	....	.34	.52	....	2.56
Clarinda	....	....	.10	....	.45	....	..	T	....	....	T	....	....	....		-	....	....	....	..	.11	.10	.60	1 63	..	T	.19	....	....	1 51	....	4.72
Clear Lake	..	....	.	.25	...	....	....	....	....		..	....		....	....	....	.05	....	....	...	T	.05	.15	...	....		.55	....	.60	....	....	1.65
Clinton	....	...	....	....	.60		..	.37	....	..	.	..	....	....	....		1.25		....	....	.01	...	1.09	.10	....	.06	.18	....	....	.13	....	3 79
Corning	.	....	T	..	.57	....		....		....	....	....	..	....	..	...	T	...	..	T	T	.85	.72	.05	..	.05	64	....	1.50	.63	....	5.01
Council Bluffs	...	T	..	....		....	..	....		..		..		....	....		.08	.25	....	41	.07	.35	.09	..	....	.05	.34	....	.57	....	....	2 21
Cumberland	....	.51	....	....	23		....		...	....		....	..	..		....	....		....	....	T	1.25	.75	....	...	1.00	..		1.40	32	-	5 46
Danville	....	....	....	....	....	.76		.24	..	T	....	..	....	..	....	....	.10	..	..	T	....	.10	.90	.10	..	..	..	....	....	.70	....	2 90
Davenport	.	...	T	..	.	.36		.25	T	..	1	..		....	..	. .	.23	.10	....	....	.0	T	1.33	.07	.35	T	.02	T	....	.44		3.20
Decorah	....	...	....	....	1 24	.12	....	-	....	....		....	....	....	..	..	.86	....	...		.04	....	.10	..	...	.09	.65	....	.76	....	..	3.86
Delaware	....	..	T	..	1.20	....	..	.03	....	..	....	..	....	....	....	....	T		....	..	.03	.18	1.02	.11	.02		.75	....	.22	..	..	3.56
Denison	....	....	T	..	.30		..		....	..	....	-	-	..	....		.33	-		.18	.22	.53	.97			...	.51	...	.08	...	..	4.02
Des Moines	....	...	T	....	.72	....	....	T	...	....	..	....	..			T	.02	..	..	T	.09	.37	.88	T	T		.99	....	.68	1.28	..	5 03
De Soto	....		..	....	.73		....	....		...	..		....	..	....	...	T		....	....	.08	.25	1.21	.15	T	....	1 55	....	67	1.12	....	5.73
Dows	.01	....	.01	....	.23	....	....		....	....		....	..	....	..	....	T		....	...	.02	.14	.62				1.30	..	.10	.23	....	2.66
Dubuque	....	....	.02	..	.45	.76		.18	....	..	...	....	..	....	....	....	.01	T	....	....	.03	.16	1.21	.13	.26	.01	.38	..	..	.33	..	3.93
Earlham	....	....	...	....	.17	....	....		....	....	..	....	....	....	....	....	T	....		.10	.01	.6	1.05	.04	.02	....	1.04	....	1.37	1.39	..	5.80
Eldon	....	....	....	....	.97	..	..	T	..	....	....	....	....	....	....	....	.22		....	..	.05	.20	.86	.11	T		57	-	....	2.27	...	5.25
Elkader	..	...	....	....	1.00	....	....	.10	..		..	-		...	...	....	.34	..	...	....	.23		.40	-	..	....	1.50	....	.55		...	4.12
Emerson	....	....	..	....	..		....	....	....	....	....	.	..	-		....	....	....	....	.20	....	T	.50	.75	.25	T	...	....	....	1.20	....	2.90
Fairfield	...	....	....	....	.51	.42	....	.12	....		.04	....	....	-	....	....	.24			.	.06	.13	1.10	.08	.03	...	.08		...	1.32	..	4.13
Forest City	..	....	....	....	13	..	....	....	...	..	....	..			....	...	.12	....	T	.53	.07	.05	.08		..	....	2.00	....	.85	.12	....	3.95
Fort Madison	....				.62	....	...	.19	....	..	.15	..		...	....		.13	..	...	....		.40	.20	T	.08	....	T	..	....	52	..	2.29
Galva	....	..	..	....	.05	...	..	....	..	.	....	-			....	...	.70	....		.58	.23	62	....	..	T	T	..	....	1.50	....	....	3.68
Gilman	..	....	.03	....	1 03	.13	....	T	..	....	....	....	....	....	....	....	.03	....	....	....	.15	.28	1.03	.20	T	T	.21	....	.06	.70	..	3.85
Grand Meadow	..	....	....	....	1.78	....	....	.15	....	..	..	...	....	....		....	2	....	....	..	.17	.06	....			....	1 25	....	.97	....	-	4.61
Greene	....	....	....	..	78	.08	....	.08	..	.	....	....	....		....		T	..	...	....	10	.41	.35	...		....	1.55	....	23	.42		4.00
Greenfield	....	.02	...	.	20	....	....	T	....	..		....	....	....	..	.04		..	....	.07	.02	1.07	1.31	06	T	.05	1.15	....	1 23	1.08	....	6.30
Grinnell (near)	..	....	.04	.	.45	.82	....	.01	....	....		....	....		....	....	02	....	....	..	.30	....	1.40	..	..	..	.60	....	.03	.90	....	4.57
Grundy Center	....	..	T	....	.39	.05	..	.05	..		..	-		....	....		.10				.13	.26	1.56	.13	T	....	.85		.38	.77	....	4.67
Guthrie Center		....	....	....	.15	....		..	..	..	....	....	..		....	..		....	...	.11	.10	.51	2 06	05	....	....	86		1 65	..		5.49
Hampton	..	....	..	..	.48	....	....	..	....	....	....	....	....	....	....	T	.06	..	....	.03	.17	.75		....	..	....	2 56	....	.62		...	4.67
Harlan	....	....	.24	..	.07	....	....	..	..	.		....					.29	..	....	.17	.22	25	2.73		....	....	.89	....	.70	.06	..	5.63
Hopeville	..	...	.21	....	1 14	...	..	.01	..	..	.02		....	....	....	..	14	....		....	.06	.9	2.87	.37	...	.31	.55	...	89	1.10	....	8.60
Humboldt	....	....			.10	..	..	....		...	...	..	..	....	....	..	.08	...	.40	.08	.10	.75	...	....	...	-	.68	....	.68	.28	....	3.15
Independence	-	....	T	....	.90		....	....	....	..	..			....	..	....	T	....	....	..	.12	.05	.90	...		....	.50	....	.80	...		3.27
Iowa City	....	..	.02	....	80	.62	....	.09	..	....		..	....	..	..	T	.06	....	..	T	.09	09	3 27	.49	.03	..	12		....	.69	....	5 87
Iowa Falls	-	....	T	...	.51	..	....	....	....	....		..	....	-	..	T	.08	....		T	T	.40	41	T	T	T	1.28		.73	.05	....	3.46
Jefferson	..	....		...	.32		....	....	....	....	....	....	....	..	-	....	....	....	....	....	.20	.18	3.07	..	....	.15		...	1.40	....	....	5.32
Keokuk	....	....	....	....		.58		.22	...	...	.12	...		....	....	....	.15	.06	....		T	07	.19	06	.14	....	T	....	....	.23	....	2.82
Keosauqua	..	....	....	....		.88	..	.11	.03	..	.03	....	..	....		..	.33	....	....	....	T	.30	.77	.07	.03	....	.05	..	....	1.56	....	4.16
Lacona	..	....	...	...	1.00	....	....	.	....		..	....	....	....	....	.....	.12	....	....	..	.08	.14	1.11	T	....	....	1.16	....	.18	2.07	....	5.86
Lansing	..	....		....	.20	....	....	..	....	....		....	....	....	....	....	.10	....	..	....	....	.45	.15	-	.15	....	1 00	...	....	.95		3 00
Le Claire	...	....	....	T	....	.21	....	....	.30	...	....	....	....	....	..	..	..	98	..	....	....	.0	.80	.63	.51	.01	.09	.02	....	.11	.....	3.67
Le Mars	....	....	....	....	.	....	....		....	....	....	....		....	....	....	....	....		3.52	.48	.07	....			....	....	....	.60	....	....	4.67
Lenox	..	. .	....	..	.13	....	....	....	....	....	....	....	....	..	....	T	T	....	....	T	.16	.58	.68	.07	.01	....	.68	-	1 42	.53	....	4.26
Leon	.	...	.05		53	.03	....	.02	....	-	T		....		....		.14	....	....	T	.07	.72	3 84	.41	T	....	.64	....	1.00	1.63	....	9 08
Logan	....	....	....	....	.03		....	....	....	....		....	....	....	....	..	.39	....	..	.37	.37		.16	1 08	....	..	.23	...	.77	....	....	3.40
Maquoketa	....	-	....	....	1 15	.40	...	.10	....	....		..	....	....	....	..	.06	.03	....	...	.06	.05	3 60	.07	.12	..	.33	....	....	.42	....	6.39
Marshalltown	....	....	.01	....	.87	.04	....	..	....	..	..		....	..	..	....	.17	..	....	-	.19	.97	1.52	.45	..	....	.35	..	.27	.86	....	5 70
Monticello	....	....	.05	...		1.55	..	.15		..	....	..	....	....	....	....	....	..	....			T	2 10	T	T	.62	....	....		.35	..	4 82
Mount Ayr	....	....	.02	....	.84	....	...	.01	....	..	.02			....	..	....	.15	....	....	T	.05	.98	1.10	.86	.02	.20	.45	....	1.40	1.19	..	7.29
Mt. Pleasant	....	....	...		...	1 11	25	....	....	....	.09	..		..	..		.22	....		....	.01	..	1.50	50	T		T	....	....	1.20		4.88
Mt. Vernon	..	....		....	.34	.62	..	11	....	..	...	....	..	....	..	..	.02	..	....	..	.08	30	3.20	.22	.02	..	.12	....	T	.77	.	5.80
New Hampton	....	....	....			1 31	...	.21		....	....	..	..	....	....	....	.16	.	....	..	.06	.27	.28	....		..	3 80	...	.20	.46	....	6.75
Newton	-	....	....	....	1 61	..	....		....			....		..	..	..	.04	....		....	.20	.28	1 05	....	....	....	.49		T	1.28		4.95
Northwood	.02	-	..	..	.22	....	....		..	...	....	..	..	....	....	....	.06	...	T	.02	.14	.09	T		....	..	1.38	..	.62	....	..	2.55
Ogden		....		....	23	....	....	..	....	..		....	..	..	....	..				T	.08	.32	1.45			...	.07	....	.66	.44	....	3.25
Olin	....	.	T	..	1.20	...	....	.10	...	....	....		....	..	..	....	..	....	-	....	....	65	3.42	.09	.16		08	...		.65	....	6.35
Omaha, Neb	....	...	.01	...	T		..	..	....	....	....	....			....	..	.32		....	.05	.10	.16	.29	....	..	....	.23	..	.35	.01	...	1.52
Onawa	.01	....	T	....	.02	...	.	..	....		..	..	..	....	....		.28	....	....	.82	.82	.46	.56	..	....	..	.63	....	1.12	.03	..	4.75
Osage	..		..	....	.45	....	....		..	T	....	....	..	....	....		.04			....		.15	.16	...	....	-	.52	..	.50	.28	....	2.10
Osceola	T	.35	....		1 50	....		T	..	T	-		....	....	..	....	12		...	.04	.03	.55	2.01	.12	...	.65		....	2.52	....	....	7 89
Oskaloosa	...	....	.	....	.72	.03		.04	..	..	...	....		..		...	.16	....		.48	.20	.82	.57			..	.21	....	.46	1.43	..	5.12
Ottumwa	..	....	....	....	.95		..	04	....	....	.12	...	...	..	....	....	.22	...	..	..	.17	....	4.03	26	..	....	.75	..	.	3.87	..	10 41
Ovid	..	....	....	....	.72	....	....	.03	....	..	01	-	....	....	....	..	.12		..	..	.06	.22	1.33	.30	.03	....	1.15	....	.05	3.55	....	7.57
Pacific Junction	..	....	.03	....	.03	...	...	....		....	....	....	....	....	....	....	.07		....	.17	.05	.03	65	....	....	....	.15	..	.92	.07	...	2.77
Perry	....	....	T	..	.13	....	....		....	..	...	..		....	....	....	T			.04	.06	.33	1.66	T	.	....	....	....	.94	.44	.	3.60
Plover	....	...	....	...	.04	....	..	....	..	....	....	..	....	..	-	...	.42	....	.04	.62		.12	.71	..	....	1.11	....	....	1.13		...	4.19
Red Oak	....	....		.11		..	....	T	....		T		....	..	..	..	T		....	.42	.12	.26	1.64	.01	....	....	.20	..	1.21	.31	....	4.28
Ridgeway	..	...	..		1.18	.01	..	.13	....	....	—	T	....	..		..	.29	....		..	.08	.04	.15	...	.04	..	.59		.82	....	....	3.33
Rockwell City	....	..		..	.11	..	....			..	..	..	..	..	..	..	T		....	45	05	.95	T	...		..	1.45	..	.90	....	....	3.91
Ruthven	....	..		....	..	....	....	....	....	-	-		....	..		....	.40	..	.20	.10	T	.10		..	....	....	.94	..	.96	..	....	2.70
Sac City	....	..	T	....	.08	..	..	.	..	....	..			....	..	....	.35	...		.25	.16	.39	.67	...	....	T	.	....	1 19	....	..	3.09
St. Charles	....	....	....	....	1.38	..	..	.02	....	....	..		..	..	....	....	.03	....	....	.03	.1	.42	1.20	.07	.03		.58	....	.66	1.44	..	5.96
Sheldon	.08	....	....	....	T	...	..	....	....		....	-	..	...	....	....				.06	2 58	.02	.12	.07	....				.38	....	....	3.31
Sibley	.63	....	....	..	....	....	..	....	....	....	....		....		....		.02		.25	2 62	.1	T	.01		..	T		....	.31	..	..	3 98
Sigourney	....	...	T	....	....	.70	....	.03	....			..	..	....	..	....	.14	....	..	....	.07	....	1.11	.26	...	....	.25	...	T	1.21	....	3.77
Sioux Center	.19	....	T	....			....	T	....	....	....	....	....	..	....	..	T	..	T	3.25	T	.25	.12	..	....	T	T	....	.34	....	....	4.15
Sioux City	T	....	T	....	T	....	..	....		....	....	....	....	..	....	..	T	....	....	2.70	.07	1.19	.08	....	....	T	02	...	.43	....	..	4.49
Stockport	-	....	..	..	....	.80	....	.10	.02	.	.15	....	..	....	....	.33			....	T	.04	.15	1.01	.10	.05	...	.04	....	....	1.75	..	4.54
Storm Lake	....	....	....	....	.05	..	....	....	..	....	....	....	....	....	....	....	.24	..	..	.12	.32	.34	.52	.02	....	..	.21	...	1.28	.0	....	3.11
Thurman	.	....	....	...	.20	....	....	....	....	....	T	....	....	....	..	..	T	..	..	.15	.30	.35	1.70	.21	....	....	....	....	1.40	.15	...	4.46
Tipton	....	....	T	....	....	.85	..	.15	..	..	..	..	....	....	..	..	.15	..	....	....	....	....	2.35	.80	.20	....	.50	....	....	.50	....	5.50
Toledo	....	....	....	....	1.00	....	....	.03	....	....	....	....	....	....	....	....	.02	....	....	....	.10	....	1.20	.90	T	...	.42	....	.83	....	....	4.50

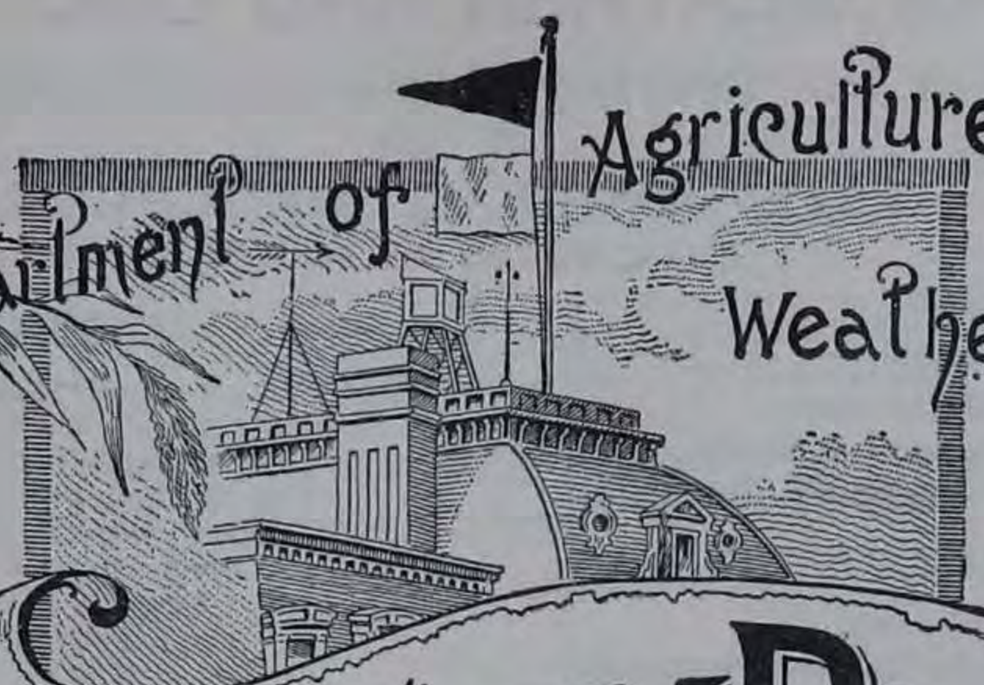
DAILY AND MONTHLY PRECIPITATION FOR SEPTEMBER, 1902—CONTINUED.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Vinton	....	....	....	....	.97	....	....	....	....	....	....	....	....	..	...		.03	....	...	..	.14	...	1.05	.11	.04	...	.37	....	.68	....	....	3.39
Wapello	...	....	....	....	....		..	.13	....	....	....	...	....	....	....	....	.37	....	....	....	....	.25	2.32	.70	....	....	.13	....		.75	....	4.65
Washington	..	....	....	....	....	.73	..	.04	..	....	....	....	..		....	....	.08	....			.02	....	.53	.68	03	....	.02	....	....	1.00	..	3.13
Washta	..	....		....	.08	....	....	....	....	..	..	....	....	....	...	....	.48	....	T	1.15	....	.41	.44	...	....	....	....	...	1.30		....	3 86
Waterloo	...	....	T	..	.45	.15	....	.17	....	..	....	....	....	..	...	.02	.15	..	....		.17	.05	1.92	....	T	T	.70	....	.56	.52	....	4 86
Waverly	...	....	....	..	.70	.01	....	.31		....		....	....	...	..	....	.18	...		....	.14	.14	.51	....	....	..	1.30	....	.61	.34	....	4 27
West Bend	....	....	....	..	.07	....	....	....	...	...	..	..	..	...	...	.34	....	...	T	.44	T	.12	.45	T	....	....	30	..	1.27	....	....	2.99
West Branch	..	....	...	....	T	.67	....	.17	..	....	....	..	...	...	....	....	.08	-	..	..	.10	.05	2.60	.73	.09	T	.08	....	....	.63	..	5.20
Whitten	....	..	T	....	.30	....	....	....	....	...	..	..	....		....	....	T	....	...	...	T	T	1 10	....	.04	..	1.00	..	.60	.45	..	3 49
Wilton Junction	....	....	....	....	.48	....	....	.13	....	....	....	..	..	..	...	....	.08	....	....	....	...	2.17	.40	.10	...	....	.10	....		.52		3.98
Winterset	....	...	...	..	.93	....	....	T	...	....	....	....	....	..	...	..	.11	....	....	T	.12	.78	1.14		..	....	.66	....	.29	1.80	..	5.83
Woodburn	....	....	.14	....	1.10	....		.04	....	....	...		....	....	....	....	....	...		T	T	.66	1.70	.26		...	T	....	3.20	....	..	7.10

Precipitation Chart September 1902.



OCTOBER, 1902. No. 10



MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

STAR ENG. CO

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CENTRAL STATION, DES MOINES, IOWA.

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U. S. WEATHER BUREAU, ASS'T DIRECTOR.

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BERNARD MURPHY, STATE PRINTER
1902

THE IOWA WEATHER AND CROP SERVICE

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Buckingham (Traer P. O.)	Dr. W. A. Daniel
Burlington	I. S. Shontz
Bussey	Agent C. B. & Q. Ry
Carroll	Moses Simon
Carson	Agent C. B. & Q. Ry
Cedar Rapids	Electric Light & Power Co
Centerville	C J Brower
Chariton	Hon. S. H. Mallory
Charles City	Chas. O. Schmidt
Chester	C. H Meredith
Clarinda	A. S. Van Sandt
Clear Lake	John Cobb
Clinton	Luke Roberts
College Springs	A. M. Finley
Columbus Junction	Prof. H. E. Simpson
Corning	Jerome Smith
Council Bluffs	Agent C. R. I. & P. Ry
Cresco	Anthony Marshall
Cumberland	Agent C. B. & Q. Ry
Danville	Agent C. B. & Q. Ry
Davenport	*J. M. Sherier
Delaware	Wm Ball
Decorah	F. H. Baker
Denison	Prof. W. C. Van Ness
Des Moines	*Geo. M. Chappel
De Soto	R. D. Minard
Dows	A. C. Fuller
Dubuque	Orin Parker
Earlham, R. F. D	Geo. Phillips
Eldon	T. Madden
Elkader	Chas. Reinecke
Emerson	Agent C. B. & Q. Ry
Estherville	Alvero O Salisbury
Fairfield	Prof. W. W. Mendenhall
Fayette	R. Z. Latimer
Fertile	Geo. W Paschen
Fort Dodge	C. R. I. & P. Agent
Ft Madison	Miss L. A. McCready
Fonda	H. P. Barron
Forest City	J. A. Peters
Galva	D. W. Farnsworth
Gilman	Jas. L. Wylie
Gladbrook	Agent C. G. W. Ry
Grand Meadow (Postville P.O.)	F. L. Williams
Greene	J. L. Cole
Greenfield	J. G. Culver
Grinnell	Prof. S. J. Buck
Grinnell (near)	A. O. Price
Grundy Center	Ed King
Guthrie Center	W. F. Braun
Hampton	E. C. Grenelle
Harlan	C. A. Reynolds
Hazleton	G. M. Miller
Hopeville	M. T. Ashley
Humboldt	H. S. Wells
Ida Grove	Dr. T. A. Collett
Independence	E. F. Wulfke
Indianola	Prof. L. Tilton
Inwood	Chris. Erickson
Iowa City	Prof. A. A. Veblen
Iowa Falls	J. B. Parmelee
Jefferson	Isaac Young
Keokuk	*Fred. Z. Gosewisch
Keosauqua	Prof. J. H. Landes
Knoxville	Casey & Belville
Lacona	Agent C. B. & Q. Ry
Lansing	Jacob Ackerman
Larchwood	Ralph Twamley
Larrabee	H. B. Strever
Lenox	J. L. Hurley
Le Mars	Dr. T. E. Cole
Leon	Millard F. Stookey
Logan	Mrs. M B. Stern
Maquoketa	Frank Keeney
Marshalltown	Branch S. Jones
Monticello	C. E. Heisey
Mount Vernon	Rev. J. W. Hubbard
Mt. Ayr	A. F. Beard
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Murray	Agent C. B. & Q. Ry
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Odebolt	E. Starner
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Perry	J. A. Harvey
Plover	J. S. Smith
Primghar	P. R. Bailey
Red Oak	J. S. Cole
Ridgeway	Arthur Betts
Rockford	J. R. Waller
Rockwell City	C. M. Randall
Ruthven	F. M. Fitzgerald
Sac City	J. A. Sodestrom
St. Charles	C. W. Minard
Scranton	Willis E. Lamb
Sheldon	J. B. Frisbee
Sibley	H. G. Doolittle
Sigourney	Mrs. R. F. Ashbaugh
Sioux Center	Jacob de Ruyter
Sioux City	*U. G. Purssell
Spencer	S. Gillespie
Spirit Lake	W. C. Drummond
Stockport	C. L. Beswick
Storm Lake	L. E Burdick
Stuart	A. S. Raber
Thurman	C. R. Paul
Tipton	G. W. Barclay
Toledo	Herbert Giger
Vinton	T. F. McCune
Villisca	C. E. Matteson
Wapello	Geo. W Schofield
Washington	Wm. A. Cook
Washta	H. L. Felter
Waterloo	M. L. Newton
Waukee	E. J. Leonard
Waverly	H. S. Hoover
Whitten	Dr. Frank P. Butler
Wilton Junction	J. M. Rider
Winterset	Prof. E. R. Zeller
West Bend	Phil. Dorweiler
West Union	J. M. Lisher
Woodburn	C B. McDonough

*U. S. Weather Bureau

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Charles City	W B. Towner
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Correctionville	Hon. W. B. Chapman
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Council Bluffs	L. Prouty
Creston	M. V. Ashby
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Emerson	D. B. Nims
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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

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NOTES.

A school for corn and live stock judging will be held at the Iowa State College at Ames January 5 to 17, 1903 A general invitation is extended to all farmers of the state to attend and to bring samples of corn to add to the exhibit. It will be a valuable school of instruction for young or old farmers.

* * *

The horticultural department of the Iowa Experiment Station has placed in cold storage one hundred varieties of Iowa apples to determine their relative keeping qualities, and the best temperature for preservation of fruit. The apples have been carefully selected and packed, and were procured at Corning, in the heart of the southwestern Iowa apple district. The experiment will be watched by both producers and dealers.

* * *

About 50 earthquakes yearly, according to Prof. John Milne, disturb the world throughout its mass. Between January 1, 1899, and January 1, 1902, the world shaking earthquakes numbered 196, of which 25 originated west and south of Alaska, 14 west of Central America, 16 west of the Antilles, 12 west of the Andes, 29 east of north Japan, 41 south and east of Java, 17 north of Mauritius, 22 on the east side of the north Atlantic, 8 on the west side of the north Atlantic, 3 in the north Atlantic, and 14 in the Balkan, Caucasian and Himalayan regions. These sources are near the base of the steepest flexures, are all submarine except the last three, and their boundary ridges are mostly lined with volcanic peaks. Both on land and under the sea the great earthquakes seem to be accompanied by a deepening of the furrows and an elevation of the flanking ridges. The elevation may reopen long sealed volcanoes, as in the eruptions in the Antilles in 1692, 1718, 1766, 1797, 1802, 1812, 1836 and 1902. The small earthquakes—of which 10,000 a year are recorded in the world—have no sensible connection with volcanoes.—*Ex.*

* * *

The body temperature of insects, unlike that of mammals, varies greatly. A recent investigator, P. Bachmetjew, finds that when the insect is at rest the temperature is near that of the surrounding air, but that it rises rapidly with active movements. The temperature endurance of insects proves to be about the same as that of plants. The species tried were immovable at 31 degrees Fahrenheit, began to move the wings at about 53 degrees, commenced to buzz at 68 degrees, showed signs of uneasiness at 104 degrees and died at 113 degrees.—*Ex.*

WEALTH FROM WASTE.

(*Manufacturers' Record.*)

Mr. Frank H. Mason, the United States consul-general at Berlin, is rendering efficient service in these times by furnishing through the United States State Department valuable information about the manufacture and use in Germany for fuel of briquettes made from brown coal, carbonized peat, coaldust, etc., and has suggested that manufacturers and domestic consumers in this country may turn their attention to the utilization of some raw material which now is practically wasted. Briquettes, according to Mr. Mason, form the principal fuel of Berlin and other German cities, and are used for steam firing and for heating in various manufactories. Their advantages are that they are clean and convenient to handle, they light easily and quickly, and burn with an intense flame, and they make practically no smoke, and are, withal, the cheapest form of fuel for most purposes. There were in operation in Germany at the close of 1900 eighty-nine manufactories of fuel briquettes, some of which produced 100,000 tons annually. The manufacture of briquettes is controlled by a syndicate, and the growth of the manufacture was from 482,495 tons, at $3.02 a ton, in 1891, to 1,566,385 tons, at $3.17 a ton, in 1901. The syndicate produces to a large extent briquettes from coal screenings which require a matrix or binder of some plastic inflammable material, and for this purpose 116,956 tons of mineral pitch, costing on an average $10 25 a ton, were used in 1900. The first report on this subject, made on August 16 last, has been followed by one in the advance sheets of the consular reports of the State Department for October 11. This is devoted largely to a description of the machinery for making briquettes from peat. Discussing the subject generally, Mr. Mason says:

"Briquette works are divided in respect to the material employed into two general classes, viz., those which make briquettes from brown coal (lignite) or carbonized peat, with or without the addition of a bituminous matrix or binder, and second, those which use as a basic material coaldust or slack—the waste of soft coal mines. Of the latter class, Messrs. Franz Haniel & Co. of Ruhrort-on-the-Rhine, who have works at several points along the Rhine, are representatives. The great Gruhl establishment at Bruhl, the 'Donatus' works at Liblar, near Cologne, and the Thuringian Aktiengesellschaft, at Deuben, near Halle, are typical examples of factories which make briquettes from brown coal, which is abundant and cheap in many sections of Germany. In the last named establishment no matrix or binder is used. The lignite is crushed, moistened with water to the consistency of mortar, then passed through the machine, which, by compression under heat, develops the bitumen in the material and renders the mass so plastic and adhesive that it molds rapidly into smooth, glistening briquettes of a black or dark brown color, which are practically smokeless and leave after combustion a reddish-brown ash. All processes of this kind are based upon the fact that lignite is a vegetable coal of more recent formation, and therefore less perfectly carbonized structure than anthracite or bituminous coals, has lower caloric value, and requires to be compressed and further carbonized by artificial means. Turf

or peat is a still more recent formation, and requires proportionately more artificial preparation to produce a high-class fuel; hence the several more or less successful patented processes for carbonizing peat into so-called peat coal, an artificial product which can be either used in irregular lumps or molded into briquettes.

"From what has been previously reported on this subject, it will be apparent that in all that concerns the manufacture of briquettes from brown coal, or from the slack and waste of bituminous coal mines the processes employed in France and Germany have long passed the experimental stage and become a standard commercial industry. If Americans are really interested in the suject, there is no need that they should risk any large sums of money in uncertain experiments. They have only to study the machinery and methods employed in European countries compare their crude materials with those found and used here, and they can thus start at the point of technical knowledge which Europeans have reached after many years of experience. When, some ten years ago, the attention of American iron-makers was called to the German system of making blast-furnace coke in retort ovens, which saves the valuable volatile elements of the coal, it was thought worth while by certain of them to bring over two carloads of Connellsville coal to be coked as a test by the German process The complete success of that experiment decided the introduction of the standard German type of coking oven into the United States.

"Something similiar it would seem, might profitably be done with the materials which Americans have not yet succeeded in converting into satisfactory briquettes There are experienced engineers and a dozen mannfacturers of briquette-making machinery who would gladily co-operate in these tests, and would furnish machinery adapted to working the material thus technically defined. Upon a basis of such tests, plans and estimates could be obtained for the erection of plants in the United States with specified daily capacity"

FOR BIGGER GRAIN CROPS.

The Department of Agriculture is trying to push plant breeding in this country. It is a branch of farming work that is pursued much more diligently in Europe than in the United States, and if it were carried on as it should be on this side of the water most important benefits would accrue to the producers of our crops Only within the last few years has it been realized that plant life is to a wonderful extent under man's control. He is almost able to act the part of a creator in the vegetable world, so greatly is it in his power to modify species by hybridizing and by artificial selection.

The government is already conducting such work on quite an extensive scale, and wishes to urge private individuals to take up further and continue the work along the lines that have already been marked out. In England the average yield of wheat is over 30 bushels to the acre, but in this country it is below 15 bushels, the difference being mainly due to the fact that in Great Britain highly productive varities of the grain have been secured through a long period of selection and breeding. It is recorded by the department of agriculture that in ten years the Minnesota Experiment Station by means of careful breeding, produced a new variety of wheat which yielded nearly 25 per cent more grain than its parent variery, which was the best grown in the state up to that time. An increase of 25 per cent or 5 bushels to the acre would add to the world's supply of wheat 625,000,000 bushels, which at 80 cents a bushel would be worth $500,000,000 per annum. An increase of only one bushel an acre would augment the world's crop 125,000,000 bushels, representing a value of $100,000,000. At the present time the United States produces about one-fifth of the world's wheat supply.

The breeding of corn in the United States has resulted in a very marked improvement. Prof. Hays, of the University of Minnesota, states that the farmers of America, without realizing the fact, have been conducting with maize the most extensive breeding experiment ever carried on, and by selection have greatly increased the yield of their cornfields. Corn is such a large plant that each ear is taken in the hand in husking out the crop, and thus the agriculturalist has been able to choose the very best yielding plants out of immense fields. Hence it has come about that ears of corn today are much larger than they were half a century ago. Yet, says Prof Hays, in another half century the farmers might easily add another 25 per cent to their cropf of maize —*Flour and Feed*.

FARMING IN THE OLDEN TIME.

The American of the Revolutionary period was an extremely poor farmer. Looking back on his methods and his work, it is hard to say which were the most crude, his implements or his ideas He used a wooden plow; he was afraid an iron one would "poison the soil" He had not learned that glanders was contagious, and would work and stable healthy stock alongside of stock affected by it, and wonder what there was in the soil, air or climate that carried them off. He didn't understand the use of fertilizers, and instead of spreading his barnyard manure on his fields he let it accumulate around his barn until the approaches were impassable Then he dug the barn out and moved it Instead of rotating crops to save his soil, he planted according to the phases of the moon. There were few sheep in the country, and other live stock was poor and scanty In Virginia the belief prevailed that it would kill cows to house and milk them in the winter. Transportation was poor and continued so for a long time. The roads could not have been worse. Markets were scattered and far between.

Each farm attempted to be self-sustaining in as large a degree as possible What the farmer couldn't grow or his wife couldn't make they went without. Wasteful methods of tillage eventually exhausted a soil originally rich, and in the reign of Andrew Jackson agriculture had fallen into such an alarming state of neglect and inefficiency that the government had to come to its relief.

Through the efforts of Henry L Ellsworth, commissioner of patents, a bureau was established in the patent office, which developed into the department of agriculture By aid of that department farming has been made a science.—*Ainslie's Monthly*.

NATIONAL CLIMATE AND CROP SUMMARY.

The Climate and Crop Bulletin of the United States Weather Bureau for October, 1902, says:

"The month, as a whole, was very mild, with rainfall generally sufficient, and while the latter was excessive over a large part of the Atlantic coast and Gulf districts, but little injury resulted therefrom, except in the early part of the month. In the central valleys the conditions were generally favorable for hardening corn, but a considerable portion of the crop in the Lake region and over the northern portions of Mississippi and the Missouri valleys is yet soft.

"Rains caused considerable injury to cotton during the early part of the month, especially in the central and western portions of the belt. The weather of the middle and latter part of the month was more favorable, and the development of a fair top crop in some localities resulted .At the close of the month picking was still in progress, and with delay of frosts considerable will yet be gathered, the most favorable prospects for top crop being reported from northern and central Texas.

"Winter wheat seeding made satisfactory progress and was largely completed by the close of the month in the principal

winter wheat states. The early sown has, as a rule, germinated well, good stands being generally reported. Fly is, however, quite extensively reported from the states of the Ohio and central Mississippi valleys."

THE SEASON OF 1902 IN NORTHEAST IOWA.

We had a wet summer. Over 2 feet waterfall for May, June and July. For August and September the rainfall was moderate, and October was very dry. We had our first killing frost Tuesday morning, October 14th, the first frost since April 24th. The cornfields were slowly dying of old age and the corn was ripe. The tenderest vegetation up to that time, was green and beautiful, such as citrons, tomatoes, ground cherries, cucumbers squashes, pumpkins, late corn, pencillaria, sorghum and geraniums. A delightful fall—the best in many years Oats yielded from 30 to 50 bushels per acre. Corn despite the wet summer is a fair crop, though in some late pieces the ears are very deficient. Potatoes are a light crop and potato rot is general. Beans are a fair crop and the bean weavel is not found this year, because the summer was so cloudy that there were few butterflies to deposit the eggs There were a good many potato bugs in their season, but very few young ones ever hatched out. Apples were less than average, and the quality was poor. Hay has been excellent and many farmers have cut their 2d crop. Pastures were extra good and cows have kept up unusally well in their milk. The price of eggs has kept up better than common, from 12 to 16 cents all the season. We have had wild flowers in the greatest profusion, but birds, with the exception of hawks crows and blue jays, have been less plentiful than usual. Nearly everyone has put in a good stock of walnuts, butternuts and hazelnuts for the winter. Clover fields are beautiful, the country is exceptionally healthy, the people are in good spirits and are prospering finely. Surely we have no reason to complain.

ARTHUR BETTS.

Ridgeway, Winneshiek Co., Nov. 2d.

WEATHER AND CROP CONDITIONS.

The weather conditions in October were very nearly normal in state averages. The mean temperature was about 3 degrees above normal, and the amount of sunshine was about the October average. The average rainfall was slightly above normal for the state at large, though portions of the central and southern sections received a considerable excess. In the northern section the general conditions were excellent for drying out corn and for the usual fall work. A good beginning was made in cribbing the matured portion of the corn crop In the central and southern districts fall plowing was much delayed by the saturated condition of the soil. Thrashing stacked grain revealed extensive damage to wheat and oats from excessive rains in the harvest season. The reports indicate a fair yield and generally good quality of potatoes. The crop of fall and winter apples was better than was indicated by reports during the growing season The season's products of cabbage, turnips, beets, squashes, and pumpkins were unusually large. The amount of forage grown was unusually heavy, though it was much impaired in quality by excessive moisture.

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 30.02 inches; highest observed, 30 36 inches at Dubuque, on the 30th; lowest observed, 29 37 inches at Keokuk, on the 12th; range for the state, .99 inch.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 112 stations, was 53.5 degrees, which is about 3° above normal. By sections the mean temperatures were as follows: Northern section, 51.4°; Central section, 53 5°; Southern section, 55 7°. The highest monthly mean was 58.4° at Winterset; lowest monthly mean, 47.3° at Plover. The highest temperature reported was 83°, at Ida Grove and Council Bluffs on the 10th and 22d; lowest temperature reported, 20° at Plover on the 14th. The average monthly maximum was 77.6°; average monthly minimum, 27.2°. Greatest daily range, 46° at Sibley; average of greatest daily ranges, 35 7°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 130 stations, was 2.54 inches, which is 0.26 of an inch above normal. The averages by sections were as follows: Northern section, 1.24 inches; Central section 2.60 inches; Southern section, 3.78 inches. The largest amount reported was 6.66 inches at Newton; least amount reported, 0.28 of an inch at Sioux Center. The greatest daily rainfall reported was 3 71 inches at Newton on the 17th. Average number of days on which .01 of an inch or more was reported, 5.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 42 miles per hour, from the southwest, at Des Moines on the 25th. Average number of clear days, 16; partly cloudy, 8; cloudy, 7

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	30.00	30.34	30	29.38	12
Des Moines	30.63	30 33	30	29.53	12
Dubuque	30.03	30.26	30	29.50	12
Omaha, Neb	30.00	30 28	30	29 60	12
Keokuk	30 01	30.33	3, 31	29 37	12
Sioux City	30.02	30.29	3	29 62	25
Means	30.02	30.36	30	27.37	12

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	5525	30	S	18
Des Moines	6204	42	SW	25
Dubuque	4896	24	.....	27
Keokuk	5396	30	W	13
La Crosse, Wis	5641	28	NW	26
Omaha, Neb	5818	30	N	6
Sioux City	8067	38	NW	27

OBSERVERS' NOTES.

ALTA—*David E. Hadden.* An ideal October, with Indian summer weather most of the time. An energetic electric storm in early morning of 21st.

AMANA—*Conrad Schadt.* Many tender plants still green at close of month; pastures fine and hay making still going on.

ATLANTIC—*J. W. Love.* Light snow on 13th; thunderstorm on 23d with no rain.

BONAPARTE—*B. R. Vale.* Precipitation for six months—April 20th to October 19th—40.41 inches. Last two weeks settled weather; corn hardly fit to crib; no fall plowing.

BRITT—*Geo. P. Hardwick.* Pleasant month, with but little frost; vegetation unusually green, except corn; insect life plentiful; farm work retarded by wet soil.

CLINTON—*Dr. Luke Roberts.* October, 1902, was marked by no abnormal weather conditions, but was a fair October average, and a happy contrast to the four or five months preceding.

The maximum temperature was 78 degrees, occurring on the 22d and 23d, being 4.2 degrees below normal, while the minimum temperature, 28 degrees, which occurred on the 14th, was 4 2 degrees above normal. The mean temperature, 52 degrees, was 2 degrees above normal. Ten Octobers during the last 24 years gave higher mean temperature, the highest of which was 57 8 degrees, occurring in 1900. The lowest mean temperature for the same period was 44.2 degrees, occurring in 1887 and 1895.

The warmest day was the 25th, which gave a mean temperature of 66 5 degrees, being 1.2 degrees below normal, while the coldest day, the 28th, gave a mean of 5.7 degrees above normal. Light frosts on the 6th, 20th, 28th and 31st and a killing frost on the 14th Even this was harmless, as it interfered in no way with fall pasturage, and crops were past injury. Apparently grass was as green and fresh at the close of the month as during the last two preceding months.

There were 9 days on which a measureable amount of rain fell. A copious precipitation occurred on the 17th, commencing at 4:30 P. M. and ending at 7 A. M. on the 18th, the principal downpour occurring between 9 and 10:30 P. M. of the 17th. Total amount 1.45 inches, being nearly one-half of the month's precipitation, which was 3.15 inches. This amount was .73 of an inch above October normal.

There were 8 cloudy days, 8 partly cloudy and 15 clear. The per cent. of cloudiness was 44, being 4 per cent. above normal. The movement of the wind was 3,680 miles, being slightly above normal.

FERTILE—*Geo. W. Paschen.* Corn cutting finished about the 5th with larger acreage than usual; corn husking begun the 20th.

FOREST CITY—*J. A. Peters.* Pastures extra at close of month; very little plowing done; corn too soft to crib; hog cholera bad.

GRAND MEADOW—*F. L. Williams.* Very favorable month for farm work; corn very soft; oats light.

GRINNELL—*A. O. Price.* Month pleasant; threshing finished; fall feed never more plentiful.

GUTHRIE CENTER—*E. S. King.* A remarkably fine month for fall work and for drying out corn; potatoes yield 100 to 150 bushels per acre; second crop grain on stubble fields heading out.

JEFFERSON—*Isaac Young,* During thunderstorm on 17th lightning killed several head of cattle, and windmills were blown down south of Jefferson.

OLIN—*Nathan Potter.* Month favorable for drying corn, and it is now in fairly good condition to crib; 40 per cent more or less hurt by frost.

RIDGEWAY—*Arthur Betts.* A lovely October; temperature normal; first killing frost here since April 24th on October 14th; corn half a crop.

ST. CHARLES—*R. D. Minard.* Precipitation January 1st to June 1st 8.45 inches; June, 6.71 inches; July, 12.77; August, 7.58; September, 6.06; October, 5.82. Total for ten months, 47.39 inches.

WEST BEND—*Ph. Dorweiler.* A fine month; threshing mostly done, and much grain in damaged condition; corn husking in progress.

ERRATA IN AUGUST REVIEW.

INDIANOLA.—Mean temperature recorded 65.4° on page 8, should have been 70.0 degrees. Mean maximum temperature recorded 73 8 degrees on page 9, should have been 78.9 degrees. Mean minimum temperature recorded 57.0 degrees on page 9, should have been 61 0 degrees.

MONTICELLO.—Mean temperature recorded 68.6 degrees on page 7, should have been 67.4 degrees. Mean maximum temperature recorded 82.0 degrees on page 10, should have been 79.8 degrees.

RUTHVEN.—Mean temperature recorded 68.1 degrees on page 7, should have been 68.0 degrees Mean maximum temperature recorded 77.8 degrees on page 10, should have been 77.7 degrees.

ERRATA IN JULY REVIEW.

OSKALOOSA.—Total precipitation recorded 7.71 inches on page 8, should have been 8.79 inches.

BELATED REPORTS FOR SEPTEMBER.

COLUMBUS JUNCTION.—Mean temperature 60.7°; highest 85°; on the 7th; lowest 33° on the 13th; greatest daily range 32; total precipitation 4.00 inches; greatest in 24 hours 1.60 inches on the 23rd; prevailing direction, northwest. Number of clear days 13, partly cloudy 11, cloudy 6, rainy 9.

CRESCO.—Mean temperature 56.3°; highest 78° on the 7 and 15th; lowest 31° on the 12th; greatest daily range 30; total precipitation 2.93 inches; greatest in 24 hours .96 inches on the 5th; prevailing direction, southeast. Number of clear days 20, partly cloudy none, cloudy 10, rainy 8.

FAYETTE.—Mean temperature 57.0°; highest 82° on the 7th; lowest 26° on the 13th; greatest daily range 40°; total precipitation 3.86 inches; greatest in 24 hours 1.41 inches on the 5th; prevailing direction, northwest Number of clear days 17. partly cloudy 1, cloudy 12, rainy 9.

COLLEGE SPRINGS.—Mean temperature 58 8°; highest 83° on the 6th, 7th and 26th; lowest 34° on the 13th and 27th; greatest daily range 41°; total precipitation 3.50 inches; greatest in 24 hours 1.73 inches on the 23rd; prevailing direction, southwest. Number of clear days 15, partly cloudy 7, cloudy 8, rainy 5.

KNOXVILLE.—Mean temperature 60.0°; highest 83° on the 7th; lowest 33° on the 13th; greatest daily range 33°; total precipitation 6.68 inches; greatest in 24 hours 2.20 inches; prevailing direction, northeast and northwest. Number of clear days 16, partly cloudy 2, cloudy 12, rainy 9.

LARRABEE.—Mean temperature 57.7°; highest 83° on the 7th; lowest 29° on the 12th and 18th; greatest daily range 37°; total precipitation 3 45 inches; greatest daily rainfall 1.04 inches on the 20th; prevailing direction, northwest. Number of clear days 17, partly cloudy 7, cloudy 6, rainy 8.

ODEBOLT.—Mean temperature 59.4°; highest 85° on the 7th; lowest 30° on the 12th; greatest daily range 40°; total precipitation 3.41 inches greatest in 24 hours 1.12 inches. Number of clear days 19, partly cloudy 5, cloudy 6, rainy 8.

VILLISCA.—Mean temperature 59.9°; highest 83° on the 7th; lowest 30° on the 13th and 28th; greatest daily range 43°; total precipitation 4.78 inches; greatest in 24 hours 2.50 inches; prevailing direction, northwest. Number of clear days 12, partly cloudy 9, cloudy 9, rainy 9.

ROCKFORD.—Total precipitation 2 23 inches; greatest in 24 hours 1.00 inch; prevailing direction, northwest. Number of clear days 25, partly cloudy 1, cloudy 4, rainy 4.

IOWA WEATHER AND CROP SERVICE.

CLIMATOLOGICAL DATA FOR OCTOBER, 1902.

NORTHERN SECTION

STATIONS	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT							PRECIP., IN INCHES				Number rainy days	SKY			Prevailing direction of wind	DATES OF THUNDERSTORMS.
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)		Number clear days	Number partly cloudy days	Number cloudy days		
Algona	Kossuth	1,213	9	52.9	†4 8	79	23	28	14, 28	35	1.10	- .66	.80	....	3	13	16	2	SE, NW	24, 25
Alta	Buena Vista	1,513	10	51.5	†2.4	74	8, 22, 23, 25	26	28	34	1.11	-1.20	.50	....	7	15	11	5	S	17, 21, 23, 25
Alta (near)	Buena Vista	....	....	.....	.....	.....	.....	.....	.....	.....	1.19	....	.53	....	7	....	....	....	....	
Britt	Hancock	1,236	....	50.9	....	74	8, 10	23	14	34	1.18	.....	.76	T	5	9	19	3	SE	21
Charles City	Floyd	1,012	10	51 0	†1.9	75	8	26	14	35	1.13	- .91	.48	..	5	9	19	3	SE	
Chester	Howard	.....	....	49.3	.....	74	23	25	15	34	2.09	....	1.30	....	4	21	1	9	NW	
Clear Lake	Cerro Gordo	984	....	51.2	.....	75	8, 10	29	28	35	1.05	.....	.80	T	3	18	12	1	NW	
Cresco	Howard	1,280	29	49 6	†3 3	72	8	28	14	31	1.60	- .78	.77	T	2	22	3	6	NW	
Decorah	Winneshiek	875	8	51.7	†3 2	73	21, 23	28	14	32	1.51	- .64	.58	....	9	....	....	..		
Dows	Wright	1,142	....	51.0		74	8, 22	27	14, 28, 29	35	.95	....	.60	....	3	23	2	6	SE	
Elkader	Clayton	600	20	53.4	†5.2	80	22	27	14	41	1.87	- .87	.55	....	5	16	9	6	W	
Fayette‡	Fayette	1,000	11	50.2	†1.9	75	8	23	14	37	1.47	-1.28	.60	....	8	14	8	9	NW	17, 24
Fertile	Worth			50 6	....	77	8	27	14	37	1.69	.....	.78	T	4	14	4	13	NW	25
Forest City	Winnebago	1,220	....	50.9	.....	76	8, 25	26	14	32	1.32	....	.90	T	5	16	6	9	W	
Grand Meadow	Clayton	1,180	10	50.7	†2.5	74	22	27	13	33	1 33	-1.21	.60	T	5	14	11	6	N, SE, Sw	
Greene	Butler	943	....	51.4	.....	75	8, 22	29	14	34	1.39	.....	.54	....	5	11	11	9	NW	
Hampton	Franklin	1,000	11	53.4	†5.3	79	8	29	28	34	1.33	-1.34	.58	....	6	10	17	4	NW	17
Humboldt	Humboldt	1,095	8	52 2	....	77	11	28	15, 28	32	1.14	- .62	.60	....	6	20	6	5	SE	
Lansing	Allamakee	632		52.8	.....	76	22	27	14	37	1.76	.....	.60	....	5	16	2	13		
Larrabee (a)	Cherokee	1,366	10	50.9	†1.7	77	8,	21	28	40	.80	-1.35	.35	....	5	15	14	2	SW	
Le Mars	Plymouth	1,224		51.6		78	23	24	28	42	.44	.....	.44	T	1	16	8	7	S	
New Hampton	Chickasaw	1,166		50.0	.....	73	8, 22	26	14	31	1.40	.....	.54	T	4	14	9	8	NW	
Northwood	Worth	1,222		50 2	.....	73	22	30	14	30	3.11	.....	2.15	T	4	15	11	5	NW	25
Osage	Mitchell	1,184	10	49.6	†5 9	72	8	29	14	31	1.46	-1.11	.70	T	3	13	8	10	NW	25
Plover	Pocahontas	1,426	....	47.3	...	77	10, 22	20	14	41	1.48	.....	1.02	....	3	22	4	5	S	
Primghar	O'Brien	1,800		52.6	..	75	8, 25	22	28	35	.30	.....	.30		1	26	0	5	NW	
Ridgeway	Winneshiek	1,215	....	53 8	.....	81	10	28	14	41	1.57	.....	.82	T	4	15	11	5	S	24, 25
Rockford	Floyd	....	....	...	.....	.....	.....	..	.....	.....	.70	.....	.70	T	1	17	11	3	SE	
Sheldon	O'Brien	1 406		51 8	...	77	7, 8	24	28	43	.70	.....	.35	T	4	18	6	7	S	
Sibley	Osceola	1,506	....	51.6	.....	79	8	22	14	46	.68	.....	.41	....	4	18	9	4	SE	
Sioux Center	Sioux		....	51.4	..	75	23	25	14	42	.28	.....	.28	T	1	18	8	5	SE	
Storm Lake	Buena Vista	1,440	12	52.1	.....	74	8	25	28	32	1.13	- .32	.59	....	6	16	7	8	NW	17, 21, 25
Washta	Cherokee	1,157		.....		.....	.....	.....	.....	.....	.71	.....	.45	..	3	23	4	4	SE	
Waverly	Bremer	942	....	52.4	.....	76	22	28	14	33	1.39	.....	.55	....	7	12	11	8	NE	17, 18, 25
West Bend	Palo Alto	1,197	8	51.3	†5.7	76	8, 10	27	14, 28	32	1.19	- .19	.78	....	5	15	8	8	S, NW	17, 21, 26
West Union	Fayette	1,115	....	.....	.....	....	.....	....	.....	.....	1.48	.....	.57		3	18	0	13	NW	
Average				51.4	†3 8	75.7	.....	26.2	.....	35.6	1.24	- .86	.....	T	4	16	9	6	NW	

CENTRAL SECTION.

Amana	Iowa	721	25	53.7	†5.2	76	22	28	14	28	3 71	†1.04	1.12	..	7	17	9	5	NW	12, 17, 24
Ames	Story	926	21	52.8	†2.9	77	8	26	14	43	2.56	† .22	.68	....	8	22	5	4	SE	12, 17
Baxter	Jasper	998		54.0	.....	79	22	25	14	36	4, 33	.....	1.75	....	7	14	10	7	SE	17, 24
Buckingham	Iowa	..	....	.....	.....	.....	.....	.....	.....	.....	1.82	.....	.83	T	8	11	15	5		
Carroll	Carroll	1,265	11	53.0	†3 6	81	22	25	14. 28	41	1.10	-1.55	.50		5	23	3	5		17, 21
Cedar Rapids	Linn	733	19	54.2	†4 2	77	22	37	14	32	2.71	† .05	.94	....	7	11	14	6	NW	
Clinton	Clinton	609	10	53.4	†2.2	78	22, 23	28	14	36	3.15	†1.57	1.45	.	6	15	8	8	W	12, 17, 24
Davenport	Scott	529	31	55.8	†2.6	78	25	33	14	29	2.81	† .39	1.48	....	7	13	11	7	W	12, 17, 18, 24
Delaware	Delaware	1,083	10	51 2	†4.7	75	22	26	14	32	1.50	- .78	.59		5	13	13	5	NW	12, 18, 25
Denison	Crawford	1,180	8	53 3	†4.9	78	10	24	14	30	3.70	† .84	1.65		3	...	...	....	N	
Des Moines	Polk	861	24	55.4	†1 4	77	22	31	14	28	3.76	.....	1.13	....	8	11	12	8	SW	12, 17, 18, 23, 25
De Soto	Dallas	866		54.4		78	22	30	14	32	2.26	- .31	1.18	..	6	21	2	8	NE	
Dubuque	Dubuque	655	29	53 5	†1.5	77	22	30	14	32	1.06	- .08	.70	....	7	10	8	13	SE	12, 17, 24, 25
Galva	Ida	1,290	8	.....	.....		.....	24	28	.....	2.91	.....	.76	....	2	16	0	15	S	
Gilman	Marshall	1,053	..	.....	.....	.....	.....	.....	.....	.....	3.60	†1.23	1.85	..	7	15	10	5	S	
Grinnell	Poweshiek	1,023	11	53 2	†6 0	75	22	29	14	30	4.55	....	2.50	....	5	12	6	13	S	12, 17
Grinnell (near)	Poweshiek	.....		53.9		77	22	27	14	31	1.65	-1 05	.73	..	5	13	10	8	SE, NE	18, 23, 24, 26
Grundy Center	Grundy	976	10	52.7	†2 9	77	22	27	14	34	2 27	.....	1.16	....	8	18	5	8	NW	25
Guthrie Center	Guthrie	1,077	..	53.0	.....	78	22	28	27, 28	38	2.25	.....	1.00	T	6	14	11	6	SW	
Harlan	Shelby	1,192	....	52 5	.....	79	22	24	14, 28	38	1.65	- .72	45	....	6	11	15	5	SW, NW	17, 21, 23, 26
Independence	Buchanan	921	39	51.8	†4 7	76	22	25	14	31	1.47	.....	.91		6	18	8	5	NW	12
Ida Grove	Ida	.....	----	52.8	.....	83	10	26	13	44	3.12	†1.13	1.56	...	4	16	2	13	S	
Iowa City	Johnson	644	11	55 2	†4.6	80	25	28	14	36	1.60	- .66	.75	..	6	15	14	2	E	
Iowa Falls	Hardin	1,107	8	50.2	†2 2	76	22	26.	14, 15	39	3.62	.....	1 53	....	5	19	8	4	NW	17, 25
Jefferson	Greene	1,052	..	.....	.....	....	.....	.....	.....	.....	3.71	.....	1.07	....	7	....	....	..	NW	17, 23, 24, 25
LeClaire	Scott	576	..	..	.....	...	.....	.....	.....	.....	3.26	† .89	1.50		7	...	....	...		
Logan	Harrison	928	36	54.2	†1.9	78	21, 24	26	13	37	2.37	- .59	.70	....	5	20	4	7	S	25
Maquoketa	Jackson	688	8	53.3	† 1	78	12	27	14	43	1.81	- .75	60	..	7	19	8	4	SE, SW	
Marshalltown	Marshall	947	11	53.7	†3 0	79	22	29	14	37	1.39	-1.36	.59	.....	8	12	15	4	NW	
Monticello	Jones	.....	47	54.4	†5.9	78	11, 25	27	14	41	3.86	....	1.22	....	4	16	8	7	NW	
Mt. Vernon	Linn	847		55.1		78	10, 22	27	14	38	6 66	†4 10	3 71		7	17	3	11	SW	12, 17, 18, 24, 27
Newton	Jasper	592	14	53.3	†3.1	75	22, 25	27	14	30	1.06	.....	.35		7	15	12	4		
Odebolt	Sac	1,356	....	52.6	....	76	22	25	28	35	2 69	.....	67	....	7	23	6	2		
Ogden	Boone	1,211	....	55.9	.....	80	22	26	14	36	2.88	.....	1.02	....	7	21	2	8	SE	
Olin	Jones	760	..	52.4	.....	82	23	27	14	36	1.56	...	1.08	....	5	14	11	6	W	
Onawa	Monona	1,053	....	55.8	.....	82	23	26	28	42	3.94	....	2.57	....	3	22	4	5	SE	
Perry	Dallas	975	..	53.4	....	78	22	28	14	32	1.45	.....	.65	....	8	15	8	8		
Rockwell City‡	Calhoun	...	...	53.1		76	22	29	28	31	1.16	-1.12	.86	....	5	22	2	7		
Sac City	Sac	900	22	53.5	†2.3	77	22	28	14, 28	32	1 79	.....	.61	T	5	19	4	8	SW	
Scranton (a)	Greene	1,172	....	52.5		76	22	28	28	32	1 79	.....	.61	T	9	....	..	....		6, 7, 23
Sioux City	Woodbury	1,122	13	54.5	†2 5	80	23	27	28	44	.63	- .99	.39	....	4	11	12	8	NW	23
Tipton	Cedar	807	....	54.0		78	24	28	14	31	5 90	.....	1.50	....	7	13	10	8	NW	12, 13, 18, 24
Toledo	Tama	856	7	53.9	†4.8	79	22	28	14	38	2.16	† .12	.80	....	7	19	8	4	NW	24
Vinton*‡	Benton	800	11	53.0	†3.8	75	8, 25	30	14	.....	2 03	- .46	.68	....	6	21	5	5	NW	12
Waterloo	Black Hawk	862	22	53.2	†1 2	79	22	29	14	35	1.50	- .78	.51	..	6	13	11	7	NW	
Wilton Junct'n	Muscatine	683		54.4	.....	79	25	27	14	34	4 34	.....	1.34	....	6	17	6	8	NE	12, 17
Whitten	Hardin	1,036	....	52.2	.....	76	23	25	14	32	.88	.....	.60	T	4	17	11	8	NE	17, 23, 24
West Branch	Cedar	.....	...	.....	....	.....	.....	.....	.....	.....	3.82	.....	1.27	....	3	14	13	4	SE	
Average				53.5	†3.3	78.2	.....	27.6	.....	37.0	2.60	- .02	....	T	8	9	18	4	SE, NW	12
															6	16	8	7	NW	

CLIMATOLOGICAL DATA FOR OCTOBER, 1902—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC., IN INCHES.				Number rainy days.	SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	....	55.0	....	78	22	27	14	35	4 32	.....	1.57		3	15	10	6	NE	
Albia	Monroe	945	..	55.6	.....	81	23	28	14	35	4.57		1.80	T	7	14	10	7	NW	
Atlantic	Cass	1,164	10	53.6	†3 4	80	22	23	14	44	2 51	† .32	80	T	5	10	12	9	SW	11,12.17,23.25
Audubon	Audubon	1,301	....	54.2	..	79	24	26	14,28	35	1.79	.....	.75	....	7	18	5	8	SW	17
Allerton	Wayne	.....	..	56 2	.....	79	22	29	14	34	3.52	.....	1.50		6	18	9	4	SW	
Bedford	Taylor	.	....	55 8	.	79	24	24	14	42	2 95	.....	1 34	....	4	19	6	6	SW	
Belknap (*b*)	Davis	877	....	55 1	.....	78	25	28	14	32	4 35	.....	1.49	....	7	20	5	6	E,W,NW	
Bonaparte	Van Buren	.....	10	57.9	†3.7	79	22,23,24,25	28	14	37	4 01	†2 45	1 47	....	5		...	....		
Burlington	Des Moines	544	..	56 4	.....	82	25	30	14	33	3.19	.....	1.34		8	19	3	9	SW	5
Bussey	Marion	.....	....		.....	.....	.....	.....	...	.....	4 49	.....	1.75	..	4	....	....	....		
Chariton	Lucas	1,042	....	55 4	.....	77	15, 22	28	14	33	4.55	.....	1.51	....	10	16	8	7	S	17
Clarinda	Page	1,069	11	56.4	†3.4	82	22, 24	27	14	40	4 23	†2.35	1.55	....	7	20	7	4	NE,S, SW, NW	
College Springs	Page	..	10	56 6	†0 8	81	1	28	28	40	3.63	†1.01	1.60	....	6	22	4	5	SE,SW	
Columbus Jct.	Louisa	595	.	55.9		81	24	29	14	31	4.77	.....	1.35	...	7	19	6	6		17, 24. 27, 29
Corning	Adams	1,127	9	53.8	†1.1	78	25	26	28	35	3.43	†1.70	1 40	..	4	16	9	6	NE SW	12, 18, 23. 26
Council Bluffs	Pot'wat'mie	990	...	57.0		83	22	24	28	40	2 24	.....	87		4	20	7	4	NW	
Cumberland	Cass	.....	....	.....	.....	.....	.....	.....	.....	.....	3 23	.....	1.40	....	4	21	5	5	,SW	
Danville	Des Moines	715	....	.....	....	..	.....	..	.....	.....	4 05	.....	1.60	...	8	13	0	18		
Earlham	Madison	.....	....	52.6		77	21	26	27	38	3 71	.....	1.28	....	9	16	6	9	NW	17, 18, 22, 25
Eldon	Wapello	630	...	55 9	.....	80	22, 24	30	14	35	4 38	.....	1.25		5	22	1	8	S	
Emerson	Mills	1,053	....	.....	.....	.....	.....	...	...	.....	.50	.. ...	.60	...	1		....			
Fairfield	Jefferson	....		55 4	.....	79	24, 25	28	14	34	4.71	.....	1 63	....	8	18	7	6	NW	12
Fort Madison	Lee	516	53	.....	.....	.	.....	.....	.....	.....	3 51	† .76	1.90	..	8	8	16	7	SW	
Greenfield	Adair	.....	10	54.2	†2.4	77	22. 24, 25	25	28	32	2 91	†1.10	1.18	....	8	19	5	7	NW	4,12,17,23, 25
Hopeville	Clarke	.....	...		....	.....	.....	.....	.. ..	.....	4 62	.....	1 70	....	7	...		....		
Indianola (*b*)	Warren	969	10	55.4	†0 8	78	23	30	14	32	3 25	†.63	1.55	....	4		..	...	NW	23
Keokuk	Lee	619	30	58 0	†3.0	80	25	32	14	34	2.38	- .29	1.03	....	8	22	2	7	SW	14. 17
Keosauqua	Van Buren	644	9	56 0	†1.4	80	25	29	14	33	3 70	†2.23	1 65	....	7		..	....		
Lacona	Warren	.....	....	.....			.....	.....	.....		4.66	.....	1.84	....	8	7	19	5		
Lenox	Taylor	1,250	....	56.4	.	77	22	27	28	39	3 11	.....	1.52	....	5	25	1	5	S	
Leon	Decatur	.....	....	56.0	....	77	22	29	14	29	3 77		1 37		6	24	4	3	SE	
Mt Ayr	Ringgold	1,236	8	55.4	†2.4	77	22.24	27	14	32	3.30	†1.39	1 55	....	6	13	12	6	NE,SW	17, 23, 25
Mt Pleasant	Henry	729	.	53 8	.....	75	9, 23, 24, 26	26	14	38	4.65	...	1 90	....	6	15	12	4	NW	
Omaha, Neb	Douglas	1,113	32	57.6	†4 7	82	22	32	28	30	2 13	- .39	1.31	....	4	14	8	9	SW	11, 23, 25
Osceola	Clarke	1,130	....	55.2	.....	78	11, 22	29	14	31	3.82	...	1 60	....	3	17	6	8	SE	
Oskaloosa	Mahaska	843	18	55 0	†4.4	79	24	30	14	30	3. 10	†1.32	2 03	....	8	22	2	7	NW	17
Ottumwa	Wapello	630	7	57 2	†4.2	78	22, 23, 24	31	14	28	4.80	†2.27	1 47	....	6	18	7	6	W	
Ovid	Wayne	992	8	56. 3	†3 6	79	22	28	14, 28	35	4 60	†2.26	1.65	....	8	16	5	10	NW	
Pacific Junction	Mills	960	....	55. 1	.....	79	22	25	28	38	2.78	.....	1.28	....	4	20	6	5	S	25
Red Oak	Montgom'ry	1,033	....	56 0	....	76	24, 25, 26	31	28	28	2.71	.. ...	1.11	....	5	9	18	4	SE	12, 23, 26
St. Charles	Madison	1,070	....	56.6	.....	79	22, 24	31	14, 28	32	5.77	.....	2.02	....	8	17	8	6	NE	17
Sigourney	Keokuk	768	....	54.9	...	82	24	26	14	36	4 59	.....	2.18	....	5	22	6	3	SE	17, 18
Stockport	Van Buren	....	....	....	....	.. .	.....		.....	.....	4.35	.....	1.50	..	7	17	7	7	S	12, 17, 18
Thurman	Fremont		....	55 5		80	22	26	28	39	4.47	....	2 50	....	5	20	4	7	SW	
Villisca	Montgom'ry	1,058	8	56.4	†5.7	79	23	24	30	39	3 08	†1.17	1.25	....	4	15	10	6	SW	11, 17, 25
Wapello (*b*)	Louisa	578	....	54.5		76	25	32	14	28	4 39	.....	1.77	...	6		..			
Washington	Washington	769	11	53.7	†1.4	80	24, 25	25	14	35	5.29	†3.64	3 30	....	4	.		..	SW	
Winterset	Madison	1,129	10	58.4	†6 8	79	22	29	28	32	4 57	†2 63	1.37	....	7	17	9	5	E, S	
Woodburn	Clarke	961	...	.....		....	.....		.....	.....	4 66	....	1.55	..	7	23	1	7	NW	
Average		.....	....	55 7	†3 1	79 0	.....	27.9	.....	34 5	3.78	†1 53		T	6	17	7	7	SW	
Av. for the state		.....	....	53.5	†3.4	77 6	.....	27. 2	.....	35.7	2.54	† .22	.....	T	5	16	8	7	NW	

*Means determined from 7 A. M., 2 P M, and 9 P. M. observations, and maximum and minimum are taken from eye readings. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. §Not supplied with self registering instruments. † Above normal.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR OCTOBER, 1902.

STATIONS.		DATE.																														Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max.	64	61	57	54	59	68	72	73	72	72	70	59	59	59	71	65	74	68	61	70	75	78	75	77	75	70	54	49	65	61	66	66.2
	Min.	38	49	47	43	39	42	45	46	45	45	45	46	37	27	42	40	44	47	45	46	46	56	58	54	56	46	39	30	30	39	45	43.8
Albia	Max.	68	61	56	53	65	72	75	76	71	77	73	60	52	61	78	71	63	71	67	69	76	77	81	79	70	60	58	51	69	65	74	67.7
	Min.	40	49	47	46	44	43	42	43	45	48	48	50	38	28	45	39	41	48	47	42	42	58	58	57	45	35	34	29	34	38	47	43.5
Algona	Max.	62	64	57	62	65	65	64	75	68	75	75	52	53	58	61	58	60	78	60	60	69	77	79	63	71	67	56	48	55	60	66	64.0
	Min.	43	43	37	39	35	42	41	56	42	48	42	43	39	28	41	35	41	43	39	40	45	53	58	48	54	45	36	28	35	35	42	41.8
Allerton	Max.	68	62	55	52	62	69	74	75	75	74	73	60	55	60	76	69	70	70	64	70	76	79	77	78	76	71	58	51	68	60	71	67.7
	Min.	41	50	47	45	43	41	44	44	46	45	47	50	38	29	42	41	46	46	48	49	44	54	55	55	57	45	40	31	35	40	46	44.6
Alta	Max.	61	58	52	52	65	65	71	74	62	74	58	46	46	60	64	60	57	70	70	66	74	74	74	64	74	54	51	48	60	62	64	62.2
	Min.	38	42	39	40	37	44	40	48	42	50	44	43	29	26	41	35	41	40	38	43	45	56	54	47	51	41	32	26	34	31	46	40.8
Amana	Max.	62	63	59	54	60	67	67	72	62	70	67	62	56	55	68	61	59	66	61	61	67	76	75	73	75	69	55	43	59	60	67	63.6
	Min.	39	49	47	46	46	40	40	46	47	43	46	52	39	28	40	39	39	51	47	34	41	54	57	54	59	51	39	31	34	38	40	43.8
Ames	Max.	68	60	58	56	65	66	74	77	65	75	64	55	50	62	69	66	58	70	61	66	74	77	75	72	75	72	55	49	65	64	66	65.5
	Min.	55	40	40	44	36	36	43	47	47	36	48	37	33	26	26	37	40	40	44	35	44	46	44	48	59	45	38	32	31	31	31	40.0
Atlantic	Max.	68	63	56	52	65	69	74	74	71	74	67	52	47	61	77	67	75	73	65	73	77	80	76	74	75	71	56	50	66	64	59	66.8
	Min.	32	47	47	42	32	46	31	50	39	41	39	47	32	23	33	35	41	40	39	34	52	59	60	47	58	44	35	25	35	26	43	40.5
Audubon	Max.	68	55	57	50	66	76	75	73	72	76	65	50	46	61	72	65	65	72	70	76	74	75	76	79	75	70	69	50	64	65	60	66.7
	Min.	38	47	44	40	32	49	42	47	45	46	45	45	33	26	41	39	43	45	40	47	45	50	50	49	57	39	34	26	33	33	46	41.6
Baxter	Max.	68	62	59	54	65	69	72	75	64	75	69	55	50	61	73	64	60	65	64	64	72	79	75	72	78	76	57	49	62	64	66	65.7
	Min.	37	45	43	42	39	41	41	47	43	46	45	48	37	25	40	35	33	45	44	48	43	56	57	47	60	47	36	29	33	34	47	42.4
Bedford	Max.	70	60	56	52	65	70	75	74	76	75	72	59	51	60	76	70	77	74	67	75	77	78	77	79	76	73	56	51	68	76	59	68.5
	Min.	34	49	49	44	37	39	36	48	44	44	44	49	38	24	39	42	48	46	42	41	50	55	58	52	58	46	36	26	35	34	49	43.1
Belknap	Max.	63	63	57	57	60	67	69	66	70	70	70	..	..	57	73	64	61	67	63	65	70	77	77	77	78	77	60	..	65	62	68	66.9
	Min.	40	47	45	45	44	40	42	49	47	45	45	44	40	28	43	40	40	40	46	38	39	52	54	57	55	50	39	32	33	40	43	42.3
Bonaparte	Max.	68	66	58	52	62	75	72	77	71	76	74	67	62	58	77	67	59	71	66	65	72	79	79	79	79	70	59	46	66	63	71	68.0
	Min.	40	49	50	49	47	38	40	48	44	45	46	50	38	28	41	43	41	50	42	35	35	51	56	46	58	49	40	32	32	40	44	47.8
Britt	Max.	62	58	57	56	63	65	69	74	59	74	58	48	46	57	61	59	63	68	58	66	68	72	70	67	72	66	51	44	56	59	68	62.7
	Min.	36	41	37	38	31	28	38	45	42	49	42	42	33	23	32	34	39	38	37	35	43	53	59	43	55	46	33	27	33	30	39	39.1
Burlington	Max.	65	62	59	54	59	75	73	78	72	78	79	68	63	58	77	66	67	75	70	69	73	81	79	82	82	72	61	48	65	65	74	66.1
	Min.	41	51	52	50	49	43	43	53	49	47	51	52	39	30	44	44	44	53	47	38	43	51	59	59	60	52	42	33	34	44	48	46.6
Carroll	Max.	69	64	57	51	70	70	76	76	67	77	65	54	52	64	74	66	60	78	69	72	78	81	79	74	76	64	54	52	62	67	64	67.2
	Min.	34	39	40	41	30	41	38	37	43	44	43	45	34	25	37	36	40	39	38	38	45	58	38	44	48	45	32	25	37	30	37	38.7
Cedar Rap	Max.	65	62	59	55	64	69	70	76	63	75	68	60	58	58	69	61	63	68	62	63	67	77	76	72	76	72	56	46	61	63	69	63.3
	Min.	43	50	48	47	47	43	43	49	46	43	49	52	40	31	39	40	39	50	48	36	42	57	59	57	59	52	43	35	36	40	40	45.2
Chariton	Max.	66	60	56	52	63	69	76	73	71	73	70	70	50	58	77	66	64	71	64	67	73	77	75	76	76	72	56	50	65	64	69	66.7
	Min.	39	50	47	44	44	44	42	51	45	48	46	48	36	28	44	40	43	48	47	42	45	55	42	56	58	45	39	30	37	37	47	44.1
Charles Cy	Max.	64	60	57	53	65	63	70	75	70	73	60	..	47	59	53	62	62	64	59	62	60	74	69	68	72	68	66	..	58	60	64	63.3
	Min.	35	46	37	35	32	36	37	40	40	41	42	45	34	26	31	32	33	43	40	39	38	39	55	50	54	49	33	33	33	35	34	38.6
Chester	Max.	64	64	60	57	56	66	65	64	72	60	72	64	58	47	53	63	60	62	65	58	58	62	74	67	68	62	65	48	37	57	63	61.0
	Min.	40	32	44	34	30	42	40	37	41	38	38	42	44	34	25	33	30	36	37	27	28	41	52	48	50	48	47	34	32	38	34	37.6
Clarinda	Max.	70	62	60	49	68	64	77	78	79	80	72	58	50	65	74	74	78	75	70	77	80	82	81	82	77	72	58	55	73	68	59	69.9
	Min.	37	49	48	42	35	41	37	43	43	42	45	44	31	27	42	41	48	48	45	39	49	56	58	50	60	44	38	28	35	34	49	42.8
Clear Lake	Max.	64	62	59	58	69	65	73	75	63	75	63	48	45	58	62	63	63	67	59	64	69	70	68	70	73	68	49	44	59	61	66	63.0
	Min.	36	42	36	36	34	45	39	46	39	41	43	43	33	30	38	32	36	44	39	30	39	54	45	50	51	46	35	29	30	34	35	39.4
Clinton	Max.	65	65	62	54	62	71	68	75	64	74	74	62	58	55	69	61	63	71	65	62	66	78	78	77	75	68	58	46	58	62	71	65.7
	Min	38	45	48	47	42	35	40	39	44	40	42	48	38	28	36	35	38	47	40	30	39	53	52	55	55	43	39	33	36	36	32	41.1
College Spr	Max.	81	61	56	49	63	68	72	75	75	73	68	48	48	61	73	70	76	70	68	73	76	78	76	77	77	72	57	60	69	69	59	68.0
	Min.	41	50	48	45	36	41	42	45	48	48	48	48	38	29	41	44	50	48	46	44	51	58	58	54	61	45	38	28	37	40	51	45.3
Colum. Jct.	Max.	60	62	60	53	63	64	70	76	68	76	74	62	57	57	62	63	58	70	65	66	70	79	79	81	80	70	58	48	63	65	72	67.8
	Min.	42	49	49	46	47	42	43	49	47	45	51	53	39	29	40	40	38	52	48	38	41	53	59	57	59	50	38	33	34	42	43	45.0
Corning	Max.	63	59	56	49	61	67	72	72	72	72	67	56	47	60	70	65	73	67	62	69	74	77	76	76	78	72	54	49	65	61	60	65.2
	Min.	34	49	47	42	36	43	37	49	43	45	44	46	33	27	38	40	48	46	41	42	48	55	58	53	56	45	37	26	36	31	41	42.5
Co. Bluffs	Max.	70	64	65	60	69	70	78	77	80	79	62	53		68	72	72	76	74	68	75	82	83	82	78	78	63	58	54	70	67	61	70.3
	Min.	39	50	45	39	31	41	48	48	45	60	47	44	29	28	40	42	48	46	45	46	56	57	57	54	50	45	35	24	35	30	55	43.8
Cresco	Max.	62	56	55	54	62	64	64	72	59	70	62	55	46	54	60	56	61	60	57	57	60	71	69	67	61	65	53	38	54	58	60	59.4
	Min.	42	38	38	37	32	43	39	49	39	39	43	45	33	28	38	34	35	44	40	35	40	54	52	53	50	45	33	30	32	35	36	39.7
Davenport	Max.	65	63	60	52	59	70	69	74	64	74	73	64	57	54	70	62	61	70	65	64	67	76	76	77	78	69	56	46	59	64	70	65.4
	Min.	42	52	49	46	49	44	45	50	49	45	53	51	37	33	45	44	40	54	47	40	42	55	60	60	58	48	39	33	38	45	43	46.3
Decorah	Max.	63	60	56	54	63	68	67	74	60	72	64	53	49	56	63	68	70	60	65	72	73	70	73	70	63	64	52	42	57	60	60	62.6
	Min.	35	47	32	39	35	42	43	44	42	40	47	46	33	28	36	47	42	38	40	48	42	38	55	50	53	47	37	34	32	40	32	40.8
Delaware	Max.	63	60	57	50	60	68	65	71	59	69	67	56	54	52	65	57	62	65	59	60	61	75	72	68	69	69	53	40	55	59	67	61.5
	Min.	40	43	42	41	43	39	39	44	41	39	45	51	37	26	39	36	34	47	45	33	36	43	53	51	54	49	35	30	30	34	34	40.4
Denison	Max.	66	61	56	53	56	69	75	73	64	78	69	50	48	62	79	65	61	73	65	71	76	72	74	75	76	69	54	49	63	64	62	65.7
	Min.	33	46	42	43	28	44	58	51	45	51	43	44	36	24	33	28	41	37	41	40	52	57	42	40	43	45	35	27	37	26	45	40.9
Des Moines	Max.	66	62	58	49	65	69	73	74	66	74	68	58	50	60	73	64	63	68	63	68	75	77	75	72	75	59	56	50	64	64	68	65.4
	Min.	40	48	46	44	41	46	43	54	48	49	50	49	35	31	44	42	42	48	47	42	46	60	59	52	59	45	40	33	37	39	48	45.4
De Soto	Max.	62	62	58	54	58	67	71	73	64	73	66	56	49	58	69	64	60	65	61	65	72	78	73	71	74	71	55	48	61	59	65	63.9
	Min.	37	50	46	43	38	44	43	53	44	46	50	48	39	30	42	37	44	45	46	37	48	60	61	52	60	50	41	33	38	39	47	44.9
Dows	Max.	62	59	57	50	64	64	71	74	66	73	61	48	43	59	64	66	60	68	59	64	69	74	70	67	73	69	53	43	52	62	67	62.3
	Min.	36	46	39	40	30	40	36	48	43	44	40	45	35	27	37	35	38	40	37	35	35	56	56	43	56	47	35	27	27	31	40	39.7
Dubuque	Max.	65	62	59	51	62	72	67	76	60	72	71	57	48	54	68	59	63	67	62	61	62	77	75	72	68	68	55	42	56	62	69	63.3
	Min.	41	49	46	46	46	44	42	44	43	41	49	48	36	30	40	38	39	47	43	35	43	57	58	56	51	49	46	36	36	43	38	43.7
Earlham	Max.	67	61	59	54	65	69	74	74	65	74	66	56	47	61	74	65	60	69	63	70	77	74	75	74	71	55	50	64	61	65	64	65.1
	Min.	33	48	44	41	34	42	37	50	40	38	44	45	36	27	37	34	38	42	43	32	47	55	47	56	45	33	26	33	28	44	42	40.0
Eldon	Max.	68	64	59	59	64	72	73	76	74	77	73	64	59	59	70	67	59	70	65	68	69	80	79	80	79	71	58	45	68	67	74	68.3
	Min.	38	47	49	47	46	36	40	41	43	48	44	50	41	30	40	42	40	49	42	34	40	56	57	58	57	50	36	33	34	37	44	43.5
Elkader	Max.	72	71	60	49	71	74	78	79	66	78	73	70	55	58	72	66	65	72	65	66	63	80	72	74	65	64	57	45	60	67	67	66.9
	Min.	37	41	40	44	44	37	38	39	42	37	40	38	39	27	32	32	34	47	44	29	36	58	58	52	52	49	41	33	32	35	28	39.9
Fairfield	Max.	68	65	58	53	61	73	71	73	68	74	72	64	57	52	73	64	57	69	65	64	71	78	78	79	79	68	59	49	67	66	73	65.7
	Min.	39	49	49	47	46	38	39	47	46	46	48	51	38	28	43	41	40	50	45	37	41	51	55	59	58	49	39	32	33	37	45	44.1
Fertile	Max.	60	58	56	55	68	59	70	77	60	75	62	48	47	59	60	58	60	68	58	63	67	73	70	65	72	70	52	39	58	63	69	61.9
	Min.	42	42	38	40	31	41	34	41	40	43	42	42	32	27	35	34	37	44	40	32	40	54	58	46	52	47	35	31	32	32	37	39.4
Forest C'ty	Max.	60	59	58	57	65	65	70	76	65	75	62	47	45	58	62	61	61	70	60	62	67	74	70	67	76	60	49	39	60	62	69	62.3
	Min.	40	38	40	39	35	40	41	44	40	44	42	41	32	26	37	35	42	44	39	37	39	52	58	47	48	42	33	28	32	32	38	39.5
Galva	Max.	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	.	.	..	.	..	..	..	..	..	..	..	..	.	..	..	..	.....
	Min.	.	43	40	38	28	42	35	40	42	48	39	43	34	26	35	35	38	38	35	50	..	54	54	42	60	49	31	24	34	27	37	40.9
G. Meadow	Max.	62	60	55	50	62	67	65	72	60	70	65	55	47	53	63	57	62	64	60	58	58	74	73	68	62	58	52	42	55	59	64	60.4
	Min.	40	47	49	40	40	45	42	49	39	37	48	47	27	27	40	35	35	47	42	33	40	55	56	47	48	47	37	31	30	35	34	41.0
Greene	Max.	70	60	56	49	65	64	70	75	65	73	63	53	48	57	65	61	60	61	60	63	65	75	70	61	73	67	53	43	59	63	64	62.3
	Min.	36	47	38	38	33	40	38	45	42	42	42	47	35	29	37	33	36	44	41	32	41	55	57	46	55	48	37	34	34	32	37	40.4
Greenfield	Max.	61	58	58	55	60	66	69	72	73	73	67	66	..	56	64	72	67	67	69	72	75	77	76	77	77	64	54	50	66	64	65	66.1
	Min.	39	46	44	41	33	44	45	47	46	48	42	46	36	30	36	40	38	46	44	46	52	56	57	55	50	40	35	26	32	34	33	42.2
Grinnell	Max.	61	60	55	52	60	65	66	71	61	70	65	58	52	55	67	60	57	64	60	62	68	75	71	72	74	70	59	45	61	60	65	62.6
	Min.	42	49	45	39	42	44	49	49	46	40	49	49	38	29	38	39	38	47	44	43	38	49	57	55	60	48	39	31	39	39	48	43.9
Grinnell(n)	Max.	62	59	55	53	39	67	67	73	64	72	65	58	57	58	69	63	58	65	60	65	71	77	72	73	75	68	56	48	63	61	69	63.9
	Min.	42	49	45	44	43	43	43	48	48	46	47	50	38	27	42	42	42	48	47	38	43	55	57	50	60	51	38	30	34	36	35	43.9
Grundy C'r	Max.	66	61	59	50	64	69	70	74	61	73	67	55	50	57	69	62	59	68	63	68	68	77	71	69	75	70	56	42	61	65	66	64.0
	Min.	38	45	42	42	36	43	40	48	43	43	45	48	37	27	38	34	37	42	42	38	41	55	57	46	60	49	35	30	31	31	39	41.4
Guthrie Cr	Max.	65	61	58	57	63	67	72	72	61	69	65	53	44	60	69	70	60	66	62	72	75	78	70	70	76	..	50	56	65	65	64	64.5
	Min.	34	49	45	43	33	45	39	51	42	42	46	44	38	27	42	35	38	43	42	31	45	62	58	46	57	46	37	28	28	31	40	41.6
Hampton	Max.	67	64	68	52	68	66	75	79	64	78	64	49	47	61	67	66	60	71	64	67	69	79	72	70	76	67	54	43	62	58	70	65.4
	Min.	39	45	40	41	34	43	41	49	43	44	44	46	35	30	42	35	36	40	42	37	40	57	59	46	56	48	37	29	33	35	41	41.5
Harlan	Max.	67	62	54	51	63	67	73	72	66	74	62	49	46	61	70	66	67	70	62	70	75	79	74	71	76	68	54	51	62	62	62	64.7
	Min.	34	48	45	40	29	36	35	40	44	43	43	44	34	24	34	40	41	42	41	38	48	54	57	46	58	43	35	24	34	32	44	40.3
Humboldt	Max.	62	62	60	57	56	64	66	70	76	62	77	66	50	48	60	65	61	60	69	60	66	73	76	73	74	72	52	46	60	62	67	63.6
	Min.	40	36	46	39	44	32	38	39	50	44	49	42	46	36	28	35	39	42	39	38	34	45	56	43	60	48	42	28	36	32	41	40.9
Ida Grove	Max.	69	60	56	57	58	60	..	75	70	83	67	50	47	62	68	65	62	70	69	71	76	77	75	76	76	71	53	49	61	61	64	64.9
	Min.	30	32	43	42	28	38	53	45	51	42	45	36	26	35	36	37	40	39	39	38	49	58	60	46	33	27	36	27	36	28	45	39.5
In'pen'nce	Max.	65	59	56	50	62	67	67	73	62	71	66	56	53	55	66	61	62	66	59	61	64	76	72	67	72	68	52	42	58	62	67	62.5
	Min.	39	43	42	43	43	39	41	44	41	40	48	48	37	25	34	36	35	46	44	33	40	52	54	52	55	50	39	32	32	35	36	41.2
Indianola	Max.	65	64	58	54	64	64	65	74	66	75	69	59	49	60	..	..	64	65	64	68	75	77	78	74	74	71	56	49	56	64	67	64.8
	Min.	41	50	46	39	49	49	41	51	45	48	48	48	38	30	.	..	32	48	47	57	47	60	60	51	60	54	38	31	39	45	44	46.1
Iowa City	Max.	68	63	62	55	62	72	71	76	67	74	72	61	52	62	72	66	63	72	64	66	70	78	79	78	80	69	57

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR OCTOBER, 1902—CONTINUED.

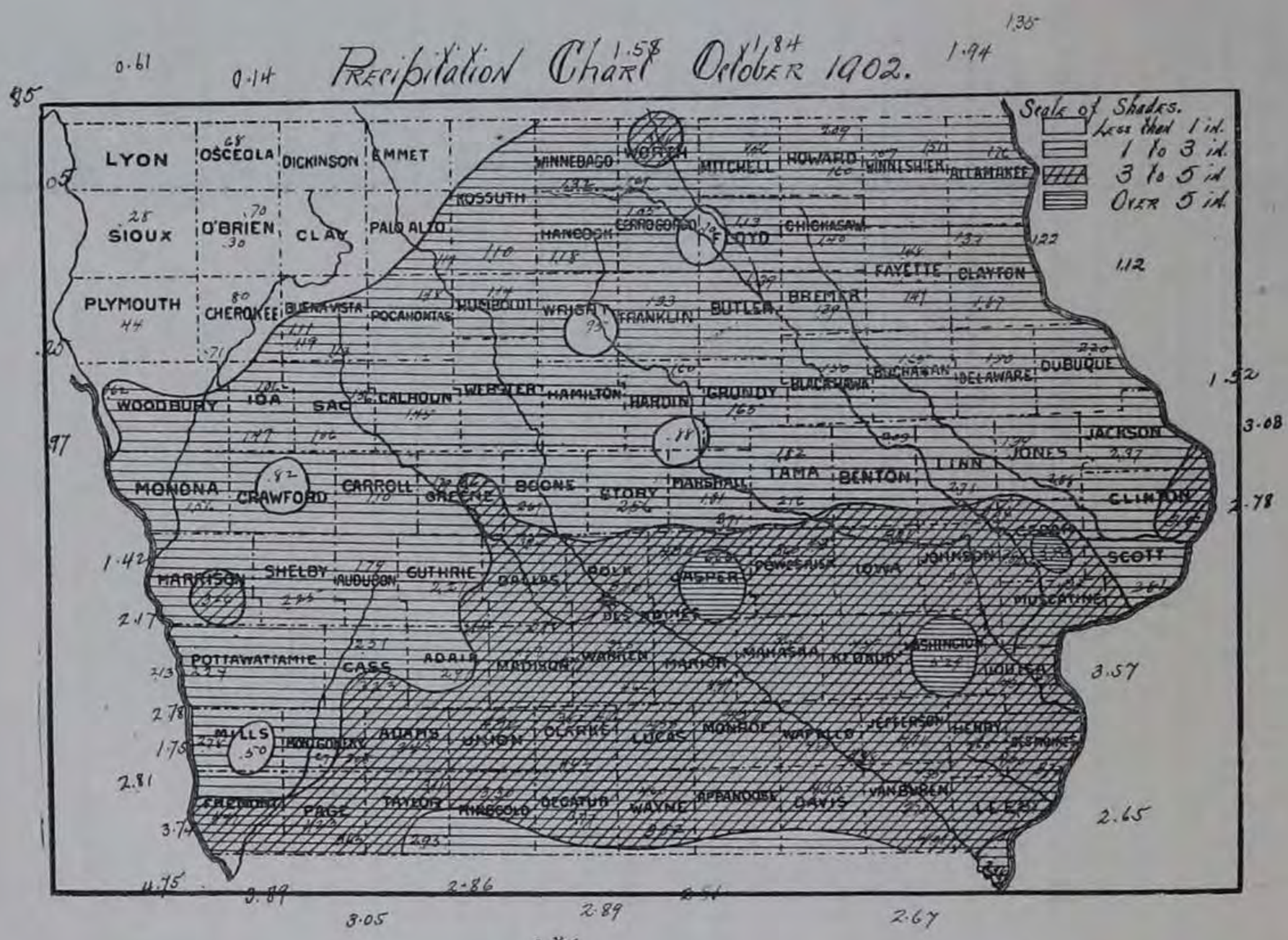
STATION		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mean.
Keokuk ...	Max...	64	65	58	56	59	74	72	75	74	75	77	66	52	58	75	67	62	70	68	66	71	78	78	79	80	65	59	49	68	66	70	67.6
	Min...	42	52	52	51	50	45	44	53	52	48	53	52	44	32	46	57	45	54	46	41	43	56	62	62	59	51	45	34	37	49	50	48.3
Keosauqua	Max...	67	65	59	54	63	72	72	75	72	73	73	68	58	58	75	67	60	65	65	67	71	78	78	79	80	70	60	50	67	65	73	67.7
	Min...	40	48	51	49	48	40	45	46	43	46	42	50	41	29	42	52	43	42	42	33	41	53	51	57	58	48	40	32	34	41	44	44.2
Lansing ...	Max...	68	62	66	56	60	74	71	77	71	75	71	70	70	56	69	62	67	66	65	64	61	76	70	75	65	70	60	43	58	60	58	65.7
	Min...	38	36	38	40	36	34	39	40	40	38	45	40	40	27	39	33	48	38	31	35	40	55	45	48	50	41	41	38	33	40	30	39.9
Larrabee..	Max...	62	60	57	59	68	67	75	77	64	..	60	48	48	65	68	65	59	73	62	68	70	76	76	67	77	60	58	50	62	61	64	64.2
	Min...	35	40	35	30	31	40	35	47	41	..	35	40	35	25	35	33	38	27	30	36	46	54	58	42	58	44	30	21	32	28	40	37.6
LeMars....	Max..	57	59	57	59	70	67	73	75	66	72	64	50	50	67	67	65	63	72	65	67	77	71	78	69	74	59	51	48	58	64	58	64.3
	Min...	36	40	35	37	30	44	38	50	43	50	40	43	34	25	27	34	38	38	33	33	50	51	59	41	56	41	32	24	34	27	42	38.9
Lenox.....	Max...	63	58	56	52	59	67	71	73	72	73	67	56	48	59	71	64	74	68	62	70	73	77	75	75	74	71	53	49	65	61	60	65.0
	Min...	41	49	47	42	37	43	39	49	47	48	48	47	37	29	43	42	48	46	45	43	48	55	57	55	54	45	36	27	34	40	48	44.2
Leon ...	Max...	63	61	57	53	60	67	71	72	71	71	68	63	55	58	71	66	72	67	64	68	73	77	75	76	75	72	55	50	63	63	70	66.1
	Min...	42	51	48	45	43	43	45	48	48	47	49	50	39	29	41	43	46	49	48	42	47	56	58	57	59	47	41	31	37	41	47	45.8
Logan.....	Max...	66	69	61	56	65	67	73	71	70	75	59	50	62	70	67	69	70	68	70	77	78	77	76	78	70	68	55	63	61	60	60	67.4
	Min..	37	40	46	44	28	41	50	46	44	48	44	38	26	37	40	43	42	43	41	46	44	46	47	44	41	40	35	40	36	30	45	41.0
Msquoketa	Max...	68	65	63	54	61	72	71	76	63	75	75	78	58	55	72	65	63	71	66	63	65	72	76	76	75	70	57	43	58	66	71	66.5
	Min...	37	44	45	46	45	35	38	37	43	37	39	50	40	27	32	34	33	44	40	29	37	52	49	53	54	49	40	33	35	37	28	40.1
Marsh'lt'n.	Max...	68	63	59	54	67	71	74	77	65	76	70	58	51	60	74	65	62	69	65	66	72	79	73	74	76	71	52	48	64	66	68	66.4
	Min...	37	44	44	43	38	43	41	48	44	43	46	48	38	29	37	36	38	47	45	34	43	56	55	49	58	50	38	30	33	36	39	41.0
Monticello.	Max...	68	65	58	51	69	70	72	75	72	76	78	68	52	60	65	69	68	66	68	66	66	72	77	75	78	70	70	72	69	70	72	68.7
	Min...	35	38	35	39	40	38	36	39	42	39	43	41	40	27	29	38	37	48	32	30	37	52	68	58	60	48	40	31	30	35	39	40.1
Mt. Ayr....	Max...	67	60	55	51	62	68	72	72	75	73	70	60	49	59	74	69	75	69	61	72	75	77	76	77	76	69	56	58	64	68	58	66.8
	Min...	42	50	47	44	40	40	43	43	48	48	47	48	36	27	41	42	46	48	46	42	45	56	56	53	56	44	38	28	35	40	47	44.1
Mt.Ple's'nt	Max...	68	65	62	60	63	70	71	70	75	71	73	69	70	55	70	70	56	60	68	70	65	67	75	75	74	55	46	30	27	45	45	66.7
	Min...	43	39	35	45	45	35	39	39	42	42	43	40	36	26	32	36	36	39	45	48	38	47	52	55	53	49	46	30	27	45	45	41.0
Mt.Vernon	Max...	70	65	61	51	66	73	73	76	68	78	72	58	56	65	74	66	66	73	65	67	67	78	76	75	76	69	58	44	60	68	71	67.3
	Min...	40	47	44	43	44	41	40	40	44	41	41	50	40	27	39	39	36	48	46	43	40	53	55	54	51	41	32	31	40	44	42.9
NewH'pton	Max...	61	59	55	50	62	64	65	73	69	70	64	57	49	55	62	59	60	63	58	60	62	73	70	69	68	66	50	44	56	60	65	61.2
	Min..	38	45	37	39	34	38	38	43	39	39	42	43	34	26	35	43	35	35	40	34	39	39	56	44	52	46	35	31	29	34	38	38.8
Newton ...	Max...	62	60	57	55	60	65	67	72	70	72	65	60	53	57	67	62	57	61	59	63	70	75	70	72	75	71	46	46	60	60	65	61.3
	Min...	42	44	45	42	41	42	42	48	47	47	48	49	37	27	42	39	39	46	44	38	43	55	55	52	59	50	38	30	34	35	43	43.3
Northwood	Max...	60	57	56	56	63	63	66	72	61	71	60	50	46	59	60	57	60	66	57	60	64	73	56	66	71	66	49	42	57	60	66	60.8
	Min...	39	43	38	38	35	41	40	42	40	42	43	42	33	30	38	34	36	42	40	33	40	50	56	47	52	47	36	32	32	34	35	39.7
Odebolt ...	Max...	65	62	59	56	66	67	73	74	64	75	64	50	46	61	67	64	59	70	67	70	75	76	75	70	75	71	51	49	62	64	64	64.9
	Min...	35	45	42	43	31	44	38	50	46	47	41	44	35	26	35	36	38	38	33	33	41	57	58	46	58	46	33	25	31	29	41	40.4
Ogden.....	Max...	69	66	65	58	68	70	76	79	65	70	68	50	50	61	73	72	62	71	73	70	78	80	76	75	78	75	63	54	65	67	76	68.5
	Min...	54	47	44	44	33	42	33	48	46	45	45	45	36	26	43	44	44	44	44	44	45	58	58	47	58	44	30	21	32	28	40	43.3
Olin..	Max...	62	63	61	55	60	67	66	71	61	69	67	59	56	53	65	59	60	66	60	61	65	76	82	73	75	58	43	44	53	59	69	63.3
	Min...	38	46	44	46	46	36	38	41	45	46	42	51	41	27	33	37	36	47	40	31	40	53	52	52	56	48	40	34	35	35	33	41.6
Omaha, N.	Max...	67	62	55	50	68	69	6	76	76	77	62	50	47	66	74	70	74	73	66	73	79	82	81	74	78	60	56	52	70	64	59	67.3
	Min ..	44	51	49	44	38	49	47	54	49	55	48	47	38	36	47	47	52	46	48	49	57	61	63	58	53	47	39	32	42	42	55	48.0
Onawa.....	Max...	63	60	57	58	75	70	78	77	67	78	68	50	49	69	72	67	67	75	69	69	80	79	55	60	79	61	43	45	26	38	30	43.8
	Min...	41	49	45	42	33	44	40	50	48	52	45	45	35	29	49	43	43	42	41	41	52	61	71	69	66	69	66	49	41	56	58	64	60.0
Osage.....	Max..	60	57	55	55	62	63	65	72	63	71	62	50	46	56	60	57	60	62	56	59	61	71	69	66	69	66	49	36	34	33	33	37	39.1
	Min...	37	45	37	36	31	36	41	42	41	40	44	44	34	29	38	34	36	43	40	33	39	49	47	42	51	39	36	34	57	51	66	60	70	66 6
Osceola....	Max...	65	63	59	51	65	67	74	76	73	73	78	57	47	50	76	65	71	69	62	70	75	78	76	80	75	57	44	33	30	36	32	47	43.8
	Min...	41	40	45	44	42	41	43	50	47	45	48	47	36	29	45	41	45	46	41	42	46	58	60	56	57	44	33	30	36	32	47	43.8
Oskaloosa .	Max...	65	61	58	51	62	68	70	74	68	75	69	62	52	59	72	65	59	67	63	66	72	79	76	79	78	59	48	39	32	35	36	45	44.1
	Min...	38	48	48	46	45	41	40	49	45	47	42	50	40	30	44	41	40	50	42	35	42	56	58	56	58	48	39	32	35	37	64	70	66.3
Ottumwa ..	Max...	65	60	58	55	62	69	69	75	71	74	71	59	50	59	72	65	59	68	64	66	73	78	78	78	78	63	61	50	45	37	37	44	49	48.1
	Min...	45	55	51	48	48	46	45	53	50	41	52	53	42	33	48	40	43	54	43	41	45	65	59	77	77	77	72	58	54	68	66	70	68.7
Ovid.....	Max...	69	62	56	52	64	70	75	75	76	75	76	61	56	60	78	71	68	73	69	73	75	79	77	77	77	57	46	38	28	34	37	46	43.9
	Min...	39	50	46	44	43	41	40	49	46	45	46	49	37	28	43	40	45	48	45	41	45	53	56	55	57	40	35	40	50	67	64	59	67.0
Pacific Jct.	Max ..	67	62	56	49	64	68	73	74	75	74	67	54	52	63	72	68	75	72	63	72	78	77	60	47	62	45	36	25	36	30	50	43.2
	Min ..	36	50	47	46	30	40	35	45	45	45	47	47	35	28	39	42	47	47	42	52	55	60	75	70	75	70	55	49	63	61	64	63.6
Perry.....	Max...	64	62	60	56	62	67	71	60	62	60	65	53	48	60	69	64	54	65	..	73	74	78	59	59	48	59	45	38	30	36	35	42	43.1
	Min...	38	50	46	45	35	43	40	49	45	42	47	47	37	28	39	38	43	43	44	39	46	59	59	48	59	49	47	50	60	66	63	62.6
Plover.....	Max...	69	61	59	60	62	64	65	75	60	77	59	42	44	61	63	60	54	70	72	70	73	77	73	64	73	49	47	50	35	27	42	32.0
	Min...	33	34	32	31	28	33	35	45	34	42	36	35	30	20	32	31	35	34	33	37	36	46	54	39	53	40	28	22	35	42	32.0
Primghar..	Max ..	70	65	65	65	70	66	72	75	64	72	65	68	42	65	65	62	60	70	68	60	71	74	70	69	75	68	49	29	22	34	28	44	40.1
	Min ..	45	42	45	35	35	41	37	50	41	50	40	42	28	26	38	36	40	39	35	39	50	50	60	44	53	44	35	31	29	34	38	38	65.6
Red Oak...	Max...	62	61	61	54	55	62	68	70	72	70	66	56	51	61	69	66	72	68	61	69	73	75	74	76	76	76	55	45	60	63	65	65.9
	Min...	40	51	49	43	37	45	40	47	46	50	49	49	38	33	41	43	52	47	47	45	55	59	61	54	64	48	42	31	41	34	53	46.3
Ridgeway..	Max...	64	64	60	56	70	69	72	76	66	81	72	60	52	59	68	69	64	65	68	61	66	79	77	78	67	69	57	45	60	63	65	64.1
	Min...	42	49	40	37	38	44	44	48	39	40	48	50	35	28	40	34	36	67	65	68	73	76	73	68	75	70	55	45	60	60	65	64.1
Rockwell C	Max ..	65	65	55	57	65	65	70	71	64	75	64	57	48	55	65	63	.	40	40	42	38	46	57	57	49	57	46	35	29	35	33	41	42.1
	Min...	40	47	41	38	35	42	39	51	43	47	43	43	36	37	42	37	40	40	42	38	46	57	57	49	57	46	35	29	35	33	41	42.1
Sac City....	Max..	63	61	58	65	67	70	73	75	66	76	64	50	46	61	67	62	55	70	70	71	76	77	75	70	74	60	52	49	60	62	63	64.8
	Min .	38	46	40	42	34	42	44	50	42	46	44	43	35	28	42	36	39	38	38	39	62	65	58	46	55	46	34	28	33	34	41	42.2
St. Charles.	Max...	65	61	58	52	65	68	75	75	66	75	69	57	48	61	77	65	60	69	64	73	76	79	77	79	77	71	59	57	68	66	74	67.3
	Min ..	41	46	46	43	40	45	52	53	48	47	50	49	39	31	45	40	43	47	46	42	47	58	60	56	58	47	39	31	36	39	58	45.9
Scranton ..	Max...	63	61	58	52	62	66	71	62	62	74	64	53	47	59	68	63	63	66	60	70	74	76	73	74	..	68	54	48	61	62	64	63.4
	Min...	..	43	43	42	34	44	44	51	44	46	44	46	36	29	44	33	40	43	39	38	45	58	52	48	..	47	36	28	33	36	43	41.7
Sheldon ...	Max..	61	62	65	61	72	67	77	77	71	73	65	52	48	68	67	63	64	48	39	37	46	50	57	39	53	43	31	24	31	27	37	37.7
	Min .	35	37	33	34	30	38	34	50	40	47	39	39	32	27	33	34	39	35	37	37	46	50	57	39	53	43	31	24	31	27	37	37.7
Sibley	Max..	57	62	59	62	72	68	77	79	78	75	61	50	49	68	70	67	64	72	66	71	72	72	72	72	75	69	50	49	65	65	66	66.1
	Min...	37	35	33	36	30	39	34	40	39	48	38	40	33	22	31	35	36	36	32	34	33	58	58	43	57	44	30	22	33	24	41	37.1
Sigourney .	Max..	69	62	62	54	64	73	71	76	69	78	72	61	52	56	72	66	62	72	62	63	71	79	78	82	80	70	58	46	65	66	74	67.3
	Min...	37	46	46	45	45	39	38	48	42	42	45	51	36	26	43	38	37	50	45	35	39	53	56	55	55	49	38	30	30	36	40	42.5
SiouxC'nt'r	Max ..	57	57	57	59	69	66	72	73	63	71	68	50	46	67	64	63	61	71	61	68	74	74	75	65	74	55	43	32	27	30	34	42	39.6
	Min ..	39	37	34	36	37	44	42	47	42	49	38	42	33	25	40	35	38	36	36	38	48	49	57	44	55	43	32	27	30	34	42	39.6
Sioux City.	Max...	59	59	57	59	75	69	75	77	68	74	60	51	47	69	69	66	62	74	63	69	78	75	80	72	75	59	51	50	63	61	59	65.3
	Min..	42	45	39	40	31	48	44	56	46	55	42	44	36	33	41	39	48	40	40	46	55	56	58	48	52	46	35	27	39	33	52	43.7
Storm L...	Max ..	61	58	57	55	66	66	73	74	63	73	64	48	47	60	66	60	55	70	61	66	72	72	72	65	72	58	46	35	50	60	61	62.6
	Min...	47	40	38	39	34	45	42	52	42	49	41	43	33	33	43	35	40	41	35	43	45	57	58	45	57	44	32	25	34	32	44	41.6
Thurman ..	Max,..	64	59	58	63	54	68	74	74	74	73	65	55	62	64	70	71	75	70	63	73	75	80	79	82	77	63	45	37	26	42	29	51	43.7
	Min .	37	51	47	43	32	44	35	35	43	47	46	45	37	28	38	43	50	49	46	40	57	59	62	49	77	45	37	26	42	29	51	43.7
Tipton	Max .	64	62	60	55	60	60	68	70	65	70	68	61	62	55	68	65	64	66	65	62	61	75	76	78	75	71	52	46	56	68	70	61.5
	Min ..	36	43	46	45	47	50	40	50	45	40	45	40	50	28	40	45	37	50	44	32	39	54	52	58	58	50	40	32	38	40	39	43.6
Toledo	Max ..	69	64	58	53	67	71	74	76	66	76	71	59	51	58	74	64	62	70	66	65	70	79	75	73	76	71	50	36	31	31	38	66.3
	Min ..	36	36	45	44	41	43	40	47	44	44	46	49	38	28	36	35	39	47	45	32	42	56	58	47	47	50	36	31	68	63	60	41.5
Villisca. ..	Max ..	65	61	58	52	60	68	72	73	70	70	59	51	61	70	67	76	70	70	72	77	76	78	79	78	78	71	48	35	28	36	24	45	44 4
	Min ..	37	50	47	41	33	48	44	51	48	45	47	35	27	39	45	48	49	42	40	51	57	56	57	58	58	57	59	45	59	68	..	62.7
Wapello...	Max .	59	59	58	60	59	64	59	67	63	69	66	64	61	51	61	59	55	62	58	..	65	73	75	74	59	60	59	53	42	35	37	41	..	46.3
	Min ..	42	50	50	45	49	41	43	50	50	46	49	51	41	32	43	44	44	50	46	..	37	54	59	78	80	80	59	60	64	65	72	65.2
Washin't'n	Max ..	66	60	60	50	62	73	71	75	67	75	71	61	53	57	73	64	60	69	65	66	70	79	78	80	80	59	60	30	30	35	42	40.2
	Min ..	38	46	45	45	42	38	37	45	45	40	45	48	32	25	39	38	36	48	40	33	37	50	55	53	55	42	36	30	30	35	66	65.6
Waterloo..	Max .	66	62	60	49	67	70	73	76	72	75	68	56	47	59	71	63	61	70	63	65	68	79	77	71	78	67	58	45	63	65	66	65.6
	Min...	38	45	42	44	39	40	40	43	43	41	48	46	37	29	36	35	37	46	41	32	40	55	42	48	52	49	40	33	34	37	35	40.9
Waverly...	Max .	64	61	56	50	63	67	68	75	60	72	69	56	47	56	66	62	61	65	60	62	65	76	71	67	74	69	61	41	59	62	65	63.0
	Min.	38	46	41	43	37	41	39	46	43	52	47	47	36	28	33	36	38	38	45	32	43	56	58	45	56	39	39	34	33	35	38	41.7
West Bend	Max .	60	60	57	59	65	66	70	76	63	76	63	48	47	60	64	61	61	70	60	66	71	75	72	57	43	56	47	34	27	33	30	34	39.6
	Min...	37	42	37	39	32	40	39	49	42	48	42	42	34	27	36	35	39	39	37	37	43	52	57	43	56	47	34	27	33	30	34	39.6
Whitten. ..	Max ..	62	60	58	59	60	62	64	68	73	72	65	57	50	57	64	61	60	67	62	62	61	68	76	70	74	70	57	39	28	33	35	40	41.4
	Min...	37	45	42	41	34	39	41	48	41	44	44	48	35	25	37	36	38	46	42	35	48	55	56	49	57	48	36	28	33	35	40	41.4
Wilton Jc..	Max ..	68	67	62	57	63	72	69	74	65	70	73	63	53	55	69	62	62	71	64	65	68	78	77	78	79	71	58	48	58	61	70	66 1
	Min...	42	38	47	45	47	38	39	44	47	40	46	51	42	27	38	40	37	51	44	33	38	52	55	54	59	51	37	32	25	36	39	42.7
Winterset..	Max. .	65	60	59	55	66	70	75	76	67	76	68	58	49	62	75	67	60	70	65	72	72	79	76	77	77	71	56	38	29	36	39	45	49.8
	Min...	40	50	45	41	37	46	45	51	46	47	48	37	37	30	43	41	40	45	45	42	49	60	57	55	56	45	38	29	36	39	45	....
.....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
.....	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..

DAILY AND MONTHLY PRECIPITATION FOR OCTOBER, 1902.

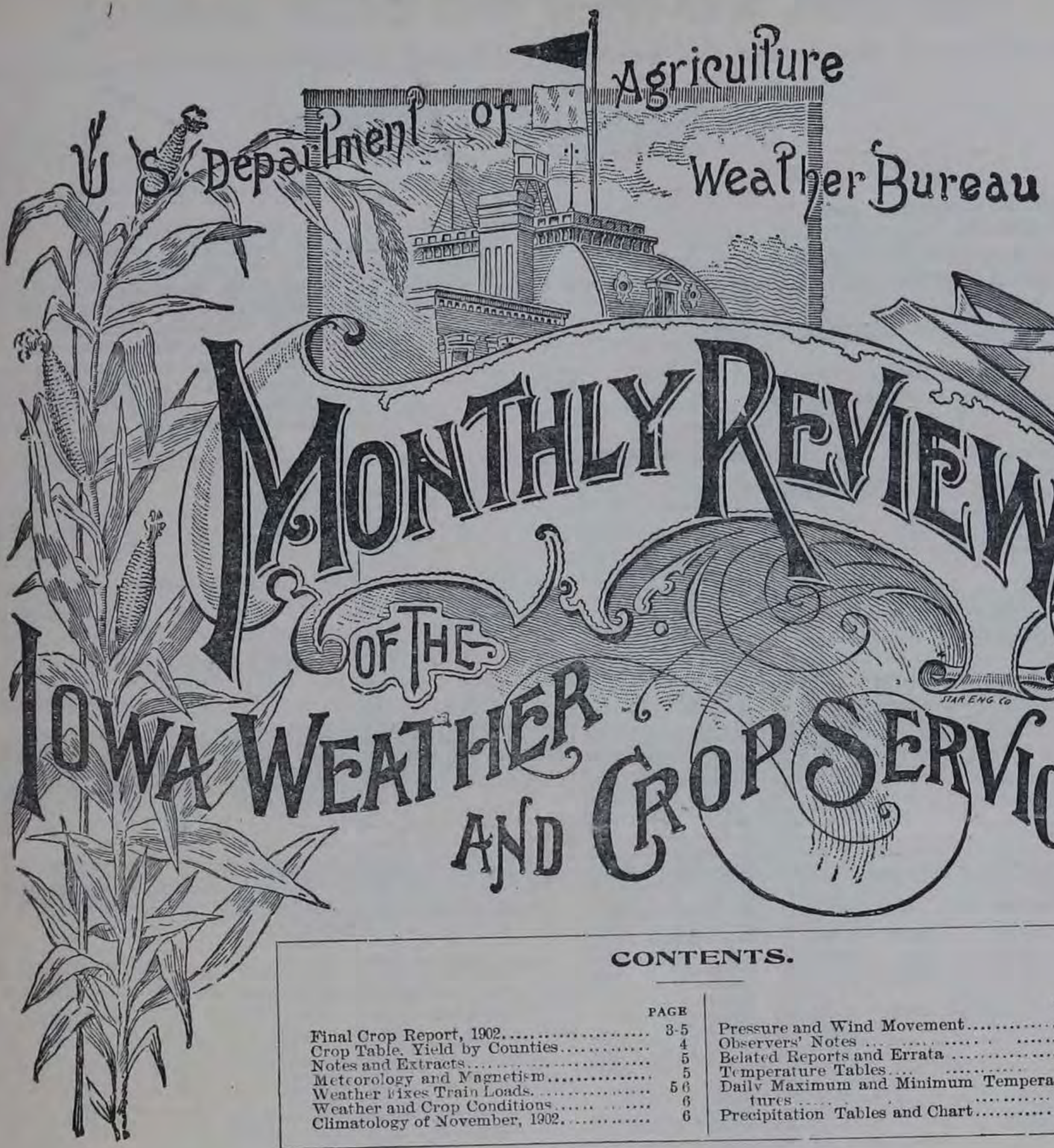
STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	...	....		1.57	....	....	....	..	..	...		1 24	-	..	....	....	....	1.51	-	...	....	....	...	....	....	T	....	..	....	....	T	4.32
Albia	....	...	.10	1 80	.05			....		..	....	1.35	.07	....	..	..	.23	1.02	....	..	..	....	....	....	...	...	....	....	....	....	....	4.57
Allerton	-	....	.05	1.20	.10	..	....	....	....	....	..	1.50	....	...	....	....	.02	.65	....	....	....	...	....	..	..	....	....	....	....	..	T	3.52
Alta	.02	..	..	-	....	....	..	..	..	....	.05	50	..	....	....	....	....	....	....	....	.30	-	.06	....	.02	....	..	....	....	....	.16	1.11
Alta (near)	.02	....	....	...	....	..	..	..	..	..	.06	.53	...	....	....	..	.09	....	...	-	.23	....	.04	...	....	....	..	....	..	....	.22	1.19
Algona	....	..		....	....	....	..	..	....	....	....	.80	....	..	....	....	-	....	....	....	T	....	....	.20	.10	....	..	....	....	....	T	1.10
Amana	....		....	.76	T	-	..	....	..	..	....	1.12	.02	....	..	....	.59	.82	....	...	...	....	....	....	37	....	.03	....	....		....	3.71
Ames	....		....	.45	.14	....	....	..	....	....	T	.41	.09	....	...	....	.68	.65	-	..	....	....	....	....	.02	T	..	....	....	....	.12	2.56
Atlantic	....	...	....	.62	....	...	...	....	..	..	.80	.75	T	....	....	...	T	....	..	....	....	....	..	....	.10	....	....	..	....	..	.24	2.51
Audubon	....	....	....	.41	....	.	....	..	....	....	.09	.75		....	....	..	.07	..	..	....	.01	....	....	....	T	.27	...	....	....	....	.19	1.79
Baxter	...	....	..	.93	...	....	..	....	..	....	....	60	.05	....	..	...	1.75	.85	....	....	....	...	...	.05	.10	....	..	....	..	....	T	4.33
Bedford	....	....	1.00	.43	...	..	..	..	....	....	....	1.34	..	....	....	....			..	....	....	....	..	....	T	..	..	..	..	....	.18	2.95
Belknap	..	....	.25	1.49	.19	....	....	....		...	....	1.13	....	....	..	....	.45	.78	..	....	..	....	..	....	..	....		....	..	.06	....	4.35
Bonaparte	.	....	....	1.35	.27	....		....	...	....	T	.55		....	....		.37	1.47	.	..	..	....	..	..	.	..	....	....	....	....		4.01
Britt	...	....	....			....	....	-	..	...	..	.76	.12	....	....	....	T	....	..	....	.26	....			02	02	....	....	....	....	T	1.18
Buckingham	....		..	.83	.11	...	....	....	..	...	..	.37	.04	...	....		.23	....	....	..		..	.02	.16	....	.06	T	....	..	....	....	1.82
Burlington	....	..	.13	1.31	.19	...	..	..		...	..	.68	.13	....	....	....	.09	1.24	....	..	....	..	....	..	....	....	T	....	....	.02	....	3.79
Bussey	....	....	....	1.30		....	..	..	....	....			1.10	....	....	....	1.75	....	....	....	.....	....	..	.	....	....	....	....	....	...	.34	4.49
Carroll	..	...	T	T	....	-	....	..	....	....	T	.50	....	....	..	....	.10	..	....	...	.10	..	....	-	.30	....	T	....	....	....	.10	1.10
Cedar Rapids	....	....	....	.49		....	....	....	....	....	.15	.43	.06	....	...	....	.94	..		..	..	..	..	.51	T	.	T	....	....	....	.13	2.71
Chariton	.02	.01	.01	1 38	.03	....	..	..	..	...	....	1.51	.02	..	....	..	.26	1 21	....		T	....	T	.33	.07		1.30	....	....	.10	....	.07	4.55
Charles City	...	....	..	.05	....	...	....	..	....	...	T	.48	.20	...	....	....	....		...	....	T	...	T	.33	.07			....	....	....	....	1.13
Chester	....	....	....	..	..	....	....	..	-	....	....		.57	.12	....	....	....	....	....	....	....	.	..	....	....	.81	....	..	..	...	.26	2.09
Clarinda	....		....	1 6,	....	..	....	..	..	....		1.49	....	..	....	....	...	....	....	....	T	....	....	....	.20	..	....	....	..	....	T	4.23
Clear Lake		.	..	....		.	...	.	..	....	T	.80	.05	....	....	....	....	....		...		....	....	....	51	....	.03	...	....	...	....	1.05
Clinton	....	...	.14	....	.58	....	..	..	....	..	....	.44	T	....	....	...	..	1.45	....	....	....	..	....	....	T	.25		....	....	....	.21	3.15
College Springs	....	..	03	1.30	...	....	....	..	..	....	....	1.60	....	..	....		....	.24	....	....	..	....	....	....	....	T	..	T	....	T	3.63
Columbus Junction	....	....	.13	.88	.04	..	....	....	....	..	..	1.15	.02	.. .	....	....	1.20	1.35	..	....	....	..	....	....	....	.87	T	.	..	....	T	4.77
Corning	....	....	T	1.40	..		....	....	....	...		1 14	....	....	....		....	T	....	....	..	....	.02	..	..		T	....	....	....	T	3.43
Council Bluffs	....	....	.13	.72	..	....		....	..	....	.87	.52	....	....	-	....	....	....	....	....	....	....	T	..	T	..	....	....	....	....	T	2.24
Cresco	....	....	...	.	..	....	....	....	....	...	....	....	.77	..	..	....	..	....	....	....	..	....	..	.83	....	..	T	..	....	....	....	1.60
Cumberland	..	....	.92	1.40	....	....	..	....	....	..	....	.79	....	....	....	....	....	....	..	....	....	..	....	....	....	....	....	....	....	....	....	3.23
Danville	....	....	.10	1.05	.07	....	....	....	....	....	.18	6	....	....	....	.25	1.60	.20	....	....	....	....	....	....	....	..	.	T	....	....	....	4.05
Davenport	....	...	T	.53	.38	....	....	....	....	....	..	.37	02	....	..	....	.23	1.25	....	..	....	...	..	....	.03	....	..	.58	.02	.02	....	....	2.81
Decorah	..	....	.06	08	..	..	....	....	....	....	.45	.21	....	....	..	..	..	...	....	....	....	....	.03	....	..	.58	.02	.02	....	....	....	.06	1.51
Delaware	....	....	....	.59	....	....	..	....	....	....	....	.34	.07	....	....	..	..	.08	....	....	..	....	....	..	.42	....	..	..	....	....	....	....	1.50
Denison	....	. .	..	...	..	..	...	....	..	....	.12	.43	.....	..	...	...	....	....	....	....	....	....	....	....	T	....	....	....	....	....	.27	.82
Des Moines	...	...	...	.84	.01	....	....	. ..	..	....	....	1 02	08	....	....	....	.55	1.10	...	....	..	....	T	T	T	.06	....	....	....	....	.04	3.70
De Soto	..	....	..	.90	.11	....	....	....	....	...		1 13	....	....	..	....	.79	.74	....	....		....	T	....	....	.09	..	....	....	....	T	3.76
Dows	....	..	....	.24		....	....	....		..	T	.60	.11	..	....	...	T	....	....	....	T	....	....	T	T	1.18	T	.03	....	....	....	....	.95
Dubuque	....	....	....	.29	.06	....	..	..	..	....	....	.62	.06	..	.	...	T	.02	..	..	....	....	T	T	1.18	T	.03	....	....	....	....	2.26
Earlham	...	....	....	1.18	.08	....	....	.	.	....	....	1.28	.01	..	....	...	.14	.64	....	....	...	.19	T	....	.08	....	....	....	....	..	.11	3.71
Eldon	....	....	.06	1.25	T	....	....	....	....	....	....	1.18	..	....	....	....	.64	1.25	....	....	....	....	..	..	....	.48	..	..	....	..	....	....	4.38
Elkader	..	..	....	55		....	....	....	....	....	..	.38	.42	....	...	...	...	.04	....	....	....	....	....	....	....	....	....	....	....	....	.50	1.87
Emerson	..	..	....			..	. .	....	....	..	..	.	...	....	..	..	....	.....	....	....	....	....	....	....	....	..	.02	....	....	....	....	.50
Fairfield	....	..	.18	1 05	.11	..	.	....	....	....	..	1.50	07	....	..	....	.13	1.65	....	....	....	....	....	....	....	.39	....	.03	....	....	....	....	4.71
Fayette	....	..	....	.29	.14	....	..	....	....	....	..	.60	.02	....	....	....	T	..	....	....	....	....	....	....	.75	.03	T	....	....	....	....	1.47
Fertile	....	....	....	..	...	....	....	..	..	....	....	.78	.13	..	....	..	....	....	....	..	....	..	....	....	.21	..		....	....	....	.03	1.69
Forest City	..	..		....	....	....	....	..	..	....	.05	.90	.13	....	....	..	....	....	....	..	....	..	....	....	....	....	T	....	....	....	....	1.32
Fort Madison	....	....	T	T	1.90	....	..	....	....	....	T	.73	..	....	..	....	.08	.80	..	....	..	....	....	....	....	....	....	....	....	....	....	3.51
Galva	..	..	....	....		....	....	....		....	T	.70	....	....	..	....	....		....	....	..	....	....	..	.	..	....	....	....	....	.36	1.06
Gilman	...	....	..	.76	.06	....		.	....	....	....	.62	.16	....	....	..	.46	.68	..	....	....	..	T		.17	T	....	....		....	....	2.91
Grand Meadow	....	....	....	.23	....	....	....	....	...	....	....	.60	.11	..	...	..	...	....	....	....	T	....	T	...	.37	....	.02	....	....	....	....	1.33
Greene	..	..	....	.50	..	....	..	..	....	....	....	.54	.15	....	..	....	...	.05	....	....	....	..	....	....	.15	..	....	....	....	....	....	1.39
Greenfield	..	..	T	1.08	....	..	....	...	....	....	T	1.18	.09	..	..		.03	.32	....	..		...	.16	T	.04	....	....	....	....	....	.01	2 91
Grinnell	...	.	..	.80	....	..	..	..	....	....	....	.70	..	....	...	...	1.85	..	....	....	....	..	..	.05	..	....	....	T	....	....	....	3.60
Grinnell (near)	....	....	..	.70	...	....	....	....	....	....	....	.65	.30	..	....	..	1.00	1.90	..	..	..	....	T	....	....	....	....	....	....	....	....	4.55
Grundy Center	....	....	....	.73	.16	..	....	....	..	....	....	.44	.09	..	....	..	.02	.07	....	....	....	....	.01	....	.13	....	....	....	....	....	....	1.65
Guthrie Center	..	..	..	.42	.21	....	....	....	..	....	....	1.16	T	....	....	....	.08	.30	....	....	....	....	T	T	..	..	....	....	....	....	.10	2.27
Hampton	....	..	....	.42	....	..	..	....	....	....	.18	.58		...	....	....	....	....	....	....	.02	.	....	.02	....	..	..	....	....	....	.11	1.33
Harlan	....	..	....	.57	T	....	....	....	....	....	.17	1 00	T	....	....	....	.07	....	....	....	T	..	T	....	T	.16	....	....	....	....	.28	2.25
Hopeville		.02	1.70	.01	....	..	....	....	....	....	....	1.30	-	.	....	..	1.30	.14	....	....	....	..	....	....	....	....	....	....	....	....	.15	4.62
Humboldt	.28	....	....	..	..	..	..	....	..	....	.	.01	.60	.15	....	....	T	..	....	..	.13	....	....	....	T	....	....	....	..	....	.02	1.14
Ida Grove	..	T	.13		....	.	....	....	....	..	T	.	.91	....	....	....	.15	....	....	....	....	....	T	.30	....	....	T	....	....	....	.30	1 47
Independence	....	....	....	.40	.20	..	..	-	....	..	....	.45	.15	....	....	....	.56	1.55	..	..	....	.	.06	....	....	..	....	..	....	....	....	1 65
Indianola	....	....	....	..	....	....	....	....	....	....	..	1.08	....	....	....	....	.69	.87	..	....	....	....	..	..	.28	....	....	....	....	....	....	3.25
Iowa City	....	....	....	.65	.03		....	....	....	....	T	.60	..	....	....	..	.02	....	....	....	T	T	.14	....	....	....	....	....	....	....	T	3.12
Iowa Falls	..	...	..	.75	....	....	..	..	....	....	....	62	.07	....	...	....	1.53	...	....	....	..		.02	.01	.01	....	....	..	....	.	.15	1.60
Jefferson	....	....		1.43	-	....	....	..	....		....	.47	....	....	....	..	.02	.36	....	..	..	....	....	....	....	..	T	..	....	.06	..	3.62
Keokuk	..	....	.16	1.03	.11	..	....	..	....		....	.32	.32	..	....	..	.55	1.11	....		..	..	..	....		..	T	....	....	....	....	2.38
Keosauqua	....		.26	1.09	.11	....	....	....		....	....	.57	01	....		....	.41	1.84	....	....	...	....	....	....	....	....	....	....	....	....	.12	3.70
Lacona	....	T	.19	1.06	.08	....	....	....	....	...		.08	.88	....	..	....			....	....	....	....	....	....	....	....	....	....	....	....		4 66
Lansing		....		.10		....		....	..		.60	.20	.54	....	....	....	....	....	.....	....	..	..	....	..	.32	....	....	....	....	....	.35	1.76
Larrabee	T	....	....	...	....	....	....	..	....	....	05	.20	....		....	....	....	....	....	..	.18	....	..	..	.02	....	....	....	....	....	....	.80
Le Claire	.	....	....	.31	.90	.02	....	..	..		....	.21	.19	T	....	....	..	1.01	..	....	....	....	....	....	....	1.07	....	....	T	....	....	....	3.71
Le Mars	....	....		....	....		...	....	...	....	...	...	T	..	...	..	..	....	..	....	....	....	....	....	..		....	....	....	....	.44	.44
Lenox	..	...	....	1.52	....	..	..	....	..	....	..	1.19		....	....	....	....	.17	....	....	....	....	....	....	..	.16	..	....	....	....	.07	3.11
Leon	....	....	.05	1.37	.04	..	..	.	.	...	.	1 30	.01	...	..	....	T	1.00	....	....	....	....	....	....	..	..	..	....	....	....	T	3.77
Logan	....	.	....	...	..	..	....	....	..	....	....	.60	1.50	.73	....	....	....	....	..	....	....	....	....	....	08	....	..	....	....	....	.35	3.26
Maquoketa	....	..	....	.40	.02		..	....	..	....		.70	.16	....	....	....	.09	.70	....	..	..	....	....	....	.30	....	....	....	....	....	..	2 37
Marshalltown		..	....	.60	....	..	....	....	..	.	....	.38	.05	...	..	....	.10	.28	....	....	....	....	.03	....	.34	.03		....	....	..	....	1.81
Monticello	T	..	T	.30	..	....	....	....	..	....	....	...	.59	..	..	....	....	35	....	....	....	....	....	....	.15	..	...	.	....	....	....	1.39
Mount Ayr		....	.05	1.40	....	....	....	....	....	..	..	1.55	..	....	.	....	....	.18		....	....	....	....	....	...	....	T	....	....	....	.08	3.30
Mt. Pleasant	....	....	..	1.14	.30	...	....	..	....	....	..	1.05	.01	....	....	....	.25	....	1.90	....	....	....	....	....	....	....	....	....	....	....	....	4.65
Mt. Vernon		....	..	.64	....		....	....	....	....	...	.80	.50	....	....	....	.40	.82	....	.	..	....	T	....	.69	....	.01	..	....	....	....	3.86
New Hampton	....	..	...	.32	...	....	....	....	....	....	....	.54	.19	...	..	....	...	....	.	....	....	....	....	....	.35	....	T	..	....	....	..	1 40
Newton	....	....	...	.80	..	....		....		....	T	.89	.07	....	..	...	3.71	1.13	....	..	..	....	.04	....	.02			....	....	....	....	6 66
Northwood	....	....	..	....	....	....	...		....	....	T	.82	.12	....	....	..	....	....	....	...	....	....	.02	....	2.15	T	T	....	....	....	T	3 11
Odebolt	....	....	....		....	..	..	....	..	...	.05	.35	.05	....	....	....	.12		....	....	.15	....	....	....	....	.22	..	....	....	....	....	.12	1.06
Ogden	....		....	.67	.33	....	....	....	....	....	T	.50	.05	....	....	...	.42	.60		....	....	..	....	..	.12	....		....	....	....	....	2.69
Olin	..	...		62	...		....	...	....	....	....	.50	.04		..	..	1.02	....	....	....	....	....	....	.30	....	T	T	...	....	..	....	2.88
Omaha, Neb		....	T	68	....	..	..	....	....		.06	1 25	T	....	....	....	....	....	..	..	....		T	....	T	....	....	....	....	....	.14	2.13
Onawa	....	...	....	..	....	..	....	....	....	....	.20	1.08	....	....	....	....	..	....	....	....	....	....	....	....	T	....	.63	....	....	....	....	.28	1.56
Osage	..	....		....	...	....	...	....	..	....	T	.70	.13	..	..	....	....	....	....	....	....	....	....	....	....	....	T	..	....	....	....	....	1.40
Osceola	....		T	1.60	....	....	....	....	....	....	T	1.10	T	....	...	....	1.12	....	....	....	....	....	....	....	....	....	....	....	....	....	T	3.82
Oskaloosa	.	..	.12	.44	...	..	....	....	..	....	..	.89	.06	.	....	....	1.00	1.03	....	....	....	....	....	T	....	....	.02	..	....	..	.04	3.60
Ottumwa	...	..	.02	1.25	05	...	....	....		..	....	1.31	....	....	.....	..	.69	1.47	....	....	....	....	....	....	....	....	....	....	....	....	....	4.80
Ovid	....	....	.10	1 4	.04	....	...	....	....	....	....	1 65	.07	....	...	....	.19	1.06	...	....	....	....	....	....	....	....	....	..	..	..	....	.02	4.60
Pacific Junction	....	T	T	1.22			....	....	....	....	1.28		....	....	....	....	....	..	.. .	..	....	....	T	....	....	.10	....	....	..	....	.18	2.78
Perry	.	....	..	.45	.13	...	....	....	..	.	....	53	.03	....	....	....	2.57	...	....	....	....	..	.11	T	.02		...	....	....	....	.10	3.94
Plover	....	...		....	....	....	....	....	....	....	..	1.02	....	....	....	....	....	....	....	T	..	....	....	....	.27	.	....	..	....	....	.19	1.48
Primghar	...	....	..	..		.	....	..	....	....	T		....	....	....	..	....	....	....	....	....	.	....	....	....		....	..	....	....	.30	.30
Red Oak	....	....	..	1.11	.11	..	....	....	..	....	..	1.04	....	....	..	....	....	....	....	....	T	..	T	...	T	.18	T	....	....	....	.27	2.71
Ridgeway	....	....	....	...	....	..	...	....	...	. ..	....	.53	.18		....	....	....	....	..	.	..	..	..		.82		.04	....	....	....	....	1.57
Rockford	....		..	T	...	....	..		....	....		..	.70	..	..	....	.	....	....	....	....	..	....	....	....	....	.30	....	...	....	....	.70
Rockwell City	....	....		....	....	....	...	....	..	....	....	.65	..	....	....	..	.20	....	....	....	.10	...	....	....	....	....	.07	....	....	....	....	.20	1.45
Sac City	....	...	....	....	..	....	....	....	..	....	.04	.86	....	..	.....	....	T	....	....	....	.02	....	....	....	....	....	.07	....	....	....	....	.17	1.16

DAILY AND MONTHLY PRECIPITATION FOR OCTOBER, 1902—CONTINUED.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
St. Charles	....	....	....	1.40	.03	....	....	....	....	....	....	2 02	.04	....	....	....	.14	1 95	....	..	....	.05	....	T	T	.14	T	....	....	T	.	....	5.77
Scranton	....	....	....	.61	T	....	....	....	....	T	.04	.41	.02	..	....	.	.41	..06	....	....	....	....	.02	T	....	.14	T		T	....	.08	1.79
Sheldon	..	.05	....	....	....	..	..	....	....	....	T	T	T	....	....	..	..	....		..			....	.25	.05	T	....	....	....	....	.35	0 70
Sibley	.05	..		...	....	....	....	....	..		....		.08		....	.	....	..	....	....	....	....	..	....	T	.14	....	....	....	....	.41	0.68
Sigourney	....	....	T	.95	...	....	....	...	..	....	T	.85	.05	...	...	....	.56	2.18	....	....	....		..	....	T		T	..	....	..	....	4.59
Sioux Center		....	...	....	....	....	....	....	....	..	....	....	T	....	..	....	....	....	....	....	....	....	.01	....	....	..	....	....	....	....	.39	0.28
Sioux City	T	....	....	....	....	...	....	....		..	.05	.18	...	....	....	....	.31	1.50	....	...	....	....	....	....	T		T	....	....	....	....	4 35
Stockport	....	..	.02	.92	.32	..	....	...	....	....	....	.53	.75	....	....	....	.05	....	..	....	.15	....	..	..	....	.15		..	...	...	16	1 13
Storm Lake	T	T	...	....	...	....	....	....	..	...	.03	.59	....	..	....	....	..	....	..	....	....	...	T	....	....	.25	T	....	....	.	.20	4.47
Thurman	....	....	.40	2 50	...	....	...	....	....	....	T	1.12	.	....	....	....	..	....	..	....	....	...	....	1.25	...	....	.10		....	...	T	5.90
Tipton	....	....	..	.65	.15	....	...	...	....	....	....	1.25	1.00	....	..	..	....	1.50	..	....	....	...	....		T		T	....	....			2.16
Toledo	....	....	...	.56	....	..	....	..	....	....	....	.37	.19	....	..	..	.8c	....		..	....		T	24	T	..	....	....		....	T	3.08
Villisca	....	....	.03	1.05	....	....	....	..	....	....	1 25	T	....	....	..	...		....	....	.	T	T	T	T	75	....	T	...	..	..		2.01
Vinton	....	....	...	.40	....	..	..	....	....	..	...	.68	.05	....	....	..	.53	....	....	....	....	....	..	..	T	....	T	....	....	....	....	.15	4.39
Wapello	....	....	T	1.42	.17	..	....	....	..	..	..	.50	.18	..	..	....	.35	1.77	....	..		....		..	....	....	....	....	..	....	..		5.20
Washington	..	....	....	.96	..	..	....	..	....	..	....	.73	.3c	..	....	....		3 30		..	....	....	....	..	....	....	....	..	....	..		5.20
Washta	....	....	....	....	...	..	....	....	....	....	T	.45	....	..	...	....	06		....	....	...		....	....	T	....	....	..		....	.2	0 71
Waterloo	..	....	....	.25	.12	...			..	....	....	.45	12	....		....	.05	T	....		..	....	T	....	.51	..	T	....	....	....	....	1.52
Waverly	....	..	..	.15	.33	....	....	....	....	....	T	.55	.12	....	..	....		.05	....	..		....	..	....	.18	.01		..	...		....	1 20
West Bend	....	....	....	....	....	..	....		....	....		.65	.13	....	...	....	T	....	...	..	.07	..	....	....	....	.16	..	.	....	....	. 8	1.10
West Branch	....	....	...	1.20	.03	....	....	....	....	....	....	.43	.18	....	....	...	.36	1.27	..	....		..	....	..	.33	....	.02	..	....	.....		3.82
West Union	....	....	....	.40	....	....	..	....	....	....		.57		....	....		T	....	...	....	....	....	....	.51	T	..	....	..	....	....	....	1.48
Whitten	....	..	....	.60	....	....	....	....	....	....	..	.18	.10	..	....	....	T	....	..	...	....	....	T	T	T	....	..	..	....	....	T	0 88
Wilton Junction	...	..	....	1.34	...	....	...	....	....	....	..	1 16	. .		....	..	....	1.34	...	....	....	....	.07	...	....	.50	....	....	....	....	....	....	4.31
Winterset	....		....	1.16	...	....	...	...	....	....	....	1.22	.07	..		....	.31	1.37	....	....	....	....	....	....	....	.37	....	....	....	....	...	4.57
Woodburn	....	T	1.35	.17	...	....		....	....	...	1.23	.14	T	...	....	...	1.55			...	....	....	....	....	....	....	....	....	....	22		4.66



NOVEMBER, 1902. No. 11



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U. S. WEATHER BUREAU, ASS'T DIRECTOR.

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1902.

THE IOWA WEATHER AND CROP SERVICE

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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIII. NOVEMBER, 1902. No. 11.

IOWA CROPS—FINAL REPORT, 1902.

AVERAGE YIELD PER ACRE, TOTALS FOR THE STATE AND AVERAGE PRICES, DECEMBER 1, 1902.

Following is a summary of crop reports received from the correspondents of the Iowa Weather and Crop Service, showing the average yield per acre and totals for the State of staple farm products for the past season, and the average prices at the farms or nearest stations December 1, 1902. As the larger portion of the season's output will be consumed on the farms, and marketed in the form of beef, pork, mutton, horses, dairy and poultry products, etc., the actual value of the crops is materially higher than is shown by the figures representing the local prices obtainable at this time.

THE CORN CROP.—In bulk, expressed in bushels, the corn crop is reported to be a little above the ten year average, the yield per acre being about 34 bushels, and the total for the state grown on an area of about 8,700,000 acres, is 296,950,230 bushels

On account of the unfavorable character of the crop season, and the unusually variable condition of the corn crop a special report was called for in answer to inquiries as to the average yield of hard and soft corn, the percentage that is sound and merchantable, the local price of sound corn and the feeding value of the softer portion of the crop. The tabulated reports show the following results of this investigation: Dividing the state into three sections, or belts three counties wide crossing east to west, we find that in the northern section (thirty counties) the sound corn is estimated at 29 per cent; in the central section (thirty-eight counties) it is 48 percent; and in the southern section (thirty-one counties) the average is 64 per cent. For the state as a whole the average condition appears to be 47 per cent sound and merchantable, and 53 per cent graded as soft, chaffy or unmerchantable. The total yield by sections is as follows: Northern section, in round numbers, 73,000,000 bushels; central section, 129,000,000 bushels; southern section, 94,000,000 bushels.

The average local price of the sound corn is reported to be 35 cents per bushel, and the average feeding value of the softer portion is estimated at 22 cents per bushel.

This serves as a basis for estimating the total value of the corn crop this year in round numbers at $83,000,000. Last year the yield was 227,000,000 bushels and the value $113 000,000. In 1900 the total yield was 345,000,000 bushels, and the value, at the current prices, $93,000,000.

WHEAT.—The acreage of winter wheat is small, and the total yield appears to be only 825,045 bushels, an average of eighteen bushels per acre. In spring wheat the yield is thirteen bushels per acre and a total of 12,680,800. The total yields of both winter and spring wheat is 13,532,845. The quality of wheat is generally poor, on account of the very wet harvest, and the price of winter wheat is reported to be 55 cents, and spring wheat 52 cents. The total value of the crop appears to be $7,0 2,640. Last year the yield was 18,295,000 bushels and the value was $10,976,000.

OATS.—This crop suffered greater damage than any other cereal from effects of excessive rains, and it has been impracticable to secure reports as to the extent of total loss, and the quality of the grain that was secured in condition to repay the cost of threshing. The returns from correspondents indicate an average yield of 31 bushels per acre from the portion of the crop that was secured and threshed. Making a liberal deduction from the acreage planted in each county we have a total of 92,907 960 bushels, as against 114,000 000 bushels last year, and 138 000 000 bushels in 1900. The average local value of this year's product appears to be 24 cents per bushel and the total $22,297,910. Last year's oats crop was valued at $40,209,000.

BARLEY.—Estimated yield per acre, 25 bushels, and total yield, 15 380,940, valued at 33 cents per bushel, or a total of $5,075,710. Last year's crop was 14,654,000 bushels, worth $6,447,000.

RYE.—Average per acre, 17 bushels; yield, 882,830 bushels; worth 40 cents per bushel, and the total, $353,132. Last year's crop, 859,630 bushels, valued at $411,762.

FLAX.—Product, 725,350 bushels; yield per acre, 8 bushels. Value about $1.00 per bushel. Last year's crop, 916,880, worth $1,182,000.

POTATOES.—Product 91 bushels per acre; total yield, 12,051,670 bushels. Price 34 cents; total value, $4 097,567. Last year's product, 5,098,000 bushels, valued at $4,588,000. In 1900 the crop was 10,850,000 bushels, worth $4,340,000.

HAY (TAME).—Product 4,439,040 tons,—an average of 1.8 per acre. Value $6.80 per ton; total value, $30,171,592. Last year's output, 3,711,000 tons, valued at $30,721,000.

HAY (WILD).—Average yield 1.3 tons per acre; total yield, 1,203,860 tons, worth $5.50 per ton; total value, $6 615,730. Last year the product was 1,268,700 tons, worth $7,992,000.

The estimated value of sweet potatoes is about $320,000. Sorghum, $250,000; broom corn, $40,000. Timothy seed is estimated at $750,000; clover seed unknown and not ascertainable as to value.

Corn fodder in shock and fields probably worth half as much as last year, or about $10,000,000.

Pasturage bulky early and late and worth at least $35,000 000

Fruits and vegetables are estimated at $9,500,000, which is a conservative figure.

[Coontinued on Page 5.]

FINAL CROP REPORT, 1902.

Average per acre and totals by counties.

COUNTIES.	CORN. Yield per acre.	CORN. Total yield, bushels.	WINTER WHEAT. Yield per acre.	WINTER WHEAT. Total yield, bushels.	SPRING WHEAT. Yield per acre.	SPRING WHEAT. Total yield, bushels.	OATS. Yield per acre.	OATS. Total yield, bushels.	RYE. Yield per acre.	RYE. Total yield, bu.	BARLEY. Yield per acre.	BARLEY. Total yield, bushels.	FLAX SEED. Yield per acre.	FLAX SEED. Total yield, bu.	POTATOES. Yield per acre.	POTATOES. Total yield, bushels.	TAME HAY. Yield per acre.	TAME HAY. Total yield, tons.	WILD HAY. Yield per acre.	WILD HAY. Total yield, tons.
Adair	30	3,058,76.	25	4 320	10	91,650	30	601,820	...	....	30	15,60	....	....	120	208 80	1.5	47,870	1.0	1,650
Adams	38	2,769,600	19	13,30	11	61,380	35	534,450	18	2,88	25	16 2 0	....	....	150	123,900	1.5	38,380	1.0	1,720
Allamakee	27	1,074,60	12	14 280	9	40,980	25	8 0,000	15	19, 0	25	146,500	....	....	70	97,300	1.5	48,4 0	1.5	2 4 0
Appanoose	35	1,502,100	15	4,900	..	.....	30	159,100	10	8,210	..	....	.	....	0.	56, 0	1.5	16 530	1.0	1 080
Audubon	33	2,752,860	.	....	13	283,530	30	669,6 0	20	1,200	30	85,50	....	......	100	93,000	1.5	32 460	1.2	7,250
Benton	35	4,0 5,050	...	....	12	33,600	30	1,293,300		....	2	306 5 0	....	....	90	134 100	1.5	48,810	1.5	1,080
Black Hawk	28	2,410,180	15	22	15	10,200	30	9 5,100	15	14,550	25	163,000	....	......	105	170 550	2.0	53 82	1.5	14,150
Boone	28	2,997,62	13	2,089	2	74,830	33	1 026,250	11	5 190	23	11,730	....	.	85	96,900	1.5	29 530	1.0	16,140
Bremer	25	1,523,750		.....	13	8,45	30	9 520	18	5 280	20	30,400	8	10,320	81	121,500	2.0	39,840	1.5	16 530
Buchanan	30	2,451,30	16	190	15	8,400	32	1,067 840	20	2,10	31	11,490	8	2,160	80	119,200	2.0	61,970	1.5	15,270
Buena Vista	30	3,3 6,700	....	....	8	84 160	33	1,427,630	15	2 250	30	213,6 0	...	.....	70	127,100	1.5	25,380	1.0	20,1 0
Butler	28	2,182,680	...	......	9	25 650	33	1,742,7 0	15	13 650	25	90,500	..	....	9	14 ,600	2.0	37,560	1.5	18,2 0
Calhoun	35	3,938 700	...	.....	8	68,560	27	1,039,50	18	3 750	20	76,200	.	....	90	112,500	2.0	21,720	1.5	29 3 0
Carroll	33	3,465 910		....	12	253 640	31	1,185,440	20	2,860	20	65,4 0		....	97	188,600	1.8	31,9 0	1.	21,500
Cass	35	3,504 610	18	3,870	12	231,72	30	843,100	18	2,750	23	21,160	....	.	85	196,200	1.5	38,85	2.0	10,320
Cedar	40	4,108,100	14	4,480	14	13,580	27	865 970	15	8,700	26	246 520	..	..	52	66,160	2.0	72,120	1.0	950
Cerro Gordo	33	2 874,16.	....	....	10	33,10	31	1,436,5 0	12	6,360	21	109,830	7	24,150	70	101,100	2.	43 570	1.	10,420
Cherokee	35	4,198,930	...	......	9	259,290	30	1,146,900	...	......	30	183 600	7	2,170	110	172 600	1.8	36,860	1.5	18,210
Chickasaw	30	1,536,300		.....	14	28,8	32	1,507,120	18	1,240	25	138,000	7	45,570	6	67,250	1.8	39 2 0	2.0	19,520
Clarke	35	1,9 2,350	22	4,62	20	1 80	32	391,350	20	2,750	23	4,370	....	....	115	54,0 0	1.5	54,910	1.0	20
Clay	26	2,525,900	18	6,300	10	81,000	32	1,042,160	18	13,86	30	692,400	5	9,750	60	70 200	1.5	25,160	1.5	31,200
Clayton	32	2, 54 50.	15	11,250	10	54,000	28	1,351,280	18	34,560	30	192,900	...	....	80	172 800	1.5	57,910	1.0	4 120
Clinton	33	3,808,5 0	....	...	10	27,300	22	772,630	16	2 600	20	80,26	...	... ..	75	107,750	1.5	59,1 0	1.5	6,560
Crawford	30	3,449,300	..	....	11	474,820	26	837,160	14	1,263	23	76,130		....	70	123,9 0	1.5	45,220	1.0	12,210
Dallas	39	3 363 8 0	20	4,500	15	97,350	31	871,720	20	4,80	25	101,25	....	....	70	83,500	2.0	47,720	1.0	10,210
Davis	40	2,125,200	20	12,600		.... .	32	509,120	16	21,360	....	....	...	....	110	73,500	1.5	61,87.	...	....
Decatur	36	2 068,850	18	16,740	...	... .	35	533,050	16	4,640	....	.....	...	....	130	83 200	1.4	52 240	...	1,010
Delaware	30	2,703 60	20	500	17	20,570	32	1,091,840	18	7,80	20	161,10	...	....	120	158,400	2.0	75 660	1.5	12,150
Des Moines	36	2,123,040	20	53,20		.....	31	685,720	20	46 10	...	... .	.	..	100	152,000	1.5	28,510	1.0	1 020
Dickinson	28	1,1 9,9		.	9	152,570	6	161,680	20	3,200	28	690,20	8	41,200	60	33,000	1.8	12,5,0	1.5	24,110
Dubuque	40	2 488 40	17	7,0 0	10	50,8 0	35	1,337,350	19	17,48	32	65 520	...	....	102	231,290	1.8	61,500	1.2	4 2 0
Emmet	30	1,540,230	....	......	11	145 860	33	747,450	12	1 630	32	435,040	8	20 550	120	73,200	2.0	18,42	1.5	42,250
Fayette	32	2 862,3	20	3,300	20	52,400	31	1,491,710	15	5,250	30	205,800	7	16,170	76	151,200	2.0	96 340	1.5	15,230
Floyd	6	3,076,920		......	12	21,840	35	1,837,150	20	10,2	25	202,770	10	41,10	9.	158, 00	1.8	37,89	1.	12,2 0
Franklin	33	3,1 8 960	...	....	16	59,20	31	1,882,630	15	6,3 0	24	89,980	8	9,84	4	55,2 0	2.0	37,860	1.0	13,910
Fremont	38	4,4 5 98	20	64,60	17	81,770	35	504,00	22	14,080		....	..	....	151	136,500	2.0	43,460	2.0	10,280
Greene	31	3,166 0 0	10	1,2.0	12	6 ,080	27	921 240	..	......	25	72,000		......	70	78,40	2.0	37,410	1.5	15, 20
Grundy	3	3,138,66		......	10	8 ,110	31	1,247,750	12	950	26	294,010	....	......	110	183,100	2.0	43,760	1.5	16 210
Guthrie	35	2 808,420	20	2,140	10	1 ,100	30	86 ,200	20	2,10.	25	37,350	..	... ..	105	1 1,300	1.5	35 450	1.0	11,120
Hamilton	30	2,193,60	..	....	9	65,3 0	28	1,124,480		....	22	25,74	8	1,840	9	105,310	2.0	34,010	1.2	24,110
Hancock	31	2,425 75	....	....	10	102 100	32	1,063,540	21	8,6 0	25	145 00	5	20 910	6	57,930	1.8	29,7 0	1.	23 230
Hardin	32	2,885,120		....	11	170,790	31	1,22 ,3 0	20	1,640	21	48,720	8	1,840	97	110,420	1.7	32,930	1.5	20,310
Harrison	32	3,59 ,630	25	80	15	578,250	32	442,880	6	3,040	25	14,250		... ..	140	247,80	2.0	15,010	2.0	23,2 0
Henry	40	2,432 800	20	33,600	8	2 880	25	611,000	14	27,160	20	8,000	...		106	75,260	2.0	48,360	1.0	290
Howard	31	1,539,150	14	440	15	28 100	30	1,253 600	8	1,08	18	145,320	12	86,280	55	59,95	1.5	58,3 0	1.5	14,110
Humboldt	33	1,950,900	.	....	12	205,080	31	772,480	18	720	21	53,2 0	7	11,620	50	30,50	1.8	22,160	1.2	22,800
Ida	35	2,881,20	15	45	12	254,520	33	795,9 0	20	6x	35	145,3 0	..	... ...	95	91,800	1.5	3 ,620	1.0	5,080
Iowa	30	2 853,600	9	2,25	15	31,350	26	774,010	20	4,500	25	157,000	..	......	68	89,080	2.0	78,710	1.5	2,140
Jackson	36	2,828 36.	17	2,72	15	46 800	28	813,36	18	31,140	30	97,200	..	......	60	83,10	1.8	72 010	1.0	2,910
Jasper	37	3,571,240	17	850	12	137,040	2	889,6 0	18	4,140	28	18,480	..	... . ..	53	141 690	1.8	46,700	1.	1,820
Jefferson	40	3,0 1,60	17	18,51	11	2,830	30	54 ,30	15	31,350	31	35,340	..	....	120	90 240	1.8	42,040	1.0	1,6 0
Johnson	40	4,332 800	19	9,88.	17	17,850	30	928,200	19	31,920	27	9 ,980		....	115	181,700	1.8	70 110	1.	1 560
Jones	40	3,481,320	...	....	12	13,800	33	947,930	18	10,08	32	130,88	.	......	112	115,360	2.0	76,960	1.5	3,220
Keokuk	40	4,235,700	19	12,540	15	12,600	25	701,500	20	40,600	21	61,480	.	....	102	118,32	1.8	61,500	1.2	560
Kossuth	28	3,215,880	.	......	9	258,2 0	14	1,938,080	21	6,870	23	350,980	7	29 260	70	98,700	1.5	26,100	1.0	49,620
Lee	43	2,6 5,400	16	159,52	..	....	42	978 6 0	17	44,570		....		......	130	215,800	1.8	62,10	1.0	210
Linn	28	2,927,120	..	.....	15	23,250	31	1,246,820	18	5,710	24	44,400	...	....	112	217,280	1.8	81,480	1.	7,510
Louisa	35	2,422,530	17	34,340	15	7,6 0	32	643,840	15	37,650	20	7,220		....	90	90,10	1.7	24,410	2.0	2,160
Lucas	34	1,928,480	20	7,04	12	2,520	33	439,230	17	12,070	..	....		.....	92	45,020	1.5	65,2 0	2.	1,120
Lyon	31	2,128,1 0		....	15	825,950	35	927,850		..	32	1,283,520	11	10,010	9	129, 60	1.5	57,940	1.0	14,230
Madison	34	2,556,200	20	4,600	13	68,250	31	636,810	15	4,200	25	28,750	..	....	90	113,50	1.8	65,830	1.0	2,810
Mahaska	35	3,140,910	18	9,16	14	31,41	26	7 5 00	16	800	22	18,260	..	....	95	134,0 0	1.6	41,960	1.2	1,620
Marion	36	3,557,12	22	9,250	11	52 910	25	6 0,500	14	10,080	30	27,900	....	....	78	92,820	2.0	42,020	1.2	1,230
Marshall	33	3,580,83		.....	14	169,540	32	1,127 680	20	1,4 0	25	653,750		....	58	95,120	1.5	42,450	1.2	3,700
Mills	40	3,078,400	16	7,200	12	154,410	30	3 6,400	19	6 080	22	5,280		....	110	127,600	2.0	33,340	1.5	7,120
Mitchell	32	1,9 9,04		.. .. .	12	35,760	32	1,221, 6	16	5 760	25	273,250	8	60,080	60	100,2 0	1.5	39,780	1.0	3,020
Monona	34	3,752,92	..	.....	14	452,3 0	5	474,600	17	4,250	33	135,630	...	. ...	12	160,800	2.0	7,720	1.5	29,120
Monroe	40	1,836,400	18	5,470	16	1,76	35	35 ,550	18	17,100	25	7,750	....	......	125	55,45	2.	61,760	1.0	560
Montgomery	38	3,6 2,410	22	15,180	10	150,100	30	311,400	15	2,10	....	....	..	....	10	99,500	1.8	36,54	1.2	2,010
Muscatine	42	3,0 6 020	20	7,800	18	38,8 0	35	701, 50	19	17,84	0	191,700	...	....	70	200 9 0	2.0	43,62	1.5	2,510
O'Brien	33	3,485,790	....	.. ...	12	289,080	18	1 507,08	20	1,800	28	718,2 0	12	22,920	60	74,400	1.5	22 750	2.0	26,210
Osceola	30	1,633,6 0	....	.. ....	9	216 900	29	769 660	15	450	22	817,740	8	18,810	50	40,500	1	13,750	1.1	17 120
Page	32	3 892 8	15	103,9 0	11	81,95	25	537,500	15	8,8 0	23	20 130		....	120	128,400	1.8	27 640	1.5	5,120
Palo Alto	34	2 626 50	..	.. ..	10	8 ,100	33	1,346,070	15	7,050	35	350,800	8	17,120	60	72,10	1.5	11,360	1.0	34,160
Plymouth	39	5,155,680		......	12	1,144,920	35	1,396,85	20	4,800	36	291,600	10	6,500	72	238,32	2.0	27,020	1.5	45,370
Pocahontas	30	2,971,600	...	....	8	57,4 0	32	1,327,9 0	15	6,45	31	240,56	4	9,920	45	58 500	2.0	20,600	1.0	41,200
Polk	40	4,186,820	29	17,980	13	132,730	33	795 960	20	2,000		....	..	....	7.	167,500	1.8	40,390	1.2	11,210
Pottawattamie	40	8,283,200	22	10,670	12	561,840	35	1,229,150	20	9,000	25	14,040	...	.. ...	121	378,000	2.0	61,000	1.0	16,210
Poweshiek	38	4,189,880	14	560	12	35,640	30	1,053,100	20	2,350	25	93,000	....	....	73	102,200	1.5	56,230	1.0	1,060
Ringgold	38	3,461,160	14	4,24	12	610	3	623,720	13	2,610		.... ..		... .	105	79,8	1.8	81,20	1.2	1,120
Sac	35	4,204,500	14	1,400	12	156 12	32	1,106,560	20	1,70	25	203,700	8	1,600	92	116,84	2.0	42 380	1.5	21 950
Scott	34	2,72 ,080	20	8,900	15	123,000	30	601,8 0	18	12,96	25	610,250	..	.....	100	487,0 0	1.5	34,590	1.5	7,120
Shelby	30	3,274,500		....	12	380,520	27	580,500	15	1,050	23	60,030	..	..	72	115,920	1.8	52,530	1.2	12,2 0
Sioux	35	4,204,200	.....	....	10	832,600	33	1,161,9 0	....	......	24	725,010	10	6,850	90	132,30	1.5	10,200	1.5	27,340
Story	32	3,360,320	....	....	17	75,3 0	32	1,251,200	17	8,670	25	2 ,250	....	....	8	90,100	2.3	48,78	1.2	6 400
Tama	31	3,352,340	....	.	12	123,6 0	32	1,027,840	12	1,120	24	531,360	....	....	93	147,870	1.6	49,070	1.7	9,300
Taylor	33	2,711,940	15	38,850	13	5,330	25	453,000	13	7,540	24	27,120	...	.....	120	141 6 0	2.	81,100	2.0	3,140
Union	38	2,272,040	15	1,050	12	7,3 0	35	524,55	16	640	25	7,25	..	....	110	123,20	1.8	55,38	1.2	1,560
Van Buren	43	2,158,170	18	51,120	...	....	40	730,000	20	31,600	....	....		....	150	73,500	1.5	52,310	1.0	1,920
Wapello	35	1,965,250	20	14 600	13	2,210	29	493 580	16	18,720	22	7,700	....	....	90	129,600	1.8	55,6 0	1.0	310
Warren	38	3,442,4 0	19	1,7 0	13	90,220	28	612,36	15	4,750	20	2 ,800	..	....	80	104 550	2.0	68,650	1.3	420
Washington	40	3,9 4,800	20	15,600	16	5,200	40	1,124,80.	20	23,2 0	32	116,160	..	....	87	73,080	1.8	57 090	1.0	3 0
Wayne	40	2,843 6 0	16	1,440	15	1,050	35	388,550	18	9,360	.	.....	..	....	15	73,750	1.6	94,560	1.2	510
Webster	38	3,8 9,020	...	....	14	146 860	33	1,521 630	14	2,660	22	45,980		...	80	105,60	1.5	18,360	1.0	40, 20
Winnebago	30	1,420,100	..	....	12	224,520	30	916,430	...	... ...	20	81,400	9	27,050	90	70,200	1.5	17,110	1.2	33,120
Winneshiek	3	2,224,8 0	16	2,400	15	114,300	32	1,961,800	20	5,82	27	201,330	10	72,300	8	107,200	1.8	71,280	1.5	17,150
Woodbury	33	4,719,690	....	....	10	587,800	31	689,750	15	2,10	28	64,400	11	5,940	120	177,600	1.5	17,440	1.2	14,210
Worth	23	891,240	....	....	9	50,310	35	1,940,80	16	3,010	26	229,580	10	104,100	58	87,000	2.0	34,900	1.5	16,210
Wright	25	1,976,500		....	8	81,320	30	1,363,50	15	1,950	25	115,150	9	17,170	57	59,850	2.0	30 510	1.6	27,110
Total for state	...	296,950,230	...	852,045	....	12,680,800	....	93,937,960		832,830	....	15,380,9 0	....	755,350	..	12,051,670	...	4,439 910	....	1 202,860
Av. per acre	31	....	18	...	13		31	....	17		25	......	8	...	9	....	1.8		1.3	.....

TABULATED CROP SUMMARY.

CROPS.	TOTAL PRODUCT, BUSHELS.	FARM VALUE DEC. 1, 1902.
Corn	296,970,230	$ 83,432,708
Wheat	13,512,845	7,032,610
Oats	92,907,900	22,297,900
Barley	15,187,940	5,075,710
Rye	882,830	353,132
Flax	755,750	755,350
Potatoes	12,051,670	4,097,567
Hay (tame)	*4,439,040	30,171,592
Hay (wild)	*1,202,860	6,615,730
Sweet Potatoes		320,000
Sorghum		259,000
Broom Corn		40,000
Timothy Seed		750,000
Corn Fodder		10,000,000
Pasturage		35,000,000
Fruits and Vegetables		9,500,000
Total soil products		$ 215,722,339

* Tons.

As to the corn crop, it is proper to add that a considerable percentage is still ungathered and subjected to the vicissitudes of the weather, which at this time is unfavorable for securing the full product. The figures as to all the crops are submitted as the best that can be secured at this time, under exceptional conditions.

The grand total for last year was 274 million dollars, and in 1900 it was in round numbers 229 million dollars.

NOTES.

The captain of the British ship Anglesey reported that on September 20th off Cape Horn, the vessel sailed through a great ice field, in the midst of which was a gigantic iceberg over 100 feet high and about 100 miles long. It had been pushed off the great polar ice-cap of the Antarctic.

* * *

In an article on Alfalfa in Argentine, published in *Orange Judd Farmer*, by B. W. Snow, it was stated that for pasturage one acre of alfalfa is found to be equivalent to four acres of native grasses.

* * *

Meteorology considered as a system of research into the laws of the motions of the atmosphere is not a matter that can be prosecuted successfully by any short-lived spasmodic or discontinuous system of work. It must be undertaken by permanent co-operation and the long-continued labors of all nations; the important mountain observations should especially be maintained intact from generation to generation without any thought of discontinuing their work. Each pair of high and low stations is really of more importance to meteorology than any dozen stations at sea level. The time will doubtless come when Mount Washington, Pike's Peak and numerous other high stations in this country will be permanently occupied. The reports from both of these stations were frequently of great use to the editor in his early forecast work, and it is only a question of time when we shall learn how to make use of them on every occasion.—*Prof. Cleveland Abbe in U. S. Weather Review for August, 1902,*

* * *

At the recent Live Stock Exposition in Chicago Secretary Wilson made an address, from which the following paragraphs are taken:

"The meeting you have here now is the most magnificent expression of the world's progressive history. What a long time we waited for all this. Forty years ago Congress endowed agricultural stations and later experimental stations for the purpose of helping the farmer toward the establishment of the science of breeding and feeding, among other things, and what an illustration we have to-day with regard to tho latter. Our people are beginning to learn something about feeding. Our 2,500,000,000 bushels of corn, grown this year, is to go to market, the greater part of it, through our domestic animals.

"Our people are learning how to feed economically and prevent waste There is a great difference between shoveling grain into a snow bank and feeding stock a well-balanced ration in a stable or well-protected shed.

"A man cares for a crop all summer, works hard in the summer, gets it piled up; he has so much corn, he has so much oats, and he has got hay and straw and all that. Well, the question comes up then, does that man know how to feed the stuff so as to make the most money out of it? Generally he does not know. As a general proposition a very great waste occurs all over the United States in the feeding of our nutrients to our domestic animals, but there is hope held out by the presence of young gentlemen from colleges that we are to have scholars in the land along those lines, and that we are getting them rapidly. We have thousands of men studying in our agricultural colleges the sciences that make for greater profit on the farm.

"The United States is doing more for research along these lines for the American farmer than all the other countries in the world. The Department of Agriculture at Washington has more money at its disposal for research along these lines than Harvard and Yale and Columbia and this big Chicago university and Leland Stanford all put together.

"I want to call your attention a moment to the magnitude of the live-stock interests. Our animal production a year amount to $900,000,000 in the United States—$900,000,000 annually is the product of all our domestic animals in the United States. The dairies amount to $472,000,000. The little speckled hen of the barnyard cackles out $181,000,000 worth every year. We sent abroad last year our live animals and animal products $244,000,000 in round numbers; the year before it was $253 000 000—$250,000,000 worth of things going from the United States. Our cattle exports, live cattle last year, amounted to $32 000 000; our horses to $11,000,000; our sheep to $2,000,000. What we use at home—we have the greatest market in the world here—and what we send abroad added together makes that $900,000,000. Those are the interests, gentlemen, that we represent. You can take all the cotton and all the wheat and the oats and put them all together, and they all don't equal the livestock industry in its products."

METEOROLOGY AND MAGNETISM.

From a rapid survey of the cosmical meteorological problem, it is obvious that meteorology has large interests in solar and terrestrial magnetism. The annual reports of magnetic observatories are usually published several years after the records are made, hence, if meteorology is to insure any progress in seasonal forecasting, it evidently must possess its own magnetic apparatus, so that the state of the solar-terrestrial field may be known in connection with current meteorological phenomena. It must be conceded that considerable scientific skill will be required to bring this system of cosmical forces into control for the benefit of mankind, but I do not see how it can be doubted that the true pathway of research is already open before us. It is to be hoped that meteorologists generally will take up these cosmical problems, and compute the necessary homogeneous systems, so that it may become possible to advance promptly to practical results.—*Prof. Frank H. Bigelow in the Mouthly Weather Review for July, 1902.*

WEATHER FIXES TRAIN LOADS.

The following extract from the *Pittsburg Dispatch* is copied from the U. S. Monthly Weather Review for September, 1902:

"There is a closer relation between the weather bureau and the operation of freight trains than is generally known. On the Pennsylvania lines, and in reference to train movements from

Pittsburg to the west and northwest, this is particularly the case.

"Every day at noon the freight transportation department of the lines receives the weather report for the ensuing twenty-four hours from Observer Cox, of Chicago. His district extends from the Rocky mountains to the line dividing eastern Indiana from Ohio, and his standing for accuracy is such that, in the winter season particularly, the make-up of trains is arranged in accordance with Cox's reports—that is, the hauling capacity of a freight engine is decided upon on receipt of the daily bulletin. To this end four classes are arranged, designated alphabetically. The report being favorable places the engine's load in class A, or full capacity, 1,750 tons. Class B denoted a reasonably good weather report, but limits the locomotive's load to 1,625 tons. Still worse weather means a reduction of the load to 1.475 tons, or 150 tons less than class B. When Mr. Cox announces specially bad weather the order goes out for class D, which means that no engine shall leave Pittsburg for the west with more than 1,225 tons. In this way delays through storms and snowfalls and extreme low temperature are greatly lessened.

"In the case of stock trains, class A is not 1,750, but 1,450 tons, and for high class freight running at higher speed than ordinary freight, this class means only 1,525 tons per train, with the same allowance for the three lower classes as is given above.

"The load having been established in the office of the superintendent of freight transportation in accordance with the weather report, the order of the superintendent goes out to the trainmasters and thence to the yardmasters, who arrange the engine's load in accordance with instructions. It is doubtful if the United States Weather Bureau finds more practical application anywhere than in operating freight trains out of Pittsburg to the West."

WEATHER CROP CONDITIONS.

November was over 8° warmer than usual and there was also more than the normal amount of precipitation, humidity and cloudiness. These conditions as to the weather, and the prevalent excess of moisture in the fields retarded the corn harvest to considerable extent, and at the close of the month more than the usual amount of that important crop was still afield, with the advent of winter close at hand. The fall has been somewhat in line with the preceding wet summer, making it quite difficult in large areas of the state to secure the corn crop in condition to prevent further damage And yet the work was pushed rapidly as possible with all the help that could be secured.

Pasturage was green and abundant throughout the month. The potato crop was generally harvested in good condition before the middle of November.

CLIMATOLOGY OF THE MONTH NOVEMBER, 1902.

BAROMETER.—Mean pressure, 30.01 inches; highest observed, 30.34 inches, at Sioux City, on the 10th; lowest observed, 29.61 inches, at Sioux City, on the 12th; range for state, .73 inch.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 108 stations, was 41.2 degrees, which is 8.4° above normal. By sections the mean temperatures were as follows: Northern section, 38.1 degrees, Central section, 41.8 degrees; Southern section 43.7 degrees. The highest monthly mean was 48.2°, at Keokuk; lowest monthly mean, 35.4°, at Sibley. The highest temperature reported was 79°, at Carroll, on the 1st; lowest temperature reported, 4°, at Chester, on the 30th. The average monthly maximum was, 69.5°; average monthly minimum, 16,0°. Greatest daily range, 46°, at Denison; average of greatest daily ranges, 31.4°.

PRECIPITATION. — Average precipitation for the state, as shown by records of 127 stations, was 2.13 inches, which is .71 of an inch above normal. The averages by sections were as follows: Northern section, 2.08 inches; Central section, 1.94 inches; Southern section, 2 37 inches. The largest amount reported was 4.19 inches, at Stockport, least amount reported, .16 of an inch, at Sioux City. The greatest daily rainfall reported was 2.20 inches, at Charles City, on the 14th. Average number of days on which .01 of an inch or more was reported, 7.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 42 miles per hour, from the south, at Sioux City, on the 7th. Average number of clear days, 9; partly cloudy, 7; cloudy, 14.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	29.98	30.22	7, 29	29 70	23, 24 26, 29
Des Moines	30 03	30 30	16	29 64	14
Dubuque	30 03	30.27	10	29.67	23
Omaha, Neb	30 02	30 33	16	29 61	12
Keokuk	30 01	30 28	29	29 72	24
Sioux City	30.01	30.34	10	29 61	12
Means	30 01	30. 14	10	29.6[illegible]	12

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	5395	30	SW	14
Des Moines	6604	36	SW	11
Dubuque	5205	30	S	14
Keokuk	5902	34	SW	14
La Crosse, Wis	5834	25	S	23
Omaha, Neb	6892	31	SE	23
Sioux City	8890	42	S	7

OBSERVERS' NOTES.

ALTA—*David E. Hadden.* November, 1902, was generally cloudy, wet and warm. First snowstorm on the 25th.

AUDUBON—*Frank Mott.* Corn about two thirds in crib.

BAXTER—*W. T. Thorp.* About three-fourths of corn gathered, and 50 per cent merchantable.

BONAPARTE—*B. R. Vale.* Only 3.18 inches of rain in November, but the soil is too wet to plow; corn gathering much hindered; first snow on 29th; stock still on pasture.

BRITT—*Geo. P. Hardwick.* A damp, cloudy month, especially the second decade; unfavorable for cribbing corn; lung disease fatal to hogs.

CLINTON—*Dr. Luke Roberts.* Cloudiness for the month was 66 per cent. The number of cloudy days was 16; partly cloudy 6; clear 8. Mean temperature 43.8°, or about 8 9° above normal; rainfall 2.51 inches,—about .59 of an inch above normal.

EARLHAM—*Geo. Phillips.* About [20 per cent of corn in the fields.

GRAND MEADOW—*F. L. Williams.* Month very cloudy but favorable for fall work; much plowing done and corn generally gathered.

LOGAN--*Mrs. M. B. Stern.* Month remarkable for damp and cloudy weather; bad for soft corn.

RIDGEWAY—*Arthur Betts.* A green November, and extremely mild. Only 111 hours of sunshine; from 9th to 16th no sun appeared; first snow on ground 26th; ripe pumpkins unharmed in fields up to 25th; observer ate an excellent watermelon fresh from the field on the 17th and picked flowers from snow drifts December 1.

WAUKEE--*E. J. Leonard.* Weather unusually mild; on majority of the mornings there was no visible white frost.

BELATED REPORTS.

OGDEN.—July. Mean temperature, 73.4°; highest, 95°, on the 25th; lowest, 52°, on the 10th; greatest daily range, 32°; total precipitation, 8 87 inches; greatest in 24 hours, 1.60 inches, on the 8th; number of rainy days, 11.

SPIRIT LAKE.—August. Mean temperature, 68.4°; highest, 91°, on the 8th; lowest, 41°, on the 12th; greatest daily range, 37°; total precipitation, 6 08 inches; greatest in 24 hours, 1.60 inches, on the 30th; prevailing direction, northeast and south; number of clear days 7, partly cloudy 11, cloudy 13, rainy 9.

SPIRIT LAKE.—October. Mean temperature, 51.3°; highest, 83°, on the 22d; lowest, 24°, on the 28th; greatest daily range, 34°; total precipitation, .48 inch; greatest in 24 hours, .48 inch, on the 31st; total snowfall, trace; prevailing direction, south; number of clear days, 20; partly cloudy 5, cloudy 6, rainy 1.

ERRATA IN SEPTEMBER REVIEW.

GRUNDY CENTER. — Mean temperature recorded 59.0° on page 8, should have been 58.0°.

LANSING.—Mean temperature recorded 60.2° on page 8, should have been 60.1°. Mean maximum temperature recorded 71.9° on page 10, should have been 71.8°.

LOGAN.—Mean temperature recorded 59.4° on page,8 should have been 59 3°. Mean maximum temperature recorded 70.6° on page 11, should have been 70.4°.

NEW HAMPTON.—Mean temperature recorded 55.0° on page 8, should have been 55.8°. Mean minimum temperature recorded 43.6° on page 11, should have been 45.1°.

WAVERLY.—Mean temperature recorded 58.7° on page 8, should have been 58.6°. Mean minimum temperature recorded 49.0° on page 11, should have been 48.9°.

WILTON JUNCTION.—Mean temperature recorded 60.5° on page 8, should have been 61.0°. Mean maximum temperature recorded 71.6° on page 11, should have been 72.6°.

CLIMATOLOGICAL DATA FOR NOVEMBER, 1902.

NORTHERN SECTION

STATIONS	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT							PRECIP., IN INCHES				Number rainy days	SKY			Prevailing direction of wind	DATES OF THUNDERSTORMS.
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)		Number clear days	Number partly cloudy days	Number cloudy days		
Algona (*a*)	Kossuth	1,213	9	38 8	†9.7	70	1	13	27	27	2.50	†1.46	1.00	1.5	5	7	6	17	SE	
Alta	Buena Vista	1,513	10	36.0	†7 0	67	1	10	27	27	2 77	†1 77	1.53	2.0	8	7	9	14	N, NW, SW	
Alta (near)	Buena Vista	....	....	.....	.....	.....	.....	.....	.....	.....	3 16	.....	1 88	2 5	7	....	....	....	.....	
Britt	Hancock	1,230	....	36.8	.....	64	1	12	30	29	2.29	.....	1.19	1.8	10	5	9	16	NW	
Charles City	Floyd	1,012	10	40 7	†11.4	66	1	9	30	31	3.18	†1.84	2 20	3.0	5	7	9	14	N	
Chester	Howard	.....	....	37 0	.....	63	12, 13	4	30	35	2 38	....	1 25	4.0	8	7	7	16	NW	
Clear Lake	Cerro Gordo	984	....	37.2	.....	63	1	12	29, 30	34	2 30	.....	1.80	2 0	5	8	9	13	NW	
Decorah	Winneshiek	87[illegible]	8	40 4	†10.1	65	1	11	30	28	2 07	† 54	1.08	3 5	7	....	.	....	.....	
Elkader	Clayton	600	20	43.2	†11.9	67	11	15	30	32	1.91	† .19	1.05	2.0	6	10	3	17	SE, NW	2
Forest City	Winnebago	1,220	....	37 0	.....	63	1	12	30	28	3.34	...	1.63	2 0	7	6	4	20	W, SW	
Grand Meadow	Clayton	1,18[illegible]	10	40 4	†9 9	65	1	16	30	2[illegible]	2.15	† .53	1.17	3 2	7	7	6	17	SW	
Greene	Butler	94[illegible]	..	40.2	.....	68	1	14	30	28	2.32	.....	1.20	2.0	8	6	7	17	W	
Hampton	Franklin	1,000	11	40.4	†10.7	72	1	18	30	31	2.16	† 37	1 35	2.0	8	7	10	13	SW, NW	
Hanlontown	Worth	...	...	37.0	.....	65	13	10	30	36	2 14	.....	1.27	2 0	11	8	5	17	S, NW	2
Humboldt	Humboldt	1,09[illegible]	8	40.0	.....	67	1	15	27	34	2.28	†1.38	1 25	T	8	9	2	19	NW	
Lansing	Allamakee	632	...	40 9	.....	67	12	12	30	35	1.75	.....	.70	T	5	7	2	21	.....	
Larrabee	Cherokee	1,365	10	36 2	†6.2	62	1	11	27, 29	30	1 48	† .53	.55	2.2	8	5	10	15	SW, NW	
Le Mars	Plymouth	1,224	.	36 8	.....	61	1	11	29	33	.35	.....	.20	T	4	12	5	13	S	
New Hampton (*a*)	Chickasaw	1,166	....	38 6	....	64	1	10	30	28	2.37	.....	1.18	4 0	7	7	4	19	NW	
Northwood	Worth	1,222	....	37 6	....	65	1	9	30	31	2 42	...	1.24	3 2	9	7	5	18	NW	2
Osage	Mitchell	1,184	10	38.1	†11.7	62	1 and 12	10	30	27	2.10	† .62	1 00	5 2	9	6	6	18	S	2
Plover (*c*)	Pocahontas	1,426	....	35.5	.....	63	1	11	30	28	2.45	....	1 21	1 0	4	8	2	20	N	
Ridgeway	Winneshiek	1,215	...	41.9	.....	69	11	14	30	34	2 48	.....	1. 6	2 8	13	7	10	13	S	2
Rockford	Floyd	.....	..	.....	.....	.....	.....	.....	.....	..	1.85	.. ...	1 1[illegible]	2.5	4	8	3	19	NW	
Sheldon	O'Brien	1,406	...	36 8	.....	61	8	15	27, 30	35	.47	. .	.30	.5	8	12	5	13	S	
Sibley (*a*)	Osceola	1,506	....	35.4	.....	63	1	11	26, 29	29	.53	. ....	.28	.5	6	....	....	....	NW	
Sioux Center	Sioux	.....	..	34 9	.	59	8	11	29	32	.35	.. ....	.20	1.5	3	13	2	15	S	
Spirit Lake (9) †	Dickinson	1,458	..	34 4	....	60	10	12	29	38	.....	.....	.....	...	....		....	..	.....	
Storm Lake	Buena Vista	1,440	12	37.1	.....	66	1	12	27	29	2.94	†1.15	1 60	5	9	9	6	15	SW, NW	
Washta	Cherokee	1,157	..	...	.....	.....	.....	.....	.....	.....	1.82	.....	1.00	2.0	5	10	10	10	SE	
Waverly	Bremer	942	....	40 8	.....	69	1	17	30	29	2 36	.....	1.22	2 5	10	6	6	7	17	NW
West Bend	Palo Alto	1,197	8	37.8	†10 .1	64	1	14	27	27	1.87	† .31	.95	1.0	6	6	7	17	S, NW	
West Union	Fayette	1,115	..	.....	.....	.....	.....	.....	.....	.....	1.94	.....	1.25	3 0	3	..	....	....	SW	
Average		.....	...	38 1	†9 9	65.0	.....	12.1	.....	30.7	2.08	† 89		2.1	7	8	6	16	NW	

CLIMATOLOGICAL DATA FOR NOVEMBER, 1902—CONTINUED.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	PREC., IN INCHES. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	SKY. Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.	DATES OF THUNDER-STORMS.
Amana	Iowa	721	25	44.2	†12.2	69	1,11	21	30	27	1.77	† .03	1.08	2.8	9	6	10	14	NW	2
Ames	Story	926	21	40.8	† 9.0	74	1	18	24	33	1.11	- .11	.77	T	7	13	1	16	SW	
Baxter	Jasper	998		43.1	....	74	11	20	25	30	2.30	.....	1.03	1.0	7	9	7	14	NW	
Buckingham	Iowa	...	...	.....	.....	..	.....	...	.....	.....	2.17	.....	1.25		4	5	15	10		
Carroll	Carroll	1,265	11	38.5	† 7.4	77	1	10	27	33	2.51	†1.43	1.12	3.8	6	11	6	13		2
Cedar Rapids	Linn	733	19	44.8	†10.2	71	11	23	30	31	1.47	- .03	1.11	1.8	5	4	11	15	S, NW	
Clinton	Clinton	609	10	44.6	†11.0	71	1, 2, 12	18	30	32	2.51	† .52	1.30	3.5	8	8	6	16	SW	
Davenport	Scott	529	31	40.5	† 9.7	72	11	25	30	32	1.95	- .11	1.12	.5	8	8	9	13	S	
Delaware	Delaware	1,083	10	40.9	†11.4	65	1, 11, 12, 13,	11	30	30	1.79	† .02	1.02	4.3	6	8	5	17	SW	1
Denison	Crawford	1,180	8	38.4	† 6.7	69	1	9	27	46	1.40	† .40	.86	1.5	5		..	....	N	
Des Moines	Polk	861	24	42.2	† 6.8	72	1	24	27	28	1.65	- .05	.80	T	9	6	10	14	SW	2
De Soto	Dallas	866		43.0	.....	71	1	21	25	28	1.90	.....	.88	..	4	10	2	18	NW	
Dubuque	Dubuque	655	29	44.0	† 9.0	69	12	22	30	23	.86	-1.24	.69	1.1	7	5	7	18	S	
Galva	Ida	1,190	8	.....	....	.....	.....	9	27	...	2.76	†1.61	1.83	1.5	4	12	1	17	S	
Gilman	Marshall	1,052	..	.....	.....		.....	...	..	....	2.35	.....	1.20	1.	8	7	10	13	S	
Grinnell	Poweshiek	1,02	11	42.0	† 7.5	69	1	20	26, 29	23	2.16	† .63	1.21	1.5	5	13	5	12	S	
Grinnell (near)	Poweshiek	.....		43.0	....	70	1	18	30	29	2.05	....	1.15	2.5	7	7	8	15	SW	2
Grundy Center	Grundy	976	10	41.2	†10.6	71	1	17	30	30	2.28	†1.28	1.30	2.5	7	9	5	16	SW	
Guthrie Center	Guthrie	1,077		40.6	...	73	1	17	25, 27	31	1.91	...	.76	T	5	9	6	15	SW	1
Harlan	Shelby	1,192	....	38.0	...	72	1	15	30	33	1.45	.....	.75	1.0	8	5	9	16	S	2
Independence	Buchanan	921	39	41.4	† 9.4	67	1	21	28, 29	31	1.50	- .01	.50	2.4	5	12	5	13	SW	
Iowa City	Johnson	644	11	44.8	† 9.0	74	1	16	30	45	2.25	† .53	.86	3.0	9	8	13	9	S, NW	
Iowa Falls	Hardin	1,107	8	39.5	† 9.8	70	1	19	29	27	1.90	† .53	1.23	1.0	7	9	5	16	NW	2
Jefferson	Greene	1,052		.....		.....	.....		....	....	2.34	.....	1.20	.8	6	..	....	....	NW	2
LeClaire	Scott	576		.....	.....		.....	.....	.....		1.54	.....	1.03	0.5	7		....	....		
Logan	Harrison	928	36	39.6	† 4.7	72	1	12	27	26	1.53	† .47	.62	2.1	8	11	8	11	SW, NW	
Maquoketa	Jackson	688	8	44.2	† 8.4	70	1, 12	11	30	31	2.17	† .61	.67	..	8	11	6	13	NE	
Marshalltown	Marshall	947	11	43.6	†11.0	73	1, 12	21	25	31	2.66	†1.58	1.36	1.0	12	7	10	13	NW	
Mt. Vernon	Linn	847		41.4		71	1	15	30	32	.77	....	.28	3.9	9	8	4	18	S	
Newton	Jasper	592	14	43.0	†10.3	69	1	21	25, 30	31	2.56	† .69	1.18	2.5	6	7	11	12	N, SE, S	
Odebolt	Sac	1,356	....	36.7	....	67	1	15	25	28	1.78	.....	.75	2.5	9	14	3	13		
Ogden (e)	Boone	1,21	....	43.3	.....	77	1	22	27	32	2.02	.....	1.14	.5	5	14	2	14	NW	
Olin	Jones	760		43.6	.....	68	1, 12, 13	12	30	29	1.72	.....	.68	2.2	7	9	6	15	NW	
Onawa	Monona	1,053	....	39.2	....	67	1	13	27	32	3.15	....	1.10	2.1	13	15	1	14	SE	
Perry	Dallas	975	..	41.6	....	71	1	20	27	31	2.51	.....	1.11	..	6	11	10	9		
Rockwell City	Calhoun	....	..	38.0		68	1	19	29	30	1.60	.....	1.15	....	5	9	11	10		
Sac City	Sac	900	22	8.4	† 5.3	68	1	12	27	31	1.97	† .81	.91	2.7	9	8	7	15	NW	
Scranton (b)	Greene	1,172	...	28.8		67	12	16	27	32	1.41	.....	.76	8	7	12	3	15	NW	
Sioux City	Woodbury	1,122	13	37.5	† 3.2	62	23	10	27	33	.16	- .65	.05	8	7	8	7	15	NW	
Tipton	Cedar	807	....	43.8	..	72	12	18	30	32	2.72	....	1.60	3.2	6	10	6	14	W	
Toledo	Tama	856	7	42.8	† 9.8	72	1	20	25	30	2.57	†1.27	1.35	2.6	7	10	7	13	NW	
Vinton*‡	Benton	850	11	42.4	† 9.6	69	1	22	25		1.70	† .57	1.25	2.6	5	11	2	17	NW	
Waterloo	Black Hawk	862	22	41.9	† 5.3	70	1	10	30	31	1.83	† .40	1.25	2.3	8	9	6	15	W	2
Wilton Junct'n	Muscatine	683		44.3	.....	71	11, 11	16	30	30	3.24	.....	1.55	7.0	6	14	1	15	S	
Whitten	Hardin	1,026	...	41.8	....	71	1	18	30	34	1.68	.....	1.00	.5	4	7	9	14	NW	2
West Branch	Cedar	.....		....	....	.....	.....	.....	.....	....	1.92	.....	.66	3.0	9	6	13	11	S	
Waukee	Dallas	.....	..	.....	.....	....	...	.....	.....	.....	1.86	.....	.96	T	8		..			
Average				41.8	† 8.6	70.5		17.2		31.5	1.04	† .45		1.9	7	9	7	14	NW	

SOUTHERN SECTION.

Afton	Union	1,212	....	42.4	.....	71	2, 12	20	27	30	1.90	.....	.79	.5	5	13	7	10	SW	
Albia	Monroe	945		45.8	....	75	11	22	14	33	3.14	...	1.27	T	8	8	9	13	SW	
Atlantic	Cass	1,164	10	42.3	† 7.8	73	1	14	27	37	2.68	† 1.92	.98	.2	6	5	10	15	NW	1
Audubon	Audubon	1,301	....	38.6	.....	74	1	12	27	33	1.78	.....	1.22	.4	5	8	6	16	SW	
Allerton	Wayne	.....		45.0	....	73	11	21	27	35	2.28	.....	1.18	1.0	11	5	13	12	SW	
Bedford	Taylor	..	....	42.9	.....	72	12	14	27	31	2.10	.....	.93	.8	5	9	8	13	NE	
Belknap	Davis	877	....	45.0	....	73	11, 12	18	30	30	2.65	.....	.80	4.0	10	9	10	11	S	
Bonaparte	Van Buren	.....	10	45.5	† 9.3	75	12	21	30	33	3.18	† 1.26	1.00	4.0	4					
Burlington	Des Moines	544	..	47.6		74	1	26	28, 30	29	2.32	....	.66		9	12	7	11	NW	
Bussey	Marion	..	...	.....	....	.....	.....	..	....		1.88	.....	.95	..	6	....				
Chariton	Lucas	1,042	....	44.1		76	12	21	25	33	2.89	.....	1.13	.2	14	6	11	13	S	
Clarinda	Page	1,069	11	42.5	† 6.7	73	12	16	27	32	2.05	† 1.11	.85	.1	6	7	10	14	S	
College Springs	Page		10	43.1	† 6.0	70	12	16	27	31	3.66	† 2.88	1.25	.	8	17	11	2	SE	
Columbus Jct.	Louisa	595		45.5		72	1, 11, 12	20	30	39	2.18	...	.72	4.8	9	9	12	9	SW	1
Corning	Adams	1,127	9	41.5	† 5.7	70	1, 12	15	27	32	2.01	† 1.16	.81	.7	6	8	7	15	SW	
Council Bluffs	Pot'wat'mie	990	..	40.6	.....	75	1	15	27	33	1.67	...	.60	.4	6	5	16	9	NW	
Cumberland	Cass	.....	..	....	....	..	.....	...	.....	.....	1.17	.....	.97	T	2	14	6	10	SW	
Danville	Des Moines	715	...		....	....	.....	..	.....		1.93	.....	.65	2.0	7	11	0	19		
Earlham	Madison	.....	...	40.8	...	72	1	15	21	33	2.14	.....	.91	1.	7	11	5	14	SW, NW	2
Eldon	Wapello	630	..	45.7	....	77	11	21	3, 30	38	2.10	....	.65	3.0	6	8	10	12	SE	
Emerson	Mills	1,053	....	....	....	.....	.....	..	.....	.....	2.05	.....	1.00		4	....	....	..	NW	
Fairfield (a)	Jefferson	...		44.4	....	74	11	12	29	32	2.11	....	.84	.2	7	...	....		SW	
Fort Madison	Lee	516	53	.....	.....		.....	.....	.....	.....	2.69	† .50	1.03	..	6	3	12	15	NE	
Greenfield	Adair	.....	10	42.5	† 8.7	73	1	14	27	29	1.26	† .46	.89	.1	10	9	8	13		
Hopeville	Clarke	.....		....	.....		.....	.....	.....	.....	1.93	.....	.90	T	6			....		1, 2
Indianola (b)	Warren	560	10	45.0	† 9.0	71	1, 12	...	.....	.....	2.19	† 1.29	1.15	T	0	9	6	15	SW, NW	2
Keokuk	Lee	619	30	48.2	† 9.4	76	11	27	26	28	2.63	† .48	1.13	.5	11	7	9	14	SW	2
Keosauqua	Van Buren	644	9	45.4	† 9.3	75	11, 12	21	30	28	3.22	† 1.93	1.92	3.0	7	...		....		
Lacona	Warren	.....	....	..	.....	.....	.....		.....	.....	2.55	.....	.98		11	6	19	5		
Lenox	Taylor	1,250	..	42.0	....	71	12	15	27	30	1.58	.....	.62	.5	6	11	7	12	S	
Leon	Decatur	.....	....	44.3	.	71	12	21	27	30	2.37	....	.90	.5	11	11	8	11	N, SE	
Mt Ayr	Ringgold	1,236	8	42.8	† 7.4	70	12	19	27	31	2.03	† .73	.65	1.0	12	5	10	15	S	
Mt Pleasant	Henry	729		43.0		72	1	15	30	36	1.82	..	1.50	7.1	5	11	9	10	NW	
Omaha, Neb	Douglas	1,115	32	41.4	† 4.8	74	1	17	27	33	1.32	† .32	.49	.3	8	7	10	13	N	
Osceola	Clarke	1,110	...	43.6		72	12	20	26	32	3.54	.....	1.25	....	13	10	8	12	SW	
Oskaloosa	Mahaska	847	18	44.9	† 9.2	73	12	22	29	30	.87	† .2	.88	.5	9	12	2	16	SW	
Ottumwa (a)	Wapello	630	7	46.5	†10.1	75	11	27	28	29	2.25	† .62	1.01	1.5	5	9	9	12	W	
Ovid	Wayne	992	8	44.9	† 9.2	71	11	19	25	34	2.41	† 1.03	1.16	1.0	12	6	7	17	SW	
Pacific Junction	Mills	960	....	40.6	.....	72	1	14	27	34	1.48	.....	.65	1.2	7	5	16	9	N	
Red Oak	Montgom'ry	1,037	....	45.9	....	70	1	18	27	30	3.31	.....	1.87	.5	5	6	15	9	SE	1
St Charles	Madison	1,070	....	44.4	.....	74	1	21	25, 27	30	2.59	...	1.05	.4	13	11	6	13	S	2
Sigourney	Keokuk	768	....	45.4	..	78	1	21	25, 30	33	2.44	.....	1.00	2.0	7	12	13	5	SW, NW	
Stockport	Van Buren	....	...	....	....	.....	.....	.....	.....	...	4.19		1.76	6.0	7	9	7	14	SE, SW	
Thurman	Fremont	..	...	41.0	...	73	12	13	27	38	2.71	....	1.60	..	5	11	5	14	SW, NW	2
Wapello	Louisa	578	....	45.8		70	11, 12	25	30	27	2.41	..	.72	4.0	6	12	9	9	S, NW	
Washington	Washington	760	11	42.9	† 7.3	71	1, 2	17	30	34	2.35	† .89	.90	..	7	....	...		SW	
Winterset	Madison	1,120	10	43.4	† 9.7	73	1	19	27	32	2.26	† 1.08	.95	T	6	12	4	14	S	
Woodburn	Clarke	961		...	.....	..	... .	.....	.....	.....	2.45	...	.85						NW	
Average		...	....	43.7	† 8.1	73.1	.....	18.6	.....	32.1	2.37	† .05	.....	1.4	7	9	9	12	SW	
Average for the state		.....	...	42.2	† 8.0	72.5	...	16.9	.....	31.4	2.13	† .80		1.8	7	9	7	14	NW	

*Means determined from 7 A. M., 2 P. M, and 9 P. M. observations, and maximum and minimum are taken from eye readings. ‡Received too late to be computed with means. a, One day missing; b, two days, etc. §Not supplied with self registering instruments. † Above normal.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR NOVEMBER, 1902.

STATIONS.		DATE.																													Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max.	66	71	55	60	49	41	52	59	59	51	68	71	66	40	45	50	39	46	51	61	58	56	54	50	42	34	35	43	37	45	..	51.9
	Min.	43	45	32	40	35	32	25	40	47	33	38	57	37	34	30	28	24	28	31	44	41	36	25	33	22	21	20	24	21	21	..	34.9
Albia	Max	74	68	60	58	57	48	54	67	68	59	75	74	67	55	52	43	41	57	59	65	57	54	57	50	43	37	40	46	38	48	..	55.8
	Min	58	46	35	50	39	29	39	42	51	49	43	60	39	22	30	32	30	33	30	43	41	35	27	31	23	25	25	24	27	24	..	35.9
Algona	Max	70	61	54	51	43	43	5	56	57	40	60	63	49	..	40	..	37	41	48	49	46	47	52	52	40	35	36	42	37	37	..	47.7
	Min	55	40	35	30	31	20	28	40	31	24	35	43	27	..	31	22	24	30	31	40	32	31	27	29	22	19	13	25	19	7	..	29.9
Allerton	Max	72	62	59	59	52	45	51	65	67	64	72	72	67	54	49	43	45	47	58	63	57	57	56	51	47	41	40	45	37	47	..	54.9
	Min	57	44	29	50	38	31	37	42	48	30	42	58	40	36	25	31	29	30	28	47	45	37	23	35	22	23	21	23	27	22	..	35.1
Alta	Max.	67	53	53	47	38	41	52	57	45	36	62	60	36	32	32	30	44	48	44	45	44	42	54	42	32	28	32	37	30	37	..	43.5
	Min.	49	38	34	34	31	28	28	42	21	21	33	36	30	28	30	23	23	31	30	35	35	28	25	25	20	16	10	25	12	16	..	23.5
Amana	Max.	69	61	56	6	50	43	50	63	65	56	69	63	55	56	51	43	45	45	54	59	55	51	37	26	31	24	26	27	25	21	21	..	36.1
	Min	53	42	39	18	42	33	25	43	47	41	41	61	41	41	39	4	35	33	29	40	41	55	60	50	50	56	47	41	30	37	43	43	43	..	52.2
Ames	Max.	71	60	57	55	43	43	54	54	53	44	68	69	..	43	45	42	40	41	25	25	22	33	31	32	33	18	20	23	23	21	33	24	..	31.3
	Min	41	41	31	31	34	32	25	40	42	43	39	38	35	35	12	27	25	25	22	33	31	32	33	18	20	23	23	21	33	24	..	49.1
Atlantic	Max	73	63	56	53	44	42	53	57	56	31	68	69	57	33	43	35	41	42	46	63	48	47	57	49	44	31	36	42	36	45	..	31.5
	Min	57	46	30	44	32	29	24	44	36	31	31	57	35	30	27	28	25	31	28	34	42	30	23	29	17	17	14	27	21	25	..	47.7
Audubon	Max..	74	63	56	53	43	41	53	54	53	45	67	67	49	40	39	43	43	40	45	56	46	41	55	44	41	32	30	41	35	43	..	29.4
	Min	56	42	32	38	0	23	25	41	33	29	34	34	32	30	27	21	22	30	31	40	32	31	20	26	19	18	17	20	18	23	..	53.0
Baxter	Max.	72	65	59	65	51	44	55	60	59	53	74	69	67	51	47	40	41	40	55	57	55	50	58	55	43	40	38	42	16	41	..	31.2
	Min.	55	42	29	44	35	30	25	42	43	31	38	57	37	..	31	28	25	27	30	44	39	32	23	32	20	24	23	24	21	21	..	52.7
Bedford	Max.	68	65	56	63	50	45	53	58	60	63	68	72	68	42	43	42	36	42	52	62	61	51	55	51	47	30	39	42	39	46	..	51.1
	Min	58	39	29	48	34	23	24	30	39	35	59	58	38	33	29	29	21	30	31	46	47	33	21	35	20	22	14	27	21	23	..	55.5
Belknap	Max	72	72	60	60	58	48	58	65	63	62	73	73	68	68	55	45	45	50	57	62	58	56	54	53	43	39	36	42	35	40	..	34.5
	Min	51	45	30	49	40	32	28	40	47	40	41	43	39	21	32	31	29	29	40	43	37	21	38	22	25	21	25	2	18	..	55.4
Bonaparte	Max	73	67	60	50	56	47	53	67	69	62	74	75	67	57	62	50	44	53	59	60	55	54	55	50	44	38	35	42	33	44	..	55.6
	Min	56	41	28	49	45	33	29	40	49	46	45	60	43	27	29	25	37	30	33	42	41	35	23	34	24	27	26	23	27	2	..	35.6
Britt	Max.	64	56	54	50	41	39	49	57	43	35	58	62	45	35	40	34	36	40	53	49	45	42	52	41	43	32	35	40	33	37	..	44.6
	Min.	52	33	29	37	31	28	24	39	31	24	35	45	29	28	31	21	23	30	35	38	32	28	23	26	20	20	15	25	16	12	..	28.9
Burlington	Max.	74	71	62	50	56	47	55	63	70	64	74	75	63	58	58	47	46	46	60	60	56	53	52	51	47	38	39	41	39	46	..	55.9
	Min.	58	44	46	51	47	35	31	46	52	58	45	63	45	44	34	39	34	36	36	42	45	35	27	39	27	23	23	26	29	26	..	39.2
Carroll	Max.	77	63	57	52	45	41	52	56	52	33	65	62	46	40	42	34	41	45	42	44	46	48	55	52	40	32	37	42	34	42	..	47.5
	Min.	54	41	34	38	30	25	25	34	34	23	32	39	37	31	29	25	22	32	30	32	34	30	26	30	17	18	10	30	12	24	..	29.5
Cedar Rap	Max..	70	63	57	62	51	45	51	61	63	56	71	69	63	58	51	44	43	43	57	58	53	52	51	50	40	37	35	40	38	41	..	52.8
	Min	51	43	33	50	42	36	23	45	51	40	49	62	41	39	37	35	34	32	29	42	40	38	28	36	25	28	25	28	24	23	.	36.9
Chariton	Max.	71	62	57	60	51	44	54	63	61	56	72	76	63	52	52	41	44	43	57	62	56	55	55	48	46	36	27	41	38	48	..	53.3
	Min.	57	40	43	45	37	31	29	42	48	37	42	57	38	36	31	29	27	30	31	45	41	35	25	32	22	24	23	25	27	26	..	34.9
Charles Cy	Max.	63	57	58	64	49	50	45	63	64	58	62	64	63	63	53	42	40	41	51	48	46	45	50	50	37	28	28	20	24	29	9	9	..	50.2
	Min.	62	32	30	41	32	33	23	32	33	32	35	52	36	33	31	30	23	30	35	40	33	34	25	28	28	20	24	29	9	9	..	31.2
Chester	Max.	62	55	54	54	48	42	47	63	55	37	60	63	61	40	37	35	33	34	50	44	62	47	48	47	36	31	32	45	34	34	..	46.3
	Min	52	40	30	30	35	32	32	30	33	31	36	42	32	32	28	23	21	25	30	32	32	23	20	23	15	20	17	17	13	4	..	27.8
Clarinda	Max	70	61	61	61	47	47	57	62	59	46	71	73	60	43	42	36	41	44	51	65	55	50	57	51	46	31	40	43	33	48	..	52.1
	Min.	58	37	31	45	33	27	25	40	42	34	39	60	37	31	30	28	25	3	30	45	46	30	25	29	21	42	16	29	23	20	..	32.9
Clear Lake	Max.	65	58	54	51	41	42	49	58	50	36	60	63	63	36	39	35	35	41	50	62	53	52	55	49	43	35	36	41	36	45	..	45.6
	Min	52	39	34	37	32	29	21	38	32	24	34	45	29	29	29	22	21	28	34	37	31	31	26	27	20	20	15	21	12	12	..	28.9
Clinton	Max.	71	71	60	60	55	48	51	64	69	60	67	7	65	61	52	41	46	53	56	59	51	51	48	48	43	37	38	41	37	40	..	53.9
	Min	50	41	29	46	45	31	27	35	48	40	39	62	45	41	39	38	37	35	29	34	42	31	24	31	28	3	22	19	23	8	..	35.3
College Spr	Max.	68	64	53	59	47	56	54	60	58	53	63	71	61	43	43	37	38	45	50	60	54	50	51	52	43	36	36	44	39	46	..	51.8
	Min	52	51	33	47	33	30	28	40	43	34	37	57	36	33	31	32	25	32	33	45	45	32	29	31	24	21	16	27	22	25	..	34.4
Colum. Jct.	Max	72	67	60	56	53	47	54	65	64	62	72	72	67	57	56	49	45	52	58	58	54	53	51	38	27	32	35	25	21	26	20	..	46.6
	Min	55	43	30	39	35	30	27	25	45	44	41	61	43	42	43	41	35	33	33	42	44	38	27	32	35	25	21	23	26	20	..	50.1
Corning	Max.	70	62	55	50	47	40	52	59	57	54	67	70	66	40	41	35	36	41	50	62	53	52	55	49	43	35	36	41	36	45	..	52.9
	Min	57	41	34	45	33	30	26	41	44	34	37	57	3	33	28	28	28	31	32	45	35	32	21	32	19	21	15	25	22	25	..	49.4
Co. Bluffs	Max.	75	58	60	54	47	41	55	57	57	40	72	70	41	46	41	37	45	49	50	56	50	47	60	45	43	30	30	42	37	45	..	31.8
	Min.	54	39	34	35	32	30	29	43	35	31	38	37	33	32	34	27	27	33	33	41	39	27	29	31	22	21	15	28	17	23	..	51.0
Davenport	Max	70	68	59	58	50	47	53	61	67	58	72	72	66	60	53	45	45	53	58	57	53	51	50	49	43	36	37	41	35	43	..	53.0
	Min	55	43	34	54	46	37	31	41	53	40	40	64	46	42	41	38	38	36	39	43	44	35	30	35	30	31	26	25	27	25	..	30.0
Decorah	Max.	65	61	55	60	47	43	50	63	57	42	62	64	62	48	40	37	37	38	53	50	48	43	48	45	40	33	34	39	28	37	..	47.6
	Min.	53	42	32	40	38	28	22	45	40	30	36	53	40	38	36	30	23	31	36	42	35	37	25	30	20	29	23	22	20	19	..	33.1
Delaware	Max	65	51	52	60	49	46	49	60	61	56	65	65	65	55	47	44	38	40	53	53	49	46	46	43	40	31	35	38	37	35	..	49.6
	Min	50	35	28	41	41	30	23	42	47	20	37	59	40	35	36	31	31	29	28	36	36	31	21	28	21	26	19	2	20	11	..	32.2
Denison	Max	69	60	55	57	43	40	51	52	52	38	64	65	48	36	38	38	43	49	45	51	44	41	48	66	42	35	31	40	36	41	..	47.6
	Min	54	42	..	39	29	29	30	43	31	28	31	43	32	30	29	27	24	32	32	33	30	31	25	20	15	12	9	28	15	22	..	29.3
Des Moines	Max	72	59	53	60	45	42	54	60	58	43	70	70	59	46	47	39	43	41	55	60	50	50	56	49	44	34	36	47	37	48	..	51.1
	Min	58	40	36	41	37	33	30	45	42	37	43	59	38	37	34	20	20	32	29	45	41	31	28	25	26	24	24	28	27	7	..	35.4
De Soto	Max.	71	61	55	58	46	41	51	57	59	45	66	69	65	43	46	39	39	43	52	60	52	50	51	50	46	30	34	45	39	45	..	50.6
	Min.	53	44	46	45	30	33	28	44	45	34	39	60	38	36	32	29	28	32	31	45	44	36	26	32	21	23	22	27	23	27	..	35.5
Dubuque	Max.	63	61	57	58	53	46	50	63	67	47	68	69	67	60	48	44	43	41	55	56	50	43	48	39	32	28	31	27	24	25	22	..	51.4
	Min	52	42	33	49	42	34	26	42	47	39	40	61	43	39	36	37	36	36	31	40	39	36	29	32	28	31	27	24	25	22	..	36.7
Earlham	Max.	72	63	53	59	48	41	53	56	56	49	65	71	66	40	44	38	41	49	61	52	50	55	51	45	37	36	44	47	40	47	..	50.9
	Min	42	42	31	42	33	32	22	28	37	31	35	56	34	34	26	22	28	27	42	42	33	22	32	15	22	18	22	23	26	23	..	30.6
Eldon	Max	70	62	59	59	56	46	54	67	69	59	77	76	68	58	57	49	45	53	60	61	55	61	57	52	45	38	37	46	41	44	..	56.3
	Min	55	41	21	51	41	31	25	42	51	42	44	61	42	40	29	31	33	31	28	42	41	25	22	31	24	20	26	23	27	21	..	35.1
Elkader	Max	65	57	51	63	58	49	52	66	60	48	67	67	61	54	45	41	40	41	59	52	50	52	53	53	44	35	41	42	41	43	..	51.9
	Min	52	40	29	47	40	30	22	41	45	33	35	61	40	39	35	33	32	31	35	41	38	35	23	30	19	30	21	19	23	15	..	31.4
Fairfield	Max	73	62	59	57	50	46	53	67	..	61	74	67	67	57	57	46	47	51	58	62	51	53	55	50	45	38	32	41	31	42	..	53.9
	Min	58	41	24	48	42	31	29	41	..	43	44	61	42	40	30	35	34	30	32	42	42	31	23	33	21	26	23	21	12	20	..	31.8
Forest C'ty	Max.	63	55	53	50	46	40	50	58	50	35	53	61	49	35	36	33	38	37	50	48	45	43	52	48	40	35	37	37	36	37	..	5.2
	Min.	52	40	32	34	31	32	25	34	32	25	32	33	29	28	30	23	22	20	35	34	35	31	24	27	23	20	14	25	17	12		28.7
Galva	Max.	..	.	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.....
	Min	45	40	31	37	31	28	42	..	31	26	32	44	30	29	29	25	25	31	29	33	35	30	40	25	16	16	9	32	13	14	..	29.2
G. Meadow	Max	65	59	54	60	47	46	48	60	57	45	64	64	64	49	41	35	37	38	57	48	43	44	47	45	33	33	35	40	35	36	..	48.1
	Min	52	40	32	40	36	28	23	42	40	30	35	57	38	37	33	40	29	30	35	40	36	33	25	21	23	29	33	23	19	16	..	32.7
Greene	Max..	68	60	55	55	45	42	50	61	53	40	61	63	63	42	41	35	40	46	51	49	49	45	52	49	41	38	37	38	35	38	..	48.2
	Min	54	43	32	41	35	28	24	42	40	31	36	51	35	35	31	27	26	30	36	40	36	33	24	29	21	21	24	23	19	14	..	31.3
Greenfield	Max.	73	64	61	58	54	55	50	48	50	54	63	70	65	59	55	50	47	46	47	60	49	50	53	45	47	35	31	42	38	45		52.4
	Min.	50	41	40	40	32	26	28	33	31	30	45	47	43	38	32	22	31	30	34	41	41	31	21	32	18	24	14	26	22	24	..	32.6
Grinnell	Max	69	63	55	61	50	42	50	60	60	47	67	68	65	53	48	38	49	40	54	53	55	50	52	45	41	35	29	38	34	42	..	50.8
	Min	52	42	29	30	32	30	28	42	41	32	39	53	38	38	31	30	29	31	28	43	40	30	27	31	22	21	21	29	20	23	..	33.1
Grinnell(n)	Max.	70	63	58	62	50	44	52	62	62	55	67	67	63	51	48	40	45	40	53	54	55	50	54	48	41	36	35	40	31	42	..	51.5
	Min	55	41	39	48	38	29	27	42	48	37	40	58	38	37	35	30	29	30	29	42	42	35	21	34	23	25	26	23	24	15	..	34.6
Grundy C'r	Max	7	64	55	60	45	43	50	59	55	48	67	65	65	46	45	37	42	38	55	55	45	44	52	49	41	36	36	39	36	40	..	49.5
	Min	53	40	3	44	35	25	25	43	43	31	37	59	37	36	35	28	25	30	33	40	34	33	23	30	2	24	21	22	20	17	..	34.8
Guthrie Cr	Max..	73	63	56	55	44	41	54	58	56	42	66	70	50	40	40	35	40	47	60	50	47	55	52	45	45	33	35	44	36	43	..	49.4
	Min.	57	40	32	42	32	28	24	40	42	31	38	49	35	27	30	29	21	31	32	39	40	32	21	29	17	20	17	23	27	21	..	31.8
Hampton	Max.	72	59	57	51	45	45	52	62	53	42	65	64	61	39	40	34	40	38	55	51	45	45	54	47	43	36	41	39	33	41	..	48.5
	Min.	53	40	33	30	31	31	21	43	42	30	33	58	33	33	32	25	24	30	35	44	37	33	26	30	21	23	23	23	20	18	..	32.4
Hanl'nt'wn	Max.	61	54	54	50	41	40	49	60	50	36	60	63	63	36	37	34	36	36	50	48	44	44	52	45	40	31	36	37	35	39	..	43.5
	Min.	42	37	32	37	31	29	23	42	31	27	31	..	29	29	30	23	22	29	33	37	35	31	21	27	27	21	15	23	17	10	..	28.5
Harlan	Max	72	62	55	52	42	31	52	52	53	35	67	65	44	37	38	34	40	41	45	55	47	44	55	45	41	35	35	41	32	41	..	40.6
	Min	56	38	23	40	24	23	23	30	35	29	34	43	32	29	27	27	24	30	27	31	38	32	22	29	16	19	16	25	17	15	..	29.4
Humboldt	Max.	67	62	56	60	42	41	51	63	54	37	62	62	63	38	40	37	38	41	50	58	48	45	55	52	42	36	35	42	36	40	..	48.4
	Min.	56	40	36	38	32	30	23	42	34	25	36	50	31	30	32	25	24	10	6	38	38	33	23	30	23	22	15	25	20	20	..	31.5
In'pen'nce	Max.	67	60	55	60	46	43	43	61	53	47	67	65	65	53	48	40	38	38	54	52	50	49	49	45	40	34	35	38	33	36	..	49.1
	Min	50	41	28	44	33	34	24	41	47	35	36	58	33	37	34	31	29	29	31	40	37	35	23	32	22	20	23	21	21	22	..	33.6
Indianola	Max	71	62	57	60	48	43	54	61	58	52	70	71	68	47	47	42	43	42	55	64	59	54	56	53	42	40	..	..	..	37	43	..	56.3
	Min..	59	53	34	46	37	31	28	39	36	37	40	59	48	37	30	21	21	31	28	44	41	39	27	33	25	..	..	..	25	21	..	35.4
Iowa City	Max	74	63	61	58	54	46	55	67	65	55	73	71	67	57	52	54	48	51	58	62	54	52	53	48	46	37	38	40	34	38	..	54.7
	Min.	52	43	28	48	41	33	25	44	48	42	40	64	42	40	31	45	37	33	23	39	42	38	24	32	24	27	25	22	23	16	..	35.0
Iowa Falls	Max	70	60	55	55	45	40	51	58	54	38	64	65	57	34	33	34	25	24	29	36	42	36	30	24	27	20	22	23	23	19	20	..	47.5
	Min.	54	36	31	38	34	26	23	43	35	30	37	57	34	33	34	25	24	29	36	42	36	30	24	27	20	22	23	23	19	20	..	31.5
Keokuk	Max.	72	65	60	58	56	47	50	67	70	54	76	75	64	60	57	42	48	59	60	61	56	52	55	55	44	35	36	43	40	48	..	55.5
	Min.	59	48	37	54	46	36	34	41	56	50	48	64	47	46	36	39	38	39	38	42	44	42	30	41	30	27	31	27	30	30	..	41.0
Keosauqua	Max.	73	65	60	56	56	47	53	64	69	64	75	75	68	57	62	50	45	53	59	60	56	55	55	52	41	33	34	42	43	42	-	55.9
	Min..	57	42	29	50	44	33	25	43	51	47	47	61	44	42	29	36	36	41	33	40

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR NOVEMBER, 1902—CONTINUED.

STATION.		DATE.																													Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Larrabee..	Max...	62	53	56	50	41	42	54	60	41	39	56	53	38	36	33	32	48	50	45	48	49	43	57	45	37	30	33	42	32	46	..	45.1
	Min...	45	42	33	36	32	22	24	40	29	23	32	37	29	28	30	24	23	29	30	33	34	26	27	20	17	15	11	22	11	13	..	27.2
LeMars....	Max..	64	56	50	49	41	42	53	60	52	38	53	53	40	36	37	38	41	52	48	46	50	47	59	47	35	35	34	37	38	40	..	45.9
	Min..	42	40	35	39	32	24	28	40	30	24	31	38	28	24	28	24	26	29	29	30	25	29	26	25	17	15	13	25	11	18	..	27 6
Lenox.....	Max .	69	61	56	59	48	40	52	59	58	54	66	71	66	40	43	34	35	41	51	62	57	53	54	49	42	35	36	40	38	44	..	50 6
	Min...	57	45	2	48	33	30	28	41	44	33	36	57	36	31	3	27	23	29	31	45	45	35	26	33	21	20	15	24	21	23	..	33.4
Leon	Max,.	69	61	57	59	55	43	52	62	66	61	70	71	67	52	46	42	38	43	55	60	57	56	54	50	42	39	34	44	38	44	..	53 0
	Min...	57	46	33	52	33	33	28	43	48	38	40	57	39	36	30	30	27	30	30	47	45	37	27	37	23	23	22	25	27	25	..	35.6
Logan.	Max...	72	65	60	50	45	48	55	54	52	48	60	43	66	53	39	36	42	46	45	50	48	46	55	47	42	38	35	40	37	39	..	48 5
	Min..	42	42	34	40	37	31	26	28	32	30	35	32	40	32	30	30	26	31	30	36	37	26	25	30	18	20	12	28	17	20	..	30.6
Msquoketa	Max...	70	69	59	56	57	50	57	64	68	63	68	70	65	60	47	44	45	51	58	57	53	51	49	49	44	37	43	42	39	40	..	54 2
	Min..	51	42	26	45	44	32	24	30	45	40	39	62	45	40	36	35	35	31	26	34	38	37	21	32	20	30	24	17	21	11	..	34 1
Marsh'lt'n.	Max..	73	66	58	62	51	45	52	60	59	52	60	23	68	48	48	43	43	41	57	59	57	48	54	53	43	50	37	42	38	42	..	53 0
	Min..	53	44	32	46	36	31	24	43	45	35	39	59	37	37	36	29	27	31	31	42	38	34	26	31	21	25	26	24	24	23	..	34.3
Mt. Ayr ...	Max...	68	61	58	61	48	44	53	62	63	57	68	70	65	56	49	41	35	41	54	6	55	51	65	49	45	33	37	43	36	40	..	52 2
	Min...	56	44	30	46	35	30	27	40	45	35	37	56	35	33	31	28	23	28	30	46	41	36	24	34	22	21	19	24	22	21	..	33.4
Mt. Ple's'nt	Max..	72	69	55	55	59	45	55	63	70	65	64	65	65	60	55	52	50	54	55	52	54	55	50	50	50	37	35	42	39	40	..	54.4
	Min...	47	45	20	40	37	26	20	27	35	42	43	45	42	35	25	32	35	29	35	32	40	35	22	30	25	22	23	24	20	15	..	31.6
Mt. Vernon	Max...	71	60	58	67	53	49	52	63	66	56	70	69	67	49	57	45	45	48	58	58	52	49	50	48	46	6	40	39	34	44	..	53.2
	Min...	50	43	30	48	44	32	26	44	47	45	38	60	40	42	40	36	34	34	28	42	9	35	22	35	22	29	22	22	24	15	..	35.5
NewH'pton	Max...	64	..	54	58	45	40	48	61	55	42	61	63	63	45	37	37	35	35	52	54	54	44	49	45	39	36	33	35	36	34	..	46 7
	Min.	50	40	29	42	34	31	24	40	42	29	34	..	35	34	3	27	25	28	34	34	24	32	35	28	2	23	20	22	17	10	..	30 5
Newton ...	Max..	69	65	55	60	50	45	51	60	59	57	66	67	66	51	48	43	43	40	5	59	58	53	53	53	41	41	37	38	40	43	.	52 1
	Min.	57	45	31	46	36	30	26	28	46	35	39	56	37	35	30	29	25	29	29	42	39	33	25	33	21	24	24	35	30	21	..	33 9
Northwood	Max..	65	56	54	52	42	40	50	60	51	35	60	61	61	38	38	34	35	37	45	50	45	44	51	45	41	35	35	35	33	34	..	45.1
	Min..	53	40	31	38	33	30	26	39	32	25	34	44	30	30	31	25	23	29	29	33	30	32	25	28	23	22	17	23	18	9	..	29 7
Odebolt ...	Max...	67	61	57	55	50	40	52	55	50	39	61	63	47	37	38	31	44	49	45	50	45	44	55	55	39	34	35	29	39	40	..	47 0
	Min...	53	40	38	32	30	29	24	43	34	27	38	46	31	30	30	26	24	32	32	35	39	30	27	26	15	16	18	25	27	30	..	26.4
Ogden.....	Max...	77	..	..	60	48	46	56	59	55	..	69	68	72	44	45	.	40	41	56	46	56	50	60	55	48	..	40	37	37	44	..	51.7
	Min..	45	45	33	45	33	31	26	40	44	40	..	43	41	34	44	30	25	.	37	41	39	37	..	29	24	24	22	29	27	..	..	34.9
Olin..	Max...	68	65	56	57	56	48	50	63	67	60	65	68	68	58	48	45	43	46	55	57	53	53	48	45	41	36	35	40	18	38	..	52.2
	Min...	51	45	27	46	45	34	25	43	47	39	39	60	44	34	38	36	36	32	28	36	39	37	22	35	24	30	24	21	25	12	..	35 1
Omaha, N.	Max..	72	56	58	54	44	42	53	56	55	38	70	70	39	47	40	37	43	48	48	55	51	48	58	49	42	31	36	41	37	45	..	48.8
	Min .	55	46	39	40	34	32	33	40	35	31	37	39	33	32	34	29	27	34	33	41	40	35	33	33	27	21	17	31	21	29	..	33 9
Onawa....	Max...	67	61	56	52	43	46	56	6	53	40	61	64	42	42	37	44	43	50	45	47	51	48	50	51	38	32	36	37	16	42	..	48 0
	Min ..	49	43	34	40	33	30	26	43	33	28	35	40	30	30	31	28	26	30	29	36	37	30	27	20	20	18	13	29	16	20	.	30.4
Osage.....	Max..	62	56	53	52	43	37	47	60	52	35	59	62	61	39	39	32	26	30	35	41	46	33	24	29	20	39	36	33	35	35	33	..	45 1
	Min...	52	4	30	41	35	29	25	42	35	29	35	47	34	33	32	26	23	30	35	41	46	33	24	29	2	23	21	24	18	10	..	31.1
Osceola....	Max..	70	61	59	65	47	45	54	60	62	56	70	72	67	42	48	40	39	55	59	61	54	57	51	45	40	48	46	45	37	48	.	53.9
	Min .	57	39	34	46	35	33	26	46	53	35	40	51	38	32	30	27	24	26	27	37	33	26	32	27	22	20	22	23	26	26	..	33 2
Oskaloosa .	Max...	72	62	58	62	52	43	53	65	67	56	73	71	66	55	49	42	47	45	57	63	59	52	54	48	43	38	38	41	37	48	..	54 0
	Min..	58	41	35	50	40	30	27	4	50	40	43	59	40	9	30	32	30	31	27	43	43	36	24	35	22	27	26	25	22	25	..	35 8
Ottumwa ..	Max...	74	56	59	60	51	46	54	66	68	49	75	74	..	58	53	45	44	52	59	63	58	.	56	53	44	41	36	42	37	45	..	54 2
	Min...	58	43	35	48	44	35	30	45	55	44	46	64	44	42	34	35	34	35	30	44	..	39	29	37	27	29	29	27	28	27	..	38 8
Ovid.....	Max...	73	64	59	57	54	5	54	65	67	61	74	3	66	53	49	44	47	48	59	61	56	55	57	54	49	38	40	45	38	48	..	55 4
	Min...	57	44	30	52	37	29	28	41	48	38	40	57	38	35	29	30	29	28	28	45	43	35	45	55	48	43	30	34	43	35	44	..	49.1
Pacific Jct.	Max ..	72	63	57	55	44	41	51	57	58	40	71	71	44	40	42	37	42	47	48	58	52	45	55	48	45	30	20	21	14	28	20	21	..	32.1
	Min .	54	40	33	43	33	33	27	40	40	32	37	44	35	32	33	28	25	32	32	38	40	33	21	30	20	21	14	28	20	21	..	32 1
Perry.....	Max.	74	62	56	57	46	42	53	59	55	42	64	68	..	40	42	47	39	41	52	59	49	49	37	47	42	35	35	44	37	43	.	49 5
	Min...	58	41	32	44	34	32	28	43	41	33	38	59	36	33	32	28	25	30	34	41	37	34	26	32	2	22	20	27	21	24	.	33.7
Plover.....	Max..	63	48	50	55	42	50	51	58	49	.	59	60	..	38	39	34	40	42	43	48	44	42	44	40	37	34	39	40	35	38	..	45.1
	Min .	44	..	..	..	25	42	25	36	32	18	35	40	27	24	10	20	21	26	35	35	..	28	23	22	22	16	15	25	15	11	..	25 9
Red Oak..	Max ..	70	65	61	55	47	40	58	58	57	53	68	69	66	52	43	37	52	53	56	59	58	50	51	50	45	37	34	53	49	41	..	56 2
	Min ..	8	46	35	44	35	33	29	41	44	32	38	59	36	33	34	33	28	33	35	45	45	36	31	34	22	23	18	30	23	28	..	35.6
Ridgeway..	Max.	68	62	55	57	56	50	54	65	56	42	69	68	66	46	44	40	39	42	53	55	46	50	54	46	44	30	24	28	23	23	20	14	..	32 9
	Min. .	52	4	32	44	36	34	24	42	39	31	35	50	37	38	35	28	26	30	36	42	38	29	46	50	50	42	70	30	34	30	40	..	46.0
Rockwell C	Max ..	68	62	56	53	53	41	54	55	54	36	64	63	54	41	45	34	40	45	42	42	38	29	46	50	50	21	19	15	21	19	20	..	29.5
	Min ..	54	42	35	38	35	31	22	35	34	27	34	53	32	31	24	24	25	28	25	30	30	23	23	35	21	8	32	34	35	36	38	..	46.9
Sac City....	Max.	65	56	55	56	41	40	52	55	49	35	61	62	61	42	40	35	44	49	46	45	46	45	55	51	18	18	12	25	16	17	..	29 9
	Min	54	42	33	39	30	28	25	40	34	28	32	55	32	30	30	24	23	30	32	35	30	32	24	29	18	18	12	25	16	17	..	53 9
St. Charles.	Max ..	74	61	60	61	52	49	56	61	59	51	69	70	66	44	48	47	45	41	55	60	66	54	58	45	46	35	42	49	40	49	..	53 9
	Min ..	57	44	34	53	36	33	27	42	43	34	39	58	38	37	30	29	24	30	30	45	43	35	28	34	21	24	21	24	26	27	..	34.9
Scranton ..	Max..	..	63	55	54	45	40	52	63	58	28	66	67	66	39	40	36	40	42	48	51	47	46	55	50	29	34	34	43	37	40	..	47 8
	Min..	..	43	32	43	32	30	24	31	38	30	35	58	..	..	30	26	24	23	32	37	33	32	24	24	19	19	16	25	21	23	..	28.8
Sheldon ...	Max..	58	55	57	60	54	55	57	61	49	38	50	48	39	34	34	33	45	55	45	45	48	45	58	47	39	36	14	36	35	40	..	46.3
	Min	50	47	32	34	32	21	22	40	28	20	30	36	27	26	28	22	23	30	30	30	30	35	24	24	44	16	15	25	16	15	.	27 6
Sibley	Max.	60	58	56	49	37	45	52	61	33	40	49	47	39	32	37	33	44	56	45	47	48	45	56	46	35	30	35	36	34	..	..	44.3
	Min..	53	3	33	35	22	20	23	32	27	20	29	30	27	23	29	21	23	23	23	32	32	31	26	23	9	11	15	26	11	..	..	26 4
Sigourney .	Max	78	65	59	62	57	45	54	67	69	60	74	71	68	57	50	47	50	51	59	61	59	53	55	50	48	35	38	42	35	45	..	55.6
	Min .	54	43	28	43	40	30	25	42	48	40	41	50	41	39	30	33	33	31	28	41	44	37	23	36	21	25	25	23	20	21	..	35.1
SiouxC'nt'r	Max ..	56	57	15	47	37	40	52	59	19	37	48	48	36	33	24	38	45	52	45	43	48	41	55	46	34	30	35	37	37	38	..	47.3
	Min ..	45	1	40	35	31	22	25	37	28	20	32	35	27	26	29	21	21	27	30	30	32	30	23	24	9	14	12	19	11	15	..	26.5
Sioux City.	Max...	59	55	57	51	39	40	55	59	37	38	54	61	39	38	37	30	45	53	45	45	54	43	62	42	35	30	35	30	38	41	..	45 5
	Min..	46	42	38	36	33	29	29	35	29	27	35	36	29	29	31	22	28	33	32	32	35	29	29	28	22	17	10	20	16	22	..	28.5
Storm L...	Max ..	66	50	52	50	40	40	51	56	48	34	60	59	47	34	34	34	44	47	44	47	45	43	54	48	37	34	36	37	37	42	..	48 0
	Min .	50	40	40	37	30	27	28	43	30	24	31	45	30	28	29	22	23	32	32	37	34	30	29	26	21	16	12	25	14	10	..	29 5
Thurman..	Max...	71	64	57	55	50	41	58	58	46	40	71	73	50	46	42	38	41	45	47	61	51	50	57	50	42	34	34	43	35	44	..	50.2
	Min	57	42	30	47	33	33	24	44	42	31	36	35	35	32	30	27	26	32	28	35	42	34	24	32	19	22	13	28	20	25	..	31.9
Tipton	Max	70	68	68	68	55	48	50	64	67	56	70	72	68	58	52	50	45	50	55	65	56	52	50	48	40	36	35	36	40	42	..	52.9
	Min ..	33	45	28	30	45	34	26	44	50	40	31	60	30	40	38	35	35	45	29	45	40	37	24	35	25	28	24	25	20	18	..	31.6
Toledo	Max ..	72	62	58	63	50	46	53	13	61	47	69	68	63	52	52	39	47	40	56	58	50	48	53	49	43	35	37	40	33	40	..	51.7
	Min .	5	42	28	43	38	30	23	43	46	36	39	60	38	38	37	31	30	31	31	42	38	34	23	30	20	25	24	21	23	21	..	34.0
Wapello...	Max	69	69	57	56	56	48	50	62	66	65	70	70	67	58	51	50	48	51	52	55	53	55	28	32	23	29	28	26	27	24	..	54.2
	Min ..	44	48	0	..	47	36	31	40	43	45	43	62	47	42	36	37	39	34	34	35	47	41	28	32	23	29	28	26	27	25	..	37.4
Washin't'n	Max .	74	64	60	57	59	47	53	61	68	47	73	74	51	57	52	38	46	50	59	50	50	49	52	49	44	34	37	40	34	43	..	52.5
	Min .	50	38	27	46	40	28	26	42	47	41	39	58	41	39	28	33	32	34	29	38	38	32	22	30	20	25	23	20	21	17	..	33.3
Waterloo..	Max	70	60	58	60	48	46	52	63	52	46	68	68	60	52	47	37	43	.0	56	55	40	50	2	24	2	23	25	23	24	22	10	..	32.5
	Min..	54	42	0	42	27	39	25	41	43	34	37	60	64	65	45	43	35	40	38	54	51	48	46	10	44	43	36	36	38	33	38	..	48.4
Waverly...	Max	69	6	56	62	45	41	56	62	55	41	61	64	65	45	43	35	40	38	54	51	48	46	10	44	43	36	36	38	33	38	..	48.4
	Min.	48	41	32	42	26	30	25	42	41	33	35	60	37	36	33	30	27	20	37	42	36	33	24	25	23	24	24	21	20	17	..	33 2
West Bend	Max.	64	55	55	48	42	40	51	56	48	33	60	6	59	36	37	35	37	42	48	49	46	45	52	47	39	34	33	40	36	28	..	45.5
	Min.	15	8	4	34	31	30	24	37	32	24	33	45	32	29	31	24	21	29	33	37	37	31	25	20	21	20	14	25	18	17	..	30.0
Whitten. ..	Max..	7	67	55	58	47	48	52	59	67	47	66	65	65	45	44	40	40	30	53	55	52	48	52	52	4	38	37	42	22	20	..	51.2
	Min..	54	44	30	37	34	32	32	30	44	32	32	50	35	35	37	25	25	28	34	45	35	33	23	30	21	22	22	22	20	18	..	32.3
Wilton Jc .	Max.	71	70	48	57	55	48	52	63	68	61	71	70	65	55	52	48	45	51	56	58	52	51	49	47	42	36	36	41	38	39	..	53.3
	Min..	5	47	47	45	45	32	26	43	50	42	4	61	45	41	40	37	37	32	32	38	44	37	23	37	25	29	22	22	24	16	..	36.4
Winterset..	Max	73	65	60	60	55	46	55	60	57	55	68	70	66	42	45	38	42	41	55	63	59	53	57	53	45	39	40	45	39	47	..	53.1
	Min .	45	46	35	41	34	30	28	42	42	32	36	56	35	31	30	27	23	.0	30	45	41	35	37	33	22	21	19	25	21	20		33.6

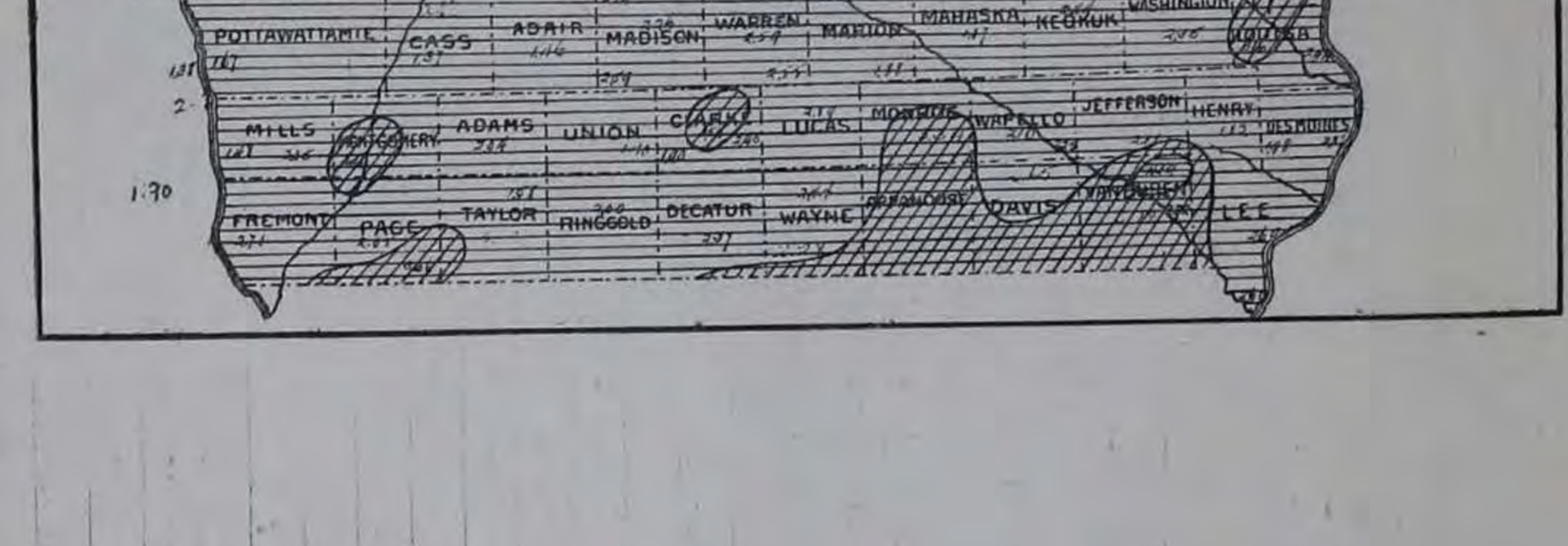
DAILY AND MONTHLY PRECIPITATION FOR NOVEMBER, 1902.

STATIONS.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL.
Afton	T	.93		.01						.06	T		.20	.64	T											T			T			1.90
Albia	.21	.72		.0	.42					.12				T	1.27	.15										T		T	.47			3.34
Algona	.30										.10	1.02		1.00												T	T	.10				2.50
Allerton	.11	.32		.04	.10					.03			.17	1.18		.09					T			.07		T		.07	.10			2.28
Alta		.1			T				.0		.08	1.53		.8											.04	.01		.15				2.77
Alta (near)		.0							.02		.07	1.88		.86											.05			.20				3.16
Amana	.18	.05			.05					.06	.03		T	1.08		.02										.03		T	.27			1.77
Ames										.02	.0		.2	.77	T						.01					T		.03	.0			1.11
Atlantic	1.05	T										.28	.15	.98	.21										T			.02				2.68
Audubon	T	.30										.0	.02	1.22	.12											T			.0			1.78
Baxter		.70											.30	1.00	.0	.10										T			.0	.05		2.30
Bedford		.93										T	.26	.64	.18											T			.09			2.10
Belknap	.09	.04		.20	.6					.05	.04		.02	.8		.10										T		T	.7			2.65
Bonaparte				1.0	.92									.68															.5			3.18
Britt	.10	.24									.05	.08	.38	1.19	.02				T		T					.01		.02	.15			2.29
Buckingham	.15	.47												1.25						T						T			.30			2.17
Burlington	T	.22		.39	.66					.05			.06	.57		.03								T		T	.04		.35			2.37
Bussey		.55		.8						.05				.9		.05													.10			1.88
Carroll	.20	.3							T		.02		.70	1.12											T	T		.08				2.51
Cedar Rapids	.06			T						.05		T	T	1.11	T	T				T	T					.02			.23			1.47
Chariton	.24	.9		.02	.14				T	.08	.03		.05	1.13	1.0	.07	.03		.03							T		.05	.0			2.89
Charles City	T	.40							T	T	.15	T	.28	2.20	T					T	T				T			.15				3.18
Chester		.2									.23	.07	.16	1.25	.05												.10		.3			2.38
Clarinda		.85							T	T	T		.25	.6	.12									.09	T				.0			2.05
Clear Lake	.15	.10							T		.05			1.80					T							T			.20			2.30
Clinton					1.3					.13	.17		.01	.3		.01					T					.03		T	.50			2.51
College Springs		1.2							T	.04	T		.40	.90	.63	.08			T					.21					.05			3.66
Columbus Junction				.72	.58					.07	.04		.46	.02		T	.66				T					.08			.52			3.16
Corning	T	.74											.3	.81	.07								T			.02			.10			2.01
Council Bluffs	.37	T										.31	.08	.60	.24										T			.07				1.67
Cumberland	.9														.40										T				T			1.37
Danville	T	T		.32	.28								.65	.20												.11			.10	.25		1.98
Davenport	T	T		.46	.8					.08	.01		.01	.3		.01	T				T	T				T	T		.16			1.95
Decorah	.06	.21									.22		.16	1.08	.0														.3			2.07
Delaware	.16	.15									.03			1.0												.08			.35			1.79
Denison	.15								T		.10	.14		.86												T			.5			1.40
Des Moines	.06	.54							T	.02	.02		.10	.80	.11	.09				T	T					T	T	T	.0			1.65
De Soto		.88									T		.18	.70		.14					T					T						1.00
Dubuque	.03	.0		T	.01	T					.01	T	T	.69	T	T					T					T	.01		.1			.86
Earlham		.7		.04					T	T	.02		.18	.91	.08	.18						T			T			T				2.14
Eldon	T	T		.40	.55									.6		.07										T		.0	.31			2.10
Elkader	.14	.26									.01		.15	1.05												T			.30			1.91
Emerson	1.00												.25	.7														.05				2.05
Fairfield	.08			.84	.40					.07			T	.63	.07											T			.02			2.11
Fayette																																
Forest City	.17	.2							.06	T	.08		.48	1.15	T						T					T	T	T	.20			3.31
Fort Madison		.26			.03					.05			T	.70		.05												T	.06			2.69
Galva					T				T			1.8		.70					T									.10	T			2.78
Gilman	.14	.63							T	.04	.02	T	.15	1.2		.07			T							T			.10			2.35
Grand Meadow	.10	.31								T	.07		.18	1.1	T					T						.02		.3				2.15
Greene	.10	.30									.11		.32	1.20	.06											.0			.19			2.32
Greenfield	T	.89	T					T	T	T	.02			.02	.03	.41	.01	.02	T	.03	.02					T	T		.0			1.46
Grinnell		.55											.15	1.2	T						.10					T	T	.15				2.16
Grinnell (near)		.60			T				T	.04	T		.10	1.05		.05					T					.01		T	.20			2.05
Grundy Center	.12	.42								T	T		.15	1.30							T					.0	.02	T	.2			2.28
Guthrie Center		.56								T	.06	T	.31	.76	.22	T										T		T				1.91
Hampton	.31		.03							.08		.2		1.35						T	.04				T	T		.14				2.16
Hanlontown	.08	.17							.03	T	.06	.03	.35	1.2	.0				.01			T				.04		T	.0			2.14
Harlan	T	.10				T			.02	T	T	.03	.28	.75	.16					T	.01					T		T	.10			1.45
Hopeville		.95								.05			.15	.67	.0											T		.03				1.90
Humboldt	.16	.32							.0		.07		.34	1.2						.06								.10				2.28
Independence	.15	.50												.50							T					.15		.10				1.40
Indianola	T	1.15		T						T	T		.23	1.07	.02	.10										T			.02			2.59
Iowa City	.17			.04	.51					.16	.04			.86		.10						.02				T			.35			2.25
Iowa Falls	.08	.23			T				T	T	.0	T	.22	.42						T	T					T		.07	.05			1.90
Jefferson		.75							T		.0		.27	1.20												.0		.06				2.34
Keokuk	T	.14		.6	.56				T	.04			.08	.60		.0								.14		.02	T	.13	.28			2.60
Keosauqua	T	T		.9	1.02					T			.06	.70		T										.04		.0	.0			3.22
Lacona		.9			.09					.07	.03		.08	.98	.09	.02											.08	.12	.02			2.55
Lansing		.40											.50	.7	.05											T			.1			1.75
Larrabee		.08			T				T	.05	.10	.49		.55					.02							.02		.1				1.48
Le Claire	T			.04	1.0	.02					.13	T					.02										.01		.25	T		1.54
Le Mars					T				.03		.05	.07		.20											T			T				.35
Lenox		.62											.24	.55	.07	.05										T			.05			1.58
Leon	.2	.62		T	.07					.06	.02		.15	.90	T	.12			.03					.03		T		T	.15			2.37
Logan		.10								.06		.05	.35		.62	.13					.02								.20			1.53
Maquoketa	.07	.10		.2	.60					.18	.03		T	.60		.09					T						T		.30			2.17
Marshalltown	.18	.51		.01					.02	.2	.04		.25	.30	.01	.02					.02	.02				T		T	.2			2.66
Mount Ayr	.25	.65		.07					T	.12	.15		.18	.2	.04	.05						.02		.07		T			.20			2.00
Mt. Pleasant				.0	.09					T			T	.07		T										.07		1.50				1.82
Mt. Vernon	.01	.01		T	.18					.0	.07	T	T	T	T	.06	T	T								.02	.03		.28			.77
New Hampton	.20	.14									.17		.28	1.18												.10			.30			2.37
Newton	.10	.75							T	T	T		.20	1.18		.13													.29			2.56
Northwood	.12	.17							.04		.17	.05	.31	1.24							T					.02		T	.30			2.42
Odebolt	.22	.05							.05		.08	.04	.43	.75						T						.06			.10			1.78
Ogden	.15	.45									T		.23	1.14	T						T					T		.0				2.02
Olin	.14			.38						.15			T	.68		.05				T	T					.01			.31			1.72
Omaha, Neb.	T	.42							T	T	.01	.08	.18	.49	.14	T		T	T	T	T				T	T		.04	.02			1.38
Onawa	.07	.03							.01		.03	1.00	1.10	.57	.17					.01	.01					.01		.04	.10			3.15
Osage	.11	.10							.01		.14	.06	.16	1.00					T	T						.07			.45			2.10
Osceola	.30	1.75		T	T					.03	.02		.10	1.10	.02	.12	T	.01	T	T					.06	T	T		.03			3.54
Oskaloosa	.23	.27		.19						.02		.02	T	.88		.03										T		.05	.18			1.87
Ottumwa				1.02						.10			.94			.04												.15				2.25
Ovid	.23	.35		.06	.12					.04	.01		.08	1.08		.15								.04		T		.03	.25			2.44
Pacific Junction		.07							T			T	.43	.65	.17	.01				T					T	.02		.13				1.48
Perry	.04	.90									T		.33	1.11	.05	T					T						T		.08			2.51
Plover	.22											1.21		.92												T			.10			2.45
Red Oak	T	1.87							T	T	T	T	.29	.93	.12	T				T						T		T	.10			3.31
Ridgeway	.10	.11		.02						.03	.22	.03	.22	1.16	.02				.01		.02					.17		.37				2.48
Rockford		.30										.20		1.15												T		.2				1.85
Rockwell City	.11	.10						T	T		.10	T	.20	1.15		T				T						T		T				1.66
Sac City	.26	.07			T				.04	T	.10	.01	.31	.91	T				T							.07		T	.20			1.97
St. Charles	.10	1.05		.02				.01	.01	.04	.05		.20	.76	.09	.21		.03								.02	T	T				2.59
Scranton		.35							.02		.02		.18	.76	T											.0		T	.04			1.40
Sheldon	.01	.04							.01		.03	.03		.30						.01								T	.04			.47
Sibley		.05							T		.05	.08		.28	.02										T	T		T	.05			.53
Sigourney	.15	.07			.38					.21	T		T	1.00		.13	T											T	.50			2.44

DAILY AND MONTHLY PRECIPITATION FOR NOVEMBER, 1902—CONTINUED.

STATIONS.	DAY OF MONTH																														TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sioux Center					T				T		T	20		T						T					01	.05		.10				.35
Sioux City	.01	T			T				T		.05	01	03	T										T				.02			.16
Stockport		T		76	1.00					10	60		03	.73		T										T		.60			4.19
Storm Lake	07	01			T				.02	T	07	8	.80	8											T	10		T	.12			2.94
Stuart		1.6							T	1		1	.18	.35	3										T	T		T	.20			2.71
Tipton					1.00					.2	10		T	.85												02			.50			2.72
Toledo	.12	.6								.05			.10	1.25	.10					T						T			.30			2.57
Vinton		T								.2				1.25	06											.10		.10				1.76
Wapello				60	.7					05			04	.48		T										T			50			2.41
Washington	.14				.9				T	01	.10	1.00		70		.08										03			45			2.35
Washta		.12			T									40											T	T		.20				1.81
Waterloo	.06	.2		01					T	T	.01			1.25												.18		01	.11			1.83
Waukee	.30	66									01			6	.10				0		.01					T		T	.01			1.86
Waverly	.12	.3								0	.03		.28	1.22						01						.07		.03				2.36
West Bend		.0							.01		.07		.93	7												T			10			1.57
West Branch	.05			.17	.6					1				.06		.14	04									T	.06		0			1.92
West Union	.39													1.2												T		.30				1.94
Whitten		.60								T	T	T	T	1.0	.03						T					T			01	T		1.68
Wilton Junction		T			1.5					2			T	.75		.08										10		4.8				3.24
Winterset	.11	9		T									.22	.75	T	.16										T		1	T			2.26
Woodburn	.11			05						0		0	85	T												T						2.45

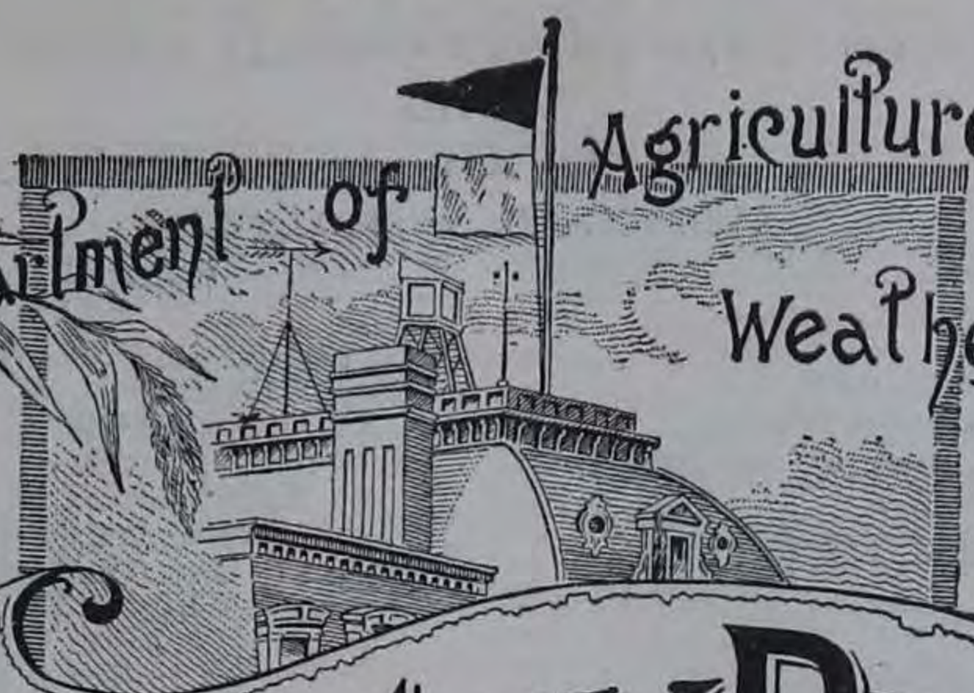
Precipitation Chart November 1902.



DECEMBER, 1902. No. 12

U. S. Department of Agriculture

Weather Bureau



MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

JIAR ENG CO

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..AND ANNUAL SUMMARY, 1902..

CENTRAL STATION, DES MOINES, IOWA.

J. R. SAGE,
DIRECTOR.

GEO. M. CHAPPEL,
LOCAL FORECAST OFFICIAL,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

ALLIED PRINTING TRADES UNION LABEL COUNCIL DES MOINES

DES MOINES:
BERNARD MURPHY, STATE PRINTER,
1902.

THE IOWA WEATHER AND CROP SERVICE

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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIII. DECEMBER, 1902. No. 12.

TWO ABNORMAL YEARS: 1901—1902.

An interesting study in climatology is afforded by comparison of the monthly weather records of 1901 and 1902, which may be regarded as types of climatic extremes. They certainly attest the fact that variableness is a marked characteristic of the climate in this midland valley. Within the past biennial period the extremes did not exactly meet, but they came together more closely than usual. While there is no evidence of a change in the general climate of this section, yet the records show sudden changes and great variability in the weather conditions as affecting the output of crops and the comfort of the people.

The following table shows the monthly averages of precipitation and temperature and the departures from normal in 1901 and 1902, for the state of Iowa:

RECORDS OF 1901.

MONTHS.	TEMPERATURE DEGREES.		PRECIPITATION INCHES.	
	Monthly means.	Departures from normal.	Monthly averages.	Departures from normal.
January	23.7	†6.5	0.74	-0.48
February	17 5	-4.0	1 01	-0.04
March	34.2	†1 0	2.64	†0 89
April	49 9	†0.4	1.79	-1.41
May	60.7	†1.0	2 35	-1 62
June	72 3	†2.3	3.71	-0.55
July	82 4	†8.7	2.34	-1.34
August	73 8	†2.7	1.29	-1.78
September	63.3	-1.0	4.77	†1.47
October	54.2	†4.0	1.98	-0 30
November	35.8	†3.0	0.86	-0.56
December	20 5	-3.1	0.93	-0 45
Yearly means	49.0	†1 8	24.6	-5 68

RECORDS OF 1902.

January	22 4	†5.3	0.87	-0.34
February	17.6	-4 0	0.73	-0.33
March	39.1	†5.9	1.45	-0.30
April	48 2	-1.3	1.71	-1 50
May	63.8	†4.1	5.39	†1.42
June	65.2	-4.8	7 16	†2.80
July	73 1	-0.6	8.67	†4 99
August	69.1	-2.0	6.58	†3.51
September	59.1	-2 5	4.35	†1 36
October	53 5	†0 3	2.54	†0 26
November	41.2	†8.4	2.13	†2.13
December	20.1	-3 5	2.23	†0.85
Yearly means	47.8	†0.6	43.82	†13.52

†Signifies plus. -Minus.

It will be noted that in the mean temperature of the two years the difference was only 1.2°; but in the three summer months the daily average temperature was 7° higher in 1901 than in 1902. And following the cool and excessively wet summer of 1902 the daily temperature of September was 5 2° below normal, which so disastrously affected the corn crop in the ripening period.

The most striking contrast in these two years was in the amount of rainfall in the critical months of the crop season. The crops in 1901 suffered materially from effects of excessive heat, and the quality of the products of 1902 was greatly impaired by excessive rains, floods and winds. The precipitation in 1901 was 5 68 inches below normal, and in 1902 it was 13 52 inches above normal, or 19 20 inches in excess of the amount in the preceding year. This difference in rainfall was most marked in the period from May 1st to September 1st, the amount for 1901 being 9 69 inches, and in 1902 27 80 inches. These figures represent the averages for the state, and this implies that considerable portions of the state received very much more than the total above given.

In 1901 there were 178 clear, 103 partly cloudy, and 84 cloudy days In 1902 the numbers were 145 clear, 109 partly cloudy and 111 cloudy days. The average number of days on which .01 inch or more rain fell for all stations of record, was 74 in 1901 and 100 in 1902. The excess of cloudiness and rainfall in the latter year occurred mainly in the crop season. As a matter of course, with such a notable difference in the precipitation, the last year brought much greater amount of destruction to property by wind, hail and lightning. The people who are most interested in the crops of the state were seriously alarmed and excited on account of the drouth and heat of 1901; but though less frightened, they really suffered greater damage from effects of the abnormal conditions in 1902.

PREVENTION OF LOSSES BY LIGHTNING.

By request the following paper was written by the Section Director, to be read at the annual meeting of the Clay County Farmers Mutual Insurance Association, at Spencer, Iowa, December 20, 1902. It is simply a re-statement of facts and deductions that need to be more widely disseminated:

"In farm property insurance the chief element of hazard is the destructive effect of lightning. If that could be eliminated the assessments levied upon the members of farmers' mutual insurance associations would be relatively light. This is well understood by officials and agents who are charged with the duty of adjusting and paying losses The aggregate of loss due to lightning in this state is fearfully heavy, and in proportion to the amount at risk the heaviest burden falls upon farm animals One of the mutual insurance companies doing a state-wide business in fire and lightning reports that the losses of live stock by lightning this season amounted to $3 95 per $1,000 at risk; and by eliminating the lightning hazard the loss on farm property would be only $1.49 per $1,000.

"By the insurance system we may, in some measure, help to bear one another's burdens, but the actual losses are never fully equalized in that way. But even if the losses were fully paid, and borne by all the people, it would still be our duty to prevent loss and destruction of property and thereby lessen the public burden.

"A large portion of the losses caused by both fire and lightning may be prevented by the exercise of due care and caution. This is certainly true as to ordinary fires, and losses by lightning are also measurably preventable Of course, it is impracticable to afford absolute protection to all farm buildings, stacks of grain and hay, and farm animals in the fields, but by means of properly constructed lightning rods on the more valuable buildings, and ground wires on all wire fences, three fourths of this class of losses may be prevented

"As a result of investigations during a series of years, sufficient facts have been collected to justify the conclusion that about two thirds of the farm animals killed in the fields by lightning were in close contact with wire fences. In many instances they were killed in bunches of three to fifteen, and in some cases lightning struck the fences many rods distant from the places where the dead animals were found. There is no longer any doubt as to the deadly effects of wire fences during prevalence of thunderstorms.

"Every strand of wire is an electric conductor, and sometimes shocks are felt by contact with wires even when the storm is quite distant. In the construction of telegraph and telephone lines all electrical engineers use ground wires to protect their poles and instruments against damage by lightning. And in the construction of wire fences a similar measure of precaution should be taken, especially if the fences inclose fields where animals are pastured. All that is necessary is to furnish sufficient wire connection to enable the electric current to reach the moist earth.

"The same principle is involved in the protection of buildings against the destructive effects of lightning discharges. A properly constructed lightning rod, having connection with moist earth, is simply the most convenient highway for electric currents to travel in Nature's efforts to restore the equilibrium between earth and clouds.

"Experience, and the investigations of the most eminent electricians of the world, all attest the efficacy of lightning rods in the protection of buildings. The fact that in rare instances rodded buildings have been damaged or burned does not militate against the fact that rods do afford protection. The failures are due to faulty construction, either in respect to the metallic points at the top, lack of connection with moist earth at the bottom, want of continuous connection of the metal in the rods, or insufficiency in size or number of rods to carry the most powerful discharges. A rod may be big enough to carry safely nine out of ten electric discharges, but the tenth one may be a very heavy overcharge, causing more or less destruction; just as a culvert underneath a road may be big enough to carry the floods of ordinary showers, and insufficient for the waters of a cloudburst.

"Statistics show that the risks of loss of life and property by lightning are fivefold greater in the farming districts than in the larger towns and cities. The evident reason is that in the cities a large measure of protection is afforded by the net work of wires on the streets, and amount of metal used in construction of buildings. This fact sustains the argument in favor of well-grounded rods and wires for protection of farm property.

"All the elements and forces of nature are beneficent, and within certain limits they may be made to serve human needs. This is an age of marvelous achievements in the mastery of the elements, and in utilizing the hitherto wasted energies and resources of the earth and air. We have tamed the electricity of the air and made it to haul our railway cars, light our streets, stores and dwellings, turn the wheels in workshops, and cook our food in kitchen ranges. Having accomplished all this, shall we supinely admit that we are utterly without power of self-protection against the electric currents that leap from clouds to the earth during the storms of summer? It would appear that it is no more presumptuous to attempt the exercise of control of lightning than to harness that same force and hitch it to our carriages in place of horses and mules. The same wire cables that will transmit a thousand horse power current of electricity a distance of 200 miles without loss of force, will also serve to carry a similar bolt safely from roof to earth."

EXTRACTS FROM NATIONAL BULLETIN.

December averaged somewhat milder than usual in the central and southern Rocky Mountain districts, in the Pacific coast States, over the northern portions of the upper Lake region and along the immediate south Atlantic coast, the average daily temperature excess being less that 3°, except over the middle Plateau region where it ranged from 3° to 4°. Nearly normal conditions prevailed over the interior portions of the South Atlantic States and along the Gulf coast, although there was a slight but general deficiency in temperature in these districts. Throughout the central valleys, lower Lake region, and New England the month was colder than usual, being decidedly cold in the central and upper portions of the Missouri Valley, where the average daily deficiency ranged from 8° to 11°. In the upper Mississippi, lower Missouri and Ohio valleys, the lower Lake region, northern portion of the Middle Atlantic States, and in New England the temperature deficiency generally ranged from 3° to 5°.

Over much the greater part of the country east of the Rocky Mountains the precipitation was in excess of the average for December, the central valleys and nearly the whole of the Lake region and Atlantic coast districts receiving from 1 to over 2 inches more than usual, while in portions of the lower Ohio Valley and western Tennessee the total precipitation ranged from 6 to 10 inches or 4 to 6 inches more than the December average. The north Pacific coast also received more than the December average but over the greater part of California and generally throughout the plateau districts there was less than the average, the deficiency in portions of central and southern California ranging from 1 to 3 inches. There was however, in extreme southern California more than the average. There was a decided deficiency over the greater part of the west Gulf States and slight deficiencies over limited areas in southern Florida, the south Atlantic States and lower Lake region. The most marked deficiency is shown in northern, central, and eastern Texas, where it ranges from 0.50 inch to more than 2 inches.

In the principal winter wheat States the month averaged cold with more than the usual amount of precipitation. The temperature conditions were, however, not unfavorable to winter wheat until the last decade, when the States of the upper Mississippi and Missouri valleys experienced temperatures ranging from zero to 28° below. During this period the Ohio Valley States were generally well protected with snow covering, but in the central Mississippi and lower Missouri valleys the crop was exposed. Only slight damage, however, seems to have resulted, and at the close of the month the crop appears to be very promising. Complaints of injury by fly are not extensive and are largely confined to the Ohio Valley.

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 30.13 inches: highest observed, 30.77 inches, at Des Moines, on the 8th; lowest observed, 29.22 inches, at Davenport, on the 2d; range for state, 1.55 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 109 stations, was 20.1 degrees,

which is 3.5 degrees below normal. By sections the mean temperatures were as follows: Northern section, 17.4 degrees; central section, 20.4 degrees; southern section, 22.4 degrees. The highest monthly mean was 27.0 degrees, at Keokuk; lowest monthly mean, 14.6 degrees, at Alta and Estherville. The highest temperature reported was 59 degrees, at Albia, on the 1st; lowest temperature reported, –20 degrees at Estherville, on the 26th. The average monthly maximum was 47.2 degrees; average monthly minimum –10 9 degrees. Greatest daily range, 41 degrees, at Charles City and Sheldon; average of greatest daily ranges, 30 8 degrees.

PRECIPITATION—Average precipitation for the state, as shown by records of 123 stations, was 2.23 inches, which is 0.85 of an inch above normal. The averages by sections were as follows: Northern section, 2.32 inches; central section, 2 13 inches; southern section, 2.24 inches. The largest amount reported was 5 51 inches, at Ridgeway; least amount reported, .67 inch, at Ottumwa. The greatest daily rainfall reported was 2.15 inches, at Le Mars, on the 20th. Average number of days on which .01 of an inch or more was reported, 8.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 50 miles per hour, from the northwest, at Sioux City, on the 24th. Average number of clear days, 9; partly cloudy, 6; cloudy, 16.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	30.10	30.71	8	29 22	2
Des Moines	30.15	30 77	8	29 41	2
Dubuque	30.14	30.71	8	29.37	2
Omaha, Neb	30.14	30 76	8	29 34	2
Keokuk	30.12	30.72	8	29 27	2
Sioux City	30.15	30.71	8	29 44	2
Means	30.13	30.77	8	29.22	2

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	6394	32	W	24
Des Moines	6740	28	NW	24
Dubuque	5359	25	NW	24
Keokuk	6452	32	NW	24
La Crosse, Wis	6128	27	NE	2
Omaha, Neb	6906	31	NW	24
Sioux City	9364	50	NW	24

OBSERVERS' NOTES.

ATLANTIC—*J. W. Love.* Month very fair, with considerable sleighing.

BONAPARTE—*B. R. Vale.* Ground not frozen till latter part of month. Precipitation for the year, 47.61 inches; 1898 gave us 54.45 inches, but it was more seasonable and gave us better crops except corn.

BRITT—*Geo. P. Hardwick.* There was snow sufficient for sleighing through the month; some unhusked corn yet in fields; much ice on level ground.

CARROLL—*Moses Simon.* Finest sleighing for years.

CHESTER—*C. H. Meredith.* Severe blizzard on December 3d. Precipitation for month, 4.37 inches.

COLUMBUS JUNCTION—*H. E. Simpson.* The cyclonic storm periods of the month have been exceptionally well marked. Rain turning to sleet and to snow, followed by high northwest winds and brief intervals of clear, cold weather, have been characteristic of each nine day period.

EARLHAM—*Geo. Phillips.* A cold, cloudy month; considerable corn still afield at close of month.

ELKADER—*Chas. Reinecke.* Total precipitation for 1902, 50.10 inches; highest temperature 95°, July 30th; lowest temperature 30°, below zero, January 28th.

FOREST CITY—*J. A. Peters.* Considerable corn in fields yet; sleighing good during month.

GRAND MEADOW—*F. L. Williams.* The month was cold and ground covered with snow; roads drifted; stock doing well.

GRINNELL—*A. O. Price.* A good many acres of corn in fields at close of month.

HUMBOLDT—*H. S. Wells.* Melted snow 1.57 inches; snowfall, 15 7 inches; rainfall for year, 40 inches.

JEFFERSON—*Isaac Young.* Ground was full of water when it froze solid; likely to be a late spring for farm work.

LOGAN—*Mrs. M. B. Stern.* Month has been cloudy and wet; lack of sunshine the worst feature.

OLIN—*Nathan Potter.* December was remarkable for excessive cloudiness; most of snow melted at close of month.

OSKALOOSA—*Jos. Boyd.* Month was noted for cloudy weather and fog. No frost in ground up to the 25th.

RED OAK—*J. S. Cole.* Total precipitation during the year, 47.26 inches; snowfall, 32.9 inches.

RIDGEWAY—*Arthur Betts.* December temperature normal; precipitation remarkably heavy, 5.51 inches; 111 hours of sunshine; dug parsnips December 2d, just as winter was setting in; ground began to freeze 4th; all thawed out on 21st; tremendous rain on 20th.

Ridgeway data for 1902—Snowfall, 44.1 in.; melted snow, 7.93 in.; rainfall, 40.61 in.; total precipitation, 48.54 in ; mean temperature for the year, 47.4; hours of sunshine, 2,843, which is 118 less than normal. First 4 months averaged 8 4 hours per day; next 4 months 9.3 hours per day, and last 4 months 5.8 hours per day. We have had years with less sunshine. Thunderstorms on 67 dates. The year was noted for big storms: January 20th, 1 51 in ; February 27th, 1 20 in.; May 4th, 1.42 in.; May 17th, 2.38 in ; May 21st, 1 57 in ; June 12th, 1.05 in ; June 25th, 2.22 in.; July 2d, 1 47 in.; July 20th, 2 43 in , July 22d, 1.00 in.; July 25th, 1 06 in.; July 30th, 1 01 in.; September 5th, 1.18 in.; November 14th, 1 16 in.; December 2d, 1.82 in.; December 15th, 1.28 in ; December 20th, 1 52 in

STOCKPORT—*C. L. Beswick.* Total precipitation for 1902, 50.74 inches.

VILLISCA—*C. E. Matteson.* Total precipitation for 1902, 51.17 inches. Rivers overflowed banks 7 times during the year.

WAPELLO—*G. W. Schofield.* Precipitation for the year 1902 was 48.73 inches. In 1901 the total was 17.03 inches; in 1900, 30.98 inches; in 1899, 22.34 inches.

WAUKEE—*E. J. Leonard.* Very little frost in ground until about Christmas; much corn yet in fields.

WATERLOO—*M. L. Newton.* The following table shows the monthly precipitation at this station for the year 1902; also the monthly averages for the past twenty years, and the maximum amount recorded in the different months of the twenty-year period and the date of its occurrence:

MONTHS.	1902—inches.	20-year averages—inches.	Maximum in any year—inches.	Date of maximum.
January	0.93	1.19	2.20	1893
February	1.47	1.10	2.55	1893
March	3.29	1.92	3.54	1893
April	1.28	3.20	5.30	1889
May	8.54	5.16	11.20	1892
June	6.81	5.64	14.00	1890
July	10.61	4.61	10.61	1902
August	7.70	3.68	11.00	1885
September	4.86	4.70	12.00	1887
October	1.50	3.18	7.20	1889
November	1.83	1.75	4.00	1884
December	1.94	1.16	1.94	1902
Sums	49.76	37.29		

ERRATA IN OCTOBER REVIEW.

BONAPARTE—Mean temperature recorded 57.9° on page 8 should have been 55 9°. Mean minimum temperature recorded 47.8° on page 9, should have been 43.8°.

BRITT—Mean temperature recorded 50.9° on page 7, should have been 50.4°. Mean maximum temperature recorded 62.7° on page 9, should have been 61.7°.

CEDAR RAPIDS—Mean temperature recorded 54.2° on page 7, should have been 55.2°. Mean maximum temperature recorded 63.3° on page 9, should have been 65.3°.

DECORAH—Maximum temperature recorded 73° on the 21st and 23rd on page 7, should have been 74° on the 8th.

DELAWARE—Mean temperature recorded 51.2° on page 7, should have been 51.0°.

DOWS—Mean temperature recorded 51.0° on page 7, should have been 50.9°. Mean minimum temperature recorded 39.7° on page 9, should have been 39.5°.

IDA GROVE—Mean temperature recorded 52.8°, on page 7, should have been 52.2°.

IOWA FALLS—Mean temperature recorded 50.2° on page 7, should have been 50.7°.

LENOX—Mean temperature recorded 56.4° on page 8, should have been 54 6°.

PLOVER—Mean temperature recorded 47.8° on page 7, should have been 48.9°. Mean minimum temperature recorded 32.0° on page 10, should have been 35.20°.

SCRANTON—Mean temperature recorded 52 5° on page 7 should have been 52.6°.

HAMPTON—Mean maximum temperature recorded 65.4° on page 9, should have been 65.1°. Mean temperature recorded 53.4° on page 7, should have been 53.3°.

ERRATA IN NOVEMBER REVIEW.

FOREST CITY—Total precipitation recorded 3.34 inches on pages 9 and 11, should have been 2.34 inches.

OSKALOOSA—Maximum temperature recorded 73° on the 12th, on page 8, should have been 11th.

RED OAK—Mean temperature recorded 45.9° on page 8, should have been 44.2°. Mean maximum temperature recorded 56.2° on page 10, should have been 52.9°.

SCRANTON—Mean maximum temperature recorded 47.8° on page 10, should have been 47.7°. Total snowfall recorded 0.8 inch on ppge 8, should have been 0.3 inch.

SHELDON—Mean temperature recorded 36.8° on page 7, should have been 37.0°.

BELATED REPORTS.

FAYETTE.—November. Mean temperature 40.2°; highest 66° on the 1st, 11th, 12th and 13th; lowest 11° on the 30th; greatest daily range 31°; total precipitation 2.13 inches; greatest in 24 hours 1.21 inches on the 14th; total snowfall 3.1 inches; prevailing direction, southwest and northwest; number of clear days 9, partly cloudy 4, cloudy 17, rainy 6.

DOWS.—November. Mean temperature 39.5°; highest 69° on the 1st; lowest 17° on the 30th; greatest daily range 32°; total precipitation 2.22 inches; greatest in 24 hours 1.40 inches on the 15th; total snowfall, trace; prevailing direction, south; number of clear days 11, partly cloudy 7, cloudy 12, rainy 6.

SPIRIT LAKE.—December. Mean temperature 16 2°; highest 53° on the 1st; lowest 20° on the 26th; greatest daily range 29°; total precipitation 1.46 inches; greatest in 24 hours .40 inch on the 3rd and 15th; total snowfall 9 5 inches; prevailing direction, south; number of clear days 10, partly cloudy 2, cloudy 19, rainy 6.

VILLISCA.—November. Mean temperature 42.8°; highest 74° on the 11th; lowest 15° on the 27th; greatest daily range 30°; total precipitation 2.20 inches; greatest in 24 hours 1.06 inches on the 14th; prevailing direction, northwest; number of clear days 9, partly cloudy 11, cloudy 10, rainy 6.

CLIMATOLOGICAL DATA FOR DECEMBER, 1902.

NORTHERN SECTION.

STATIONS	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT: Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	PRECIP., IN INCHES: Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)	Number rainy days	SKY: Number clear days	Number partly cloudy days	Number cloudy days	Prevailing direction of wind	DATES OF THUNDER-STORMS.
Algona	Kossuth	1,213	9	18.0	- 2.4	47	20	-16	26	25	2.45	† 1.16	.80	14.5	7	5	10	16	NW	
Alta	Buena Vista	1,513	10	14.6	- 7.0	44	1	-17	26	30	1.97		.70	15.1	11	11	6	14	NW	
Alta (near)	Buena Vista										1.97		.74	12.c	6					
Britt	Hancock	1,236		17.0		44	1, 19, 20	-16	26	32	1.93		.55	12.1	13	5	6	20	NW	
Charles City	Floyd	1,012	10	17.2	- 3.4	40	1	-17	26	41	2.30	† .88	.70	15.5	10	7	8	16	N	
Chester	Howard			15.1		40	1	-16	4	38	3.35		2.10	6.2	10	11	5	15	NW	
Clear Lake	Cerro Gordo	984		16.3		42	19	-16	26	27	1.95		1.00	9.5	7	8	8	15	NW	
Decorah	Winneshiek	875	8	18.6	- 2.4	43	1	-12	8	29	3.00	† 1.74	.74	11.2	12	..				
Dows	Wright	1,142		17.2		44	1	-13	26	28	1.70		.75	16.0	7	7	7	17	NW	
Elkader	Clayton	600	20	20.4	- 1.1	47	1	-11	7	31	2.50	† .27	1.00	11.0	6	7	4	20	NW	
Estherville	Emmet	1,298		14.6		46	1	-20	26	32	1.80		.66		6	9	8	14	W	
Forest City	Winnebago	1,220		17.4		43	1	-16	26	31	2.80		1.40	14.0	4	6	6	19	SE	
Grand Meadow	Clayton	1,180	10	18.2	- 4.3	42	2	-14	8	25	2.44	† .85	.83	10.7	7	7	6	18	W	
Greene	Butler	943		19.0		45	20	-12	8	27	2.30		.56	18.0	9	4	7	20	NW	
Hampton	Franklin	1,000	11	18.8	- 2.2	47	1	-12	8, 25	27	2.42	† 1.07	.80	15.4	9	5	10	16	NW	
Hanlontown	Worth			16.6		46	1, 2	-15	25, 26	31						10	5	16	NW	
Humboldt	Humboldt	1,095	8	17.5		46	1	-15	26	28	1.57	† .97	.70	15.7	6	8	4	19	SE	
Lansing	Allamakee	632		20.4		45	1	-12	25	40	2.12		1.00		6	12	5	14		
Larrabee	Cherokee	1,366	10	16.6	- 6.0	47	1	-17	26	34	2.17	† 1.03	1.00	11.8	6	9	10	12	NW	
Le Mars	Plymouth	1,224		18.1		45	1	-13	26	31	3.15		2.15	11.0	5	10	5	16	S	
New Hampton (e)	Chickasaw	1,166		18.0		41	1	-13	25, 26	28	2.20		1.00	12.0	6	7	4	20	NW	
Northwood	Worth	1,222		17.8		44	1	-13	8, 25	31	2.68		.88	18.0	0	7	6	18	NW	
Osage	Mitchell	1,184	10	17.4	- 1.7	41	1	-13	25	30	2.41	† 1.10	.64	16.1	12	6	6	19	NW	
Plover	Pocahontas	1,426		17.4		45	1	-17	26	31	1.10		.40	11.0	5	13	2	16	S	
Ridgeway	Winneshiek	1,215		20.6		43	1	-13	8	32	5.51		1.82	19.5	12	6	12	13	NW	
Rockford	Floyd						1				1.53		.60	11.0	5	8	5	18	NW	
Sheldon	O'Brien	1,406		15.3		46	1	-16	25	41	1.12		.45	6.5	10	8	5	18	S	
Sibley (c)	Osceola	1,506		15.8	† 0.7	48	1	-16	26	30	1.85		.75	11.0	10	6	13	12	SW, NW	
Sioux Center	Sioux			15.6		46	1	-17	26	33	2.60		1.10	11.5	9	10	5	16	S	
Storm Lake	Buena Vista	1,440	12	16.7		42	1	-18	26	31	1.92	† 1.00	.70	14.0	6	13	2	16	NW	
Washta	Cherokee	1,157									3.10		1.40	12.5	4	11	9	11	N	
Waverly	Bremer	942		19.0		43	1	-13	25	30	2.10		.51	11.5	12	8	4	19	NW	
West Bend	Palo Alto	1,197	8	17.5	- 0.4	46	1	-15	26	32	2.34	† 1.46	.97	13.5	6	6	9	16	NW	
Average				17.4	- 3.1	44.3		-14.8		31.2	2.32	† 1.05		12.9	8	8	7	16	NW	

CENTRAL SECTION.

Amana	Iowa	721	25	22.0	† 0.2	46	1	- 7	8	28	1.97	† .53	.51	11.8	10	9	6	16	NW	
Ames	Story	926	21	20.6	- 1.2	48	1	- 7	27	39	1.87	† .88	.41	11.5	9	10	5	16	NE, NW	
Baxter	Jasper	998		20.8		48	1	-10	8	38	1.95		1.00	9.0	7	10	5	16	SE, NW	
Belle Plaine	Benton	828	11	20.4	- 3.5	43	1, 31	- 9	25	25	2.40	† 1.07	.50	16 0	11	2	20	9	NE, NW	
Buckingham	Iowa										1.40		.36	13.2	8	6	12	13		
Carroll	Carroll	1,265	11	19 2	- 4.0	51	1	-14	26	30	2.58	† 1.61	1.28	7 0	7	11	8	12		
Cedar Rapids	Linn	733	19	22.6	- 2.1	47	1	- 7	8	27	1.96	† .32	.69	8 8	7	8	7	16	N, NW	
Clinton	Clinton	609	10	22 8	- 3.5	48	19	-12	8	31	2.09	† 95	.95	8.5	8	6	5	20	W	
Davenport	Scott	529	31	24 2	- 3 6	49	1	- 7	8	30	1.88	† 15	.59	5.9	9	9	3	19	W	
Delaware	Delaware	1,083	10	18.2	- 3.2	40	1	-15	8	26	2 25	† .73	.61	14.3	8	8	8	15	NW	
Denison	Crawford	1,180	8	18 2	- 4.1	49	1	-14	26	38	1.40	† .99	.60	9.c	5	16	1	14	N	
Des Moines	Polk	861	24	22.4	- 4.4	50	1	- 7	26	32	1.77	† .33	.55	15.9	10	4	10	17	SW	
De Soto(c)	Dallas	866		22 2		50	1	- 7	26	26	2 79		1.19	12 3	7				NW	
Dubuque	Dubuque	655	29	21 8	- 4.1	44	1	- 6	8	26	2 24	† .43	.86	12.1	12	9	3	19	NW	
Galva(e)	Ida	1,190	8					-15	26	30	1.90	† 1.18	.60	8.5	5				NW	
Gilman	Marshall	1,052									1.60		.41	10.0	7	7	7	17	N	
Grinnell	Poweshiek	1,023	11	20.6	- 4.2	43	3	- 8	8	34	2.26	† 1.06	.58	13.8	7	8	9	14	N, S	
Grinnell (near)	Poweshiek			20.6		46	1	-10	8	24	2.50		1.00	12.5	6	8	2	21	NE	
Grundy Center	Grundy	976	10	19.0	- 4.0	45	1	-11	8	28	2.05	† .77	.66	12 5	7	5	5	21	NW	
Guthrie Center	Guthrie	1,077		20 2		44	1	-11	7, 26	29	2.27		.80	19 6	7	11	5	15	NW	
Harlan	Shelby	1,192		18.6		48	1	-12	26	31	2.69		.78	14.2	9	6	9	16	NW	
Independence	Buchanan	921	39	18 2	- 2.9	41	1	-11	8	29	1.72	† .34	.27	12.6	10	10	7	14	SW, NW	
Ida Grove	Ida			18 3		46	19	-14	26	40	3.10		.90		6	13	0	18	NW	
Iowa City	Johnson	644	11	22 2	- 4.8	51	1	- 7	8	33	2.21	† .57	.70	12.0	7	5	7	19	NE, W	
Iowa Falls	Hardin	1,107	8	17.9	- 3.1	43	1	-11	25	29	2.11	† 1.01	.51	16.0	8	7	6	18	NW	
Jefferson	Greene	1,052									2.32		.85	11.8	9				NW	
LeClaire	Scott	576									1 38		.42		10					
Logan	Harrison	928	36	20.2	- 6.6	44	1, 2	- 9	25	32	2.14	† .84	1.10	12.0	8	13	5	13	NW	
Maquoketa	Jackson	688	8	19.6	- 5.7	45	1	-13	8	38	2.35	† .71	1.00	9.0	6	11	8	12	NW	
Marshalltown	Marshall	947	11	21.4	- 2 2	47	1	- 8	25	30						7	6	18	NW	
Monticello	Jones		47	19 6	- 2 5	50	19	-14	8	30	2.46	† .24	.75	14 0	6	7	5	19	NE. NW	
Mt. Vernon	Linn	847		21.0		46	1, 19	-11	8	29	2.40		.65	15 6	14	10	2	19	NE	
Newton	Jasper	592	14	20.5	- 1.4	47	1	-10	8	30	2.13	† .86	.52	15.5	9	10	5	16	N	
Odebolt	Sac	1,356		18.8		46	1	-14	26	28	2.50		.76	14 5	6	14	3	14		
Ogden	Boone	1,211		23.3		52	2			32	1.63		.70	9 4	5	14	0	17	NW	
Olin	Jones	760		21.2		44	1	-13	8	32	2 87		1.30	9.0	6	7	10	14	NE	
Onawa	Monona	1,053		19 9		46	1	- 9	26	30	2 85		.60	20.2	9	14	6	11	NW	
Perry	Dallas	975		20 6		50	1	-10	26	31	2.54		.60	14.2	8	9	7	15		
Rockwell City(b)	Calhoun			19 5		46	1	-12	26	28	3.00		2.10	9 0	4	9	1	21		
Sac City (b)	Sac	900	22	17 2	- 6 2	43	1	-15	26	28	2 16	† .92	.74	14.0	10	9	5	17	NW	
Scranton	Greene	1,172		19 8		46	1	-11	26	30	2.50		.70		7					
Sioux City	Woodbury	1,122	13	17.7	-10.1	46	1	-15	26	26	1.43	† .55	.64	18.2	9	9	5	17	NW	
Tipton	Cedar	807		22.6		50	1	-10	8	27	1.70		.60	13.5	7				NE	
Toledo	Tama	856	7	20.6	- 2.7	46	1	- 8	8, 25	27	1.40	† .22	.40	11.5	10	6	9	16	NW	
Vinton*‡	Benton	800	11	21 1	- 3.5	45	1	- 9	8		1.35	† .12	.60	13.5	4	11	2	18	NW	
Waterloo	Black Hawk	862	22	19.6	- 3.7	45	1	-11	8	31	1.94	† .71	.78	9.8	9	8	6	17	NE	
Wilton Junct'n	Muscatine	683		22.1		46	1	-10	8	28	2.03		.98	14.0	5	19	0	12		
West Branch	Cedar										1.63		.50	10.0	6	3	8	20	NW	
Waukee	Dallas										2 36		.55	16.5	9	6	8	17	NW	
Average				20.4	- 3.7	46.4		-10.6		30.5	2.13	† .70		12 7	8	9	6	16	NW	

CLIMATOLOGICAL DATA FOR DECEMBER, 1902—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC., IN INCHES.				Number rainy days.	SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	....	21.6	.....	48	1	-9	26	36	2.30	.....	.55	15.0	6	10	4	17	NW	
Albia	Monroe	945	...	23 0	.....	59	1	-5	8, 26	28	1 92	....	.55	16.0	7	7	6	18	NW	
Atlantic	Cass	1,164	10	19.6	- 5.3	48	1	-11	7	35	2.66	† 1 36	.94	14.0	7	8	6	17	NW	
Audubon	Audubon	1,301	....	21.0	....	48	1	-12	29	33	1.75	.....	.65	16.7	7	3	14	14	NW	
Allerton	Wayne	.....	..	23.4	.....	53	1	-7	26	30	1.48	.....	.40	7.5	9	12	3	16	SW	
Bedford	Taylor	.....	....	22.1	.....	52	1	-9	26	32	2.13	.....	.60	9.2	6	10	2	19	NW	
Bonaparte	Van Buren	.....	10	24.4	- 4.4	54	1	- 3	8, 26	33	1.47	- .25	.50	8.0	4	....	....			
Burlington	Des Moines	544	...	25 8	.....	56	1	- 3	8, 23	29	2.13	.....	.70	....	10	7	6	18	NW	
Chariton	Lucas	1,042	....	22.8	...	52	1	- 7	26	31	1.91	....	.45	16.4	11	9	7	15	S	
Clarinda	Page	1,069	11	22.0	- 5.2	53	1	- 8	26	31	2.53	† 1.36	.95	12.2	7	11	4	16	S	
College Springs	Page	....	10	22.6	- 5.4	52	1	- 7	26	28	2.44	† .94	.60	15 6	11	13	2	16	SE, NW	
Columbus Jct.	Louisa	595	.	22 8		48	1, 31	- 5	8, 26	27	2.16	....	.55	13 8	10	9	8	14	NW	20
Corning	Adams	1,127	9	20.6	- 6.0	49	1	-10	26	29	3.10	† 2.11	.80	19.8	9	10	5	16	NW	
Council Bluffs	Pot'wat'mie	990	....	21.0	.....	51	1	-13	26	37	1.91	.....	1.26	.	8	4	12	15	SE	
Cumberland	Cass	.....	....	.....	.....	....	.....	....	.....	.....	1.80	.....	.40	14.0	6	8	6	17	NW	
Danville	Des Moines	715	....	.....	...	....	....	...	... ...	....	1.10	.....	.60	....	7	7	0	24		
Earlham	Madison	.....	....	19.4	.....	49	1	-10	8, 26	31	2.59	.....	.98	16.8	9	9	2	20	SSWNW	
Eldon	Wapello	630	...	23.6	....	53	1	- 6	26	28	1 45	.....	.78	1.1	6	7	2	22	W	
Fort Madison	Lee	516	53	.....	.....	....	.....		.....	.....	3.20	† 1.17	.68	.	8	4	8	19	SW	
Greenfield	Adair	.....	10	20 2	- 2.4	47	1	-12	26	29	1.98	† .52	.39	18.0	12	12	2	17	NW	
Hopeville	Clarke	.....	...	.....	.....	.	.. ..	...	.....	....	1.69	.....	.39	..	9	...	....	....		
Indianola (*c*)	Warren	969	10	21.8	- 3.9	50	1	- 8	26	32	.....	.....	.....	....	....	.	....	....		
Keokuk	Lee	619	30	27.0	- 2.8	56	1	- 2	26	26	2.21	† .25	.89	6 1	9	8	6	17	SW	
Keosauqua	Van Buren	644	9	24.8	- 2.4	51	1	- 3	26	27	2 21	† .73	.57	12.5	8	..	...	....		
Lacona	Warren	.....	....	.....	.....	.....	.....	.. ..	.....	.....	3 80	.....	.63	20.7	13	5	18	8		
Lenox	Taylor	1,250	....	20.1	.....	49	1	-12	26	30	1.69	.....	.50	8 8	8	15	2	14	NW	
Leon	Decatur	.....	....	22.8	.. ..	50	1	- 7	26	25	2.01	....	.39	12.9	11	14	8	9	N	
Mt Ayr	Ringgold	1,236	8	19.4	- 6.1	51	1	- 9	26	31	2.57	† 1.28	.41	14 0	13	9	2	20	NW	
Mt Pleasant	Henry	729	...	22.4		49	1	- 8	8, 26	27		.....	.....	....		7	8	16	NW	
Omaha, Neb	Douglas	1,113	32	21.5	- 5.2	50	1	- 8	26	31	2.72	† 1.71	.96	14.1	11	6	9	16	N	
Osceola‡	Clarke	1,130	....	22 5	...	51	1	- 9	26	35	2.34	.....	.64	...	7	13	4	14	SE	
Oskaloosa	Mahaska	843	18	22.6	- 3.6	52	1	- 6	26	28	1.53	† .38	.36	15.2	10	9	2	20	SW	
Ottumwa	Wapello	630	7	25.6	- 2.1	52	1	- 2	26	27	.67	- 1.12	.25	0.7	5	8	8	15	W	
Ovid	Wayne	992	8	22 6	- 3.9	41	1, 31	- 7	26	33	2.39	† .81	.48	13 5	12	8	3	20	NW	
Pacific Junction	Mills	960	....	20.9	.....	49	1	- 7	26	27	2 55	.....	.85	12.7	10	12	9	10	N	
Red Oak	Montgom'ry	1,033	....	25 2	.....	56	1	- 6	25	33	2.52	.....	.56	15.5	7	9	10	12	SW, NW	
St. Charles	Madison	1,070	....	22.8	.....	53	1	- 8	26	34	2.75	.....	.47	18 3	11	11	6	14	NW	
Sigourney	Keokuk	768	....	23.0	....	51	1	- 6	8, 26	29	2.25	.....	.82	12.0	6	12	9	10	NW	
Stockport	Van Buren	.....	....	.....	.....	.....	.....	.....	.....	.....	2 23	.....	.76	12 0	9	10	3	18	NE	
Thurman	Fremont	..	....	21.0	. ...	48	1	- 7	18, 26	39	4.31		1.54	....	9	18	4	9	NW	
Villisca	Montgom'ry	1,058	8	21.8	- 2.2	45	31	-10	26	36	2.80	† 1.80	.65	12.0	7	10	4	17	NW	
Wapello	Louisa	578	....	25.1	...	47	1	- 2	8	23	1.99	.....	.50	11.3	9	10	4	17	NE, W	
Washington	Washington	769	11	21.0	- 5.3	50	1	- 8	8, 26	31	2.47	† 1.25	.92	16.5	7		....		SW	
Winterset	Madison	1,129	10	21.0	- 4.6	56	1	- 9	26	30	2.09	† .74	.50	11.8	7	12	3	16	S	
Woodburn	Clarke	961	..	.....	.....	....	.....	.....	.....	.....	2.40	.....	.88	14.0	8	13	2	16	NW	
Average		.....	....	22.4	- 4.2	50.8	.....	- 7.4	.....	30.6	2.24	† .88	.....	13.2	9	10	5	16	NW	
Av. for the state		.....	....	20.1	- 3.7	47.2	..	-10.9	.....	30.8	2.23	† .88		12 9	8	9	6	16	NW	

*Means determined from 7 A. M., 2 P M, and 9 P. M. observations, and maximum and minimum are taken from eye readings. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. §Not supplied with self registering instruments. † Above normal.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR DECEMBER, 1902.

STATIONS.		DATE.																														Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max.	48	42	33	21	31	26	18	15	30	35	25	26	26	26	29	21	29	33	41	40	35	34	29	31	8	7	21	30	30	38	43	29.2
	Min.	31	33	13	1	16	16	0	-3	3	23	17	23	16	20	20	11	11	9	19	35	30	23	23	4	-2	-9	1	19	14	9	7	14.0
Albia	Max.	59	41	33	19	36	25	18	8	31	37	30	29	29	27	30	26	35	39	44	40	38	34	32	32	9	8	19	27	34	32	48	30.6
	Min.	34	32	14	12	13	16	-2	-5	3	29	29	19	19	19	21	14	12	16	24	21	32	26	22	7	-2	-5	-2	15	12	4	24	15.3
Algona	Max.	45	44	35	17	29	30	11	7	27	32	21	23	27	23	28	25	27	30	40	47	43	29	30	31	4	-1	15	28	25	26	36	26.9
	Min.	29	31	6	-5	14	7	-4	-10	4	12	11	17	3	10	21	12	8	15	15	33	27	11	10	0	-14	-16	-8	13	8	4	20	9.2
Allerton	Max.	53	41	34	29	35	29	21	16	31	35	31	29	30	26	29	27	35	38	42	43	39	36	31	32	20	10	21	28	32	33	49	31.8
	Min.	32	31	20	8	17	15	0	-3	3	25	22	21	21	19	20	10	10	10	20	37	32	25	25	7	-1	-7	-1	16	11	4	19	15.1
Alta	Max.	44	36	29	14	27	18	5	4	29	29	18	23	24	22	23	19	29	29	40	34	34	26	28	21	-1	0	18	27	21	29	38	20.5
	Min.	26	26	-1	-4	10	5	-7	-8	3	12	10	16	7	15	16	9	7	13	19	32	26	10	15	-3	-11	-17	-6	16	6	1	23	8.6
Amana	Max.	46	39	35	23	33	28	19	6	28	36	32	30	30	26	32	26	29	34	43	38	37	35	33	33	8	8	19	27	30	23	42	29.3
	Min.	29	33	17	2	11	15	0	-7	5	27	24	15	21	21	23	19	10	13	15	36	34	29	30	6	-6	-6	-1	14	10	2	17	14.8
Ames	Max.	48	40	..	18	33	..	12	6	31	34	24	28	28	24	26	24	30	32	40	40	38	38	32	..	37	32	23	29	34	30	44	30.5
	Min.	35	30	9	-2	5	9	-3	-6	-7	20	7	21	14	18	17	17	13	7	6	7	33	21	21	7	-2	-2	-4	11	13	4	12	10.7
Atlantic	Max.	43	38	33	20	30	25	16	11	31	34	22	26	27	23	24	23	31	32	40	37	34	28	30	31	8	8	21	30	29	32	43	27.9
	Min.	31	32	9	-7	16	11	11	-6	-1	17	16	21	18	19	21	12	1	-3	19	21	18	21	19	4	-2	-9	-1	19	15	4	26	11.3
Audubon	Max.	48	41	31	28	30	22	15	9	29	33	25	23	25	24	24	32	35	44	43	37	48	38	32	29	10	20	22	30	10	31	42	29.4
	Min.	35	30	4	-5	15	10	-5	-10	1	11	12	15	10	14	15	9	20	28	30	32	32	24	24	10	-7	0	7	10	-12	6	21	12.5
Baxter	Max.	48	41	36	36	30	28	17	8	28	34	25	30	29	24	30	26	34	42	36	37	38	33	34	11	5	18	13	27	30	26	45	29.0
	Min.	30	32	9	-2	15	12	-2	-10	4	20	20	18	15	16	20	15	12	17	34	32	25	25	4	-8	-8	-5	11	12	11	4	20	12.7
Bedford	Max.	52	44	35	21	32	24	21	18	31	37	27	27	27	25	29	24	29	33	41	40	35	39	30	32	11	10	21	31	32	35	46	30.3
	Min.	32	33	11	-2	17	12	3	1	8	25	20	23	20	21	21	9	3	-2	19	32	29	22	21	5	-1	-9	2	20	12	3	20	13.9
Belle Plain	Max.	43	35	28	20	35	24	13	5	27	35	28	28	29	22	33	29	33	35	36	40	37	31	32	10	0	8	16	27	30	25	43	27.0
	Min.	29	32	20	-1	12	14	-3	-6	5	27	20	15	19	8	20	16	10	13	23	35	34	28	27	4	-9	-2	-4	13	10	0	20	13.8
Bonaparte	Max.	54	41	32	22	34	27	20	8	31	38	38	32	31	24	32	27	33	39	45	44	37	36	34	34	10	9	22	27	39	32	50	31.7
	Min.	31	32	22	10	15	16	1	-3	4	30	28	21	21	20	22	17	14	18	25	37	33	29	31	9	1	-3	0	17	14	5	17	17.2
Britt	Max.	44	36	32	22	30	21	7	10	27	31	23	23	25	25	31	24	27	31	44	44	35	31	30	29	0	1	16	29	25	29	36	26.3
	Min.	26	29	4	-10	6	1	-5	-13	0	12	11	18	5	10	22	13	-2	13	18	33	29	15	15	0	-14	-16	-9	13	5	-2	16	7.8
Burlington	Max.	56	46	35	29	38	29	22	11	31	37	34	32	32	25	30	28	36	40	40	46	46	37	33	34	10	12	23	27	48	31	50	33.2
	Min.	34	35	28	14	18	22	3	-3	8	31	28	23	25	20	22	18	15	17	23	29	31	31	31	10	0	-3	1	17	14	8	21	18.4
Carroll	Max.	51	36	32	16	32	30	10	8	28	33	22	23	28	22	25	22	34	38	43	36	34	30	32	26	5	5	18	29	27	32	42	27.4
	Min.	25	30	5	-6	18	10	-9	-7	-2	10	12	18	10	17	18	14	11	22	32	32	30	15	14	3	-9	-14	-5	16	10	2	25	11.2
Cedar Rap.	Max.	47	40	35	22	31	30	18	5	28	35	33	30	30	28	30	28	29	34	43	40	39	36	34	39	8	8	16	26	30	22	45	29.6
	Min.	29	33	18	3	14	17	0	-7	4	28	24	15	22	20	23	19	12	15	18	36	34	30	30	7	-6	-5	-1	13	13	5	18	15.5
Chariton	Max.	52	42	33	21	33	23	18	9	31	35	27	27	29	26	27	26	32	33	42	44	38	36	30	30	9	8	19	27	46	35	46	30.1
	Min.	34	31	13	8	17	15	-1	-5	5	25	22	20	20	19	20	11	10	13	23	35	32	24	25	7	-1	-7	-1	16	24	4	24	15.6
Charles Cy.	Max.	40	35	36	30	27	23	20	4	27	32	23	24	24	26	34	26	27	28	38	38	38	34	30	32	4	6	6	27	27	23	38	26.7
	Min.	20	5	-5	10	9	5	-5	-15	3	13	10	10	15	14	17	16	5	8	12	30	29	21	20	2	-14	-17	-13	7	3	5	14	7.6
Chester	Max.	40	35	32	17	26	25	10	3	25	24	22	22	26	23	28	25	23	28	37	34	35	34	30	23	3	17	12	24	24	20	38	24.7
	Min.	5	22	5	-16	-12	-8	-6	-18	-3	15	8	11	13	5	20	12	4	8	8	33	30	21	12	2	-14	8	-10	8	8	-3	8	5.5
Clarinda	Max.	53	38	32	29	35	24	17	14	32	36	35	27	29	23	24	26	33	30	42	40	35	29	30	31	9	8	21	32	33	37	46	30.0
	Min.	30	32	6	-2	17	16	2	2	8	20	18	23	21	21	19	10	7	0	21	30	27	22	22	5	0	-8	4	21	12	6	20	13.9
Clear Lake	Max.	39	36	32	20	29	22	10	4	25	31	26	25	24	24	34	24	25	32	42	36	34	34	29	20	1	1	15	28	24	23	36	25.3
	Min.	19	24	6	-6	9	4	-5	-15	-2	10	8	15	9	9	20	14	4	10	13	32	30	17	15	-1	-15	-16	-10	9	5	-1	15	7.3
Clinton	Max.	45	36	36	27	36	31	20	5	29	35	32	35	32	27	32	28	28	34	48	40	38	36	33	33	6	12	18	27	34	21	43	30.2
	Min.	23	27	24	12	25	17	1	-12	5	29	21	17	20	16	24	20	11	15	18	35	34	32	29	6	-2	-4	-1	14	11	1	12	15.5
College Spr	Max.	52	43	33	21	30	24	19	24	32	36	25	27	25	23	25	25	30	29	42	38	38	32	30	30	8	8	32	31	34	35	45	29.9
	Min.	30	33	10	-3	17	17	3	3	10	23	21	23	22	22	22	10	9	5	20	31	32	23	22	6	1	-7	4	22	14	8	22	15.3
Colum. Jct.	Max.	48	42	32	27	35	29	20	11	30	39	32	32	31	26	31	27	30	37	45	38	37	34	32	15	6	9	14	32	37	30	48	30.2
	Min.	31	31	21	6	14	16	0	-5	5	23	25	16	20	11	23	12	12	17	25	33	34	30	28	-3	-2	-5	-3	20	16	4	21	15.4
Corning	Max.	49	38	33	21	30	23	19	21	31	35	24	27	25	23	25	24	29	29	39	48	34	32	32	31	7	7	21	30	30	33	43	28.8
	Min.	31	32	8	-2	18	11	-1	-1	4	21	12	21	17	19	20	9	6	1	20	32	28	20	3	3	-2	-10	1	19	12	4	24	12.3
Co. Bluffs	Max.	51	40	33	18	31	22	13	16	31	35	24	26	28	24	25	30	29	31	42	40	35	25	45	35	10	10	24	32	33	38	45	29.7
	Min.	30	33	3	-3	16	13	0	-1	16	14	11	22	18	22	15	9	11	5	27	22	23	20	23	-2	-4	-13	-3	17	10	7	24	12.4
Davenport	Max.	49	40	34	27	33	29	19	7	32	37	31	33	30	26	31	26	29	37	44	42	40	36	33	34	4	10	18	26	36	26	47	30.5
	Min.	35	32	23	12	26	19	1	-7	7	31	21	18	22	21	24	20	17	21	28	37	37	32	29	4	-4	-4	1	17	13	6	22	18.0
Decorah	Max.	43	36	34	21	30	22	4	4	25	32	26	24	28	25	30	18	29	35	37	37	36	35	32	29	3	7	17	24	27	22	39	26.5
	Min.	16	30	7	8	15	7	-2	-12	-2	16	17	10	20	9	23	16	7	12	15	33	33	22	23	0	-11	-8	-9	12	7	-1	20	10.7
Delaware	Max.	40	34	34	20	31	26	18	3	22	32	27	26	27	24	30	25	25	30	37	35	35	31	30	30	4	7	14	24	24	20	37	26.0
	Min.	21	25	11	0	10	9	-5	-15	1	21	17	10	20	10	20	16	6	12	17	32	32	25	23	4	-10	-10	-7	7	7	0	11	10.3
Denison	Max.	49	40	28	14	29	25	16	14	38	32	19	23	25	22	24	32	28	32	40	38	35	29	30	30	4	2	18	30	26	31	40	27.2
	Min.	28	20	5	-11	14	10	-10	-10	0	12	12	16	9	14	20	14	7	2	18	34	20	17	17	-1	-8	-14	-4	17	12	4	23	9.3
Des Moines	Max.	50	40	34	19	32	24	15	6	32	37	28	29	30	25	27	27	34	34	43	39	38	32	32	32	5	8	19	30	30	31	47	29.3
	Min.	36	34	10	7	14	15	1	-5	0	21	20	24	20	21	22	16	13	14	21	36	32	24	24	5	-4	-7	0	18	13	6	26	15.4
De Soto	Max.	50	41	34	24	33	28	19	15	31	35	26	25	28	29	30	34	30	34	43	40	38	34	32	32	8	6	21	31	..	..	..	29.4
	Min.	34	34	11	2	19	17	2	-3	5	20	19	5	18	22	22	18	14	14	23	35	33	24	24	6	-3	-7	3	18	..	..	..	15.1
Dows	Max.	44	38	32	14	27	20	14	10	28	32	22	22	24	22	25	24	25	32	39	36	35	33	29	28	4	-1	12	26	26	24	35	25.2
	Min.	26	31	4	-8	10	10	-8	-12	0	10	8	10	12	15	22	7	12	12	14	33	32	18	17	1	-12	-13	-7	12	11	0	19	9.2
Dubuque	Max.	44	37	34	23	30	28	17	4	23	35	26	28	30	27	32	27	30	36	38	38	38	36	31	29	3	10	17	24	27	21	42	27.9
	Min.	32	31	18	5	19	15	3	-6	2	23	19	14	23	20	25	20	13	20	23	36	35	29	27	3	-5	-3	-1	14	10	3	18	15.6
Earlham	Max.	49	39	32	18	31	25	16	6	29	34	23	27	29	24	27	25	31	35	38	37	35	34	29	27	5	3	18	27	29	32	44	27.7
	Min.	29	32	11	-5	11	10	-7	-10	-1	20	15	20	15	14	14	12	10	7	18	31	28	19	19	3	-4	10	-9	12	14	1	26	11.1
Eldon	Max.	53	41	33	21	35	26	21	10	32	37	39	32	32	26	35	29	35	39	46	43	39	38	35	35	8	12	20	29	34	33	30	31.5
	Min.	32	31	19	9	17	15	2	-4	4	30	26	19	22	21	21	16	12	12	20	35	33	27	30	8	-1	-6	-1	14	10	5	11	15.8
Elkader	Max.	47	37	35	20	31	28	17	7	23	34	30	26	35	33	34	31	33	41	41	37	38	35	31	30	2	15	17	24	27	24	45	29.3
	Min.	17	35	15	-5	16	9	0	-11	1	20	20	16	17	5	25	20	7	10	11	35	34	27	25	2	-8	-7	-8	8	5	0	16	11.5
Estherville	Max.	46	39	29	12	28	15	7	8	29	29	18	21	20	21	22	23	30	34	38	34	34	25	30	29	-2	-1	14	28	19	28	39	24.1
	Min.	27	29	1	-12	9	-4	-6	-10	-1	11	11	12	1	3	18	10	7	7	17	17	24	3	-1	-3	-16	-20	-14	14	5	1	18	5.2
Forest C'ty	Max.	43	41	34	29	25	21	9	1	0	31	21	23	25	23	27	21	28	41	35	37	35	33	29	31	0	-3	13	26	22	26	38	24.8
	Min.	26	25	20	-3	8	3	-4	-14	27	12	11	19	10	11	21	16	1	11	27	33	31	12	9	0	-14	-16	-8	7	-1	8	18	9.9
Galva	Max.	..	..	..	..	..	..	..	7	27	30	22	25	22	22	26	21	27	29	41	36	35	30	29	29	2	3	16	20	25	..	29	....
	Min.	32	26	6	-10	12	3	-14	-9	5	13	11	18	6	12	18	10	5	6	12	32	29	14	13	-1	-10	-15	-7	10	2	..	20	7.5
G. Meadow	Max.	40	42	32	20	30	26	16	4	20	32	24	24	28	26	32	27	27	30	38	36	36	28	29	9	3	6	15	25	25	20	39	25.5
	Min.	23	28	25	-2	12	0	-2	-14	-2	16	16	11	18	11	23	18	7	14	18	33	33	25	21	3	-11	-11	-6	7	8	0	14	10.8
Greene	Max.	44	38	32	19	29	25	15	4	23	31	25	24	26	24	29	25	27	34	39	45	35	34	30	30	4	4	17	27	26	25	39	26.7
	Min.	21	29	12	-6	15	5	-4	-12	2	18	14	18	18	11	22	19	17	10	12	34	33	25	21	3	-11	-9	-7	12	11	1	15	11.3
Greenfield	Max.	47	43	33	23	31	24	18	14	28	34	23	28	29	25	28	27	28	42	38	38	35	33	28	30	7	7	25	30	25	31	40	28.8
	Min.	31	33	7	-4	14	13	-4	-8	0	16	15	15	14	17	20	10	8	17	11	30	28	19	20	2	-5	-12	-4	18	11	3	22	11.5
Grinnell	Max.	41	42	43	18	29	19	11	7	28	33	25	27	27	27	29	25	29	32	40	37	36	35	31	31	9	5	17	26	28	29	42	27.7
	Min.	31	32	9	-2	18	15	-2	-8	-1	22	21	17	11	18	21	11	12	15	22	33	33	25	25	5	-6	-7	-4	15	12	9	17	13.5
Grinnell(n)	Max.	46	38	32	17	30	25	18	8	27	33	25	27	28	25	30	24	29	33	42	38	35	34	31	30	6	5	20	27	28	25	41	27.6
	Min.	29	31	14	0	16	14	-3	-10	5	23	21	17	19	18	21	15	8	11	20	35	33	25	25	4	-7	-7	-4	15	10	2	18	13.5
Grundy C'r	Max.	45	40	33	14	28	26	17	3	25	32	24	27	27	24	27	25	28	34	40	36	35	34	31	31	6	4	15	26	26	24	42	26.7
	Min.	26	33	12	-9	13	6	-7	-11	1	21	18	15	11	17	21	17	6	11	17	33	33	25	23	3	-10	-8	-7	12	8	-1	18	11.2
Guthrie Cr	Max.	44	40	20	30	32	17	8	29	34	23	26	28	29	31	25	23	32	36	43	38	35	35	30	30	7	0	19	29	20	32	42	28.0
	Min.	30	32	-6	14	10	-8	11	0	17	15	21	22	12	20	20	14	10	9	22	34	31	19	19	2	-7	-11	-4	19	15	4	19	12.4
Hampton	Max.	47	38	33	17	29	24	10	5	26	33	27	26	31	24	29	27	29	39	42	36	35	32	32	28	2	4	16	27	28	27	41	27.2
	Min.	26	25	9	-5	15	5	-5	-12	-1	13	11	18	12	14	22	15	10	15	19	33	32	22	19	2	-12	-10	-7	10	9	2	20	10.5
Hanl'nt'wn	Max.	46	46	32	12	25	26	6	8	27	35	20	22	23	28	27	24	36	37	37	35	34	29	35	29	0	-3	12	27	25	24	37	25.8
	Min.	20	30	4	-7	10	2	-4	-12	-2	10	10	17	6	6	22	15	5	9	8	33	28	11	11	-2	-15	-15	-7	10	5	-2	19	7.3
Harlan	Max.	48	37	32	22	31	23	17	15	30	33	22	26	27	23	25	22	30	26	43	38	34	26	30	30	3	7	19	30	27	30	39	27.3
	Min.	25	29	4	-7	13	12	-3	-5	1	12	12	19	13	19	19	9	-1	0	15	31	25	18	18	0	-5	-12	-1	18	9	1	15	9.8
Humboldt	Max.	46	40	32	16	30	23	12	6	29	32	22	26	24	24	29	23	28	33	40	36	35	33	30	30	2	-3	15	30	28	28	30	26.1
	Min.	28	32	10	-10	11	6	-4	-10	3	14	12	..	8	10	:	15	6	9	15	34	33	16	16	2	-12	-15	-10	..	10	0	20	8.9
Ida Grove	Max.	44	40	33	18	28	26	17	15	38	33	20	24	25	22	24	20	28	31	46	36	35	30	30	30	5	4	19	29	26	30	34	27.1
	Min.	24	28	9	-12	13	9	-7	-7	4	13	11	11	9	13	19	14	4	6	6	34	30	18	18	0	-8	-14	-4	17	11	2	23	9.5
In'pen'nce	Max.	41	37	31	17	27	26	16	1	24	32	24	24	25	23	26	23	25	29	37	36	35	35	30	30	3	4	12	23	25	19	39	25.5
	Min.	22	29	18	-2	11	11	-3	-11	0	24	19	13	18	14	22	18	3	7	12	33	32	25	24	3	-10	-10	-5	11	4	0	10	11.0
Indianola	Max.	50	45	34	20	32	28	19	7	31	35	26	28	29	25	26	25	..	35	45	39	36	36	31	31	9	9	20	34	29	..	..	14.6
	Min.	34	32	13	2	13	16	-3	-5	-1	25	19	17	19	19	21	15	..	17	19	35	32	19	24	5	-3	-8	-2	19	15	..	46	29.9
Iowa City	Max.	51	38	36	28	34	29	19	5	28	35	33	31	32	26	30	26	30	38	43	37	37	35	34	32	8	8	18	21	33	25	46	29.9
	Min.	31	32	19	4	11	13	-1	-7	4	28	24	16	21	19	22	20	11	12	18	31	32	30	30	7	-6	-6	-2	13	10	1	13	14.5
Iowa Falls	Max.	43	37	32	17	28	19	5	5	29	32	23	24	26	23	28	29	26	32

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR DECEMBER, 1902—CONTINUED.

STATION.		DATE.																														Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Keosauqua	Max...	51	42	33	24	34	30	22	10	32	39	34	32	31	26	32	28	33	38	46	45	39	38	34	35	10	10	21	28	38	33	50	32.2
	Min...	32	30	22	10	16	16	7	-2	5	31	23	21	24	20	23	17	14	13	21	37	33	29	29	10	1	-3	0	18	14	7	21	17.4
Lansing	Max...	45	38	34	22	29	30	20	15	20	33	25	26	32	30	32	32	35	40	35	33	38	38	35	25	20	32	24	20	21	24	25	29.4
	Min..	18	29	19	-3	8	6	3	-9	-5	11	18	8	20	18	6	22	8	10	20	18	25	21	25	10	-12	-8	12	10	16	16	15	11.5
Larrabee	Max..	47	38	30	17	28	21	9	9	31	31	21	23	24	23	27	22	29	32	42	35	36	28	30	29	8	4	18	29	20	29	33	26.1
	Min...	25	26	-1	-9	10	8	-10	-10	-3	11	11	16	4	12	18	10	6	10	9	33	26	10	12	-1	-13	-17	-6	1.	5	0	18	7.1
LeMars	Max..	45	40	30	16	29	21	11	9	35	28	25	25	26	24	24	21	30	28	42	42	38	32	35	29	4	6	19	30	21	30	36	26.8
	Min...	29	26	7	-10	11	5	-6	-4	8	12	11	18	18	15	19	11	8	5	18	34	18	15	11	-2	-9	-13	-2	16	-4	6	20	9.4
Lenox	Max..	49	43	33	21	31	23	18	11	30	35	23	26	25	23	25	23	28	31	38	39	35	33	29	31	7	7	20	30	30	33	44	28.2
	Min...	32	32	9	-2	17	13	-2	-3	3	22	17	21	17	19	19	6	5	3	19	33	27	21	20	2	-4	-12	-1	17	11	3	22	12.5
Leon	Max..	50	46	34	20	32	29	20	11	30	36	30	28	28	26	29	25	31	32	42	42	37	36	30	32	9	8	20	29	31	32	46	30.0
	Min...	31	33	12	7	13	18	2	-1	5	29	22	22	22	21	21	12	10	10	24	36	32	25	25	7	0	-7	1	8	14	7	22	15.6
Logan	Max...	44	44	42	20	32	25	18	15	32	33	34	26	27	25	27	24	31	27	43	37	34	28	30	31	4	9	21	32	29	33	41	28.8
	Min..	28	37	10	6	14	12	-3	-1	4	15	12	14	13	18	20	12	6	2	15	21	26	16	18	2	-3	-9	3	20	12	5	20	11.9
Maquoketa	Max...	45	36	35	25	30	30	20	5	26	36	31	30	33	30	31	26	28	34	40	38	39	37	34	33	8	14	11	25	29	20	42	29.4
	Min...	19	23	23	2	18	13	1	-13	-12	24	20	-8	11	6	10	19	8	12	10	34	33	26	25	5	-6	-7	-4	9	8	0	4	10.1
Marsh'lt'n	Max..	47	42	34	18	32	32	20	7	28	34	27	28	32	26	28	27	29	34	44	39	38	36	33	34	9	5	17	27	29	25	45	29.3
	Min...	28	31	14	-4	15	14	-4	-7	3	23	20	18	18	19	21	16	11	13	20	34	33	25	25	4	-8	-7	-4	15	13	4	20	13.6
Monticello	Max...	42	40	33	40	30	28	18	15	30	35	33	32	30	32	30	30	30	35	50	48	35	32	30	20	7	11	26	24	30	29	30	30.2
	Min...	19	14	15	10	0	5	-2	-14	0	15	10	12	10	15	15	10	6	11	26	30	19	20	13	4	-7	-8	5	6	0	5	11	9.0
Mt. Ayr	Max..	51	42	33	22	32	25	18	13	30	36	25	26	28	24	25	24	30	33	42	40	35	30	31	29	6	10	20	29	31	34	46	29.0
	Min...	30	32	10	3	14	14	1	-2	4	23	18	21	19	19	19	9	4	4	19	32	30	22	22	4	-2	-9	0	18	8	3	19	13.2
Mt. Ple's'nt	Max..	49	40	39	25	32	29	20	12	30	40	38	34	30	32	29	30	..	..	45	42	39	36	32	32	10	9	22	25	30	35	40	31.2
	Min...	22	32	22	5	12	15	-2	-8	2	25	25	19	16	15	19	22	20	22	25	24	21	20	16	5	-4	-8	2	3	5	14	17	13.6
Mt. Vernon	Max...	46	37	33	25	30	25	18	5	24	35	29	32	32	28	30	24	32	38	46	38	38	33	32	30	8	10	19	23	30	22	42	28.8
	Min...	25	31	20	2	14	14	-1	-11	4	24	21	12	22	16	21	17	9	13	18	33	33	28	28	4	-9	-8	-4	10	7	0	13	13.1
NewH'pton	Max...	41	35	33	18	26	25	15	..	22	30	23	23	25	24	29	..	..	..	37	36	35	34	30	30	..	5	11	24	25	20	38	26.7
	Min.	20	28	9	-3	-2	-2	..	..	-6	17	13	..	18	12	22	9	..	..	..	32	32	22	19	-1	-13	-13	-7	9	6	-3	..	9.4
Newton	Max...	47	44	35	18	30	30	20	9	27	34	25	28	29	27	27	26	29	32	40	39	37	37	31	24	9	5	17	28	28	26	43	28.4
	Min. .	30	32	14	0	15	15	-3	-10	3	23	19	18	16	19	20	14	9	10	19	34	32	24	18	4	-8	-9	-5	14	11	1	13	12.6
Northwood	Max...	44	36	33	18	32	22	8	8	26	30	28	26	28	24	32	25	30	37	39	37	35	32	30	30	0	2	13	28	24	26	40	26.5
	Min...	19	29	8	-3	12	6	-3	-13	0	11	11	18	9	11	22	15	8	12	11	33	30	19	18	-1	-13	-12	-5	11	6	0	15	9.2
Odebolt	Max...	46	39	34	17	29	35	15	7	27	33	22	26	27	24	24	20	30	35	42	36	35	32	30	29	5	-1	18	29	27	31	40	30.9
	Min...	33	27	7	-11	14	14	-7	-7	2	12	11	19	10	9	20	15	12	9	19	33	30	17	17	0	-8	-14	-4	17	13	3	22	10.8
Ogden	Max...	50	52	34	20	33	31	20	10	28	35	24	26	30	24	29	26	35	35	43	39	38	37	32	32	10	6	30	31	30	31	45	30.6
	Min..	40	38	20	-7	9	7	-7	-6	7	17	16	22	18	20	23	18	..	25	.	36	35	..	..	8	..	..	..	18	9	-1	18	16.0
Olin..	Max...	44	35	34	25	35	30	20	6	23	37	33	32	30	27	33	28	27	32	41	38	38	..	38	38	11	9	13	25	30	23	38	29.5
	Min...	21	26	25	-6	12	8	0	-13	2	22	22	13	22	16	22	18	6	12	12	35	34	32	28	4	-7	-7	-4	9	4	-2	6	13.0
Omaha, N.	Max...	50	42	32	18	29	21	16	12	34	36	21	26	26	24	24	26	31	30	43	39	34	24	35	35	4	7	23	31	31	38	46	28.6
	Min .	34	32	3	0	18	16	1	1	12	15	15	21	17	21	14	13	12	8	26	32	24	19	21	4	-3	-8	5	22	13	10	29	14.4
Onawa	Max...	46	41	32	15	31	26	18	11	30	28	23	26	31	23	25	28	34	29	40	36	34	25	31	30	4	9	20	31	25	34	41	27.0
	Min...	27	29	10	-4	13	13	-2	1	7	10	15	19	15	17	19	14	7	6	18	32	24	19	17	1	-4	-9	2	18	13	4	21	11.2
Osage	Max..	41	36	33	18	27	24	13	3	21	30	23	24	24	23	28	25	27	30	38	35	35	33	30	30	0	3	13	26	26	21	35	25.0
	Min...	18	31	11	-5	13	3	-2	-13	1	13	11	15	12	12	22	19	7	11	15	33	33	22	19	0	-13	-11	-8	11	6	-1	15	9.7
Osceola	Max...	51	42	40	35	35	32	10	15	28	32	25	27	26	25	27	25	33	36	42	41	36	34	30	31	30	26	26	28	30	33	47	31.5
	Min...	31	33	10	-2	12	10	0	-5	5	21	19	21	17	20	20	12	12	7	22	32	30	23	22	5	-3	-9	-1	15	15	5	17	13.5
Oskaloosa	Max...	52	43	32	21	35	28	18	8	32	36	28	30	30	26	30	26	31	38	45	38	39	36	32	32	8	8	20	28	31	29	45	30.2
	Min...	33	32	16	7	19	14	-3	-6	4	28	24	17	21	21	20	16	9	10	21	36	33	23	28	7	-4	-6	-2	16	11	3	20	15.1
Ottumwa	Max...	52	43	35	25	34	30	20	11	34	38	35	35	31	25	31	28	34	38	45	43	39	38	38	35	17	16	20	30	34	32	49	32.7
	Min...	36	34	18	13	21	19	4	-1	7	33	30	21	24	23	23	19	17	18	26	38	35	29	30	10	0	-2	3	6	16	8	20	18.6
Ovid	Max...	47	46	33	26	37	29	20	11	30	37	31	28	38	26	28	26	36	37	43	44	38	35	31	31	10	14	21	28	28	32	47	31.2
	Min...	28	32	17	8	17	15	-3	-5	-3	28	22	20	19	19	19	10	9	10	20	35	31	24	24	5	-2	-7	-2	15	12	-2	18	14.0
Pacific Jct.	Max ..	49	39	33	20	34	24	18	18	32	34	26	29	26	23	21	24	29	26	43	39	35	28	31	31	6	10	21	32	24	35	34	28.3
	Min ..	28	33	10	-4	12	18	-2	3	8	20	16	22	21	21	20	6	2	1	19	32	28	23	21	5	-1	-7	8	20	11	5	21	13.5
Perry	Max..	50	41	34	21	32	26	12	8	30	33	25	32	29	24	28	24	32	33	43	37	36	34	30	31	7	5	19	29	29	30	43	28.6
	Min...	30	31	10	-2	1	12	-4	-6	2	19	17	23	16	21	22	16	8	8	18	34	33	20	20	2	-5	-10	-2	19	14	4	22	12.7
Plover	Max...	45	36	26	14	11	21	5	22	28	30	20	22	27	22	31	20	27	30	33	38	40	35	25	18	5	14	15	30	35	31	37	25.6
	Min...	25	24	7	-10	10	4	-5	-2	4	15	16	15	14	10	18	15	1	20	20	31	..	..	..	0	-13	-17	-4	10	22	18	15	9.1
Red Oak	Max ..	56	50	36	35	43	27	22	26	38	38	29	29	38	29	30	25	31	26	53	42	37	31	49	34	12	9	29	32	31	33	41	33.7
	Min ..	32	33	12	4	20	20	7	3	13	21	19	23	20	24	22	15	12	4	20	33	31	23	23	8	2	-6	5	24	16	10	25	16.7
Ridgeway	Max...	43	40	35	24	32	22	12	10	30	32	32	31	32	30	31	30	31	39	40	42	38	35	32	32	2	13	21	29	29	24	40	29.5
	Min...	22	32	10	0	16	5	-1	-13	0	18	14	13	19	12	24	20	8	14	16	35	35	28	20	0	-10	-9	-4	12	9	0	20	11.8
Rockwell C	Max ..	46	45	25	20	28	23	12	10	20	28	28	28	23	23	31	23	35	33	40	37	40	35	35	30	6	10	19	32	30	33	38	28.4
	Min...	28	30	9	-5	6	9	-6	-6	1	10	10	20	9	13	20	10	9	15	17	33	32	17	17	2	-9	-12	-5	16	16	4	22	10.6
Sac City	Max..	43		32	18	29	24	12	7	28	26	18	25	30	22	28	24	28	30	40	38	38	30	..	..	4	-2	16	30	27	29	38	25.4
	Min.	25	28	8	-6	3	8	-5	-7	0	8	10	18	9	10	19	15	9	12	16	31	30	12	..	0	-10	-15	-5	15	10	3	20	9.0
St. Charles	Max...	53	41	34	24	36	25	18	10	30	31	25	26	29	24	28	28	38	45	46	40	36	36	32	31	9	12	23	29	31	35	48	30.8
	Min...	34	32	11	2	16	17	0	-5	4	20	19	21	16	20	20	14	13	11	22	36	30	23	23	5	-2	-8	-2	18	15	5	26	14.7
Scranton	Max...	46	39	33	18	..	29	..	12	29	33	22	26	27	22	23	23	32	33	39	36	35	34	29	30	11	2	18	29	29	29	40	27.9
	Min...	29	28	9	-6		-4	..	-6	-1	15	13	20	11	20	20	11	11	12	19	33	33	19	18	2	-6	11	-9	18	15	5	24	11.8
Sheldon	Max..	46	37	29	21	28	24	10	4	26	26	23	20	21	21	22	18	28	31	38	35	33	26	29	28	4	2	16	28	21	29	38	24.7
	Min .	25	27	5	-8	-8	3	-5	-12	3	8	10	15	0	6	18	9	4	8	9	33	26	11	7	-13	-16	-16	-5	14	6	0	18	5.9
Sibley	Max..	48	36	30	16	29	29	6	6	26	27	..	..	24	22	23	..	28	32	39	35	35	28	29	28	0	5	13	26	22	29	37	25.3
	Min...	27	29	1	-7	8	0	-2	-10	6	8	..	..	1	10	14	..	2	6	10	33	27	5	7	-2	-14	-16	-6	13	6	2	17	6.2
Sigourney	Max..	51	43	33	26	35	27	27	12	28	39	32	30	34	27	32	26	31	40	47	39	38	36	32	32	8	9	24	26	33	30	46	31.4
	Min...	30	31	20	3	13	15	-2	-6	4	27	24	16	21	20	21	18	9	13	23	35	33	27	29	7	-3	-6	-3	-1	10	1	19	14.5
SiouxC'nt'r	Max..	46	37	30	24	27	20	5	8	28	24	20	20	22	22	21	18	28	28	38	35	34	23	30	30	0	6	16	28	19	27	26	23.9
	Min ..	26	30	4	-6	9	5	-5	-9	4	9	11	11	5	6	17	10	5	10	14	32	23	8	6	-3	-13	-17	-4	14	8	0	17	7.3
Sioux City	Max...	46	42	27	15	28	18	5	9	30	28	19	25	25	23	22	21	32	24	40	37	34	22	35	15	1	2	20	29	23	32	38	24.7
	Min..	31	27	2	-9	11	5	-3	-3	9	13	12	19	14	19	19	11	10	5	19	34	22	14	14	-1	-7	-15	1	19	9	6	25	10.7
Storm L	Max ..	42	40	32	13	26	23	12	6	30	25	24	28	26	21	22	20	21	30	38	35	34	30	28	29	3	0	16	27	25	28	36	24.8
	Min...	26	28	5	-8	10	7	-8	-10	1	12	11	16	6	12	13	13	8	11	19	32	29	14	10	-2	-12	-18	-7	14	10	3	21	8.6
Thurman	Max,..	48	44	33	12	30	23	21	13	33	35	23	27	26	24	25	24	29	27	48	46	35	30	31	32	9	7	22	30	32	37	45	29.1
	Min .	30	33	10	-5	10	14	4	4	9	20	17	23	22	22	18	6	4	-7	9	29	28	22	22	6	0	-7	3	22	13	3	14	12.9
Tipton	Max..	50	45	34	25	34	32	20	7	25	36	32	34	30	30	32	30	28	35	40	40	38	37	32	30	8	9	18	28	32	28	42	30.4
	Min ..	30	30	23	5	15	14	0	-10	-2	25	22	13	20	15	21	20	14	15	22	34	32	30	28	7	-6	-7	-3	12	12	18	14.9
Toledo	Max ..	46	37	34	19	32	27	14	4	28	33	26	27	29	26	28	25	29	36	43	38	36	35	31	31	8	5	17	28	27	25	44	28.0
	Min ..	30	30	10	-3	13	12	-2	-8	3	23	22	17	19	18	22	16	9	12	20	34	33	27	25	4	-8	-7	-6	14	11	2	20	13.3
Villisca	Max.	44	43	40	32	38	34	18	24	32	35	32	30	28	25	22	28	36	43	40	41	34	32	30	20	12	22	26	33	36	33	45	31.9
	Min ..	20	32	20	-4	15	4	-2	0	5	25	20	18	18	16	17	10	4	6	10	26	28	23	18	6	-2	-10	0	6	10	6	20	11.8
Wapello	Max ..	47	42	34	29	32	29	23	10	29	35	34	31	31	25	31	30	32	34	40	41	41	36	31	34	13	15	21	26	36	30	45	31.3
	Min ..	32	32	29	15	18	20	5	-2	6	27	28	20	24	21	23	21	16	18	26	36	33	31	30	12	0	-1	4	16	16	9	22	18.0
Washin't'n	Max ..	50	37	31	23	35	23	14	7	32	38	28	34	32	25	32	26	32	38	45	40	36	33	34	13	5	9	20	26	35	29	48	29.4
	Min...	29	30	16	0	5	12	-3	-8	1	29	21	11	17	17	19	15	8	11	20	32	31	26	28	5	-7	-8	-4	12	7	-2	17	12.5
Waterloo	Max .	45	38	36	21	30	26	12	4	33	34	29	26	30	26	31	27	31	34	44	36	35	36	33	23	4	6	14	24	29	23	42	27.8
	Min.	25	30	15	-4	10	12	-2	-11	2	5	19	15	18	17	21	18	7	11	14	34	32	23	23	2	-10	-8	-4	12	7	3	13	11.3
Waverly	Max .	43	37	33	18	31	26	16	3	25	32	24	25	27	25	29	26	28	32	41	38	35	34	31	31	1	6	16	26	26	22	41	26.7
	Min..	23	31	10	-3	11	8	-3	-12	2	18	18	17	17	17	23	18	5	8	17	34	33	24	23	1	-13	-11	-5	14	10	1	15	11.3
West Bend	Max...	46	38	33	18	28	22	14	10	26	26	19	25	22	24	30	22	27	31	41	36	35	31	29	29	12	4	14	28	27	27	37	25.2
	Min...	23	29	7	-6	14	4	-3	-10	-1	13	13	13	6	9	21	15	6	13	9	34	31	13	9	1	-12	-15	-8	14	9	1	20	8.8
Wilton Jc.	Max...	46	35	33	25	25	25	20	8	27	38	32	33	31	26	32	28	30	34	45	39	39	36	33	33	10	12	20	26	33	23	43	29.6
	Min...	27	32	23	5	14	13	-2	-10	3	26	23	13	21	17	22	20	0	12	23	35	32	32	28	8	-5	-6	-3	12	10	-1	15	14.6
Winterset	Max ..	56	50	34	18	31	28	17	7	29	34	25	27	30	25	28	24	32	39	36	39	39	35	30	28	7	9	21	27	24	35	46	29.4
	Min ..	33	32	12	0	14	15	-2	-7	8	23	6	21	12	18	18	9	10	9	16	26	29	21	21	14	-4	-9	-2	16	9	5	15	12.5

DAILY AND MONTHLY PRECIPITATION FOR DECEMBER, 1902.

STATIONS.	DAY OF MONTH.																															TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	.55					.50						T	.50	20	.30					.25												2.30
Albia		.55	.23			.26				T	T	T	.34	.30	T				T	.22					T		T	.02			1.92
Algona		.80			.10	.07				T					.60	.10				.70		.08										2.45
Allerton		.40	.30	T		.05				.02	T	T	.10	.10	T				T	.30	.11			T								1.48
Alta		.55			T	.15		T				.02			.45				.30	.42	.03		.03				.01	.01			1.97
Alta (near)		.40				.30								.40	.10				.74	03												1.97
Amana		.36	.51			.24								03	.27				T	.40	.05		T	.03			.05	.03			1.07
Ames		.36	.20			40		T					.05	.05	.38				.01	.41				T			.01				1.87
Atlantic			.94			.40						.20		.30	.10				.60	.12							T				2.66
Audubon		.21	.30			.65			.15				.21	.08						.15												1.75
Baxter		.10	.10		.40										.20				1.00	.05							.10				1.95
Bedford		.50				.32				T		.32		.60					.38									.01			2.13
Belle Plaine		.10	.40		.05	.45									.25	.10			.25	.50	05			.10			.15				2.40
Bonaparte						.50							.30		.27					.40												1.47
Britt		.46	12		.05	.05						.15		.02	.38				.06	.55		T	.02	.02				.03	.02			1.93
Buckingham		.36			.02	.17									.36				.20	.21	.03			T				.05	T			1.40
Burlington		.46	.01			.30						.11	.16	.08	.21				.04	.70									06			2.13
Carroll			1.28			.50			T	T					.50				T	.30	T		T				T	T			2.58
Cedar Rapids			.41	.02		.64			T						.20			T	.29		.20			T			.15				1.96
Chariton		.45	.09	T		.30	T			T	T	.14	.16	16	.20				.05	.25	.02	T		T			.08				1.91
Charles City	.25	.10			.25	.10						T		T	.50	T			.05	70	T		.10	.20			T	.05			2.30
Chester		2.10	.40		.15	.01									.35				.10	1.10	.05		.01				.10				4.37
Clarinda		.12	.95	T		.13							.32		.44					.55							.02				2.53
Clear Lake		.50	20		.05	.10						T			05				T	1 0			.05				T	T			1.95
Clinton			.95			.25					.03				.05					.6	.04		.06				.10				2.09
College Springs		.60	.45	.02		.05				T	T	.05	.10	.30	30				.05	.48							.04				2.44
Columbus Junction		.55	.23		T	25				T	T	.10		.03	.45	T			T	.38	T	T	T	.03		T		T	.04	.10		2.16
Corning		.70	.30	T		.35					T	.20	.35	.80					.10	.27		T					.03				3.10
Council Bluffs		1.26	.33			.04						.03		.05	T				.03	.08	.09						T				1.91
Cumberland		.30			.40							.20		40	10				.40							T					1.80
Danville			T	T			.10			T	T	T	.10	.05	.10	T	T		.60	.10	.05										1.10
Davenport		.49	.12	T	T	.18	T		T	T	T	T	.02	T	.45	T			T	.47	.08	T		.03	T	T		T	09	T		1.88
Decorah		.56	.34		.07	T				T			T		.33	.02			.31	74	.06		.31	.02			.07	.06			3.00
Delaware		.57				.20									.20				.14	.61	.10		.25						.05			2.25
Denison							.60								.10					.50									T			1.40
Des Moines		.28	.28	T		.33	T			T		T	.06	.01	.34	.01			T	.36	.06	T	T	T		T		.04	T			1.77
De Soto		.40	.10	T		.60								.10	.30					1.19	T							.10				2.79
Dows		.20	.75		.13										.4				.10				.05						.04			1.70
Dubuque		.56	.30		.0	.04					T				.26	01			07	.59	.11	T	T	.10				.05	.14	T		2.24
Earlham		.30	.98	T		.25	T					T	.09	.17	30				T	.40	.09		T					T	.01			2.59
Eldon		.78	T			16						.05	.05	.08	T					.33	T							T				1.45
Elkader		1.00			T	08									.33					.80				.21				T	.08			2.50
Estherville		.64				T						.05		T	.35				.04	.66	T		.06					T				1.80
Forest City		.60			T	T		T				.10			.70			T		1 40	T			T				T				2.80
Fort Madison		.65	.20			.10				T	.05	.67		.20	.48				T	.65	.20					T						3.20
Galva		.45				.55		T				T		.10	.20					.60			T		T	T	T	T				1.90
Gilman			.40			.20		T		T		T			.40	.03			.03	.43	.13						.10		.05			1.60
Grand Meadow		.59					T								.34				.33	83			.20									2.44
Greene		.56	.21		T	.12									.40				.12	.55				.23				.06	.05			2.30
Greenfield			.26	T	T	.31	.12				T	.03	.32	.18	.28	T		T		.39	.02	T						.01	.05	.01			1.98
Grinnell		.52	19			37									.26					.58	.26				T		.08					2.26
Grinnell (near)			1.00			.40								.05	.15					.75									.15			2.50
Grundy Center		.07	.66		T	T	.23						T	T	.45				.05	.52	.07			T		T		T	T			2.05
Guthrie Center	.31	.40			.80								.01	.30	.40				T	T							.05					2.27
Hampton		.80				12								.45	09			.22	.66	.05			.02				.01					2.42
Harlan		.78	.31	T		.30	T		T		T		.05	.20	.30	T			.22	.52		T	T				.01	T				2.69
Hopeville		.39	.26			.08					.06	.11			.39				.36		.03						.01					1.69
Humboldt		.56	.20			05														.70							.04	.02				1.57
Ida Grove		.60				.50							.50	.60						.90												3.10
Independence		.25	.05		.04	.25					T			T	.27	T			.25	29			.20			.07		.10	.02			1.72
Iowa City		60	.70			.25	T			T				T	.30	T				.08	.13		T	T				T	.15			2.21
Iowa Falls		.30	.45		T	.20								.15	.35				T	.51	T		.10	T		T		.05	T			2.11
Jefferson			.85			.45									.32					.65			.02				.03					2.32
Keokuk		.35	.05			.06	T					.08	.24	.10	.42	T			T	89	.02	T		T		T	T	T				2.21
Keosauqua		.57	27	T		.26					T	T	.28	.14	.20					.45	T	T		T		T	T	T	.04			2.21
Lacona		.63	.31	T		.40	.05		.02		.06	.12	.41	.10	.32				.61	38								.19				3.80
Lansing		.22	.30													1.00			.20		.30				.10							2.12
Larrabee		.60				.20		T							.37					1.00	T					T	T	T				2.17
Le Claire			.42	T			.21			T		T	T	T	.02	.28	02			29	.07			.02	T				.04	.01			1.38
Le Mars		.30				.45									.10	.15				2.15												3.15
Lenox		.50	.20			.10				T	T	T	.05	.20	10	.20			T	.34							T					1.69
Leon		.39	.39	05		.18							.14	.17	.21				T	.35	.09	T	T					.01	.02			2.03
Logan			1.10			40							.10	.40	10				.02	02												2.14
Maquoketa			1.00												.40					.62	.14		.06						.13			3.35
Monticello	T	.60				.75									.45				T	.55			.05				.06	T				2.46
Mount Ayr		.40	.36			.20			.04		.26	.09	.20	41	.20				.10	.20	.03	T					.08					2.57
Mt. Vernon		.30	.65		.02	.23				.01	T			T	.25	.12			.02	.40	.10			.11	.01			.07	.11			2.40
New Hampton		.20	.30		T	.10						T			.40				1.00				T	.20				T	T			2.20
Newton		.16	.52			43							.08		.28				.07	.36	.15							.08				2.13
Northwood		.30	.50		.10	T						T			.80				T	88			.10				T	T			2.68
Odebolt	.55	.39				.25									.52				T	03	.76			T								2.50
Ogden			.70			.20									.22				T	.45							.06		T			1.63
Olin		1.30			T	.30				T					.25	T			.53	.47			.02									2.87
Omaha, Neb		.63	.34			.30		T		T	T	.10	.25	.28	.09				.16	.52	.02	T	T					.03					2.72
Onawa		.50	.40		.02	.50								.35	.30				.13	.60			.05									2.85
Osage		.35	.40		.10	.03									.60	.02			06	.64			.05	.10			.02	.04				2.41
Osceola			.50	T		40				T	T	T	.40	.20	64	T			T	.10	T	T	T				.10					2.34
Oskaloosa		06	.30			.20						.03	.31	.02		.33			.02	.2							.05					1.53
Ottumwa	.15					.25				T		.25		.01													.01					67
Ovid		.36	.48			.21				.01		.11	.28	.16	.28	T				.33	06			T				.05	.06			2.39
Pacific Junction		.85	.15			.35				T		.20	.03	.35	.05				.20	.33	T	T	T					.04				2.55
Perry		.54	.33		.60								.10		.40				T	.47	.03			T				.07				2.54
Plover		.40				.20								.10	.30								.10									1.10
Red Oak		.50	.44	T		.20			T	T		.20	.22		.40					56		T					T					2.52
Ridgeway		1.82			.15	.03									1.28	.01			.24	1.52	.02		.30	.09		T		.04	.01			5.51
Rockford		.60				.10									.35					.43			05						T			1.53
Rockwell City		.40				.20									.30				T	2.10			T					T				3.00
Sac City	T	.40	.20			.20		T	T			T		.10	.20				.02	.74			.10				.10	.10				2.16
St. Charles		.30	.46	T		.37		T				.10	.47	.15	.35	T			.10	.35	.05	T		T			.05	T				2.75
Scranton		.52	.70			.27								.06	.30					.58	.07			T				T				2.50
Sheldon		.10				.10		T				.10		.10	.20				.02	.45	.01	T	.03				T	01				1.12
Sibley		.10	.10		T	.08			T			20		.10	.40				T	.75	.05		.05	T			T	02				1.85
Sigourney			.82			.50					T	T	.10		.25				.15	.43		T		T		T	T	T				2.25
Sioux Center		.30				.20		.05				.05		.05	.40				.35	1.10	T		.10				T	T				2.60
Sioux City		.11	.08			.18							T	.15	.23	T			.14	.50	.01	T	.03				T	.08				1.43
Stockport		.09	.28	T		.09		T	T	T	T	.76		T	.42	T			.02	.31	.18	T		T	T	T		T				2.23
Storm Lake		.53	.10			.15						T	T	.04	.40				T	.70	T		T					T	T			1.92

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR DECEMBER, 1902—CONTINUED.

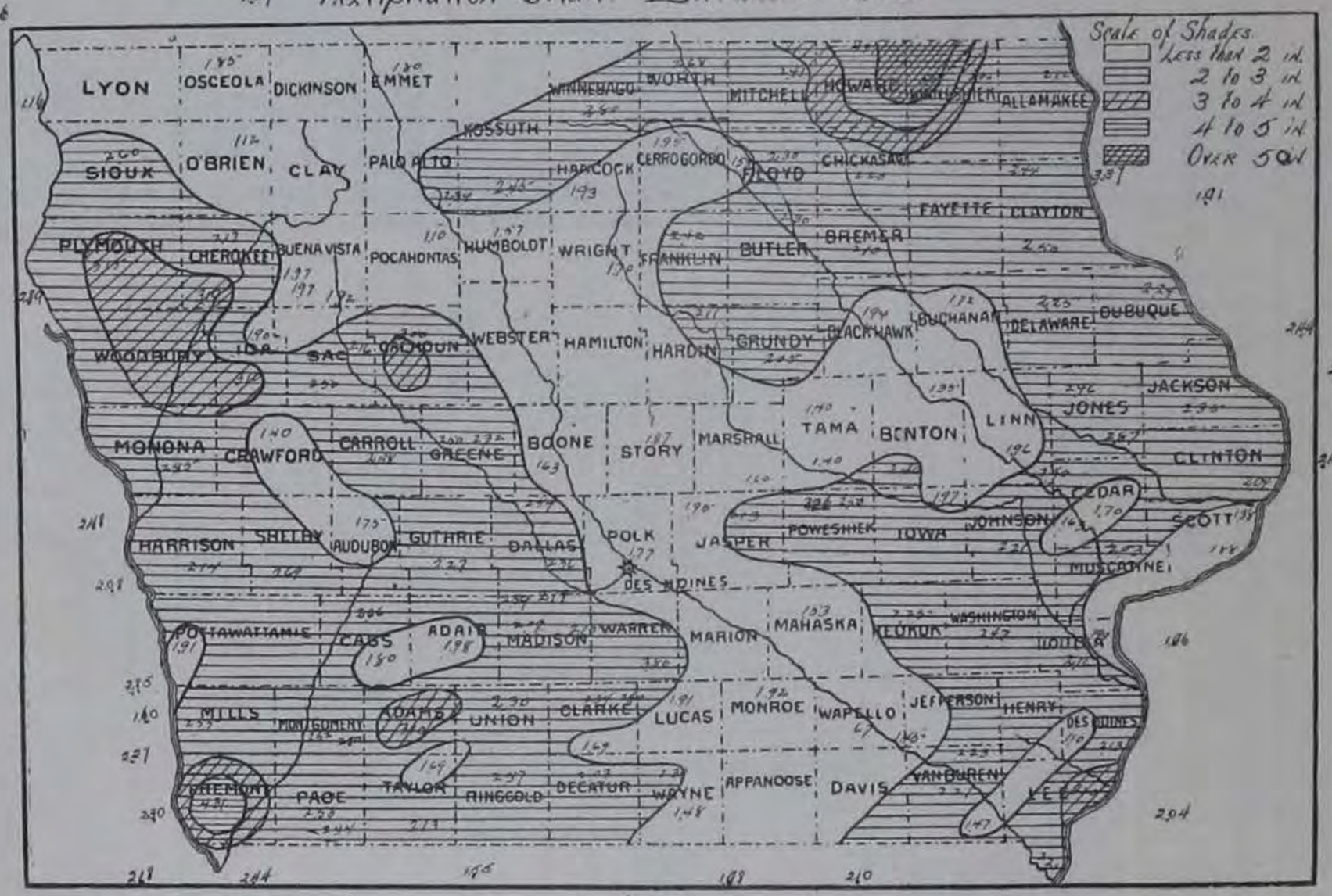
STATION.		DATE.																													Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Keosauqua	Max...	51	42	33	24	34	30	22	10	32	39	34	32	31	26	32	28	33	38	46	45	39	38	34	35	10	10	21	28	38	33	50	32.2
	Min...	32	30	22	10	16	16	7	-2	5	31	23	21	24	20	23	17	14	13	21	37	33	29	29	10	1	-3	0	18	14	7	21	17.4
Lansing	Max...	45	38	34	22	29	30	20	15	20	33	25	26	32	30	32	32	35	40	35	33	38	38	35	25	20	22	24	20	21	24	25	29.4
	Min..	18	29	19	-3	8	6	3	-9	-5	11	18	8	20	18	6	22	8	10	20	18	25	21	25	10	-12	-8	12	10	16	16	15	11.5
Larrabee	Max..	47	38	30	17	28	23	9	9	31	31	21	23	24	23	27	22	29	32	42	35	36	28	30	29	8	4	18	29	20	29	38	26.1
	Min...	25	26	-1	-9	10	8	-10	-10	-3	11	11	16	4	12	18	10	6	10	9	33	26	10	12	-1	-13	-17	-6	11	5	0	18	7.3
LeMars	Max..	45	40	30	16	29	21	11	9	35	28	25	25	26	24	24	21	30	28	42	42	38	32	35	29	4	6	19	30	21	30	36	26.8
	Min...	29	26	7	-10	11	5	-6	-4	8	12	11	18	18	15	19	11	8	5	18	34	18	15	11	-2	-9	-13	-2	16	-4	6	20	9.4
Lenox	Max..	49	43	33	21	31	23	18	11	30	35	23	26	25	23	25	23	28	31	38	39	35	33	29	31	7	7	20	30	30	33	44	28.2
	Min...	32	32	9	-2	17	13	-2	-3	3	22	17	21	17	19	19	6	5	3	19	33	27	21	20	2	-4	-12	-1	17	11	3	22	12.5
Leon	Max...	50	46	34	20	32	29	20	11	30	36	30	28	28	26	29	25	31	32	42	42	37	36	30	32	9	8	20	29	31	32	46	30.0
	Min...	31	33	12	7	13	18	2	-1	5	29	22	22	22	21	21	12	10	10	24	36	32	25	25	7	0	-7	1	8	14	7	22	15.6
Logan	Max...	44	44	42	20	32	25	18	15	32	33	24	26	27	25	27	24	31	27	43	37	34	28	30	31	4	9	21	32	29	33	41	28.6
	Min..	28	37	10	6	14	12	-3	-1	4	15	12	14	13	18	20	12	6	2	15	24	26	16	18	2	-3	-9	3	20	12	5	20	11.9
Maquoketa	Max...	45	36	35	25	30	30	20	5	26	36	31	30	33	30	31	26	28	34	40	38	39	37	34	33	8	14	11	25	29	20	42	29.1
	Min...	19	23	23	2	18	13	1	-13	-12	24	20	-8	11	6	10	19	8	12	10	34	33	26	25	5	-6	-7	-4	9	8	0	4	10.1
Marsh'll't'n	Max..	47	42	34	18	32	32	20	7	28	34	27	28	32	26	28	27	29	34	44	39	38	36	33	34	9	5	17	27	29	25	45	29.3
	Min...	28	31	14	-4	15	14	-4	-7	3	23	20	18	18	19	21	16	11	13	22	34	33	25	25	4	-8	-7	-4	15	13	4	20	13.6
Monticello	Max...	42	40	33	40	30	28	18	15	30	35	33	32	30	32	30	30	30	35	50	48	35	32	30	20	7	11	26	24	30	29	30	30.2
	Min...	19	14	15	10	0	5	-2	-14	0	15	10	12	10	15	15	10	6	11	26	30	19	20	13	4	-7	-8	5	6	0	5	11	9.0
Mt. Ayr	Max..	51	42	33	22	32	25	18	13	30	36	25	26	28	24	25	24	30	33	42	40	35	30	31	29	6	10	20	29	31	34	46	29.0
	Min...	30	32	10	3	14	14	1	-2	4	23	18	21	19	19	19	9	4	4	19	32	30	22	22	4	-2	-9	0	18	8	3	19	13.2
Mt. Ple's'nt	Max...	49	40	39	25	32	29	20	12	30	40	38	34	30	32	29	30	..	..	45	42	39	36	32	32	10	9	22	25	30	35	40	31.2
	Min...	22	32	22	5	12	15	-2	-8	2	25	25	19	16	15	19	22	20	22	25	24	21	20	16	5	-4	-8	2	3	5	14	17	13.0
Mt. Vernon	Max...	46	37	33	25	30	25	18	5	24	35	29	32	32	28	30	24	32	38	46	38	38	33	32	30	8	10	19	23	30	22	42	28.8
	Min...	25	31	20	2	14	14	-1	-11	4	24	21	12	22	16	21	17	9	13	18	33	33	28	28	4	-9	-8	-4	10	7	0	13	13.1
NewH'pton	Max...	41	35	33	18	26	25	15	..	22	30	23	23	25	24	29	..	..	..	37	36	35	34	30	..	5	11	24	25	20	38	26.7
	Min.	20	28	9	-3	-2	-2	..	..	-6	17	13	..	18	12	22	9	..	..	..	32	32	22	19	-1	-13	-13	-7	9	6	-3	..	9.4
Newton	Max...	47	44	35	18	30	30	20	9	27	34	25	28	29	27	27	26	29	32	40	39	37	37	31	24	9	5	17	28	28	26	43	28.4
	Min...	30	32	14	0	15	15	-3	-10	3	23	19	18	16	19	20	14	9	10	19	34	32	24	8	4	-8	-9	-5	14	11	1	13	12.6
Northwood	Max...	44	36	33	18	32	22	8	8	26	30	25	26	28	24	32	25	30	37	39	37	35	32	30	30	0	2	13	28	24	26	40	26.5
	Min...	19	29	8	-3	12	6	-3	-13	0	11	11	18	9	11	22	15	8	12	11	33	30	19	18	-1	-13	-12	-5	11	6	0	15	9.2
Odebolt	Max...	46	39	34	17	29	35	15	7	27	33	22	26	27	24	24	20	30	35	42	36	35	32	30	29	5	-1	18	29	27	31	40	26.9
	Min...	33	27	7	-11	14	14	-7	-7	2	12	11	19	10	9	20	15	12	9	19	33	30	17	17	0	-8	-14	-4	17	13	3	22	10.8
Ogden	Max...	50	52	34	20	33	31	20	10	28	35	24	26	30	24	29	26	35	35	43	39	38	37	32	32	10	6	30	31	30	31	45	30.0
	Min..	40	38	20	-7	9	7	-7	-6	7	17	16	22	18	20	23	18	..	25	.	36	35	..	..	8	..	..	..	18	9	-1	18	16.0
Olin..	Max...	44	35	34	25	35	30	20	6	23	37	33	32	30	27	33	28	27	32	41	38	38	37	38	38	11	9	13	25	30	23	38	30.5
	Min...	21	26	25	-6	12	8	0	-13	2	22	22	13	22	16	22	18	6	12	12	35	34	32	28	4	-7	-7	-4	9	4	-2	6	13.0
Omaha, N.	Max...	50	42	32	18	29	21	16	12	34	36	21	26	26	24	24	26	31	30	43	39	34	24	35	35	4	7	23	31	31	38	46	28.6
	Min .	34	32	3	0	18	16	1	1	12	15	15	21	17	21	14	13	12	8	26	32	24	19	21	4	-3	-8	5	22	13	10	29	14.4
Onawa	Max...	46	41	32	15	31	26	18	11	30	28	23	26	31	23	25	28	34	29	40	36	34	25	31	30	4	9	20	31	25	34	41	27.6
	Min...	27	29	10	-4	13	13	-2	1	7	16	15	19	15	17	19	14	7	6	18	32	24	19	17	1	-4	-9	2	18	13	4	21	12.3
Osage	Max..	41	36	33	18	27	24	13	3	21	30	23	24	24	23	28	25	27	30	38	35	35	33	30	30	0	3	13	26	26	21	35	25.0
	Min...	18	31	11	-5	13	3	-2	-13	1	13	11	15	12	12	22	19	7	11	15	33	33	22	19	0	-13	-11	-8	11	6	-1	15	9.7
Osceola	Max...	51	42	40	35	33	32	10	15	28	32	25	27	26	25	27	25	33	36	42	41	36	34	30	31	30	26	26	28	30	33	47	31.5
	Min...	31	33	10	-2	12	10	0	-5	5	23	19	21	17	20	20	12	12	7	22	32	30	23	22	5	-3	-9	-1	15	15	5	17	13.5
Oskaloosa	Max...	52	43	32	21	35	28	18	8	32	36	28	30	30	26	30	26	31	38	45	38	39	36	33	32	8	8	20	28	31	29	45	30.2
	Min...	33	32	16	7	19	14	-3	-6	4	28	24	17	21	21	20	16	9	10	21	36	33	23	28	7	-4	-6	-2	16	11	3	20	15.1
Ottumwa	Max...	52	43	35	25	34	30	20	11	34	38	35	35	31	25	31	29	34	38	45	43	39	38	38	35	17	16	20	30	34	32	49	32.7
	Min...	36	34	18	13	21	19	4	-1	7	33	30	21	24	23	23	19	17	18	26	38	35	29	30	10	0	-2	3	6	16	8	20	18.6
Ovid	Max...	47	46	33	26	37	29	20	11	30	37	31	28	38	26	28	26	36	37	43	44	38	35	31	31	10	14	21	28	28	32	47	31.2
	Min...	28	32	17	8	17	15	-3	-5	-3	28	22	20	19	19	19	10	9	10	20	35	31	24	24	5	-2	-7	-2	15	12	-2	18	14.0
Pacific Jct.	Max ..	49	39	33	20	34	24	18	18	32	34	26	29	26	23	21	24	29	26	43	39	35	28	31	31	6	10	21	32	24	35	34	28.3
	Min ..	28	33	10	-4	12	18	-2	3	8	20	16	22	21	21	20	6	2	1	19	32	28	23	21	5	-1	-7	8	20	11	5	21	13.5
Perry	Max..	50	41	34	21	32	26	12	8	30	33	25	32	29	24	28	24	32	33	43	37	36	34	30	31	7	5	19	29	29	30	43	28.6
	Min...	30	31	10	-2	1	12	-4	-6	2	19	17	23	16	21	22	16	8	8	18	34	33	20	20	2	-5	-10	-2	19	14	4	22	12.7
Plover	Max...	45	36	26	14	11	21	5	22	28	30	20	22	27	22	31	20	27	30	33	38	40	35	25	18	5	14	15	30	35	31	37	25.6
	Min ..	25	24	7	-10	10	4	-5	-1	4	15	16	15	14	10	18	15	1	20	20	31	..	..	..	0	-13	-17	-4	10	22	18	15	9.1
Red Oak	Max ..	56	50	36	35	43	27	22	26	38	38	29	29	38	29	30	25	31	26	53	42	37	31	49	34	12	9	29	32	31	33	41	33.7
	Min ..	32	33	12	4	20	20	7	3	13	21	19	23	20	24	22	15	12	4	20	33	31	23	23	8	2	-6	5	24	16	10	25	16.2
Ridgeway	Max...	43	40	35	24	32	22	12	10	30	32	32	31	32	30	31	30	31	39	40	42	38	35	32	32	2	13	21	29	29	24	40	29.5
	Min...	22	32	10	0	16	5	-1	-13	0	18	14	13	19	12	24	20	8	14	16	35	35	28	20	0	-10	-9	-4	12	9	0	20	11.8
Rockwell C	Max ..	46	45	25	20	28	23	12	10	20	28	28	28	23	23	31	23	35	33	40	37	40	35	35	30	6	10	19	32	30	33	38	28.4
	Min...	28	30	9	-5	6	9	-6	-6	1	10	10	20	9	13	20	10	9	15	17	33	32	17	17	2	-9	-12	-5	16	16	4	22	10.6
Sac City	Max..	43		32	18	29	24	12	7	28	26	18	25	30	22	28	24	28	30	40	38	38	30	..	..	4	-2	16	30	27	29	38	25.4
	Min.	25	28	8	-6	3	8	-5	-7	0	8	10	18	9	10	19	15	9	12	16	31	30	12	..	0	-10	-15	-5	15	10	3	20	9.0
St. Charles	Max...	53	43	34	24	36	25	18	10	30	31	25	26	29	24	28	28	38	45	46	40	36	36	32	31	9	12	23	29	31	35	48	30.8
	Min...	34	32	11	2	16	17	0	-5	4	20	19	21	16	20	20	14	13	11	22	36	30	23	23	5	-2	-8	-2	18	15	5	26	14.7
Scranton	Max...	46	39	33	18	..	29	..	12	29	33	22	26	27	22	23	23	32	33	39	36	35	34	29	30	11	2	18	29	29	29	40	27.9
	Min...	29	28	9	-6		-4	..	-6	-1	15	13	20	11	20	20	11	11	12	19	33	33	19	18	2	-6	11	-9	18	15	5	24	11.8
Sheldon	Max..	46	37	29	24	28	24	10	4	26	26	23	20	21	21	22	18	28	31	38	35	33	26	29	28	4	2	16	28	21	29	38	24.7
	Min .	25	27	5	-8	-8	3	-5	-12	3	8	10	15	0	6	18	9	4	8	9	33	26	11	7	-13	-16	-16	-5	14	6	0	18	5.9
Sibley	Max..	48	36	30	16	29	29	6	6	26	27	..	..	24	22	23	..	28	32	39	35	35	28	29	28	0	5	13	26	22	29	37	25.3
	Min...	27	29	1	-7	8	0	-2	-10	6	8	..	..	1	10	14	..	2	6	10	33	27	5	7	-2	-14	-16	-6	13	6	2	17	6.2
Sigourney	Max..	51	43	33	26	35	27	27	12	28	39	32	30	34	27	32	26	31	40	47	39	38	36	32	32	8	9	24	26	33	30	46	31.4
	Min...	30	31	20	3	13	15	-2	-6	4	27	24	16	21	20	21	18	9	13	23	35	33	27	29	7	-3	-6	-3	-1	10	1	19	14.5
SiouxC'nt'r	Max ..	46	37	30	24	27	20	5	8	28	24	20	20	22	22	21	18	28	28	38	35	34	23	30	30	0	6	16	28	19	27	26	23.9
	Min ..	26	30	4	-6	9	5	-5	-9	4	9	11	11	5	6	17	10	5	10	14	32	23	8	6	-3	-13	-17	-4	14	8	0	17	7.3
Sioux City	Max...	46	42	27	15	28	18	5	9	30	28	19	25	25	23	22	21	32	24	40	37	34	22	35	15	1	2	20	29	23	32	38	24.7
	Min..	31	27	2	-9	11	5	-3	-3	9	13	12	19	14	19	19	11	10	5	19	34	22	14	14	-1	-7	-15	1	19	9	6	25	10.7
Storm L	Max ..	42	40	32	13	26	23	12	6	30	25	24	28	26	21	22	20	21	30	38	35	34	30	28	29	3	0	16	27	25	28	36	24.8
	Min...	26	28	5	-8	10	7	-8	-10	1	12	11	16	6	12	13	13	8	11	19	32	29	14	10	-2	-12	-18	-7	14	10	3	21	8.6
Thurman	Max...	48	44	33	12	30	23	21	13	33	35	23	27	26	24	25	24	29	27	48	46	35	30	31	32	9	7	22	30	32	37	45	29.1
	Min .	30	33	10	-5	10	14	4	4	9	20	17	23	22	22	18	6	4	-7	9	29	28	22	22	6	0	-7	3	22	13	3	14	12.9
Tipton	Max..	50	45	34	25	34	32	20	7	25	36	32	34	30	30	32	30	28	35	40	40	38	37	32	30	8	9	18	28	32	28	42	30.4
	Min...	30	30	23	5	15	14	0	-10	-2	25	22	13	20	15	21	20	14	15	22	34	32	30	28	7	-6	-7	-3	12	12	12	18	14.9
Toledo	Max ..	46	37	34	19	32	27	14	4	28	33	26	27	29	26	28	25	29	36	43	38	36	35	31	31	8	5	17	28	27	25	44	28.0
	Min ..	30	30	10	-3	13	12	-2	-8	3	23	22	17	19	18	22	16	9	12	20	34	33	27	25	4	-8	-7	-6	14	11	2	20	13.3
Villisca	Max .	44	43	40	32	38	34	18	24	32	35	32	30	28	28	22	28	36	43	40	41	34	32	30	20	12	22	26	33	36	33	45	31.9
	Min ..	20	32	20	-4	15	4	-2	0	5	25	20	18	18	16	17	10	4	6	10	26	28	23	18	6	-2	-10	0	6	10	6	20	11.8
Wapello	Max ..	47	42	34	29	32	29	23	10	29	35	34	31	31	25	31	30	32	34	40	41	41	36	34	34	13	15	21	26	36	30	45	31.3
	Min ..	32	32	29	15	18	20	5	-2	6	27	28	20	24	21	23	21	16	18	26	36	33	31	30	12	0	-1	4	16	16	9	22	18.0
Washin't'n	Max ..	50	37	31	23	35	23	14	7	32	38	28	34	32	25	32	26	32	38	45	40	36	33	34	13	5	9	20	26	35	29	48	29.4
	Min...	29	30	16	0	5	12	-3	-8	1	29	21	11	17	17	19	15	8	11	20	32	31	26	28	5	-7	-8	-4	12	7	-2	17	12.5
Waterloo	Max .	45	38	36	21	30	26	12	4	33	34	29	26	30	26	31	27	31	34	44	36	35	36	33	23	4	6	14	24	29	23	42	27.8
	Min.	25	30	15	-4	10	12	-2	-11	2	5	19	15	18	17	21	18	7	11	14	34	32	23	23	2	-10	-8	-4	12	7	3	13	11.3
Waverly	Max .	43	37	33	18	31	26	16	3	25	32	24	25	27	25	29	26	28	32	41	38	35	34	31	31	1	6	16	26	26	22	41	26.7
	Min..	23	31	10	-3	11	8	-3	-12	2	18	18	17	17	17	23	18	5	8	17	34	33	24	23	1	-13	-11	-5	14	10	1	15	11.3
West Bend	Max...	46	38	33	18	28	22	14	10	26	26	19	25	22	24	30	22	27	31	41	36	35	31	29	29	12	4	14	28	27	27	37	25.2
	Min...	23	29	7	-6	14	4	-3	-10	-1	13	13	13	6	9	21	15	6	13	9	34	31	13	9	1	-12	-15	-8	14	9	1	20	8.8
Wilton Jc.	Max...	46	34	33	25	25	25	20	8	27	38	32	33	31	26	32	28	30	34	45	39	39	36	33	33	10	12	20	26	33	23	43	29.6
	Min...	27	32	23	8	14	13	-2	-10	3	26	23	13	21	17	22	20	0	12	20	35	32	32	28	8	-5	-6	-3	12	10	-1	15	14.6
Winterset	Max ..	56	50	34	18	31	28	17	7	29	34	25	27	30	25	28	24	32	39	36	39	39	35	30	28	7	9	21	27	24	35	46	29.4
	Min ..	33	32	12	0	14	15	-2	-7	8	23	6	21	12	18	18	9	10	9	16	26	29	21	21	14	-4	-9	-2	16	9	5	15	12.5

DAILY AND MONTHLY PRECIPITATION FOR DECEMBER, 1902.

STATIONS.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL.
Afton	.55					.50						T	.50	20	.30					.25												2.30
Albia		.55	.23			.26				T	T	T	.34	.30	T				T	.22						T		T	.02			1.92
Algona		.80			.10	.07				T					.60	.10				.70		.08										2.45
Allerton		.40	.30	T		.05				.02	T	T	.10	.10	T				T	.30	.11			T				.10				1.48
Alta		.55			T	.15		T				.02			.45				.30	.42	.03		.03					.01	.01			1.97
Alta (near)		.40				.30								.40	.10				.74	03												1.97
Amana		.36	.51			.24								03	.27				T	.40	.05		T	.03				.05	.03			1.97
Ames		.36	.20			.40		T					.05	.05	.38				.01	.41				T				.04				1.87
Atlantic			.94			.40						.20		.30	.10				.60	.12								T				2.66
Audubon		.21	.30			.65			.15				.21	.08						.15												1.75
Baxter		.10	.10		.40										.20				1.00	.05								.10				1.95
Bedford		.50				.32				T		.32		.60					.38										.01			2.13
Belle Plaine		.10	.40		.05	.45									.25	.10			.25	.50	05			.10				.15				2.40
Bonaparte						.50							.30		.27					.40												1.47
Britt		.46	.12		.05	.05						.15		.02	.38				.06	.55		T	.02	.02				.03	02			1.93
Buckingham		.36			.02	.17									.36				.20	.21	.03			T				.05	T			1.40
Burlington		.46	.01			.30						.11	.16	.08	.21				.04	.70									06			2.13
Carroll			1.28			.50			T	T					.50				T	.30	T		T					T	T			2.58
Cedar Rapids			.41	.02		.64			T						.20			T	.29		.20		T					.15				1.96
Chariton		.45	.09	T		.30	T			T	T	.14	.16	16	.20				.05	.25	.02	T		T				.08				1.91
Charles City	.25	.10			.25	.10						T		T	.50	T			.05	70	T		.10	.20				T	.05			2.30
Chester		2.10	.40		.15	.01									.35				.10	1.10	.05		.01					.10				4.37
Clarinda		.12	.95	T		.13							.32		.44					.55								.02				2.53
Clear Lake		.50	20		.05	.10						T			05				T	1.0			.05					T	T			1.95
Clinton			.95			.25					.03				.05					.6	.04		c6					.10				2.09
College Springs		.60	.45	.02		.05				T	T	.05	.10	.30	30				.05	.48								.04				2.44
Columbus Junction		.55	.23		T	25				T	T	.10		.03	.45	T			T	.38	T	T	T	.03		T		T	.04	.10		2.16
Corning		.70	.30	T		.35					T	.20	.35	.80					.10	.27		T						.03				3.10
Council Bluffs		1.26	.33			.04						.03		.05	T				.03	.08	.09							T				1.91
Cumberland		.30			.40							.20		40	.10				.40									T				1.80
Danville			T	T			.10			T	T	T	.10	.05	.10	T	T		.60	.10	.05					T						1.10
Davenport		.49	.12	T	T	.18	T		T	T	T	T	.02	T	.45	T			T	.47	.08	T		.03	T	T		T	.04	T		1.88
Decorah		.56	.34		.07	T				T			T		44	.02			.31	74	.06		.31	.02				.07	.06			3.00
Delaware		.57				.20									.33				.14	.61	.10		.25						.05			2.25
Denison							.60							.20	.10					.50									T			1.40
Des Moines		.28	.28	T		.33	T			T		T	.06	.01	.34	.01			T	36	.06	T	T	T		T		.04	T			1.77
De Soto		.40	.10	T		.60								.10	.30					1.19	T							.10				2.79
Dows		.20	.75		.13										.4				.10				.05						.04			1.70
Dubuque		.56	.30		.0	.04					T				.26	01			07	.59	.11	T	T	.10				.05	.14	T		2.24
Earlham		.30	.98	T		.25	T					T	.09	.17	30				T	.40	.09		T					T	.01			2.59
Eldon		.78	T			16						.05	.05	.08	T					.33	T							T				1.45
Elkader		1.00			T	08									.33					.80				.21				T	.08			2.50
Estherville		.64				T						.05		T	.35				.04	.66	T		.06						T			1.80
Forest City		.60			T	T		T				.10			.70			T		1.40	T			T				T				2.80
Fort Madison		.65	.20			.10				T	.05	.67		.20	.48				T	.65	.20					T		T				3.20
Galva		.45				.55		T				T		.10	.20					.60			T					T				1.90
Gilman			.40			.20		T		T		T			.40	.03			.03	.41	.13		T		T	T	T		T			1.60
Grand Meadow		.59					T					T			.34				.33	83			.20				.10		.05			2.44
Greene		.56	.21		T	.12									.40				.12	.55				.23				.06	.05			2.30
Greenfield			.26	T	T	.31	.12				T	.03	.32	.18	.28	T		T		.39	.02	T						.01	.05	.01		1.98
Grinnell		.52	19			37									.26					.58	.26							.08				2.26
Grinnell (near)			1.00			.40								.05	.15					.75					T				.15			2.50
Grundy Center		.07	.66		T	T	.23						T	T	.45				.05	.52	.07			T		T		T	T			2.05
Guthrie Center	.31	.40			.80								.01	.30	.40				T	T								.05				2.27
Hampton		.80				.12								.45	.09			.22	.66	.05			.02					.01				2.42
Harlan		.78	.31	T		.30	T		T		T		.05	.20	.30	T			.22	.52		T	T					.01	T			2.69
Hopeville		.39	.26			.08					.06	.11			.39				.36		.03							.01				1.69
Humboldt		.56	.20			05														.70								.04	.02			1.57
Ida Grove		.60				.50							.50	.60						.90												3.10
Independence		.25	.05		.04	.25					T			T	.27	T			.25	27			.20			.07		.10	.02			1.72
Iowa City		60	.70			.25	T			T				T	.30	T				.08	.13		T	T				T	.15			2.21
Iowa Falls		.30	.45		T	.20								.15	.35				T	.51	T		.10	T		T		.05	T			2.11
Jefferson			.85			.45									.32					.65			.02					.03				2.32
Keokuk		.35	.05			.06	T					.08	.24	.10	.42	T			T	.89	.02	T		T		T	T	T	T			2.21
Keosauqua		.57	27	T		.26					T	T	.28	.14	.20					.45	T	T		T		T	T	T	.04			2.21
Lacona		.63	.31	T		.40	.05		.02		.06	.12	.41	.10	.32				.61	.38								.19				3.80
Lansing		.22	.30													1.00			.20		.30					.10						2.12
Larrabee		.60				.20		T							.37					1.00	T						T	T	T			2.17
Le Claire			.42	T			.21			T		T	T	T	.02	.28	02			29	.07			.02	T				.04	.01		1.38
Le Mars		.30				.45								.10	.15					2.15												3.15
Lenox		.50	.20			.10						.05	.20	10	.20				T	.34								T				1.69
Leon		.39	.39	05		.18				T	T	T	.14	.17	.21				T	.35	.09	T	T					.01	.02			2.03
Logan			1.10			40							.10	.40	10				.02	02												2.14
Maquoketa			1.00												.40					.62	.14		.06							.13		2.35
Monticello	T	.60				.75									.45				T	.55			.05					.06	T			2.46
Mount Ayr		.40	.36			.20			.04		.26	.09	.20	41	.20				.10	.20	.03	T						.08				2.57
Mt. Vernon		.30	.65		.02	.23				.01	T			T	.25	.12			.02	.40	.10			.11	.01			.07	.11			2.40
New Hampton		.20	.30		T	.10						T			.40				1.00				T	.20				T	T			2.20
Newton		.16	.52			.43							.08		.28				.07	.36	.15								.08			2.13
Northwood		.30	.50		.10	T						T			.80				T	88			.10					T	T			2.68
Odebolt	.55	.39				.25									.52					03	.76											2.50
Ogden			.70			.20									.22				T	.45				T			.06					1.63
Olin		1.30			T	.30					T				.25	T			.53	.47			.02						T			2.87
Omaha, Neb.		.63	.34			.30		T		T	T	.10	.25	.28	.09				.16	.52	.02	T	T					.03				2.72
Onawa		.50	.40		.02	.50								.35	.30				.13	.60			.05									2.85
Osage		.35	.40		.10	.03									.60	.02			06	.64			.05	.10				.02	.04			2.41
Osceola			.50	T		40				T	T	T	.40	.20	64	T			T	.10	T	T	T					.10				2.34
Oskaloosa		06	.30			.20						.03	.31	.02		.33			.02	.2								.05				1.53
Ottumwa	.15					.25				T		.25		.01														.01				67
Ovid		.36	.48			.21				.01		.11	.28	.16	.28	T				.33	c6			T				.05	.06			2.39
Pacific Junction		.85	.15			.35				T		.20	.03	.35	.05				.20	.33	T	T	T					.04				2.55
Perry		.54	.33		.60								.10		.40				T	.47	.03			T				.07				2.54
Plover		.40				.20								.10	.30								.10									1.10
Red Oak		.50	.44	T		.20			T	T		.20	.22		.40					56		T						T				2.52
Ridgeway		1.82			.15	.03									1.28	.01			.24	1.52	.02		.30	.09		T		.04	.01			5.51
Rockford		.60				.10									.35					.43			05						T			1.53
Rockwell City		.40				.20									.30				T	2.10			T					T				3.00
Sac City	T	.40	.20			.20		T	T			T		.10	.20				02	.74			.10					.10	.10			2.16
St. Charles		.30	.46	T		.37		T				.10	.47	.15	.35	T			.10	.35	.05	T		T				05	T			2.75
Scranton		.52	.70			.27								.06	.30					.58	.07			T				T				2.50
Sheldon		.10				.10		T				.10		.10	.20				.02	.45	.01	T	.03					T	01			1.12
Sibley		.10	.10		T	.08			T			20		.10	.40				T	.75	.05		.05					T	02			1.85
Sigourney			.82			.50					T	T	.10		.25				.15	.43		T		T		T		T	T			2.25
Sioux Center		.30				.20		.05				.05		.05	.40				.35	1.10	T		.10					T	T			2.60
Sioux City		.11	.08			.18							T	.15	.23	T			.14	.50	.01	T	.03					T	T			1.43
Stockport		.09	.28	T		.09		T	T	T	T	.76		T	.42	T			.02	.31	.18	T		T	T	T		T	.08			2.23
Storm Lake		.53	.10			.15						T	T	.04	.40				T	.70	T		T					T	T			1.92

DAILY AND MONTHLY PRECIPITATION FOR DECEMBER, 1902—CONTINUED.

STATIONS.	DAY OF MONTH. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL.
Thurman	....	1.54	.62	....	....	.30	T	....	T	....	..	.30	.40	.40	.10	....	....	....	.30	.35	T	T	T	....	....	....	....	T	....	....	....	4.31
Tipton	....	.30	.60	....	.05	.20	....	....	....	....	....	....	....	T	.10	....	....	....	....	.25	....	....	....	....	....	....	....	....	.20	....	....	1.70
Toledo	....	....	.20	....	....	.40	....	....	....	....	....	.10	....	....	.30	....	....	....	....	.25	....	....	.05	....	....	....	....	.10	....	....	....	1.40
Villisca	....	.65	.43	....	....	....	T	....	T	....	....	.54	....	....	.50	....	....	....	.10	.53	....	....	T	....	....	....	....	.05	....	....	....	2.80
Vinton	....	....	.60	....	T	.30	....	....	T	....	....	....	....	....	.40	....	....	....	....	....	....	....	.05	....	....	....	....	....	....	....	....	1.35
Wapello	....	.20	.50	....	....	.17	....	....	....	....	....	.03	.12	T	.47	....	....	....	.08	.40	.02	..	..	....	....	....	....	....	....	....	....	1.90
Washington	...	.92	....	....	....	.40	....	....	....	....	....	....	.15	....	.30	..	....	....	....	.50	....	....	.02	..	....	....	....	.18	....	....	....	2.47
Washta	..	.75	..	..	....	.60	....	....	....	....	....	T	..	.25	.10	....	....	....	1.40	....	T	....	T	....	....	....	....	....	T	....	....	3.10
Waterloo	....	.32	.46	....	T	.14	....	..	....	....	T	....	..	....	.36	T	....	....	.04	.47	....	....	.04	.03	..	....	..	.08	T	..	....	1.94
Waukee	....	.19	.55	T	....	.50	....	....	....	..	....	T	.20	.20	.25	..	..	....	T	.30	.07	....	..	....	....	....	....	.10	T	....	....	2.36
Waverly	...	40	.35	....	.05	.10	..	....	....	....	....	....	....	....	.40	....	....	....	.08	.51	.04	....	.05	.05	....	....	..	.04	.03	..	....	2 10
West Bend	....	.50	....	....	T	.10	..	T	..	....	....	T	....	....	.70	....	....	....	....	.97	.02	T	.05	..	....	..	....	T	T	....	....	2.34
West Branch	....	....	.50	..	....	....	.20	....	....	T	T	....	....	....	....	.10	....	..	....	.45	18	....	....	....	....	....	....	....	.20	....	....	1.63
Wilton Junction	..	....	.98	....	....	.25	....	....	....	....	..	....	....	....	42	....	....	....	....	.33	..	....	....	....	....	....	....	.05	....	....	....	2.03
Winterset	...	.30	.50	..	..	.25	....	....	....	....	..	....	.06	.08	.40	....	....	....	T	.50	....	....	....	....	....	....	....	T	....	....	....	2.09
Woodburn	....	.88	....	....	....	.33	....	....	....	....	....	.25	....	.15	.10	....	....	....	.51	.13	T	....	....	....	....	....	....	.05	....	....	....	2.40



APPENDIX--ANNUAL SUMMARY, 1902.

CLIMATOLOGY OF THE YEAR 1902.

BAROMETER.—The mean pressure for the year was 30.01 inches. The highest observed pressure was 30.96 inches on January 28th at Dubuque; lowest pressure, 28.67 inches, on February 28th at Davenport. Range for the state 2.29 inches.

TEMPERATURE.—The mean temperature for the state was 47.8°, which is 0.6° above normal. The highest temperature reported was 98° on July 30th at Charles City. The lowest temperature reported was 31° below zero on January 27th at Atlantic. Range for the year 129°.

PRECIPITATION.—The average amount of rain and melted snow for the year, as shown by complete records of 99 stations, was 44.31 inches, which is 14.01 inches above the normal and 19.69 inches above the average amount for 1901. The greatest amount recorded at any station for the year was 58 80 inches at Columbus Junction; least amount recorded 20.14 inches at Sioux City. The greatest monthly rainfall was 18 04 inches at Grand Meadow in May; least amount, a trace, at Cresco in March; the greatest amount in any consecutive 24 hours was 6 96 inches at Allerton, August 25th and 26th. The average number of days on which .01 inch or more of rain fell was 100.

WIND AND WEATHER.—The prevailing direction of wind was northwest. Highest velocity reported, 74 miles an hour, in Sioux City, from the north, on April 25th. Average daily wind movement 211 miles. There were 145 clear days, 109 partly cloudy, and 111 cloudy days.

REVIEW OF THE CROP SEASON, 1902.

January, 1902, was warmer than usual, the daily mean temperature being about 5 degrees above normal, and the average precipitation for the state was b low normal. February temperature averaged about 4 degrees below normal, and the precipitation was less than the normal amount, the larger part coming about the close of the month The winter as a whole was about as moderate and favorable as the average in this section.

March was warmer than usual, the mean temperature ranging from 4 to 7 degrees above the normal. Wintry weather of considerable severity prevailed from the 1st to the 4th and from the 15th to the 19th, but the balance of the month was mostly springlike and unusualy favorable for early farm operations. The soil was in excellent condition for plowing, and seeding of spring wheat and oats was well advanced before the close of the month. The season opened from ten days to two weeks earlier than the average in this section. The cold wave and high wind, prevalent from the 16th to the 18th, caused some damage to winter wheat in the southern and central counties, and delayed spring seeding in all parts of the state. The average perecipitation was below normal, but there was ample moisture to facilitate plowing and for germination of grain.

April was slightly cooler and drier than usual, the abnormal condition prevailing for the most part through the first and second decades. The last decade was seasonably warm, and copious showers relieved apprehensions of a serious drouth. The worst features of the month were the frequent dust storms and strong gales, which caused considerable damage to windmills, trees and light structures, and wrought some injury to newly seeded grain crops in exposed localities, by uncovering the grain or blowing the loose soil into drifts. The conditions however, were generally favorable for field work, and more than usual progress was made in seeding and preparing the ground for planting corn. In southern localities the planters were started about the 28th to 30th of April. The germination of small grain was retarded by the cold and dry weather in the first half of the month, but there was considerable moisture below the dry surface to quicken growth when the soil became warmer during the last decade. At the close of the month the grain crops were making a fair stand and the outlook was generally promising. The foliage and bloom on fruit trees appeared very near the normal period. There was a fair prospect for apples, plums and cherries, but peach buds were not in evidence, and the smaller fruits did not give promise of full average crops. Pastures and meadows were late in starting, but the growth was fairly good at close of April.

In marked contrast with the preceding month, May was warm and showery. The daily excess in temperature was about 4°. The average rainfall for the state was 5.39 inches, which is 1.42 inches above normal. There was great inequality in the distribution of rainfall, ranging from 87 of an inch at Washta, Cherokee county, to 18.04 inches at Grand Meadow, Clayton county. The area of the marked deficiency was limited to a small portion of the northwest district. The northern section received the heaviest rainfall, and the eastern half of that section the bulk of that amount. But the soil was very dry, and in excellent condition to absorb and retain a goodly portion of the copious moisture; and despite the interruption of frequent rainy days the work of planting corn progressed rapidly between showers, so that before the close of the month the corn area was practically planted. The seed was generally good, and a fair stand of corn was secured, with not more than the usual amount of replanting. Cultivation was begun early, and in portions of the state where the rainfall was about normal, or less than normal, the crop was most thoroughly cleaned and made most satisfactory progress. Generally corn was rated in high condition on June 1st. The copious rains, though not so favorable for corn planting and cultivating, were highly favorable to grass in pastures and meadows, and caused a heavy growth of all small grain crops. Except in portions of the northwest district spring wheat, oats and barley showed a tendency to rankness, causing apprehension of damage by lodging and rust. The potato crop was generally very promising at close of the month, and garden truck was seldom in better condition at the corresponding date.

June was an abnormal month in respect to temperature, amount of rainfall and excess of cloudiness. The daily average temperature for the state was about 5° below normal, and the daily average of the last decade was about 11° colder than the first decade of the month—a reversal of usual conditions. At the central station the records show only 49 per cent of sunshine for the month, and about 75 per cent of mean relative humidity. On the mornings of the 21st and 22d frost was observed at numerous stations, with some damaging results in the northwest district. The average rainfall was 7.16 inches, which is 2.90 inches above normal. The heaviest amounts were recorded in the central district, and the lowest in several counties of the northwest district. One striking feature was the fact that showers fell in some portion of the state every day in the month. The average number of clear days for all stations of record was only eight, as against an average of twenty-two cloudy or partly cloudy days. As a result of these abnormal weather conditions farming operations were greatly retarded, and in the wettest portions field work was wholly

impracticable except at short intervals between showers. On the river bottoms in the central counties many thousand acres of corn, small grain and meadows were flooded and the crops practically ruined. But despite all the drawbacks fully three-fourths of the corn acreage had been fairly well cultivated, and the average condition of early planted fields was promising at close of the month. The oats crop grew unusually rank on rich lands in all sections where the rainfall was at or above normal, and there was a tendency to rust. At close of the month oats and spring wheat were filling well, and were standing up remarkably well though bulky in straw. Winter wheat, rye and clover harvest was begun, but the wet weather was unfavorable for securing hay and grain. Potatoes, pastures and garden vegetables made great advancement. The wet weather was very favorable for new seeding of grasses.

In respect to temperature, July was about normal, the average for the state being 73 degrees; but the month broke all records as to amount and distribution of rainfall, frequency of showers, severe wind squalls and extent of overflow of the principal rivers of the state. The average precipitation was 8.67 inches, or about 5 inches above normal, and the reports of all stations of record showed an excess. As in the preceding month of June, the records showed a measurable amount of rainfall every day during the month, at one or more stations. These adverse conditions greatly retarded the cultivation of late corn, and harvesting the matured crops of hay and small grain. The saturated grain fields were rendered too soft for operation of harvesting machinery. The heavy storms of rain and wind caused lodgment of oats, wheat, barley and grass to a much greater extent than was ever known in previous years, and this added greatly to the labor and difficulty in securing the heavy burdens of grain and hay. There was, therefore, a much larger percentage of loss of acreage and damage to quality of these crops than was ever known in this state in recent years. But despite these unusual drawbacks, by strenuous labor between showers, the farmers secured a considerable amount of hay in fair condition, and the small grain crops were put in shock or stack. Corn in upland fields that had been well tilled was in fair condition, being bulky and heavily eared. Potatoes exceeded all recent records. All kinds of garden truck made heavy growth. Apples suffered materially from windstorms.

The abnormal features prevalent in June and July continued throughout the larger part of August, the cool, cloudy and showery weather making altogether the wettest and most unfavorable season for cultivating crops and harvesting hay and grain that has been experienced in Iowa during the past thirty-three years. The daily mean temperature for August was 2 degrees below normal, and the average rainfall, 5.58 inches, —— 3.51 inches above the normal amount. Cool nights, cloudy days, frequent showers, excessive humidity of the air and saturated soil, retarded the ripening of corn and rendered it well nigh impossible to carry on the usual harvest operations. At the close of the month corn was about two weeks later than usual, with rank growth of stalks and very heavily eared. The late planted portion of the crop was green as in June, and its immature condition indicated the need of a full month of warm and dry weather to bring it to the stage to withstand killing frosts. The oats crop suffered greatest damage in shock and stack, and a very large percentage has been ruined. Spring wheat was injured, but the total loss was not so great. Barley was discolored and much of it rendered unmarketable. The hay crop was badly damaged, but there was partial compensation in the growth of very heavy aftermath. Potatoes suffered materially by rot and blight of tops.

The month of September was also cold, cloudy and wet. The daily average temperature being 5 degrees below normal and the rainfall, 4 35 inches, was 1 36 inches above the average for that month. The generally saturated condition of the soil retarded field work, and corn and other unripened crops made slow progress toward maturity. The period of low temperature from the 11th to the 13th, with frost and ice in all districts, caused great injury to belated corn, especially on low ground and in the northern half of the state, where the crop was least advanced. All reports indicated very heavy damage from the untimely frosts and continued prevalence of unseasonable weather.

October was nearly normal in amount of rainfall, though portions of the central and southern sections received a considerable excess. The temperature was about 3 degrees above, normal and there was a fair amount of sunshine. In large areas the soil was too wet for plowing, and many corn fields were not dry enough for harvesting the crop. November was warmer than usual, with excess of moisture, humidity and cloudiness. The conditions were measurably unfavorable and at the close of the month fully 25 per cent of the corn crop was still afield and much of it was lying on the ground and covered with snow. The wintry conditions prevalent throughout December afforded but little opportunity to secure the unharvested portion of the crop.

The season was generally very productive in respect to the bulk of all soil products, but the quality has been much impaired, and a large percentage of small grain and corn was practically destroyed. The final reports show a full average yield of corn in bushels per acre, but fully 55 per cent of it was below the merchantable grade, and its value in the markets was correspondingly low. Pasturage has been unusually heavy though in quality it was below the normal standard. The potato crop, as a whole, was much better than in recent years, though there was some loss from rotting. Apples yielded more abundantly than was anticipated in midsummer.

ERRATA IN 1900 ANNUAL.

HARLAN.—Precipitation for December recorded .71 inch on page 21, should have been .90 inch. Total precipitation recorded 29.95 inches on page 21, should have been 30 14 inches.

MT. PLEASANT.—Mean temperature for September recorded 63.5° on page 19, should have been 63.6° Mean temperature for the year recorded 49.7° on page 19, should have been 49.8°

CRESCO.—Annual mean temperature 44.9°; highest 106° on July 24; lowest —29° on December 14.

CLIMATOLOGICAL DATA FOR THE YEAR 1902.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT. Annual Mean.	Highest.	Date.	Lowest.	Date.	Length of record, years.	PRECIPITATION, IN INCHES. Total for the year.	Greatest monthly.	Month.	Least monthly.	Month.	Total snowfall, unmelted.	SKY. Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.
Alton	Union	1,212	9	49 2	96	Aug 2	-17	Jan. 27	9	46.76	8.67	July	.40	Feb	..	92				SE
Albia	Monroe	945	5	50 0	94	May †20	-16	Jan. 27	5	51 25	8.82	July	.82	Jan	25 1	105				SE, NW
Algona	Kossuth	1,213	29	46.7	94	July 16	-16	Jan. 27	30	36 88	7.49	Aug	.13	March	31 2	75	113	177	75	SE
Alta	Buena Vista	1,513	12	45.0	90	July †16	-2.	Jan. 27	12	42.99	12.2	July	.50	Jan	35.3	118	134	147	84	S, NW
Alta (near)	Buena Vista									42 48	8 82	July	.50	Jan	26.0	93				
Amana	Iowa	721	26	48.3	92	July 17	-22	Jan. †27	27	46.81	9.41	Aug	.88	Jan	24 1	117	136	127	102	NW
Ames	Story	926	21	47.6	94	July 10	-23	Jan. 28	25	45.79	10.01	June	.38	Feb	27 9	121	192	73	100	SE
Atlantic	Cass	1,164	12	47 9	96	Aug 2	-31	Jan. 27	12	43.51	9.36	July	.59	Feb	37.2	91	74	139	152	NW
Baxter	Jasper	998	3	47.8	95	July 16	-21	Jan. 27	3	47.87	10.76	June	.70	Jan	17 5	9.	151	97	117	NW
Belknap	Davis	877	8		90	July 29	-18	Jan. 27	8		8 9.	June	.60	Jan						
Belle Plaine	Benton	828	13	47 2	92	July 17	-22	Jan. 27	13	57 48	13 53	Aug	1.07	Jan	38.1	111				SE
Bonaparte	Van Buren		11	50.1	94	July 17	-16	Jan. 27	11	48.07	9.94	June	.55	Jan., Feb		78				
Britt	Hancock	1,236	6	45.4	92	July 16	-22	Jan 27	6	35.54	7 24	August	.46	March	22 2	104	90	186	89	NW
Buckingham	Tama								3	49 85	13.50	June	1 06	Feb	28 8	97				
Burlington	Des Moines	544	6	51.2	93	July 24	-14	Jan. 27	7	51.55	11.65	June	.89	Jan		117	154	88	123	NW
Carroll	Carroll	1,265	13	47.6	97	Aug 2	-21	Jan. 27	13	43 94	9.52	July	.30	Feb		99	186	65	114	
Cedar Rapids	Linn	733	20	48.9	94	July †16	-23	Jan. 28	20	43.38	9.93	Aug	.90	Feb	23.7	105	139	87	139	NW
Chariton	Lucas	1,042	8	49.1	92	Aug 2	-20	Jan. 27	8	55 95	10.07	July	.74	Jan	28 9	147	117	131	117	S
Charles City	Floyd	1,012	12	46.6	98	July 30	-27	Jan. 28	12	45.81	9 19	May	.33	Feb	30.0	86	89	183	93	SE
Clarinda	Page	1,069	13	50.0	96	June †10	-2.	Jan. 28	13	51.37	11.64	June	.30	Feb	29.5	102	158	125	82	NW
Clear Lake	Cerro Gordo	984	4	46.9	96	July †16	-22	Jan. 27	4	35.84	9.15	July	.65	March	25.0	83	161	130	74	NW
Clinton	Clinton	609	31	48 6	95	July 17	-15	Jan. †27	35	44.8c	9.90	June	.63	Jan	20.8	108				W
College Springs	Page		11		97	Aug 2	-17	Jan. 27	11											
Columbus Junc.	Louisa	595	2		95	July 30	-15	Jan 28	2	58.80	15 47	Aug	.46	Jan	26 6	119	164	109	92	NW
Corning	Adams	1,127	10	47.8	92	June †11	-25	Jan 27	10	46 34	8.72	July	.50	Feb	40 0	97	146	122	97	SW
Council Bluffs	Pottawat'mie	990	5	50.1	97	July 16	-19	Jan. 27	22	37.69	10.23	July	.06	Feb						NW
Cresco	Howard	1,312	30		90	July 16	-23	Jan. 28	30		9.47	May	T	March						
Cumberland	Cass								4	40.68	8.99	July	.21	Feb	31.0	67	199	57	109	S
Davenport	Scott	529	31	49 6	92	July 17	-13	Jan. 27	31	40.31	7 55	June	.60	Jan	15.4	119	134	106	125	W
Decorah	Winneshiek	875	9	45 9	91	May 19	-30	Jan. 28	9	43 22	11.63	May	1.20	Jan	33.5	121				
Delaware	Delaware	1,083	12	45 6	90	July 30	-22	Jan. 27	12	37.29	7 49	May	.67	Jan	29.1	100	124	151	90	NW
Denison	Crawford	1,180	8	46.8	93	July 16	-27	Jan. 27	8	31.81	11 34	July	.14	Feb		96				N
Des Moines	Polk	861	25	49.2	94	Aug 2	-16	Jan. 27	25	42.01	7 82	Aug	.52	Feb	29.8	121	82	165	118	SW
De Sota	Dallas	880	3	50 1	9	Aug 2	-13	Jan. 27	3	43 05	7.86	July	.25	Feb	21.5	93				NW
Dows	Wright	1,142	3	45 5	94	July †4	-24	Jan. 27	3	45.81	12.19	July	.54	Feb	26.5	96	192	68	105	SE
Dubuque	Dubuque	698	30	48.1	90	July 16	-18	Jan. 18	30	38.24	8.67	May	.74	Jan	25 8	130	100	124	141	NW
Eldon	Wapello		5	49.9	95	July 30	-18	Jan. 27	5	40.23	7.18	Aug	.65	Jan	12.0	95	19	39	133	S
Elkader	Clayton	600	22	47.6	9	July 30	-30	Jan. 28	23	50.01	12.46	June	.77	Jan	31 5	99	156	126	83	NW
Fayette	Fayette	1,003	13		92	July 30	-30	Jan 28	13		15.59	May	.82	Jan						NW
Forest City	Winnebago	1,220	9	45.4	92	July 30	-20	Jan. 27	9	37.79	7.10	May	20.	March	26 5	87	147	72	146	W
Fort Madison	Lee								53	48.88	9.05	June	1.10	Jan	20 5	99	73	144	148	SW
Galva	Ida	1,290	9		94	Aug 2	-21	Feb. 2	9	36.47	10.39	July	.2.	Feb	17.1	63				S
Gilman	Marshall	1,053							4	42 00	7 8.	July	.72	Jan		112				S
Grand Meadow	Clayton	1,180	12	45.4	90	July 3	-25	Jan. 28	12	54.71	18.04	May	.85	Jan	31.1	106	120	120	125	NW
Greene	Butler	943	6	46.5	93	July 30	-24	Jan. 28	6	43 33	8 97	July	.58	Jan	34 4	106	95	132	138	W
Greenfield	Adair		12	48.1	90	June †10	-10	Jan. 27	12	46.38	10.87	July	.38	Feb	31.5	126	172	97	96	NW
Grundy Center	Grundy	976	12	46 4	92	July †16	-25	Jan. 27	12	58 08	16.04	June	.79	Feb	26.0	130	14	87	134	NW
Guthrie Center	Guthrie	1,077	7	46 9	95	July 16	-23	Jan. 28	7	43 56	9.27	July	.16	Feb	35.1	95	126	150	89	NW
Hampton	Franklin	1,000	13	46.9	94	July 30	-19	Jan. 28	13	49.33	10 95	July	.87	Feb	36.8	109	93	189	83	NW
Harlan	Shelby	1,192	4	47.4	95	July 17	-2.	Jan. 27	4	43.94	12 6.	July	.15	Feb	34.7	110	82	171	112	NW
Hopeville	Clarke								12	47.15	8 60	Sept	.53	Jan		102				
Humboldt	Humboldt	1,095	11	47.4	94	July †6	-22	Jan. 28	14	40.00	8.81	July	.45	Jan		100	200	60	105	SE
Independence	Buchanan	1,111	39	45.8	89	July 16	-24	Jan. 28	35	46.14	10.46	May	.93	Jan	27.1	92				NW
Indianola	Warren	969	12	49.2	94	Aug 2	-20	Jan. 27	12				.72	Feb						
Iowa City	Johnson	685	44	49.0	95	May 20	-23	Jan. 28	40	47.80	10 91	Aug	.85	Feb	20 8	106	126	137	102	NW
Iowa Falls	Hardin	1,107	10	45.5	92	July 2	-25	Jan. 28	10	49.57	11 26	July	.84	Feb	39 0	109				NW
Jefferson	Greene								4	49.77	10.65	July	.37	Feb		107				SE, NW
Keokuk	Lee	613	32	51 0	96	Aug 2	-10	Jan. 27	31	39.89	7.59	June	.44	Jan	13 5	115	143	115	107	SW
Keosauqua	Van Buren	664	11	50.8	97	June 10	-15	Jan. †27	11	44.56	9.13	June	.58	Jan	22.4	108				
Lacona	Warren								4	54.17	8.70	Aug	1.15	Jan		116				
Larrabee	Cherokee	1,366	12	45.7	93	July †12	-22	Jan. 27	13	32.82	7.19	July	.60	Feb	30 8	81				
Le Mars	Plyomuth	1,224	7	46 2	93	Aug 2	-21	Jan. 27	7	29.99	7.08	July	.20	Feb	24 0	64	153	133	79	S
Lenox	Taylor	1,250	8	48.3	91	July 16	-24	Jan. 27	8	38.81	7.86	July	.20	Feb	18.0	91	212	64	89	S
Le Claire	Scott	576								46 86	10 62	June	.55	Jan						
Logan	Harrison	928	36	48 7	95	July 16	-21	Jan. 27	3	40.74	11.34	July	.50	Feb	32.0		197	63	105	NW
Maquoketa	Jackson	688	10	47 8	92	July 30	-29	Jan. 28	10	46.01	8 8.	July	.73	Jan		108	181	82	102	NE
Marshalltown	Marshall	947	10	48.5	96	July 30	-23	Jan. 28	10		12 31	June	.72	Feb	19 9					NW
Mt. Ayr	Ringgold	1,236	9	48.7	93	June †10	-23	Jan. 27	9	50.08	9 0	Aug	.67	Feb	32.5	127	112	127	126	
Mt. Pleasant	Henry	720	21	48.8	95	July 17	-17	Jan. 27	9		10.96	June	.19	Jan		89	143	149	73	NW
Mount Vernon	Linn	858	36	48.3	95	July 17	-21	Jan. 27	7	47.9	10 65	Aug	.70	Feb	33.1	125	155	67	143	NW
New Hampton	Chickasaw	1,16[illegible]	6	44.6	90	July 16	-22	Jan. 27	6	48.67	12.04	May	.74	Feb	30.0	104				NW
Northwood	Worth	1,222	7	45.3	89	July 16	-18	Jan. †27	7	44.92	9.46	May	.55	March	31.2	102	118	136	111	NW
Odebolt	Sac	1,356	5	47.4	97	Aug. 2	-21	Jan. 27	5	37.90	13.57	July	.3	Feb	32.8	93	211	61	93	
Ogden	Boone	1,211	8	48.8	96	Aug. 2	-24	Jan. 27	8	44.27	8.87	July	.15	Feb						SE
Olin	Jones	760	4	47.0	90	July †14	-28	Jan. 28	4	44 78	8 47	July	.80	Jan		90				
Omaha, Neb.	Douglas	1,113	32	50.4	96	July 16	-12	Jan. 27	32	30.35	7 32	June	.13	Feb	24.8	109	106	139	120	SE
Onawa	Monona	1,053	3	49.3	94	June †14	-23	Jan. 27	3	42.25	13.48	July	.36	Feb		109	232	44	89	NW
Osage	Mitchell	1,184	12	44.9	9[illegible]	July 30	-22	Jan. 28	15	39.31	9.58	May	.57	Jan	34.5	117	83	117	165	NW
Oskaloosa	Mahaska	843	19	48.6	92	July 30	-17	Jan. 27	25	44.83	8.79	July	.28	Jan	22.9	115	18	30	151	NW
Ottumwa	Wapello	630	9	50.8	92	July 17	-12	Jan. 27	9	50.59	10.41	Sept	.60	Jan	17.2	85	146	99	120	W, SE
Ovid	Wayne	992	10	49.4	92	Aug. 2	-20	Jan. 27	10	53.72	11.57	July	.81	Jan	24.5	122	114	40	211	NW
Pacific Junction	Mills	961	4	49.6	95	June 10	-21	Jan. 27	4	38.36	9.88	July	.08	Feb	21.9	101	122	170	73	S
Plover	Pocahontas	1,426	6	44.8	95	July †16	-25	Jan. 27	6	43.82	9.04	July	.52	March	23.3	91	175	59	131	S
Red Oak	Montgomery	1,033	6	50.5	90	July 16	-15	Jan. 27	6	47.36	11.19	July	.29	Feb	33.4	99	80	216	69	SE
Ridgeway	Winneshiek	1,215	5	47.6	95	July 30	-21	Jan. 27	5	48 54	9.59	May	1.16	April	44.1	14[illegible]	148	133	84	S
Rockwell City	Calhoun	1,219	6		94	July †16	-21	Jan. 27	7	43.51	9.85	July	.20	Feb	28.0	71	210	57	98	
Sac City	Sac	900	22	46.9	94	July †16	-21	Jan. 27	27	42.77	12.61	July	.18	Feb	21.2	9[illegible]				NW
St Charles	Madison	1,070	2	49.8	99	July 17	-16	Jan. 27	2	53.58	12.77	July	.61	Feb	34.2	138	168	93	104	NW
Sheldon	O'Brien	1,406	4	45.4	92	June 14	-23	Jan. 27	4	26.59	6.14	Aug	.47	Nov.	20.5	102				S
Sibley	Osceola	1,509	9	44.9	94	June 14	-21	Jan. 27	9	23.06	9.25	Aug	.30	Jan	21.[illegible]	82				NW
Sigourney	Keokuk	768	7	49.8	97	May †20	-18	Jan. 27	7	50.69	11.03	July	.56	Jan	21.8	104	183	141	41	NW
Sioux Center	Sioux		4	45.5	91	June 14	-20	Jan. 27	4	29.08	5.64	July	.28	Oct	29.0	78	168	84	112	S
Sioux City	Woodbury	1,122	14	47.6	95	Aug. 2	-21	Jan. 27	14	20.14	5.0[illegible]	July	.16	Nov.	37.1	113	121	116	12[illegible]	NW
Stockport	Van Buren								1	50.75	9.34	July	.43	Jan	25.5	117	138	61	164	NW
Storm Lake	Buena Vista	1,440	7	45.4	90	July †30	-20	Jan. 27	1[illegible]	38.63	10.49	July	.32	Feb	28 4	107	165	97	102	NW
Thurman	Fremont		6	50.3	96	June 10	-27	Jan. 27	6	50.49	9.66	June	.02	Feb		82	188	69	109	SW
Tipton	Cedar		5	48.3	92	July 17	-18	Jan. 28	5	55.67	9.40	Aug	.55	Feb	24.2	89	126	103	136	W
Vinton	Benton	800	13		91	July †16	-27	Jan. 28	13	44.59	8.75	July	.75	Jan	24.0	83				NW
Wapello	Louisa	578	5	49.7	90	Aug. 2	-12	Jan. 27	5	49.48	8.11	July	.31	Jan		97				
Washington	Washington	738	21		91	May †18	-20	Jan. 27	12	49.37	12.34	Aug	.49	Jan		89				SW

CLIMATOLOGICAL DATA FOR YEAR 1902.—CONTINUED.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.						PRECIPITATION, IN INCHES.					SKY.					
				Annual mean.	Highest,	Date.	Lowest.	Date.	Length of record, years.	Total for the year.	Greatest monthly.	Month.	Least monthly.	Month.	Total snowfall, unmelted.	Number rainy days	Number clear days.	Number partly cloudy days.	Number of cloudy days.	Prevailing direction of wind.
Washta	Cherokee	1,157	....	....	.....	....	.....	.....	5	32.03	10.02	July	.45	Feb	31.0	74	183	124	58	SE
Waterloo	Black Hawk.	862	15	47.0	94	July 30	-23	Jan. 28	22	49.76	10.61	July ..	.91	Jan	26.1	122	144	111	110	NW
Waverly	Bremer	942	7	46.5	91	July 16	-25	Jan. 28	7	42.43	9.50	May	.92	Jan	29.6	123	116	126	123	NW
West Bend	Palo Alto	1,197	9	46.2	93	July 16	-20	Jan. 27	9	.....	8.36	July	.67	Feb	26.0	99	119	126	110	NW
Whitten	Hardin	1,036	5	.....	93	July † 6	-22	Jan. 27	5	.....	11.51	June	.10	Feb	....	....	....	....	....	.....
Wilton Junction.	Muscatine	683	8	49.0	96	July †17	-21	Jan. 27	8	49.41	8.46	July	.87	Jan	33.5	86	164	69	132	NW
Winterset	Madison	1,129	12	49.4	9.	July †16	-17	Jan. 27	12	50.14	11.08	July	.47	Feb	27.9	93	.....	....	....	S
Woodburn	Clarke	961	....	.....	.....	.....	.....	.....	4	49.53	9.83	July	.92	March...		97	177	72	116	NW
Averages	.....	.....	.....	47.8	.....	.....	.....	.....	.....	44.31	.....	.....	T	.....	....	102	145	110	110	NW
Extremes and date	.....	.....	....	.....	98	July 30	-31	Jan. 27	..		18.01	May		March.		....	.....		....	

† and other dates.

MONTHLY MAXIMUM AND MINIMUM TEMPERATURES FOR 1902, WITH DATES.

STATIONS.		Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
		Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date
Afton	Max	54	8	53	26	72	25	90	21	90	12	93	*10	95	16	96	2	82	7	78	22	71	*2	48	1
	Min	-17	27	-13	4	1	17	20	7	40	9	43	22	52	10	46	11	32	12	27	14	20	27	-9	26
Albia	Max	60	8	55	26	73	25	90	21	94	20	94	10	86	*16	90	13	85	7	81	23	75	11	59	1
	Min	-16	27	-10	4	2	17	23	8	44	7	44	*21	51	21	43	11	35	13	28	14	24	14	-5	*8
Algona	Max	48	8	51	26	66	25	86	21	87	18	90	14	94	16	86	*1	83	7	79	23	70	1	47	20
	Min	-18	27	-16	2	-6	17	16	7	38	10	41	21	51	10	45	11	34	12	28	*14	13	27	-16	26
Alta	Max	45	*8	54	26	70	25	82	20	86	18	88	*4	90	*16	90	2	81	7	74	*8	67	1	44	1
	Min	-20	27	-18	2	-4	17	16	7	38	*11	38	21	49	10	43	11	29	12	26	28	10	27	-17	26
Amana	Max	49	9	50	26	70	26	88	21	91	20	88	*12	92	17	91	2	81	7	76	22	69	*1	46	1
	Min	-22	*27	-13	3	-1	17	23	7	42	*7	41	22	51	1	49	12	34	13	28	14	21	30	-7	8
Ames	Max	49	*6	49	23	70	25	87	21	88	18	89	14	94	16	93	2	83	7	77	*6	74	1	48	1
	Min	-23	28	-12	2	-1	17	20	7	41	11	42	22	53	20	49	11	31	13	26	*14	18	24	-7	27
Atlantic	Max	59	8	55	26	72	25	90	20	90	*2	93	*10	94	*16	96	2	85	7	80	22	73	1	48	1
	Min	-31	27	-13	4	2	17	17	8	34	7	38	*21	50	21	40	11	25	13	23	14	14	27	-11	7
Baxter	Max	55	8	55	26	73	*25	92	21	89	19	89	10	95	16	94	2	82	7	79	22	74	11	48	1
	Min	-21	27	-13	2	0	17	19	*7	39	27	42	21	51	10	45	11	32	12	25	14	20	25	-10	8
Bedford	Max							91	20	89	3	93	11	94	30	94	4	83	7	79	24	72	12	52	1
	Min							20	*2	37	7	40	*21	51	21	45	11	28	13	24	14	14	27	-9	26
Belknap	Max			54	26	71	*26	88	21	89	20	90	10	56	29	92	2	80	7	78	25	73	*1		
	Min	-18	27	-10	*3	3	17	22	8	43	*7	42	22	48	1	48	11	35	13	28	14	18	30		
Belle Plaine	Max	50	8	53	26	69	26	87	21	91	21	86	10	92	17	89	2	79	7	78	*22	71	1	43	*1
	Min	-22	27	-11	5	-2	17	21	7	41	*7	41	22	52	14	49	11	34	*12	28	14	20	30	-9	25
Bonaparte	Max	58	8	55	26	72	25	88	21	92	20	93	10	94	17	93	2	84	7	79	*22	75	12	54	1
	Min	-16	27	-14	3	4	17	23	8	43	*7	42	22	50	1	49	11	33	13	28	14	21	30	-3	*8
Britt	Max	49	8	55	26	67	25	89	21	88	20	90	14	92	*16	89	19	81	7	74	*8	64	1	44	*1
	Min	-22	27	-18	2	-7	17	14	7	37	7	36	22	48	10	45	*11	27	13	23	14	12	30	-16	26
Burlington	Max	61	9	57	25	73	25	88	21	91	18	91	12	93	24	92	2	85	7	82	25	74	1	56	1
	Min	-14	27	-7	*3	5	17	25	8	44	*7	42	22	60	22	50	11	34	13	30	14	26	*28	-4	*8
Carroll	Max	54	8	55	26	75	25	90	21	92	18	92	14	95	16	97	2	85	7	81	22	77	1	51	1
	Min	-21	27	-15	2	-2	17	18	7	38	27	38	21	47	10	41	11	29	12	25	14	10	27	-14	26
Cedar Rapids	Max	52	9	49	26	68	*26	90	21	91	18	89	*12	94	*16	92	2	83	7	77	22	71	11	47	1
	Min	-23	28	-11	3	-2	17	24	*7	40	10	44	22	53	1	50	12	38	*12	31	14	23	30	-7	8
Chariton	Max	60	8	57	26	72	25	87	21	87	*12	90	*10	91	*16	92	2	84	7	77	15	76	12	52	1
	Min	-20	27	-11	4	3	17	22	7	42	*7	40	22	52	*1	46	11	33	13	28	14	22	25	-7	26
Charles City	Max	48	8	45	24	67	26	89	21	86	18	96	14	98	30	88	3	81	7	75	8	66	1	40	1
	Min	-27	28	-15	5	-7	17	19	7	35	10	39	22	51	21	47	11	29	13	26	14	9	30	-17	26
Chester	Max							86	21	88	2	83	*6	92	16	88	14	80	7	74	23	63	*12	40	1
	Min							18	6	35	*9	37	22	46	10	43	27	26	13	25	15	4	30	- 6	1
Clarinda	Max	60	8	59	26	74	25	96	20	93	12	96	10	96	16	96	2	87	7	82	22	73	12	53	1
	Min	-21	28	-13	4	4	17	20	*2	40	7	41	21	53	*10	45	11	31	13	27	14	16	27	-8	26
Clear Lake	Max	60	7	59	23	69	*27	86	21	91	2	90	10	96	*16	94	1	85	6	75	*3	65	1	42	19
	Min	-22	27	-16	2	-8	17	15	*7	35	10	42	21	50	11	45	10	33	12	29	28	12	*29	-16	26
Clinton	Max	52	9	50	26	67	*25	88	21	92	20	94	14	95	17	91	2	83	7	78	*22	71	*1	48	19
	Min	-15	27	-11	5	1	17	22	3	39	10	40	22	41	1	46	12	31	13	28	14	18	30	-12	8
College Springs	Max	58	8			73	25	80	30					93	30	97	2	83	*6	81	1	71	12	52	1
	Min	-17	27					20	7					54	10	46	11	34	*13	28	28	16	27	-7	26
Columbus Junction	Max	53	9	57	26	69	25	88	21	92	18	92	12	95	30	92	2	85	7	81	24	71	*11	48	*1
	Min	-15	28	-8	*3	2	*16	25	*3	42	10	30	22			50	*8	33	13	24	14	20	30	-5	*8
Corning	Max	55	8	54	26	70	25	90	20	89	12	92	11	92	*15	92	2	81	7	78	25	70	1	49	1
	Min	-25	27	-17	4	3	17	18	*8	42	*7	41	*21	51	21	43	11	32	12	26	28	15	27	10	26
Council Bluffs	Max	56	8	58	26	78	25	95	20	95	12	96	*10	97	16	96	2	88	7	83	22	75	1	51	1
	Min	-19	27	-11	4	4	17	20	7	43	*7	42	17	54	*3	44	11	33	13	24	28	15	27	-13	26
Cresco	Max	43	8	48	26	64	26	88	21	84	*18	82	8	90	16	84	2	78	7	72	8				
	Min	-23	28	-16	5	-7	17	17	7	25	10	38	22	49	1	46	11	31	12	28	14				
Davenport	Max	52	9	52	26	66	26	86	21	90	20	90	12	92	17	90	2	83	7	78	25	72	11	49	1
	Min	-13	27	-8	4	0	17	25	8	40	10	46	21	53	1	51	11	36	13	33	14	25	30	-7	8
Decorah	Max	47	*8	47	26	66	27	86	21	91	19	82	10	90	14	88	30	79	7	74	8	65	1	43	1
	Min	-30	28	-15	5	-5	17	20	7	37	10	41	22	52	10	43	12	31	13	28	14	11	30	-12	8
Delaware	Max	44	*8	46	26	65	26	84	21	87	20	87	12	90	30	89	2	78	7	75	22	65	*1	40	1
	Min	-22	27	-14	15	-4	17	22	*7	34	10	39	22	49	1	45	12	32	12	26	14	11	30	-15	8
Denison	Max	52	8	51	26	70	25	86	20	87	12	89	14	93	16	92	2	88	2	78	10	69	1	49	1
	Min	-27	27	-15	4	-5	17	16	7	37	27	40	*21	48	10	43	11	29	*12	24	14	9	27	-14	26
Des Moines	Max	58	8	56	26	71	25	89	21	88	12	90	10	93	16	94	2	83	7	77	22	72	1	50	1
	Min	-16	27	-9	4	2	17	23	8	44	11	43	22	54	1	50	11	35	13	31	14	24	27	-7	26
De Soto	Max	57	9	55	26	68	25	88	21	89	20	93	*10	94	16	95	2	81	7	78	22	71	1	50	1
	Min	-13	27	-8	4	3	17	22	8	44	11	42	22	56	10	49	11	34	13	30	14	21	25	-7	26
Dows	Max	54	8	50	26	66	*25	88	21	84	20	87	14	94	*4	86	2	80	7	74	8	69	1	44	1
	Min	-24	27	-18	1	-7	17	14	7	34	1	38	22	50	10	46	11	30	13	27	*14	17	30	-13	26
Dubuque	Max	52	9	48	26	65	27	85	21	88	20	88	12	90	16	89	2	81	7	77	22	69	12	44	1
	Min	-18	28	-10	4	-3	17	24	7	36	10	45	22	53	1	50	12	36	13	30	14	22	30	-6	8
Earlham	Max					72	25	89	21	87	12	91	10	92	16	94	2	84	7	77	21	72	1	49	1
	Min					1	17	14	8	37	28	36	22	50	*11	42	11	29	13	26	27	15	24	-10	*8
Eldon	Max	57	8	53	26	73	26	88	21	92	20	94	10	95	30	91	1	86	7	80	*22	77	11	53	1
	Min	-18	27	-14	3	4	17	20	8	40	7	41	22	50	*1	49	12	31	13	30	14	21	3	-6	26
Elkader	Max	51	9	53	*23	66	27	88	21	91	*18	91	10	95	30	91	*1	86	7	80	22	67	11	47	1
	Min	-30	28	-15	3	-4	17	22	3	35	10	39	22	50	21	47	12	30	13	27	14	15	30	-11	8
Fairfield	Max	57	8	55	25	73	*25			92	19	90	11	95	17	89	*1	84	7	79	*24	74	11		
	Min	17	27	-11	3	3	17			42	*7	39	21	50	1	51	12	32	13	28	14	12	29		
Fayette	Max	47	9	48	26	66	26	87	21	88	17	87	10	92	30	91	4	82	7	75	8	66	*1		
	Min	-30	28	-16	5	-6	17	19	7	32	10	37	22	49	21	43	12	26	13	23	14	11	30		
Forest City	Max	49	8	51	26	65	26	88	21	86	20	85	14	92	30	87	*2	82	7	76	8	63	1	43	1
	Min	-20	27	-17	2	-8	17	16	7	36	10	40	*21	52	10	42	11	30	13	26	14	12	30	-16	26
Fort Dodge	Max	55	8	52	26	68	25	88	21	88	*18	90	17	94	30	90	2	84	7						
	Min	-30	28	-16	2	-3	17	14	8	36	27	34	21	50	21	43	11	27	13						
Galva	Max	49	8	54	27	72	25	88	20	88	17	89	14	92	30	94	2	82	7						
	Min	-20	27	-21	2	-4	17	15	7	35	27	36	21	51	*10	41	11	23	11	24	28	9	27	-15	26
Grand Meadow	Max	45	9	46	26	64	27	88	21	88	18	85	4	90	3	89	26	78	7	74	22	65	1	42	2
	Min	-25	28	-15	5	-6	17	19	7	32	10	40	22	52	10	46	12	33	12	27	13	16	30	-14	8
Greene	Max	52	8	47	*23	68	25	88	21	88	*2	90	14	93	30	90	1	82	7	75	*8	68	1	45	20
	Min	-24	28	-17	2	-6	17	19	7	37	10	38	22	52	10	47	11	32	13	29	14	14	30	-12	8
Greenfield	Max	56	8	53	25	69	25	88	21	87	12	90	10	90	16	89	2	80	7	77	*22	73	1	47	1
	Min	-18	27	-15	*2	0	17	18	*7	40	27	39	21	50	1	43	11	33	12	26	28	14	27	-12	26
Grinnell	Max	50	8	51	26	69	26	85	21	88	21									75	22	69	1	43	3
	Min	-16	27	-10	4	0	17	21	7	42	11									29	14	20	*26	-8	8
Grinnnell (near)	Max	50	*8	52	26	70	25					86	15	88	*16	90	2	80	7	77	22	70	1	46	1
	Min	-20	27	-11	*2	-2	17					42	22	53	1	48	11	34	13	27	14	18	30	-10	8
Grundy Center	Max	51	9	48	26	68	26	82	21	87	18	86	14	92	16	89	2	82	7	77	22	71	1	45	1
	Min	-25	27	- 7	3	-4	17	18	7	39	*9	39	22	50	10	45	11	32	12	27	14	17	30	-11	8
Guthrie Center	Max	56	8	55	26	72	25	88	21	87	18	92	14	95	16	93	2	83	7	78	22	73	1	44	1
	Min	-23	28	-12	*2	0	17	20	3	34	12	35	*21	48	10	41	*11	31	*12	27	14	17	*25	-11	*7
Hampton	Max	59	8	49	*43	68	26	90	21	88	2	88	14	94	30	89	2	84	7	79	* 8	72	1	47	1
	Min	-19	28	-16	2	-5	17	18	7	37	10	41	22	52	10	46	11	34	12	29	28	18	30	-12	*8
Harlan	Max	54	8	53	26	71	25	87	20	88	12	91	* 0	95	17	91	2	83	7	79	22	72	1	48	1
	Min	-22	27	-15	4	0	17	18	7	37	7	40	22	50	10	41	11	27	13	24	*14	15	30	-12	26
Humboldt	Max	58	*8	62	27	70	9	88	21	90	18	90	*6	94	*16	88	2	82	7	77	11	67	1	46	1
	Min	-22	28	-18	2	-4	17	16	7	37	27	39	24	52	10	45	11	31	13	28	*15	15	27	-15	26
Independence	Max	47	*8	45	26	70	26	86	21	85	*18	84	14	89	16	88	2	81	7	76	22	67	1	41	1
	Min	-24	28	-15	5	-7	16	20	7	35	10	41	*22	50	1	46	12	29	13	25	14	21	*28	-11	8
Indianola	Max	60	8	57	26	71	25	88	21	88	20	90	10	92	16	94	2	82	7	78	23	71	*1	50	1
	Min	-20	27	-12	4	2	17	20	8	42	27	43	*21	53	1	47	11			30	14			-8	26

MONTHLY MAXIMUM AND MINIMUM TEMPERATURES FOR 1902, WITH DATES.

STATIONS.		Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
		Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.
Iowa City	Max	53	8	53	26	70	26	90	21	95	20	91	12	94	*17	92	2	85	7	80	25	74	1	51	1
	Min	-23	28	-15	3	0	17	22	8	40	10	42	22	50	1	49	12	33	13	28	14	16	30	-7	8
Iowa Falls	Max	53	8	47	*23	67	26	89	21	88	18	88	14	92	2	88	2	80	7	76	22	70	1	43	1
	Min	25	28	-15	2	-5	17	18	*7	38	10	38	12	51	10	46	11	30	13	26	*14	19	29	-11	25
Keokuk	Max	57	*8	52	26	71	25	89	21	92	20	93	12	94	*16	96	2	85	7	80	25	76	11	56	1
	Min	-10	27	-6	4	6	17	26	8	45	11	46	22	54	1	52	11	36	13	32	14	27	26	-2	26
Keosauqua	Max	55	*8	55	26	78	26	90	21	93	20	97	10	95	*17	95	2	85	7	80	25	75	*11	51	1
	Min	-15	27	-15	3	5	17	20	8	40	9	42	22	50	1	50	*12	32	13	29	14	21	30	-3	26
Lansing	Max	....	....	....	....	....	....	87	21	86	20	86	*11	94	20	92	2	83	1	76	22	67	12	45	1
	Min	....	....	....	....	....	....	21	*3	33	10	40	22	52	*1	45	12	28	13	27	14	12	30	-12	25
Larrabee	Max	47	8	51	26	67	*14	84	20	87	*18	90	14	93	*12	93	2	83	7	77	*8	62	1	47	1
	Min	-22	27	-19	2	-3	17	9	7	33	27	34	21	47	10	38	11	29	*12	21	28	11	*27	-17	26
Le Mars	Max	48	*7	54	26	68	25	84	20	86	* 8	91	14	92	30	93	2	83	7	78	21	64	1	45	1
	Min	-24	27	-16	*2	-5	17	15	7	34	27	38	21	46	10	41	11	26	13	24	28	11	29	-13	26
Lenox	Max	53	8	53	26	70	25	90	20	87	12	89	11	91	16	90	2	81	7	77	22	71	12	49	1
	Min	-24	27	-18	4	1	17	18	7	41	*7	40	21	53	10	47	11	34	13	27	28	15	27	-12	26
Leon	Max	....	....	....	....	....	....	88	21	88	18	93	10	91	16	92	*2	81	7	77	22	71	12	50	1
	Min	....	....	....	....	....	....	22	7	43	27	43	21	53	1	49	11	35	13	29	14	22	27	-7	26
Logan	Max	56	15	55	*26	72	25	90	20	90	17	93	*10	95	16	91	3	82	7	78	*21	72	1	44	*1
	Min	-21	27	-15	4	2	17	19	7	41	30	40	19	49	10	42	11	28	13	26	13	12	27	-9	26
Maquoketa	Max	57	9	50	*23	65	26	86	21	89	20	90	* 0	92	30	91	2	83	7	78	12	70	*1	45	1
	Min	-29	28	-13	15	-1	17	21	24	37	10	39	22	45	1	44	12	30	13	27	14	11	30	-13	8
Marshalltown	Max	50	9	48	23	72	26	90	21	91	*18	92	11	96	30	94	2	85	7	79	22	73	*1	47	1
	Min	-23	28	-12	2	-2	17	20	7	41	*10	41	22	52	10	46	11	32	13	29	14	21	25	-8	25
Monticello	Max	52	9	46	26	67	27	....	....	89	*3	90	12	92	30	92	3	82	*6	78	11	...	....	50	19
	Min	-28	28	-14	15	-6	18	....	....	35	11	39	21	49	1	45	11	31	13	27	14	...	....	-14	8
Mt. Ayr	Max	56	8	56	26	72	25	91	20	88	12	93	10	93	30	93	2	82	*7	77	*22	70	12	51	1
	Min	-23	27	-15	4	2	17	20	7	40	7	41	21	53	10	46	11	32	13	27	14	19	27	-9	26
Mt. Pleasant	Max	54	8	55	26	70	26	88	21	93	20	92	12	95	17	92	2	82	7	75	*9	72	1	49	1
	Min	-17	27	-15	3	2	17	20	8	39	28	36	22	55	22	47	11	32	13	26	14	15	30	-8	*8
Mt. Vernon	Max	52	8	50	26	68	27	86	21	92	20	89	12	95	17	93	2	82	7	78	*10	71	1	46	*1
	Min	-21	27	-14	9	-4	17	21	8	36	10	41	22	51	1	47	11	31	*12	27	14	15	30	-11	8
New Hampton	Max	47	8	44	26	66	26	86	21	83	*18	82	10	90	16	84	2	78	7	73	*8	64	1	41	1
	Min	-22	27	-18	5	-3	17	22	* 2	37	*10	39	22	50	10	44	*11	32	*12	26	14	10	30	-13	*25
Newton	Max	50	8	55	27	68	*25	85	21	....	....	86	*10	91	16	90	2	80	7	75	*22	69	1	47	1
	Min	-22	27	-13	4	-1	17	20	7	..	....	43	22	52	10	47	*11	35	*12	27	14	21	*25	-10	8
Northwood	Max	47	8	51	26	66	*13	87	21	84	*2	84	14	89	16	83	2	78	7	73	22	65	1	44	1
	Min	-18	*27	-13	2	-7	17	17	7	35	10	41	22	50	1	46	11	35	*12	30	14	9	30	-13	*8
Odebolt	Max	49	8	53	26	70	25	85	20	88	*2	94	14	95	16	97	2	85	7	76	22	67	1	46	1
	Min	-21	27	-16	2	4	17	16	7	37	27	38	21	47	10	41	11	30	12	26	14	15	25	-14	26
Ogden	Max	58	*8	55	26	69	25	88	21	89	18	90	*10	95	25	96	2	84	7	80	22	77	1	52	2
	Min	-24	27	-16	2	-1	17	18	7	40	27	40	*21	52	10	44	11	30	12	26	14	22	27	...	....
Olin	Max	48	9	46	26	65	26	85	21	88	20	88	12	90	*14	90	2	78	22	82	23	68	*1	44	1
	Min	-28	28	-15	15	-3	17	22	8	40	7	39	22	49	1	46	12	31	13	27	14	12	30	-13	8
Omaha	Max	59	8	58	26	71	25	92	20	92	12	95	10	96	16	94	2	86	7	82	22	72	1	50	1
	Min	-12	27	-11	4	2	17	22	7	43	11	46	21	56	10	51	11	39	12	32	28	17	27	-8	26
Onawa	Max	55	8	52	*23	70	25	89	20	89	3	94	14	94	16	94	2	87	7	82	23	67	1	46	1
	Min	-23	27	-13	2	0	17	16	7	39	27	42	21	52	10	46	11	33	*12	26	28	13	27	-9	26
Osage	Max	43	*5	46	*23	66	26	85	21	87	18	81	*4	90	30	85	1	80	*7	72	8	62	*1	41	1
	Min	-22	28	-14	5	-7	17	18	7	36	10	41	*22	49	*10	45	11	34	*13	29	14	10	30	-13	25
Osceola	Max	..	..	....	..	....	....	80	22	88	12	87	14	91	*16	91	*2	83	7	78	1	72	12	51	1
	Min	...	...	....	..	....	....	20	8	42	27	42	22	51	1	47	11	35	12	29	14	20	26	-9	26
Oskaloosa	Max	57	8	55	26	71	*26	83	21	84	17	91	10	92	30	91	2	82	7	79	*22	73	12	52	1
	Min	-17	27	-12	3	2	17	17	8	42	7	40	*22	51	1	48	11	31	13	30	14	22	29	-6	26
Ottumwa	Max	55	8	54	26	72	*25	87	21	91	20	90	10	92	17	91	2	79	*16	78	*22	75	11	52	1
	Min	-12	27	-8	3	5	17	25	8	46	*7	45	22	58	*1	53	11	38	13	33	14	27	28	-2	26
Ovid	Max	59	8	56	26	72	25	88	21	88	12	89	10	91	*16	92	2	83	7	79	22	74	11	47	*1
	Min	-20	27	-14	4	3	17	20	*7	40	27	40	21	52	1	46	11	33	13	28	*14	19	25	-7	26
Pacific Junction	Max	54	8	57	26	73	25	94	20	93	12	93	10	94	16	93	2	84	7	79	22	72	1	49	1
	Min	-21	27	-16	2	4	17	19	7	39	7	40	21	52	10	45	11	31	13	25	28	14	27	-7	26
Perry	Max	57	8	55	26	71	25	91	21	90	18	91	*10	....	....	98	19	....	....	78	22	74	1	50	1
	Min	-22	27	-14	2	1	17	21	7	40	27	41	22	....	....	48	11	33	13	28	14	20	27	-10	26
Plover	Max	51	9	55	26	70	25	90	21	89	18	92	14	95	*16	88	2	83	7	77	*10	63	1	45	1
	Min	-25	27	-20	2	-5	17	13	8	36	27	33	21	44	2	38	11	25	13	20	14	11	30	-17	26
Red Oak	Max	54	8	55	26	67	25	84	20	87	12	89	11	90	16	89	2	79	7	76	24	70	1	56	1
	Min	-15	27	-9	4	6	17	24	7	41	8	44	*20	56	21	51	11	37	13	31	28	18	27	-6	26
Ridgeway	Max	47	8	51	26	67	26	88	21	87	2	83	14	95	30	91	2	79	*2	81	10	69	11	43	1
	Min	-2.	27	-15	5	-6	17	18	7	34	10	43	*21	55	*10	48	11	34	13	28	14	14	30	-13	8
Rockwell City	Max	52	8	46	23	70	25	87	21	86	*17	90	*10	94	16	94	2	....	....	76	22	68	1	46	1
	Min	-21	27	-18	2	-2	17	18	7	36	27	38	21	51	10	43	11	.	....	29	28	19	29	-12	26
Ruthven	Max	45	9	....	....	....	....	82	21	87	18	91	14	92	30	86	*1	83	7	....	..	....	....	....	....
	Min	21	27	....	..	..	....	11	7	36	28	37	22	48	10	42	11	31	12	....	....	....	....	....	....
Sac City	Max	48	9	52	26	69	25	84	21	88	18	91	14	94	16	94	2	83	7	77	22	68	1	43	1
	Min	-21	27	-17	*2	-2	17	17	7	39	*11	40	21	50	10	45	11	32	12	28	*14	12	27	-15	25
St. Charles	Max	63	8	56	26	73	25	89	21	89	12	90	*10	99	17	92	2	83	7	79	*22	74	1	53	1
	Min	-16	27	-12	4	2	17	21	*7	43	11	43	21	53	1	47	11	35	13	31	*14	21	*25	-8	26
Scranton	Max	58	8	47	23	72	25	80	*20	89	2	90	14	96	16	95	2	....	....	76	22	67	12	46	1
	Min	-16	27	-12	2	0	*16	18	6	40	*10	41	20	51	9	46	10	....	....	28	28	16	27	-11	26
Sheldon	Max	51	8	51	26	68	25	83	20	87	18	92	14	90	30	89	2	85	7	77	*7	61	8	46	1
	Min	-23	27	-19	2	-6	17	12	8	32	3	35	21	47	10	40	11	28	12	24	28	15	*27	-16	26
Sibley	Max	49	8	46	22	66	24	82	20	88	18	94	14	92	*16	90	2	88	7	79	8	60	1	48	1
	Min	-21	27	-20	2	-5	17	13	7	35	27	32	22	45	10	37	11	28	13	22	*14	11	*26	-16	26
Sigourney	Max	54	8	57	26	73	*25	91	21	97	20	96	10	97	*17	95	*1	88	7	82	24	78	1	51	1
	Min	-18	27	-12	3	1	17	20	8	40	*7	40	22	49	1	46	11	32	13	26	14	21	*25	-6	*8
Sioux Center	Max	49	8	49	26	65	25	85	20	88	20	91	14	90	25	89	2	84	7	75	23	59	8	45	1
	Min	-20	27	-18	2	-6	17	12	7	38	11	37	21	53	*10	42	11	30	*12	25	14	11	29	-17	26
Sioux City	Max	51	8	51	26	70	13	85	20	87	20	94	14	92	30	95	2	86	7	80	23	62	23	46	1
	Min	-21	27	-14	4	-2	17	17	7	38	27	41	21	50	10	46	11	30	13	27	28	10	27	-15	26
Spirit Lake	Max	50	8	52	25	....	....	....	....	85	17	89	14	93	24	91	8	....	.. .	83	22	60	10	....	....
	Min	-23	27	-20	2	....	....	....	..	37	9	38	21	53	8	41	12	.	. ..	24	28	12	29	....	....
Storm Lake	Max	48	18	50	26	65	*25	78	20	82	*17	87	14	90	30	90	2	80	7	74	8	66	1	42	1
	Min	-20	27	-19	2	-5	17	15	7	37	*11	38	21	49	10	43	11	32	*12	25	28	12	27	-18	26
Thurman	Max	63	8	61	26	78	*10	94	20	91	12	96	* 0	94	*15	94	2	84	7	80	22	73	12	48	1
	Min	-27	27	-15	4	4	17	21	7	39	7	40	20	52	21	44	11	29	13	26	28	13	27	-7	*18
Tipton	Max	54	8	48	26	65	*26	86	21	88	*2	87	12	92	17	90	2	79	2	78	24	72	12	50	1
	Min	-18	28	-12	3	0	17	18	8	40	*10	40	22	50	1	47	12	32	13	28	14	18	30	-10	8
Villisca	Max	55	8	56	20	77	*25	95	20	91	12	93	10	93	16	....	....	83	7	79	23	74	11	45	31
	Min	-25	27	-17	4	2	17	18	7	40	*2	40	21	52	11	....	....	30	*13	24	30	15	27	-10	26
Wapello	Max	51	9	53	27	68	25	84	21	88	20	87	11	88	*17	90	2	80	7	76	25	70	*11	47	1
	Min	-12	27	-9	3	6	17	27	6	41	7	42	21	52	11	52	*11	36	13	32	14	25	30	-2	8
Washington	Max	55	8	55	22	..	....	89	21	91	*18	90	10	91	*16	90	2	83	7	80	*24	74	*1	50	1
	Min	-20	27	...	..	...	..	20	*7	40	*7	38	22	48	1	47	11	30	13	25	14	17	30	-8	*8
Waterloo	Max	51	8	48	25	68	26	87	21	87	*18	88	10	94	30	90	2	83	7	79	22	70	1	45	1
	Min	-23	28	-11	*2	-4	17	20	7	36	10	40	22	52	10	48	*11	33	*12	29	14	19	30	-11	8
Waverly	Max	50	8	46	26	69	26	88	21	87	22	85	*10	91	*16	87	11	81	7	76	22	69	1	43	1
	Min	-15	28	-12	5	-5	17	20	7	36	10	40	22	53	21	49	11	31	13	28	14	17	30	-13	25
West Bend	Max	49	8	54	26	69	25	87	21	90	*17	90	*4	93	16	87	2	82	7	76	*8	64	1	46	1
	Min	-20	27	-17	2	-1	17	16	7	37	27	39	*21	54	*10	44	11	32	*.2	27	*14	14	27	-15	26
Whitten	Max	51	8	49	26	68	26	89	21	89	20	88	4	93	*16	91	2	81	7	76	23	71	1	...	....
	Min	-22	27	-14	*2	-5	17	18	7	38	10	39	22	49	10	45	11	31	12	25	14	18	30	...	....
Wilton Junction	Max	52	9	52	25	67	*25	87	21	92	20	93	12	96	17	93	2	82	7	79	25	71	*1	46	1
	Min	-21	27	-15	3	0	17	22	8	40	*10	39	22	52	*1	47	12	32	13	27	14	16	30	-10	8
Winterset	Max	59	8	50	26	79	25	90	21	87	18	89	10	91	16	91	2	82	11	79	22	73	1	56	1
	Min	-17	27	-12	*2	2	17	22	*7	40	11	42	21	55	1	47	11	35	*12	29	28	19	27	-9	26

* Other dates.

MONTHLY AND ANNUAL MEAN TEMPERATURES FOR 1902, WITH DEPARTURES.

STTIONS.	Jan.		Feb.		March.		April.		May.		June.		July.		August.		Sept.		Oct.		Nov.		Dec,		Annual.	
	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.
Afton	24.3	* 1.0	18.8	- 3.5	39.8	* 5.3	50.2	- 0.7	66.0	* 3.3	67.2	- 5.0	75.0	- 0.7	71.0	- 3.3	59.2	- 6.7	55.0	* 1.2	42.4	* 7.4	21.6	- 3.6	49.2	- .04
Albia	26.1	.	19.8	.	41.0	.	51.2	.....	67.6	.	66.0	.....	72.2	.....	70.6	...	61.0	... .	55.6	.. .	45.8	....	23.0	.....	50.0	.....
Algona	21.1	* 6.9	18.6	- 0.5	37.1	* 6.4	46.7	- 1.3	62.8	* 4.4	65.0	- 5.0	72.6	- 1.0	68.0	- 1.3	59.0	- 4.6	52.9	- 4.8	38.8	* 9.4	18.0	- 2.4	46.7	* 1.3
Alta	20.0	* 5.0	7.2	- 1.0	36.9	* 7.3	46.0	- 1.4	61.4	* 3.8	62.9	- 6.2	70.2	- 2.2	66.9	- 3.1	56.7	- 7.9	51.5	* 2.1	36.0	* 7.0	14.6	- 7.0	45.0	- 0.3
Amana	22.0	* 7.6	16.4	- 4.4	39.2	* 8.1	48.7	* 0.3	64.7	* 5.1	65.8	- 3.8	73.9	* 0.2	69.0	- 1.3	59.7	- 2.2	53.7	* 5.2	44.2	*12.2	22.0	* 0.2	48.3	* 2.3
Ames	21.8	* 6.0	15.3	- 7.(	40.1	* 7.7	48.6	- 0.5	64.2	* 5.2	65.6	- 4.4	72.8	- 2.2	69.3	- 2.7	59.8	- 3.8	52.8	* 2.9	40.8	* 9.(	20.6	- 1.2	47.6	* 0.7
Atlantic	22.4	* 4.0	17.2	- 5.7	40.2	* 6.8	49.2	* 0.2	64.2	* 5.8	65.8	- 4.0	73.4	* 0.6	69.8	- 0.8	58.0	- 6.8	53.6	* 3.4	40.3	* 7.8	19.6	- 5.3	47.9	* 0.5
Audubon	..	.....	..	.....	....	..	....	.. .	64.0	* 4.5	65.2	- 4.3	73.2	0.0	70.5	- 1.2	59.8	- 4.4	54.2	* 5.4	38.(	* 6.5	21.0	- 3.0	...	... .
Baxter	21.2	.....	17.4	....	39.4	.....	48.2	.....	63.6	.....	64.8	.. .	73.0	.....	69.0	....	59.2	.....	54.(	. . .	43.	.....	20.8	.....	47.8	....
Bedford	...	....	..	.....		.....	49.7	.....	65.2	.	66.2	.	73.6	.	71.8	.	59.4	....	55.8	.....	42.9	....	22.1	.. .	..	. ...
Belknap		.....	17.7	- 4.3	41.0	* 5.4	49.1	- 4.1	65.0	* 2.4	65.6	- 6.2	73.2	- 2.6	69.4	- 5.2	59.2	- 8.6	55.1	- 0.6	45.0	* 5.4	....	.....	....	.....
Belle Plaine	20.4	* 2.4	18.4	- 4.1	38.0	* 5.6	47.8	- 1.8	63.4	* 5.2	64.0	- 5.9	73.0	* 0.2	67.8	- 2.1	58.2	- 5.9	52.5	* 3.4	42.5	*10.2	20.4	- 3.5	47.2	* 0.3
Bonaparte	24.9	* 3.3	18.6	- 6.8	40.6	* 2.2	50.4	- 1.6	66.8	* 4.5	66.8	- 6.3	75.0	- 0.9	70.6	- 3.5	61.2	- 7.6	55.9	* 1.7	45.5	* 9.3	24.4	- 4.4	50.1	- 0.8
Britt	19.0	* 1.5	16.1	- 1.1	36.6	* 9.3	45.3	- 1.7	62.0	* 3.5	64.0	- 4.5	72.4	- 0.9	67.6	- 2.8	57.4	- 5.1	50.4	- 1.6	36.8	* 4.5	17.0	- 0.1	45.4	* 0.1
Burlington	24.7	- 5.8	21.6	- 2.5	42.1	* 4.1	51.4	- 1.4	67.4	* 2.5	67.8	- 5.1	75.8	- 0.9	71.6	- 3.4	62.6	- 2..	56.4	- 0.5	47.6	* 9.5	25.8	* 0.1	51.2	- 0.5
Carroll	22.4	* 3.9	18.6	- 2.1	40.2	* 9.0	48.5	- 0.3	64.2	* 5.7	64.8	- 5.2	72.2	- 0.9	69.4	- 0.8	59.6	- 4.3	53.0	* 3.6	38.5	* 7.4	19.(	- 4.0	47.6	* 1.0
Cedar Rapids	22.2	* 5.5	15.6	- 6.1	39.6	* 6.8	49.3	* 5.5	65.4	* 6.4	66.4	- 4.2	74.7	* 0.1	69.9	- 1.6	61.0	- 2.4	55.2	* 5.2	44.8	*10.2	22.6	- 2.1	48.9	* 1.9
Chariton	24.4	- 1.2	18.4	- 4.3	40.4	* 5.4	49.0	- 3.1	65.4	* 3.1	65.6	- 5.5	73.8	- 1.5	70.3	- 3.9	59.6	- 6.9	55.4	* 0.7	44.1	* 6.3	22.8	- 3.2	49.1	- 1.2
Charles City	25.2	*11.3	13.6	- 4.0	37.0	* 6.5	46.5	- 0.4	62.6	* 5.3	66.8	- 1.8	72.6	- 0.8	67.6	- 2.6	58.8	- 4.8	51.0	* 1.(	40.7	*11.4	17.2	- 3.4	46.6	* 1.6
Chester	....	...	..	...	...	.....	45.2		60.6	.	62.8	.....	71.4	... .	65.6	...	57.2		49.3	.	37.0	....	15.1	.....	....	.
Clarinda	25.7	* 4.5	20.0	- 4.9	41.8	* 6.9	51.3	- 0.7	63.4	* 4.6	66.9	- 5.0	75.0	- 0.8	72.5	- 1.3	59.9	- 7.7	56.4	* 3.4	42.5	* 6.7	22.0	- 5.2	50.0	* 0.0
Clear Lake	23.4	.....	20.4	.....	38.0	.....	48.5	.....	62.4	.....	64.4	.....	73.2	... .	69.2	.....	58.6	.....	51.2	.	37.2	.	16.3	.....	46.9	.....
Clinton	22.(	* 3.6	16.8	- 5.9	39.7	* 3.0	48.5	- 2.4	65.6	* 4.7	66.3	- 5.2	74.2	0.1	69.5	- 2.6	59.6	- 5.8	53.4	* 2.2	44.6	*11.0	22.8	- 3.5	48.6	- 0.1
College Springs	25.4	* 2.9	....	.....	....	.....	49.4	- 1.3	....	.....	...	. .	74.3	- 0.1	71.8	- 1.7	58.8	-10.0	56.6	* 0.8	43.1	* 6.0	22.(	- 5.4	...	.....
Columbus Junction	24.4	.....	19.3	.....	40.0		51.0		66.6	.....	61.4	.....	.....		69.5	.....	60.7	.	55.9	.	45.5	....	22.8	.	...	.....
Corning	23.0	* 2.4	16.4	- 8.8	38.6	* 1.9	48.2	- 2.9	64.6	* 4.3	65.4	- 5.0	73.2	- 0.3	70.3	- 1.7	58.5	- 7.9	53.8	* 1.1	41.5	* 5.7	20.6	- 6.(	47.8	- 1.4
Council Bluffs	25.8	- 1.4	21.3	- 1.3	42.2	* 7.4	51.8	- 0.2	66.2	* 3.5	67.1	- 6.6	75.0	- 3.5	72.8	- 3.6	60.8	- 7.3	57.0	* 0.2	40.6	* 2.4	21.0	- 3.1	50.1	- 1.1
Cresco	17.4	* 7.1	13.3	- 2.6	35.6	* 9.8	45.0	* 0.6	59.8	* 3.3	60.2	- 6.1	70.5	- 0.4	65.3	- 3.3	56.3	- 3.5	49.6	* 3.3	....	....	....	....	..	.....
Davenport	24.0	* 4.0	17.4	- 7.9	40.2	* 5.3	49.5	- 0.2	65.0	* 4.3	66.3	- 4.6	75.0	* 0.0	70.4	- 2.4	61.0	- 3.7	55.8	* 3.7	46.5	* 9.7	24.2	- 3.6	49.6	* 0.4
Decorah	18.8	* 6.3	14.6	- 2.(	37.6	* 5.6	47.1	- 2.1	62.4	* 2.6	63.9	- 4.5	71.4	* 1.1	66.6	- 2.9	58.2	- 5.0	51.7	* 3.2	40.4	*10.1	18.6	- 2.4	45.9	* 0.8
Delaware	19.5	* 6.2	14.2	- 3.9	36.6	* 5.7	46.4	- 0.3	61.5	* 3.6	63.5	- 5.3	71.4	- 0.2	66.4	- 2.4	57.6	- 4.2	51.0	* 4.5	40.5	*11.4	18.2	- 3.2	45.6	* 1.0
Denison	22.4	* 2.4	17.3	- 5.2	38.8	* 6.7	47.1	- 2.2	62.8	* 2.8	64.2	- 4.5	71.8	- 1.0	68.2	- 2.5	59.6	- 5.7	53.3	* 4.9	38.4	* 6.7	18.2	- 4.1	46.8	- 0.1
Des Moines	24.4	* 6.9	19.9	- 3.2	40.5	* 5.8	49.6	- 0.9	64.7	* 4.3	65.8	- 4.3	74.5	* 0.0	70.4	- 1.6	59.7	- 4.4	55.4	* 3.2	43.2	* 6.8	23.4	- 4.4	49.2	* 0.7
Desoto	15.0	.....	21.0	.....	41.4	.....	50.8	.....	67.2	.....	69.2	...	76.1	.....	71.2	.....	60.2	.....	54.4	.....	43.0	....	22.2	.....	50.1	.....
Dows	20.1	.....	14.6	....	36.8	.....	45.6	.....	61.4	.	64.4	.....	72.4	.....	65.2	.....	57.8	.. .	50.9	.	39.5	.....	17.2	... .	45.5	.....
Dubuque	22.8	* 5.5	17.6	- 5.0	39.4	* 6.5	48.0	- 0.6	63.4	* 3.5	65.0	- 4.5	73.4	- 0.9	68.5	- 3.1	59.4	- 3.8	53.5	* 2.9	44.0	* 9.0	21.8	- 4.1	48.1	* 0.4
Earlham	..	.	.	.....	39.6	....	48.4	.....	63.2	.....	64.4	.. .	72.5	.....	68.4	.	58.1	....	52.6	....	40.8	.....	19.4	.....	..	...
Eldon	24.4	.....	18.4	.	40.8	.....	50.0	.	67.0	.....	66.7	.....	75.0	.. .	71.1	.	60.6	.....	55.9	....	45.7	....	23.6	.. .	49.9	.....
Elkader	20.7	* 7.7	16.4	- 2.7	38.4	* 7.5	46.0	- 2.0	64.1	* 3.5	65.4	- 4.1	73.8	* 0.1	69.6	- 0.6	59.8	- 2.4	53.4	* 5.2	43.2	*11.9	20.4	- 1.1	47.6	* 1.9
Fairfield	21.3	* 8.0	18.9	* 3.8	39.8	* 6.2	..	.....	66.2	* 7.1	66.0	- 4.1	75.4	* 0.6	70.9	* 0.5	60.9	- 3.2	55.4	* 4.0	44.4	* 9.1	....	.....	....	.....
Fayette	18.5	* 2.8	13.0	- 7.1	36.7	* 5.8	45.4	- 1.8	62.1	* 5.3	63.3	- 5.1	70.2	- 1.5	66.0	- 1.7	57.0	- 6.6	50.2	* 1.9	40.2	* 9.2	....	.	....	....
Forest City	20.0	.....	16.4	.....	35.5	.....	45.2	.....	61.4	.....	63.4	.	71.6	.....	67.5	.....	58.2		50.9	.....	37.0	.....	17.4	..	45.4	.....
Ft. Dodge	20.2		6.3	.....	38.0	.....	46.4	.	63.4	.....	64.0	.....	72.2	. .	67.7	... .	58.4	....	....	.....	....	.....	....	... .	..	.....
Galva	21.1	* 5.7	16.8	- 3.2	37.8	* 4.0	47.5	- 1.8	63.4	* 3.2	65.3	- 3.9	71.8	- 1.7	68.8	- 1.2	58.0	- 7.5	....	....	....	....	15.8	- 6.6	..	.....
Grand Meadow	18.6	* 3.7	14.6	- 5.1	36.2	* 5.1	46.1	- 1.1	61.6	* 4.1	63.0	- 3.9	70.9	* 0.8	67.2	- 0.7	57.6	- 5.4	50.7	* 2.5	40.4	* 9.9	18.2	- 4.3	45.4	* 0.5
Greene	20.2	- 0.1	15.0	- 1.6	37.2	* 7.5	46.8	- 1.8	63.1	* 3.0	65.3	- 4.0	73.2	- 2.3	68.2	- 5.1	58.2	- 7.0	51.4	- 2.7	40.2	* 6.0	19.0	* 0.3	46.5	- 0.8
Greenfield	24.6	* 4.5	18.0	- 5.0	39.4	* 5.4	49.1	- 1.7	63.8	* 4.2	65.1	- 5.7	72.2	- 1.8	69.0	- 3.2	58.8	- 7.3	54.2	* 2.4	42.5	* 8.7	20.2	- 2.4	48.1	- 0.2
Grinnell	22.7	* 4.4	17.8	- 5.4	38.6	* 5.5	48.0	- 2.7	64.0	* 4.6	....	.....	....	.. .	....	...	....	... .	53.2	* 6.0	42.0	* 7.5	20.6	- 4.2	....	.....
Grinnell (near)	21.7	....	16.9	.. .	38.4	....	....	.....	....	.....	65.1		72.1	.	68.6	....	59.0	.....	53.9	.....	43.0	.	20.6	....	....	.. .
Grundy Center	20.1	* 5.2	15.0	- 5.0	37.6	* 5.5	46.8	- 2.0	62.4	* 4.3	64.0	- 5.8	72.2	* 0.4	68.3	- 1.5	58.0	- 5.8	52.7	* 2.9	41.2	*10.6	19.0	- 4.0	46.4	* 0.4
Guthrie Center	23.0	- 1.5	18.2	- 2.0	39.3	* 6.6	44.2	- 7.1	60.2	- 1.0	64.6	- 5.7	73.0	- 1.2	67.9	- 5.4	58.4	- 5.9	53.0	* 0.6	40.6	* 4.6	20.2	- 1.3	46.9	- 1.6
Hampton	21.6	* 7.7	17.2	- 0.8	37.6	* 8.6	47.4	* 0.6	62.4	* 5.4	64.4	- 3.5	72.6	* 0.9	68.4	- 0.3	59.2	- 3.2	53.3	* 5.2	40.4	*10.7	18.8	- 2.2	46.9	* 2.4
Harlan	22.4	..	17.8	....	39.2	.	48.7	.....	64.0	.....	65.8	.	73.6	.	69.6	.....	58.4	.....	52.5	.. .	38.0	.....	18.6	.....	47.4	* 1.3
Humboldt	24.4	* 8.2	20.6	* 3.6	39.0	*10.4	47.0	- 2.3	63.1	* 3.0	65.3	- 5.1	72.6	- 1.5	68.4	- 0.9	58.8	- 3.8	52.2	* 2.7	40.0	* 7.1	17.5	- 5.7	47.4	† 1.3
Independence	19.6	* 4.8	13.6	- 6.7	37.0	* 6.6	46.2	- 1.0	61.8	* 2.4	63.4	- 3.6	71.0	- 0.2	67.2	- 0.8	58.0	- 2.0	51.8	* 4.7	41.4	* 9.4	18.2	- 2.9	45.8	* 0.9
Indianola	24.3	* 5.0	18.6	- 6.4	40.4	* 3.8	48.8	- 3.3	65.2	* 4.8	66.2	- 4.6	73.4	- 0.8	70.0	- 2.8	61.2	- 5.8	55.4	* 0.8	45.0	* 9.0	21.8	- 3.0	49.2	- 0.4
Iowa City	21.1	* 0.1	16.7	- 8.2	39.4	* 4.2	49.5	- 1.3	66.3	* 6.7	66.0	- 4.6	74.5	* 0.6	70.3	- 0.4	61.0	- 4.2	55.2	* 4.6	44.8	* 9.0	22.2	- 4.8	49.0	* 0.1
Iowa Falls	17.9	* 5.7	14.5	- 2.7	36.5	* 4.8	46.1	- 0.9	62.1	† 3.1	64.0	- 4.7	71.9	- 0.4	67.5	- 1.5	56.9	- 5.6	50.7	* 2.7	39.5	* 9.8	17.9	- 3.1	45.5	* 0.6
Keokuk	27.5	* 4.3	21.0	- 7.3	42.2	* 4.6	51.5	- 0.5	67.7	* 5.1	68.3	- 4.2	76.5	- 0.4	72.2	- 2.3	62.4	- 4.0	58.0	* 3.9	48.2	* 9.4	27.0	- 2.8	51.0	* 0.5
Keosauqua	25.5	* 3.1	19.2	- 7.4	41.7	* 2.7	51.2	- 1.8	67.8	* 5.7	68.2	- 5.1	76.0	- 0.4	71.6	- 2.5	61.7	- 6.3	56.0	* 1.4	46.4	* 9.3	24.8	- 2.4	50.8	- 0.3
Larrabee	20.4	* 3.9	17.8	- 2.7	35.8	* 5.2	45.2	- 3.3	62.4	* 4.8	64.4	- 5.2	72.5	* 0.3	68.5	- 1.7	57.7	- 6.8	50.9	* 1.7	6.2	* 6.2	16.6	- 6.0	45.7	- 0.3
Le Mars	21.6	* 0.7	18.0	* 0.9	37.2	* 6.3	46.2	- 4.0	62.6	* 2.3	64.8	- 4.8	71.6	- 2.6	68.2	- 4.4	58.2	- 5.4	51.6	- 1.0	36.8	* 3.9	18.1	- 4.0	46.2	- 1.0
Lenox	23.8	- 1.3	17.2	- 5.6	39.8	* 5.8	49.4	- 2.1	64.4	* 2.7	65.3	- 5.5	72.6	- 2.4	70.2	- 3.5	59.4	- 6.7	54.6	* 0.3	42.0	* 5.2	20.4	- 4.3	48.3	- 1.4
Leon	..	.....	....	.....	....	.	52.8	.....	66.7	.....	67.7	... .	75.0	.	71.4	.....	60.2	.....	56.0	.	44.3	....	22.8	.	...	.....
Logan	24.0	* 3.7	19.3	- 4.8	40.4	* 6.4	51.0	- 0.9	65.4	* 4.6	66.1	- 5.6	73.4	- 1.4	71.1	- 1.0	59.3	- 7.0	54.2	* 1.9	39.6	* 4.7	20.2	- 6.6	48.7	- 0.5
Maquoketa	21.4	* 3.6	16.1	- 9.2	39.1	* 3.4	47.8	- 0.5	65.5	* 4.8	65.0	- 6.1	72.8	- 2.9	68.6	- 3.0	59.6	- 5.1	53.3	* 0.1	44.2	* 8.4	19.6	- 5.7	47.8	- 1.0
Marshalltown	23.0	* 5.0	17.6	- 4.1	39.2	* 7.3	48.6	- 0.5	64.8	* 6.2	65.9	- 3.2	74.3	* 1.9	70.0	- 0.6	59.6	- 5.3	53.7	* 3.0	43.6	*11.0	21.4	- 2.2	48.5	* 1.5
Monticello	20.2	* 4.8	15.6	- 5.8	38.4	* 6.5	....	.....	64.6	* 5.4	65.9	- 2.9	74.4	* 1.5	67.4	- 2.6	57.8	- 3.9	54.4	* 5.9	...	... .	19.6	- 2.5	....	... .
Mt. Ayr	23.9	* 1.7	17.5	- 9.0	40.2	* 3.8	49.4	- 2.8	64.6	* 2.4	65.9	- 5.1	74.0	- 1.2	71.0	- 2.0	59.8	- 8.4	55.4	* 2.4	42.8	* 7.4	19.4	- 6.1	48.7	- 1.4
Mt. Pleasant	22.7	* 2.1	17.8	- 5.8	39.2	* 3.6	49.9	- 1.9	64.6	* 2.3	65.4	- 6.8	75.8	- 0.2	70.0	- 3.3	60.5	- 4.4	53.8	* 1.4	43.0	* 6.1	22.4	- 4.4	48.8	- 0.9
Mt. Vernon	21.7	* 4.2	16.6	- 4.7	38.3	* 6.4	48.6	- 0.7	64.5	* 3.8	65.5	- 5.3	74.0	- 0.8	70.0	- 1.5	59.8	- 2.9	55.1	* 4.8	44.4	*10.2	21.0	- 1.8	48.3	* 1.0
New Hampton	19.2	....	12.8	. .	35.4	.....	46.8	.....	59.0	.....	63.0	.....	70.2	..	65.4	.....	55.8	....	50.0	.. .	38.6	.. .	18.0	.....	44.6	.....
Newton	22.6	* 6.3	17.9	- 3.8	38.3	* 3.9	47.9	- 0.7	....	.....	64.3	- 6.3	72.4	- 2.4	68.6	- 3.2	58.7	- 4.2	53.3	* 3.1	43.0	*10.3	20.5	- 1.4	...	....
Northwood	20.1	* 3.5	17.3	* 2.3	37.0	* 9.1	46.4	- 1.6	61.0	* 2.4	63.0	- 4.5	70.2	- 2.2	66.2	- 4.1	57.3	- 3.5	50.2	- 0.8	37.6	* 6.6	17.8	- 1.6	45.3	* 0.5
Odebolt	21.6	. .	18.6	.....	39.0	.	48.0	.....	64.2	.....	66.6	. .	73.7	.....	70.2	....	59.4	.....	52.6	....	36.7	....	18.8	.....	47.4	.....
Ogden	23.1	* 1.8	17.6	- 2.1	39.4	* 7.1	48.8	- 2.1	64.0	* 2.9	66.1	- 3.7	73.4	- 1.6	70.2	- 3.2	60.7	- 4.5	55.9	* 2.8	43.3	* 9.1	23.3	- 0.1	48.8	* 0.4
Olin	20.7	.....	13.8	.....	38.4	.....	46.2	.....	64.7	.	64.8	.....	72.6	.. .	68.0	.....	58.2	.....	52.4	....	43.6	.....	21.2	.....	47.0	.....
Omaha	26.6	* 7.4	21.3	- 3.7	41.8	* 6.3	52.2	* 1.2	66.0	* 4.3	67.3	- 4.2	74.8	- 1.4	72.4	- 1.3	62.0	- 2.8	57.6	* 4.7	41.4	* 4.8	21.5	- 5.2	50.4	* 0.8
Onawa	23.6	.....	20.4	.....	40.0	.....	50.2	.....	66.4	.....	68.8	.	74.4	.....	71.5	. .	61.4	.....	55.8	.....	39.2	.. .	19.9	.....	49.3	.. ..
Osage	18.8	* 6.4	14.8	- 1.2	36.8	* 8.3	45.4	* 0.6	61.0	* 4.9	62.6	- 3.9	71.1	* 1.2	66.0	- 0.1	57.0	- 2.3	49.6	* 5.9	38.1	*11.7	17.4	- 1.7	44.9	* 2.5
Osceola		.....	....	.. .	....	.....	48.9	... .	64.7	. .	64.2	. .	73.6	.. .	70.7	.....	59.8	... .	55.2	.....	43.6	.....	22.5	.. .	....	.....
Oskaloosa	23.6	* 6.0	18.4	- 4.0	38.6	* 4.3	48.0	- 2.2	63.6	* 3.7	65.6	- 4.3	73.4	- 1.3	69.2	- 1.9	59.8	- 4.7	55.0	* 4.4	44.9	* 9.2	22.6	- 3.6	48.6	* 0.5
Ottumwa	25.9	* 3.3	20.2	- 5.0	41.6	* 2.7	50.9	- 2.6	67.4	* 4.4	67.6	- 5.3	75.8	* 0.2	71.7	- 2.1	59.8	- 8.1	57.2	* 4.2	46.5	*10.1	25.6	- 2.1	50.8	- 0.0
Ovid	24.4	* 1.8	18.8	- 6.0	40.7	* 3.3	50.3	- 2.3	64.8	* 3.5	65.6	- 5.7	73.6	- 1.7	70.6	- 3.1	60.4	- 7.4	56.3	* 3.6	44.9	* 9.2	22.6	- 3.9	49.4	- 0.7
Pacific Junction	24.3	.. .	20.7	....	41.8	...	50.5	.....	66.2	.....	67.7	.. .	75.0	.....	72.0	.. .	60.6	.....	55.1	....	40.6	.....	20.9	.....	49.6	.....
Perry	23.2	.. .	18.0	.....	39.8	...	49.4	.	65.6	.....	66.6	.....	..	.....	71.0	... .	..	.	53.4	.. .	41.6	.....	20.6	.....	..	.....
Plover	20.8	- 0.2	16.4	- 0.3	36.8	* 7.7	45.2	- 3.6	61.5	* 1.4	62.6	- 7.2	70.6	- 4.7	66.6	- 5.3	55.6	- 9.3	48.9	- 4.0	35.5	* 2.0	17.4	- 3.0	44.8	- 2.2
Red Oak	27.4	.. .	21.4	.....	41.8	.. .	50.6	.....	65.6	.....	67.0	.....	74.1	.....	72.1	....	60.9	.....	56.0	....	44.2	.....	25.2	.....	50.5	. ...
Ridgeway	21.4	.....	18.0	.....	8.1	.....	47.0	.....	61.8	.....	64.7	.....	74.0	.. .	69.4	.....	60.0	... .	53.8	.....	41.9	.....	20.6	.. .	47.6	.....
Rockwell City	22.8	* 3.9	17.8	* 1.2	36.2	* 5.8	46.6	- 1.9	62.0	* 1.7	64.0	- 5.8	71.4	- 3.7	68.0	- 4.2		.....	53.1	* 0.4	38.0	* 4.6	19.5	- 1.7		.....
Sac City	20.4	* 6.5	17.4	- 2.3	38.5	* 7.3	47.7	- 2.0	63.6	* 4.6	65.9	- 5.8	72.0	- 4.1	68.8	- 3.7	59.1	- 4.8	53.5	* 2.3	38.4	* 5.3	17.2	- 6.2	46.9	- 0.2
St. Charles	25.9	.. .	20.2	....	40.8	.....	50.6	.	65.4	.....	66.2	.....	73.8	.....	70.5	.....	60.5	.....	56.6	. ...	44.4	.....	22.8	... .	49.8	.....
Scranton	22.5	.....	18.0	.....	37.7	.....	48.7	... .	63.9	.. .	66.0	.. .	74.1	.. .	69.2	.....	....	..	52.6	.....	38.8	.. ..	19.8	.....	....	.....
Sheldon	20.4	.....	17.2	.....	36.8	....	46.0	.....	60.8	....	61.8	.....	71.2	.....	67.4	.....	57.8	... .	51.8	.....	36.8	.....	15.3	.....	45.4	.....
Sibley	19.2	* 6.5	15.2	- 2.8	35.4	* 5.0	45.4	- 2.8	60.8	* 3.0	63.6	- 3.7	71.0	* 0.7	67.8	* 0.2	57.6	- 4.6	51.6	* 3.4	35.4	* 7.6	15.8	- 3.6	44.9	* 0.7
Sigourney	24.2	* 0.1	19.0	- 2.8	41.5	* 7.6	50.2	- 2.5	66.6	* 2.8	66.6	- 6.9	75.0	- 3.1	70.4	- 4.4	60.4	- 5.6	54.9	- 0.1	45.4	* 7.9	23.0	- 2.2	49.8	- 0.8
Sioux Center	20.8	.	17.4	.....	35.4	....	45.8	.....	62.2	.....	65.0	.....	71.3	.....	68.2	.....	57.8	.....	51.4	.	34.9	.....	15.6	.....	45.5	.....
Sioux City	22.7	* 6.4	18.8	- 0.2	38.4	* 6.8	48.0	- 2.6	64.0	* 5.6	65.6	- 4.7	73.8	- 0.5	69.8	- 1.8	59.9	- 5.3	54.5

MONTHLY AND ANNUAL MEAN TEMPERATURE FOR 1902, WITH DEPARTURES.

STATIONS.	Jan.		Feb.		March.		April.		May.		June.		July.		August.		Sept.		Oct.		Nov.		Dec.		Annual.	
	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.
Villisca	21.8	* 4.0	18.5	-6.0	41.8	* 4.6	49 8	-2.2	65.3	* 3.9	65.9	-5.1	74.1	* c.1	....	.....	59.9	-5 3	56 4	* 5.7	42.8	† 8.6	21.8	-2.2	...	.....
Wapello	25.0	....	18.6	.....	41.0	...	51.8	. ...	65.5	....	05 6	....	73 5	.....	69 0	.....	61.0	....	54.5	....	45.8	.	25.1	..	49.7	.....
Washington	22.6	* 1.1	..	. ....	....	.	47 0	-5.3	64.4	* 3.4	64.0	-9 7	72 5	-3.1	68.2	-4.9	58.7	-8.0	53.7	* 1 4	42.9	* 7.3	21.0	-5.3	...	.....
Waterloo	20 4	* 3.7	15.6	-5 3	37 5	* 4 6	47.3	-3.0	63.3	-0.2	64 6	-8 2	72.7	-5.1	68 8	-5 6	59.4	-6.6	53 2	* 1.2	41.9	* 5 3	19 0	-3.7	47.0	-2.0
Waverly	20.3	* 0.7	15.2	-3.3	37.8	* 7.5	47.4	-0.3	63.2	* 2 1	64.2	-5.4	72 0	-2.2	67.5	-4.7	58.6	-4 6	52 4	-1.2	10 8	* 7.3	19.0	-2.0	46 5	-0.5
West Bend	20.7	* 5.1	18.0	-1.7	37.2	* 7.3	46.7	* 0.5	52.5	* 4.1	64.8	-3 4	72.2	0.0	67 8	-1.4	57 8	-3.7	51.3	* 5.7	37 8	*10.1	17 5	-0 4	46.2	* 1.8
Whitten	19 5	.	15.9	.	37 2	.....	46.8	..	63.2	. ...	54 4	.....	73.3	.....	68.1	. .	57.8	. ....	52.2	. .	41.8	. .....	...	.. ..	....	.....
Wilton Junction	22.9	* 0.1	17.0	-3.3	40.0	* 6 4	48.8	-2.4	64.2	* 2.1	67 2	-4.4	75.2	-0 3	70 8	-2.4	61.0	-3.8	51.4	* 1.8	44 8	* 8.4	22.1	-4 0	49 0	-0.1
Winterset	21.7	* 4 9	19.6	-4.0	41 3	* 7 1	50 4	-1.0	61.3	* 3.9	66.0	-4.4	73.6	* 0 2	70.0	-1.4	60 3	-5 6	58 4	* 6 8	43.4	* 9.7	21.0	-4 6	49.4	* 1.0

*Indicates above normal.

MONTHLY AND ANNUAL PRECIPITATION FOR 1902, WITH DEPARTURES FROM NORMAL.

STATIONS.	Jan.		Feb.		March		April		May		June		July		August		Sept.		Oct.		Nov.		Dec.		Annual	
	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.
Afton	1.30	*0.56	.40	-.73	.71	-1.82	1.85	-2.08	7.31	*2.97	4.88	* .65	8.67	*4.35	5.80	*2.57	7.32	*3.88	4.32	*1.52	1.90	*.89	2.30	*1.15	46.76	*13.91
Albia	.82	....	.92	.....	.91	....	2.85	....	5.48	...	7.93	. .	8.82	....	7.27	.	6.42	...	4.57	..	3.34	...	1.92	...	51.25	...
Algona	1.04	*.43	.50	-.37	.13	-1.50	1.10	-2.84	5.49	*1.89	4.10	* .52	6.03	*3.80	7.49	*4.65	4.95	*3.13	1.10	-0.66	2.50	*1.46	2.45	*1.16	36.88	*11.67
Alta	.94	*.21	.40	-.36	.87	-1.02	1.51	-2.53	4.31	*.09	6.59	*1.23	12.24	*8.64	6.34	*2.58	3.94	*1.93	1.11	-1.23	2.77	*1.77	1.97	* .99	42.99	*12.33
Alta (near)	.75	....	.30	.. .	.80	.. .	1.48	....	3.68	....	6.73	....	12.37	....	6.34	.....	3.71	...	1.19	...	3.16	...	1.97	....	42.48	.....
Amana	.88	- .66	1.10	- .17	1.45	- .53	1.83	-1.11	5.30	*1.10	6.86	*2.39	6.17	*2.06	9.41	*6.01	6.36	*2.99	3.71	*1.04	1.77	*0.03	1.97	* .52	46.81	*13.68
Ames	1.32	* .28	.38	- .54	2.70	1.31	2.31	- .54	6.69	*2.85	10.01	*5.57	8.06	*3.61	7.12	*3.72	1.66	-1.85	2.56	*0.22	1.11	-0.11	1.87	* .88	45.79	*15.40
Atlantic	1.70	* .93	.59	- .32	2.08	* .23	1.37	-2.16	4.48	* .16	6.89	*1.04	9.36	*5.79	4.75	*2.09	4.44	*1.64	2.51	*0.32	2.68	*1.94	2.66	*1.36	43.51	*13.02
Baxter	.70	.....	.75	....	.90	.....	3.21	....	4.95	.....	10.76	.....	6.60	.....	6.57	....	4.85	....	4.33	....	2.30	....	1.95	.....	47.87	.....
Bedford	....	.....	....	....	...	....	1.50	...	5.13	....	10.62	.....	7.63	.....	7.38	...	4.76	.....	2.95	...	2.10	....	2.13	....	.....	.....
Belknap	.60	-1.50	.69	- .99	1.59	- .51	3.58	* .68	2.63	-1.52	8.90	*5.51	6.68	*2.31	6.17	*2.32	5.17	*1.74	4.35	*2.48	2.65	* .93	.	....	.....	.....
Belle Plaine	1.07	- .66	2.39	-1.27	3.45	*1.38	2.57	- .91	7.13	*3.09	7.12	*3.56	6.20	*3.01	13.53	10.50	5.64	*2.87	2.85	* .33	3.13	*1.47	2.40	*1.07	57.48	*26.95
Bonaparte	.55	-1.46	.55	- .47	1.84	-1.04	4.15	* .35	2.69	-1.36	9.94	*5.66	8.06	*4.32	8.12	*4.23	3.51	-0.89	4.01	*2.45	3.18	*1.26	1.47	- .25	48.07	*12.80
Britt	.55	- .05	.47	- .40	.46	-1.05	.95	-1.34	6.36	*3.20	3.87	- .73	6.83	*3.22	7.24	*4.28	3.41	- .77	1.18	-1.20	2.29	*1.57	1.93	*1.37	35.54	* 8.10
Buckingham	1.09	...	1.06	.....	1.60	....	1.45	.....	3.78	...	13.56	....	7.66	.....	10.13	.	4.13	...	1.82	...	2.17	....	1.40	....	49.85	.....
Burlington	.89	- .73	1.16	- .97	2.52	- .39	3.21	* .21	3.17	-1.31	11.65	*7.12	7.27	*4.65	10.62	*6.66	2.77	* .40	3.79	*1.37	2.37	* .75	2.13	* .72	51.55	*18.48
Carroll	1.35	* .12	.30	- .73	2.33	- .15	1.38	-2.49	2.58	-1.75	9.34	*5.16	9.52	*6.30	5.56	*2.75	5.39	*3.20	1.10	-1.55	2.51	*1.43	2.58	*1.61	43.91	*13.90
Cedar Rapids	1.03	- .57	.90	- .77	1.55	- .71	1.30	-1.86	4.61	* .13	5.57	*1.75	7.52	*3.77	9.93	*6.95	4.83	*1.88	2.71	*0.05	1.47	-0.03	1.96	* .32	43.38	* 0.91
Charlton	.74	- .43	1.15	* .12	1.10	- .45	3.42	- .08	5.60	*1.52	7.19	*3.33	10.07	*4.38	8.23	*4.95	9.10	*6.14	4.55	*1.97	2.89	*1.69	1.91	* .45	55.95	*23.59
Chariton	.65	- .64	.33	-1.01	2.19	* .61	1.65	-2.33	9.19	*5.42	8.36	*3.47	7.92	*5.16	6.71	*4.46	2.80	*0.52	1.13	-0.91	3.18	*1.84	2.30	* .88	45.8.	*17.47
Charles City	..	...	....	...	....	.....	86	.....	4.62	.....	5.74	. .	6.21	. .	2.79	.....	2.56	.....	2.09	....	2.38	....	4.37	....	. .	. .
Chester	1.23	* .12	.30	- .76	.92	- .79	1.79	-1.45	7.18	*2.59	11.61	*6.59	8.02	*3.69	6.76	*3.41	4.78	*2.59	4.23	*2.35	2.05	*1.11	2.53	*1.36	51.37	*20.81
Clarinda	.00	.....	.66	.....	.65	.....	.78	.....	6.85	....	5.30	.....	9.15	.....	4.60	.....	1.65	.	1.05	. .	2.30	.....	1.95	.....	35.84	.....
Clear Lake	.63	-1.55	1.18	- .52	2.19	- .36	1.45	-1.74	6.01	*1.90	9.90	*5.12	7.79	*4.45	4.08	*1.30	3.79	*0.80	3.15	*1.57	2.51	* .52	2.09	* .95	44.80	*12.44
Clinton	1.05	* .47	....	.....	1.95	- .05	1.11	-2.95	7.86	*3.31	9.61	*5.43	9.91	*4.57	6.00	*3.31	3.50	*1.13	3.63	*1.01	3.66	*2.88	2.44	* .94	....	.....
College Springs	.46	....	.92	.. .	2.06	.. .	2.30	....	4.81	....	7.77	.....	10.90	....	15.47	.....	4.00	....	4.77	. .	3.16	...	2.16	..	58.80	.....
Columbus Junction	1.50	* .68	.50	- .33	1.08	- .64	1.56	-2.00	5.87	*1.21	5.70	*1.34	8.72	*4.69	7.81	*4.70	5.01	*2.74	3.43	*1.70	2.04	*1.16	3.10	*2.11	46.34	*17.37
Corning	1.05	* .38	.06	- .98	.56	-1.02	1.29	-1.27	3.33	-1.17	9.84	*4.67	10.23	*5.45	3.30	- .16	2.21	-1.14	2.24	- .81	1.67	* .60	1.91	* .97	37.69	* 5.52
Council Bluffs	.60	- .63	1.63	* .70	T	-1.33	1.00	-1.59	9.47	*5.90	4.11	*1.01	8.41	*4.51	2.80	- .09	2.93	-0.71	1.60	-0.78	.....	....	....	....	.....	.....
Cresco	1.10	.....	.21	.....	4.33	....	.51	.....	2.26	.....	6.06	.....	8.99	....	5.36	....	5.46	....	3.23	.....	1.37	....	1.80	....	40.68	.....
Cumberland	...	....	1.28	.....	2.47	....	3.85	.....	4.15	....	12.74	.....	7.73	.....	8.86	....	2.90	.....	4.05	.....	1.98	...	1.10	.....	.....	.....
Danville	.60	-1.07	.96	- .61	1.76	- .40	1.40	-1.38	4.57	* .25	7.55	*3.16	6.38	*2.72	7.25	*3.67	3.20	*0.02	2.81	*0.19	1.95	- .11	1.88	* .15	40.31	* 6.59
Davenport	1.20	- .06	1.35	* .58	1.77	* .29	1.27	-2.05	11.63	*8.43	5.35	*1.00	8.43	*6.04	1.78	* .40	3.86	*0.93	1.51	-0.64	2.07	*0.54	3.00	*1.74	43.21	*17.22
Decorah	1.67	- .55	1.09	* .31	1.78	- .03	1.26	-2.12	7.49	*3.67	6.62	*2.34	5.97	*2.67	3.31	* .43	3.56	*0.20	1.50	-0.78	1.79	*0.03	2.25	* .73	37.29	* 6.90
Delaware	1.00	* .38	.14	- .72	1.60	- .14	1.19	-3.98	2.69	-1.55	4.62	*1.67	11.34	*7.60	3.59	* .59	4.07	*1.73	0.82	-0.83	1.40	*0.40	1.40	* .99	33.81	* 6.14
Denison	.91	- .43	.52	- .76	1.15	- .31	1.55	-1.24	4.69	- .01	7.27	*1.91	5.95	*2.42	7.82	*4.56	5.03	*1.83	3.70	*0.66	1.65	-0.06	1.77	* .33	42.01	* 8.90
Des Moines	.80	.....	.25	.....	1.97	.....	1.00	....	3.26	.....	6.02	....	7.86	....	7.68	.....	5.76	.....	3.76	.....	1.90	...	2.79	.....	43.05	.....
De Soto	.75	...	.54	.....	2.12	.....	1.38	.....	4.38	.	5.82	.....	12.19	.....	11.10	.....	2.66	.....	0.95	...	2.22	.....	1.70	.....	45.81	...
Dows	.74	- .91	1.43	- .03	1.76	- .51	1.11	-1.68	8.67	*4.68	6.97	*1.77	6.80	*2.52	1.47	-1.68	3.93	- .16	2.26	-0.45	0.86	-1.24	2.21	* .43	38.24	* 2.71
Dubuque	....	....	..	....	1.33	.....	1.07	....	3.75	.....	5.55	.....	8.46	....	8.54	.....	5.80	....	3.71	....	2.14	.....	2.59	.....	...	.....
Earlham	65	.....	.72	....	1.21	.....	2.94	....	1.97	...	6.72	...	5.63	.....	7.18	...	5.25	.....	4.38	.....	2.10	.....	1.45	....	40.23	...
Eldon	.77	- .73	1.19	* .09	2.17	* .39	.97	-1.99	11.81	*8.10	12.46	*8.57	8.10	*3.99	2.14	-0.71	4.12	*0.21	1.87	-0.87	1.91	*0.19	2.50	* .27	50.01	*17.51
Elkader	.51	-1.20	.74	- .89	1.43	*1.24	....	.	2.45	-2.95	9.34	*4.38	11.40	*7.74	9.54	*5.71	4.13	* .69	4.71	*1.87	2.11	- .18	...	.....	.....	.....
Fairfield	.82	- .62	1.48	* .37	2.27	* .17	1.13	-2.49	5.59	11.61	8.81	*2.71	9.07	*5.92	4.92	*2.17	3.86	*1.03	1.47	-1.28	2.13	*0.38	...	.....	.....	.....
Fayette	.72	....	.40	....	.20	...	.92	..	7.10	....	5.85	....	6.58	....	5.61	.	3.95	.....	1.32	. .	2.34	....	2.80	...	37.79	....
Forest City	1.10	- .90	1.52	- .42	2.57	- .20	3.48	* .26	4.37	- .02	9.05	*4.77	7.91	*4.01	7.19	*3.54	2.23	-1.56	3.51	*0.76	2.69	*0.50	3.20	*1.17	48.88	*11.91
Fort Madison	.50	* .06	.20	- .13	.22	-1.01	1.29	-2.31	2.53	-1.02	7.01	*3.33	0.39	*6.97	4.9	*2.01	3.68	*1.72	1.06	*0.08	2.78	*1.61	1.90	*1.18	36.47	*12.29
Galva	.72	...	.87	....	80	...	2.67	....	4.41	....	7.00	....	7.88	....	6.94	....	3.85	.	2.91	.....	2.35	.	1.60	.....	42.00	.....
Gilman	.83	- .58	1.97	* .92	2.73	* .68	1.36	-2.22	18.04	13.83	6.55	*1.31	10.70	*7.06	1.98	-0.38	4.61	*1.72	1.33	-1.21	2.15	*0.53	2.44	* .85	54.71	*22.51
Grand Meadow	.58	....	.89	- .09	1.94	* .36	83	-1.26	7.38	*3.89	4.67	* .72	8.79	*5.52	8.24	*6.10	4.00	* .79	1.39	- .90	2.32	*1.24	2.30	*1.59	43.33	*17.96
Greene	.91	- .18	.38	- .79	1.54	- .86	1.23	-2.37	6.76	*2.33	6.27	*1.06	10.87	*6.43	5.77	*3.18	6.30	*3.27	2.91	*1.10	1.46	* .46	1.98	* .52	46.38	*14.15
Greenfield	.43	- .92	1.23	* .46	1.52	- .06	2.82	- .91	4.92	* .35	....	....	.....	....	.....	...	.....	.....	3.60	*1.23	2.16	* .63	2.26	*1.06	.....	.....
Grinnell	.80	.....	1.13	.....	1.18	...	...	.....	.....	.	9.39	. .	11.57	. .	7.45	.....	4.57	...	4.55	...	2.05	..	2.50	.....	...	...
Grinnell (near)	1.16	* .41	.79	* .09	2.08	* .75	1.70	-2.30	7.11	*2.70	6.04	12.02	8.74	*5.01	9.81	*6.82	4.67	*1.81	1.65	-1.05	2.28	*1.28	2.05	* .77	58.08	*28.31
Grundy Center	1.25	* .87	.16	- .59	1.86	* .54	.89	-1.86	3.30	-1.48	6.99	*3.35	9.27	*5.40	7.91	*3.72	5.49	*2.32	2.27	* .05	1.91	*1.00	2.27	*1.16	43.56	*14.48
Guthrie Center	1.46	* .23	.87	- .30	2.88	* .87	1.07	-3.06	7.45	*3.6	8.30	*3.33	10.95	*7.62	5.77	*2.74	4.67	*1.80	1.33	-1.34	2.16	* .37	2.42	*1.07	49.33	*17.02
Hampton	1.67	.	.15	.....	2.01	....	.96	.....	3.31	.....	7.87	.....	12.63	....	3.32	.....	5.63	.....	2.25	. .	1.45	.....	2.69	.....	43.94	.....
Harlan	.53	- .63	.61	- .27	.98	- .74	1.59	-2.28	4.70	- .14	5.67	*1.47	7.89	*1.63	8.37	*5.33	8.60	*5.44	4.62	*2.76	1.90	* .96	1.69	* .62	47.15	*16.15
Hopeville	.45	- .04	1.29	* .65	.86	- .65	1.58	-2.45	3.51	- .17	8.00	*4.39	8.81	*5.67	7.36	*4.53	3.15	*1.05	1.14	-0.62	2.28	*1.38	1.57	* .97	40.00	*14.70
Humboldt	.97	- .37	1.10	* .06	1.51	- .23	1.14	-1.30	10.46	*6.45	9.03	*4.23	9.51	*5.22	4.42	*1.28	3.27	-1.02	1.65	-0.72	1.40	- .01	1.72	* .34	46.14	*13.93
Independence	.84	- .65	.72	* .02	1.12	* .19	1.6	-2.20	5.54	* .80	.....	.....	.....	.....	9.48	*6.18	....	....	3.25	*1.63	2.50	*1.29	.....	.....	.....	.....
Indianola	1.29	- .74	.85	- .40	1.29	-1.10	1.91	-1.27	3.75	- .40	7.46	*3.78	6.80	*2.76	10.91	*8.56	5.87	*3.17	3.12	*1.13	2.25	* .53	2.21	* .57	47.80	*16.59
Iowa City	1.60	* .69	.84	* .01	2.15	* .89	1.10	-3.12	5.86	*2.18	10.01	*6.39	11.28	*8.46	7.66	*4.74	3.46	*0.47	1.60	-0.66	1.90	* .55	2.11	*1.01	49.57	*21.61
Iowa Falls	.95	....	.37	.....	1.21	.....	.83	.....	4.68	.....	9.21	....	10.65	.....	8.27	.	5.32	. .	3.62	....	2.34	.....	2.32	.....	49.77	.....
Jefferson	.44	-1.28	1.02	- .69	2.21	* .06	3.13	- .08	3.63	- .44	7.59	*1.05	4.87	*0.77	6.93	*4.10	2.82	-0.70	2.38	-0.38	2.60	* .48	2.21	* .25	39.86	* 5.14
Keokuk	.58	-1.25	.77	- .45	1.85	- .64	3.27	-1.25	2.14	-2.59	9.13	*5.19	6.43	*2.61	7.10	*3.75	4.16	-0.97	3.70	*2.23	3.22	*1.93	2.21	* .73	41.56	* 9.29
Keosauqua	1.15	....	1.25	....	1.75	....	2.50	...	7.20	....	6.25	.....	8.50	.....	8.70	.....	5.86	.	4.66	....	2.55	.....	3.80	....	54.17	.
Lacona	.95	* .31	.60	‡ .00	.63	-1.25	.55	-3.28	3.26	- .61	4.79	-1.37	7.19	*3.25	6.95	*3.76	3.45	*1.48	0.80	-1.35	1.48	* .53	2.17	*1.03	32.82	* 2.50
Larrabee	.55	....	1.03	.....	2.52	....	1.63	....	5.17	.....	10.62	.....	7.57	....	6.50	...	3.67	.	3.71	....	1.54	.....	1.38	.....	46.86	.....
La Claire	.98	* .35	.20	- .50	.65	- .84	2.68	-1.10	1.46	-2.48	4.68	* .77	7.08	*2.54	3.65	*1.10	4.67	*1.72	0.44	-1.64	.35	- .83	3.15	*2.41	29.99	* 1.50
Le Mars	.70	* .09	.20	- .50	.83	-1.19	1.02	-2.34	4.71	‡ .00	5.99	*2.12	7.86	*3.02	6.86	*3.72	4.26	*1.47	3.11	* .14	1.58	* .51	1.69	* .47	38.81	* 7.51
Lenox	....	....	...	....	..	....	1.85	.....	3.76	....	7.72	.....	10.11	....	8.24	. .	9.08	.....	3.77	.....	2.37	....	2.03	....	.....	.....
Leon	1.30	* .11	.50	- .68	.43	-1.44	1.08	-1.90	2.88	-1.51	7.52	*2.01	11.34	*6.48	5.36	*1.48	3.40	*0.34	3.26	*0.89	1.53	* .47	2.14	* .84	40.74	*7.09
Logan	.73	- .98	1.31	- .47	2.23	- .21	1.69	-1.53	5.73	*1.78	8.67	*2.33	8.80	*5.61	3.57	*0.79	6.39	*3.61	2.37	-0.59	2.17	* .61	2.35	* .71	46.01	*11.66
Maquoketa	1.11	* .27	.72	‡ .00	1.37	- .17	2.03	-1.58	7.65	*3.20	12.31	*8.40	7.69	*3.35	7.87	*5.25	5.70	*3.57	1.81	-0.75	2.66	*1.60	...	.....	.....	.....
Marshalltown	.68	- .93	.92	- .79	1.72	- .67	...	.....	5.81	*1.91	9.78	*5.32	7.80	*3.66	3.31	-0.35	4.82	*1.04	1.39	-1.36	...	....	2.46	* .24	. .	....
Monticello	1.45	* .13	.67	- .47	.69	-1.44	2.27	-1.49	5.13	- .64	8.18	*3.58	7.44	*2.67	9.09	*6.08	7.29	*4.52	3.30	*1.39	2.00	* .74	2.57	*1.28	50.08	*16.29
Mt. Ayr	.19	-1.16	.87	- .19	1.93	- .45	3.29	* .27	3.70	- .72	10.96	*7.60	8.70	*5.58	10.06	*7.26	4.88	*1.71	4.65	*2.89	1.82	* .26	.....	.....	.	.....
Mt. Pleasant	.90	- .55	.70	- .46	1.73	- .53	1.30	-2.02	4.49	- .19	8.10	*4.05	7.20	*3.22	10.65	*8.17	5.80	*3.12	3.86	*1.58	.77	- .51	2.40	* .89	47.90	*16.77
Mt. Vernon	.90	....	.74	....	1.94	.....	1.04	.....	12.04	....	7.38	.	8.19	.....	3.72	...	6.75	....	1.40	....	2.37	.....	2.20	. .	48.62	.....
New Hampton	1.37	* .45	.72	- .25	1.01	- .34	2.79	- .71	...	.....	8.87	*4.81	7.91	*4.72	7.06	*3.51	4.95	*1.65	6.66	*4.10	2.56	* .69	2.13	* .86	....	.....
Newton	.80	* .18	.77	- .47	.55	-1.26	1.26	-1.21	9.46	*5.88	6.96	*2.51	8.48	*5.24	5.88	*2.63	2.55	-1.11	3.11	* .55	2.42	*1.00	2.68	*1.93	44.92	*15.85
Northwood	.91	* .59	.30	- .45	.99	-1.00	1.13	-1.58	2.30	- .47	6.23	*1.92	13.57	*8.45	3.72	* .03	3.41	* .26	1.06	-1.15	1.78	* .65	2.50	*1.40	37.90	* 8.66
Odebolt	1.08	* .57	.15	- .50	1.87	* .40	1.23	-1.97	6.61	*1.66	7.86	*3.41	8.87	*5.35	7.01	*3.32	3.25	- .62	2.69	* .03	2.02	*1.03	1.63	* .70	44.27	*13.38
Ogden	.80	.....	.94	.....	1.89	....	1.30	.	5.59	....	6.63	....	8.47	.....	5.34	.....	6.35	....	2.88	.....	1.72	.....	2.87	. .	44.78	.....
Olin	.71	* .02	.13	- .66	.70	- .80	.85	-2.28	2.88	-1.49	7.32	*1.65	7.28	*2.53	2.86	-0.48	1.39	-1.52	2.13	-0.34	1.38	* .32	2.72	*1.71	30.35	- 1.34
Omaha	1.15	-1.17	.36	- .76	1.23	- .28	2.50	- .29	1.48	-3.13	5.50	* .39	13.48	*9.25	4.24	* .20	4.75	*2.42	1.56	- .55	3.15	*2.10	2.85	*1.79	42.25	* 9.97
Onawa	.57	- .35	.70	- .47	1.19	- .26	1.11	-1.79	9.58	*5.49	7.60	*3.38	6.31	*2.91	4.18	*1.44	2.10	-1.28	1.46	-1.11	2.10	* .62	2.41	*1.10	39.31	* 9.68
Osage	....	.....	....	.....	....	.....	1.59	....	6.69	.....	5.42	.....	10.35	.....	7.26	.....	7.89	.....	3.82	.....	3.54	.....	2.34	.....	.. ..	.....
Osceola	.28	- .68	.88	- .19	.97	-1.01	3.31	* .57	3.72	* .01	7.24	*1.24	8.79	*5.07	7.57	*4.84	5.12	*2.21	3.60	*1.32	1.87	* .21	1.5	* .38	44.88	*15.97
Oskaloosa	.60	-1.90	1.50	* .37	1.22	- .88	3.08	- .80	3.90	- .97	8.42	*5.02	7.32	*3.07	6.42	*3.07	10.41	*7.05	4.80	*2.27	2.25	* .62	.67	-1.12	50.59	*15.80
Ottumwa	.81	-1.20	1.16	- .19	1.12	-1.07	2.55	-1.09	4.83	*1.41	6.04	*2.21	11.57	*8.04	8.64	*4.78	7.57	*3.83	4.60	*2.26	2.44	*1.08	2.39	* .81	53.72	*20.87
Ovid	.93	.....	.08	....	2.13	.....	.92	....	3.65	.....	6.61	.....	9.88	....	5.15	....	2.17	.....	2.78	.....	1.48	....	2.55	.....	38.36	....
Pacific Junction	.95	...	.36	.....	3.47	.....	.86	....	6.25	....	8.72	....	....	....	9.38	....	3.60	....	3.94	.....	2.51	.....	2.54	....	....	.....
Perry	.60	* .11	.60	- .06	52	-1.03	1.43	- .42	4.79	*1.81	7.24	*3.74	9.94	*5.62	9.48	*6.39	4.19	* .18	1.48	- .97	2.45	*1.00	1.10	* .41	43.82	*16.78
Plover	1.22	.....	.29	....	1.76	.....	1.0	.....	4.66	.....	8.90	....	11.19	....	5.71	.....	4.28	.....	2.71	.....	3.31	.....	2.32	....	47.36	.....
Red Oak	2.83	....	2.28	.....	1.85	.....	1.16	.....	9.59	.....	5.94	....	9.34	....	2.66	.....	3.33	.....	1.57	.. .	2.48	.....	5.51	.....	48.54	.....
Ridgeway	....	.....	.08	.....	.85	.....	.75	.....	5.25	.....	5.17	....	6.97	...	6.12	.....	2.23	.....	0.70	.....	1.85	....	1.53	...	.....	.....
Rockford	1.35	* .84	.20	- .36	1.60	- 85	1.65	- .89	4.90	*1.82	6.12	*1.82	9.85	*7.53	7.82	*4.99	3.91	* .98	1.45	-1.32	1.66	* .94	3.00	*1.97	43.51	*17.54
Rockwell City	1.45	* .34	.18	- .88	1.18	- .43	1.28	-2.09	3.63	- .55	5.63	*0.54	12.61	*8.88	8.03	*4.71	3.09	.00	1.56	-0.72	1.97	* .81	2.16	* .02	42.77	*11.53
Sac City																										

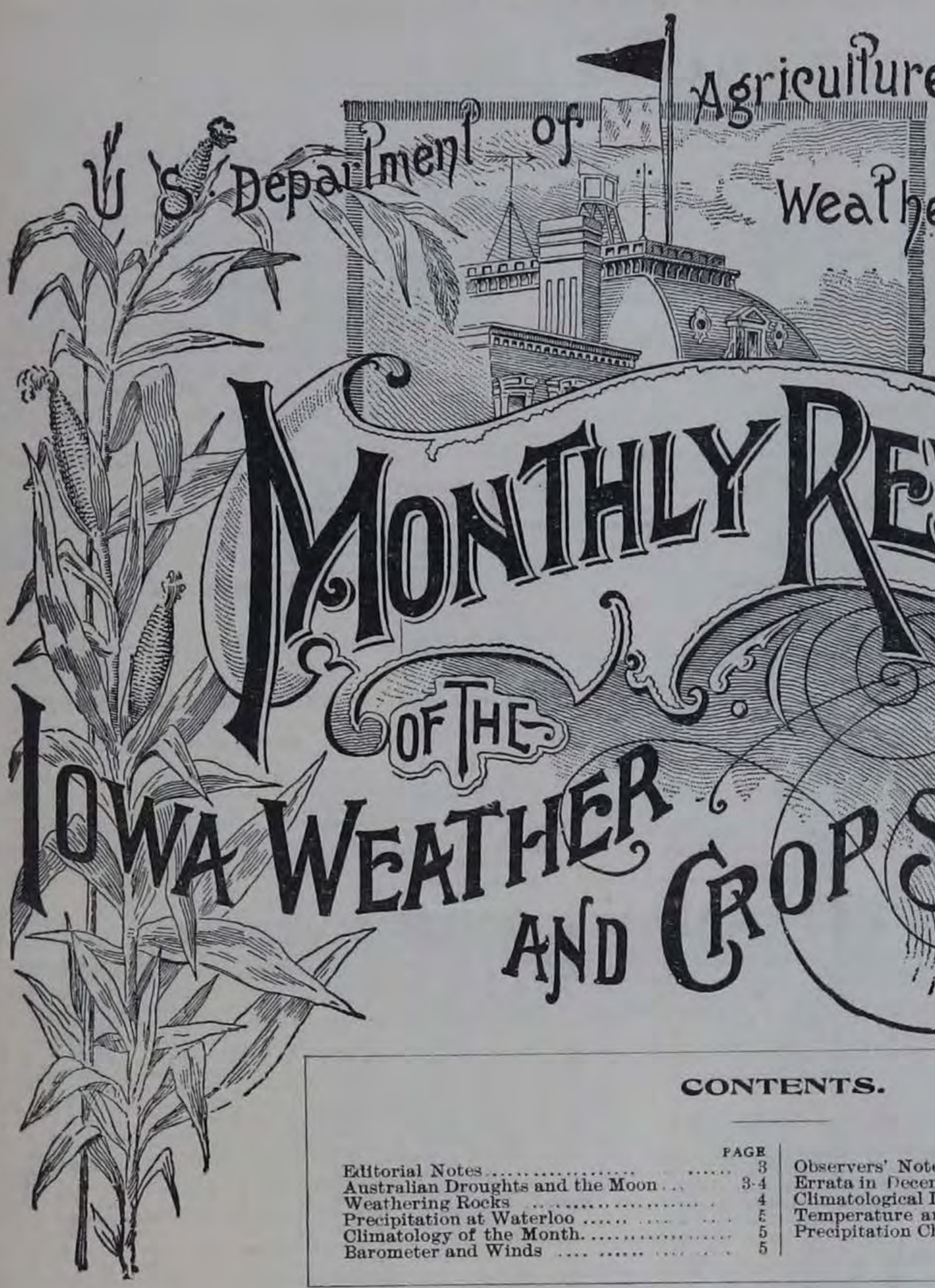
MONTHLY AND ANNUAL PRECIPITATION FOR 1901, WITH DEPARTURES FROM NORMAL.

STATIONS.	Jan.		Feb.		March		April		May		June		July		August		Sept.		Oct.		Nov.		Dec.		Annual	
	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.
St. Charles	1.04	.....	.61	.....	1.08	.....	1.53	.....	5.19	.....	6.71	.....	12.77	.....	7.58	.....	5.96	.....	5.77	.....	2.59	.....	2.75	.....	53.58	.....
Scranton	1.20	.....	1.10	.....	1.41	.....	1.11	.....	3.09	.....	6.77	.....	11 30	.....	5.70	.....	.....	.....	1.79	.....	1.40	.....	2.50	.....	.....	.....
Sheldon	.71	.....	.65	.....	.56	.....	.76	.....	4.81	.....	1.46	.....	5.90	.....	6 14	.....	3.31	.....	0.70	.....	.47	.....	1.12	.....	26.59	.....
Sibley	.30	- .50	.40	* .02	.50	- .67	1 54	-1 94	2.56	-0.80	1.89	-2.05	5.58	*.257	9.25	*7.22	3.98	*1.59	0 68	-1.22	.53	- 50	1.85	*1.15	29.06	* 4.86
Sigourney	.56	- .82	.93	- .53	.96	-1.07	3.84	* .28	4.21	* .27	8 61	*5.90	11.03	*7.63	7.53	*4.42	3.77	* .93	4.59	*1.83	2.44	*1.10	2.25	*1.00	50.60	*20.94
Sioux Center	.40	.....	.63	.....	1.19	.....	3 37	.....	3.77	.....	1.63	...	5.64	.....	5.05	.....	4 15	.....	0.28	.....	.35	.....	2.60	.....	29.08	.....
Sioux City	.83	* .20	.30	- .25	.50	- .74	1.29	-1.73	1.27	-2.40	2.02	-1.78	5.03	*1.66	2 19	-1.00	4.49	*2.40	0.63	-1.07	0.16	- .66	1.43	* .55	10.14	- 4.82
Stockport	.43	.....	.53	.....	1.61	.....	3.33	.....	2 88	.....	9 11	...	9 34	...	8.21	.....	4.54	.....	4.35	.....	4.19	.....	2.23	.....	50.75	.....
Storm Lake	.89	* .08	.32	- .36	.86	- .51	1.86	- .63	4.22	* .75	5.37	*0.85	10.49	*6.70	5.52	*2.86	3.11	*0.45	1.13	-0.32	2.94	*2.15	1.92	*1.00	38.63	*13.02
Thurman	.75	.....	.02	.....	1.15	.....	.83	.....	4 61	..	9.66	.....	8.83	.....	8.72	.....	4.46	.. .	4.47	.....	2 71	.....	4.31	.....	50.49	.....
Tipton	1.10	.....	.55	.....	3.25	.....	2.45	.....	5 85	.....	8.35	.....	8.90	.....	9.40	.....	5.50	..	5.90	.....	2.72	.....	1.70	...	55.67	.....
Villisca	1.55	* .83	.60	- .25	.92	-1.21	(.98	-1.96	5.11	*1.23	7.37	*2.48	10.52	*5.97	...	.....	4.78	*2.39	3.08	*1 17	2.20	*1.08	2 80	*1.80	.	.....
Vinton	.75	- .62	1.13	* .17	1.59	- .10	.91	-2.24	6.61	*2 92	8.25	*4.72	8.75	*6.16	8.03	*5 82	3.39	*0.67	2.03	-0.46	1 76	* .57	1.35	* .12	44.59	*17.73
Wapello	.31	.....	90	....	1.39	.....	3 61	.....	3.27	.....	7.87	...	8.11	.....	9.55	.....	4.65	...	4.39	...	2 44	.....	1.99	.....	49 48	...
Washington	.49	-1.33	1.01	* .01	1.57	- .68	2.66	- .05	2 58	- .95	7.68	*4.56	7.80	*3 96	2.34	*9.78	3.13	*0.51	5.29	*3.64	2.35	* .89	2.47	*1.25	49.37	*21.59
Washta	1.10	.....	.45	....	.65	.	2.00	....	.87	....	3.54	....	10.02	.....	3.91	.....	3.86	....	0.71	.....	1.82	...	3.10	.....	32 03	.....
Waterloo	.93	- .27	1.47	* .36	2.29	* .91	1.28	-1.20	8.54	*4.94	6.81	*3.21	10.61	*6.63	7 70	*4.11	4 86	*0 62	1.50	-0.78	1.83	* .40	1.94	* .71	49.76	*19.64
Waverly	.92	- .02	1.39	* .31	2.05	* .11	1 04	-2 35	9.50	*5.69	5 77	*1.51	7.07	*3.77	4.57	*2.21	4.27	*1 25	1.39	-1 45	2.36	*1.02	2.10	*1.18	42.43	*13.23
West Bend	.70	- .06	.67	- .25	.41	-1.29	...	....	2.97	* .16	4.39	*0 53	8.36	*5.40	7.12	*4 53	2.99	*0.83	1.19	-0.19	1 87	* .31	2.34	*1.46	.....	.....
West Branch	....	....	.82	....	....	.....	1.65	.....	3.97	.....	6.88	....	7 68	.....	7.71	.....	5.20	....	3.82	....	1.92	.....	1.63	.....	.....	.....
West Union	120	....	...	.....	2.28	.....	1.41	.....	11 83	....	6 36	.....	8.42	.....	2 02	...	4.89	.....	1.48	....	1.91	.....	.....	.....	.....	.....
Whitten	.95	...	.10	....	1.71	.....	1 93	....	6.69	....	11.52	...	8.45	.....	6 98	....	3.49	.....	0.88	....	1.68	...	.....	.....	.	.....
Wilton Junction	.81	- .65	.96	- .50	2.67	- .05	2.14	- .84	4.85	* .60	8.33	*5.76	8.46	*3 64	7.60	*3.86	3 98	* .91	4.34	*2 55	3.24	*1 62	2.03	* .65	49.41	*17.55
Winterset	1.20	* .09	.47	- .42	1 05	- .78	1 15	-3.28	5.19	* .63	6 90	*0.73	11 08	*5.77	8 35	*5.28	5.83	*2 73	4.57	*2.63	2.26	*1.08	2 09	* .74	50.14	*15.20
Woodburn	.98	.....	1.15	....	.92	....	1.95	....	4.68	...	6 60	.....	9.83	.	6.80	.....	7 10	..	4.66	....	2 45	.....	2 40	.....	49.53	.....

* Signifies plus. All over 10.00 inches above normal. - Minus.

Annual Precipitation Chart 1902.

JANUARY, 1903. No. 1.



MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

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GEO. M. CHAPPEL,
LOCAL FORECAST OFFICIAL,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

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BERNARD MURPHY, STATE PRINTER
1903.

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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIV. JANUARY, 1903. No. 1.

EDITORIAL NOTES.

Marconi has expressed the opinion that wireless messages sent across the Atlantic will cost ten cents per word at the outset, and will eventually be transmitted at a one cent rate.

* * *

The Rockford *Register* says: "Iowa furnishes more winter tourists for California than any other state. They go from this state because they are able to go, and they are able to go because they live in this state."

* * *

Marconi took advantage of a recent storm to test the effects of adverse weather conditions on his wireless telegraph system, and the messages were successfully transmitted while storms were raging at both ends of the line.

* * *

An inventive genius mounted two windmills on a wagon, the wind serving as power to haul the wagon to any place desired. A pulley on a shaft driven by the windmills can be belted and used for driving various kinds of farm machinery. Thus saith a newspaper item.

* * *

The meteorological station at Mason City has been re-established, with Mr. J. S. Mills serving as voluntary observer. Mr. Mills is highly recommended and takes a deep interest in the service. It is desirable that a permanent station shall be maintained at that important commercial center.

* * *

We have received a valuable table showing the monthly and annual rainfall at Clermont, Fayette county, Iowa, for the years 1877 to 1902, inclusive, the data being the records of observations by Augusta Larrabee and William Larrabee, Jr. The table will be published in the annual report for 1902.

* * *

It is not often that famine visits a country as a result of excessive rainfall, the periodical famines of central Russia and India being invariably caused by drought, but in the northern districts of Sweden and in Finland a famine involving the lives of over 100,000 people exists to-day as a result of the excessive rainfall of the year 1902.—*J. S. Trigg, in Rockford Register.*

* * *

We hear reports now and then of discoveries of oil in Iowa. Well, there's plenty of oil in the soil of this state—oil in paying quantities. But the best of it is not to be found in gushers, or by boring. It's the oil of corn, and it can be produced in great abundance by planting, cultivating and harvesting that great staple product. There may be traces of oleaginous matter in the lower rocks, but there is some uncertainty about striking paying quantities of patroleum in this section. As to corn-oil, however, there's no doubt whatever, and it's good for millions of revenue.

* * *

At the recent annual congress of the Swiss Society of Natural Science, held at Berne, a new and interesting theory as to the origin of the appearance of the higher atmosphere, which is popularly styled as the "blue sky," was advanced by M. Spring, a well known scientist of Liege. Hitherto the azure tint has been supposed to be due to the refraction of light upon minute corpuscles disseminated in the air M Spring however, has conceived a new explanation of the phenomenon. He has carried on a number of experiments with luminous rays under almost all conceivable conditions, injecting them into agitated solutions, and into a glass tube containing pseudo solutions, such as chlorides of aluminum, of absolute limpidity; but although he could obtain red, yellow, violet, etc , under no circumstances could he obtain blue, until by the use of electricity he secured a perfectly pure atmosphere in which blue was clearly discernible. M. Spring therefore concludes that the blue of the sky is purely electrical in origin, and is an essential quality of the air.—*Scientific American.*

AUSTRALIAN DROUGHTS AND THE MOON.

Mr. H. C. Russell, Director of the Observatory at Sydney, New South Wales, has published in the Journal and Proceedings of the Royal Society of New South Wales, for the year 1901, a memoir on the relation of the moon's motion in declination and the quantity of rain in that colony, in which the author concludes "that rain is clearly shown to come in abundance when the moon is in certain degrees of her motion south; but when the moon begins to go north then droughty conditions prevail for seven or even eight years. This phenomenon repeated for three periods of nineteen years each constitutes a marvellous coincidence, such that there must be a law connecting the two phenomena."

The influence of the moon on the weather is a matter that will not be downed by the exercise of any amount of common sense. According to the most ancient notions, the moon ought to have and must have a controlling influence in excess of the sun's, and every one who seeks to demonstrate its power is liable to become infatuated with the study. The moon has so many variations north and south of the equator, north and south of the ecliptic, to and from the earth, from new moon to full moon, conspiring with the sun and opposing the sun, that it does seem as though one ought to be able to make its periodical oscillations agree with some of the many variations in the aspect of the weather. However, we know of but one relation between the moon and the earth's atmosphere that can be said to have been settled upon a rational basis, and that is the matter of atmospheric tides. Laplace stated that the semi-

diurnal lunar tide in the atmosphere ought to amount to about 0.003 inches of barometric pressure for equatorial stations, and this agrees with the results of observations carried on at Batavia, Java. His formulæ also showed, although we believe he did not state the fact, that as the moon moves north and south of the equator monthly, there ought to be a fortnightly tide, or a general pull of the atmosphere southward for two weeks and northward for two weeks. This, we believe, was first demonstrated as an observable quantity by A.Poincare, a civil engineer of Paris, and a member of the Meteorological Society of France. From his articles published by that society in 1885–1888, we learn that the average barometric pressure on parallels of latitude around the whole globe, as measured on the International Maps published by the United States Weather Bureau, give the following results: The pressure on latitude 40° minus that on latitude 10° is plus 1 88 millimeters when the moon is in the extreme south and plus 4.82 millimeters when the moon is in the extreme north. The normal difference is plus 3.35. This indicates that when the moon is furthest north there is a slight accumulation of atmosphere in the Northern Hemisphere, amounting to an increase of 1.47 millimeter, or 0.06 inch of pressure on the parallel of 40°.

Now, all lunar phenomena go through rather rapid periodic changes. What happens in one part of a lunar month is offset by an opposite effect in the other half of that month, or what happens at the time when the sun and moon conspire is offset by an opposite effect a few months or years later when the sun and moon oppose each other. When the moon is far south and begins to go north, according to Mr. Russell, droughty conditions prevail and continue for seven or eight years. But the strange part is that the moon begins to go north from her extreme southern position every month without exception, not only just before the seven or eight year drought, but during the whole of that long period, and continues to do so during the whole of the succeeding rainy period. How can her beginning to go north be rationally supposed to be a basis for predicting droughts in one case and rains in another?

But if we lay aside all these vagaries about the moon, and recognize Mr. Russell's meteorological induction that droughty conditions do prevail for seven or eight years in Australia, followed by years of rain, and that this cycle of droughts and rains has been repeated about three times since 1840, then, we have a fair observational basis upon which to build a rational explanation. Now, this periodicity, or rather the irregular succession of good seasons and bad seasons is a fact recognized in every portion of the world We have also enough data to show that in most cases a drought in one portion of the globe is accompanied by rains in other portions, and that the regions of excess and deficiency of rain move over the surface of the globe month by month and year by year. They do not move in courses so nearly parallel as to justify long range predictions any more than do our storm centers, but the movements are certainly governed by laws, and we can begin to generalize as a first step in the process from induction to deduction. For instance floods in the upper Nile, due to rains in the highlands of central Africa, mean that an unusual proportion of moisture has been taken from the southeast trade wind current, and that, therefore, when that has turned northeastward over the Indian Ocean, and has become the southwest monsoon of India, it will bring droughts over the western portion of that country. A drought in New South Wales, or on the southeast side of Australia, means a deficiency in the easterly winds blowing on that coast, and especially so in the rainy season, or December, January, February and March. But this means that the great area of high pressure over the Indian Ocean at the latitude 30° south has been pushed farther west than usual, or in other words that the general circulation of the atmosphere in that region has been disturbed. Now, such a disturbance, continued over several months or even years, can hardly be produced by the rapidly changing moon; it might be due to secular changes in the quantity and quality of the solar heat, but is most of all likely to be simply the result of accumulations of pressure, temperature and moisture in various portions of the earth's atmosphere. Australia has about the same area as the United States, but lies on the average about 15° nearer the equator. This latter feature gives it soil temperatures and monsoon influences similiar to those that prevail in northern Africa, so that it may itself produce an appreciable disturbance of the general circulation in the southern half of our atmosphere. But the principal cause of the droughts in Australia and India is undoubtedly to be found in the changes going on periodically in the relation between the general atmospheric pressure and resultant circulation in the south and in the north, or between Cape Colony and Australia, China and eastern Siberia. In this large portion of the globe a system of circulation prevails that is affected but comparatively little by what goes on to the west of it and north of it. A large quantity of air enters into this region from the Anarctic Ocean and passes out of it as the southwest monsoon of southern Asia to eventually become the westerly winds of the North Pacific. We may, therefore, look for some connection by this roundabout way between the droughts and rains of Australia, or southeastern Asia, and those of northwestern America.—*Prof. Cleveland Abbe in U. S. Weather Review, Nov. 1902.*

WEATHERING ROCKS.

Rain, assisted by the dissolved gases and surrounding air, acts chemically on rock surfaces, producing changes known as weathering. Next to beds of rock-salt and gypsum (calcium sulphate) limestone is the rock which is dissolved most readily. The waste of the hard and massive surface is often shown only by the way in which it becomes studded with less soluble nodules or fossils originally hidden in its substance. Sir Archibald Geikie has calculated that by the acid-laden rain of towns one-third of an inch is removed from the surface of marble monuments in a century. Insoluble sulphides, such as that of iron, are rapidly oxidized by air in the presence of moisture to form soluble sulphates, and when this process goes on in the pores of a rock the expansion of the chrystalized salts splits the block into thin layers. This action is the basis of the common way of making alum. In the case of granite and most other rocks the process of weathering is more complicated. Some of the minerals are decomposed. In felspar, for instance, the silicates of potash, soda, and lime are changed to corbonates which are washed away, while the silica and the more resisting silicate of alumina remain as a soft crust of kaolin or china clay, valuable for making porcelain. Granite has been found weathered in this way in South America to the depth of 600 feet. Rocks containing iron usually become brown or reddish in color, although the freshly broken rock may be white or gray. The lines of stratification and joints of rocks are sometimes etched out by weathering, so that the face of the cliff assumes the appearance of a gigantic wall of masonry. The crumbling of rocks in rainy regions is assisted by the action of the sun in drying and warming the surface, which may then be splintered into flakes by a shower of cold rain. Rain soaking by capillary attraction through the weathered crust and into the pores of the solid rock is frozen in cold weather, and the ice, expanding as it forms, acts like a multitude of minute wedges driven simultaneously in all directions. When the thaw comes, the bases of the cliffs and banks are strewn with weather crusts and stones, often of a great size, broken off in this way.—*Mill, in "Realm of Nature."*

PRECIPITATION AT WATERLOO, IOWA.

MONTHS.	1902—inches.	20-year averages—inches.	Maximum amounts—inches.	Years.
January	0.93	1.19	2.20	1893
February	1.47	1.10	2 55	1893
March	2.29	1.92	3.54	1893
April	1.28	3.20	5.30	1889
May	8.54	5.16	11 20	1892
June	6.81	5.64	14.00	1890
July	10.61	4.61	10.61	1902
August	7.70	3.68	11 00	1885
September	4.86	4.70	12.00	1887
October	1.50	3.18	7.20	1889
November	1.83	1.75	4.00	1884
December	1.94	1.16	1.94	1902
Total	49.76	37.29		

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 30.02 inches; highest observed, 30.44 inches, at Dubuque, on the 8th; lowest observed, 29.29 inches, at Dubuque, on the 6th; range for state, 1 15 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 105 stations, 23.0 degrees, which is 3.5 above normal. By sections the mean temperatures were as follows: Northern section, 19.8 degrees; central section, 22 8 degrees; southern section, 25.8 degrees. The highest monthly mean was 27.8, at Red Oak; lowest monthly mean, 17 5, at New Hampton. The highest temperature reported was 60°, at Balknap, on the 1st; lowest temperature reported, -12°, at Clear Lake, on the 11th. The average monthly maximum was 46 7; average monthly minimum, -6.2. Greatest daily range, 45°, at Carroll; average of greatest daily ranges, 32.1.

PRECIPITATION.—Average precipitation for the state, as shown by records of 120 stations, was 0.28 inch, which is .74 of an inch below normal. The averages by sections were as follows: Northern section, .21; central section, .29; southern section, .28. The largest amount reported was 1 46 inches, at Fort Madison; least amount reported, a trace, at Charles City, Carroll, Cumberland, Afton, Atlantic, Thurman and Winterset. The greatest daily rainfall reported was .70 inches at Danville on the 2nd. Average number of days on which .01 of an inch or more was reported, 4.

WIND AND WEATHER.—Prevailing direction of wind, northwest; highest velocity reported, 72 miles per hour, from the northwest, at Sioux City, on the 6th. Average number of clear days, 13; partly cloudy, 7; cloudy, 11.

The month was unusually favorable for feeding stock, and or gathering the unharvested portion of the corn crop. Fall wheat and rye, of which a small acreage was sown, were not materially injured by freezing weather.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced	EXTREMES. Highest reduced barometer	Date.	Lowest reduced barometer.	Date.
Davenport	29.98	30 41	18	29 32	7
Des Moines	30 04	30 43	18	29 47	6
Dubuque	29 99	30.44	8	29.29	6
Keokuk	30 02	30 42	12	29 44	29
Omaha, Neb	30 04	30 44	12	29 51	28
Sioux City	30.04	30.40	8	29 68	31
Means	30 02	30.41	8	29.29	6

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity	Direction.	Date.
Davenport	6252	34	W	7
Des Moines	6511	48	NW	7
Dubuque	5711	33	NW	7
Keokuk	6476	40	NW	7
La Crosse, Wis	5681	38	NW	7
Omaha, Neb	7316	52	NW	7
Sioux City	9295	72	NW	6

OBSERVERS' NOTES.

AFTON—*N. W. Rowell.* On the 7th the wind was 40 to 50 miles an hour, the high wind prevailing 24 hours

ALTA—*David E Hadden.* Gale with blinding snowstorm raged from 8 P. M of the 6th to sunset on the 7th; some slight damage done Last week of the month was warm, and December's legacy of snow was nearly all gone.

AMANA—*C. Schadt.* Excepting a few days January was mild; cattle still finding green grass in protected places.

ATLANTIC—*J. W. Love.* The mildest January in 12 years. No rain, and only a trace of snow three times; zero temperature only on two days.

BONAPARTE—*B. R Vale* A mild month, too soft at times; stock did well on blue grass meadows and pastures all the month.

BRITT—*Geo. P. Hardwick.* Mild weather excepting severe wind on 7th and 8th; ground nearly bare at close of month; stock healthy; some corn yet in fields; hay scarce.

CLINTON—*Dr. Luke Roberts.* Cloudiness 59 per cent. or 8 per cent above normal. Precipitation 1.03 less than normal; country roads better than usual; two weeks of sleighing; ice crop excellent and abundance secured Mean temperature for January 22.7° being 4.1° above normal. Maximum velocity of wind twenty-seven miles an hour on the 7th. and again on 29th; total wind movement for the month 4000 miles.—nearly 1000 miles less than normal.

DENISON—*W C Van Ness.* A very mild and pleasant January, easy on stock and feed.

EARLHAM—*Geo. Phillips.* A fine January; farmers finished picking corn; some young cattle dying.

GRAND MEADOW—*F L. Williams.* On the 6th the mercury in barometer was down to 27 80 inches; month as a whole a pleasant one; stock wintering well.

GRINNELL—*A. O. Price.* Little snow and generally fair weather; fine for stock.

GRUNDY CENTER—*E. S King.* A good month for gathering corn. but not all picked yet.

OLIN—*Nathan Potter.* A pleasant winter month, with no extremes; much corn gathered; stock in fine condition.

RIDGEWAY—*Arthur Betts.* Mild January; no excessive cold; distant lightning after sunset on 6 h and 26th; 142 hours of sunshine; forest ground has remained unfrozen; farmers grubbing every day; crows and other birds numerous.

ERRATA IN DECEMBER REVIEW.

CHESTER.—Total precipitation recorded, 3.35 inches, on page 7, should have been 4 37 inches. Total snowfall, recorded 6.2 inches, on page 7, should have been 10.2 inches.

DE SOTO.—Mean temperature, recorded 22 2 degrees, on page 7, should have been 23.5 degrees. Mean maximum temperature, recorded 29.4 degrees, on page 9 should have been 29.7 degrees. Mean minimum temperature, recorded 15.1 degrees, on page 9, should have been 15.3 degrees.

HAMPTON.—Total snowfall, recorded 15.4 inches, on page 7, should have been 16 4 inches

LACONA.—Total precipitation, recorded 3.80, on pages 8 and 11, should have been 3.60 inches.

OVID.—Maximum temperature, recorded 41 degrees, on page 8, should have been 47.

CLIMATOLOGICAL DATA FOR JANUARY, 1903.

NORTHERN SECTION

STATIONS	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT							PRECIP., IN INCHES				Number rainy days	SKY			Prevailing direction of wind	DATES OF THUNDER-STORMS.
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)		Number clear days	Number partly cloudy days	Number cloudy days		
Algona	Kossuth	1,213	28	20.8	† 8.2	42	31	- 8	11	34	.30	- .49	.15	3.0	3	7	13	11	NW	
Alta	Buena Vista	1,513	11	23.6	† 7.1	45	6	- 9	11	29	.16	- .40	.10	1.5	6	11	15	5	NW	
Alta (near)	Buena Vista										.20		.15	1.5	2					
Britt	Hancock	1,236	5	18.7	† 1.2	42	6	-10	11	34	.39	- .21	.13	1.5	10	8	11	12	NW	
Charles City	Floyd	1,022	11	20.8	† 5.3	49	31	- 5	12	36	T	- 1.16	T	T	0	11	9	11	N, NW	
Clear Lake	Cerro Gordo	984		17.8		40	31	-12	11	33	.25		.10	2.1	3	14	10	7	NW	
Decorah	Winneshiek	875	8	17.8	† 3.4	41	31	- 8	13	31	.31	- .77	.09	3.0	5					
Dows	Wright	1,142		20.3		44	31	- 9	11	32	.20		.10	1.0	2	13	2	16	NW	
Elkader	Clayton	600	21	20.4	† 6.3	47	31	- 6	12	37	.16	- 1.22	.08	2.5	2	12	8	11	NW	
Estherville (a)	Emmet	1,298	7	18.2	† 2.4	42	31	-10	11	31	.09	- .32	.05	1.0	3				NW	
Forest City	Winnebago	1,220	8	17.9	- 0.3	40	1, 7	-10	11	40	.10	- .51	.05	1.0	2	7	5	19	W	
Grand Meadow	Clayton	1,182	11	18.4	† 2.8	41	31	-10	12	34	.40	- .82	.15	3.3	5	10	8	13	NW	
Greene	Butler	943	5	20.0	- 0.3	41	31	- 7	11	29	.12	- .46	.07	1.0	2	6	9	16	W	
Hampton	Franklin	1,000	12	20.6	† 5.7	48	31	- 9	11	32	.18	- .88	.12	1.4	3	8	15	8	NW	
Hanlontown‡	Franklin			17.8		41	31	-10	11	34						11	5	15	NW	
Humboldt	Humboldt	1,093	10	21.6	† 5.4	44	31	- 7	11	34	.07	- .50	.04	.7	3	13	7	11	NW	
Larrabee‡	Cherokee			21.4	† 8.8	47	6, 15	-10	11	33	.11	- .43	.05	1.0	4	10	13	8	NW	
Le Mars	Plymouth	1,224	6	22.1	† 1.2	45	15	- 8	11, 12	32	.01	- .62	.01	T	1	15	9	7	S	
New Hampton	Chickasaw	1,166		17.5		40	31	-10	11, 12	29	.06		.05	T	2	12	3	16	NW	
Northwood	Worth	1,222	6	18.8	† 2.2	41	6, 31	-10	11	36	.40	- .22	.20	4.0	4	11	11	9	NW	
Osage	Mitchell	1,184	11	18.0	† 4.4	40	31	-10	11	29	.31	- .60	.10	3.1	9	9	6	16	NW	
Plover	Pocahontas	1,426	5	18.9	- 2.1	43	6	-10	11	28	.11	- .38	.06	.5	2	14	1	16	NW	
Ridgeway	Winneshiek	1,215		20.6		46	31	- 9	12	32	1.14		.40	5.6	16	10	8	13	NW	
Rockford	Floyd										T		T	T	0	14	12	5	NW	
Sheldon (a)	O'Brien	1,406		19.9		47	6	-10	11, 12, 13	42	.05		.05	.5	1	17	2	12	S, NW	
Sibley (a)	Osceola	1,506	8	18.8	† 2.7	43	6	-10	11	36	.27	- .30	.10	2.7	5	10	17	4	NW	
Sioux Center	Sioux			20.5		45	6	-10	12	34	.05		.05	.5	1	16	4	11	S	
Spirit Lake	Dickinson	1,458	8	19.2	† 3.6	42	1	-11	11	31	.40		.30	4.0	2	14	2	15	NW	
Storm Lake	Buena Vista	1,440	7	2.2	† 2.0	47	6	-10	11	37	.06	- .64	.06	T	1	19	1	11	NW	
Washta	Cherokee	1,157									.05		.05	.5	1	18	8	5	N	
Waverly	Bremer	942	6	20.6	† 1.0	45	31	- 6	11	30	.19	- .75	.05	1.5	9	6	8	17	NW	
West Bend	Palo Alto	1,197	8	20.4	† 3.2	43	6	- 8	11	35	.38	- .23	.20	3.3	4	8	10	13	NW	
Average				19.8	† 3.1	43.6		-9.0		33.3	0.21	- .58		2.1	4	12	8	11	NW	

CENTRAL SECTION.

Amana	Iowa	721	25	23.5	† 8.0	46	26, 31	- 3	11, 12	26	.28	- 1.18	.07	1.8	6	10	9	12	NW	
Ames	Story	926	20	24.0	† 7.1	48	31	- 4	12	36	.14	- .82	.05	1.0	3	13	6	12	SE	
Baxter	Jasper	998		23.2		47	31	- 6	11, 12	32	.10		.10	1.0	1	16	2	13	NW	
Belle Plaine	Benton	828	12	21.9	† 3.6	45	31	- 6	12	28	.70	- .85	.20	5.6	8	4	21	6	NW	
Buckingham	Iowa										.08		.05	0.3	3	9	11	11		
Carroll	Carroll	1,265	12	23.4	† 4.0	48	6, 31	- 9	11	45	T	- .82	T	T	0	12	10	9		
Cedar Rapids	Linn	733	19	23.9	† 5.8	45	26, 31	- 2	11, 12	25	.11	- 1.36	.04	1.0	5	7	12	12	NW	
Clinton	Clinton	609	34	22.6	† 3.2	46	31	- 6	12	31	.83	- 1.06	.41	5.0	6	10	5	16	W	
Davenport	Scott	529	31	24.9	† 4.9	49	1	- 2	12	28	.79	- .86	.40	5.1	6	9	5	17	W	
Delaware	Delaware	1,083	11	19.4	† 4.0	41	26, 31	- 8	12	30	.07	- .98	.04	1.0	3	10	9	12	NW	
Denison	Crawford	1,180	8	23.8	† 2.7	50	15, 31	- 6	11, 12	36	.10	- .46	.05	1.0	2	21	4	6	N	
Des Moines	Polk	861	24	25.4	† 7.9	49	31	- 3	12	33	.20	- 1.14	.06	1.4	5	12	6	13	NW	
Dubuque	Dubuque	655	29	22.4	† 5.1	45	31	- 5	12	27	.17	- 1.51	.04	1.5	7	9	5	17	NW	
Galva	Ida	1,190	8	21.0	† 2.8	45	6	- 9	11	31	.30	- .03	.15	3.0	3	12	0	19	NW	
Gilman	Marshall	1,052									.10		.10	1.0	1	13	9	9	S	
Grinnell	Poweshiek	1,022	9	22.9	† 3.1	45	2, 31	- 4	11, 12	27	.34	- .82	.14	3.8	3	15	8	8	SW, NW	
Grinnell (near)	Poweshiek			22.6		45	2	- 5	11, 12	31	.22		.10	2.5	5	13	5	13	SW	
Grundy Center	Grundy	976	11	21.4	† 4.9	45	31	-10	12	30	.12	- .54	.09	1.2	3	12	5	14	NW	
Guthrie Center	Guthrie	1,077	6	24.9	† 0.4	47	6	- 6	14	33	T	- .38	T	T	0	11	14	6	NW	
Harlan	Shelby	1,192		23.6		47	31	- 6	12	36	.05		.02	.2	3	7	16	8	NW	
Independence	Buchanan	921	38	20.2	† 5.1	43	31	- 5	11, 12	26	.27	- .97	.10	2.8	7	14	6	11	NW	
Ida Grove	Ida			23.4		47	7	- 8	11, 12	34	.10	- .72	.10		1	14	11	6	NW	
Iowa City	Johnson	644	43	23.8	† 4.7	47	31	- 3	12	28	.67	- 1.09	.30	3.0	6	4	11	16	NW	
Iowa Falls	Hardin	1,107	9	19.7	† 4.6	45	31	- 8	11	30	.20	- .56	.13	.7	3	10	6	15	NW	
Jefferson	Greene	1,052									.27		.10	2.0	5				NW	
LeClaire	Scott	576									.73		.50		7					
Logan	Harrison	928	35	24.2	† 5.2	48	31	- 4	12	30	.70	- .62	.50	5.0	2	17	0	14	SW	
Maquoketa	Jackson	688	9	21.6	† 1.7	45	31	- 5	12	22	.30	- 1.09	.10		5	14	5	12	NW	
Marshalltown	Marshall	947	9	23.6	† 3.1	47	31	- 5	11, 12	29	.29	- .63	.09		6	10	10	11	W, NW	
Monticello	Jones		48	18.8	† 2.9	45	26, 31	- 6	13	34	.20	- 1.36	.20	T	1	8	9	14	NW	
Mt. Vernon	Linn	847	35	21.9	† 4.4	45	15	- 5	11, 12	26	.29	- 1.16	.10	2.7	7	13	2	16	NW	
Newton	Jasper	592	14	22.6	† 5.3	45	31	- 8	12	32	.65	- .24	.15	8.0	5	12	8	11	W	
Odebolt	Sac	1,356	5	22.9	† 0.3	45	31	- 7	11	32	.28	- .04	.20	2.8	2	18	5	8		
Ogden	Boone	1,211	8	23.0	† 1.7	50	31	-12	13	39	.16	- .35	.10	1.1	4	20	1	10	NW	
Olin	Jones	760		22.2		48	27	- 3	11, 12	28	.31		.10	3.5	5	10	8	13	NW	
Onawa	Monona	1,053		24.8		49	31	- 4	12	35	.06		.05	.5	2	20	4	7		
Perry	Dallas	975		24.2		48	31	- 6	11	32	.65		.50	1.5	3					
Rockwell City	Calhoun		5	23.6	† 4.7	45	31	- 6	11	30	.40	- .11	.30	4.0	2	16	1	14		
Sac City	Sac	900	22	22.1	† 6.9	44	6, 31	- 8	11	36	.20	- .82	.10	2.0	2	12	4	15	NW	
Scranton	Greene	1,172		24.3		44	6	- 6	11	32	.12		.08	1.2	2	9	7	15		
Sioux City	Woodbury	1,122	13	22.8	† 6.5	51	6	- 6	12	37	.06	- .57	.04	0.7	4	11	7	13	NW	
Tipton (a)	Cedar	807		24.2		45	31	- 3	12	24	.35		.15	2.5	3				NW	
Toledo	Tama	856	8	22.6	† 2.9	46	31	- 5	12	29	.46	- .35	.18	2.8	5	14	4	13	NW	
Vinton§	Benton	800	12	22.8	† 4.0	42	16	- 1	12		.12	- .95	.05	1.2	3	16	1	14	NW	
Waterloo	Black Hawk	862	15	21.5	† 3.7	44	31	- 5	11	30	.17	- .93	.06	1.3	3	11	7	13	NW	
Wilton Junct'n	Muscatine	683	7	23.9	† 1.1	48	25	- 4	12	23	1.02	- .44	.67	5.5	5	20	0	11	NW	
Whitten	Hardin	1,035		21.4		45	31	- 8	11	29	.15		.05	1.5	3	11	6	14	SE	
West Branch	Cedar										.18		.08	1.8	3	4	13	14	NW	
Waukee	Dallas										.35		.10	3.5	4	16	3	12	NW	
Average				22.8	† 3.8	46.1		-5.8		30.8	.29	- .77		2.2	4	12	7	12	NW	

CLIMATOLOGICAL DATA FOR JANUARY, 1903--CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC., IN INCHES.				Number rainy days.	SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	7	26.0	† 2 7	47	15, 31	- 4	12	33	T	- .74	T	T	0	12	5	14	SW, NW	
Albia	Monroe	945	..	25 8		51	1	- 5	12	33	.40	....	.30	T	3	12	8	11	SW, NW	
Atlantic	Cass	1,164	11	25.3	† 5.2	49	15	- 3	12	34	T	- .67	T	T	3	10	9	12	NW	
Allerton	Wayne	.....		25.0	.....	52	15	- 8	12	38	.48	.....	.15	2.0	5	10	13	8	NW	
Bedford	Taylor	.	....	26.5	.....	50	31	- 5	11	38	.05	.....	.05	.5	1	13	7	11	SE, NW	
Belknap	Davis	877	7	26.7	† 1 3	60	1	- 6	12	34	1.00	- 1.10	.50	.5	7	13	13	5	NW	
Bonaparte	Van Buren	.....	10	24.9	† 1.4	50	1	- 7	12	33	.43	- 1.24	.20	4.5	3	....	....	..	.. ...	
Burlington	Des Moines	544	....	26 5		53	1	- 5	12	29	.58	- 1.04	.14	....	6	15	3	13	S	
Chariton	Lucas	1,042	7	25.4	- 0.2	51	15	- 5	12	41	.25	- 92	.05	.6	8	9	10	12	N	
Clarinda	Page	1,069	12	27.2	† 4.7	51	15, 23	- 4	12	34	.14	- .81	.11	1.2	4	12	10	9	NW	
College Springs	Page	....	10	27.4	† 3.4	50	31	- 6	12	34	.20	- .30	.10	2.0	2	18	8	5	NW	
Columbus Jct.	Louisa	595	..	24 4	....	49	2, 26	- 4	12	30	.28	.....	.07	2.7	7	11	10	10	NW	
Corning	Adams	1,127	10	25.7	.....	48	15	- 5	12, 13	43	.07	....	.07	.8	1	10	12	9	NW	
Council Bluffs	Pot'wat'mie	990	5	25.8	- 0.4	57	30	- 4	12	42	.03	- .64	.02	.1	2	7	15	9	NW	
Cumberland	Cass	.....	....	....	.....		.....	...	.....	.....	T	.... ..	T	T	0	13	3	15	NE	
Danville	Des Moines	715	....	.....	...	...	.....	.....	...	...	1.20	... .	.70	.	6	5	0	26	.....	
Earlham	Madison	.....	...	24.6	.....	49	15, 31	- 5	11, 12	36	.03	.....	.03	0.2	1	15	5	11	NW	
Fort Madison	Lee	516	51	.....	.....		.....		.....	.....	1.46	...	.30	9.5	7	10	4	17	NW	
Greenfield	Adair	.....	11	24.8	† 3 4	46	31	- 6	12	33	.09	- .81	.02	0.6	6	15	8	8	SW	
Hopeville	Clarke	.....	11	.....	.....		.....	...	.....	.....	.12	.....	.04	...	4	....	....	....	.....	
Indianola (e)	Warren	969	11	25.8	.....	48	16, 31	- 4	12	30	.09	- 1.21	.03	0.5	4	....	....		SW	
Keokuk	Lee	619	31	26.5	† 3.3	51	26	- 5	12	27	.77	- .95	.21	8.0	10	12	5	14	SW	
Keosauqua	Van Buren	644	10	25.4	† 1.7	50	1, 31	- 5	12	25	.84	- .12	.29	....	6	....	...		.....	
Lacona	Warren	.....	....	.....	.....	.....	.....	...	.....	.....	.85	....	.13	6.4	9	10	14	7	.....	
Lenox	Taylor	1,250	7	25.3	† 0.2	47	15	- 7	12	29	.03	- .58	.03	.3	1	13	4	8	NW	
Leon	Decatur	.....	....	26.6		48	15, 31	- 5	12	31	.31	.....	.12	2.4	5	21	4	6	NW	
Mt Ayr	Ringgold	1,236	8	25.6	† 1.8	50	15	-10	12	33	.24	- .73	.10	1.5	7	11	9	11	NW	
Omaha, Neb	Douglas	1,113	32	27.1	† 7.9	51	15	- 3	12	23	.07	- .62	.03	.4	5	9	12	10	NW	
Osceola	Clarke	1,130	6	25.0	† 2.9	50	15, 31	- 5	12	32	.57	- .69	.50	T	4		....		NW	
Oskaloosa	Mahaska	843	18	21 3	† 5.6	49	1	- 5	13	31	.22	- .63	.04	2 7	7	16	2	13	NW	
Ottumwa	Wapello	630	8	27.0	† 2.3	50	26, 31	- 1	12	24	.47	- 1.24	.23	3.8	5	15	8	8	N	
Ovid	Wayne	992	9	26.2	† 2.4	53	15	- 9	12	35	.32	- 1.23	.13	T	4	12	6	13	NW	
Pacific Junction	Mills	960	....	25 6	.....	48	30	- 4	12	32	.05	.....	.04	.5	2	13	12	6	S	
Red Oak	Montgom'ry	1,033	....	27.8	. ...	45	25	1	12	24	.05	.... ..	.05	.5	1	7	20	4	NW	
St. Charles	Madison	1,070	....	26 0	...	52	1, 15	- 4	11	33	.17	.....	.05	1.5	6	17	7	7	NW	
Sigourney	Keokuk	768	6	24.4	† 0.3	48	26, 31	- 5	12	32	56	- .82	.36	1.5	4	15	10	6	NW	
Thurman	Fremont	.	....	26 4	.....	47	6, 25 31	- 4	12	36	T	.....	T	T	0	19	1	11	NW	
Wapello(d)	Louisa	578	....	25.6	.	45	15, 26	- 1	11, 12	23	.65	.....	.20	4.5	5		.	....	SE	
Washington	Washington	769	20	22.3	† 4.0	49	1	- 7	12	32	.38	- 1.22	.18	3.5	5	....	....	....	NW	
Winterset	Madison	1,129	11	26.0	† 4.8	50	31	- 6	12	32	T	- .86	T	T	0	19	1	11	W	
Woodburn	Clarke	961	..	.....	.....	....	.....	.....	.....	.....	.05	....	.05	.5	1	21	1	9	NW	
Average	.....	.....	....	....	25.8	† 2.8	49.8	....	- 4.9	....	32 6	.33	- .82	.....	1.8	4	13	8	10	NW
Av. for the state	.....	.....	.....	....	23.0	† 3.5	45.7	. .. ..	- 6.2	.....	32. 1	.28	- .74		2.0	4	13	7	11	NW

*Means determined from 7 A. M., 2 P M, and 9 P. M observations, and maximum and minimum are taken from eye readings. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. §Not supplied with self registering instruments. † Above normal.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JANUARY, 1903.

STATIONS.		DATE.																													Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton.....	Max..	44	38	35	32	31	40	44	24	22	22	18	11	37	36	47	42	37	28	40	34	31	31	27	35	42	45	38	43	40	39	47	36.8
	Min.	24	33	22	17	14	13	16	9	4	2	-3	-4	4	21	27	27	24	12	7	20	3	19	12	22	28	34	27	33	20	15	29	17.4
Albia.....	Max.	51	41	34	28	26	41	41	22	19	17	16	14	36	37	50	48	36	28	40	33	31	32	35	35	36	47	36	44	43	41	40	38.2
	Min.	28	32	18	11	7	12	14	8	5	1	-3	-5	3	17	27	25	21	12	18	19	2	13	10	22	28	32	27	32	20	13	28	18.4
Algona	Max.	35	35	30	24	22	40	40	38	17	20	18	9	27	30	42	39	29	20	35	26	28	23	27	36	37	32	35	35	35	22	42	29.9
	Min .	24	17	13	12	9	10	8	4	-5	0	-8	-5	4	13	28	22	18	7	7	-1	6	1	19	26	31	20	30	17	10	-1	26	11.7
Allerton...	Max.	50	40	35	30	30	40	43	25	19	16	15	14	38	39	52	50	39	30	41	32	31	31	26	35	40	49	36	45	45	43	49	35.7
	Min..	21	32	18	19	10	11	10	8	5	-1	-3	-8	0	18	25	27	24	11	15	22	1	22	13	22	27	35	29	33	21	11	29	16.4
Alta	Max	38	28	24	25	25	45	26	21	13	20	3	6	30	32	42	38	29	22	35	23	29	29	19	30	38	37	33	34	33	34	43	31.7
	Min..	17	17	9	13	10	9	8	3	-4	-1	-9	-7	3	18	24	25	18	12	11	6	0	8	4	19	22	29	22	30	8	4	28	15.9
Amana ...	Max..	42	38	34	28	26	32	40	20	18	18	16	10	28	31	40	40	33	24	33	32	22	30	27	31	33	46	37	41	40	29	46	31.1
	Min..	24	32	21	16	10	13	17	7	4	2	-3	-3	2	16	23	25	20	10	15	18	2	19	9	22	27	33	27	34	9	10	22	15.9
Ames.....	Max.	45	37	34	33	31	45	45	32	23	21	21	14	32	36	47	41	32	30	40	34	27	32	26	30	35	40	35	39	38	39	48	34.3
	Min..	20	27	2	21	6	9	11	11	0	1	0	-4	1	21	23	23	22	12	9	14	1	13	9	20	27	30	24	31	13	10	23	13.8
Atlantic ...	Max..	42	39	29	30	32	46	39	25	21	21	21	11	37	37	49	42	32	30	42	27	32	30	25	37	43	42	33	38	35	42	48	34.1
	Min..	21	25	17	19	19	12	16	10	5	1	-2	-3	9	18	25	27	22	9	21	18	3	20	13	15	28	30	24	32	18	10	31	16.5
Baxter.. ..	Max..	41	38	38	27	25	40	46	20	28	18	16	10	31	34	45	42	40	25	37	33	25	29	24	27	33	40	36	38	38	33	47	32.4
	Min..	25	32	18	15	5	7	11	5	0	-2	-6	-6	-1	18	24	26	20	10	18	15	0	15	8	18	25	30	23	31	15	8	24	17.4
Bedford. ..	Max.	48	41	35	33	35	45	45	27	18	18	11	37	36	48	45	33	31	32	42	34	33	34	27	37	47	45	36	43	43	42	50	36.5
	Min..	22	33	13	20	18	10	18	10	0	-4	-5	-1	14	23	32	21	9	12	17	20	0	20	15	22	30	32	26	33	17	14	30	19.5
Belknap ...	Max.	60	45	32	32	34	35	20	25	25	15	10	8	20	30	40	50	35	32	35	32	35	35	36	27	40	50	50	50	36	40	50	34.3
	Min	26	33	30	17	12	20	15	9	7	5	0	-6	7	20	29	28	27	16	16	26	6	20	22	22	29	29	30	36	21	11	29	19.1
BellePlain'	Max..	43	37	24	27	25	38	25	20	10	14	2	10	28	33	37	40	29	24	34	32	20	30	24	32	37	42	33	40	33	30	45	29.6
	Min..	24	25	20	16	10	10	13	6	2	0	-5	-6	0	18	23	24	25	12	12	26	0	20	8	14	25	27	25	32	16	9	28	14.8
Bonaparte.	Max..	50	37	35	29	27	31	39	20	17	16	15	12	31	36	45	46	34	27	37	34	27	34	29	31	33	47	39	45	41	41	48	33.3
	Min..	22	32	19	14	8	19	17	9	6	0	-3	-7	-2	16	27	27	22	13	14	21	3	8	13	20	22	32	32	32	23	17	27	16.5
Britt.....	Max..	36	38	18	24	27	42	38	20	15	20	15	10	26	28	38	33	29	21	34	32	24	27	25	30	33	37	37	37	34	22	41	28.7
	Min.	13	18	11	11	0	8	8	2	-6	-4	-10	-7	1	1	22	20	18	4	4	8	-5	10	1	17	26	30	17	30	9	-4	17	8.7
Burlington.	Max..	53	38	33	29	28	30	39	28	18	15	14	14	29	36	46	49	37	28	35	38	27	35	30	35	34	47	41	56	44	38	47	34.5
	Min.	26	33	22	17	16	22	17	8	7	1	-2	-5	0	18	27	30	24	14	16	24	5	17	19	20	23	23	32	37	24	17	30	8.5
Carroll	Max.	44	37	32	28	29	48	42	25	24	20	16	10	36	35	47	43	30	26	40	32	31	32	35	40	39	36	38	40	41	44	48	34.5
	Min..	19	25	12	15	11	10	-3	-5	-2	-2	-9	-6	4	16	21	22	24	12	19	15	0	7	18	25	30	23	12	6	18	21	22	12.3
Cedar Rap.	Max..	42	39	36	28	27	39	42	19	19	18	18	9	25	31	41	41	35	23	33	34	22	31	24	29	33	45	40	41	42	29	45	31.6
	Min .	23	30	21	17	10	14	18	7	4	3	-2	-2	4	16	28	28	22	10	15	19	3	18	9	21	27	32	27	33	17	8	22	16.2
Chariton...	Max..	48	42	34	28	30	43	43	23	17	16	16	13	37	36	51	48	35	29	39	33	29	30	30	33	40	45	35	44	44	41	50	34.9
	Min..	26	34	17	18	10	17	15	9	4	0	-3	-5	3	18	10	13	21	13	17	19	0	18	12	22	27	34	27	33	19	12	29	15.5
Charles Cy.	Max..	35	38	25	23	23	38	37	28	21	17	17	15	23	25	38	40	34	30	31	25	20	18	20	31	30	36	38	38	14	17	49	28.1
	Min.	17	20	20	13	10	12	13	6	7	2	-4	-5	5	19	20	23	22	20	17	8	8	9	10	25	28	25	19	31	10	-4	13	13.5
Clarinda...	Max..	48	40	33	34	45	45	44	30	22	20	17	14	40	37	51	46	33	32	43	32	35	33	28	39	51	45	34	42	39	46	50	37.6
	Min.	23	23	17	25	16	25	16	11	7	4	-2	-4	6	17	22	23	20	13	18	17	5	22	15	24	29	29	28	33	16	16	0	17.5
Clear Lake	Max .	31	26	21	28	24	39	36	18	15	17	15	4	24	28	36	35	28	20	34	27	22	27	24	30	30	36	34	37	34	20	40	27.5
	Min..	16	18	14	8	5	6	10	-1	-8	-5	-12	-8	0	12	12	20	17	3	12	6	-8	8	-1	13	23	27	15	29	6	-6	12	8.1
Clinton....	Max..	45	35	34	31	25	36	37	20	18	18	5	10	24	31	39	41	31	21	30	35	21	37	28	31	33	45	39	44	42	26	46	30.9
	Min..	18	24	21	21	13	15	20	5	2	-3	-3	-6	0	12	21	18	17	7	12	17	3	13	11	21	24	32	33	34	18	9	15	14.4
College Spr	Max .	46	45	32	32	35	46	41	28	20	19	17	12	39	37	46	45	33	31	41	33	35	34	28	39	49	43	35	43	41	43	50	38.1
	Min	23	32	17	24	22	15	18	10	8	5	-3	-6	5	20	25	25	23	14	18	22	5	22	15	25	29	32	28	33	17	17	31	18.7
Colum. Jct.	Max .	48	49	42	33	25	30	24	23	18	19	14	9	25	32	43	42	32	25	34	34	28	34	29	33	33	49	38	45	42	34	45	33.3
	Min .	21	27	31	20	16	19	12	8	0	2	-2	-4	-3	19	21	27	22	12	18	22	3	18	13	18	25	31	30	34	21	13	15	16.4
Corning ...	Max .	44	38	33	32	33	42	38	26	17	20	18	10	38	36	48	42	34	29	40	34	32	33	27	37	44	43	35	42	41	40	47	34.8
	Min .	23	32	12	22	18	26	17	9	4	2	-3	-5	-5	7	17	26	23	11	13	20	3	24	13	22	28	34	27	32	16	15	30	16.8
Co Bluffs..	Max.	42	36	31	35	45	49	31	30	18	24	12	19	40	40	50	42	31	34	42	31	43	34	30	40	40	42	34	41	34	57	50	36.8
	Min.	24	18	10	25	26	15	9	10	9	5	0	-4	11	25	23	25	12	14	20	15	8	16	19	24	25	29	27	33	13	5	31	17.2
Davenport.	Max..	49	37	34	28	26	39	39	19	19	16	14	8	24	33	41	48	35	22	33	33	22	34	27	29	35	47	38	46	46	29	45	32.1
	Min..	30	33	22	19	14	18	18	8	5	2	-2	-2	4	19	30	30	19	12	15	16	4	16	14	21	24	35	33	35	18	12	28	17.7
Decorah....	Max..	38	33	32	27	23	37	33	23	18	17	16	-2	3	22	28	37	38	32	18	28	30	22	25	22	31	30	38	36	37	15	40	28.7
	Min..	18	17	19	16	4	11	13	11	3	-4	-5	-7	-8	0	11	23	16	14	2	13	8	-6	8	-2	17	16	31	21	15	-5	10	9.0
Delaware..	Max.	39	37	35	30	25	25	35	18	16	16	15	3	21	25	36	37	30	17	30	30	20	30	22	30	29	41	36	38	37	20	41	27.9
	Min.	21	24	18	17	6	9	9	4	-2	-4	-4	-8	-1	15	22	21	14	4	10	10	-2	11	5	17	23	26	22	20	14	0	11	11.0
Denison...	Max.	40	35	29	29	30	45	22	30	20	21	19	10	36	35	50	42	34	29	41	35	33	32	24	36	43	40	33	35	35	43	50	33.4
	Min .	20	22	12	9	16	11	15	5	0	-2	-6	-6	5	23	23	24	23	12	21	16	2	15	8	15	20	31	23	31	10	7	28	14.3
Des Moines	Max..	46	41	28	29	30	47	32	24	20	20	14	13	36	37	49	45	31	26	41	32	30	32	26	34	39	43	35	40	39	42	49	33.9
	Min..	28	22	19	20	12	14	12	9	3	3	-3	-2	4	22	28	29	23	16	21	13	4	17	12	21	28	32	27	32	16	14	30	17.6
Dows.....	Max.	39	36	21	23	23	41	40	19	15	17	17	5	27	32	39	39	29	20	33	32	23	28	22	26	31	36	33	35	35	23	44	28.6
	Min	22	20	15	13	2	9	10	3	-5	-2	-9	-6	0	15	22	23	18	5	17	10	-3	11	4	18	25	30	20	30	11	1	22	11.3
Dubuque...	Max..	43	38	33	29	25	35	35	19	19	15	14	7	23	33	40	42	29	18	29	32	21	29	22	29	29	44	36	40	38	24	45	29.5
	Min.	28	28	20	23	15	20	18	8	3	0	-4	-5	4	18	26	25	16	9	13	12	2	16	6	21	25	32	26	34	14	3	18	15.3
Earlham...	Max..	45	36	34	33	29	42	40	24	20	20	15	12	37	37	49	44	34	28	41	34	31	33	33	34	40	44	37	39	41	44	49	34.8
	Min.	21	30	15	15	9	9	15	6	3	-2	-5	-5	1	17	16	26	19	8	18	19	-2	18	15	20	26	33	30	17	10	19	27	14.5
Elkader....	Max..	46	38	34	28	24	28	25	18	18	18	16	10	23	25	41	44	28	21	32	28	25	30	24	30	30	41	36	38	35	20	47	29.1
	Min..	23	18	20	20	2	12	21	5	0	-4	-5	-6	0	10	24	15	17	4	13	14	-3	16	0	19	26	28	20	32	15	-1	10	11.8
Estherville	Max .	34	31	23	23	22	38	33	31	15	20	7	7	30	29	39	34	32	..	33	33	28	29	29	27	30	38	32	33	32	19	42	28.1
	Min .	15	17	8	9	6	6	7	2	-7	-5	-10	-7	1	11	25	22	17	..	7	5	-6	3	-1	18	21	24	19	29	5	-5	11	8.2
Forest C'ty	Max	40	35	28	25	24	39	40	20	25	17	10	4	21	26	36	32	20	20	32	32	22	26	21	25	30	35	30	34	31	21	36	26.7
	Min..	15	15	15	12	1	-1	10	1	-7	-5	-10	-6	1	13	23	25	18	5	14	6	-6	9	0	17	24	30	17	29	6	-5	16	9.1
Galva.....	Max .	35	31	24	26	26	45	36	21	19	22	19	6	30	29	41	39	32	23	36	33	30	20	20	32	39	31	34	35	33	34	43	29.8
	Min .	11	22	11	15	14	9	11	4	-2	-1	-9	-7	1	20	20	20	23	13	18	14	1	10	7	19	20	30	21	30	9	3	23	12.3
G. Meadow	Max.	37	38	34	27	22	31	32	16	10	15	6	5	21	24	36	37	24	15	27	29	18	28	20	30	30	40	35	35	35	20	41	26.4
	Min..	23	21	18	15	5	10	15	3	-4	-6	-8	-10	-2	12	22	18	16	1	11	11	-5	15	10	14	25	25	19	30	12	-4	7	10.3
Greene....	Max.	38	36	33	25	24	32	38	18	16	18	16	7	26	25	38	37	32	21	32	29	23	22	23	29	30	37	34	36	34	22	44	28.2
	Min .	19	25	19	14	5	7	15	3	-3	-1	-7	-5	1	16	21	19	21	7	16	14	-3	16	3	16	25	29	20	31	12	-2	15	11.9
Greenfield.	Max.	42	38	33	32	30	43	31	25	20	21	15	10	33	35	44	45	35	29	39	33	32	30	35	42	41	42	33	42	38	37	46	33.9
	Min .	21	30	22	19	14	10	15	7	1	0	-5	-6	3	17	22	20	20	12	18	0	17	11	19	27	29	21	25	31	16	14	28	15.6
Grinnell ...	Max..	43	45	33	25	24	38	39	17	16	16	15	9	28	32	41	41	31	22	34	31	22	29	22	27	32	42	35	40	39	31	45	30.5
	Min .	27	32	19	12	2	12	12	12	1	1	-4	-4	1	20	20	26	21	10	12	15	0	16	7	19	25	30	25	32	19	10	20	15.3
Grinnell(n)	Max.	43	45	33	25	24	36	39	18	13	18	15	8	30	32	41	40	35	24	35	31	24	28	24	30	33	42	34	39	37	30	43	30.6
	Min..	27	32	16	15	6	10	15	5	1	-2	-5	-5	-1	18	25	25	23	10	17	17	0	16	8	19	25	29	25	32	17	10	23	14.6
Grundy C'r	Max	43	37	34	25	24	36	36	18	16	16	16	8	30	31	41	41	32	22	32	32	24	28	24	27	31	39	35	36	35	30	45	29.8
	Min.	22	28	18	14	5	8	15	4	-2	-3	-6	-10	0	18	21	24	22	7	13	16	-2	18	6	19	25	30	22	32	16	6	21	13.1
Guthrie Cr	Max..	44	38	33	30	29	47	42	23	22	22	20	10	34	36	46	41	33	28	40	39	31	33	25	34	39	42	36	38	37	39	43	34.0
	Min..	24	29	15	17	11	12	15	7	1	0	-6	-5	3	22	24	29	21	11	20	19	0	18	10	19	28	34	24	31	17	10	31	15.8
Hampton..	Max.	42	37	24	26	25	42	20	20	7	18	16	7	28	32	42	39	28	21	34	31	26	22	26	30	32	39	32	37	35	29	48	29.1
	Min..	22	21	16	15	5	10	11	3	-3	-2	-9	-6	2	10	25	28	20	8	15	11	-2	11	2	21	23	32	20	32	10	0	20	12.2
Harlan.....	Max..	38	37	27	30	30	46	38	24	17	22	16	10	34	36	44	39	32	29	39	33	31	33	27	37	41	39	33	37	36	40	47	33.0
	Min.	16	21	12	18	17	10	14	6	1	0	-5	-6	4	21	22	19	23	13	18	16	4	17	10	16	24	31	21	30	10	9	27	14.3
Humboldt.	Max.	38	34	25	25	28	43	40	20	19	20	20	7	30	32	40	38	30	24	36	36	26	30	24	28	35	40	34	37	36	30	44	30.6
	Min.	14	25	15	15	6	9	10	4	3	0	-7	-5	2	16	22	20	20	8	20	14	-2	10	4	20	27	32	22	31	12	4	22	12.7
Ida Grove..	Max.	37	34	25	28	28	..	47	26	22	22	23	8	36	34	43	39	37	28	38	36	31	31	22	35	40	40	35	37	36	37	45	32.7
	Min.	14	23	11	12	16	11	15	5	0	0	-8	-8	2	20	22	24	25	15	20	15	3	13	17	20	23	32	24	31	9	5	27	14.1
In'pen'nce.	Max..	37	36	35	24	22	34	35	16	15	14	14	6	23	25	37	38	33	18	29	27	19	27	22	27	28	40	35	36	30	22	43	27.5
	Min..	28	26	19	13	6	8	14	4	0	-1	-5	-5	2	17	23	21	18	6	13	20	-1	17	6	18	25	28	22	32	13	1	16	13.2
Indianola..	Max.	..	..	..	39	29	44	45	23	23	20	18	13	33	..	..	48	38	35	40	38	30	33	37	33	41	45	40	40	40	40	48	35.1
	Min.	..	..	..	18	10	19	17	8	2	1	-3	-4	4	..	..	28	24	14	26	18	0	20	21	21	24	32	25	32	19	10	34	16.5
Iowa City..	Max.	45	37	34	28	25	39	41	21	18	18	14	9	28	30	40	42	35	35	35	31	25	30	28	32	33	45	38	43	42	35	47	32.4
	Min..	21	30	21	14	9	13	18	8	4	1	-2	-3	0	11	22	23	23	11	13	21	1	13	10	22	21	32	26	33	19	11	21	15.1
Iowa Falls.	Max .	39	36	23	25	24	40	33	18	15	18	11	6	26	28	38	36	29	21	33	30	25	29	24	27	32	38	33	36	35	27	45	28.4
	Min..	19	18	13	9	4	10	8	3	-3	-2	-8	-6	1	14	24	22	16	7	16	5	-2	10	5	17	25	30	21	30	10	3	21	11.0
Keokuk ...	Max..	46	35	24	29	25	35	42	19	16	16	6	11	32	35	45	43	34	26	34	37	26	35	30	29	35	51	43	47	46	41	51	33.0
	Min.	32	32	21	20	14	21	18	9	10	4	0	-5	5	16	28	32	26	16	16	28	6	19	22	22	23	34	33	38	25	31	34	20.0
Keosauqua	Max .	50	39	33	31	26	36	30	20	19	18	17	11	24	36	45	46	37	28	37	34	26	33	29	31	33	49	39	45	44	41	50	31.5
	Min..	25	32	17	12	10	20	17	9	7	0	-2	-5	0	13	28	30	24	13	16	23	3	20	15	21	23	33	32	34	23	17	29	17.3
LeMars....	Max.	34	28	25	28	26	47	34	25	15	14	12	8	34	34	45	38	34	26	37	34	33	31	25	30	40	40	35	38	25	35	43	30.7
	Min.	10	17	7	19	17	12	15	5	-2	3	-8	-8	20	23	33	22	21	16	19	13	5	6

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JANUARY, 1903—CONTINUED.

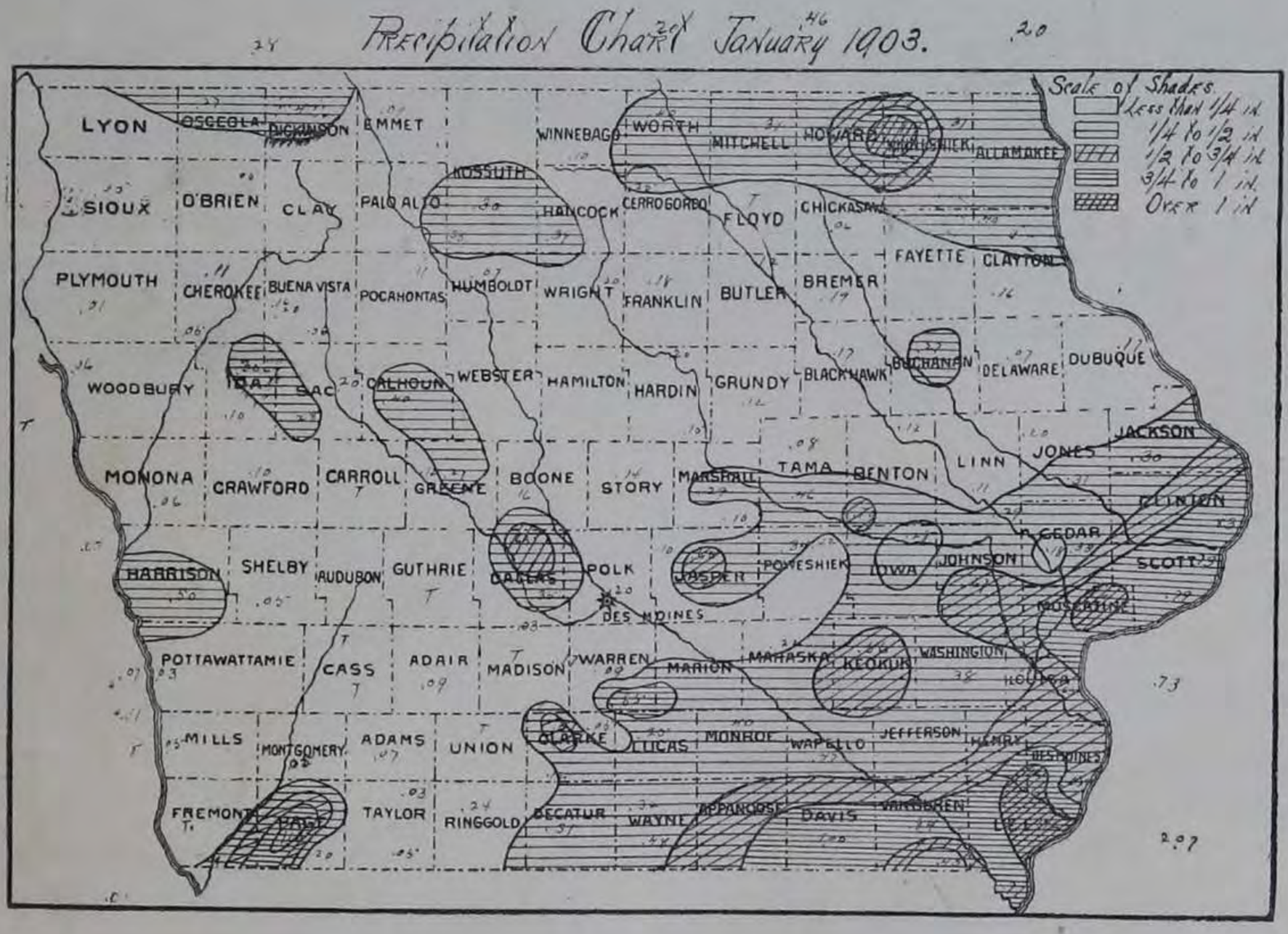
STATIONS.		DATE.																														Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
gan.	Max...	38	35	28	35	32	27	21	25	21	17	24	13	37	38	45	37	33	30	40	35	34	35	32	35	44	41	34	37	36	43	48	33.2
	Min..	20	20	12	11	11	8	11	8	4	3	-3	-4	7	27	22	23	21	14	18	10	6	16	12	21	23	32	24	32	12	12	31	15.0
aquoketa	Max...	43	38	35	28	29	25	37	21	18	15	14	8	19	23	41	42	31	24	30	35	21	31	26	31	30	43	39	41	42	26	45	30.0
	Min...	18	19	20	18	12	11	19	5	3	-3	-3	-5	0	10	25	18	19	8	12	20	1	11	0	20	24	30	27	32	19	6	13	13.2
arsh'll't'n.	Max..	44	40	39	27	26	33	41	20	20	19	22	9	29	34	43	42	33	26	35	35	25	30	25	28	32	43	39	39	38	31	47	32.0
	Min...	26	28	19	16	8	11	16	5	0	1	-5	-5	0	21	26	27	23	9	18	19	0	21	7	20	25	31	24	32	18	8	23	15.2
onticello.	Max...	20	24	22	18	14	20	42	18	15	10	8	12	25	32	28	27	25	29	38	40	35	22	28	32	38	45	40	40	38	28	45	27.7
	Min...	-1	2	7	6	7	10	8	5	4	0	-2	-5	-6	18	6	10	7	5	12	12	0	..	15	18	22	28	33	32	17	5	20	9.8
. Ayr ...	Max..	48	39	32	31	32	44	41	27	15	18	15	10	38	36	50	46	33	32	41	33	32	31	28	35	45	45	35	43	43	42	49	35.1
	Min...	24	32	16	21	13	10	15	9	5	2	-4	-10	-1	19	23	22	21	12	14	18	1	20	13	22	27	33	28	32	17	15	28	16.0
. Vernon	Max..	42	37	34	25	23	37	33	18	11	16	10	10	22	31	45	43	32	27	32	31	25	31	24	32	29	43	34	42	41	32	44	30.2
	Min...	23	32	22	14	8	11	12	6	3	-2	5	-5	1	18	22	23	18	7	12	12	0	15	7	18	24	25	24	33	17	6	21	13.6
wH'pton	Max...	36	35	34	25	22	27	27	15	15	14	14	2	19	23	36	37	33	19	28	23	19	25	20	27	27	37	34	35	35	16	40	25.9
	Min...	19	25	17	11	4	5	14	0	-6	-6	-10	-10	-2	13	21	20	17	3	12	10	-5	14	3	3	23	26	19	30	10	-6	11	9.2
ewton ...	Max...	43	41	36	27	26	36	40	19	21	18	8	9	30	34	42	41	38	28	37	32	24	29	24	29	33	42	38	38	38	32	45	31.9
	Min.	21	31	15	15	4	9	13	4	-1	-2	-7	-8	-2	19	20	25	22	10	17	19	-1	18	9	19	25	29	24	31	18	9	24	13.2
orthwood	Max..	6	35	24	28	24	41	35	19	17	19	17	8	25	29	37	36	30	20	31	32	21	25	24	29	30	36	33	35	35	19	41	28.1
	Min.	14	18	14	11	11	5	10	7	-6	-3	-10	-6	2	13	23	18	16	5	13	5	-5	10	2	17	25	29	17	30	6	-6	12	9.4
iebolt ...	Max...	38	35	26	27	26	42	38	22	20	21	20	8	32	34	43	39	35	26	37	35	30	32	23	34	40	39	38	35	34	38	45	32.0
	Min..	16	23	12	15	15	10	14	5	-1	-,	-7	-6	2	22	24	23	24	14	20	15	3	14	8	20	22	32	23	31	10	6	20	13.8
gden.	Max...	46	40	35	27	30	45	..	25	..	20	20	22	36	35	49	41	35	28	42	35	28	34	25	29	36	41	37	37	39	41	50	34.8
	Min...	21	30	14	15	4	5	10	3	-3	-2	-9	-7	-2	17	18	22	20	10	17	15	-3	15	6	18	25	28	31	28	15	4	25	11.2
in..	Max...	37	39	35	28	26	28	25	20	17	18	16	9	23	28	38	38	35	23	30	31	23	34	25	31	31	43	48	42	40	25	43	30.0
	Min..	17	22	22	16	9	15	17	6	4	-1	-3	-3	0	13	25	19	22	8	12	21	1	13	9	20	26	30	35	33	20	6	15	14.5
maha, N.	Max...	42	37	31	35	32	49	34	28	22	24	7	17	38	38	51	41	31	30	41	35	37	37	28	37	48	41	33	40	34	47	50	35.3
	Min...	23	17	9	24	22	20	14	10	6	7	-1	-3	16	28	31	29	23	19	22	16	11	17	15	24	27	30	27	33	13	19	33	18.9
nawa.....	Max..	40	32	28	41	33	46	37	29	23	24	16	16	37	38	47	40	33	27	39	35	31	32	25	35	43	42	35	38	35	44	49	34.3
	Min .	16	18	8	21	17	14	14	9	3	4	-2	-4	9	24	20	24	84	16	19	16	7	12	11	21	23	31	23	70	9	9	27	15.3
sage.....	Max...	35	34	29	24	22	30	37	17	16	16	15	2	21	24	35	35	31	19	29	28	18	25	21	28	28	36	33	35	34	15	40	26.2
	Min...	17	22	17	11	7	5	14	2	-5	-5	10	-7	0	13	24	17	19	4	13	11	-7	12	1	15	25	28	18	31	9	-6	11	9.9
sceola....	Max..	48	41	34	30	30	44	43	39	19	30	15	20	32	35	50	46	45	30	40	33	33	29	30	29	46	44	36	41	42	44	50	36.4
	Min...	25	33	18	19	12	14	13	9	-2	-1	-4	-5	1	20	21	34	22	12	18	13	1	9	12	13	22	21	17	16	12	12	18	13.7
skaloosa.	Max...	49	39	33	28	24	38	38	20	14	18	16	11	32	35	46	45	34	27	37	32	26	31	27	33	34	47	35	40	40	38	48	32.7
	Min...	23	33	18	13	7	17	14	6	3	-1	-2	-5	1	13	26	28	22	11	17	19	0	16	9	22	27	31	27	32	22	12	28	15.9
ttumwa ..	Max...	49	42	35	29	28	44	42	20	18	18	18	14	29	36	45	47	33	27	38	34	28	34	28	32	35	50	39	45	43	41	50	34.5
	Min...	29	34	21	18	15	15	15	11	9	4	0	-1	5	24	30	23	25	18	19	19	7	21	20	23	28	34	31	35	22	18	31	19.6
vid.....	Max...	50	43	34	31	28	41	41	28	23	17	15	14	36	39	53	50	37	31	41	37	31	31	28	35	43	46	39	44	44	44	50	36.3
	Min...	24	31	17	18	9	15	15	5	4	-2	-5	-9	-1	16	23	26	24	10	15	23	0	23	12	19	26	32	34	32	20	15	28	16.1
acific Jct.	Max...	35	33	30	34	34	46	25	27	20	22	20	10	38	40	47	40	32	29	40	32	38	34	26	38	47	43	34	41	37	43	48	34.3
	Min...	20	20	11	24	20	15	17	10	6	4	-1	-4	7	20	20	21	23	13	13	23	6	20	20	22	24	31	24	33	15	14	29	16.8
erry.....	Max ..	45	9	28	29	29	44	39	24	18	22	19	10	33	37	43	43	31	29	41	31	31	33	26	33	39	40	37	38	37	40	48	33.4
	Min ..	24	27	17	20	11	12	13	7	1	1	-6	-5	7	..	..	..	..	.	..	..	..	..	16	19	28	30	24	31	16	8	28	15.0
lover.....	Max.	35	30	25	26	24	43	..	23	21	18	5	21	29	31	40	36	29	20	36	33	22	22	23	29	37	38	35	37	33	30	42	28.2
	Min...	14	4	8	15	5	16	10	2	-4	-2	-10	-7	2	16	23	24	5	9	16	6	0	5	-1	18	19	20	21	32	9	4	19	9.6
ed Oak..	Max...	40	39	30	33	32	41	40	26	25	23	22	14	34	36	44	40	33	37	39	35	34	31	..	..	45	42	35	41	40	40	44	35.0
	Min ..	25	26	20	25	24	20	19	13	8	11	3	1	11	20	25	28	25	12	26	23	10	23	18	22	34	34	29	34	19	20	33	20.7
idgeway..	Max ..	44	39	30	28	23	39	37	21	19	17	20	6	22	31	38	41	36	24	29	29	25	32	24	34	32	39	35	37	39	21	46	30.4
	Min ..	23	25	20	12	7	7	15	3	-4	-6	-7	-9	0	15	23	21	15	3	11	9	-5	12	1	15	26	32	18	30	12	-5	18	10.9
ockwell C	Max...	40	40	25	25	30	40	35	21	17	21	23	10	30	38	42	43	42	35	40	25	30	28	21	33	36	40	37	37	35	40	45	32.5
	Min...	18	2.	15	21	15	10	14	5	-2	5	-6	-5	4	15	20	2.	25	20	20	10	2	10	10	19	25	30	22	31	15	0	30	14.6
ac City....	Max.	36	34	35	28	26	44	40	20	18	21	28	8	32	33	40	38	35	25	37	33	31	28	22	33	38	36	30	39	33	35	44	31.6
	Min .	12	22	18	1	14	11	11	4	-1	0	-8	-2	0	20	22	24	25	12	22	12	1	10	10	19	21	30	..	..	10	5	27	12.6
t. Charles.	Max...	52	39	33	30	30	44	39	27	19	19	10	14	36	38	52	40	36	28	42	30	34	32	26	34	42	45	35	39	33	43	49	34.9
	Min..	26	33	18	18	12	13	15	8	2	2	-4	-3	4	22	28	30	24	14	20	20	1	18	11	22	28	33	25	32	18	12	30	17.2
cranton ..	Max...	40	39	28	31	38	44	40	23	20	20	20	8	33	35	40	38	30	34	40	35	30	34	25	34	38	39	34	36	36	37	41	33.0
	Min...	23	28	15	16	12	12	15	6	0	1	-6	-5	2	23	25	27	21	20	20	17	1	16	9	19	28	30	23	30	15	9	28	15.6
heldon ...	Max..	36	28	25	25	..	47	33	25	15	21	9	10	32	30	43	39	33	23	36	35	30	30	21	31	37	37	33	34	33	32	42	30.2
	Min .	..	18	8	13		10	10	2	-5	0	-10	10	10	15	23	20	21	11	17	5	0	3	2	18	20	20	23	29	5	0	21	9.6
ibley	Max..	36	..	25	23	24	43	10	20	18	20	5	6	32	29	40	40	32	20	35	32	30	29	20	29	36	37	35	33	32	32	41	28.2
	Min..	10	..	12	15	13	10	10	2	-6	-2	-10	-9	2	1	20	20	18	10	16	10	0	1	1	18	20	29	23	29	5	-4	19	9.4
igourney .	Max	47	38	30	29	25	37	39	19	16	16	15	10	32	31	45	45	37	24	36	32	26	30	31	36	33	48	38	44	42	34	48	32.8
	Min...	23	31	20	13	7	12	16	7	4	-1	-2	-5	0	15	25	28	24	11	15	22	1	20	10	21	26	31	26	33	2	12	27	15.9
ioux C'nt'r	Max ..	34	22	23	24	25	45	32	24	25	21	6	6	32	32	41	38	31	21	35	34	30	30	21	32	37	37	34	35	33	32	44	29 5
	Min ..	12	14	7	15	14	11	3	11	-4	-1	-9	-10	0	19	26	23	21	14	16	10	2	4	4	19	23	29	25	31	5	0	22	11.5
ioux City.	Max...	33	29	24	29	27	51	29	25	16	23	4	12	35	36	46	39	28	25	38	37	39	38	22	34	41	39	33	37	19	39	47	31.4
	Min..	12	10	5	23	17	14	12	7	-1	4	-4	-6	12	25	28	22	20	18	21	11	8	7	10	22	25	30	26	19	7	9	28	14.2
pirit Lake	Max...	42	30	32	23	42	32	22	22	13	22	5	6	22	32	39	39	30	19	35	32	27	28	28	32	34	36	34	34	32	29	32	28.5
	Min..	13	18	9	5	17	7	6	1	-7	-3	-11	-7	7	11	22	25	17	9	15	7	-4	1	0	26	21	28	25	29	5	-5	20	9.9
storm L...	Max...	35	32	23	25	24	47	40	20	20	21	20	6	29	32	41	39	35	25	35	34	29	30	19	31	37	38	33	31	34	34	42	30.5
	Min...	15	20	9	11	3	10	12	2	-4	0	-10	-8	2	17	24	23	22	11	18	12	0	18	4	13	22	30	22	29	8	3	25	12.0
Thurman ..	Max,..	42	38	29	34	34	47	43	28	20	21	18	14	38	37	46	40	35	28	40	32	36	35	28	35	47	44	35	40	38	43	47	35.3
	Min .	21	21	10	23	21	15	15	10	8	10	-1	-4	2	22	21	26	25	14	22	21	7	20	15	22	27	30	28	32	15	14	33	17.6
Tipton	Max .	42	40	..	42	27	28	37	21	18	15	15	10	23	29	41	42	36	25	32	34	23	32	27	32	31	44	38	42	44	28	45	31 5
	Min...	2.	28	..	26	14	18	18	8	6	1	-2	-3	4	16	26	26	22	12	15	21	5	16	13	20	25	30	29	32	20	10	23	16.8
Toledo	Max ..	45	37	33	25	23	40	39	20	18	17	16	9	28	33	42	40	30	23	34	30	25	29	23	28	32	43	35	38	37	32	46	30.6
	Min ..	25	29	19	15	8	11	14	6	1	-1	-4	-5	2	20	26	28	20	8	16	15	-1	15	7	20	25	30	24	32	17	8	20	14.5
Napello...	Max .	40	38	31	27	31	38	35	21	2	19	13	11	25	31	45	..	36	30	34	32	..	..	33	34	.	45	40	44	43	33	43	32.4
	Min ..	29	33	24	18	17	22	20	10	4	1	-1	-1	2	20	27	..	21	15	16	25	.	..	17	20	23	33	33	31	22	8	28	18.9
Washin't'n	Max ..	49	35	23	28	25	40	25	20	15	18	5	5	30	33	43	46	33	25	35	33	25	33	2	32	33	44	48	44	36	35	47	31.4
	Min ..	21	29	16	13	6	14	10	5	2	-2	-2	-7	-2	15	21	24	16	9	12	12	-1	11	8	18	23	28	21	31	16	11	25	13.2
Waterloo..	Max .	42	39	33	25	23	39	31	20	17	16	11	10	26	33	41	41	30	20	32	29	24	30	29	29	32	41	33	38	35	24	44	29.6
	Min..	19	27	19	15	8	9	16	5	0	0	-5	-4	5	19	24	21	20	8	12	14	0	12	7	19	24	30	23	31	17	1	20	13.4
Waverly...	Max .	38	36	32	27	22	38	38	20	15	16	15	8	25	29	39	37	30	19	31	29	21	28	25	28	29	38	34	36	35	25	45	28.6
	Min.	18	26	19	13	8	8	13	4	-2	-1	-6	-5	1	18	24	29	19	7	7	11	-2	15	5	18	25	29	23	32	11	-1	17	12.7
West Bend	Max .	35	35	32	25	25	43	38	20	15	20	19	8	27	30	40	34	30	22	35	33	25	29	24	29	34	39	35	38	34	27	42	29.7
	Min....	14	20	14	13	5	8	10	3	-4	5	-8	-4	0	15	21	18	20	6	19	10	-4	8	3	18	22	31	21	31	11	-1	16	11.0
Whitten...	Max..	40	34	35	25	26	35	43	19	17	7	15	8	29	32	40	40	33	23	34	32	24	21	26	29	33	40	38	39	37	29	45	30.4
	Min..	21	29	17	14	5	8	15	3	-3	-2	-8	-7	0	18	23	23	20	7	16	15	-3	4	5	19	25	30	21	30	14	4	21	12.3
Wilton Jc..	Max...	44	30	36	29	28	28	38	26	16	19	15	8	28	32	39	42	35	23	32	35	23	36	30	32	48	38	42	45	42	29	45	32.2
	Min..	22	32	24	13	12	15	18	6	5	0	-3	-4	2	12	23	24	22	7	13	21	0	12	12	20	32	37	28	33	23	10	21	15.6
Winterset..	Max ..	49	39	36	30	30	42	40	25	25	20	16	10	36	36	50	45	42	31	41	40	33	33	35	40	43	43	39	38	36	42	50	36.0
	Min ..	25	33	16	20	10	10	16	7	3	0	-5	-6	4	21	26	28	24	14	19	19	1	20	10	12	26	32	25	30	12	13	32	16.0

DAILY AND MONTHLY PRECIPITATION FOR JANUARY, 1903.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton				T							T													T				T			T
Albia		.30		.07			T			T														T			T	.03			.40
Algona				T			.10			.15														T			.15	T	T		.30
Allerton		.13		.05			.05			T	.10													T			.02	.01			.48
Alta				.01			.10			.02																	.05				.16
Alta (near)							.15																								
Amana		.06	.04	.04			T			T	.03											.07		.02				T			.28
Ames		.08		.01		T	T			T												T	T		T		T	.05	T		.14
Atlantic																															T
Baxter							.10																T		T	T	T	T	T		.10
Bedford				T			T		.05																						.05
Belknap		.50		.10			.10		T	.10												.05		.05	T		T	.10			1.00
Belle Plaine		.12		.05	.05						.20											20		.05				.02	.01		.70
Bonaparte							.20				.10													.13							.41
Britt		.09	.01	.04	T		.02				.03		T	T		.02						.02		.01			.13	.02			.39
Buckingham		.05		.02							.01																				.08
Burlington		.12		T	T		T			T	T											.04		.14	T						.58
Carroll																															T
Cedar Rapids		.02		.02			.01			.02													T	T				T			.11
Centerville																						T	T	.01			.01	.02	.01		.35
Chariton		.05		.01	T	T	.03			.02				T								T		T	T			T			T
Charles City			T	T	T		T			T	T			T														.03			.14
Clarinda				T							.11								T					T			T	T			.25
Clear Lake		T		.10	T		.10			.05	T											.04		.05				.04			.83
Clinton		.41		.15						.14														T							.30
College Springs				T						.10	.10											.05	.04	.06			T	.02	.03		.28
Columbus Junction		.01	T	T	.07		T				T																		T		.09
Corning										.07																		.02			.03
Council Bluffs	T	.01		T			T			1																		T			T
Cumberland							T																		T	T	.05	.10	.15		1.30
Danville		.70		T	T	.10													.10		T	T		.07	T		T		T		.75
Davenport		.4	.02	.02	T		.16	T		T	.08											T					.04	.05			.31
Decorah				.05			.09					.08		T																	.07
Delaware				.02	01					.04																					.10
Denison							.05			.05																					.10
Des Moines		.05	T	T	T	T	.05	T		T	.06											.03		T	T	T	T	T	T		.05
Dows		T	T	T			.10			T														T			T	.10	T		1.00
Dubuque			T	.01	.0	T	.07	T		T	.03		T									.04			T		T	.01	.02			.70
Earlham		T		.03			T			T	T																T	T			.41
Eldon	T	T	T	.05						T																					.43
Elkader				.08			T				.08								T										T		.39
Estherville				.02	T		.05			T																					.08
Forest City		.05		T			T			T	T								T												.58
Fort Madison		.30	T	.25			.10			.25										T		.05	.30								1.46
Galva				T			.10			.05																					.30
Gilman				T	T		T				.10	T										T		T			T	T			.10
Grand Meadow			T	.05		.07					.15			T					.05			T		T				T			.40
Greene		T	T	.07			.05										T					T									.12
Greenfield				.0			.02			.01	.02											T				T	.02	.01			.00
Grinnell				.12																		.14					.08				.31
Grinnell (near)				.05			.05			T												.10		.01				.0			.22
Grundy Center		.09	T	02	T		T			T	T													T	T	T	T	.01	T			.13
Guthrie Center							T																					T	T	T		T
Hampton				.05						.12														.01								.15
Hanlontown																						T		T				.01	T			.05
Harlan			T	T			T	T		.02	.02						T					T		T			T	T	.03			.13
Hopeville		.03		.02							.04												T						.02			.07
Humboldt			.04							T	01																	.10				.10
Ida Grove																																.87
Independence		.05		.10	01		.02			.06				T								.02		.01			T	.02	.03			.09
Indianola				T			.02				02													T					.19			.67
Iowa City		.30	T	T	.04		T				02											.05		.07			T	T	T			.20
Iowa Falls		.13		.05		T	T			T	T													.02								.87
Jefferson		02		.03			.10			.07																		05				.77
Keokuk		14	.04	.08	.04		.08			.01	.20									T		.01	02	.15					T			.84
Keosauqua		.29		.16			.10				.18											.03	T	.08					T			.85
Lacona		.10				.12	.06			.09	08											.11		.09	T			07	.13			.73
Le Claire		.02	.50		.07		07	.03		T													T	.02	T			T		T		.01
Le Mars											02							T											.01			.03
Lenox							T			.03																						.31
Leon		.08		.04	T		T			.12	.05												T	.02	T		T	T	T			.10
Logan							.20			.50																						.30
Maquoketa		T	10		.09						.05											.03		T				.03				.93
Marshaltown		.08	T	04			.04				09											T		T				T				.80
Monticello		T		T			T	T			T	T										.20	T		T							.24
Mount Ayr		.04		.01			T			.10													T	.03	.02		.02	.02				.29
Mt. Vernon		.01	T	.04			T				.10											04		T				.02	.02			.00
New Hampton				T	T		T				T							T						T			.05	.01	T			.05
Newton		.15		.10			.15				.15											.10										.40
Northwood		T	T	.05	T		.20			T	.10			T					.05					T				T	T			.28
Odebolt				T			.20			.08																			.02			.16
Ogden		T					.01	.05		.10																T		T				.31
Olin		.05	T	.10				T		.08												.04		.04			T					.07
Omaha, Neb		.0	T	T	T		T			.02	.01			T								T						.c2	.01			.06
Onawa				T			.05			T	T																	.01	T			.31
Osage		.01	T	.05	.01		.10			T	.05			.02					.05					0	T				.01			.57
Osceola		.03		T			.01	T		.50	.02											.01				T						.22
Oskaloosa		.04		.02			.02			.04	.04										.03		.03									.47
Ottumwa		.1c		20						.15													.02			T		.06				.32
Ovid		.08		05	T		T	T		.13														T								.05
Pacific Junction		T	.01	T			T			.04																		T	.50			.05
Perry		T		.05			.10			T																		.06				.81
Plover				05																				T								.05
Red Oak		T		T			T			.05												T		T			T	T	T			1.14
Ridgeway		.01	.01	.12	.03	07	.40			.16	.01			.01					.02			.02		.01	.01	T	.12	.10	.04			T
Rockford				T						T																T		T				.40
Rockwell City						.10	.30																					T	T			.30
Sac City						.10	.10			T	T													T			T	01	.01			.17
St. Charles				02			.05	.02		T	.06																	T				.12
Scran on		T		.0							.08																	T	T			.05
Sheldon							.05			T														T				T	1C			.27
Sibley				.02			05			.05	T							T	.05					T				T				.56
Sigourney			.36	.08			T			T												.07		.05			T		T			.05
Sioux Center							T			T																		T	05			.06
Sioux City		T		T			T			.01	T			T					.01	T		T	T					.03	.01	T		.40
Spirit Lake				.10			.30																									.06
Storm Lake				T			T			T	T													T				.06	T			

DAILY AND MONTHLY PRECIPITATION FOR JANUARY, 1903—CONTINUED.

STATIONS.	DAY OF MONTH.																															TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Thurman	T	....	T	T	....	....	T	....	....	T	....	....	....	....	....	....	....	.	....	....	....	....	....	....	....	....	....	....	T	....	....	T
Tipton	....	.10	....	T	....	....	....	....	....	....	....	....	....	..	....	..	..	....	....	..	....	.10	....	.15	T	....	....	....	T	....	....	.35
Toledo	....	.18	....	.08	T		.09	..	..	.05	....	....	....	....	..	....	....	....	....	....	.10	....	....	T	....	....	....	....	T	....	....	.46
Vinton	....	T	....	.05	....		.02	....	....	T	.	....	....	..	....	....	..	....	....	....	.05	....	..	T	....	....	....	....	....	....	....	.12
Wapello	....	.20	T	.15	....	....	....	....	....	.10	....	....	....	....	....	....	..	....	....	....	..	.05	....	.15	....	....	....	....	T	....	....	.65
Washington	....	.02	....	.18	..	....	.03		....	..	.	....	....	....	..	....	....	....	....	....	..	.10	..	.05	....	..	..	....	..	..	....	.38
Washta	....	....		T	.	..	T	..	....	.05	....	....	....	....	....	....	....	T	....	..	..	....	....	....	....	..	....	....	T	....	....	.05
Waterloo	....	T	T	.06	....		.05	..	....	....	.06	..	....	....	..	....	....	....	..	..	....	T	....	T	..	....	T	T	T	....	....	.17
Waukee	....	T	....	.10	..	..	.10	....	....	.10	....	....	..	....	....	....	....	....	....	..	....	.05	..	T	....	..	....	T	T	....	....	35
Waverly	....	.01	.07	.02	.01	....	.02		....	.01	.05	....	....	....	....	....	....	....	....	....	....	....	....	T	....	....	.01	.02	.02	....	....	.19
West Bend	....	....	....	.05	T	....	.20	....		05	....	..	.	....	....	....	....	T	....		....	....	....	T	....	....	....	....	c8	....	....	.38
West Branch	....	....	T	.05	....	..	T	....	....	T	T	..	....	....	....	....	....	....	....	....	.05	....	....	.08	..	..	T	T	T	.	....	.18
Whitten	....	T	T	.05	T	.05	.05	....	....	T	....	....		....	..	....	....	..	....	....	....			T	....	....	T	T	T	.	....	.15
Wilton Junction	..	.20	....	T	.	....	....	..		.10		....	....	....	....	....	....	....	....	....	....	.05	....	.07	....	..	....		....	....	..	1.02
Winterset	....	....	....	T	....	....	T	....		T	....	....	..	....	....	....	..	....	..	....	....	....	....	..	....	....	..		T	....	....	T
Woodburn		T	....	T	....	....	T	.	....	....	....	....	....	....	....	....		....	....	..	....		.05				..	T	..		....	.05



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CENTRAL STATION, DES MOINES, IOWA.

J. R. SAGE,
DIRECTOR.

GEO. M. CHAPPEL,
LOCAL FORECAST OFFICIAL,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

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DES MOINES:
BERNARD MURPHY, STATE PRINTER
1903.

THE IOWA WEATHER AND CROP SERVICE

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Fifth District—S. B. PACKARD, Marshalltown.
Sixth District—T. C. LEGOE, What Cheer.
Seventh District—M. J. WRAGG, Waukee.
Eighth District—JOHN LEDGERWOOD, Leon.
Ninth District—M. MCDONALD, Bayard.
Tenth District—J. W. WADSWORTH, Algona.
Eleventh District—H. L. PIKE, Whiting.

METEOROLOGICAL STATIONS AND OBSERVERS.

From the following, weekly and monthly reports of Meteorological data are received by the Iowa Weather and Crop Service.

Afton	Hon. N. W. Rowell
Albia	E. R. Reeve
Algona	C. D. Pettibone
Allerton	Ed. T Burns
Alta	D. E. Hadden
Alta (near)	W. J. Minard
Amana	Conrad Schadt
Ames	Exp. Station
Atlantic	J. W. Love
Audubon	Frank Mott
Baxter	W. T. Thorp
Bedford	E. E. Healy
Belknap	A. W. Rankin
Belle Plaine	S. P. Vandike
Bonaparte	Hon. B. R. Vale
Britt	G. P. Hardwick
Buckingham (Traer P. O.)	Dr. W. A. Daniel
Burlington	I. S. Shontz
Carroll	Moses Simon
Cedar Rapids	Electric Light & Power Co
Centerville	C J Brower
Chariton	Hon. S. H. Mallory
Charles City	C. H. Priebe
Chester	C. H. Meredith
Clarinda	A. S. Van Sandt
Clear Lake	John Cobb
Clinton	Luke Roberts
College Springs	A. M. Finley
Columbus Junction	Prof. H. E. Simpson
Corning	Jerome Smith
Council Bluffs	Agent C. R. I. & P. Ry
Cresco	J. P. Howe
Cumberland	Agent C. B. & Q. Ry
Danville	Agent C. B. & Q. Ry
Davenport	*J. M. Sherier
Delaware	Wm Ball
Decorah	F. H. Baker
Denison	Prof. W. C. Van Ness
Des Moines	*Geo. M. Chappel
De Soto	R. D. Minard
Dows	A. C. Fuller
Dubuque	Orin Parker
Earlham, R. F. D	Geo. Phillips
Eldon	T. Madden
Elkader	Chas. Reinecke
Estherville	Alvero O Salisbury
Fairfield	Prof. W. W. Mendenhall
Fayette	R. Z. Latimer
Fort Dodge	C. R. I. & P. Agent
Ft Madison	Miss L. A. McCready
Galva	D. W. Farnsworth
Gilman	Jas. L. Wylie
Grand Meadow (Postville P. O.)	F. L. Williams
Greene	J. L. Cole
Greenfield	J. G. Culver
Grinnell	Prof. S. J. Buck
Grinnell (near)	A. O. Price
Grundy Center	Ed King
Guthrie Center	W. F. Braun
Hampton	E. C. Grenelle
Hanlontown	Geo. W. Paschen
Harlan	C. A. Reynolds
Hopeville	M. T. Ashley
Humboldt	H. S. Wells
Ida Grove	Dr. T. A. Collett
Independence	E. F. Wulfke
Indianola	Prof. L. Tilton
Iowa City	Prof. A. A. Veblen
Iowa Falls	J. B. Parmelee
Jefferson	Isaac Young
Keokuk	*Fred. Z. Gosewisch
Keosauqua	Prof. J. H. Landes
Knoxville	Casey & Belville
Lacona	Agent C. B. & Q. Ry
Lansing	
Larchwood	Rev. Geo. A. Wickwire
Larrabee	H. B. Strever
Lenox	J. L. Hurley
Le Mars	Dr. T. E. Cole
Leon	Millard F. Stookey
Logan	Mrs. M. B. Stern
Maquoketa	Frank Keeney
Marshalltown	Branch S. Jones
Mason City	J. S. Mills
Monticello	C. E. Heisey
Mount Vernon	Rev. J. W. Hubbard
Mt. Ayr	A. F. Beard
Mt. Pleasant	Dr. Frank T. Stevens
New Hampton	R. H. Gurley
Newton	Hon. J. P. Beatty
Northwood	Dr. J. H. Darey
Odebolt	E. Starner
Ogden	E. Sayre
Olin	Hon. Nathan Potter
Omaha, Neb	*L. A. Welsh
Onawa	C. G. Perkins
Ovid (Corydon P. O.)	H. C. Miller
Osage	G. D. Pattingill
Osceola	Mrs S. Lewis
Oskaloosa	Jos. Boyd
Ottumwa	Dr. J. F. Herrick
Pacific Junction	Agent C. B. & Q. Ry
Pella	L. L. Davenport
Perry	J. A. Harvey
Plover	J. S. Smith
Pomeroy	Jasper N. Marsh
Red Oak	J. S. Cole
Ridgeway	Arthur Betts
Rockford	J. R. Waller
Rockwell City	C. M. Randall
Ruthven	F. M. Fitzgerald
Sac City	J. A. Sodestrom
St. Charles	C. W. Minard
Scranton	Willis E. Lamb
Sheldon	J. B. Frisbee
Sibley	H. G. Doolittle
Sigourney	Mrs. R. F. Ashbaugh
Sioux Center	Jacob de Ruyter
Sioux City	*U. G. Purssell
Spencer	S. Gillespie
Spirit Lake	W. C. Drummond
Stockport	C. L. Beswick
Storm Lake	L. E. Burdick
Stuart	A. S. Raber
Thurman	C. R. Paul
Tipton	F. K. Gregg
Toledo	Herbert Giger
Vinton	T. F. McCune
Villisca	C. E. Matteson
Wapello	Geo. W Schofield
Washington	Wm. A. Cook
Washta	H. L. Felter
Waterloo	M. L. Newton
Waverly	H. S. Hoover
Whitten	Dr. Frank P. Butler
Wilton Junction	J. M. Rider
Winterset	B. L. Sprinkle
West Bend	Phil. Dorweiler
West Union	J. M. Lisher
Woodburn	C B. McDonough

*U. S. Weather Bureau

WEATHER-CROP OBSERVERS.

Reporting for the Weekly Bulletin.

Agency	J. H. Van Zandt
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Algona	J. H. Zanke
Allerton	James Piper
Alta	Jonas Cushman
Audubon	Hon. A. H. Edwards
Blairstown	T. H. Weil
Burt	R. Jain
Cedar Rapids	Hon. A. J. Fuhrmeister
Charles City	W B. Towner
Chariton	C. C. Burr
Clarksville	F. M. Russell
Correctionville	Hon. W. B. Chapman
Corwith	Wm. Oxley
Council Bluffs	L. Prouty
Creston	M. V. Ashby
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Dubuque, R. F. D	Hon F. N. Knoll
Dunlap	Hon. B. F. Roberts
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Elliott	C. B. Hamilton
Emerson	D. B. Nims
Fort Dodge	R. W. Blaine
Fruitland	R. T. Hummel
Geneva	Wm. H. Thompson
Harlan	H. B. Kees
Hesper	G E. Dillingham
Humeston	Hon. S. H. Moore
Independence	Geo. H. Wilson
Indianola	H. D. Guthrie
Ireton	J. M. Sherman
Le Mars	Hon. Henry Schrooten
Manson	J. D. Skinner
Marshalltown	Hon. S. B. Packard
Martinsburg	W. B. Berridge
Mapleton	A. Lamb
Mt. Pleasant	W. S. Wright
Milton	Hon. E. C. Holland
Monroe	J. A. Dibel
Nevada	Geo. C. White
Northwood	T L. Bolton
Orange City	H. J. Vande Waa
Owen	Hon. J. W. Bird
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Red Oak	Hon. C. L. Stratton
Rock Rapids	D. E. F. Merrill
Rossville	T. B. Wiley
Seymour	L. B. Sager
Shenandoah	Reuben Mullison
State Center	E. P. Thompson
Stuart	W. W. Bailey
Toledo	W. G. Malin
Van Horne	Spencer Smith
Waukee	E. J. Leonard
Weldon	Ed. Worden
Winterset	H. A. Kinsman
West Branch	Wrigley Smith
West Union	H. B. Blackman
Wilton	Thos. Boot
Wiota	I. S. Coomes
Woodward	Geo. Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

owa Weather and Crop Service.

VOLUME XIV. FEBRUARY, 1903. No. 2.

EDITORIAL NOTES.

Snowfall in the Texas "Panhandle" of sufficient depth to op railway traffic was a recent novelty, breaking the weather cords in that region for the past twenty years.

* * *

On the average the winter has been fairly mild and favor- le for this latitude. December was a little colder than usual, t January was warmer than the average, and February ought no very severe storms. The forecast made by some eatherwise people, that the winter's snowfall would be corre- ondingly heavy as the summer's rainfall, came far short of rification.

* * *

A farmers' mutual insurance company of a county in a estern state paid $2,375 on thirty-nine losses during the year. this amount $2,284.84 was for losses caused by lightning, ock killed, while only $129 75 was paid out for fire losses. his goes to show that lightning in these days of barbed wire nces is a very destructive agent —*J. S. Trigg*.

* * *

The bureau of forestry will this year begin experimenting nong the sand hills of northwestern Nebraska, to see if they ay be made to grow valuable timber. A nursery has been tablished at Halsey, Nebraska, and seed of yellow pine, jack ne, and red cedar will be planted this spring About 100 res will be uses for experimental work this year, and it is pected in time to extend the forest over a large part of the ebraska reserves The experts believe the experiment will be ccessful.

* * *

Mr. C. W. Hawley of Fort Dodge, contributes an interesting scription and a graphic representation of parhelia observed himself and others about 11 a m. on February 7th. There ere three brilliant "mock suns" within a bright aureole circling the zenith and in contact with the sun at the south. he phenomenon continued about half an hour The sky was ue, with a light haze, following snowfall of about six inches rlier in the day It was a rare but not an unprecedented sight der certain peculiar atmospheric conditions Observer L. E. urdick at Storm Lake observed the phenomenon, and made a ncil sketch of the rings and luminous spots.

* * *

In a signed letter addressed to the editor of the Cincinnati *rice Current*, Prof. Willis L. Moore, chief of the weather ureau, says: "No reputable scientist will today essay to make ng-range predictions. With our present knowledge of eteorological science such forecasts cannot be made with any arked degree of accuracy. Of course, anyone, with a proper nsideration of the weather that usually occurs in a season,may ake long range predictions and have some of them verified, ut such work is worse than useless. If it were possible to ake reliable long-range forecasts the weather bureau, with its rps of trained scientists, would surely do such work for the eople, as no one can overestimate the immense benefit that gricultural and commmercial interests would reap from a nowledge of what the weather would be during an advancing rop season."

THE DISTRIBUTION OF RAINFALL.

(*A. S. Henderson Ph. D., in November, 1902, Harpers.*)

Rainfall, an agency at first sight so humble, is, through the ultimate dependence of all life upon vegetation, an essential link in the chain which connects the lowest and the highest forms of life. The difference in the vegetative covering in low lands is due not so much to variation in sunshine or tempera- ture as to the differences in the distribution of the third factor —moisture.

The moisture of the atmosphere has not until recently been so thoroughly studied as temperature or pressure and winds. Yet it plays an all important part in the world's economy. Water is the life blood of the organic world, penetrating to all parts of it, purifying the air and fertilizing the land. As cloud it screens the earth' surface from the scorching sun's rays and protects it from excessve radiation. When it is deficient, extremes of temperature are great and vegetation is scanty; when it is abundant, climate is relatively equable and vegeta- tion is prolific. The distribution of water available for plant growth is therefore a question of supreme practical importance.

The measurement of rainfall is very simple when proper precautions are taken. The amount precipitated is usually expressed in terms of the depth to which it would cover the land were none to sink into the ground and none to be evapor- ated. Millions of observations have been made on rainfall. The map of the rainfall of the world is based on returns from nearly 9,000 stations, and if we consider fifteen years as the average period of observation at each station, which is consid- erably under the mark, it represents 50,000,000 observations taken in different parts of the world.

The scientific study of rainfall distribution has been mainly the work of the last quarter of a century. The first tempera- ture map of the world was made by the great Humboldt in 1817; that of pressure by Dr. Buchan of Edinburg in 1869; while the first quantatitive map of rainfall was made just twenty years ago by Prof Loomis of Yale. Since that time Dr. Supan of Gotha and the present writer have independently made public maps, embodying more recent results, in 1898.

By examining a map of the rainfall of the world, we notice at once that rain is very unevenly distributed. In many inter- tropical lands over eighty inches falls every year, while arctic circles are correspondingly dry. Arctic aridity and equatorial rains are partly expressions of the temperature differences. The warmer air holds more water in a state of vapor than the colder air, and the same degree of cooling brings about a much greater precipitation in the hotter regions. A cubic foot of air over the Caribbean Sea at 80° F. can hold 10.95 grains of water in the state of vapor, whereas at Boston at 50° F. it can hold 4 09 grains, and over Hudson Bay at 20° F. only 1.30 grains. Supposing the cubic foot of air at these places was suddenly cooled by 10° F. which is roughly what would happen were it rap- idly elevated to 3,000 feet above the sea, then it could contain only 7.99 grains of water vapor at the Caribbean Sea, 2.86 grains over Boston, and 0.84 grains over Hudson Bay, forcing 2 96 grains to be precipitated in the first case, 1.23 grains in the second case, but only 0.46 grains in the third. Without going into further details, it is obvious from this that the possibilities

of heavy precipitation due to cooling diminish from the thermal equator to the thermal poles.

The divisions of the world by rainfall are of the greatest practical consequence. Each has its characteristic vegetation, and, speaking generally, the economic products of one region of each group can be grown in any corresponding region as far as climate is concerned. An instance in point is the similar distribution of Mediterranean climates and Mediterranean fruits.

Many economic problems in which rainfall is a factor present themselves for consideration, of which one or two may be mentioned as typical. There is an inferior and a superior limit of rainfall for each crop. Very little wheat is grown in the United States to the drier western side of the line where the mean annual precipitation is twenty inches. In England wheat growing is concentrated in the eastern counties, where the rainfall is less than thirty inches per annum, and in Scotland it is cultivated in similarly dry areas. In South Australia special attention has been paid by Sir Charles Todd to the relationship between the yield of the wheat crop and rainfall. The figures of average rainfall and average yield for the agricultural lands of south Australia show how very close is the connection between them.

Natural grass and fodder plants flourish best where the rainfall is uniformly distributed, and their economic value, as measured by the number of animals they can support, steadily increases with rainfall Mr. J. T. Wills shows that in Australia land receiving less than ten inches of rainfall per annum is worth next to nothing unless it can be irrigated; with ten inches of rain eight or nine sheep can be kept per square mile; with about twenty inches of rain, 640 sheep per square mile, eighty times as many; and with thirty-four inches of rain in Buenos Ayres, a square mile will support the enormous number of 2560.

The day of the medicine man with his rain-making charms is past. The future belongs not to the magician who attempts to interfere with the laws of nature, but to the man of science who can state with something approaching to certainty how they will operate under given conditions. Of all those who contribute to the cause of human progress, and the transferrence of human activites from the sphere of the accidental to the sphere of the causal, none perhaps are concerned with weightier issues than the men who patiently and persistently, day by day and season by season, measure and compare, compare and measure, the rainfall of their little districts. We may forgive the meteorologist his uninteresting statistics when we reflect that in their trustworthiness and in their right interpretation may lie the future of an abundant food supply and even of industries yet undeveloped.

PRACTICAL VALUE OF THE WEATHER SERVICE.

(From J. S. Trigg's Farm Notes.)

It costs this country $1,250,000 annually to maintain the weather signal service, and a friend writes us asking what it amounts to and what goood it does. Where a man's view is contracted so that he can only take in his immediate local conditions it is not strange that such a question should be asked. This service from a small beginning has been gradually extended so as to cover nearly the whole country. It furnishes the only reliable data as to rainfall, force of winds, varying temperature and barometrical readings. The reports from its agents are tabulated in each state, and very accurate forecasts can thus be made of coming marked changes in the weather. The value of these reports as applied to the coast and lake shipping interests is almost inestimable, while for the agricultural and horticultural interests of the country immense good results. A warning recently given out by the weather bureau saved the people of Florida millions of dollars, and a late notice given of a coming cold wave prevented shippers of perishable products from losing an enormous sum of money. The records thus made of the rainfall in any locality constitute the most reliable information to be obtained as to whether such locality is fit for settlement and cultivation or not. Perhaps if the weather service assumed to be wise enough to forecast the weather a year ahead, as do some so called weather prophets, those who doubt its value might have more faith in it. It is one of the best organized and most useful departments maintained by the general government.

IOWA FARM PRODUCTS.

Concerning some of the major and minor products of Iowa, William E Curtis of the *Chicago Record-Herald*, writes as follows:

George Fayette Thompson of the bureau of animal industry of the Agricultural Department has been making a very interesting comparison between Iowa and other of the great agricultural states in this respect, and secretary Wilson approves the totals. In 1900 the number of poultry in Iowa over three months old was 20,043 343, and they were worth $6,535,464 A comparison of values with previous census years cannot be made, as the census of 1890 only gave values. The value of poultry products for one year, when compared with that of poultry for one year is sufficient to cause astonishment For instance, the value of poultry on the farms of Iowa, as has been stated, was $6,535,464 while the poultry and eggs sold off the farm amounted to $19,508,526. Of the latter sum $10,016,707 was for eggs and $9,491,819 was for poultry. The number of dozens of eggs laid in Iowa in 1899 was 99,621,920, which was an increase of about 20,000,000 dozen over 1889. The average price per dozen of the eggs was 10 cents. The value of all animal products on the Iowa farms was $169,858,981, poultry products forming 11.5 per cent of the whole. The animals sold; with a value of $113,078,523, and the dairy products, with a value of $27,516,870, were the only two products worth more than poultry and eggs. The statement below shows the relative position of poultry in the farm economy of Iowa:

Animals sold	$113,078,523
Corn	97,297,707
Oats	33,254,987
Hay and forage	30,042,246
Dairy products (milk, butter and cheese)	27,516,870
Poultry and eggs	19,016,707
Wheat	11,457,808

LET IN THE SUNSHINE.

Spring is coming and with it sunshine and greater warmth. Do not shut out the sunshine. It is Nature's great healer and preventive of sickness. In the Mammoth Cave of Kentucky, there is a wonderful uniformity of temperature and because of this there was a belief that consumptives might be benefited by a residence there. So huts were built and the experiment tried. It was not a success. There was quiet there; there were no adverse winds, but there was darkness, impenetrable darkness, where artificial light was not used. There was no sunshine, and its absence counteracted all the benefits derived from pure air, uniformity of temperature and quiet.

Invite the sunshine into your home. Don't allow the house to be so shaded by trees that it will be darkened or dampened thereby. Especially let the sunshine into the sick room. The patient needs its health-giving as well as cheering rays. The sunlight will not only warm, but purify the air and destroy

ɔase germs. As vegetation sickens, dies or has an unhealthy wth in the shade; so animal life loses its vitality, droops and ɜ without the invigorating influence of sunshine. Don't shut the sunshine!—*Iowa Health Bulletin.*

CLIMATOLOGY OF THE MONTH.

BAROMETER—Mean pressure, 30.16 inches; highest observed, 68 inches, at Des Moines, on the 18th; lowest observed, 29.37 hes, at Davenport, on the 3d; range for state, 1.31 inches.

TEMPERATURE—The monthly mean temperature for the te, as shown by the records of 108 stations, was 19.8 degrees, ich is 0.2 degree below normal. By sections the mean tem- atures were as follows: Northern section, 17.2 degrees; ıtral section, 20 2 degrees; southern section, 22.1 degrees. The ghest monthly mean was 26 4 degrees at Keokuk; lowest nthly mean, 14 2 degrees, at Estherville. The highest tem- rature reported was 56 degrees, at Eldon on the 2nd; lowest nperature reported, -21 degrees, at Clear Lake, Estherville d Sioux Center, on the 16th, 17th and 18th. The average nthly maximum was 45 7 degrees; aveage monthly minimum, 3 4 degrees. Greatest daily range, 44 at Villisca; average greatest daily ranges, 35.8.

PRECIPITATION—Average precipitation for the state, as own by records of 120 stations, was 1.18 inches, which is 09 an inch above normal. The averages by sections were as llows: Northern section, 1.02 inches; central section, 1.13 inches; uthern section, 1 38 inches. The largest amount reported was 25 inches at Danville; least amount reported, .30 of an inch, Galva. The greatest daily rainfall reported was 1 50 inches Indianola, on the 4th. Average number of days on which 1 of an inch or more was reported, 4.

WIND AND WEATHER—Prevailing direction of the wind, rthwest; highest velocity reported, 52 miles per hour, from e northwest, at Sioux City, on the 28th. Average number of ear days, 13; partly cloudy, 7; cloudy, 8

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced	EXTREMES			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
avenport	30.11	30 58	18	29 37	3
es Moines	30 18	30 68	18	29 48	27
ubuque	30.14	30.56	18	29.39	28
maha, Neb	30 19	30 75	18	29 38	27
eokuk	30 14	30 65	18	29 39	3
ioux City	30.20	30 61	18	29 41	27
Means	30 16	30.68	18	29. 37	3

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	5688	32	NE	3
Des Moines	6521	32	NW	28
Dubuque	5358	32	NW	18
Keokuk	5991	31	W	28
La Crosse, Wis	5784	38	N	28
Omaha, Neb	7191	41	N	28
Sioux City	8426	52	NW	28

OBSERVERS' NOTES.

ALTA—*David E. Hadden.* Blizzard nearly all day the 3d. Second decade very cold; warm and thawing latter part of month.

ATLANTIC—*J. W. Love.* February was a pleasant month. Quite an electrical display in southeast on night of 2d.

BONAPARTE—*B. R. Vale.* A pleasant month; coldest of the season 16th to 20th; roads very muddy at close of the month.

BRITT—*Geo. P. Hardwick.* Excepting from 15th to 20th the month was comparatively mild, with light snowfall, allowing stock feeding in stalk fields.

CLEAR LAKE—*John Cobb.* No bad storms; ideal weather most of the month.

CLINTON—*Dr. Luke Roberts.* February, 1903, was a disappointment to many weather prophets who had avertised an extra cold month as well as a very stormy one. While there was one excessively severe and widespread storm period about the middle of the month, its behavior during other portions entitles it to be entered in the column of mild Februaries.

The month came in cloudy and sustained that record to the number of three cloudy days above normal and three per cent of cloudiness above normal, while the clear days were one less than normal. The storm days were 8 in number, each giving light precipitation, so that the total rainfall was only 1 29 inches, being 67 hundreths of an inch below normal This was principally in the form of snow which, in depth, measured 9½ inches. There were three days, the 16th, 17th and 18th, which gave a mean temperature below zero of 1.5 degrees, 1.7 degrees and 1 degree respectively. The mean temperature for the month was 23 9 degrees, or 2 6 degrees above normal. The maximum temperature was 52 degrees, occurring on the 27th, being 1.3 degrees above normal.

Following is given some season comparisons of the last 25 winters, that is the time embraced in the three months commencing on the first of December. There is found great variation both in rainfall and temperature, especially in the latter. The mean daily temperature for this period was 21 4 degrees. For the winter just closed the mean temperature was 23 degrees or 1.6 degrees above the 25 year average, which is a small variation from normal, but enough to entitle it to a place among the warmer winters.

The highest average winter temperature for the 25 years, was 31 degrees, credited to the winter of 1899–00. The lowest average was 14 degrees, occuring in the winter of 1892–93, making a range of 17 degrees, which aggregated by its multiplication with the number of days in a winter, which is 90, would give to the latter winter 1,260 degrees of heat less than is embraced in the former.

The maximum temperature for the 25 winters was 67 degrees credited to February, 1891. The minimum temperature was 36 degrees below zero, credited to January, 1884. Approximating this terrible cold period may be mentioned a record of 33 degrees below zero in February, 1885, and one of 30 degrees below zero in December, 1886. It will be noticed that these three low records occured in three continuouos winters. Those winters can never be lost to the memory of those who experienced the inflexibility of the extreme and prolonged cold, when the minimum temperature would range from 4 to 36 degrees below zero for 16 consecutive days, and the earth frozen six feet down.

The total precipitation for the 25 winters was 11.75 feet. About one-half of that amount came in the form of snow, equaling fifty feet in depth, or an average of two feet per winter. The winter of 1884–85 furnished four feet of snow.

EARLHAM—*Geo. Phillips.* Cool and cloudy; ground bare at close of month; first flight of wild ducks on 27th.

ELKADER—*Chas. Reinecke.* Ice went out of Turkey river on 27th.

GRAND MEADOW—*F. L. Williams.* Month generally pleasant; no bad storms.

RIDGEWAY—*Arthur Betts.* Month mild; 3° above normal; 220 hours of sunshine; coldest weather of the winter 15th to 21st, with a mean of 5 degrees; about one-tenth of the corn remains to be husked.

BELATED REPORTS.

FAYETTE—January. Mean temperature, 19.3°; highest, 43° on the 29th and 31st; lowest, -9 on the 12th; greatest daily range, 33; total precipitation, 04 inch; greatest 'in 24 hours .04 inch; total snowfall 0.5 inch; prevailing direction, northwest Number of clear days 12, partly cloudy 8, cloudy 11, rainy 1.

MT. PLEASANT—January Mean temperature; 24.2°; highest, 52° on the 16th; lowest, -5° on the 12th, greatest daily range 34; total precipitation .15 inch; greatest in 24 hours, .10 on the 4th; prevailing direction, northwest; total snowfall, 1.0 inch. Number of clear days 12, partly cloudy 9, cloudy 10, rainy 2.

PELLA—January. Mean temperature, 24.4°; highest, 49° on the 31st; lowest, -5 on the 12th; greatest daily range 34; prevailing direction, northwest. Number of clear days 13, partly cloudy 0, cloudy 18.

VILLISCA—January. Mean temperature 26.4°; highest 50° on the 15th and 16th; lowest, -5° on the 12th; greatest daily range, 36; total precipitation .05 inch; greatest in 24 hours; .05 inch; total snowfall, 0.5 inch; prevailing direction, northwest. Number of clear days 12, partly cloudy 13, cloudy 6, rainy 1.

STOCKPORT—January. Total precipitation .39 inch; greatest in 24 hours .10 inch on the second; total snowfall 3.8 inches; prevailing direction, northwest. Number of clear days 14, partly cloudy 3, cloudy 14, rainy 8.

ERRATA IN JANUARY REIVEW.

ALTA—Mean temperature recorded 23.6° on page 6, should have been 21.6°. Mean minimum temperature recrded 15.5° on page 8, should have been 11.5°.

COLLEGE SPRINGS—Mean temperature recorded 27.4° on page 7, should have been 27 2°. Mean minimum temperature recorded 18 7° on page 8, should have been 18.4°.

COLUMBUS JUNCTION--Mean temperature recorded 24 4° on page 7, should have been 24 5°. Mean maximum temperature recorded 32 3° on page 8 should have been 32.6°.

BURLINGTON--Maximum temperature recorded 53° on the 1st, should have been 66° on the 28th on page 7.

GRINNELL--Total snowfall recorded 3 8 inches on page 6, should have been 2 8 inches.

OGDEN—Mean temperature recorded 23.0° on page 6, should have been 23.7°. Total precipitation recorded .16 inch on pages 6 and 10, should have been .18 inch.

OTTUMWA--Total snowfall recorded 3.8 inches on page 7, should have been 4.8 inches.

CLIMATOLOGICAL DATA FOR FEBRUARY, 1903.

NORTHERN SECTION

STATIONS	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT							PRECIP., IN INCHES				Number rainy days	SKY			Prevailing direction of wind	DATES OF THUNDERSTORMS.
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)		Number clear days	Number partly cloudy days	Number cloudy days		
Algona	Kossuth	1,213	28	17.0	- 0.2	40	23, 26, 27	-20	17	33	.95	- .38	.40	5.5	5	10	13	5	NW	
Alta	Buena Vista	1,513	11	15.9	- 0.7	40	10, 22	-19	16	30	.93	† .14	.40	6.1	5	15	7	6	NW	
Alta (near)	Buena Vista										.90		.40	6 5	6					
Britt	Hancock	1,236	5	16.6	- 0.6	43	26	-19	16, 17	40	.63	- .24	.29	3.4	5	7	16	5	NW	
Charles City	Floyd	1,012	11	19.8	† 3 9	44	1, 26	-17	18	29	.50	- .81	.26	2.4	2	16	7	5	W	
Clear Lake	Cerro Gordo	1,241		16.0		42	26	-21	16, 18	40	.62		.35	3.8	3	15	8	5	NW	
Decorah	Winneshiek	875	8	18.1	† 3.1	43	10, 27	-18	18	38	1.09	† .16	.52	9 2	4					
Dows	Wright	1,142		18.0		42	1	-20	17	39	1.45		1.00	11.0	4	19	2	7	NW	
Elkader	Clayton	727	21	20 6	† 2 3	52	26	-15	17, 18	41	1.46	† .35	1.00	12.0	2	14	9	5	NW	
Estherville	Emmet	1,298	7	14.2	- 1.5	40	26	-21	17	34	1.01	† .34	.90	9.0	3	23	3	2	NW	
Forest City	Winnebago	1,226	8	15.7	† 0.7	40	26	-20	16	40	.80	† .03	.40	4.0	2	16	6	6	W	
Grand Meadow	Clayton	1,180	11	17.0	- 0.3	44	10	-18	18	27	1 18	† .16	.57	6 2	5	13	9	6	NW	
Greene	Butler	924	5	19 1	† 2 5	44	26	-16	18	29	.81	- .17	.38	5 0	4	10	8	10	NW	
Hampton	Franklin	1,155	12	18.6	† 1.9	46	1	-17	17, 18	36	1.52	† .39	.95	13.9	4	11	14	3	NW	
Hanlontown	Franklin			16.4		45	28	-20	6	41			.37			19	5	4	NW	
Humboldt	Humboldt	1,095	10	18.2	† 1.2			-17	18	36	.43	- .22	.42	T	2	22	0	6	NW	
Larrabee	Cherokee	1,366		16.4		45	22	-20	16, 17	36	1.13		.67	10.4	4	15	9	4	SW	
Le Mars	Plymouth	1,224	6	15.8	- 1.3	43	22	-19	18	33						19	7	2	S	
Mason City	Cerro Gordo	1,132		20.4		44	26	-15	16, 18	31	1.11		.73	7.4	3	15	7	6	NW	
New Hampton	Chickasaw	1,169		17.2		43	25	-19	18	36	.60		60	6.0	1	13	8	7	NW	
Northwood	Worth	1,222	6	17.8	† 2.8	42	25	-19	16	39	1.12	- .12	.60	6.5	3	17	7	4	NW	
Osage	Mitchell	1,184	11	17.6	† 3.2	43	25	-18	18	35	1.05	- .15	.60	6.9	5	12	9	7	NW	
Plover	Pocahontas	1,190	5	16 0	- 0.7	41	22, 26	-20	16, 18	37	.57	- .09	.30	3.5	3	20	4	4	W	
Ridgeway	Winneshiek	1,215		19 8		48	26	-18	17, 18	38	2 05		1.11	9 0	11	16	9	3	NW	
Sheldon	O'Brien	1,422		15 2		42	26	-20	17	38	1 57		1.00	12.7	4	14	5	9	N	
Sibley	Osceola	1,512	8	15.9	† 0.5	42	22, 26	-18	16, 18	28	.50	† .02	.20	5.0	5	8	18	2	NW	
Sioux Center	Sioux			15.0		40	22, 26	-21	17	35	.90		40	7.0	5	8	13	7	NW	
Spirit Lake	Dickinson	1,458	8	14 6	- 1.3	40	22	-20	17	32	1.00		.80	10.0	2	23	1	4	NW	
Storm Lake	Buena Vista	1,440	7	16.5	† 1 5	40	22	-20	16, 18	34	1.11	† .46	.62	5.0	4	19	2	7	SW	
Washta	Cherokee	1,157									1.20		.60	9.0	3	20	5	3	S	
Waverly	Bremer	942	6	18.9	† 0.4	45	10	-16	18	38	1.49	† .41	.85	11.4	8	11	11	6	NW	
West Bend (a)	Palo Alto	1,197	8	16.4	† 0.1	43	10	-19	16	38						11	13	4	NW	
Average				17.2	† 0.8	43.5		-18.7		35.4	1.02	† .02		7.4	4	15	8	5	NW	

CENTRAL SECTION.

Amana	Iowa	721	25	21.7	† 1 6	49	1	-13	17, 18	39	1.47	† .19	.57	10.9	8	10	9	9	NW	
Ames	Story	926	20	19 6	- 2.3	47	22	-14	16, 18	40	.94	† .07	.35	5.0	5	18	5	5	NW	
Baxter	Jasper	998		20.8		45	1, 26, 27	-15	18	40	1.15		.50	5.5	4	10	3	15	NW	
Buckingham	Iowa										.61		.40	5.2	6	9	14	5		
Carroll	Carroll	1,265	12	19.0	‡ 0.0	44	22, 24	-18	16, 18	35	1.29	† .14	.75	9.5	4	17	6	5		
Cedar Rapids	Linn	733	19	22 4	† 1.6	48	1	-12	18	37	.74	- .85	.10	8.0	3	8	9	11	NW	
Clinton	Clinton	609	34	23.4	† 1 3	52	27	-16	17	37	1.29	- .85	.65	9.5	8	8	7	13	NW	
Davenport	Scott	606	31	23 6	- 1 7	50	27	-13	17	27	1.67	† .10	.83	14.2	6	11	7	10	W	
Delaware	Delaware	1,083	11	19 2	† 2.8	46	26	-16	18	34	.77	- .09	.61	2.2	4	14	8	6	NW	
Denison	Crawford	1,180	8			50	1				1.45		.50	9.5	5	22	2	4	N	
Des Moines	Polk	861	24	21.9	- 1.2	46	22	-13	18	34	1.12	- .16	.75	9.1	6	6	14	8	SW	
De Soto	Dallas	866																		
Dubuque	Dubuque	655	29	22.4	- 0.2	49	26	-14	18	38	1.19	- .27	.55	6.0	8	9	6	13	NW	
Fort Dodge (a)	Webster	1,126		16 8		47	1, 23			41	.83		.40	5.3	5				SW	
Galva (b)	Ida	1,290	8	16.9	- 1.0	43	1	-20	16	35	.30	- .20	.20	3.0	2					
Gilman	Marshall	1,052									.83		.43	4.0	3	12	8	8	S	
Grinnell	Poweshiek	1,023	9	20.8	- 0.3	45	1	-13	18	29	1.92	† 1.09	.84	11.5	5	11	11	6	N	
Grundy Center	Grundy	976	11	19.8	† 2.0	45	10	-15	17, 18	39	.90	† .19	.43	5.5	7	11	7	10	SW, NW	
Guthrie Center	Guthrie	1,077	6	20.0	- 0.2	44	22	-17	18	39	.49	- .26	.49	7.0	4	10	11	7	NW	
Harlan	Shelby	1,192		18.1		43	10, 22	-18	17, 18	38	1.27		.54	9.0	7	6	15	7	N, SW, W	
Independence	Buchanan	921	38	10.0	- 1.0	45	26	-15	18	36	.82	- .20	.48	6.8	6	14	8	6	SW	
Ida Grove	Ida	1,220		17.9		48	2	-20	17	42	1.37		.69	4.2	4	15	7	6	SW	
Iowa City	Johnson	685	43	22.2	- 0.9	49	1	-13	17, 18	40	1 03	- .50	.38	7.0	4	10	13	5	S	
Iowa Falls	Hardin	1,107	9	16.8	† 1.5	42	22, 26, 27	-16	18	40	1.35	† .39	.60	9.5	5	16	5	7	NW	
Jefferson	Greene	1,052									.98		.50	6.8	3				NW	
LeClaire	Scott	576									1 04		.51	7.3	8					
Logan	Harrison	928	35	20.2	- 3.5	45	10	-17	17	41	1.46	† .24	1.00	14.0	5	20	2	6	NW	
Maquoketa	Jackson	688	9	22.2	‡ 0.0	49	1	-15	17	35	.82	- .70	.53		5	14	7	7	NE	
Marshalltown	Marshall	947	9	22.0	† 1 7	47	22	-14	18	39	1.14	† .35	.55	8.5	8	8	11	9	NW	
Monticello	Jones	925	48	21.8	† 0.8	47	9	-15	18	30	1.50	- .17	.80	7.0	3	6	12	10	NE	
Mt. Vernon	Linn	847	35	21.6	† 0.3	52	1	-15	17, 18	35	1.05	- .11	.43	6.7	8	14	2	12	NW	
Newton	Jasper	944	14	20.6	‡ 0.0	45	1	-17	8	39	1.65	† .61	.80	16.0	5	12	9	7	N	
Odebolt	Sac	1,356	5	18 2	† 0.6	44	1	-16	16, 18	29	.79	† .04	.35	4 0	3	19	2	7		
Ogden	Boone	1,087	8	20,0	† 0.3	46	1, 10, 26	-17	16, 18	39	.95	† .30	.40	6.5	4	18	0	10	NW	
Olin	Jones	760		21 5		48	1	-15	18	35	1.64		1.00	5.8	5	12	7	9	NW	
Onawa	Monona	1,053		20.0		48	22	-15	17, 18	32	1.62		.55	10 7	9	19	0	9	NW	
Perry	Dallas	975		20.2		45	22, 28	-14	16, 18	31	1.10		.50	7.8	4					
Rockwell City	Calhoun		5	19.2	† 2.6	45	1	-18	16	36	.60	† .04	.50	1.0	2	14	4	10		
Sac City (a)	Sac	1,278	22	18.0	- 1.0	41	1, 21	-17	16, 17	33	1.10	† .13	.55	7.5	3	14	6	8	NW	
Scranton	Greene	1,172		18.2		42	22	-15	16	36	1.37		.53	10.0	4	18	4	6	NW	
Sioux City	Woodbury	1,165	13	16 1	- 2.9	45	22	-18	18	31	.66	† .11	.39	10 2	5	11	9	8	S	
Tipton	Cedar	807		23.3		48	26	-12	18	28	1.17		.42	7.5	4	15	6	7	SW	
Toledo	Tama	856	8	20.9	† 1.3	45	1, 10, 22	-14	18	41	.97	† .28	.68	8.0	3	13	5	10	NW	
Vinton*§	Benton	810	12	21.4	† 1.2	47	26	-12	17		.78	- .22	.40	6.0	4	16	1	11	NW	
Waterloo	Black Hawk	862	15	20.2	† 2.0	47	1	-15	18		1.37	† .23	.74	10.2	9	14	7	7	NW	
Wilton Junct'n	Muscatine	683	7	21.3	† 2.0	47	1	-16	17	36	1.90	† .44	.70	7.0	7	13	0	15	NW	
Whitten	Hardin	1,036		19.3		44	22	-18	18	40	1.25		.50	12.0	4	12	9	7	NW	
West Branch	Cedar	718									.99		.42	5.8	5	9	7	12	NW	
Waukee	Dallas	1,039									1.38		.80	11.0	4	8	8	12	NW	
Average				20.2	† 0.2	43.9		-15.6		36.1	1.13	† .01		2.8	3	13	7	9	NW	

CLIMATOLOGICAL DATA FOR FEBRUARY, 1903--CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC., IN INCHES.					SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	7	21.6	-0.7	50	1	-14	18	33	.96	- .17	.40	8.0	5	10	6	12	SW	
Albia	Monroe	959	....	23.4	.....	53	1	-14	17	33	1.46	.....	.88	12.0	4	11	10	7	NW	
Atlantic	Cass	1,164	11	20.3	-0.7	45	22	-15	5	42	2.10	†1.11	1.20	14.0	3	9	4	15	SW, NW	
Audubon	Audubon	1,301	8	17.4	-1.8	43	22	-17	18	35	.49	- .31	.35	3.7	4	17	4	7	SW	
Allerton	Wayne	.....	...	23 0	.....	55	1	-16	17	40	1.17	.....	.60	5.8	7	9	14	5	SW	
Bedford	Taylor	.....	....	20.8	.....	52	1	-17	17	39	1.13	.....	.48	4.8	4	12	3	13	SW	
Bonaparte	Van Buren	.....	10	23.1	-0.2	49	1	-17	17	35	1.92	† .61	1.28	11.5	3	....	....	....	.....	
Burlington	Des Moines	544	....	25.0		50	27	-18	17	29	1.98	.....	.99	6 9	7	11	7	10	SW	
Chariton	Lucas	1,042	7	22.5	-0.2	53	1	-14	17	41	1.14	† .11	.45	3.2	7	12	6	10	N	
Clarinda	Page	1,069	12	22.4	-0.9	52	1	-14	18	37	1.18	† .10	.71	9.0	7	12	7	9	NW	
College Springs	Page	....	10	22 0	-1 8	51	1	-14	18	36	.92	† .02	.42	5 0	4	16	5	7	NW	
Columbus Jct.	Louisa	595	..	22.5	.....	47	27	-15	17	31	1.42	.....	.56	14 6	9	14	9	5	NW	
Corning	Adams	1,127	10	20.9	-1.9	48	1	-15	18	36	1.05	† .22	.35	8.0	8	11	11	6	SW	
Council Bluffs	Pot'wat'mie	990	5	23.1	†0.5	.....	.....	-13	18	...		...	....		4	7	15	6	NW	
Cumberland	Cass	.....	....	.....	.....	....	.....	.....	.....	....	1.00	.....	.60	10 0	3	14	4	10	N	
Danville	Des Moines	726	....	.....	.....	.....	.....	.....	.....	...	3.25	.....	1.25		5	9	2	17	.....	
Earlham	Madison	.....	....	18 1	. . .	46	1, 22	-15	18	38	1.57	.....	.62	11.8	4	10	5	13	NW	
Eldon	Wepello	630	....	21.4	.....	56	2	-20	16	43	1.14	. .	.32	8.9	6	16	0	12	NW	
Fort Madison	Lee	516	51	.....	.....	.....	.....	.....	.....	.....	1 03	- .94	.50	7 0	4	9	4	15	SW	
Greenfield	Adair	.....	11	20.6	-0.7	47	1	-16	18	34	1 13	† .03	.64	9.8	8	13	9	6	SW	
Hopeville	Clarke	.....	11	.....	...	.....	.....	.....	.....	.....	.77	- .11	.41	..	8	...	....	....	.....	
Indianola	Warren	969	11	22.5	-0.3	49	1	-13	18	32	2.58	†1 83	1.50	7.5	5	18	2	8	NW	
Keokuk	Lee	619	31	26.4	-1.9	51	27	-13	17	28	1.42	- .29	.69	6 1	9	10	7	11	SW	
Keosauqua	Van Buren	664	10	23.0	-1 6	50	1	-15	17	40	2.09	† .60	1.25	11.0	7	...	...	...	.....	
Lacona	Warren	.....	....	.....	.....	...	.....	.....	.....	...	1.04	.....	.40	5.0	7	....	....	....	.....	
Lenox	Taylor	1,250	7	20 4	-2.4	44	10, 22	-17	18	33	.98	† .28	.40	5.8	7	15	6	7	NW	
Leon	Decatur	1,120	....	23.2	.....	52	1	-12	17, 18	34	1 03	.....	.38	6.6	8	17	9	2	N	
Mt Ayr	Ringgold	1,236	8	22 8	†0.3	53	1	-16	17	34	1.c8	† .00	.60	10.8	7	10	3	15	NW	
Mt. Pleasant	Henry	729	20	24.3	†0 7	55	11	-16	17	36	.32	- .74	.30	3 2	3	12	6	10	NW	
Omaha, Neb	Douglas	1,113	32	21.1	-3.9	47	22	-15	18	34	1.12	† .33	.68	8.4	7	8	9	11	N	
Osceola. (a)	Clarke	1,130	6	21.6	†1.1	52	1	-15	18	37	.90	- .18	.40	9.0	4	....	....	..	N	
Oskaloosa	Mahaska	843	18	21 4	‡0.0	49	1	-14	17	41	.79	- .29	.28	7.8	8	12	3	13	NW	
Ottumwa	Wapello	649	8	25.0	†1.9	50	1	- 9	17, 18	34	2.51	†1.43	.80	15.1	5	10	11	7	W	
Ovid	Wayne	992	9	23.5	†1.4	54	1	-15	17	40	1.55	† .09	.57	6 3	7	10	5	13	SW	
Pacific Junction	Mills	960	....	20.8	....	44	22	-15	18	35	1.04	....	.60	6.9	7	13	8	7	S	
Red Oak	Montgom'ry	1,032	....	23.2	....	44	1	-10	18	28	1.70	.....	1.13	14.5	5	9	15	4	SW	
St. Charles	Madison	1,070	....	22.5	.....	51	1	-13	18	35	1.15	.....	.60	6.8	7	12	8	8	NW	
Sigourney	Keokuk	787	6	23 3	†1.5	51	1	-14	17	39	1.40	- .03	.64	9.5	4	10	11	7	NW	
Stockport	Van Buren	.....	....	..	.....	.....	.....	.....	.....	...	1 56	.....	.56	6.0	5	9	4	15	NW	
Thurman	Fremont	....	....	20.0	...	44	22, 25	-15	18	33	2.45	...	1.10	....	5	15	2	11	SW	
Villisca	Montgom'ry	1,058	8	21.0	-1.5	48	11	-15	18	44	1.61	† .57	.97	14.5	5	14	14	0	NW	
Washington	Washington	769	20	20 7	-2.3	47	1	-17	17	36	1.43	† .34	.85	12.5	6	....	...	....	NW	
Winterset	Madison	1,129	11	21.6	-0.3	52	1	-14	18	41	.95	† .02	.60	6.0	2	12	9	7	S	
Woodburn	Clarke	961	....	.....	...	.....	.....	.....	.....	.....	1 72	.....	1.21	6.2	5	14	4	10	NW	
Average		.....	.....	.....	-0.6	49.6	.....	-14 8	.....	36.0	1.38	† .17	.....	8.5	6	12	7	9	NW	
Av. for the state		.....	.....	19 8	†0.1	45.7	.....	-16.4	.....	35.8	1.18	† .07	.....	7 9	4	13	7	8	NW	

*Means determined from 7 A. M., 2 P M, and 9 P. M. observations, and maximum and minimum are taken from eye readings. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. §Not supplied with self registering instruments. † Above normal.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR FEBRUARY, 1903.

STATIONS.		DATE.																													Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max.	50	45	25	23	25	23	29	31	42	44	44	33	23	23	20	3	12	18	24	38	33	44	40	40	42	43	42	36	..	..	..	32.0
	Min.	31	15	14	11	0	3	12	9	10	33	28	19	8	13	2	-13	-11	-14	-1	5	11	18	14	16	16	20	32	15	..	..	..	11.3
Albia	Max.	53	45	28	28	33	23	28	33	47	47	46	39	24	24	23	6	11	10	23	40	32	43	36	39	41	45	44	38	..	..	..	33.2
	Min.	37	19	17	12	0	2	17	19	18	35	27	23	10	13	4	-11	-14	-13	-2	4	12	12	28	15	20	23	34	17	..	..	..	13.5
Algona	Max.	38	25	15	17	22	25	23	23	32	39	39	35	14	19	15	-2	10	10	24	33	27	36	40	32	38	40	40	35	..	..	..	26.6
	Min.	22	10	4	4	-2	4	14	13	5	23	21	9	0	-6	-6	-19	-20	-18	0	0	6	11	22	14	18	24	32	8	..	..	..	7.3
Allerton	Max.	55	45	29	29	35	24	29	33	45	48	48	38	25	24	22	5	10	12	23	39	34	43	40	38	41	44	46	38	..	..	..	33.6
	Min.	35	19	18	13	-1	-1	17	10	13	34	28	22	10	14	4	-12	-16	-13	-3	-1	12	13	27	16	16	21	33	18	..	..	..	12.4
Alta	Max.	39	27	13	20	19	24	26	24	34	40	35	23	17	19	4	2	11	5	21	32	28	40	34	34	37	38	33	30	..	..	..	25.3
	Min.	24	5	5	0	-2	2	11	4	10	20	22	8	0	4	-9	-19	-18	-18	0	2	2	17	19	14	19	24	30	6	..	..	..	6.5
Amana	Max.	49	42	27	27	26	23	31	33	39	44	42	36	24	27	22	7	8	9	20	34	26	40	36	35	38	44	45	37	..	..	..	31.1
	Min.	32	23	16	13	-3	-1	18	13	14	31	24	23	10	14	7	-9	-13	-13	0	-5	10	10	30	13	13	20	37	18	..	..	..	12.3
Ames	Max.	40	37	24	20	25	24	26	28	42	45	40	36	22	22	8	-1	13	11	24	32	31	47	40	38	42	45	45	37	..	..	..	30.5
	Min.	25	9	11	10	-6	2	16	10	3	29	23	12	5	11	-1	-14	-11	-14	1	6	10	7	26	15	4	20	20	13	..	..	..	8 6
Atlantic	Max.	43	36	22	20	23	21	27	29	41	43	38	32	21	23	18	2	14	14	27	38	33	45	41	40	41	41	43	37	..	..	..	30.5
	Min.	25	13	14	9	-15	..	16	3	-1	28	20	12	8	13	1	-11	-12	-14	2	2	10	21	25	10	18	29	32	15	..	..	..	10.1
Audubon	Max.	39	34	35	30	10	19	30	28	40	42	38	30	19	16	12	-1	0	-2	28	35	30	43	33	35	39	39	39	33	..	..	..	27.6
	Min.	27	9	5	5	0	2	13	1	8	16	16	14	2	-1	-2	-16	-16	-17	-7	7	7	15	18	13	19	21	31	10	..	..	..	7.1
Baxter	Max.	45	40	25	24	25	22	26	26	38	44	41	36	22	23	20	5	12	15	23	40	34	50	40	38	40	45	45	42	..	..	..	30.9
	Min.	29	16	12	12	6	2	16	5	5	29	25	18	5	12	0	-13	-13	-15	1	0	9	15	25	12	16	20	34	15	..	..	..	10.6
Bedford	Max.	52	42	22	23	25	23	22	31	39	45	43	35	25	24	22	8	15	16	25	39	34	46	35	40	43	42	39	36	..	..	..	31.8
	Min.	27	15	15	8	-9	2	15	5	5	31	25	20	10	13	2	-13	-17	-14	-6	0	12	11	27	13	15	19	32	15	..	..	..	9.9
Bonaparte	Max.	49	41	31	31	31	24	30	33	43	43	44	39	27	27	24	8	8	8	21	33	30	38	35	35	38	44	47	37	..	..	..	32.1
	Min.	35	26	22	13	-2	4	19	18	15	35	28	27	15	19	8	-8	-17	-11	-5	-1	12	8	29	11	15	22	37	20	..	..	..	14.1
Britt	Max.	34	27	16	16	20	31	29	32	35	39	39	34	13	23	16	-4	8	10	23	34	25	38	35	33	37	43	38	33	..	..	..	27.0
	Min.	17	9	4	6	-9	-1	7	12	4	21	15	11	0	3	-5	-19	-19	-18	-3	-6	5	13	23	11	15	21	33	11	..	..	..	6.1
Burlington	Max.	47	45	32	32	30	27	32	34	43	43	49	38	28	28	25	11	11	8	20	33	29	38	36	40	43	49	50	38	..	..	..	33.5
	Min.	37	29	23	15	3	10	20	18	20	36	31	28	17	22	11	-8	-18	-13	-3	5	13	12	31	19	19	25	38	21	..	..	..	16 5
Carroll	Max.	39	35	30	21	27	21	27	30	40	42	40	30	32	25	15	2	14	6	25	35	38	44	42	44	42	41	38	31	..	..	..	30.6
	Min.	23	12	7	5	3	-1	10	-1	8	27	20	8	0	8	-4	-11	-17	-18	-2	0	5	18	21	12	21	22	29	8	..	..	..	7 4
Cedar Rap.	Max.	48	41	27	27	25	24	29	29	38	43	43	38	25	26	23	8	8	10	19	24	30	41	37	37	40	46	42	47	..	..	..	31.6
	Min.	32	22	17	13	-2	1	18	19	9	32	24	22	11	14	7	-8	-11	-12	3	-3	10	15	29	14	15	21	38	18	..	..	..	13.1
Chariton	Max.	53	40	36	27	38	22	38	28	42	42	44	35	22	22	22	3	9	11	23	39	31	44	36	38	41	46	45	36	..	..	..	32 6
	Min.	35	18	17	11	-3	0	17	10	15	35	26	21	9	14	3	-11	-14	-13	-3	3	12	17	26	14	17	22	33	16	..	..	..	12.4
Charles Cy.	Max.	44	35	20	23	20	24	26	39	31	41	38	36	20	20	20	-2	-5	10	20	32	32	40	38	33	38	44	43	37	..	..	..	28.5
	Min.	24	15	9	10	-7	-4	12	10	12	24	22	15	4	7	0	-14	-15	-17	1	13	7	20	20	30	28	30	35	16	..	..	..	11 0
Clarinda	Max.	52	36	21	18	30	25	27	35	47	47	43	32	21	25	20	6	17	14	32	40	37	50	35	40	40	43	43	32	..	..	..	32.4
	Min.	28	15	15	10	-7	4	13	8	17	28	27	19	11	17	0	-10	-12	-14	2	20	20	19	17	16	19	22	32	15	..	..	..	12.5
Clear Lake	Max.	35	28	16	18	19	29	31	30	35	38	38	32	16	24	16	4	7	10	20	33	27	40	35	36	38	42	38	39	..	..	..	27.6
	Min.	18	19	4	6	-7	-2	13	15	4	15	16	10	0	1	-4	-21	-20	-21	-7	-7	3	13	22	9	15	19	32	8	..	..	..	4.4
Clinton	Max.	48	40	32	33	28	27	34	31	40	45	45	35	29	30	26	10	6	9	20	31	27	37	36	36	40	47	52	38	..	..	..	32 6
	Min.	31	25	21	12	-1	4	18	18	17	37	31	27	17	16	10	-6	-16	-12	-3	3	12	15	24	10	13	20	34	19	..	..	..	14.1
College Spr	Max.	51	36	22	22	23	23	27	31	39	41	41	34	22	24	18	3	17	14	28	40	49	38	38	39	41	40	41	34	..	..	..	31.3
	Min.	31	15	15	10	-1	7	15	10	15	30	26	20	10	16	3	-10	-12	-14	0	11	13	20	28	18	20	22	23	14	..	..	..	12.7
Colum. Jct.	Max.	45	45	30	31	31	29	32	32	42	42	40	34	27	34	22	10	8	8	20	34	29	39	35	36	42	46	47	38	..	..	.	32 4
	Min.	15	25	20	13	0	4	19	15	18	24	27	25	13	15	8	-8	-15	-12	-3	3	5	11	24	15	17	21	37	18	..	..	..	12.6
Corning	Max.	48	36	32	22	23	21	26	29	40	40	41	33	23	23	20	3	14	14	26	37	31	45	43	34	39	40	43	34	..	..	..	30.7
	Min.	30	14	13	10	-6	0	13	2	25	30	26	18	8	13	2	-12	-12	-15	-1	1	11	19	25	14	16	21	32	13	..	..	..	11.1
Crydon	Max.	54	48	28	25	34	27	30	31	44	45	47	38	25	25	23	9	10	12	25	39	35	44	40	41	42	44	46	39	..	..	..	33.9
	Min.	34	17	17	12	-3	2	16	8	14	35	24	22	10	13	4	-13	-15	-14	-4	-1	10	14	13	17	15	21	31	17	..	..	..	13.1
Co Bluffs	Max.	42	33	20	19	28	24	32	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	52	69	38	40	40	42	25	..	..	..	36 0
	Min.	27	11	11	-5	-5	-4	16	16	11	23	25	12	5	4	-4	-11	-10	-13	8	12	12	22	20	20	23	26	24	11	..	..	..	10.2
Davenport	Max.	45	40	32	32	27	25	30	29	41	45	44	36	26	29	26	7	6	7	18	31	28	36	26	35	40	46	50	39	..	..	..	31.6
	Min.	36	27	21	10	3	7	20	19	21	39	30	26	17	18	7	-6	-13	-12	0	4	11	13	25	17	19	25	37	17	..	..	..	15.6
Decorah	Max.	42	32	21	20	22	31	32	31	34	43	41	26	27	22	15	-2	6	8	18	31	22	41	38	33	38	41	43	37	..	..	..	28.3
	Min.	26	13	8	12	-2	-3	10	8	20	23	22	14	5	5	2	-14	-16	-18	-3	-7	5	12	19	8	12	20	33	11	..	..	..	7.9
Delaware	Max.	41	36	22	21	24	26	30	30	37	42	40	34	22	24	20	7	6	10	17	29	28	39	35	35	38	46	44	35	..	..	..	29.2
	Min.	26	18	11	9	-2	0	11	10	15	25	22	20	7	9	5	-12	-15	-16	-3	-5	5	10	22	10	12	18	31	11	..	..	..	9.1
Denison	Max.	50	36	17	13	25	21	27	28	38	40	35	33	18	28	16	0	15	13	25	35	31	44	39	26	39	39	40	33	..	..	..	28.7
	Min.	21	7	-1	-3	-13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	-2	6	16	22	9	16	18	31	6	..	..	..	....
Des Moines	Max.	46	29	25	21	27	22	28	28	41	44	44	33	23	25	20	3	13	11	27	39	31	46	37	36	40	43	45	35	..	..	..	30.8
	Min.	32	16	15	15	-3	4	19	9	7	34	28	17	8	16	-2	-10	-9	-13	2	7	13	20	28	17	17	26	35	15	..	..	..	13.0
Dows	Max.	42	30	20	16	20	22	23	24	33	40	35	33	15	18	17	-3	7	7	21	33	28	40	36	33	32	41	40	34	..	..	.	26 1
	Min.	23	12	8	2	-8	-5	12	14	4	26	17	12	0	4	-3	-18	-20	-17	-3	-6	5	13	24	10	10	19	32	12	..	..	..	10.0
Dubuque	Max.	44	38	26	24	30	26	29	29	38	47	47	34	21	27	22	9	4	11	16	29	25	39	35	37	42	49	47	35	..	..	..	30.8
	Min.	34	22	15	14	4	4	20	19	22	36	30	21	12	12	9	-7	-13	-14	0	2	11	12	24	14	14	22	38	13	..	..	..	14 0
Earlham	Max.	46	41	21	21	25	19	24	27	39	41	34	21	19	22	17	0	10	10	25	37	34	46	38	37	40	43	43	33	..	..	..	29.0
	Min.	24	13	12	9	-3	-7	13	4	2	23	17	5	4	10	0	-14	-12	-15	-3	-1	9	16	14	9	13	16	31	12	..	..	..	7.2
Eldon	Max.	55	56	30	33	33	35	40	42	32	55	41	43	46	28	27	23	11	19	24	37	38	37	39	41	43	46	40	41	..	..	..	37.1
	Min.	44	21	20	15	14	0	15	10	12	25	18	20	11	7	7	-20	-8	-9	-6	-4	11	15	13	12	14	36	12	19	..	..	..	11.6
Elkader	Max.	42	35	25	24	27	28	30	32	38	45	50	35	25	25	15	19	10	14	17	32	30	42	38	40	43	52	43	36	..	..	..	31.9
	Min.	28	20	10	10	-13	-10	9	9	21	29	20	21	8	9	4	-10	-15	-15	0	-9	8	8	26	9	10	18	36	16	..	..	..	9.2
Estherville	Max.	33	25	9	18	21	23	23	22	32	37	36	31	17	12	11	-3	11	10	20	32	28	39	35	34	39	40	37	32	..	..	..	25.1
	Min.	15	4	1	3	-3	1	7	1	-2	20	15	5	-5	-3	-10	-20	-21	-19	-3	-11	4	15	18	7	16	20	31	4	..	..	..	3.2
Forest C'ty	Max.	29	11	18	12	19	27	28	22	32	34	34	19	10	16	11	-4	6	9	14	34	33	35	29	35	33	40	36	32	..	..	..	23.4
	Min.	17	9	-1	6	-6	6	8	18	20	24	19	10	0	4	-5	-20	-18	-19	6	-6	5	9	23	23	27	23	32	10	..	..	..	8.0
Ft. Dodge	Max.	47	33	27	20	20	19	25	28	37	40	41	35	17	20	22	19	19	12	10	23	31	35	47	42	35	39	45	41	..	..	..	29.9
	Min.	28	13	7	6	-21	-9	12	1	10	26	14	14	0	0	1	8	-19	-20	-18	-4	-10	5	12	19	8	10	15	9	..	..	..	3.6
Galva	Max.	43	32	15	17	17	23	27	25	35	40	36	..	21	15	0	11	7	24	33	35	:	40	38	34	38	39	38	32	.	..	..	27.5
	Min.	19	5	9	5	-5	0	14	0	3	20	18	..	15	-5	-19	-20	-18	-5	-2	15	..	15	20	10	15	19	31	8	..	..	..	6 3
G. Meadow	Max.	41	32	26	21	24	25	28	32	38	44	41	35	20	22	18	3	5	9	17	29	22	39	35	33	37	41	43	34	..	..	..	24.8
	Min.	27	5	8	13	1	3	11	13	19	26	24	20	5	7	2	-15	-16	-18	0	-4	5	13	24	12	15	20	34	12	..	..	..	9.1
Greene	Max.	42	34	21	18	24	25	29	28	36	42	38	34	19	21	19	1	8	12	21	33	30	38	36	38	35	40	40	33	..	..	..	28 7
	Min.	18	16	10	12	-5	-2	13	16	14	26	23	16	4	9	2	-14	-15	-16	1	-4	6	15	26	13	15	22	33	14	..	..	..	9.5
Greenfield	Max.	47	37	32	22	23	21	28	33	42	42	40	32	20	23	18	-1	12	11	25	35	41	44	38	36	40	41	42	36	..	..	..	31.1
	Min.	30	12	12	12	-2	-2	14	5	14	32	27	17	5	10	-1	-15	-13	-16	-2	5	7	17	24	12	17	17	32	13	..	..	..	10 1
Grinnell	Max.	45	40	24	19	25	25	27	26	39	41	39	32	20	22	19	3	7	11	22	30	30	42	38	32	37	42	42	36	.	..	..	29.1
	Min.	32	19	12	11	0	3	15	20	11	33	22	19	6	12	3	-11	-12	-13	1	1	9	16	27	15	20	24	35	16	..	..	..	2.4
Grundy C'r	Max.	38	38	22	22	24	22	24	26	38	45	41	35	20	22	20	3	10	10	21	37	31	44	39	36	40	43	42	34	..	..	..	29.5
	Min.	26	17	10	11	-8	-2	16	15	10	28	24	17	5	10	3	-13	-15	-15	0	-4	7	15	28	13	17	20	34	15	..	..	..	10.2
Guthrie Cr	Max.	42	37	22	21	23	20	28	29	42	43	39	35	22	22	19	4	12	13	26	35	33	44	40	36	42	41	42	30	..	..	..	30.1
	Min.	31	12	12	10	-6	-2	17	3	3	33	25	17	5	11	0	-15	-15	-17	-2	3	4	19	24	11	17	33	30	13	..	..	..	9.9
Hampton	Max.	46	30	21	18	22	26	30	25	37	43	39	32	19	20	17	-2	8	9	21	33	28	42	37	36	41	44	39	34	..	..	..	27.7
	Min.	26	15	8	10	-1	0	15	20	7	29	24	13	2	7	-2	-16	-17	-17	-1	-3	6	15	27	15	19	21	33	12	..	..	..	9 5
Hanlonto'n	Max.	36	26	16	16	23	19	25	24	32	36	40	33	13	18	15	-5	10	11	21	34	30	38	36	36	36	40	40	45	..	..	..	26.6
	Min.	21	10	5	6	-8	-1	10	18	4	25	18	10	0	3	-5	-20	-18	-18	-2	-7	6	11	22	12	11	22	32	10	..	..	..	6.3
Harlan	Max.	40	35	21	17	22	24	30	32	41	43	38	32	18	24	16	0	16	12	25	34	31	43	36	34	40	40	40	33	..	..	..	29.2
	Min.	21	8	11	5	-10	-2	14	0	3	23	18	14	3	8	-3	-16	-18	-18	0	2	7	15	22	11	17	21	31	10	..	..	..	7 0
Humboldt	Max.	40	32	18	20	22	26	26	28	36	40	58	34	15	18	18	-3	10	9	24	35	32	40	36	32	37	41	40	34	..	..	..	28.5
	Min.	20	10	8	8	8	0	16	6	0	25	18	14	1	4	-2	-18	-16	-17	-2	-5	6	18	24	12	17	21	32	10	.	..	.	7.8
Ida Grove	Max.	44	48	27	16	26	26	38	26	38	40	38	34	28	21	19	3	12	12	24	34	31	42	40	34	39	38	38	34	..	..	.	30. 1
	Min.	21	6	9	6	-5	1	15	-2	7	22	19	0	2	4	-4	-17	-20	-18	0	-1	4	15	21	10	17	21	22	8	..	..	..	5.8
In'pen'nce.	Max.	37	36	22	22	20	22	26	25	33	40	38	35	22	23	17	3	5	8	19	32	28	39	35	33	37	45	43	34	..	..	..	27.8
	Min.	25	18	10	10	-6	-1	18	17	12	24	23	19	7	10	3	-11	-13	-15	1	-4	6	11	25	14	15	20	34	15	..	..	..	10 2
Indianola	Max.	49	42	26	25	27	22	27	28	45	44	43	37	25	23	21	5	12	12	24	38	33	44	40	36	40	44	44	37	..	..	..	31.9
	Min.	34	16	17	12	1	6	16	8	14	35	27	24	7	14	4	-11	-12	-13	2	6	12	19	26	16	21	23	34	15	..	..	..	13.1
Iowa City	Max.	49	42	28	28	31	28	32	33	44	45	43	36	25	25	22	8	10	9	19	35	29	43	35	42	35	48	46	38	..	..	..	32.4
	Min.	29	24	17	12	-5	-1	18	13	8	29	28	23	12	13	8	-9	-13	-13	-2	-5	9	9	30	11	28	18	28	19	..	..	..	12 1
Iowa Falls	Max.	38	30	21	18	20	24	24	24	35	41	37	30	16	19	16	-5	8	7	21	33	25	42	35	31	38	42	42	32	..	..	..	26.6
	Min.	21	14	9	9	-11	-4	13	12	6	25	22	8	2	7	-5	-15	-15	-16	0	-7	7	16	22	10	12	20	32	10	..	..	..	7.3
Keokuk	Max.	50	45	33	34	32	36	31	33	49	47	49	44	26	29	25	3	11	13	22	36	27	41	39	36	39	45	51	42	..	..	..	34 1
	Min.	42	30	24	17	8	14	22	23	26	39	33	29	20	22	11	-7	-13	-10	-2	8	10	15	31	22	21	26	39	22	..	..	..	18.7
Keosauqua	Max.	50	44	39	32	31	25	29	31	39	44	45	41	27	26	25	9	9	7	21	35	31	39	36	34	39	45	46	38	..	..	..	32.8
	Min.	38	26	23	14	-2	-1	15	21	12	28	27	27	15	19	9	-8	-15	-11	-5	-5	12	4	30	10	10	16	37	20	..	..	..	13.1
Larrabee	Max.	39	28	18	20	17	27	28	28	35	42	37	31	30	22	7	3	13	7	25	34	28	45	30	37	39	41	37	33	..	.	..	28.1
	Min.	17	4	5

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR FEBRUARY, 1903—CONTINUED.

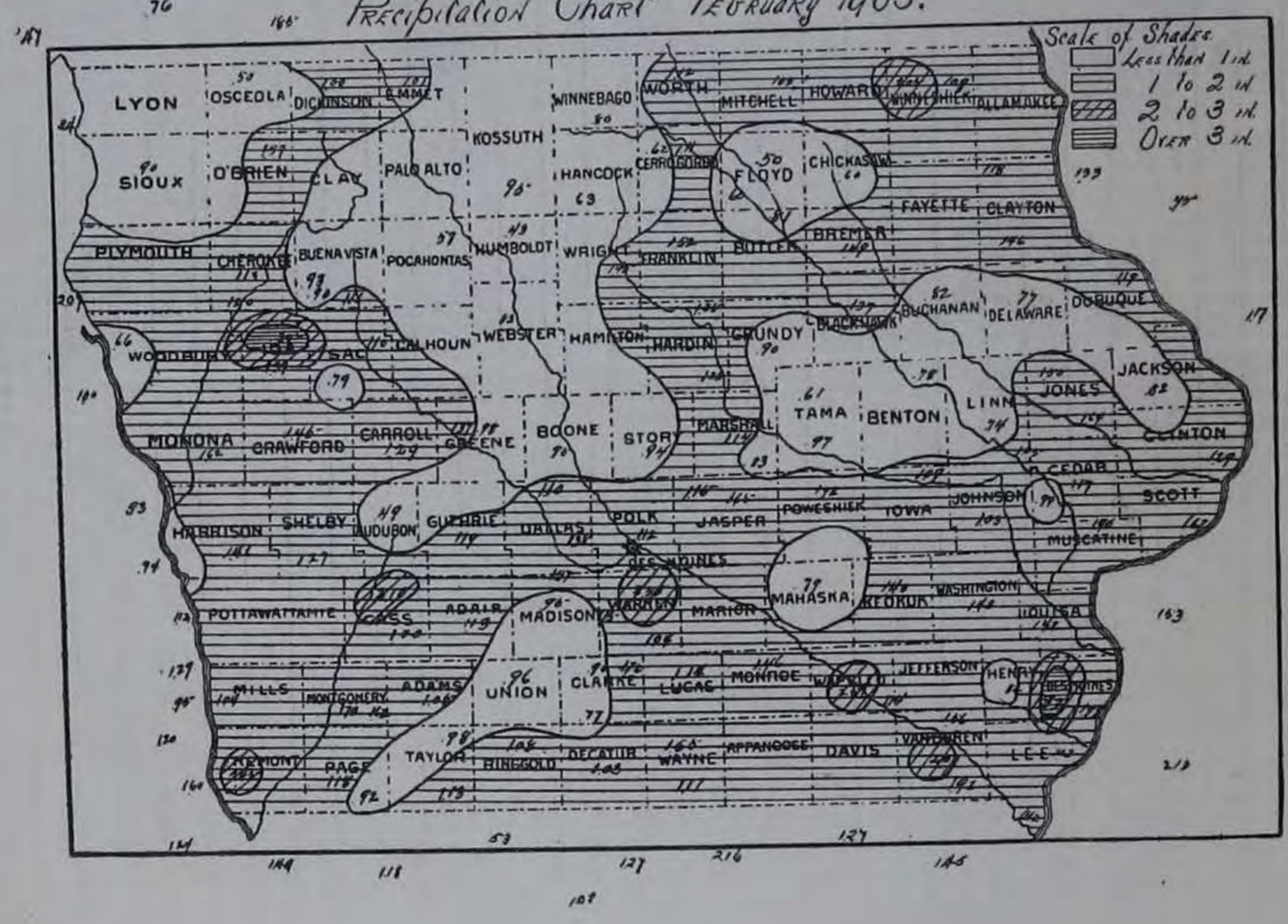
STATIONS		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mean.
LeMars	Max	36	24	11	16	11	27	27	22	31	40	34	30	12	24	20	2	12	6	24	34	27	43	39	34	39	42	44	34	..	..	..	26.6
	Min	19	2	6	4	-7	3	7	1	0	17	21	6	0	5	-5	-15	-17	-19	0	1	5	19	19	11	11	22	20	6	..	..	..	5.1
Lenox	Max	43	42	23	22	24	20	23	35	42	44	41	34	22	22	20	2	14	14	24	36	31	44	39	34	39	40	43	35	..	..	..	30.5
	Min	30	13	12	8	-6	4	13	2	11	34	25	18	6	13	0	-15	-15	-17	-4	4	10	18	25	15	19	21	32	13	..	..	..	10.3
Leon	Max	52	46	27	25	29	27	30	29	44	44	43	40	25	25	23	5	11	13	22	38	36	42	40	36	40	43	45	37	..	..	..	32.8
	Min	35	14	17	14	0	6	17	9	16	36	28	22	11	16	5	-11	-12	-12	-1	4	14	19	27	17	20	22	33	15	..	..	..	13.7
Logan	Max	37	33	18	16	20	25	30	27	43	45	41	32	19	29	17	2	22	17	28	35	32	38	36	35	40	42	40	33	..	..	..	29.7
	Min	22	8	12	6	7	0	13	3	2	24	22	15	3	9	0	-13	-17	-16	2	2	8	25	17	14	18	22	32	11	..	..	..	10.6
Msquoketa	Max	49	43	31	30	26	22	31	34	38	44	44	38	28	29	25	9	5	12	16	29	29	38	35	43	41	48	47	38	..	..	..	32.2
	Min	30	25	17	15	1	3	15	16	15	26	38	25	14	12	8	-7	-15	-14	0	-6	9	8	23	8	9	15	31	18	..	..		12.1
Marsh'lt'n	Max	44	42	25	24	27	24	29	27	41	49	44	38	25	24	21	6	11	11	24	38	34	47	44	38	42	46	43	38	..	..	..	32.4
	Min	29	17	12	14	-1	2	17	18	10	29	28	19	5	13	3	-13	-13	-14	1	-1	9	17	28	14	14	20	35	16	..	..	..	11.7
Mason City	Max	37	39	22	26	20	25	28	27	34	42	37	37	19	21	22	2	7	12	21	33	34	40	42	35	38	44	41	40	..	..	..	29.5
	Min	25	15	10	12	2	4	17	21	10	28	24	16	5	7	-1	-15	-14	-15	2	2	7	18	25	17	19	24	33	16	..	..	..	11.2
Monticello	Max	40	38	30	18	18	30	33	42	47	40	37	33	30	38	23	20	0	10	18	20	25	33	35	40	45	43	40	29	..	..	..	30.2
	Min	33	32	20	10	-2	0	8	22	28	28	25	22	15	13	10	-10	-13	-15	-3	-7	2	12	20	30	28	27	18	22	..	..	..	13.4
Mt. Ayr	Max	53	44	23	23	26	23	29	45	42	42	33	22	23	23	21	0	13	7	23	38	32	44	36	37	41	42	44	34	..	..	..	34.4
	Min	31	15	14	7	-6	5	13	12	32	26	20	9	13	13	0	-14	-16	-15	-5	4	11	17	25	16	19	22	31	14	..	..	..	11.2
Mt. Pleas't	Max	50	45	39	31	30	25	30	39	45	50	55	40	30	25	26	10	20	10	19	35	35	45	42	45	42	39	39	45	..	..	..	35.2
	Min	35	25	15	10	-2	5	10	19	10	30	29	25	15	10	2	-10	-16	-13	0	2	26	27	30	20	30	20	10	12	..	..		13.4
Mt. Vernon	Max	52	40	28	20	25	25	30	31	41	43	44	37	26	28	22	8	8	13	17	32	29	39	36	42	43	49	43	38	..	..	..	31.5
	Min	30	22	14	13	-2	1	15	19	15	29	24	17	9	11	8	-11	-15	-15	-2	-3	8	9	26	12	10	23	34	16	..	..		11.7
NewH'pton	Max	41	33	19	18	17	26	19	28	29	40	38	34	19	20	20	1	4	9	17	31	29	40	39	32	37	43	41	34	..	..		27.1
	Min	..	13	8	11	-5	-2	11	13	12	23	23	15	3	6	0	-6	-17	-19	-2	-5	3	11	24	10	11	21	33	13	..	..	..	7.3
Newton	Max	45	44	26	24	24	23	28	30	39	41	40	38	22	24	23	6	9	10	23	33	34	44	41	34	38	42	42	38	..	..	..	30.9
	Min	29	17	12	12	-6	1	16	17	6	30	26	18	5	11	3	5	-15	-17	-1	-1	8	5	27	14	15	21	33	16	..	..	..	10.2
Northwood	Max	34	28	18	18	20	30	30	33	36	41	37	34	17	24	19	-3	7	10	21	34	26	40	36	34	39	42	40	34	..	..	..	27.8
	Min	21	9	6	10	-1	3	17	19	8	20	21	11	1	5	-5	-19	-17	-18	-1	-5	4	14	23	12	15	21	32	12	..	..	..	7.8
Odebolt	Max	44	36	17	18	20	26	29	29	39	40	37	32	20	21	16	0	12	10	24	34	30	41	39	34	39	39	38	33	..	..	..	28.5
	Min	22	7	9	8	-3	0	12	6	9	25	21	15	2	5	-3	-16	-15	-16	-1	1	6	15	21	11	18	21	32	9	..	..	..	7.9
Ogden	Max	46	41	24	23	26	23	30	26	43	46	42	35	30	21	20	-1	15	14	26	39	33	45	39	40	41	46	45	41	..		..	32.9
	Min	24	10	8	8	-8	-4	4	1	1	26	20	14	2	8	-2	-17	-16	-17	-4	0	6	15	23	15	17	20	31	10	..		..	7.0
Olin	Max	48	40	27	26	25	28	33	32	38	44	42	38	27	29	24	11	5	7	29	30	30	37	34	35	37	44	45	37	..	..	..	31.5
	Min	29	24	15	11	-2	0	13	19	12	25	26	25	12	13	11	-9	-14	-15	-1	-5	10	7	25	9	10	17	37	19	..	..	..	11.5
Omaha, N.	Max	39	28	19	18	26	22	27	29	44	43	33	28	16	22	15	0	22	8	30	38	32	47	38	37	37	39	42	32		..	..	29.2
	Min	28	10	11	7	4	7	16	16	15	32	28	13	6	12	-2	-12	-12	-15	7	15	12	25	25	21	26	26	32	11			..	13.0
Onawa	Max	44	31	16	20	25	26	34	28	39	46	39	32	22	23	20	6	21	14	30	39	34	48	43	40	39	40	38	33	..	..	..	31.1
	Min	22	7	10	4	-4	3	16	7	7	19	17	14	3	9	-2	-14	-15	-15	5	4	8	19	23	16	21	23	32	9	..	..	..	8.9
Osage	Max	37	32	16	17	18	26	28	27	31	39	37	33	16	20	18	-1	6	9	19	30	29	38	37	32	37	43	40	34	..	..	..	26.7
	Min	22	11	7	10	-4	1	15	19	12	23	22	11	3	5	-2	-17	-16	-18	0	-5	4	13	23	11	15	21	33	12	..	..	..	8.4
Osceola	Max	52	39	25	25	28	20	26	28	..	43	43	41	30	23	19	10	10	12	24	37	33	45	37	27	43	44	45	36	..	..	..	31.3
	Min	33	14	13	12	-1	2	16	8	..	36	28	17	8	13	3	-13	-10	-15	-2	5	12	19	23	15	17	20	31	16	..			11.8
Oskaloosa	Max	49	42	25	24	30	23	28	29	44	44	45	37	21	23	21	5	10	9	22	38	32	42	35	35	40	45	43	37	..	..		31.4
	Min	35	18	17	13	-5	-3	16	21	2	32	24	21	8	13	5	-13	-14	-13	-3	-3	10	13	29	14	12	22	35	16	..			11.5
Ottumwa	Max	50	44	32	31	32	23	29	32	44	40	46	38	26	27	25	8	12	13	23	38	33	41	39	35	40	46	46	40		..	..	33.3
	Min	40	25	20	16	4	5	20	25	16	36	30	25	13	18	6	-6	-9	-9	2	4	15	17	31	20	19	26	37	19	..	..	..	16.6
Pacific Jct.	Max	42	35	18	18	25	27	29	31	40	43	43	32	21	25	20	6	20	15	30	38	32	44	35	35	39	39	36	35			..	30.5
	Min	24	11	15	8	-10	2	14	13	6	25	20	17	6	14	0	-11	-13	-15	5	9	12	20	27	18	27	25	33	12			..	11.2
Perry	Max	41	37	32	19	25	22	29	28	42	44	40	34	19	23	18	1	14	9	26	36	29	45	38	35	40	43	43	45		..	..	30.6
	Min	27	13	12	10	-6	-2	17	5	-3	31	24	16	5	12	-1	-14	-2	-14	-1	4	10	18	25	13	18	21	33	13	..	..		9.8
Plover	Max	33	23	18	21	19	25	21	25	35	40	38	31	22	20	10	-7	10	12	23	33	28	41	35	34	39	41	40	31	..	..	..	26.5
	Min	22	9	4	1	-5	2	15	3	-2	22	18	10	0	-1	-10	-20	-17	-20	-5	-4	5	16	23	14	17	22	31	7	..	..	..	5.6
Red Oak	Max	44	41	21	24	24	26	28	32	37	41	38	34	24	25	23	9	18	18	26	38	32	42	40	36	40	41	43	35		..	..	31.5
	Min	32	15	16	12	-1	8	18	13	9	31	23	21	11	17	6	-6	-5	-10	6	10	15	22	29	18	25	27	34	17	..	..	..	14.8
Ridgeway	Max	46	34	21	24	24	32	32	32	31	44	42	35	25	26	17	7	6	11	19	32	30	42	40	39	41	48	45	36	..	..	..	30.8
	Min	24	14	7	13	3	3	13	11	18	28	24	15	5	5	-5	-16	-18	-18	-3	-6	4	13	24	9	16	22	34	11	..	..	..	8.9
Rockw'l Cy	Max	45	40	19	20	20	20	25	32	38	40	40	33	19	23	19	4	14	10	26	35	31	42	41	41	40	40	40	34	..	..	..	29.7
	Min	30	16	10	7	2	8	0	0	2	19	21	16	3	12	-3	-18	-17	-17	-2	3	8	15	21	20	20	22	32	10	..	..	..	8.6
Sac City	Max	41	34	27	20	21	24	23	29	..	38	38	35	32	28	14	6	12	9	23	34	33	41	38	30	38	38	38	32			..	28.4
	Min	23	8	7	5	-3	5	11	2	..	5	24	23	14	3	-4	-17	-17	-16	-3	7	6	15	21	12	16	20	32	8				7.7
St. Charles	Max	51	39	23	23	30	22	27	32	45	45	44	34	22	23	20	6	11	14	25	41	38	48	39	39	41	44	44	35	..		..	32.4
	Min	34	16	15	13	3	2	13	7	10	35	29	20	7	13	2	-12	-10	-13	2	6	12	20	25	15	19	21	34	16	..	..	..	12.6
Scranton	Max	37	37	20	20	23	21	32	29	39	41	39	28	17	24	16	1	12	12	25	34	31	42	38	34	39	..	41	30	..		..	28.2
	Min	25	11	10	9	1	4	14	0	3	30	20	16	3	7	-1	-15	-13	-14	-6	4	8	19	24	14	19	..	20	11	..	..	..	8.3
Sheldon	Max	34	22	11	22	18	23	24	22	36	39	36	31	20	19	5	0	12	9	21	34	27	41	37	35	39	42	35	31	..	..	..	25.9
	Min	17	2	2	2	-7	2	10	0	3	20	22	10	0	4	-10	-9	-20	-19	-3	-4	-4	17	17	12	18	22	30	4	..		..	4.6
Sibley	Max	36	27	9	20	22	24	26	23	32	38	35	32	20	18	4	1	12	10	22	25	28	42	35	33	39	42	36	33	..	..		25.9
	Min	16	1	0	-6	2	5	10	4	2	17	23	10	1	4	-10	-18	-15	-18	-1	-1	4	28	18	12	18	22	31	5	..	..	..	5.9
Sigourney	Max	51	43	28	27	33	27	32	34	46	45	45	39	25	27	23	8	10	9	24	38	32	42	38	39	42	48	45	37	..	..	..	33.5
	Min	35	18	22	14	-3	1	18	21	9	32	24	23	10	12	7	-10	-14	-13	-3	-1	10	14	30	13	13	22	36	18	..	..	..	13.1
SiouxC'nt'r	Max	34	27	9	26	15	26	27	21	30	39	35	26	18	21	8	0	10	4	19	33	25	40	37	33	38	40	34	32	..	..	..	25.2
	Min	18	0	0	2	-7	4	10	5	3	15	23	8	0	4	-9	-18	-21	-19	-2	-2	3	16	17	15	19	21	32	2				4.9
Sioux City	Max	35	15	15	12	18	24	26	22	33	44	35	22	15	21	8	-1	15	8	23	35	27	45	35	34	38	40	37	24	..	..		25.2
	Min	15	4	8	-4	-1	8	10	5	5	21	22	6	2	4	-8	-15	-16	-18	8	5	6	21	21	15	21	25	24	6	..	..	..	7.2
Spirit Lake	Max	30	21	6	6	21	33	35	25	33	32	38	21	30	20	0	-2	8	12	25	35	30	40	35	34	36	36	36	18	..	..		24.8
	Min	15	4	0	0	-6	9	10	4	3	13	16	3	-1	0	-10	-20	-20	-19	-3	7	3	15	18	9	9	32	31	3				4.3
Storm L.	Max	38	33	11	18	17	21	24	23	34	38	34	32	20	17	17	-1	10	8	21	33	31	40	38	34	36	37	38	32	..		..	26.2
	Min	24	14	5	4	-4	3	14	0	6	22	21	12	-1	8	-7	-20	-19	-20	5	-1	4	15	12	11	17	23	31	5	..	..	..	6.8
Thurman	Max	40	38	22	19	24	24	25	30	39	41	38	33	19	24	21	5	20	18	30	38	32	44	36	33	44	38	42	35	..	..	..	30.4
	Min	28	12	14	6	-2	-4	11	3	0	21	18	17	7	13	0	-11	-14	-15	2	5	11	19	27	16	20	24	31	11		..	..	9.0
Tipton	Max	46	42	29	30	27	22	30	30	38	42	43	38	28	29	26	13	7	11	18	30	29	37	33	39	40	48	45	39			..	31.8
	Min	34	25	20	15	3	5	18	21	15	28	27	26	15	16	13	-5	-10	-12	0	2	10	10	27	12	17	25	37	20	..		..	14.8
Toledo	Max	45	37	24	23	26	22	28	28	41	45	43	35	22	23	21	4	10	10	23	38	30	45	38	38	40	45	43	36	..	..	..	30.8
	Min	29	19	13	8	-3	-4	17	18	11	32	25	19	6	13	3	-12	-13	-14	1	-3	8	16	25	12	12	20	35	16	..		..	11.0
Villisca	Max	40	42	30	30	28	28	29	35	44	46	48	35	26	26	20	12	12	15	18	42	40	32	42	32	38	40	37	42	..		..	32.5
	Min	34	12	10	14	-8	0	14	5	0	27	22	17	8	14	2	-8	-10	-15	-13	4	10	14	25	14	18	21	14	17	..	..	..	9.4
Washin't'n	Max	47	33	30	23	32	25	32	34	44	44	41	31	23	28	17	7	10	8	21	35	27	38	34	36	41	45	43	32	..		..	30.9
	Min	32	20	17	9	-4	-1	14	12	12	30	24	21	10	12	2	-12	-17	-15	-5	-2	7	9	24	12	13	22	35	12	..	..	..	10.5
Waterloo	Max	47	33	27	21	21	24	30	30	34	44	40	34	26	22	16	3	9	11	21	36	30	44	38	35	40	45	43	31	..	..	..	29.8
	Min	25	16	10	10	-7	0	16	12	14	30	24	18	4	11	0	-12	-13	-15	3	-2	7	17	30	15	15	19	34	17	..	..	..	10.6
Waverly	Max	39	32	23	20	21	25	30	30	35	45	39	34	20	22	17	0	8	11	21	32	30	42	37	34	38	44	42	34	..	..	..	28.8
	Min	23	17	10	12	-10	0	13	13	14	13	22	18	5	9	0	-13	-14	-16	2	-6	6	12	27	12	15	20	34	13	..	..	..	9.0
West Bend	Max	34	27	15	16	21	26	27	26	34	43	40	32	15	20	15	-2	11	10	23	34	28	41	36	..	38	41	38	32			..	26.7
	Min	20	9	5	5	-8	-2	15	10	-2	23	16	12	0	3	-4	-19	-18	-17	-2	-4	5	16	23	..	18	23	32	10	..		..	6.2
Whitten	Max	40	38	23	20	23	25	27	28	37	43	40	36	21	23	18	-1	10	9	23	36	33	44	43	33	39	43	43	36	..		..	29.8
	Min	24	14	10	9	-7	-2	15	11	10	31	25	15	2	9	0	-16	-17	-18	-1	-4	6	13	26	12	13	18	34	15	..		..	8.8
Wilton Jc.	Max	47	43	28	30	26	28	32	35	40	45	43	37	30	34	25	13	7	7	20	32	30	37	37	35	38	45	46	35	..	..	..	32.1
	Min	31	24	20	16	-6	-3	18	17	12	30	27	25	14	14	11	-9	-16	-13	-5	-4	8	7	28	8	11	19	37	20	..		..	12.2
Winterset	Max	52	50	25	20	26	24	26	35	43	44	44	35	24	22	20	3	9	9	24	38	36	47	39	41	43	44	44	37	..	..	..	32.3
	Min	31	9	20	10	0	2	15	5	9	21	28	18	6	12	2	-12	-2	-14	0	5	10	20	25	15	20	22	30	10	..	..	..	11.0

DAILY AND MONTHLY PRECIPITATION FOR FEBRUARY, 1903.

Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
Afton			.40	.20		.10	.10					T			T				T							T	.16	T				.96
Albia			.88	.13		T	T					T		T	.08				T							T	.37	T				1.46
Algona			.40				.05										.03			T						.40		.05				.95
Allerton			.15	.10		.05	.07					T		T	.10				.10							T	.6					1.17
Alta			.40			.04													.01								.43					.93
Alta (near)			.40			.10												.05								.25	.10	T				.90
Amana			.31	.57			.06	.01						.06	.06				.02								.38	T				1.47
Ames	.01		.30	T			.20				T			T					T							.01	.35	T				.94
Atlantic				1.20			.20				T				T			T									.70					2.10
Audubon				.35		.05											T									.06	.03					.49
Baxter			.40				.10							.05													.50					1.15
Bedford			.48			.04	T				T				.21		T		T							.40		T				1.13
Bonaparte			1.28												.36												.28					1.92
Britt		T		.25			.07	T											T	.02							.29	.05				.63
Buckingham			.05	T			.10							.03					.01				T				.40	.02				.61
Burlington			.99	.15				.03		T				.08	.40				.03								.30					1.98
Carroll		T		.75		.20								T	T			T	T							.34		T				1.29
Cedar Rapids				.70				.02						.02	T		T		T							T						.74
Chariton			.45	.18			.06	.02				T		T	.08		T		.04							.05	.28	T				1.14
Charles City				.24			T			T																	.26	T				.50
Clarinda				.71			.10				T				.07		T										.30	T				1.18
Clear Lake				.35			T												T	T							.25	.02				.62
Clinton				.65			.02			.03					.27												.31	.01				1.29
College Springs			.20	.20			.10					T			.01		T		T							T	.42					.92
Columbus Junction			.29	.56			.08	.04		.03				.04	.23				.04								.11	T				1.42
Corning			.35	.20		.05	.10				T	T			.03		T		.02							.10	.20	T				1.05
Corydon			.57	.20		T	.05	.02				T		T	.28			T	.01							.42						1.55
Cumberland			.60				.30								.10																	1.00
Danville			.60	.30	T	T	T			T	T	T		.10	1.10	T					T			T	1.25							3.35
Davenport			.70	.34			.02	T		T				.02	.30	T		T	T								.29	T				1.67
Decorah				.52			T	T										T	.02								.37	.18				1.09
Delaware			.11				.02																				.61	.03				.77
Denison			.30	.50			.10								.05												.50					1.45
Des Moines			.35	.40		T	.10	T			T			T	.01		T	T	T				T			.01	.25	T				1.12
Dows		T		1.00			T							T					.05								.35	.05				1.45
Dubuque		T	.11	.44			.02	.01		T	T			.06	T			T	.01	T							.50	.04				1.19
Earlham			.62	.54		T	.14			T									T							T	.27	T				1.57
Eldon			.15	.32			.10							.02	.30											.25						1.14
Elkader				1.00				T						T					T								.46	T				1.46
Estherville			.90				T												.05	T							.06					1.01
Forest City			T	.4			T												T	T							.40	T				.80
Fort Dodge			.03	.4			.05													.05							.30	T				.83
Fort Madison			.10	T			.10			T					.50				T								.33	T				1.03
Galva				.20			.10																				T	T				.30
Gilman	.30		.10	T	T	T	T	T						T	T												.47	T				.83
Grand Meadow				.50			.02												.02								.57	.07				1.18
Greene				.36			.02																				.38	.05				.81
Greenfield			.35	.3		.05	.2	T			.01	T		T	.02		T	T	T	T						.02	.17	T				1.13
Grinnell				.84			.09							.10					.11								.78					1.92
Grundy Center			.03	.26			.06							.03					.01								.41	.08				.90
Guthrie Center			.40			.2	.05				T			T	T				T				T		.49			T				1.19
Hampton			.95				T							T					.02							.50	.05					1.52
Harlan		.01	.54	.18		T	.12				.01			T	.0				T							T	.40	T				1.27
Hopeville			.41	.02		.02	.04			T	T				.01				.01							.16	.10					.77
Humboldt																											.42	.01				.43
Ida Grove			.69				.2																				.4	.02				1.37
Independence			.04	.44			.07							.03					.04							.15		.05				.82
Indianola			.51	1.50	.20							T		T	.01				T							T	.26					2.58
Iowa City			.25	.38			T	T		T				.10	T			T									.33	T				1.03
Iowa Falls			.30	.60			T	T							T				.05							.05	.35	T				1.35
Jefferson				.50			.18							T					T							.30		T				.98
Keokuk			.60	.10			T	.04				.04		.02	.2				.01							T	.29	.01				1.42
Keosauqua			1.08	.17			T	.05		T				.05	.30				.04							T	.40					2.09
Lacona					.40	.08	.03	T							.27				.13							.06	.0					1.04
Larrabee			.67			.06														T							.40					1.13
Le Claire			.07	.51	.05			.02			.02				.1	.12		T									.14					1.04
Lenox			.15	.35		.02					.03				.03											.05	.35					.98
Leon			.38	.13		.02	.04	.04				T			.02		T		.03								.37					1.03
Logan			1.00			.10					.2							.10								.06						1.46
Maquoketa				.13				.07		.07					.06												.53					.82
Marshalltown			.13	.42			.10	.03						.05			T		.02								.35	.04				1.14
Mason City			T	.73															T								.37	.01				1.11
Monticello				.60			T							.10					T			T				.8						1.50
Mount Ayr			.60	.10		.10					T				.03				.10							.05	.10	T				1.08
Mt. Pleasant			.30	.01																				.01								.32
Mt. Vernon			.10	.40			.02	.01						.04	.03			T									.43	.02				1.05
New Hampton			T	.6				T											T													.60
Newton			.80				.18								.09				.18								.40					1.65
Northwood			T	.60			T	T									T		T	T							.47	.05				1.12
Odebolt				.32			.12																				.35					.79
Ogden				.40				.20																			.30	.05				.95
Olin				.50			.10			.01				.0	T				T								1.00	T				1.64
Omaha, Neb.	T		.46	.22		T	.09				.02	T	T	T	.01		T		T							.03	.29	T				1.12
Onawa			.40	.37		.05	.10								.05				.02							.03	.55	.05				1.62
Osage				.6			T	.01											.01	T							.36	.07				1.05
Osceola			.40	.20		T	.20								.1																	.90
Oskaloosa			.28	.10		T	.04	.04						T	.07				.02							.02	.22					.79
Ottumwa				.80			.01							.20					.50							1.00						2.51
Pacific Junction			.55	.05		T	.05				.02			T	.02		T									.0	.32					1.04
Perry				.50			.25				T			.02					T							T	.33					1.10
Plover				.30			.0																				.22					.57
Red Oak				1.13		T	.07				T	.05			.05		T		T							T	.40					1.70
Ridgeway		.02	.01	1.11			.01	.01	.01	T							.01		.03	.01			T				.63	.2				2.05
Rockwell City				.10																							.50					.60
Sac City			T	.05			.20																				.35	T				1.10
St. Charles			.10	.60		T	.0				T	T			.03				.03							.01	.34	T				1.15
Scranton			.0	.40		.53																				.37						1.37
Sheldon		T	1.00				.0												.02	T							.50	T				1.57
Sibley		.05	.15	.0			.05					T							T	T							.20					.50
Sigourney			.64	.25		T	T			T				T	.13				T				T				.38	T				1.40
Sioux Center			.40											.05					.05								.20	.20				.90
Sioux City			.1	.10		T	.3					T			T	T			T								.39	.04				.66
Spirit Lake			.80																	T							.2					1.00
Stockport		T	.56	.52			T	T		T		T		T	.05				.0							T	.38	T				1.56
Storm Lake			.16	.46			.09												T								.40	T				1.11
Thurman			.65	.10			.20				T	T			T		T		T							.40	1.10	T				2.45
Tipton			.25	.40			T	T						.10	T				T								.42					1.17

DAILY AND MONTHLY PRECIPITATION FOR FEBRUARY, 1903—CONTINUED.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Toledo	....	....	....	.68	....	....	.10	....	..	....	T	....	....	T	....	..	....	..	T	....	....	....	....	..	....	.19	....	T	....	....	....	.97
Vi lisca	....	..	.97	....	....	....	.30	....	..	....	.15	....	..	.10	....	....	....	..	.10	....	....	....	....	....	....	....	....	....	....	....	....	1.62
Vinton	....	....	.40	T	....	....	.10	....	..	....	....	....	....	.10	....	....	..	..	....	....	....	....	....	....	....	....	.18	..	....	....	..	.78
Washington	....	....	..	.85	....	....	.10	....	....	.03	....	....	..	....		.12	..	.	.03	....	....	....	....	....	....	....	.30	....	..	....	....	1.43
Washta	..	....	.60		....	.10		....	....	..	....	....	..		....	..	..	....	T	T	..	..	....	..	....	....	.50	..	..	....	....	1.20
Waterloo	..	.02	.08	.74	....	....	.04	.01	....	....	....	..	....	.04		....	....	..	.03	....	....	....	....	..	..	....	.35	.03	....	..		1.37
Waukee	....		.80	....	....	T	.20	.10	..	....	T	..	....	T	T	....	T	....	T	....	....	....	....	..	....	T	.28	T	....	..	....	1.38
Waverly	....	....	.12	.85		....	.03	.02	..	....	..	....	..	.01	....	....	.....	....	.01	..		....	....	....	....	....	.35	.10	..	....	.....	1.49
West Branch	....	....		.3	...	T	...	15	....	T	..	....	....	....	.10	..	....	....	.02	....	....	....	....	....	....	....	.45	....	....	....	....	.99
Whitten	...	....	.50	.50	....	....	.20	T	....	....	....	....	....	T	....	....	....	T	T	....	....	....	....	....	....	....	.05	T	..	..	....	1.25
Wilton Junction	..	.10	.10	.50	....	....	.28	....	....	.10	....	....	....	.70	....	....	....	..	....	....	....	....	....	....	....	....	.12	..	....	....	....	1.90
Winterset	....	....	T	.60		T	T	...	..		....	.	....	....	T	....	....	..	....	....	....	....	....	....	....	....	.35	..	....	.	..	.95
Woodburn	....	....	.2	....	....	T	.02	....		....	T		....	T	.02	..		..	.03		....	....			....	....	.45	....	....	....	....	1.72



MARCH, 1903. No. 3.



MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

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U. S. WEATHER BUREAU, ASS'T DIRECTOR.

ALLIED PRINTING TRADES UNION LABEL COUNCIL DES MOINES

DES MOINES:
BERNARD MURPHY, STATE PRINTER
1903.

THE IOWA WEATHER AND CROP SERVICE

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Winterset	H. A. Kinsman
West Branch	Wrigley Smith
West Union	H. B. Blackman
Wilton	Thos. Boot
Wiota	I. S. Coomes
Woodward	Geo. Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIV. MARCH, 1903. No. 3.

EDITORIAL NOTES.

The up-to-date Iowa Idea is to plant and harvest in 1903 the biggest and soundest crop of corn ever grown in this state. We need it in our business.

* * *

Within the past month we have received the sad news of the passing away of two of the most faithful co-workers in this service, Hon. S. H. Mallory, of Chariton, and Mr. H. C. Miller, of Ovid. The communities in which they lived, and the people of the state at large, have suffered a serious loss by the death of these public spirited and intelligent citizens.

* * *

The department of geology and mining engineering of the Iowa State College has been engaged in the study of Iowa clays during the past three years and finds that everyone of the ninety-nine counties in the state contains clay suitable for the manufacture of clay products. In 1901 the state ranked eighth in total clay production. Ninety-three counties marketed clay wares valued at $2,737,825, consisting chiefly of common building brick and drain tile, constituting 2.48 per cent of the production of the entire country, which amounted to $110, 211,587, In the cheaper clay wares, building brick, drain tile, hollow block and burnt clay ballast, she produced 4.45 per cent of a production of about $51,000,000 in those lines.

* * *

Science is touching agriculture and horticulture in many ways in plant breeding, cross fertilization, in the spraying and limitation of insect pests, in analyses of all foodstuffs as animal rations, in soil physics whereby the soil is fitted for its work, in animal husbandry, the feeding and breeding of all domestic animals—in fact, there is no other business in which man is engaged where science touches him more helpfully or with which it works more harmoniously.—*J. S. Trigg.*

THE UNITED STATES AS A STORM CENTER.

There are several reasons for believing that this continent is the peculiar theater for the interchange between the heat and the cold of the Northern Hemisphere, and that the Euro-Asian Continent plays a very different role in the meteorological economy of this hemisphere. For it is well known (1) that while the American Continent is the place for the profuse generation of cyclones, Europe is the region for their dissipation, and in Asia very few cyclones occur except along the ocean borders; (2) that the velocity of motion of the atmosphere generally is about twice as great over North America as over Europe. This points to a profound difference between the actions of the atmosphere in these two regions, but one cause of it at least is easily perceived. It has been shown that the currents which are especially concerned in forming cyclones are contained for the most part within two or three miles of the ground, though their accompanying effects may extend much higher. Hence, any barriers of elevated ground, as mountain ranges, which tend to deflect the flow of the lower strata, must strongly influence the formation of the cyclones themselves, if they are to be referred to the counter flow of long horizontal currents of different temperature rather than to local vertical convective currents.

The great range of the Himalaya Mountains stretching east and west is such a barrier to the flow of the tropical and polar currents in that region, and the result is that true cyclonic movements are almost excluded from the interior of Asia. On the other hand the Rocky Mountain range, stretching north and south along the western districts of North America, favors the counter flow from the tropics and the polar regions by deflecting the westward current of the tropics toward the north, and the eastward drift of the higher latitudes toward the south. The same tendency is favored by the location of the high pressure belt in the latitude of 35°, which causes a high pressure area to form over the middle Atlantic Ocean, while the Rocky Mountain range breaks through the midst of it The result is to produce a powerful anti-cyclonic center of action over the Atlantic Ocean, which maintains a strong northward component from the West Indies toward the interior of the continent. At the same time the American Continent causes the isobars and isotherms to loop southward, and thus in consequence to draw the Siberian atmosphere in a direction nearly parallel to the Rocky Mountain range. These physical conditions are a constant incentive to the formation of countercurrents which meet on the Canadian and United States territory, with the result that 75 per cent or 80 per cent of the storms of the Northern Hemisphere are generated in these districts.—*Relation between the general circulation and the cyclones and anti-cyclones, by Prof. Frank H. Bigelow, in the Monthly Weather Review for May, 1902.*

HOW THE AIR IS WARMED.

BY PROF. G. D. SWEEZY, LINCOLN, NEB.

The great furnace from which we get most of our heat is the sun. It sends to us little waves of heat—many thousands of these tiny waves every second; but they pass so easily and quickly through the air that they have little effect upon it on their way down; but they do warm the ground upon which they fall. for they cannot get through that so easily, and when the ground gets warm it soon warms up the air which lies upon it. This it does in two ways. In the first place, the bottom of the atmosphere actually touches the ground and rests upon it and is warmed by it just as a flat-iron is warmed when it is set on the stove; the heat creeps slowly up from the hot griddle of the

stove into the bottom of the flat-iron, or from the warm earth into the lower air. This process is called conduction. Then again, the earth warms the air in another way. If you hold your hand near the ground when it has been well heated in the sunshine, you will feel the warmth coming to your hand from the ground even if you do not touch it. This is called radiation; that is, the heat is radiated from the earth in little waves much like those which come down from the sun; but there is this difference—the heat waves radiated from the warm soil do not vibrate as rapidly as those which come from the sun, and for this reason they cannot pass through the air so easily. They are mostly stopped before they get very high up into the air, and so the air is warmed by them. That is why it is cold high up in a balloon; the sun is shining there just as much as it is at the surface of the earth, but its rapid waves pass by on their way down and do not warm the air much, and the slower waves coming back from the warmed earth do not get up so high, but mainly warm the lower air, in which the plants and trees live and grow. And so the earth's atmosphere acts as a blanket to keep the earth warm by letting in the heat waves from the sun more readily than it lets out the slower heat waves coming back from the warmed earth. The glass which is put over a hotbed acts in just the same way; it lets the sun's heat come in but will not let the heat arising from the ground get out, and so the plants are kept warm.

For fifteen years past the temperature of the soil has been measured daily at the state farm at seven different depths, ranging from one inch to three feet, and a study of the results recently has brought out many interesting conclusions.

For example, it appears that in every month of the year the surface of the ground averages warmer than the air; this shows that it is the ground which first feels the effect of the solar heat and is warmed by it and then it imparts its heat to the air, rather than the air warming the soil. The warmed surface layers also impart their heat to the deeper soil, but more slowly, so that at a depth of three feet the highest and lowest temperatures of the year are not reached till about a month later than they occur at the surface. At a depth of three feet the range between summer and winter is only thirty-four degrees, instead of a hundred and more, as it is in the air at the surface. The greatest depth to which the ground freezes in the winter is most commonly eighteen or twenty inches; twice since 1890 it has frozen to a depth of more than three feet, viz., in 1895 and in 1899.

PROGRESS AND OPPORTUNITY.

Pittsburg Gazette.

"Do you ever stop to consider young man," said the old stager, "how much you depend upon applied electricity? There goes the telephone bell now. A newspaper office without a system of telephones would be on a par of a 'home without a mother,' or nearly so. Click, click, I hear the telegraph instruments working there in the other room. That's right, my boy, push the button and let us have light. You see electricity comes at every turn. Light and the news—that's light, too—come with the electric touch, I came up an electrically operated elevator just now, and the other day when I was looking over the plant, I noted that your presses on the ground floor and your Mergenthaler machines on the top floor were all run by electricity. Wonderful machines, rapid, efficient, accurate, splendid; wonderful energy that makes them go.

"Young man, these things have all been developed, except the telegragh, within the span of your life. Most of them within the last two decades, yet there are foolish young fellows who con the names of the great and wealthy and lament that the door of opportunity is not as wide open as when those men made their start in life. Nonsense. The door of opportunity was never as wide open as now. Fame and wealth were never as ready to be embraced by ambition and brains as at this moment. Never.

"The inventions that have been made will be surpassed by those yet to come. We have but begun to realize the differentations of voltage, potentials and electro-motive force. The door of opportunity stands wide for the man whose think-tank runs at the touch of the electric facet.

"Not only in the electrical field is there opportunity. In chemistry, in engineering, in geology, in biology there are as good opportunities as were ever improved by Berthelot, Bequerel, Roebling, Lyell or Darwin. In plain business there are rich fields as rich as any worked by Rockefeller or Morgan. In industry Carnegie and Havemeyer have not exhausted the possibilities. In exploration the whole world has not been covered by Humboldt and Captain Cook. There is always opportunity, but the man who grasps it must have force and persistence, energy and brains. That's all. It's a great world, or queer world, a funny world—yes, it is a real good world to live in and be active."

WHAT "CATCHING COLD" MEANS.

The old-fashioned cold has been ousted to some extent from its former position in domestic medicine by the more modern influenza. An attack of influenza is a much better excuse for non-attendance at the office or shop than a cold, the latter being commonly regarded as an accommodation bill drawn by laziness on idleness. There is unquestionably such a thing as a cold—that is to say, a deviation from health obviously consequent upon and due to exposure to cold and damp. The initial sensation of cold is followed by more or less pronounced physical discomfort, possibly by more definite signs and symptoms of bronchitis or other disease a frigore. With that predilection for for inexorable logic which characterizes the undiscerning, the average citizen regards every illness commencing with a chill as a cold, losing sight of the fact that there are chills—i. e.: sensations of cold—which are in no wise due to the action of low temperatures. This vulgar error has been productive of serious consequences in mo e than one direction. Nowadays, and rightly, we are all for fresh air. We fear no foe save the ubiquitous microbe, and we fight him with fire and poison, with results that amply suffice to justify this war. It may, on the other hand, be a person with a weak chest who experiences a "chill," and, as it is theoretically impossible ever to exclude the influence of cold, he or she attributes the symptoms which follow—the cough, the sweating, the exporation, etc.—to incautious exposure, whereas this chill merely heralded a rise of temperature incidental to an outburst of tuberculous disease. It would suprise many intelligent people to be told that a chill is a sign that there is fever, and that sweating is usually a sign that the fever is abating. Yet such is the unvarnished fact, and it would be well for it to be generally known. Cold is merely a debilitating agent, the effects whereof will vary according to the individual. It throws a strain on the organic machinery and the weakest part gives. If the machine as a whole is in good trim, nothing happens beyond a little temporary discomfort. In a rheumatic person it may determine pains in the joints; in another, bronchitis; in a third, kidney trouble, and so on—in short, it picks out the weak spots and converts weakness into disease. Colds are notoriously infectious, and the places where colds are most frequently caught are places where ventilation is defective and where microbes abound, as in certain theaters, churches, railway carriages, and the like, so that even the symptoms of the old fashioned cold are, for the most part, the result of microbial infection and not of exposure.—*London Medical Press.*

SOME OLD-TIME DROUGHTS.

The following interesting statement of dry seasons extenting back to days of the Pilgrim Fathers, has been compiled and is worth preserving.

In the summer of 1621, twenty-four days in succession without rain.

In 1530, forty-one days without rain.
In 1657, seventy-five days without rain.
In 1674, forty-five days in succession without rain.
In 1688, eighty-one days in succession without rain.
In 1694, sixty-two days wi hout rain.
In 1705, forty days in succession without rain.
In 1715, forty-six days in succession without rain.
In 1728, sixty-one days in succession without rain.
In 1730, ninety-two days in succession without rain.
In 1741, seventy two days in succession without rain.
In 1749, one hundred and eight days in succession without rain.
In 1755, forty-two days without rain.
In 1762, one hundred and twenty-three days without rain.
In 1773, eighty days in succession without rain.
In 1791, eighty-two days in succession without rain.
In 1802, twenty-three days in succession without rain.
In 1812, twenty-eight days without rain.
In 1856, twenty-four days without rain.
In 1871, forty-two days without rain.
In 1875, twenty-six days without rain.
In 1876, twenty-six days without rain.

It will be seen that the longest drought that ever occured in America was in the summer of 1762. No rain fell from the 1st of May to the 1st of September, making 123 days without rain. Many of the inhabitants sent to England for hay and grain.—*Ex.*

WEATHER AND CROPS.

The month was warmer than usual, with less than the normal amount of precipitation. But the excessive cloudiness and lack of drying winds and sunshine retarded farm work except in dry sandy soil. The fields were excessively wet, and the roads well nigh impassable the larger part of the month. While the spring opened earlier than usual, the condition of the soil made a late start in spring work. Grass and fall grain wintered well.

CLIMATOLOGY OF MARCH 1903.

BAROMETER.—Mean pressure, 30.13 inches; highest observed, 30.50 inches, at Des Moines, on the 11th; lowest observed, 29.75 inches, at Davenport on the 23d, range for state, 0.75 inch.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 114 stations, was 38.8 degrees, which is 6.6 above normal. By sections the mean temperature were as follows: Northern section, 36.1 degrees; Central section, 39.4 degrees; Southern section, 41.1 degrees. The highest monthly mean was 45 0 degrees at Eldon; lowest monthly mean, 30.8 at Sibley. The highest temperature reported was 82 degrees, at Mt. Pleasant on the 14th; lowest temperature reported, 6 degree at Baxter and Clear Lake on the 1st. The average monthly maximum was 72.1 degrees; average monthly minimum, 11.2 degrees. Greatest daily range, 48 at Monticello; average of greatest daily ranges, 35.3 degrees.

PRECIPITATION.—Average percipitation for the state, as shown by records of 126 stations, was 1.38 inches, which is 0.53 of an inch below normal. The averages by sections were as follows: Northern section, 1.40 inches; Central section, 1.34 inches; Southern section, 1.39 inches. The largest amount reported was 3.90 inches at Le Mars; least amount reported, .15 of an inch at Denison and Ruthven. The greatest daily rainfall reported was 1.80 inches at Keokuk on the 7th. Average number of days on which .01 of an inch or more was reported, 7.

WIND AND WEATHER.—Prevailing direction of the wind, southwest; highest velocity reported, 41 miles per hours, from the northwest, at Sioux City, on the 23d. Average number of clear days, 11; partly cloudy, 7; cloudy, 13.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	30.11	30.48	11	29 75	23
Des Moines	30.15	30 50	11	29.82	31
Dubuque	30.14	30.49	11,28	29.76	23
Omaha, Neb	30.13	30.48	28	29.75	18
Keokuk	30 13	30.48	11	29.80	7
Sioux City	30.14	30.48	28	29 81	14
Means	30.13	30.50	11	29.75	23

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	5681	32	W	24
Des Moines	6371	34	SW	18
Dubuque	5016	26	SW	24
Keokuk	5856	32	W	24
La Crosse, Wis	5663	25	NW	24
Omaha, Neb	6924	28	NW	23
Sioux City	9613	41	NW	23

OBSERVERS' NOTES.

ALGONA—*C. D. Pettibone.* On 17th first robin appeared, wild geese observed flying northward.

ALTA—*David E. Hadden.* Month warm, dry and generally cloudy; mean temperature 7° above, and precipitation 1.09 inches below average of preceding thirteen years.

AMANA—*Conrad Schadt.* Spring opened early, yet no field work could be done till about the close of the month, as the ground was too wet, on account of lack of sunshine and drying winds. Roads have not been in worse condition for many years. Some wheat and oats sown.

ATLANTIC—*J. W. Love.* Wild geese observed on 6th, robbins on 7th, and bluebirds on 8th. Month unusually mild.

BONAPARTE—*B. R. Vale.* Severe electrical storms on 7th, 17th and 18th, the last doing much damage to barns and stock; ground very wet and no farming practicable.

BRITT—*Geo. P. Hardwick.* Month comparatively mild, with little snow or wind; fruit buds forward.

CLINTON—*Dr. Luke Roberts.* March, 1903, gave us her coldest day on the 1st, having been preceded by a windy day with March characteristics, but those conditions had spent their forces at the crossing of the line, and no more "March winds" prevailed until the 23d and 24th, when an average speed of seventeen miles prevailed for thirty hours, commencing at noon of the 23d. The maximum movement of twenty miles an hour occurring during the central portion of the 24th. Snow, by spells, accompanied the wind. Not over two inches of snow fell altogether. This comprised all the snow of the month. Total

precipitation for the month was 2.36 inches, being eighteen hundredths below normal. The greatest precipitation during any twenty-four consecutive hours was 1.10 inches, occurring on the 7th. The maximum temperature was 78°, occurring on the 18th, and was 12° above normal. The minimum temperature was 14° , occurring on the 1st, and was 12.6° above normal.

The warmest day was the 18th, giving a mean of 65.2°, or 13.9° above normal. The coldest day was the 1st, giving a mean of 27°, or 15° above normal.

The total movement of the wind was 3,040, or 2,750 miles below normal, being the smallest run of wind for any March during the last twenty-two years.

It will be observed the departures from normal are greatly in excess, causing a record breaker. On some kinds of trees the buds were putting out at the close of the month.

COLUMBUS JUNCTION—*Prof. H. E. Simpson*. Ice went out of the Iowa and Cedar rivers early on morning of the 7th, followed by a very rapid rise of water on 8th, rising within three feet of high water mark of last August.

FOREST CITY—*J. A. Peters*. Robins came on 11th. No seeding done, frost out of ground.

GRAND MEADOW—*F. L. Williams*. Bluebirds on the 12th, and robins on 17th. All frost out by the 20th; grass well started by end of month; roads very bad.

GRUNDY CENTER—*E. S. King*. Some sod plowing done; clover mostly killed; heaviest snowstorm of season on 23d.

HANLONTOWN—*Miss G. M. Paschen*. First flock of geese observed on 8th; ducks on 18th; robins on 17th. Pussy willows in bud the 13th.

HUMBOLDT—*H. S. Wells*. First robin observed on 17th; fine weather at close of month.

IDA GROVE—*Theo. A. Collett*. On 12th robins appeared; on 14th plowing sod begun; on 17th lawns looked green.

LEON—*M. F. Stookey*. Two inches of snow on morning of 22nd; all off by night; four inches on morning of 23; disappeared by night.

MASON CITY—*J. S. Mills*. Robins and wild ducks on 7th; bluebirds and wild geese on 17th.

OLIN—*Nathan Potter*. Grass three weeks ahead of last year; meadows and ryefields in best of condition; some gardens made.

RIDGEWAY—*Arthur Betts*. Month unseasonably warm, same as in 1902; much thunder; 185 hours of sunshine; much hazy weather and fog; road almost impassable; at end of month soft maples, willows and hazel blossomed out.

WAUKEE—*E. J. Leonard*. First part of month gave promise of an early spring; unusually heavy snowstorms 22d and 23d postponed work in the fields till about 30th.

WAVERLY—*H. S. Hoover*. First wild geese flew north on 5th. Ice went out river on 8th; on 21st planted lettuce, radishes etc.

WEST BEND—*Ph. Dorweiler*. Month warmer than usual; ground too wet to work: roads very bad.

BELATED REPORTS FOR FEBURARY.

FAYETTE.—Mean temperature 18.1 degrees; highest 47 degrees on the 26th; lowest 17 on the 18th; greatest daily range 43 degrees; total precipitation 1.22 inches; greatest in twenty-four hours .70 inches on the 4th; total snowfall 8.7 inches; prevailing direction, northwest. Number of clear days 14, partly cloudy 8, cloudy 6, rainy 4.

WAPELLO.—Mean temperature 23.6 degrees; highest 47 degrees on the 27th; lowest 11 degrees on the 17th; greatest daily range 28 degrees; total precipitation 1.56 inches; greatest in twenty-four hours .90 inches on the 3d; total snowfall 11.5 inches; prevailing direction, northwest; number of rainy days 4.

ERRATA IN FEBRUARY REVIEW.

GRAND MEADOW.—Mean temperature recorded 17 0 degrees on page 7, should have been 18.8 degrees. Mean maximum temperature recorded 24.8 degrees on page 9, should have been 28.4 degrees.

HAMPTON.—Mean temperature recorded 18 6 degrees on page 7, should have been 19.0 degrees. Mean maximum temperature recorded 27.7 degrees on page 9, should have been 28.4 degrees.

BAXTER.—Total precipitation recorded 1.15 inches on pages 7 and 11, should have been 1.05 inches.

BUCKINGHAM.—Total snowfall recorded 5.2 inches on page 7, should have been 4.2 inches.

COLLEGE SPRINGS.—Total precipitation recorded .92 inches on pages 8 and 11, should have been .96 inches.

GUTHRIE CENTER.—Total precipitation recorded .49 inch on page 7, should have been 1.19 inches.

IOWA FALLS.—Mean temperature recorded 16.8 degrees on page 7, should have been 17.0 degrees.

PELLA.—Mean temperature recorded 22 8 degrees should have been 21.8 degrees.

LE MARS.—Maximum temperature recorded 43 degrees on the 22d, on page 7, should have been 44 degrees on the 27th.

MARSHALLTOWN.—Maximum temperature recorded 47 degrees on the 22d, on page 7, should have been 49 degrees on the 10th.

CLIMATOLOGICAL DATA FOR MARCH, 1903.

NORTHERN SECTION

STATIONS	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT							PRECIP., IN INCHES				Number rainy days	SKY			Prevailing direction of wind	DATES OF THUNDERSTORMS.
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)		Number clear days	Number partly cloudy days	Number cloudy days		
Algona	Kossuth	1,213	28	36.6	†9.1	67	18	11	1	37	.60	-1.01	.30	1.5	6	10	8	13	SE	16, 17
Alta	Buena Vista	1,513	11	35.4	†6.7	63	31	9	1	37	.80	-1.11	.58	.7	9	10	9	12	SE, S	17
Alta (near)	Buena Vista	.....	..	.....	.....	.....	.....	.....	.....	.....	93	.....	.74	5	7	.....	....	....	.....	
Britt	Hancock	1,230	5	36 0	†8 7	71	18	13	1	30	.73	- .78	.21	1.1	8	5	11	15	SW	17, 18
Charles City	Floyd	1,012	11	38.2	†8.9	71	18	11	1, 25	33	1.65	- .06	.41		8	8	10	13	SE, NW	
Clear Lake	Cerro Gordo	1 241	..	36.2		68	18	6	1	42	.50	...	.25	1.5	4	12	9	10	SW	6
Decorah	Winneshick	875	8	37.1	†7.6	70	18	7	1	34	1 58	- .41	.64	6.5	6				.....	
Dows	Wright	1,142		37.8	...	72	18	10	1	31	.95	.....	.33	3.8	9	15	5	11	NW	16
Elkader	Clayton	727	21	39.4	†8 8	76	18	10	1	36	2.07	† .25	.80	8.0	11	10	9	12	SE, NW	16, 18
Estherville	Emmet	1,298	7	34.2	†8 4	66	12	9	1	27	.....	.....	.27	3.6	7	10	7	14	NW	17
Fayette	Fayette		....	36.8	†6 8	72	18	7	1	36	1.70	- .56	.71	5.0	9	10	7	14	SE, NW	16, 18, 19
Forest City	Winnebago	1,226	8	33 6	†5.2	69	18	7	1	34	.73	- .75	.36	T	4	12	4	15	W	
Grand Meadow	Clayton	1,18	11	36.8	†7.1	75	18	7	1	33	2 05	† .00	1.00	9.5	8	9	8	14	SW	18
Greene	Butler	924	5	37 2	†7.5	70	18	9	1	33	1.59	† .01	.42	7.0	9	9	8	14	SW	
Hampton	Franklin	1,155	12	37 3	†9 5	72	18	10	1	32	1.33	- .88	.33	3.2	9	9	9	13	SW	14, 16, 18
Hanlontown	Franklin			36 0		70	18	9	1	41	.73	... ..	.34	.5	8	12	5	14	NW	
Humboldt	Humboldt	1,095	10	37.4	†8.8	72	18	10	1	32	85	- .65	.20	...	7	14	5	12	SE	
Larchwood (b)	Lyon	.....	...	34.6		70	12	8	1	37	2 11	..	.70	T	5	17	3	11	S	16, 17, 19
Larrabee	Cherokee	.....	....	34.6	†6.0	64	12, 18, 31	9	1	40	1 02	- .71	.58	.6	4	11	8	12	SW	15, 17
Le Mars	Plymouth	1,224	6	35.5	†4 6	63	12	9	1	37	3.90	†1 41	1.40	T	5	....	...	..	S	16, 17
Mason City	Cerro Gordo	1,132	...	39 4	†11.5	74	19	12	1	39	1.07	- 27	.20	4 5	8	9	8	14	SW	7
New Hampton (b)	Chickasaw	1,169	..	35.8	.....	70	18	7	1	30	1 68	...	.80	10.0	6	10	7	14	NW	
Northwood	Worth	1,222	6	36 3	†8.4	66	18	9	1	31	.95	- .86	.30	3.0	8	11	5	15	NW	
Osage	Mitchell	1,184	11	36 0	†9.4	67	18	8	1	30	2.02	† .42	.72	6.5	11	9	5	17	SW, NW	18
Plover	Pocahontas	1,190	5	35.9	†6.8	68	18	8	1	36	.50	-1.05	.22	1.0	6	15	1	15	NW	
Primghar (b)	O'Brien	....	6	34.4	†6.8	62	18	12	20	36	1.15	-1.18	.75	....	4		..	..	N	
Ridgeway	Winneshiek	1,215	....	38.1		70	18	7	1	31	2 81	.....	1.02	10.0	13	10	8	13	S	6, 16, 17, 18, 19, 31
Ruthven	Palo Alto	.....	....	37.0		68	18	9	1	44	.15	....	.10	1.5	2	14	3	14	NW	
Sheldon (a)	O'Brien	1,422		31.2	.....	65	12	9	1	34	2.23	.....	1 16	.2	6	13	1	17	S	
Sibley	Osceola	1,512	8	30.8	† 1 9	63	12	10	1, 20	30	2.52	†1.20	.79	.2	6	...		....	NE	
Sioux Center	Sioux		....	33.2	.....	63	12	8	1	29	2 68	.....	1 05	2.0	6	12	7	12	SE	19
Storm Lake	Buena Vista	1,440	7	36.0	† 7.9	61	12, 18, 19, 31	9	1	36	.64	- .74	.51	T	4	12	4	15	SE	17
Washta	Cherokee	1,157	....		....	.....	.....	.....	.....	.....	.90	.....	.50	..	2	15	13	3	S	
Waverly	Bremer	942	6	37 3	† 7.0	73	18	9	1	34	1.59	- .35	55	8.5	11	11	5	15	SE	3, 16, 18, 19
West Bend (a)	Palo Alto	1,197	8	36 6	† 8 4	69	18	10	1	32	.92	- .90	.35	1.0	7	....	....	....	S	17, 18
Average	.....	.....	...	36.1	† 7.6	68.6	.....	9.0	.....	34.6	1.40	- 39	....	3 7	7	11	7	13	NW	

CENTRAL SECTION.

Amana	Iowa	721	25	40.7	†9.5	73	18	11	1	28	1.44	-1.48	.22	2.0	13	7	9	15	S, SW	7, 16, 18
Ames	Story	926	20	38.6	†6.5	73	19	13	25	31	.61	- .82	.22	2.4	10	....	....	....	SE	
Baxter	Jasper	998		39.4	.....	78	18	6	1	38	.90	.....	.40	9.0	3	11	5	15	SE	
Belle Plaine	Benton	828	12	39.2	†7 2	76	18	11	1	34	2.00	- .52	.60	11.8	11	3	20	8	SE	
Buckingham	Iowa	..	...	..	.....	.....	.....	.....	.....	.....	1 08	.....	.30	4.8	7	11	7	13	.....	
Carroll	Carroll	1,265	12	38 5	†7.8	71	18	11	1	36	70	-1.65	.42	1.0	6	12	7	12	.....	16
Cedar Rapids	Linn	733	19	42 6	.....	78	18	15	1	32	.65	-1 50	.16	3.0	5	8	9	14	S	
Clinton	Clinton	609	34	41.1		78	18	14	1	38	2.36	- .72	1.10	2.0	9	9	6	16	NE	3
Davenport	Scott	606	31	42 6	-7 7	76	18	13	1	29	2.06	- .10	1.10	.7	12	8	8	15	S	7, 16, 18
Delaware	Delaware	1,083	11	38.8	†9 1	71	18	7	1	36	1.74	- .09	.42	2.5	11	10	10	11	SW	7, 16, 17, 18
Denison	Crawford	1,180	8	33.5	†1.6	71	17	13	1, 20	41	.15	-1.48	.15	T	1	15	5	11	N-S	
Des Moines	Polk	861	24	40.6	†5.6	74	18	15	1	34	1.09	- .23	.67	8.3	11	7	12	12	SW	16, 18
De Soto	Dallas	866	....	38.6		74	18	15	1	35	.74	.....	.39	5.0	7	12	4	15	SW	
Dubuque	Dubuque	655	29	39.6	†7.7	75	18	11	1	29	1.84	- .43	.40	2.6	12	7	4	20	SE	7, 16, 18
Galva	Ida	1,290	8	35.9	†4.2	64	18	13	2	35	.16	-1.38	.11	.5	1	....	...	...	NW	
Gilman	Marshall	1,052	...	.....	....	..	.....	...	..	.....	.....	.....	1.37	.....	.64	5.0	5	11	5	15	S	
Grinnell	Poweshiek	1,023	9	40 0	†7.3	74	18	12	1	29	1.21	- .68	.30	2.8	8	10	8	13	N	18
Grundy Center	Grundy	976	11	38 5	†7.6	72	18	9	1	34	1.91	† .30	.80	11 5	9	10	6	15	SE, S	16
Guthrie Center	Guthrie	1,077	6	38.8	†6 1	73	18	13	1	34	.95	- .37	.24	4.5	8	8	10	13	SW	
Harlan	Shelby	1,192	....	37.8	....	73	17	10	1	37	.83	.....	.31	2.6	7	7	12	12	S, NW	
Independence	Buchanan	921	38	36 4	†6.3	72	18	10	1	37	.80	- .84	.45	4.6	5	14	5	12	SW	6, 18
Ida Grove	Ida	1,220	...	38.4		67	17, 18	10	1	38	1.96	.....	.70	.6	4	10	16	5	S	
Iowa City	Johnson	685	43	41.9	†8.4	79	18	11	1	39	1.86	- .65	.95	.5	12	10	8	13	S	
Iowa Falls	Hardin	1,107	9	36.8	†6.7	72	18	10	1	30	1.35	- .20	.30	6.5	9	14	2	15	SE	16, 18
Jefferson	Greene	1,052	..	...	....	.....	....	.....	.....	.....	1.40	.....	.70	3.5	6	....	....	....	NW	16
LeClaire	Scott	576	..	...	....	.....	....	.....	.....	.....	2.61	.....	1.12	.2	10	.	...	....	S	
Logan	Harrison	928	35	38.2	†4.3	74	17	13	1	43	.28	-1.66	.10	1.0	5	19	2	10	SW	
Maquoketa	Jackson	688	9	41 0	†7.6	76	18	11	1	37	1.83	- .79	.35	...	12	11	7	13	NE	
Marshalltown	Marshall	947	9	40.4	†8.9	74	18	12	1	34	1.55	- .43	.38	8.5	11	8	9	14	SW	
Monticello	Jones	925	48	41.3	†9.5	75	18	15	24	48	2.25	- .15	1 10	5.0	6	7	5	19	SW	
Mt. Vernon	Linn	847	35	40.6	†8.7	73	17, 18, 31	8	1	35	1.66	- .60	.27	2.7	10	9	6	16	SW	6, 16, 18
Newton	Jasper	944	14	39 4	†5 8	70	18, 19	12	1	34	1.41	- .18	.47	8 0	8	12	8	11	S	
Odebolt	Sac	1,356	5	39.0	†6.0	77	31	11	1	47	.54	-1.45	.42	.5	4	15	6	10	.....	
Ogden	Boone	1,088	8	38 2	†5.9	73	18	9	1	38	1.09	- .38	.30	4.0	7	16	2	13	SE	
Olin	Jones	760	....	39 8	.....	73	18	10	1	31	3.32	.....	1 00	2.0	10	11	7	13	E	6, 18
Onawa	Monona	1,053	....	38.4	.....	69	31	13	1	38	1.08	.....	.56	2.0	7	16	5	10	SE	
Perry (a)	Dallas	975	..	39.3		72	17, 18	14	1	34	.80	.....	.39	3.0	4	...	....	..	.....	16
Rockwell City	Calhoun	.....	5	37.7	†7.3	72	18	12	1	35	.40	-2.05	.15	1.0	5	13	6	12	.....	
Sac City	Sac	1,278	22	36.8	†5.7	69	18	10	1	36	.57	-1.05	.27	1.0	4	13	2	16	S, NW	
Scranton	Greene	1,172	....	38.7	.....	71	18	14	1	34	.55	.....	.17	.5	6	13	5	13	S	
Sioux City	Woodbury	1,165	13	36.0	†4.4	67	12	11	20	36	1.85	† .61	1.22	.3	8	8	8	15	NW	17, 18
Stuart (j)	Guthrie	1,216	5	40.6	†8 9	72	18	.....	.....	.....	.....	.....	.....	....	..	..	...	...	.....	
Tipton	Cedar	807	....	41.6	.....	75	18	11	1	33	1.37	.....	.66	2.0	8	8	11	12	SW	
Toledo	Tama	856	8	40.0	†6.8	74	18	12	1	38	1.07	.....	.10	4.0	9	10	7	14	SW	
Vinton*§	Benton	810	12	39.3	.....	72	18	15	1	.....	1.27	- .53	.50	5.0	5	12	3	16	SE	6
Waterloo	Black Hawk	862	15	38.2	†8.0	75	18	11	1	33	1.60	† .03	.75	12.0	10	12	6	13	S	19
Wilton Junct'n	Muscatine	683	7	42.6	†9.0	77	18	10	1	34	2 91	† .19	1 23	4.0	5	11	3	17	NW	18
Whitten	Hardin	1,036	....	33.2	.....	72	18	9	1	34	1.77	....	1.00	12.0	6	10	7	14	S, NW	16, 19
West Branch	Cedar	718	...	...	.....	.. .	.....	.....	... .	.....	1.99	.....	.87	.8	12	6	14	11	SE	6
Waukee	Dallas	1,039	....	.....	.....	.....	.....	.....	.....	.....	.84	.....	.50	5.0	10	8	12	11	SW, NW	16
Average	.....	.....	....	39.1	†7.0	73.1	.....	11.5	.....	35.4	1.34	- .68	.....	3.9	8	11	7	13	SW	

MONTHLY REVIEW OF THE

CLIMATOLOGICAL DATA FOR MARCH, 1903—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC., IN INCHES.					SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	7	39.2	†4.7	74	17, 18	12	1	36	.78	-1.75	.30	4.0	5	....	....	....	SW	
Albia	Monroe	959	..	42.6	....	76	18	13	1	33	1.87	.....	.50	....	10	15	6	10	SE	6
Atlantic	Cass	1,164	11	38.8	†5.9	73	17	13	23	39	1.11	-.81	.41	3.5	3	6	10	15	NW	
Audubon	Audubon	1,301	8	37.6	†5.0	71	18	11	1	37	.47	-1.32	.20	2.0	4	15	4	12	SW	
Allerton	Wayne	.....	..	41 9	.....	75	17, 18	13	1	36	1.85	.....	.40	2.0	9	11	12	8	SE	16
Bedford	Taylor	.....	....	40.1	.....	74	17	10	23	42	.83	.....	.41	4.2	4	12	7	12	SW	
Bonaparte	Van Buren	.....	10	43.2	†6.3	78	18	13	1	37	2.23	-.53	.57	T	7	....	....	....	.....	7, 17, 18
Burlington	Des Moines	544	....	44.8	.....	79	18	13	1	40	2.32	-.59	1.11	....	9	16	4	11	S	7
Corydon	Wayne	993	9	41.9	....	75	17	12	1	33	1.97	...	.50	5.0	9	12	4	15	NE, SW	16
Chariton	Lucas	1,042	7	41.3	†6.3	75	17	13	1	35	.86	-.69	.21	4.8	9	10	6	15	S	
Clarinda	Page	1,069	12	40 7	†6.1	76	17	13	1	39	.99	-.99	.45	5 0	6	11	7	13	S	
College Springs	Page	....	10	40.5	†4 4	75	17	14	1	32	1.07	-.77	.40	4 0	7	16	4	11	SW	
Columbus Jct.	Louisa	595	...	41.6	.....	78	18	10	1	35	2.40	.....	.97	1.0	10	12	9	10	SE, NW	6, 7, 16, 19
Corning	Adams	1,127	10	38.8	†3.4	71	17	7	23	41	1.34	-.47	.80	8.0	5	10	11	11	SW	16
Council Bluffs	Pot'wat'mie	990	5	36.3	†1.5	76	17	7	24	45	.50	-1.08	.26	2 6	4	8	6	17	SE, NW	
Cumberland	Cass	.....	....	.....	.....	.....	.....	....	....	....	1.10	.....	.60	5.0	2	21	2	8	S	
Danville	Des Moines	726	....	.....	.....	.....	.....	.....	.....	....	1.55	.....	1.25	..	3	19	0	12	.....	..
Earlham	Madison	.....	....	39 6	..	74	17	12	23	35	1 05	.....	.66	6.5	5	8	5	18	S	
Eldon	Wapello	630	....	45.0	.....	73	18, 19	19	1,25	39	.71	.....	.20	.5	5	20	0	11	W	
Fort Madison	Lee	516	51	.....	.....	.....	.....	.....	.....	.....	2.25	-.53	.97	..	7	6	8	17	SW	7, 16, 18
Greenfield	Adair	.....	11	38.6	†5.2	72	17	10	1	35	1.03	-1.27	.46	4.6	8	17	2	12	SW	13, 18
Hopeville (j)	Clarke	.....	11	42.3	†8.0	78	18	16	25	37	1.14	-.60	.35	..	9	....	....	....	.....	
Indianola	Warren	969	11	41.3	†6.7	75	17	19	1	35	1.21	† .01	1.03	8 0	4	12	7	12	SW	
Keokuk	Lee	619	31	44.4	†6 8	77	17	15	1	30	3.03	† .85	1.83	.2	11	11	11	9	SW	7, 16
Keosauqua	Van Buren	651	10	43.8	†6.2	79	18	14	1	37	3 00	† .46	1.43	T	9	..	....	....	.....	16, 18
Lacona	Warren	.....	....	.....	.....	.....	.....	.....	.....	.....	2.49	.....	.64	7.0	9	....	....	....	.....	
Lenox	Taylor	1,250	7	39 4	†5.4	73	17	10	1	35	.79	-1.24	.45	4.5	5	15	5	11	S	
Leon	Decatur	1,120	....	41.8	..	74	17	14	1	34	1.28	.....	.40	...	8	14	5	12	S	
Mt Ayr	Ringgold	1,236	8	40.1	†5.1	74	17	12	1	36	1.38	-.75	.40	7.0	9	7	12	12	SW	
Mt. Pleasant (‡)	Henry	729	20	44.1	†8.5	82	17	10	9	41	1 15	-1.23	.55	....	3	15	5	11	SW	
Omaha, Neb.	Douglas	1,113	32	39.6	†4.1	74	17	14	1	36	.58	-.92	.20	2.3	7	10	7	14	S	
Osceola	Clarke	1,130	6	40.2	†6.4	75	17	18	20	33	1.41	-.47	.50	....	6	....	..	..	SE	5
Oskaloosa	Mahaska	843	18	41 2	†7.3	73	17	12	1	32	.90	-1.04	.24	3 5	9	....	....	..	.....	
Ottumwa	Wapello	649	8	43.4	†6.3	76	18	17	1	27	.95	-1.05	.50	....	3	9	12	10	E	
Pacific Junction	Mills	960	....	39.4	....	73	17	13	1	33	.58	.....	.21	2.3	4	7	12	12	S	
Red Oak	Montgom'ry	1,033	....	40.6	.....	70	17	17	1	31	.88	.....	.38	4.2	4	9	12	10	SE	16
St. Charles	Madison	1,070	....	41.0	.....	74	17	14	1	35	1 92	.....	.70	7.7	11	13	4	14	NW	
Sigourney	Keokuk	787	6	42 6	†8.7	78	18	11	1	41	1.35	- .68	.39	1.0	8	13	10	8	SE, NW	7, 16, 18
Stockport	Van Buren	.....	....	.....	.....	.....	.....	.....	.....	.....	1.91	.....	.55	.2	8	9	7	15	SW	7
Thurman	Fremont	.....	....	39.6	.....	70	18	12	1	38	1.23	.....	.40	4.0	4	12	5	14	SW	
Wapello	Louisa	588	....	42.6	..	75	18	17	1	31	1.38	.....	.60	.5	8	12	8	10	SE, NW	18
Washington	Washington	769	20	40 6	†7.1	77	18	9	1	37	2 25	† .14	1.28	....	10	..	...	....	SE	6
Winterset (a)	Madison	1,129	11	42.9	†9.4	74	19	20	2, 3	37	.66	-1.48	.22	....	5	9	7	15	S	
Woodburn	Clarke	961	....	.....		.....	.....	.....	.....	.....	1.19	.....	.45	8.5	7	14	6	11	SW	
Average		....	....	41.1	†6.1	74.7	.....	13 2	.....	35.8	1.39	- .72	.....	4.0	7	12	7	12	SW	
Av. for the state		.....	.....	38 8	†6.9	72.1	.....	11.2	....	35.3	1.38	- 65	.....	3 9	7	11	7	13	SW	

*Means determined from 7 A. M., 2 P M, and 9 P. M. observations, and maximum and minimum are taken from eye readings. ‡Received too late to be computed with means. a, One day missing; b, two days, etc. §Not supplied with self registering instruments. † Above normal.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MARCH, 1903.

STATIONS.		DATE.																														Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max.	38	44	46	42	38	50	50	50	56	47	51	61	56	38	46	68	74	74	64	33	55	36	35	36	..	..	46	42	52	63	70	50.3
	Min.	12	19	27	32	31	33	33	36	28	37	36	34	32	26	33	42	44	54	28	17	22	21	22	24	..	..	19	24	23	27	42	28.2
Albia	Max.	40	49	50	49	40	52	51	52	57	47	52	63	67	42	42	69	75	76	65	39	55	45	36	38	58	65	52	45	51	61	71	53.4
	Min.	13	22	34	34	32	35	35	27	30	39	38	36	34	23	33	38	45	57	38	22	25	33	26	24	23	40	30	25	25	29	44	31.9
Algona	Max.	37	40	39	36	34	42	43	47	49	52	50	62	62	32	34	44	55	67	60	31	48	41	31	42	46	43	40	37	46	61	60	45.5
	Min.	11	20	30	30	26	26	30	25	32	33	33	35	25	23	29	35	34	48	30	18	21	26	25	21	22	33	22	23	26	33	29	27.6
Allerton	Max.	40	44	49	45	39	53	53	53	56	46	51	61	68	40	45	71	75	75	66	38	55	46	35	35	56	63	57	45	51	62	71	53.0
	Min.	13	20	22	34	32	34	35	38	30	40	36	32	32	22	30	40	45	56	38	20	22	32	25	23	22	35	29	25	25	27	40	30.8
Alta	Max.	36	39	38	31	36	41	44	48	54	44	51	64	44	30	37	44	56	64	57	26	48	34	29	36	54	41	36	39	48	61	65	44.4
	Min.	9	18	29	28	25	31	28	27	31	30	29	36	23	22	28	34	33	53	20	14	18	25	23	20	22	25	20	23	25	34	38	26.5
Amana	Max.	37	45	43	40	41	46	49	46	46	48	51	51	61	43	43	52	68	73	62	46	51	43	34	37	50	61	47	44	47	57	68	49.4
	Min.	11	21	33	34	34	34	37	27	29	39	38	34	34	32	31	37	43	56	46	27	23	32	27	26	21	36	31	27	25	25	40	32.0
Ames	Max.	22	42	47	39	38	39	47	48	51	56	45	56	64	40	38	41	54	72	73	57	39	54	34	32	37	53	59	41	42	5c	56	47.6
	Min.	14	14	24	31	31	31	33	26	29	36	35	33	34	27	30	34	41	41	51	29	27	29	26	20	13	35	27	25	25	27	40	29 3
Atlantic	Max.	40	43	42	36	37	48	50	52	59	49	57	65	53	35	44	57	73	70	61	32	53	40	31	37	56	45	38	43	52	64	69	49.4
	Min.	14	21	29	32	30	33	31	20	30	34	32	35	29	25	31	40	39	54	25	17	23	28	13	21	20	34	25	23	23	32	30	28.2
Audubon	Max.	40	43	38	34	35	42	47	50	57	51	55	64	53	32	42	58	64	71	62	32	51	42	34	38	53	53	40	43	45	50	67	47.9
	Min.	11	13	28	30	27	30	32	26	32	33	30	40	29	24	29	37	42	53	25	14	21	28	18	20	22	32	20	22	22	24	34	27.4
Baxter	Max.	42	47	40	37	38	47	49	50	55	45	52	60	50	39	39	55	71	78	67	38	53	45	35	36	52	60	40	43	48	60	69	49.7
	Min.	6	20	30	30	32	34	32	25	30	36	34	34	30	28	31	38	40	53	35	22	18	27	25	24	14	34	28	24	24	25	40	29 1
Bedford	Max.	40	44	50	41	39	53	51	54	59	49	51	63	58	39	46	68	74	72	63	35	57	43	33	37	59	55	40	45	53	64	70	51.8
	Min.	12	18	26	33	32	33	31	20	31	37	35	34	30	26	33	44	44	59	29	11	19	27	10	21	17	38	27	22	22	26	35	28.4
Belle Plain	Max.	37	44	43	39	40	47	48	46	48	48	51	53	60	42	41	53	68	77	60	30	52	35	37	38	49	61	42	42	47	60	69	48.6
	Min.	11	18	30	32	33	35	32	25	28	35	38	34	35	30	31	30	38	45	52	25	20	28	25	24	18	30	30	25	26	28	35	29 9
Bonnaparte	Max.	36	46	44	47	41	53	54	50	51	50	52	59	69	50	46	67	76	78	65	45	53	56	38	41	55	67	54	47	49	58	70	53.8
	Min.	13	23	33	35	34	36	41	27	28	40	39	33	32	31	32	39	47	58	45	26	24	36	28	27	23	36	34	27	25	26	36	32.7
Britt	Max.	36	40	38	34	40	45	41	45	50	44	49	61	50	35	38	47	55	71	56	28	47	38	32	35	48	40	31	42	45	60	61	44.7
	Min.	13	17	30	31	27	33	29	23	31	34	33	34	26	25	32	35	35	48	28	17	18	27	26	21	18	28	23	23	23	30	30	27 3
Burlington	Max.	37	50	43	46	42	53	55	53	50	55	57	57	71	57	50	66	78	79	70	51	54	53	41	43	55	67	54	50	52	60	71	55.5
	Min.	13	24	32	35	35	36	43	29	30	43	40	36	31	34	30	38	56	60	51	28	25	35	29	27	22	39	36	28	27	28	40	34.2
Carroll	Max.	41	44	39	36	38	52	49	52	56	45	57	66	48	34	41	53	64	71	54	32	51	48	33	41	55	50	41	44	52	65	70	49 1
	Min.	11	18	28	30	28	29	30	23	30	32	29	35	24	28	36	36	49	38	15	26	31	24	20	19	32	22	22	24	34	36	28.0	
Cedar Rap.	Max.	39	46	43	39	41	53	56	55	48	50	53	54	62	48	49	55	71	78	66	48	54	47	38	38	53	64	46	43	48	60	70	52.1
	Min.	15	23	33	34	33	36	38	30	30	40	39	36	35	34	30	38	44	56	46	27	25	34	25	26	24	38	32	28	27	28	40	33.0
Chariton	Max.	38	45	47	43	37	52	51	55	61	46	50	61	64	38	41	67	75	74	64	35	54	44	35	34	55	62	45	43	49	60	70	51.5
	Min.	13	22	28	33	33	34	34	31	28	39	36	36	34	27	34	39	45	57	34	19	23	31	26	23	20	37	39	24	24	28	43	31.1
Charles Cy.	Max.	37	41	39	36	39	40	44	45	46	46	49	58	53	39	40	44	52	71	65	41	49	41	33	34	40	54	38	44	46	69	62	46.3
	Min.	11	22	33	32	32	34	33	25	29	37	36	35	32	31	32	36	39	48	39	23	23	31	27	26	11	26	29	27	27	31	35	30.1
Clarinda	Max.	43	46	42	38	38	51	51	55	62	42	53	66	49	40	47	69	76	75	60	33	60	43	33	41	61	56	40	47	55	67	73	52 0
	Min.	13	18	26	34	31	33	32	24	33	35	35	33	27	24	33	44	46	57	26	17	28	27	14	23	22	35	27	25	27	28	36	29 4
Clear Lake	Max.	35	42	36	38	42	42	42	50	51	40	51	61	50	36	36	44	55	68	57	28	47	39	31	36	52	47	40	44	62	60	62	46.0
	Min.	6	17	28	29	26	31	29	20	27	34	32	35	25	25	32	33	35	44	28	16	18	27	24	20	17	29	23	26	20	28	35	26.4
Clinton	Max.	35	45	43	38	41	47	47	47	45	51	44	56	65	49	44	55	72	78	71	53	52	62	43	38	49	66	50	40	48	57	69	51.6
	Min.	14	22	28	28	33	33	36	29	27	33	33	32	28	33	30	33	43	48	52	28	23	33	28	26	24	28	33	28	25	22	36	30.6
College Spr	Max.	40	44	45	39	37	52	48	30	60	47	52	62	50	42	47	68	75	73	62	36	57	46	35	35	59	54	39	44	40	63	68	50 8
	Min	14	20	26	33	31	33	32	27	32	34	35	33	34	27	33	43	46	67	28	16	25	26	17	23	24	37	27	25	27	30	36	30.2
Colum. Jct.	Max	37	47	45	44	41	52	53	51	47	52	54	55	68	53	49	68	72	78	61	41	54	57	38	39	55	67	56	51	50	60	72	51.2
	Min	10	20	31	33	33	34	48	28	27	38	38	35	35	32	30	40	48	57	41	27	24	32	23	20	22	37	32	24	22	25	41	31.9
Corning	Max	39	43	41	39	37	50	48	48	56	43	50	65	52	36	45	63	71	70	59	34	54	43	32	36	54	56	38	41	49	60	67	40.1
	Min	12	18	27	33	31	33	32	22	32	26	34	36	32	25	32	42	43	55	25	15	23	27	7	20	16	37	26	24	25	30	38	28.6
Co Bluffs	Max.	42	45	40	35	37	45	48	53	60	39	52	44	44	35	45	61	76	71	58	35	55	36	33	39	61	51	45	43	38	66	67	48.4
	Min.	13	19	30	32	30	35	17	24	24	33	30	30	30	25	25	25	42	50	22	15	10	9	9	7	27	27	25	24	9	25	38	24.2
Corydon	Max.	40	46	50	44	40	50	53	54	58	47	51	62	68	43	44	70	75	74	68	37	55	46	34	36	56	64	53	51	52	63	72	53.4
	Min.	12	19	28	33	31	33	32	25	29	39	35	33	35	27	30	38	44	56	35	19	22	31	25	22	20	37	28	23	24	26	40	30.4
Davenport	Max.	35	46	41	39	42	50	53	47	47	51	45	54	67	48	43	61	74	76	65	42	52	60	39	38	50	63	45	43	45	56	69	51.2
	Min.	13	25	31	34	34	34	37	31	29	40	39	36	39	37	31	35	45	60	42	27	26	38	29	26	28	40	35	31	27	30	43	33.9
Decorah	Max.	37	40	44	37	35	40	44	48	45	44	39	47	45	41	38	42	47	70	64	52	47	38	33	34	43	53	42	42	48	58	55	44.9
	Min.	7	18	28	32	32	34	32	24	29	36	36	37	33	32	31	35	37	36	39	28	23	28	32	27	17	30	28	25	23	27	32	29.3
Delaware	Max.	35	42	40	35	38	44	47	46	45	44	47	49	57	43	42	44	52	71	63	50	46	43	37	33	43	56	44	42	46	59	61	46.6
	Min.	7	18	29	30	30	30	34	24	29	36	33	30	32	31	28	36	40	45	48	25	20	27	26	25	16	30	30	24	20	23	39	30.9
Denison	Max.	40	43	38	34	36	48	45	50	58	53	51	64	55	32	42	52	71	69	63	47	51	45	35	39	55	53	52	40	51	64	68	49.8
	Min.	13	18	29	29	27	31	29	22	33	31	29	34	27	24	29	39	35	55	22	13	20	28	22	21	20	29	20	22	25	32	35	27 2
Des Moines	Max.	40	45	40	39	39	51	49	51	57	45	53	60	49	39	41	59	74	74	63	33	54	38	33	37	52	59	40	42	48	61	70	49.5
	Min.	15	23	32	33	34	34	35	29	31	40	36	37	30	29	34	40	44	58	29	21	22	28	27	25	21	31	29	28	28	31	46	31.6
De Sota	Max.	40	44	42	38	39	50	50	48	54	49	51	60	50	37	44	64	73	74	60	36	54	44	33	37	50	56	41	41	61	67	..	47.3
	Min.	15	22	31	33	33	35	38	28	32	38	36	34	32	27	34	39	41	53	30	20	22	30	27	28	20	37	28	26	26	41	..	30.0
Dows	Max.	37	42	37	34	32	42	44	46	51	42	49	61	55	39	36	45	61	72	64	34	48	42	30	35	46	54	38	39	46	60	62	47.6
	Min.	10	19	30	30	29	32	29	24	30	34	32	35	27	26	30	35	32	49	33	19	40	27	25	21	19	31	25	23	25	29	39	28.0
Dubuque	Max.	35	44	42	38	40	48	52	48	45	46	42	52	64	42	41	44	52	75	64	41	50	49	35	35	46	62	38	40	46	57	63	47.6
	Min.	11	25	32	33	32	34	37	28	28	38	34	35	36	34	30	34	42	47	41	26	23	31	26	26	26	33	33	29	26	29	40	31.6
Earlham	Max.	38	44	43	45	44	50	50	49	56	47	52	61	50	36	43	59	74	72	60	55	46	33	52	59	49	45	39	43	49	62	70	50.8
	Min.	16	18	31	30	33	32	31	20	28	33	32	39	30	25	31	34	39	53	29	19	27	20	12	34	25	30	25	22	17	29	37	28 3
Eldon	Max	40	39	45	46	44	52	54	53	56	51	54	63	71	70	65	69	71	73	73	59	56	50	39	40	56	65	66	60	62	53	62	58.9
	Min.	19	22	25	24	36	36	35	29	25	40	31	33	32	38	33	34	45	44	39	31	27	36	32	27	19	29	30	31	28	23	34	31.0
Elkader	Max.	36	45	38	36	40	40	53	50	48	45	50	57	60	45	40	47	49	76	60	46	63	51	41	41	36	56	48	46	50	60	63	48.8
	Min.	10	21	33	33	33	34	36	24	25	37	30	33	38	33	30	37	40	40	46	28	26	28	28	27	17	27	32	24	20	24	35	30.0
Estherville	Max.	34	36	39	34	34	40	40	47	49	45	51	66	49	30	36	39	43	61	42	25	42	35	31	35	52	43	34	39	46	60	61	42.6
	Min.	9	12	14	26	25	28	30	31	31	30	30	37	23	22	28	33	32	39	22	14	13	25	23	20	34	25	20	27	23	33	37	25.7
Forest C'ty	Max.	35	37	32	32	33	38	35	38	43	38	45	51	48	33	33	41	51	69	60	28	46	31	26	34	48	32	31	32	37	53	53	40.1
	Min.	7	19	30	30	27	32	31	23	30	34	32	35	26	25	31	34	30	45	26	16	20	26	24	20	19	29	23	23	23	31	35	27.0
Galva	Max.	35	40	40	33	37	42	42	47	54	48	51	63	45	31	40	47	63	64	58	29	49	39	32	34	53	56	33	49	..	55	62	45 6
	Min.	18	13	29	29	27	51	28	20	31	31	29	34	27	20	29	35	34	50	24	13	17	24	22	21	18	27	19	22	..	31	31	26.2
G. Meadow	Max.	32	38	37	35	39	40	45	44	40	44	45	52	49	40	39	40	42	75	60	45	45	43	32	35	43	53	46	41	46	57	62	44.6
	Min.	7	20	31	32	32	32	34	24	26	35	34	34	36	32	28	35	38	42	45	23	20	28	26	25	16	31	28	23	22	26	37	29.1
Greene	Max.	38	43	36	34	40	40	45	47	47	44	51	59	52	39	38	44	57	70	63	34	48	43	30	35	45	53	39	38	48	60	61	45.8
	Min.	9	20	32	32	30	33	30	25	29	35	30	34	30	29	32	37	37	45	34	22	22	28	25	23	15	31	27	25	28	27	40	28.7
Greenfield	Max.	38	43	40	45	38	50	48	49	56	44	60	62	55	35	45	60	72	71	63	32	52	43	36	36	53	56	47	40	51	62	68	50.0
	Min.	10	18	28	26	33	30	32	24	28	35	34	31	30	20	32	34	40	47	28	15	19	28	16	19	18	36	28	23	21	29	35	27.3
Grinnell	Max.	36	43	41	37	37	47	48	45	52	52	50	58	57	38	39	55	69	74	64	40	51	45	34	36	50	60	45	40	46	58	69	48 8
	Min.	12	24	31	31	32	34	33	27	30	38	37	39	33	28	30	37	42	54	40	38	23	29	25	24	21	37	28	25	19	29	44	31 1
Grundy C'r	Max.	38	43	39	35	39	43	47	48	50	44	50	59	55	38	38	48	64	72	67	38	51	41	32	36	46	55	42	41	47	60	65	47.4
	Min.	9	21	31	32	31	33	32	25	29	36	35	34	33	29	31	36	39	49	38	23	20	28	25	24	12	35	29	25	24	27	42	29.6
Guthrie Cr	Max.	40	44	38	37	37	49	48	50	57	51	54	64	56	33	43	57	72	73	65	32	52	46	32	36	50	55	37	42	50	64	69	49.5
	Min.	13	18	30	32	30	33	31	22	29	35	33	36	30	26	32	39	38	39	28	17	22	28	21	22	18	33	25	25	25	30	35	28.2
Hampton	Max.	38	44	37	34	41	40	45	49	52	43	51	62	50	37	37	45	59	72	62	31	51	39	30	35	48	55	42	44	48	62	64	46.1
	Min.	10	20	31	31	30	33	32	24	30	35	34	36	28	27	32	31	32	45	31	20	20	29	24	22	19	32	27	25	23	30	40	28 5
Hanlonto'n	Max.	45	40	44	38	35	41	41	45	47	45	47	61	52	36	35	42	50	70	68	30	46	37	30	34	46	46	35	35	45	60	60	41.7
	Min.	9	20	30	30	22	32	31	24	30	34	34	37	27	27	30	34	35	43	27	17	20	28	25	20	19	25	24	24	22	32	35	27 3
Harlan	Max.	40	42	41	34	37	45	46	49	57	49	49	63	47	33	43	57	73	71	60	31	52	44	33	38	56	51	36	40	60	62	66	48.5
	Min.	10	16	28	31	28	32	30	22	31	32	30	33	29	24	29	40	37	50	23	13	19	29	22	20	19	31	22	24	24	32	34	27.2
Hopeville	Max.	..	..	..	..	..	..	..	..	..	..	49	62	61	38	46	67	74	78	62	33	55	47	33	34	53	60	44	42	52	64	72	53.6
	Min.	..	..	..	..	..	..	..	..	..	..	35	35	32	26	34	42	45	55	..	18	22	28	25	21	16	36	28	25	26	28	42	31.0
Humboldt	Max.	38	41	40	35	37	43	44	46	50	47	52	64	56	34	38	46	62	72	62	30	50	44	34	38	51	53	38	40	48	64	63	47.1
	Min.	10	19	30	31	29	33	30	22	32	35	32	36	28	26	32	36	36	48	30	18	20	28	26	24	19	31	24	24	24	32	37	27.8
Ida Grove	Max.	43	51	40	47	48	44	45	49	55	52	51	64	60	31	41	50	67	67	61	35	51	45	34	37	54	47	36	39	50	63	65	49.0
	Min.	10	18	31	30	28	32	28	23	33	32	30	36	29	14	30	30	54	54	24	13	18	28	25	21	20	29	21	23	25	34	35	27.7
In'pen'nce	Max.	36	42	37	35	38	43	46	46	44	44	48	51	52	40	41	43	58	72	62	41	48	44	32	33	42	55	42	42	45	57	62	45.8
	Min.	10	19	30	30	31	32	33	24	27	36	36	31	31	31	29	35	39	46	41	24	20	29	25	25	16	30	30	24	30	20	36	29.0
Indianola	Max.	44	45	45	39	41	51	50	49	56	49	53	61	55	37	55	62	75	74	69	36	55	50	33	35	55	52	43	46	49	62	71	51.5
	Min.	19	22	29	33	34	33	24	29	31	38	38	49	33	27	34	39	47	43	34	20	23	23	26	23	20	33	28	25	26	29	44	31.1
Iowa City	Max.	38	47	46	42	42	47	47	52	48	52	52	53	66	46	46	60	74	79	63	47	54	48	35	38	52	64	54	47	52	62	72	52.4
	Min.	11	22	32	34	32	33	38	27	28	38	38	32	32	33	31	36	43	53	47	28	22	35	28	26	22	32	32	28	22	23	37	31.5
Iowa Falls	Max.	37	42	36	34	37	43	45	46	51	42	50	59	48	37	37	41	62	72	58	28	49

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MARCH, 1903—CONTINUED.

STATIONS.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mean.
Keosauqua	Max.	36	44	46	47	43	54	53	51	55	50	52	60	70	53	48	68	76	79	65	47	55	54	39	41	56	68	57	47	54	62	70	51.9
	Min.	14	24	33	35	34	36	41	27	27	40	39	32	33	31	33	35	48	60	44	26	24	35	28	27	23	38	34	27	26	22	35	32.6
Larchwood	Max.	36	41	43	38	40	43	..	..	..	..	..	70	57	39	44	50	50	56	54	33	51	38	33	42	54	40	32	35	45	50	58	45.1
	Min.	8	17	20	22	25	30	30	25	35	28	29	33	24	19	27	34	32	37	18	9	14	23	21	18	21	24	16	20	26	31	29	24.1
LeMars	Max.	35	39	39	35	37	43	43	47	53	50	48	65	55	30	38	43	48	60	52	28	49	39	33	37	55	52	33	40	50	58	64	45.1
	Min.	9	17	23	27	27	32	27	25	35	30	28	35	27	22	28	35	37	43	15	10	19	20	23	19	24	28	19	22	27	34	30	25.9
Lenox	Max.	38	43	42	40	37	51	50	50	57	47	51	62	54	36	45	65	73	72	64	33	54	46	31	35	56	58	40	41	51	62	69	50.1
	Min.	10	17	25	32	30	32	32	25	31	37	34	33	33	25	32	42	43	54	29	15	21	27	11	20	19	37	26	23	24	28	41	28.6
Leon	Max.	38	43	46	45	40	53	53	50	55	50	50	60	63	40	48	67	74	73	68	38	55	47	36	36	54	60	56	42	50	59	70	52.2
	Min.	14	21	28	34	33	34	34	30	31	40	36	36	35	27	33	42	46	56	37	20	23	31	25	22	21	38	29	26	25	28	42	31.5
Logan	Max.	40	42	38	35	37	43	40	50	57	49	50	64	54	34	42	58	74	69	63	33	52	45	33	40	57	50	38	42	53	60	62	48.5
	Min.	13	20	31	31	20	33	32	23	34	33	31	33	29	25	31	41	31	53	24	14	21	31	24	21	22	29	23	25	26	28	33	27.9
Maquoketa	Max.	35	46	41	38	40	47	55	50	45	51	47	55	66	49	43	50	63	76	68	55	52	57	41	37	49	63	55	44	47	61	70	51.5
	Min.	11	21	28	32	32	33	40	25	27	37	37	32	29	36	29	33	41	58	52	26	21	33	21	26	20	27	31	27	20	21	35	30.4
Marsh'lt'n	Max.	40	47	43	39	39	47	49	49	55	46	54	62	55	39	40	53	69	74	67	41	53	50	34	38	51	60	42	43	49	62	69	50.3
	Min.	12	21	32	32	32	34	32	25	30	37	37	36	33	29	32	37	40	52	39	23	22	29	26	25	17	34	29	25	25	28	42	30.5
Mason City	Max.	41	41	40	39	40	40	44	46	51	53	54	69	66	37	37	45	52	73	74	39	51	51	33	36	46	52	40	41	46	68	66	48.7
	Min.	12	23	32	31	30	33	32	26	27	36	35	37	31	30	32	36	37	46	35	25	23	31	26	23	23	34	26	26	27	31	37	30.1
Monticello	Max.	32	36	38	40	46	48	50	52	58	60	60	62	64	60	62	58	58	75	70	65	50	48	33	48	42	62	55	62	65	68	66	54.5
	Min.	24	23	28	33	36	38	31	28	21	25	28	27	25	33	30	31	38	37	36	38	22	20	25	15	20	27	32	23	18	20	37	28.1
Mt. Ayr	Max.	39	44	48	42	33	52	50	52	57	44	50	62	61	39	45	67	74	72	61	33	54	46	33	36	58	60	45	44	51	61	70	51.1
	Min.	12	17	16	32	31	32	32	23	30	37	34	32	12	25	22	43	45	55	28	16	21	27	20	20	22	38	27	23	25	27	42	29.1
Mt. Vernon	Max.	34	46	47	37	39	45	50	54	46	52	52	52	67	45	46	55	73	73	62	47	51	44	36	38	55	61	47	47	52	62	73	51.2
	Min.	8	20	29	33	31	31	34	26	26	37	36	33	32	32	29	34	42	52	47	24	21	32	26	21	21	26	30	25	21	26	41	30.0
NewH'pton	Max.	36	39	35	39	..	40	43	45	45	..	45	47	55	45	39	41	49	70	63	38	47	41	32	32	38	51	37	39	44	57	62	44.8
	Min.	7	18	30	..	30	31	24	..	27	..	34	34	32	31	29	34	36	45	36	21	19	19	24	23	10	29	25	22	23	23	36	26.9
Newton	Max.	38	44	39	38	38	48	48	47	53	50	49	58	54	39	40	60	68	70	70	40	53	49	34	36	51	59	44	43	47	60	65	49.4
	Min.	12	19	30	31	31	34	32	26	20	38	31	33	34	28	32	32	41	52	31	21	20	20	25	23	19	35	28	24	24	26	41	29.4
Northwood	Max.	37	40	36	36	42	48	42	50	47	43	48	62	49	35	35	43	47	66	58	28	47	39	32	35	46	46	38	40	46	61	62	44.6
	Min.	9	19	30	31	27	36	31	23	30	35	33	34	27	27	31	34	37	41	27	18	19	28	25	21	25	30	24	23	24	30	36	28.0
Odebolt	Max.	37	41	43	36	38	45	45	50	56	51	51	65	57	32	40	50	69	69	61	35	55	45	34	43	68	55	45	50	54	58	77	50.5
	Min.	11	18	30	30	28	32	29	24	32	32	30	35	28	30	30	32	35	50	24	15	19	20	19	21	21	31	21	25	24	35	36	27.6
Ogden	Max.	41	45	40	36	37	45	50	49	55	53	53	61	46	35	33	53	71	73	68	33	53	48	37	39	48	56	42	44	50	64	68	48.8
	Min.	9	17	28	29	28	32	30	22	29	34	31	36	27	24	30	31	37	51	30	17	20	25	23	21	18	32	24	23	23	28	40	27.5
Olin	Max.	34	42	43	38	42	46	50	44	43	50	49	50	61	47	44	50	66	73	65	51	49	51	48	45	45	65	47	42	43	55	67	49.5
	Min.	10	18	30	33	33	33	39	27	27	38	37	29	28	34	29	35	42	50	51	27	22	34	27	25	20	29	32	27	22	23	36	30.2
Omaha, N.	Max.	40	44	38	35	35	46	48	51	60	45	52	66	51	32	43	54	71	70	57	34	53	36	72	41	59	53	34	41	51	64	66	48.5
	Min.	14	22	31	32	31	33	31	30	37	33	31	36	30	27	32	41	40	57	21	16	28	30	25	22	30	27	24	27	30	37	40	30.6
Onawa	Max.	39	45	40	35	38	43	50	52	59	53	51	66	59	32	39	50	63	63	60	35	54	43	36	46	58	53	40	49	51	65	69	49.6
	Min.	13	20	30	30	28	31	28	25	33	32	29	32	28	24	29	36	35	47	22	14	22	29	23	19	22	29	21	23	25	32	33	27.2
Osage	Max.	36	38	36	34	38	39	41	45	45	42	47	58	51	37	36	43	48	67	62	34	46	40	30	34	42	48	37	38	45	59	60	43.7
	Min.	8	18	31	29	20	32	32	23	30	35	35	34	30	29	31	35	36	45	34	20	19	20	24	22	16	31	25	24	24	29	36	28.2
Osceola	Max.	..	40	41	..	38	.	53	53	58	47	49	61	53	54	44	47	75	74	67	35	55	48	33	35	60	47	53	43	50	62	71	50.0
	Min.	..	20	33	..	32	..	33	29	31	30	42	37	26	20	40	40	45	56	34	18	23	29	23	21	31	28	26	25	35	29	42	30.3
Oskaloosa	Max.	39	47	48	43	43	51	51	49	54	46	63	61	63	42	42	65	73	72	63	38	54	45	34	37	55	65	45	43	50	62	71	52.1
	Min.	12	20	31	33	33	35	35	26	29	38	37	33	36	28	32	36	43	54	38	21	22	32	26	25	19	27	28	24	24	24	39	30.3
Ottumwa	Max.	38	46	47	46	46	53	52	49	48	56	53	61	66	45	45	66	74	76	67	39	55	45	36	39	55	64	44	45	49	59	70	52.7
	Min.	17	26	35	37	35	33	40	32	31	32	41	37	37	32	34	40	47	59	38	25	26	34	29	28	26	42	34	29	28	28	44	34.1
Pacific Jct.	Max.	39	42	43	36	38	42	48	50	59	56	50	63	49	36	45	62	73	72	63	34	54	45	34	39	58	54	36	42	52	64	65	49.6
	Min.	13	19	28	33	31	34	30	23	33	34	32	32	31	25	33	43	43	56	26	17	23	31	14	22	25	32	25	24	25	32	35	29.2
Perry	Max.	41	45	39	36	38	48	47	49	56	49	53	63	49	36	40	56	72	72	63	32	53	40	33	38	49	..	56	42	49	63	69	49.2
	Min.	14	20	30	32	31	34	31	30	25	36	34	35	30	..	33	37	40	51	29	19	23	28	25	23	19	..	26	25	25	30	40	29.4
Plover	Max.	37	36	40	35	36	40	43	44	50	45	51	64	47	33	40	40	56	68	58	33	48	40	33	38	49	40	36	37	47	62	63	44.9
	Min.	8	16	30	29	22	32	31	24	28	32	32	43	25	25	30	35	34	52	25	16	19	24	22	20	21	33	24	22	25	26	30	26.9
Primghar	Max.	..	..	35	35	32	39	40	46	52	47	50	61	43	29	36	38	40	62	44	43	40	39	33	34	53	41	41	36	47	58	59	43.2
	Min.	..	..	25	26	20	31	27	25	32	38	29	36	23	21	26	27	30	40	22	12	16	22	23	21	22	25	18	22	26	22	33	25.5
Red Oak	Max.	36	40	41	39	38	49	45	47	55	52	51	58	54	37	47	58	70	67	63	35	50	46	35	37	53	51	40	41	48	56	60	48.4
	Min.	17	23	32	34	31	36	34	29	35	37	36	38	34	29	31	44	45	56	32	22	30	33	23	26	28	37	30	29	31	35	39	32.9
Ridgeway	Max.	38	41	39	36	45	46	48	49	53	48	49	57	45	44	39	46	47	70	64	36	48	42	33	35	41	54	44	44	49	60	65	46.9
	Min.	7	20	30	30	31	34	33	21	29	35	35	37	35	31	30	34	38	46	36	23	20	29	27	25	18	31	27	22	24	30	36	[illegible]
Rockw'l Cy	Max.	38	40	40	38	40	45	45	48	53	52	53	63	55	55	40	50	65	72	53	48	51	42	30	49	52	50	38	40	50	62	60	48.9
	Min.	12	19	30	31	29	33	33	25	33	33	31	35	33	20	20	25	30	38	38	18	20	29	26	21	22	21	23	25	25	35	38	26.5
Ruthven	Max.	33	39	37	33	35	40	42	46	48	46	50	64	56	54	58	54	52	68	66	46	57	59	49	41	61	46	39	37	45	61	63	49.1
	Min.	9	18	29	27	28	32	28	26	31	30	30	34	12	19	21	24	21	43	24	14	19	26	23	21	22	26	22	22	25	29	32	24.8
Sac City	Max.	38	40	39	35	36	43	45	48	54	50	52	65	52	31	37	46	63	69	62	30	50	44	12	38	54	38	37	40	50	63	66	46.7
	Min.	10	18	30	30	28	32	30	24	30	32	30	31	28	24	30	35	34	46	26	15	17	27	26	20	19	28	20	23	23	32	35	27.0
St. Charles	Max.	41	46	48	39	38	51	50	53	58	43	53	62	61	38	44	62	74	73	60	34	55	43	38	57	53	60	41	43	51	64	72	51.1
	Min.	14	21	31	32	32	34	33	39	30	38	35	37	32	27	35	39	43	54	30	19	23	29	25	23	18	38	28	24	25	30	41	30.9
Scranton	Max.	39	42	36	36	38	47	46	49	55	47	52	64	55	34	40	54	69	71	62	..	50	40	34	38	52	52	40	44	51	60	70	48.9
	Min.	14	20	20	31	29	34	29	26	29	34	32	36	29	26	31	36	37	37	28	..	17	27	26	23	21	32	25	24	23	30	38	28.5
Sheldon	Max.	39	31	35	32	35	39	44	48	52	47	50	65	55	28	35	40	41	57	44	..	46	35	31	38	54	42	34	37	47	58	63	43.4
	Min.	9	15	22	20	25	30	28	26	31	30	28	36	24	21	27	34	32	38	20	..	12	25	22	23	23	25	18	21	26	33	30	25.1
Sibley	Max.	34	38	35	36	36	40	43	48	50	33	50	63	54	28	30	39	41	51	36	22	37	36	33	37	42	33	35	37	..	55	48	36.9
	Min.	10	16	24	24	24	30	26	24	33	30	30	36	24	21	27	32	31	36	20	10	15	23	22	20	25	26	..	18	..	27	32	24.7
Sigourney	Max.	39	47	49	44	41	51	51	52	57	51	54	59	67	47	45	65	77	78	65	40	56	47	37	38	57	67	54	49	55	64	74	54.1
	Min.	11	21	32	34	33	35	36	26	26	38	38	34	34	30	31	37	44	57	40	25	21	33	27	26	20	39	26	26	22	23	41	31.2
SiouxC'nt'r	Max.	33	36	34	33	36	40	40	47	49	44	46	63	50	28	34	39	41	50	44	25	45	36	32	36	53	42	32	37	45	54	61	41.5
	Min.	8	14	23	25	25	32	28	26	34	23	29	35	25	21	27	34	33	38	18	10	16	24	22	19	24	26	18	20	26	33	33	25.0
Sioux City	Max.	38	38	35	33	35	44	43	49	54	43	50	67	50	30	36	44	51	57	52	30	50	37	30	38	55	47	35	39	49	61	63	44.6
	Min.	12	19	25	28	29	33	31	29	36	32	29	37	25	22	30	36	34	40	16	11	24	27	24	19	28	23	21	26	30	36	32	27.4
Storm L.	Max.	36	38	37	35	35	41	43	46	52	48	49	61	52	30	37	44	58	61	61	27	47	42	35	36	57	48	34	37	47	60	61	45.0
	Min.	9	17	29	28	26	31	30	27	31	31	29	37	26	23	28	36	33	48	25	13	19	25	24	20	24	26	25	23	26	34	33	27.0
Stuart	Max.	..	..	..	..	..	..	..	..	..	..	52	60	70	41	44	60	70	72	70	33	51	44	33	38	49	51	32	39	47	60	67	51.6
	Min.	..	..	..	..	..	..	..	..	..	..	40	51	31	32	30	38	38	51	27	16	20	27	21	20	18	32	24	22	22	27	37	29.5
Thurman	Max.	38	42	40	38	37	48	48	48	58	54	50	63	58	35	45	60	63	70	64	34	55	48	33	40	57	54	35	42	52	63	64	49.7
	Min.	12	20	28	32	30	33	32	24	35	34	32	32	32	27	32	42	43	46	26	18	25	30	26	22	25	34	26	24	27	32	35	29.6
Tipton	Max.	35	40	43	40	41	47	53	50	47	50	47	50	65	47	40	57	72	75	65	50	53	55	41	39	51	61	45	47	50	60	63	51.1
	Min.	11	23	31	33	33	33	39	29	29	38	37	34	32	36	30	..	43	56	50	27	22	27	27	25	24	34	34	29	25	29	41	32.0
Toledo	Max.	39	46	42	36	38	45	50	49	51	45	53	60	60	41	40	51	69	74	64	39	53	43	32	37	51	60	44	43	49	63	72	49.6
	Min.	12	21	32	30	32	34	33	24	29	37	37	36	34	30	31	36	40	54	39	24	21	28	25	25	17	39	28	25	24	25	44	30.5
Wapallo	Max.	34	42	41	41	39	50	51	45	49	48	..	37	63	45	45	62	71	75	65	52	52	61	41	41	55	64	53	50	49	59	70	51.6
	Min.	17	24	28	32	34	35	42	30	29	39	..	35	36	35	31	38	46	58	51	30	21	32	32	28	27	38	34	29	28	29	41	33.6
Washin't'n	Max.	37	46	46	43	40	52	50	49	43	51	51	56	68	43	45	65	75	77	64	31	54	51	35	39	55	65	38	48	49	60	71	52.1
	Min.	9	19	30	31	31	33	33	25	26	36	36	32	31	29	27	34	40	56	38	24	20	31	24	23	19	35	30	23	21	22	38	29.2
Waterloo	Max.	44	43	37	34	39	45	49	47	46	45	50	55	50	40	40	45	64	75	68	35	50	30	33	39	44	43	43	42	46	58	62	46.8
	Min.	11	22	31	32	31	32	35	25	29	39	37	32	32	31	20	36	39	49	35	24	22	28	24	25	16	33	28	25	24	26	38	27.7
Waverly	Max.	38	41	37	35	39	42	45	47	47	45	49	52	48	39	39	44	58	73	63	36	50	42	32	36	44	54	40	39	47	59	61	45.9
	Min.	9	21	32	31	31	32	32	23	29	34	35	34	31	30	30	..	38	47	36	22	22	28	25	25	10	33	27	25	24	27	38	28.7
West Bend	Max.	36	40	39	35	38	43	42	46	51	46	50	63	54	32	37	43	57	69	60	28	48	40	32	36	50	46	35	38	47	62	62	45.3
	Min.	10	20	31	30	27	33	36	25	31	33	33	35	27	25	31	31	35	48	28	17	20	25	25	22	22	27	22	24	25	33	35	27.9
Whitten	Max.	38	43	38	37	38	44	46	46	52	48	51	59	55	38	40	51	65	72	66	42	51	47	34	36	47	54	38	38	46	59	64	47.7
	Min.	9	17	30	30	30	33	30	24	28	35	36	33	31	27	31	36	38	50	39	21	19	27	24	23	15	34	26	23	22	25	42	28.6
Wilton Jc	Max.	35	45	45	42	41	49	52	46	50	51	48	51	65	52	45	63	74	77	67	55	52	58	40	42	50	68	60	45	47	58	71	53.0
	Min.	10	21	30	33	33	37	12	27	27	35	23	35	33	34	29	..	46	50	55	27	22	38	28	23	28	34	33	27	23	24	38	32.2
Winterset	Max.	42	49	45	44	44	58	56	55	63	55	55	62	63	48	44	62	71	[illegible]	74	55	56	49	41	38	54	63	49	44	53	68	71	54.4
	Min.	30	20	30	31	30	32	31	26	39	36	32	34	31	26	31	38	44	52	32	..	22	26	20	21	..	38	26	21	24	31	38	31.4
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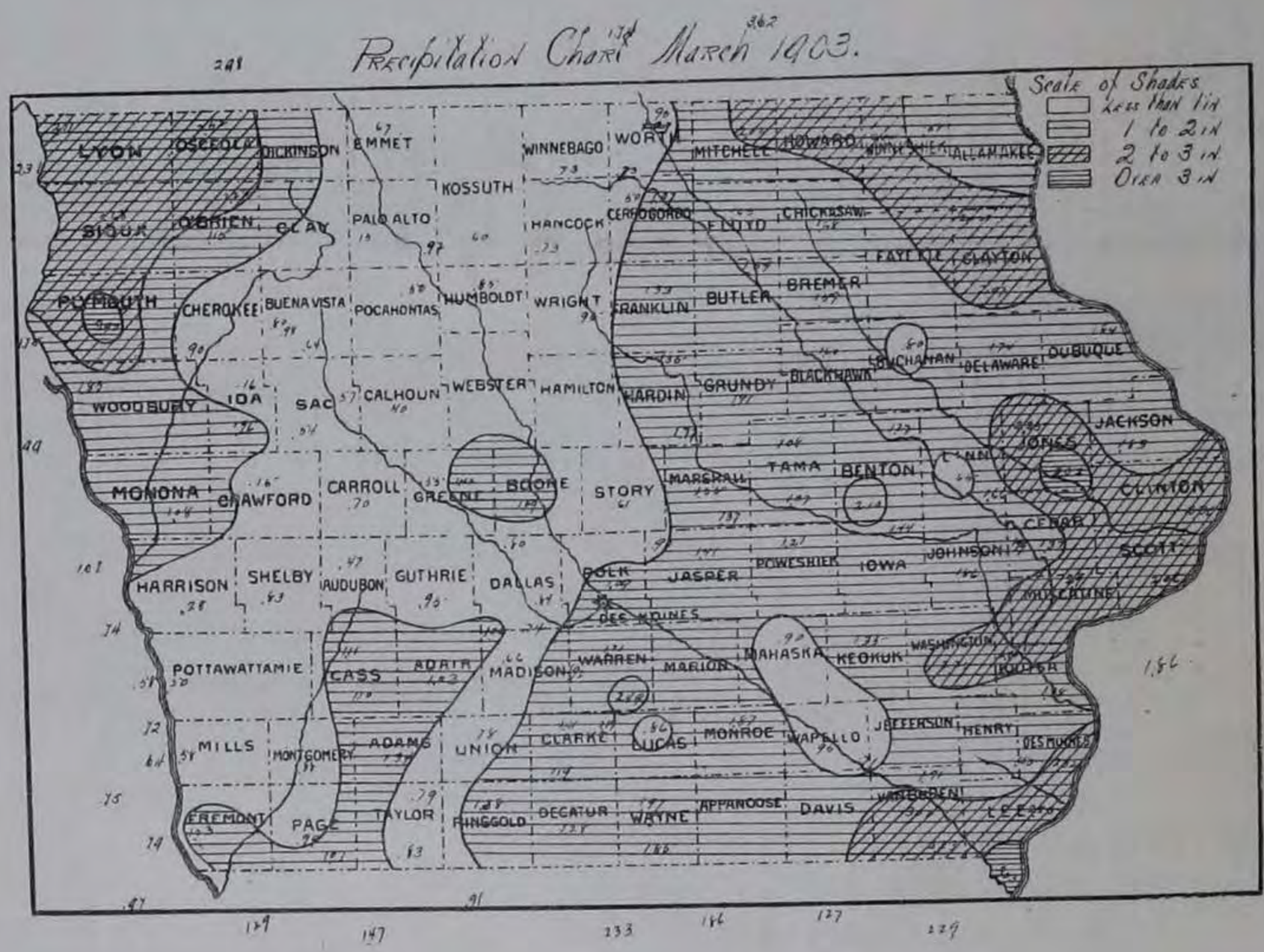
DAILY AND MONTHLY PRECIPITATION FOR MARCH, 1903.

STATIONS.	DAY OF MONTH.																															TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton					.17	.10				.04									T			.30	.10									.78
Albia				.07	.09	.12	.32			.10						.11			.38			.06	.50				.12					1.87
Algona				.05		.05										.10	.05						.05			.30						.60
Allerton				.11	.15	.16	.31			.40					T	.15	T		.35			T	.20			T	.02					1.85
Alta				.05		.06									.01	.03	.01	.04		T		T	.02			.58					.01	.80
Alta (near)				.05		.04									.02		.02	.01								.74					.10	.98
Amana				.11	.02	.11	.06			.14						.05	.18	.07	.22	.06			.21	.06		T	.15					1.44
Ames				.08	.03	.03		.09			.02	.01			T	T	09	.01	.03				.22									.61
Atlantic				T															.41	T		.30	T				.40					1.11
Audubon																			.02			.08	.20	T		.17						.47
Baxter																			.10			.40	.40									.90
Bedford				.05	.16											T			.21			.41				T						.83
Belle Plaine				.12	.03	.10				.30					T	.05						.20	.60	.25		.05	.40					2.10
Bonaparte				.15			.57			.24							.46	.56	.19				T				.06					2.23
Britt				.10		.06							T		T	.20	.06	T	.04	T		T	.03	.03		.21						.73
Buckingham				.08		T				.12	T					.12	.07		.15			T	.30	24								1.08
Burlington				.08			1.11			.13						.16	.05		.35	.22			.12				.10					2.32
Carroll						T										.10			.08			.05		.05			.42					.70
Cedar Rapids				T	T	T	.12		.10	T						T	T	T	.16	T		T	.13				.14					.65
Chariton			T	.08	.11	.05				.12						.02			21	T		.06	.19			T	.02					.86
Charles City				T			.26									.27		.05	.25	T		.14	.41	.13		.14	T					1.65
Clarinda				.03	.06	.10										T			.35			.45				T	T					.99
Clear Lake				.10		T									T	.25				T		.05				.10						.50
Clinton				.10			1.10			.13						.08			.66				.08	.07			.14					2.36
College Springs				.02	.10	.04										.01			.40			.40	T				.10					1.07
Columbus Junction				.08	.06	.05	.84			.11						.10		.97	.02				.11				.06					2.40
Corning				T	T	.10				T					.16	.16			.25	T		.80				.03	T					1.34
Council Bluffs			T	.01														.2	.02			T	T			.26	T					.50
Corydon				.10	.14	.14	.02			.29						.50			.36				.36				.06					1.97
Cumberland						T													.60			.50				T						1.10
Danville						1.25	T		T	.15				T			T	T	.15			T					T	T				1.55
Davenport	T			.02	.04	.02	1.08			.17	T					.04	.08	T	.14	.26			.07	.05			.09	T				2.06
Decorah							.29												.33			12	.64	.13		.07						1.58
Delaware				.05		.02	.21			.18						.35	.04	.42	.14	.10		.03	.20									1.74
Denison																							T			.15						.15
Des Moines				.03	.02	.02	T			.04	T				T	.13	T	T	.06	T		.33	.34	.01		.02	.09					1.09
De Soto				.01	T	.06					.01				T	T			.04			.39	.07	T		.16	T					.74
Dows				.07		.05	.06									.33		T	T			.10	.10	.10		.07	.07					.95
Dubuque	T			.10	T	.04	.31			.15				T	T	.24	.03	.34	.09	.17		T	.14	.13		T	.10					1.84
Earlham			T		.06	T				T	T					T			.09		.66	.06		T	T		.18					1.05
Eldon						.20			.15		T						.10	T	.17	.04		.05										.71
Elkader				.11		.04	.03			.05						.60		.10	.16			.05	.80			.07						2.07
Forest City				T		T	.12							T	T	.36	T			T			.05			.20						.73
Fort Madison			T	T	.30	T	.97			.16						.04		.53					.10				.15					2.25
Galva						T											.11						T			6						.16
Gilman				T		T				.64						.10			.13			T	.30	.20		T	T				T	1.37
Grand Meadow				.14		.06										.34	.03	.06	.36				1.0			.06						2.05
Greene				.10		.02	18									.15			.30			.20	.42			.12	.10					1.59
Greenfield			T	.02	.06	.05				T			T	T	T	.12			.24	T		.46	T	T		.02	.06					1.03
Grinnell					.12	.03	.08			.14							.09	.16					.30			.29						1.21
Grundy Center				.13	T	T	.07			.11					T	.12		T	.07	T		.27	.80			.08	.26					1.91
Guthrie Center				.05	T	.10										.24			.08	T		.25	.05			.03	.15					.95
Hampton				.02	.12	.17							.03		.13			.15				.33	.20			.18						1.33
Hanlontown				T		.05	.03					T		T	.02	.34	.03	T	.02	T		T	.05			.20				T		.73
Harlan			T	T	T	.08	T									.01	.01		.12	T		.06	T	T		.21	.31					.83
Hopeville				.11	.16	.10	.01			.08						.06		T	.18					.35			.09					1.14
Humboldt				.10		.20										.15		.01						.06		.29	.04					.85
Ida Grove				.70		.50											.30									.46						1.96
Independence				T						.05						.05		.20	.05	T		T	.45			T	T					.80
Indianola				.02						.13								T	.03			1.03				T						1.21
Iowa City				.04	.02	.19	.95			.13						.03	.04	.22	.07	.05			.07	T			.05					1.86
Iowa Falls				.09		.11	T								T	.20	T	.06	.04	T		.3[illegible]	.25			.26	.03					1.35
Jefferson				.08		.20										.16						.20	.06			.70						1.40
Keokuk				.16	.02	.02	1.80			.15						.02	.12		.40	.26			.02				.06	T				3.03
Keosauqua				.09	T	.14	.52			.35							1.00	.43	.16	.14							.17					3.00
Lacona		.11	.33		.20	.19								T				T	.61			.31	.40			.12	.19					2.49
Larchwood				T	T	T										.70	.37	.25	.65				T			.14						2.11
Le Claire	T			.02	.13	.32	1.12			.01	T						.19			.63				.13	T		.04	.02				2.61
Le Mars				T												.30	.30	.80	1.10							1.40						3.90
Lenox				.07	.12	T				.03	T								.12			.45										.79
Leon				.15	.16	.19	.05			.40						.01			.30			.02										1.28
Logan																			.02	.03		.10	.03			.10						.28
Maquoketa				.25	.02	.05				.35		.05				.07	.27		.20	.20			.12	.02			.23					1.83
Marshalltown				.06		.02	T			.05						.03	.32		.07			.27	.38	.09		.04	.22					1.55
Monticello	T	.80	T	T	T	.10			T		T						1.10		.10				.05	T	T	.10	T					2.25
Mason City				.12		T	.20									.20	.04	T	.05				.15	.18		.13						1.07
Mount Ayr				.10	.07	.04				.05						.07			.25			.40	.30			T	.10					1.38
Mt. Vernon				.01		.60				.08						.14	.25	.10	.02	.01		T	.27				.18					1.66
New Hampton				T			.29									.30			.04		.20	.80				.05						1.68
Newton				.08	.04	.04				.26						.20			.17			.15	.47									1.41
Northwood				.06		T	.07							T	.02	.26	.02		.04	T		T	.30			.18						.95
Odebolt				.06		T										.06										.42						.54
Ogden				.04		T	.13									.10			.07			.25				.20	.30					1.06
Olin			.15	.10		1.00				.25						.30		1.00	.25	T			.10	.15			.20					3.52
Omaha, Neb.			T	.02	T	.01			T	T	T		T	T	T	T	T	T	.20			.07	.02	T		.05	.21					.58
Onawa				.03		.03											T	.02	.22	T			.02			.56	.20					1.08
Osage				.05			.27								.03	.20	.03	.03	.72	T		.11	.38	.10		.10						2.02
Osceola			T	.05	.35	.50	T											.25	.05			.21			T		T					1.41
Ottumwa						.50										.10			.35													.95
Pacific Junction			T	T	T											T			.21			.18	T			.04	.15					.58
Perry				.08		.03						T			T	.39						.30	T				T					.80
Plover				.05		.08										.06		.04					.05			.22						.50
Primghar				T												.07	.75	.18		T			T			.15						1.15
Red Oak				T		.06										T			.35	T		.38	T	T		T	.09					.88
Ridgeway				.19		.55				.02		.01		.01	.01	.31	.08	.04	.18	T		.33	1.02			.06						2.81
Rockwell City				.05		.15											.05						.05			.10						.40
Ruthven				.05		T									T		T						.10									.15
Sac City				.10		.08			T						T	T		.12								.27						.57
St. Charles				.04	.11	.02				.14		.01			T	.38			.16			.23	.70	.01			.12					1.92
Scranton				T	T	.11											.05	.05				.05				.12	.17					.55
Sheldon						.01							T			.10	.60	.32	1.16				T			.04						2.23
Sibley						T									T	.79	.18	.55	.73	T			.02		.25							2.52
Sigourney				.07	.24	.10	.39			.13					T	.11		T	.21				.10				T					1.35
Sioux Center							T		T							.65	.31	.35	1.05				.10			.22						2.68
Sioux City				.02		.04										.17	.08	.57	.66	T			.01	T		.30						1.85
Stockport			T	T	T	.02	.55			.27		T					.51	.21	.30	T			.02	T		T	.03	T				1.91
Storm Lake				T		.09			T					T	T	.02			.02				T	T		.51						.64

DAILY AND MONTHLY PRECIPITATION FOR MARCH, 1903—CONTINUED.

STATIONS.	DAY OF MONTH. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL.
Thurman	...	...	...	T	T	T	....	....	....		....	....	...	....	....	.05	.10	....	.05	.19	....		....									1.23
Tipton	....	....	....	.12	....	.05	.66	..		.15	....	....	...	....	....	.18	.08	....	.12	..	....	.06	.30	....	...	.10	...	..	..	....	..	1.37
Toledo	....	....	....	.05	....	.07	.	....	....	.11	....	.	....	....	....	.15	.45	....	....		....	....	.50	..	..	.05	....	....	....	....	..	1.07
Vinton	....	..	....	T	....	T	....	....	....	.12	....	....	....	....	....	.03	....	....	.20	.21	....	..	.07	...	....		.10	....	....	....	....	1.27
Wapello	....	..	....			.05	.60	....	.12	.	....	....	....		....	.01	.01	.15	..	.22	....	..	.04	....	....	....	.10	....	....		...	1.38
Washington	..	....	...	.20	....	.05	1.28	...	....	.18	....	..	...	....	....	.01	.01	.15	..	.22	....	..	.04	....	....	....	.10	....	....		...	2.35
Washta	....	....	...	...		T	.	....	....			....	....	..	...	..	T	.40	..	....	..	....	T		..	.50	...	..	....	....	....	.90
Waterloo	....	....	....	.19		.04		..	....	.02	....	....	....	..	....	.15	T		.17		....	.15	.60	.15	....	.02	.11	..	....	....	....	1.60
Waukee	....	....	....	.02	T	.02	.01	...		.02	T	....	....	....	....	.01		T	.10	T	....	.30	.20	....	....	.03	.13	....	....	....	....	.84
Waverly	....	..	....	.10	...	.02	.05	....	....	....		....	....	....	....	.32	.05	.02	.09	....	....	.21	.55	.10		.07	....	....		....	..	1.59
West Bend	....	....	....	....	.05	.03	....	..	....	..	....	....	....	....	....	.14	.17	.13	....	T	....	.	.05	...	....	....	.35	...		....	-	.93
West Branch	....	...		.14	.03	.87	...	..	.18	.	...	....	..	....	..	.09	.01	.14	.13		....	.11	.07	.13	....	....	.09		....	....	....	1.99
Whitten	....	....	....	T	....	T	....		....	.03	...	...	..	....	....	.06		....	.08	T	...	.20	1.00	...	....	T	.40	.....	....		..	1.77
Wilton Junction	-	....	....	.15	....	T	1.23	....	....	...	...	....	....	....	....	10	.	.85	....	....	..		.58	....	....		.	....	....	....	..	2.91
Winterset	....	..	..	....	T		....	....	T	...	...		....	....	..	.10	....	.13		..	...	.21	.13	..	....		.09	..	....		..	.66
Woodburn	....			.07	T	.22	....		....	.13			....	....	....	.02	....	T	.15		....	.45	T		....	.15	....	....	..	....	....	1.19



APRIL, 1903 No. 4.



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DES MOINES:
BERNARD MURPHY, STATE PRINTER.
1903.

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MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIV. APRIL, 1903. No. 4.

EDITORIAL NOTES.

The exportation of American agricultural products in March amounted to $81,000,000, an increase of $21,000,000 as compared with March, 1902.

* * *

On the night of April 28th lightning struck a new church at Dedham, Carroll county, damaging the structure to the amount of about $2,000. It was set on fire, but the flames were soon extinguished. Churches should be protected by rods, as they are exposed more than ordinary buildings.

* * *

A correspondent writing under date April 28th, says: "The ground is so saturated from last year's rains that I fear there will be much land hereabout that will not be planted this season, unless it turns off dry very soon." This describes the situation in large areas of the central counties.

* * *

On Sunday, April 19th, large portions of central Europe were swept by a hurricane, accompanied by a heavy fall of snow, which caused a large amount of damage to chimneys, trees, parks and telegraph wires. The brunt of the storm was suffered in Germany, Austria-Hungary and the Polish plains.

* * *

The Turkish government has removed the ban on American pork, which hereafter will be admitted to the empire after the customary inspection.

* * *

The general prospects of winter wheat are exceptionally promising, according to the *Modern Miller*.

* * *

A report of the bureau of statistics of the Treasury Department says: "To sum up in a single sentence comparison of production with exportation, in America, in agricultural and manufactured products respectively, it may be said that, comparing conditions in 1900 with those of 1870, agricultural production has increased 92 per cent, agricultural exportation 132 per cent, production of manufactures 209 per cent and exportation of manufactures 538 per cent."

THE NATIONAL WEATHER REVIEW.

The Monthly Weather Review, published by the weather bureau in the Department of Agriculture, challenges admiration for its high character. It is a work at once scientific and practical, besides furnishing much that is theoretical, suggestive and interesting. Its accumulation of facts and the records thereof must constitute a record of data which may hereafter prove valuable in meteorological science. Many trained and amateur observers are working in its behalf. With headquarters at Washington, D. C., the bureau has a wide area of useful activity. Particularly are the forecasts valuable, beneficial and appreciated. Science associated with the political movements of the day is surely a gratifying index of the advancing civilization of the age.

The issue of January, 1903, besides much varied matter, has an article by Prof. Edwin G. Dexter of the University of Illinois, entitled "Inductive Studies in Weather Influence." Almost every one can appreciate such a topic, for who has not heard of "blue Monday," or felt the "blues" in gloomy weather. The professor traces the influences of the weather as modified by temperature, pressure, precipitation, humidity and cloudiness on the mind and body of man through twelve respects. So much for the effects on man of meteorology, though few think of it in this aspect.

The previous issue is mainly filled with the normal summary of 1902. Other contents furnish an elaborate discussion of cannonading the clouds against hail storms, resulting in its more than probable futility. Also the studies on the snow crystals as they occurred during the winter of 1901-2. Twenty-four and one-fourth full pages of twelve cuts each are given, showing ninety-nine various types.—*Dubuque Trade Journal.*

NITROGEN FOR FERTILIZING.

The principal sources of nitrogen for fertilizers are nitrate of soda and slaughter-house products, of which latter dried blood is the most important. Slaughter-house products are called "organic" fertilizers because produced from the "organs" of animals. The nitrate of soda is obtained from mineral deposits mainly on the west coast of South America. The known deposits are by no means inexhaustible, and unless other beds are found the world a generation or two hence may have serious trouble to secure nitrogenous manures. By that time, however, it is hoped that we shall have learned how to obtain nitrogen from the air on a commercial scale, and at a cost which the industry can bear. Many scientific men are at work on the problem. Prof. A. J. Cook makes the following comparison between nitrate of soda and dried blood:

Nitrate of soda being a soluble salt in a condition for ready absorption by plants ranks first as an available source of nitrogen. It is the cheapest and most direct form of nitrogen for plant feeding. Dried blood as a source of organic nitrogen easily convertible to nitrates in the soil is a first-class product. It is a humus producer more enduring than nitrate and can be used in larger quantity without danger of loss by drainage, but its benefits are more protracted, and it must be expected to act on the crop as quickly, because it must first be nitrified in the soil

by the organisms of nitrification there. It takes a high temperature in the soil for these bacteria to do effective work, so when blood is applied in cold weather it is well to remember it only becomes available as the warmth of spring and summer proceeds.—*San Francisco Chronicle.*

COURSES OF INSTRUCTION.

Among the recent courses of instruction in meteorology and climatology we notice those offered by Dr. J. Paul Goode, Ph. D., instructor in geography in the Wharton School of Economics, in the University of Pennsylvania. There is a short course of four hours a week during the first term of the year entitled 'Climatology and Applications in Economic Geography." It covers the following subjects:

Principles of meteorology; general atmospheric circulation; laws of storms with special attention to the cyclonic storm; charting of weather elements. Application of principles of meteorology to the interpretation of regional climates. Climate as a factor in economic and social development.

There is also in the course for teachers a series of lectures, occupying one hour, given each Saturday throughout the college year, about forty in all, entitled "The Atmosphere and the Ocean."

Part 1. Meteorology; the general atmospheric circulation, the laws of storms, the charting of weather elements, and the interpretation of weather maps. Scientific weather forecasting.

Part 2. Oceanography; the principles of oceanic circulation, action of waves and tides, harbors, sailing routes.

Part 3. Climatology; the regional application of the principles of climate to the world at large.

Dr. Goode has recently accepted a position in the department of geology of the University of Chicago, and will probably give these same courses at that place next year. It is most important that all teachers should profit by such lectures so that the general public may be educated up to a better appreciation of the difference between the daily weather map with the forecasts of the weather bureau and the farmers' almanacs with the forecasts of these astrological editors.—*Monthly Weather Review for February, 1903.*

OUR NATIONAL DOMAIN.

At the annual meeting of the National Geographic Society, February 10, 1903, Mr. Cyrus C. Adams delivered an address on "The United States—Land and Waters," from which the following extract is made:

"Many foreigners who cross our country are impressed by two facts: Its vast extent and its very apparent sparsity of population away from a few great centers. We are among the most populous nations in the world, but our domain south of Canada is so great that with all our 77,000,000 people we have an average density of population of only about twenty-eight to the square mile, in which respect we are comparable with Norway, one of the most thinly peopled countries of Europe. The part of Great Britain occupied by England is one of the most densely peopled regions in the world; but if England had only our density of population its inhabitants would number less than one-fourth the number in Greater London.

"We have really no conception derived from our experience at home of what great density of population means. Perhaps the following facts may give a vivid idea of it. If we were to crowd our 77,000,000 people into Texas and add to them 40,000,000 more, we should have a density of population in that state comparable with that of the lower Yangste valley and the great eastern plain of China between the Yangste and the Hoang rivers. But human experience has recently recorded a still greater density of population than this, and the following is deduced from the census taken last year by the Chinese government and already accepted by statisticians as a fair approximation of the number of persons in China. If we were to place in Texas double the population of the United States or, say, 150,000,000 persons, we should have in that state approximately the density of population that is to be found in the Shantung province. Our nation may never be called upon to confront the problems growing out of such a prodigious congestion of humanity as this; and these illustrations of great density of population are given here only to show one aspect of our enormous territory. China is not half so large as our country, and its natural resources, area for area, are no greater than our own; so the 408,000,000 souls in China, proper, at least give emphasis to the thought that we have as yet scarcely began to scratch the surface of the capacity of this country to support many times its number of inhabitants.

"Another influence of our vast area is permanent, far reaching and most significant. The United States, extending from ocean to ocean, reaching far into the north and far into the south, with vast areas only 1,000 feet or less above the sea, and others of high altitude, has great variety of climatic conditions and therefore great diversity of products; so that we grow nearly all the commodities of the temperate and sub-tropical zones, and not a few products of the tropical zones. We raise the citrus fruits of the Mediterranean, the figs of Smyrna and the dates of the Persian gulf. We find that we can grow the famous Sumatra tobacco which we still import to the amount of millions of dollars every year; that we can produce Egyptian cotton, and Egypt does not raise all that the world would like to consume of that unique and superior fiber. This diversity of products, and our large mineral resources, make the country practically self-sufficient. No nation can become self-sufficient unless it reaches across a continent and embraces a wide latitude like the Russian Empire, Australia and the United States. We really need to import very little except certain raw materials from the tropics which our own colonial possessions may some day supply."

WEATHER AND CROP CONDITIONS.

In respect to temperature and precipitation the month of April was about normal. The soil and subsoil, however, were abnormally moist at the outset, except in fields naturally well drained or thoroughly tiled. The prevalence during the larger part of April of cloudy, misty and humid weather, retarded the necessary drying of the surface, and hindered seeding and plowing operations on a very considerable area of land intended for grain seeding or corn planting. Fair progress was made in seeding and plowing, under somewhat adverse conditions, but the acreage of oats, barley and wheat was somewhat reduced on account of the excessive moisture in some portions of the land intended for these crops. Pastures and meadows made an early start, and cattle were turned on grass somewhat earlier than usual. The cereal crops germinated readily, and made a fairly good stand. The snow storm and freezing temperature at close of the month checked growth, but did not injure field crops. Apples were but slightly injured in the larger part of the state. Cherries and plums suffered the greatest amount of damage.

TORNADO IN CALHOUN COUNTY.

Late in the afternoon of Saturday, April 11th, a small but vigorous tornado was observed about four miles northeast of Rockwell City, Calhoun county. It struck the farm of C. H. Clark, occupied by P. G. Armour, on the west bank of South

Twin Lake, destroying the house and barn and much personal property, and then swept across the lake, raising a column of water in its passage and spending its force within a short distance on the east side. The Armour family found refuge in a cave and escaped personal injury, but their losses were considerable. Mr. H. C. Maulsby, who was driving homeward from the town of Jolly, was caught very near the center of the whirling shaft, and had a rough experience, but was not injured seriously. He wrote a graphic account of his observations and experiences, which appeared in the *Rockwell Advocate*. The air was dense and hot, and conditions were favorable for the development of a tornado. A cloud was noticed in the southwest, moving eastward, which shortly assumed the funnel shape and soon thereafter the lower appendage reached the earth, raising a column of dust and loose articles in its pathway. Driving rapidly southward Mr. Maulsby reached the west bank of the lake, near the Armour residence, a little ahead of the funnel, and drove his team into the grove and awaited the onset of the storm. The roar sounded like a buzzing cylinder, and struck the buildings and grove with an awful crash. Mr. Maulsby affirms that he was caught up in the air, where he was whirled around and around, with everything dark, coming in contact with flying debris of every description, and finally was let down to earth without any sudden jar or serious hurt. His team was badly injured, and a valuable mare that was tied to the hind end of the wagon was lifted bodily and carried into the lake and killed. At this point the tornado was about twenty yards wide, and the debris covered a space two to three hundred yards wide. The length of its track was less than two miles.

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 29.91 inches; highest observed, 30.38 inches at Sioux City, on the 25th and 30th; lowest observed, 29.30 inches at Davenport, on the 2d; range for state, 1.08 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 107 stations, was 49.8 degrees, which is 0.3° above normal. By sections the mean temperatures were as follows: Northern section, 47.6°; Central section, 50.0°; Southern section, 51.8°. The highest monthly mean was 53.8°, at Burlington; lowest monthly mean 44.9°, at Forest City. The highest temperature reported was 86°, at Mt. Vernon on the 11th; lowest temperature reported, 17° at Larchwood on the 30th. The average monthly maximum was 77.4°; average monthly minimum, 25.0°. Greatest daily range, 52°, at Stuart; average of greatest daily ranges, 39.7°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 120 stations, was 2.98 inches, which is 0.03 of an inch below normal. The averages by sections were as follows: Northern section, 3.38 inches; Central section, 2.89 inches; Southern section, 2.67 inches. The largest amount reported was 6.00 inches, at Grand Meadow; least amount reported, 0.74 of an inch, at Logan. The greatest daily rainfall reported was 3.16 inches, at Columbus Junction, on the 10th and 11th. Average number of days on which .01 of an inch or more was reported, 9.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 45 miles per hour, from the south, at Sioux City, on the 27th. Average number of clear days, 11; partly cloudy, 9; cloudy, 10.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	29.88	30.25	30	29.30	2
Des Moines	29.93	30.24	30	29.85	2
Dubuque	29.92	30.28	30	29.32	2
Omaha, Neb	29.91	30.45	30	29.37	18
Keokuk	29.88	30.32	30	29.35	2
Sioux City	29.94	30.38	25,30	29.51	2
Means	29.91	30.38	25,30	29.30	2

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	7065	28	W	24
Des Moines	7809	38	S	5
Dubuque	7251	34	NW	14
Keokuk	7114	30	W	24
La Crosse, Wis	.....	.....	.....	.....
Omaha, Neb	9021	38	N	3
Sioux City	11525	45	S	27

OBSERVERS' NOTES.

ALLERTON—*Rex Shriver*. Oats sowing began on 1st. Plums and cherries in bloom on 20th; peaches blooming the 26th.

ALTA—*David E. Hadden*. Compared with the preceding thirteen years April, 1903, was about normal in temperature, and the precipitation was about one half inch below the average.

AMANA—*Conrad Schadt*. Snow, ice and frost on morning of 30th; fruit damaged.

ATLANTIC—*J. W. Love*. Ice formed five nights during April; snow fell on evening of 29th and morning of 30th.

BONAPARTE—*B. R. Vale*. A cold, wet month; not over half the acreage of oats sown; sub-soil, full of water and 4.15 inches of rain fell this month.

BRITT—*Geo. P. Hardwick*. Frosts on two-thirds of the mornings; farm operations backward.

CLARINDA—*A. S. Vansandt*. Hailstones on 11th were very large; one measured 6 inches the larger circumference and 5 inches the shorter.

CLINTON—*Dr. Luke Roberts*. Rainfall 4.93 inches, 2.04 above normal; plenty of moisture and coolness; spring opened early enough, but lack of warmth retarded vegetable growth.

COLUMBUS JUNCTION—*H. E. Simpson*. The spring which opened so early has been set back; fruit seems badly damaged.

ESTHERVILLE—*Earle W. Peterson*. It is a peculiar fact that the first day of the month was the warmest, and the last day the coldest.

FOREST CITY—*J. A. Peters*. Seeding began about 5th; ground very wet; considerable plowing done for corn at close of the month.

GRAND MEADOW—*F. L. Williams*. Month very wet and work backward; grass in pastures good.

RIDGEWAY—*Arthur Betts*. Wettest April on record at this station; a degree warmer than 1902; ground thoroughly soaked; 202 hours of sunshine and seven days without a sun. Large hailstones fell on the 1st and 12th.

WAUKEE—*E. J. Leonard*. Last half of month unseasonably cold; closed with a severe snow storm and freeze for a climax.

MONTHLY REVIEW OF THE

CLIMATOLOGICAL DATA FOR APRIL, 1903.

NORTHERN SECTION.

STATIONS	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT							PRECIP., IN INCHES				Number rainy days	SKY			Prevailing direction of wind	DATES OF THUNDERSTORMS.
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)		Number clear days	Number partly cloudy days	Number cloudy days		
Algona	Kossuth	1,213	28	50.0	†3.7	74	11	25	30	32	2 91	† .29	1.27	1.0	8	8	11	11	NW	2
Alta	Buena Vista	1,513	11	47.2	-0 6	72	11	22	30	35	2.65	- .74	.97	.7	10	10	11	9	N, S	11, 18, 27, 28
Alta (near)	Buena Vista	.....	...	.....	....	....	.....	....	.....	.....	2.49	....	.71	....	8	....	....	..	.....	
Britt	Hancock	1,236	5	46.6	-0.4	76	11	22	4	34	2.69	† .40	1.25	.3	12	3	15	12	N	1, 11, 28, 29
Charles City	Floyd	1,012	11	48 2	†0.8	72	8, 11	28	4, 30	39	3.55	† .48	1.32	.4	13	9	12	9	N	1, 12
Clear Lake	Cerro Gordo	1,241	....	47 8	.....	77	11	24	30	43	2.35	.....	.50	.8	9	13	9	8	NW	
Decorah	Winneshiek	875	8	49.1	†0.1	73	27	27	30	39	5.38	†2.48	2.44	....	9	....	....		.....	
Dows	Wright	1,142	..	48.0	.....	75	11	22	4	41	4.04	.....	1.30	.2	10	14	5	11	NE	1, 10, 11
Elkader	Clayton	727	21	48.1	-0.2	76	15	25	4	44	4.93	†2.07	1 85	5	14	7	12	11	SE. NW	1, 10, 12, 28
Estherville	Emmet	1,298	7	46 4	-2.6	74	1	23	4, 30	39	3.04	† .51	.98	T	14	11	9	10	NW	18, 28
Forest City	Winnebago	1,226	8	44.9	-4 9	73	11	23	4	27	3 33	† .73	1.64	T	10	13	4	13	W	
Grand Meadow	Clayton	1,180	11	47.8	†0.2	72	1	25	4, 30	30	6.00	†2 71	2.50	.8	11	5	12	13	NW	1
Greene	Butler	924	5	48.4	-0.2	75	11	25	4	42	3.77	†1.68	1.48	....	11	4	13	13	NE	1, 12
Hampton	Franklin	1,155	12	49.0	†1.4	80	11	25	4	39	3.62	- .01	.82	1.1	13	6	15	9	NE	10, 11
Hanlontown	Franklin		...	46.0	....	70	1, 27	23	4	39	2.91	.....	1.10	.2	11	11	8	11	N	1
Humboldt	Humboldt	1,095	10	49 2	-0.1	77	11	22	4	42	3.49	† .64	1.08	....	10	17	3	10	NW	28
Larchwood	Lyon	.....	....	47.4	.....	75	27	17	30	38	2.12	.....	.90	.5	7	19	4	7	N	1, 28
Larrabee	Cherokee	1,366	..	....	....	....	.....	.....	.....	...	.	.... ..	.....	..	....	....	...		.....	
Lansing	Allamakee	.....	...	50.3	.....	75	1	26	30	43	4.90	.....	1 05	3.0	12	12	3	15	.....	
Le Mars	Plymouth	1,224	6	48.6	-1.6	73	23	21	30	40	2.48	-1.30	1.05	T	5	11	8	11	N	10, 27
Mason City	Cerro Gordo	1,132	....	48.9	.....	78	1	26	30	33	2.78	.....	.75	T	10	6	10	14	SE, SW, NW	
New Hampton	Chickasaw	1,169	....	47.0	....	71	1	24	30	40	3.47	.....	1 50		12	10	8	12	NW	
Northwood	Worth	1,222	6	47.2	-0.8	71	27	24	4	37	3.84	†1.35	1.67	T	13	13	6	11	NE	1, 12, 18, 19
Osage	Mitchell	1,184	11	46.8	†1.2	71	11, 27	24	30	39	3.93	†1.25	1.65	.7	13	9	6	15	N, S	11, 28
Plover	Pocahontas	1,190	5	46.6	-2.2	75	11	24	4	39	2 44	† .59	.75	1.0	9	17	0	13	N	1, 18
Primghar(a)	O'Brien	.....	....	47.4	.....	72	11	24	3	36	2.64	.....	1 05	....	7	14	0	16	N	28
Ridgeway	Winneshiek	1,215	....	48 2	.....	73	8	25	4	41	5.68	.....	2.31	.8	17	10	8	12	NE	1, 2, 7, 10, 11, 12, 28
Ruthven	Palo Alto	.....	....	47 8	.....	74	23	24	30	31	3.25	.....	1.00	.	4	....			NW	
Sibley	Osceola	1,512	8	45.6	-2.8	72	27	19	30	40	2.28	- .55	1.00	.6	8	9	13	8	NE	
Sioux Center	Sioux		....	46.6	.....	73	23, 27	20	30	38	1 72	....	.55	1.0	7	11	8	11	N, S	1, 28
Storm Lake	Buena Vista	1,440	7	48.2	†1.8	73	11	23	30	33	3.61	†1.31	.97	T	10	13	8	9	N	1, 12, 18, 28
Washta	Cherokee	1,157	....	..	.....	....	.....	.....	.....	.....	1.85	.....	1.30	.5	5	14	5	11	N	28
Waverly	Bremer	942	6	48.4	†0.7	73	11	21	30	35	3.29	- .10	1.40	.3	14	....	....		....	
West Bend	Palo Alto	1,197	8	48.0	†1 2	77	13	24	4	31	3.47	.....	1.48	.5	10	10	11	9	N	1, 12, 28
West Union	Fayette	.....	....	.....	..	.....	.. ..		.....	.....	3 95	.....	1.45	....	9	14	0	16	NE, SE	
Average	.....	.....	.....	47.6	-0.3	73.9	.....	23.5	....	37 4	3.38	† .72	.....	.6	10	11	8	11	N	

CENTRAL SECTION.

Amana	Iowa	721	25	50 8	†2.1	78	1, 11	27	4	41	2.39	- .53	.76	....	10	11	9	10	NW	10, 11, 22, 28, 29
Ames	Story	926	20	49 8	†0.5	80	11	24	13	47	1.97	- .80	.65	.2	13	12	5	13	NW	18
Baxter	Jasper	998		51.4	....	80	1	24	4	34	2.12	.....	.65	T	6	11	4	15	NW	
Belle Plaine	Benton	828	12	50.8	†5.2	81	1	26	4	35	2.75	- .95	.70	.5	11	5	19	6	NW	
Carroll	Carroll	1,265	12	49.0	†0.0	83	11	23	4	45	2 70	-1.00	1.10	T	7	11	7	12	.....	17, 29
Cedar Rapids	Linn	733	19	52.1	†2.0	80	11	30	4, 30	39	1.97	-1.10	.92	....	10	9	12	9	N	
Clinton	Clinton	609	34	51.0	†2.3	82	29	28	26	40	4.93	†1.92	1.68	1.0	10	8	9	13	NE	1, 11, 12
Davenport	Scott	606	31	50.2	†0.5	78	11	31	30	32	3.42	† .64	1.54	T	13	10	10	10	N	10, 12, 18
Delaware	Delaware	1,083	11	48.0	†2.0	73	11	26	4, 30	31	4.35	†1.12	1.08	T	10	8	16	6	SW	
Denison (e)	Crawford	1,180	8	48.4	-0.9	72	1	21	4	.....	4.51	† .55	1.42	.5	9	..	....	....	N	
Des Moines	Polk	861	24	51.2	†1.6	78	11	29	30	41	1.64	-1 15	.50	.5	9	6	13	11	N	11, 18, 23, 28
De Soto	Dallas	866	....	51.6	.....	77	8, 11	28	4	44	2.39	.....	.80	.5	7	13	4	13	NW	
Dubuque	Dubuque	655	29	49.6	†1.0	75	29	28	30	35	3.29	† .50	.99	T	15	8	5	17	N	1, 11, 12, 28, 29
Galva	Ida	1,290	8	47.6	-1.9	74	11	21	4	43	3.65	.....	1.00	.5	7	15	1	14	N	
Gilman	Marshall	1,052	....	..	.....	....	.....	.....	.....	.....	3.66	.....	2.10	..	9	7	14	9	N	
Grinnell	Poweshiek	1,023	9	50.4	†0 0	78	1	26	4	33	2.04	-1.48	1.25	....	4	11	9	10	N	
Grundy Center	Grundy	976	11	49.3	†1.6	78	11	23	4	44	1.69	-1.84	.32	T	13	8	11	11	N-S	1, 12, 28
Guthrie Center	Guthrie	1,077	6	51.1	-0.2	81	11	22	4	48	3.02	† .28	.72	2.0	8	5	18	7	NW	29
Harlan	Shelby	1,192	....	49.8	.....	83	11	25	30	46	2.32	...	1.36	T	5	5	16	9	N	18, 28, 29
Independence	Buchanan	921	38	47 6	†0.3	75	11	26	4	40	2.67	† .20	1.15	1.0	8	11	9	10	N	1, 10, 18
Ida Grove	Ida	1,220	....	49.8	.....	76	11	23	4	42	2.73	....	.86	.6	9	8	21	1	N	18, 28
Iowa City	Johnson	685	43	51.6	†3.0	80	1, 11	25	4	41	3.11	-.07	1.15	..	11	10	8	12	N	
Iowa Falls	Hardin	1,107	9	47.6	†0.0	75	11	24	4	45	3.15	- .23	1.08	1.0	12	12	4	14	N, NW	1, 10, 11, 28
Jefferson	Greene	1,052	..	.....	.....	.....	.....	....	.....	....	4.13	.....	1.59	.3	11	3	16	11	SE	10, 18, 28
LeClaire	Scott	576	....	...	.....	...	.....	.....	.....	.....	3.46	.....	2.01	T	13	...	....	...	NE	11
Logan	Harrison	928	35	51.4	†1.4	82	10	25	30	42	.74	-1.19	.50	....	6	16	5	9	NW	
Maquoketa	Jackson	688	9	49.7	†0 7	78	11	26	26	43	4.72	†2 10	1.05	....	10	14	6	10	NE	
Marshalltown	Marshall	947	9	51.2	†1.5	80	11	27	4	45	2.17	-1.05	.76	..	15	7	15	8	SE	
Monticello	Jones	925	48	48.8	†0.4	78	9	25	17, 30	42	4.65	†1.96	1.55	T	7	9	8	13	SW	
Mt. Vernon	Linn	847	35	51 4	†2.1	86	11	26	4	48	2 97	- .35	.72	2.0	12	12	9	9	NW	10, 11, 12
Newton	Jasper	944	14	50 0	†1.0	75	8, 11	21	4	41	2.79	- .63	.95	.8	10	11	7	12	N	
Odebolt	Sac	1,356	5	48.0	-1.7	79	11, 25	23	4	47	2.36	- .35	1.23	..	6	20	2	8	.....	
Ogden†	Boone	1,088	8	50.0	-0.9	80	1	22	4	38	2.58	- .62	.45	..	10	16	2	12	NW	
Olin	Jones	760	....	50 0	.....	77	11	28	23, 26, 30	34	3.28	.....	1.50	.8	10	8	15	7	S, NW	1, 10, 11
Onawa	Monona	1,053	....	51.6	....	79	10	23	30	46	2.56	.....	1.35	2.0	9	18	4	8	NW	29
Perry	Dallas	975	....	50.4	.....	80	1	25	4	44	2 34	.....	1.10	.5	6	9	9	12	.....	
Rockwell City	Calhoun	.....	...	49.3	....	82	11	25	4	31	3.44	.....	1.20	..	10	18	2	10	.....	
Sac City	Sac	1,278	22	49.2	-0.5	78	11	25	30	42	2 55	- .63	1.30	.8	7	12	7	11	SE	
Scranton	Greene	1,172	....	49.6	.....	80	11	25	4	35	2.98	....	.91	.7	9	11	9	10	.....	
Sioux City	Woodbury	1,165	13	49.3	-1.3	76	23	22	30	39	2.39	- .63	.80	....	9	9	7	14	N	
Stuart	Guthrie	1,216	5	50.3	†1.1	79	11	20	28	52	1 99	-1.22	.67	..	7	13	4	13	NW	12, 18
Tipton	Cedar	807	....	52.5	....	77	11, 29	30	30	34	2.76	.....	1.00	....	8	15	9	6	NW	
Toledo	Tama	856	8	50.4	-0.5	81	1	25	4	46	2.73	- .44	.93	..	10	9	13	8	SE, S	
Vinton§	Benton	810	12	49.1	-0 2	78	11	29	4	.....	.....	.....	.68	..	9	10	9	11	NW	
Waterloo	Black Hawk	862	15	49.2	†2.0	78	11	26	4	44	2 67	† .29	.85	.5	13	15	2	13	NW	
Wilton Junct'n	Muscatine	683	7	52.8	†1.6	78	1, 11, 29	28	4	36	4.78	†1.80	1.50	1.0	8	13	8	11	SE	10, 12
Whitten	Hardin	1,036	....	49.2	....	77	11	24	4	32	1.18	.....	.24	.5	7	11	9	10	S	10, 12
West Branch	Cedar	718		.....	.....	.....	.....	.....	....	.....	3.77	.....	1.45	T	10	14	5	11	NW	12
Waukee	Dallas	1,039	....	.....	.....	.. .	.....	.....	.....	.....	2.04	... .	.54	1.0	8	3	21	6	NW	11
Average	.....		.. .	50.0	†0.8	78.5	.....	25.4	.....	40.7	2.89	-0.14	..	.6	9	4	13	13	NW	28
																10	10	10	NW	

CLIMATOLOGICAL DATA FOR APRIL, 1903--CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC., IN INCHES.					SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	7	52.2	†0.7	81	11	27	30	42	1.45	-1.48	.60	T	4	10	12	8	SW	
Albia	Monroe	959	....	52.6	.....	80	1, 11	27	4	40	2.53	.....	1.51	....	10	11	7	12	SE, SW	20, 29
Atlantic	Cass	1,164	11	50 8	†1.5	83	11	21	4	51	2.26	- .93	.92	1.0	6	7	11	12	N	10, 18, 28
Allerton	Wayne	.....	....	51 5	.....	78	1, 11	26	4	38	1.80	.....	1.00	1.0	9	13	10	7	NW	10
Bedford	Taylor	.....	....	51 6	.....	79	11	23	4	48	1.53	.....	.40	....	9	13	5	12	NE	
Bonaparte	Van Buren	.....	10	52 6	†0.7	80	1, 29	28	4	40	4.15	† .90	1.70	2.0	7	....	....	....	.....	
Burlington	Des Moines	544	....	53.8	.	80	11, 29	28	4	34	3.97	.... .	1.21	....	12	15	6	9	NW	11, 12
Clarinda	Page	1,069	12	52.4	†0.4	84	11	26	4	50	1.02	-1.51	.78	.5	7	12	10	8	NW	
College Springs	Page	.....	10	53.0	†2.1	81	11	28	30	43	1.86	-1.06	.54	2.0	10	17	8	5	NW	
Columbus Jct.	Louisa	595	...	52.3	.....	80	11	28	4,30	36	5.54	.....	3.16	.4	10	15	6	9	NW	11, 12, 18
Corning(a)	Adams	1,127	10	51 6	†0 6	78	8	24	4	41	1.88	-1.37	.73	.5	8	....	....	....	NE	11, 28
Corydon	Wayne	992	9	51.9	†0.1	78	1, 11	24	4	40	2.44	-1.88	1.35	.5	8	14	6	10	NW	
Council Bluffs	Pot'wat'mie	990	5	52.5	†0.5	85	11	25	5	49	2.72	† .16	1.23	.4	6	15	8	7	NW	
Cumberland	Cass	.....	....	...	.....	....	....	.....	.....	.....	1.65	.....	.75	1.0	5	21	1	8	S	
Danville	Des Moines	726	....	.....	.....	....	.....	.....	.....	....	3.80	.....	1.35	....	6	7	0	23	.....	
Earlham	Madison	.....	....	50.0	.. ..	79	1	20	4	46	1.73	.....	.63	1 0	8	11	3	16	N	11, 18, 28
Eldon	Wapello	630	....	51.0	.....	80	1	28	23	48	2.03	..	.83	2.0	8	18	6	6	W	
Fort Madison	Lee	516	51	.	.....	....	.....	.....	.....	.....	4 81	†1.61	2.15	...	7	6	11	13	NW	
Greenfield	Adair	.....	11	50.8	†0.0	78	1, 11	24	4	41	2.27	-1.03	.62	.3	9	16	8	6	N, SE	11, 28
Ho peville	Clarke	.....	11	51.7	†1.5	78	1, 11	26	4	41	1.72	-1.88	.88	...	4	....	....	....	.....	
Indianola	Warren	969	11	52.2	†0.6	79	11	27	4	35	2.38	-1.08	1.05	.2	8	13	5	12	NW	12
Keokuk	Lee	619	31	53.5	†1.5	79	11	31	3	30	4.91	†1.70	2.86	6.1	11	10	13	7	N	2, 10, 11, 19
Keosauqua	Van Buren	664	10	53 2	†0.3	80	11	27	4	43	4.49	† .59	1.46	....	12	...	....	....	.....	
Lacona	Warren	.....	....	.....	.....	....	.....	.....	.....	....	2.85	.....	.98	...	12	5	21	4	.....	29
Lenox	Taylor	1,250	7	52.2	†0.7	80	11	27	4,30	41	1.91	-1.45	.57	.2	8	19	4	7	N	
Leon	Decatur	1,120	....	53.1	...	79	11	29	4,30	37	1.69	.....	.70	....	6	14	9	7	N	10
Mt Ayr	Ringgold	1,236	8	51.6	-0.2	79	11	27	4,30	42	2.11	-1.15	.95	1.0	10	6	14	10	NW	10
Omaha, Neb	Douglas	1,113	32	52.8	†1 8	82	10	27	30	35	2.01	-1.12	1.45	.6	9	7	12	11	N	18, 28, 29
Osceola	Clarke	1,130	6	52.8	†1.8	79	1	27	4	38	2.12	-1.72	.50	....	9	12	6	12	SE	27, 28
Oskaloosa	Mahaska	843	18	51.4	†1.0	81	11	24	4	45	1 67	- .66	.75	....	8	....	...	.	.....	
Pacific Junction	Mills	960	....	52.4	....	81	10	25	4	43	2.11	.....	1.37	.9	6	7	15	8	N	
Red Oak	Montgom'ry	1,033	....	51.8	.....	72	1, 9, 10, 11	29	30	34	1.56	... ..	.72	.5	6	5	17	8	SE, NW	
St. Charles	Madison	1,070	....	52.0	.....	80	1, 11	27	4	37	3.11	.....	1.23	.3	9	14	7	9	NW	
Sigourney	Keokuk	787	6	52.2	-0.5	82	1	26	3, 4	45	2.26	-1.30	.92	T	7	18	8	4	NW	12, 29
Stockport	Van Buren	.....	....	.....	.....	....	.....	.....	.....	.....	3.63	.....	1.24	3.0	12	14	6	10	SW, NW	12
Thurman	Fremont	...	....	51.6	.....	81	11	23	29	47	3.49	.....	2.10	....	6	12	7	11	SW	
Wapello	Louisa	588	....	53.2	.....	79	11	31	4	36	3 93	.....	1.25	....	9	16	9	5	NW	
Washington	Washington	769	20	50.3	-0.7	80	1	23	1	36	3.82	†1.20	1.15	....	12	...	...	....	SW	
Woodburn	Clarke	961	....	.....	.....	....	.....	.....	.....	.....	2.10	.....	1 02	...	5	11	8	11	NW	
Average	.....	.....	....	51.8	†0.6	79.8	.....	26.2	.....	41.0	2.67	- .69	.....	1.1	8	12	9	9	NW	
Av. for the state	....	.....	....	49 8	†0.4	77.4	.....	25.0	.....	39.7	2 98	- .03	.....	8	9	11	9	10	NW	

*Means determined from 7 A. M., 2 P. M, and 9 P. M. observations, and maximum and minimum are taken from eye readings. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. §Not supplied with self registering instruments. † Above normal.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR APRIL, 1903.

STATIONS.		DATE.																													Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max.	79	67	49	61	61	56	65	76	78	71	81	71	50	53	50	59	68	74	64	62	57	59	67	63	56	67	72	77	66	47	..	64.3
	Min.	48	43	30	26	42	42	31	34	42	56	51	50	37	36	35	38	35	48	46	47	39	32	35	44	36	34	49	50	36	37	..	40.4
Albia	Max.	80	69	68	58	61	64	62	76	77	65	80	70	59	48	48	58	65	73	68	61	57	59	65	65	57	66	72	77	70	47	..	65.1
	Min.	52	43	30	27	28	44	36	36	42	51	53	49	38	37	37	37	37	38	49	48	41	39	34	44	35	36	44	51	41	30	..	40.6
Algona	Max.	70	62	47	51	59	58	61	70	64	59	74	57	45	52	53	55	66	61	59	60	59	61	62	59	54	62	71	63	46	45	..	62.1
	Min.	42	38	26	24	41	40	32	36	32	46	48	45	34	33	31	30	37	45	49	43	33	32	39	39	32	35	47	39	31	28	..	37.8
Allerton	Max.	78	71	47	57	61	58	66	75	77	68	78	72	51	51	48	58	64	73	67	62	57	58	62	66	54	64	69	76	70	47	..	63.5
	Min.	47	43	29	26	44	46	34	37	43	43	43	50	38	37	37	38	37	42	41	50	41	30	34	45	37	31	41	53	41	29	..	39.6
Alta	Max.	68	54	48	56	60	51	61	71	68	54	72	52	46	54	54	58	66	60	57	63	58	63	68	56	56	67	67	57	35	44	..	58.1
	Min.	48	30	25	24	43	33	29	36	40	49	51	43	35	32	30	32	32	45	47	43	34	32	38	37	33	35	47	33	28	22	..	36.2
Amana	Max.	78	69	45	52	58	60	65	73	70	61	78	70	46	41	49	56	62	68	62	64	55	57	64	60	56	64	70	75	73	45	..	61.5
	Min.	48	41	34	27	40	45	33	32	40	48	51	46	40	37	37	35	33	43	52	49	40	31	30	44	36	31	41	53	44	30	..	40.6
Ames	Max.	70	68	44	56	62	58	63	76	72	59	80	71	51	50	54	56	66	70	58	62	58	59	61	55	58	66	68	68	64	46	..	61.3
	Min.	46	34	30	27	42	32	33	29	39	38	53	51	24	31	36	44	33	47	51	47	38	33	32	42	35	29	43	52	35	27	..	37.7
Atlantic	Max.	79	68	52	62	63	56	66	77	78	77	83	62	52	57	51	60	68	59	62	62	58	65	69	63	58	68	69	72	66	47	..	64.5
	Min.	44	43	30	21	46	41	22	26	29	55	44	48	38	34	33	37	27	50	46	48	38	22	36	36	36	24	50	53	33	27	..	37.2
Baxter	Max.	80	72	62	65	64	60	65	79	71	63	78	73	52	52	51	57	64	70	60	64	58	60	63	60	58	65	70	72	70	47	..	64.8
	Min.	46	40	35	21	41	41	29	32	38	49	51	46	37	35	36	32	35	46	50	47	36	29	35	40	35	31	43	50	38	28	..	38.8
Bedford	Max.	78	67	51	60	63	57	63	77	78	77	79	75	49	57	58	61	66	51	46	48	40	28	35	40	38	27	28	52	35	28	..	58.7
	Min.	48	41	30	23	45	40	29	29	35	56	52	49	41	36	34	41	35	51	46	48	40	28	35	40	38	27	28	52	35	28	..	39.9
Belle Plain	Max.	81	68	46	53	62	58	66	75	70	58	80	54	42	45	52	56	63	70	62	65	56	57	67	62	57	65	70	73	79	45	..	61.9
	Min.	47	54	31	26	39	42	32	33	42	45	50	50	38	36	37	35	35	43	49	48	38	31	32	42	34	31	43	52	50	28	..	39.8
Bonaparte	Max.	80	72	46	54	59	64	70	74	75	62	78	69	48	42	41	58	63	69	65	63	57	57	65	68	54	65	71	78	80	51	..	61.4
	Min.	48	46	31	28	40	45	34	34	44	50	55	48	40	37	37	41	37	45	50	50	41	34	33	45	38	30	41	66	51	32	..	41.7
Britt	Max.	73	60	38	51	58	52	60	63	67	53	76	58	43	51	55	59	64	64	59	60	54	58	60	50	58	64	71	76	70	47	..	57.9
	Min.	45	33	27	22	41	35	28	29	32	47	47	43	32	32	32	30	32	45	48	44	32	28	32	36	32	30	45	42	32	25	..	35.7
Burlington	Max.	79	78	47	55	58	67	73	74	77	65	80	71	51	41	44	61	63	71	67	66	58	59	65	68	51	65	71	79	80	61	..	64.8
	Min.	51	47	31	28	37	47	39	40	45	48	53	51	41	35	37	41	39	47	51	49	43	37	34	48	38	33	45	55	59	31	..	42.7
Carroll	Max.	76	48	50	61	65	52	66	77	65	58	83	52	44	51	56	58	69	65	60	54	65	61	65	55	41	33	45	51	36	25	..	60.0
	Min.	47	42	27	23	43	40	32	32	35	54	46	45	34	32	31	31	35	49	45	45	40	35	27	35	41	33	45	51	36	25	..	37.9
Cedar Rap.	Max.	79	71	46	54	59	59	64	75	71	66	80	73	47	42	50	57	63	69	64	65	58	58	65	56	56	66	73	78	75	47	..	63.9
	Min.	51	46	36	30	40	46	36	36	41	46	50	46	40	38	37	37	36	46	52	50	42	34	35	46	37	31	44	54	44	30	..	41.3
Charles Cy.	Max.	71	55	44	50	..	..	65	72	68	51	72	47	42	46	50	56	61	65	63	61	58	58	62	51	55	64	71	63	62	43	..	58.3
	Min.	36	35	32	28	41	45	34	33	36	48	50	39	37	31	39	31	32	44	50	47	38	31	31	44	36	31	43	53	39	28	..	38.1
Clarinda	Max.	80	54	53	64	65	59	68	81	81	80	84	58	49	58	54	61	72	68	61	64	62	66	67	67	59	70	71	74	66	48	..	65.5
	Min.	44	40	31	26	42	37	27	31	31	55	53	48	39	35	31	42	35	49	47	47	43	32	36	44	38	29	49	51	33	28	..	39.3
Clear Lake	Max.	71	62	45	62	59	52	60	69	74	55	77	60	45	56	59	61	71	62	57	64	57	61	62	50	38	31	34	40	41	31	..	50.5
	Min.	43	38	26	28	37	37	31	32	36	44	41	43	33	31	33	27	30	41	47	44	32	38	37	33	36	34	70	75	73	45	..	35.0
Clinton	Max.	79	75	47	50	56	62	68	72	72	57	78	63	45	41	48	57	64	69	64	64	55	58	64	64	58	66	72	73	75	54	..	63.8
	Min.	46	46	32	31	32	43	33	32	33	45	55	44	40	33	36	38	29	36	51	44	38	35	29	44	38	28	45	52	54	32	..	39.8
College Spr	Max.	79	56	53	63	66	58	67	78	79	78	81	60	48	57	60	63	68	59	61	63	59	66	67	68	57	67	70	75	67	48	..	64.7
	Min.	48	42	30	30	45	40	35	35	42	56	56	48	40	34	33	43	39	50	48	48	40	35	37	47	38	34	47	53	36	28	..	41.2
Colum. Jct.	Max.	78	77	45	55	69	63	68	73	74	58	80	45	40	33	35	29	35	43	51	48	41	37	39	43	48	35	41	53	41	28	..	63.1
	Min.	42	43	30	28	43	43	36	36	43	47	49	45	40	33	35	29	35	43	51	48	41	37	39	43	48	35	41	53	41	28	..	41.2
Corning	Max.	76	63	51	60	63	56	..	..	78	77	76	77	63	48	54	56	65	70	60	64	58	60	65	64	54	61	70	72	64	47	..	63.9
	Min.	46	48	30	24	44	40	..	41	36	56	52	47	38	35	34	41	35	49	46	46	39	28	38	43	37	32	48	53	34	28	..	40.1
Co. Bluffs	Max.	80	66	55	65	67	58	69	79	83	83	85	55	48	58	57	81	70	70	64	65	58	62	64	63	58	66	70	71	70	48	..	66.3
	Min.	36	40	28	26	25	37	33	37	34	58	50	45	40	34	35	43	43	50	48	48	43	33	42	43	37	37	42	37	30	26	..	38.1
Corydon	Max.	78	70	51	57	62	60	67	76	77	72	78	71	50	54	50	63	64	74	70	74	62	63	62	67	57	64	69	76	70	50	..	64.9
	Min.	48	41	29	24	42	45	32	36	41	55	56	48	37	35	35	33	34	48	41	37	36	27	34	43	36	32	42	53	39	28	..	38.9
Davenport	Max.	76	73	46	47	56	62	68	70	75	56	78	67	46	40	48	57	61	67	61	61	54	58	61	61	55	63	69	78	68	46	..	61.3
	Min.	53	46	32	32	36	45	40	42	47	46	53	46	36	34	35	42	37	45	51	49	40	39	38	46	38	31	45	55	42	31	..	42.1
Decorah	Max.	70	72	44	52	55	52	62	71	67	60	63	52	44	42	59	61	63	63	57	50	42	40	32	40	38	31	49	53	46	27	..	59.3
	Min.	47	37	32	28	38	40	38	32	40	44	48	42	35	37	37	31	30	38	39	42	37	32	30	40	38	33	45	53	42	28	..	38.5
Delaware	Max.	69	64	43	49	53	56	62	70	67	51	73	67	43	39	50	32	31	38	40	45	35	30	34	44	34	32	36	50	42	26	..	60.5
	Min.	45	40	30	26	33	41	30	32	36	36	43	41	37	34	34	58	68	63	60	58	58	64	68	63	51	37	68	65	45	46	..	46.2
Denison	Max.	72	68	50	61	57	..	..	..	..	..	..	..	..	..	..	33	32	45	46	45	35	25	40	42	35	34	49	43	30	22	..	38.2
	Min.	48	38	26	21	40	..	25	25	30	53	43	44	36	32	31	33	32	45	46	45	35	25	40	42	35	34	49	43	30	22	..	36.2
Des Moines	Max.	78	64	48	57	62	55	64	76	74	63	78	59	45	51	52	56	64	73	63	63	57	59	61	59	57	64	71	74	65	47	..	61.7
	Min.	51	38	32	29	46	41	34	35	41	53	53	45	38	39	38	39	35	49	50	48	40	35	37	41	38	33	47	54	34	29	..	40.5
De Sota	Max.	76	71	48	58	63	56	65	77	73	65	77	70	50	54	51	55	65	72	58	61	58	40	33	45	38	31	47	54	36	29	..	49.2
	Min.	48	41	31	28	46	44	31	33	40	56	51	48	39	37	38	39	34	50	48	48	40	33	36	45	38	33	45	55	39	44	..	55.9
Dows	Max.	70	69	44	51	56	53	61	72	68	60	75	69	47	50	54	54	63	64	54	63	49	44	34	39	33	32	43	52	35	25	..	57.1
	Min.	45	40	28	22	41	39	31	31	32	45	48	45	34	33	35	32	35	45	57	64	54	57	63	59	56	63	72	72	75	41	..	59.1
Dubuque	Max.	72	66	45	47	55	58	63	71	67	52	74	54	43	40	52	35	37	42	49	49	38	35	35	42	38	38	45	54	42	23	..	53.0
	Min.	47	43	32	31	35	43	38	36	43	45	49	41	39	35	35	37	33	42	49	42	38	35	35	46	38	34	49	54	42	23	..	63.0
Earlham	Max.	79	69	49	59	58	54	65	74	76	65	78	57	50	53	50	59	64	73	60	62	57	59	64	66	58	64	70	73	65	47	..	65.3
	Min.	42	40	28	20	34	40	27	30	30	53	47	45	42	35	33	34	26	47	43	45	37	27	34	40	34	33	42	48	31	26	..	35.7
Eldon	Max.	80	79	71	68	64	69	68	69	67	76	79	78	56	50	55	58	64	72	69	68	67	62	66	62	60	63	69	72	72	48	..	68.1
	Min.	34	37	29	30	32	29	31	35	31	35	49	49	38	35	34	33	32	45	49	49	48	33	28	35	33	30	48	51	32	32	..	35.2
Elkader	Max.	76	62	46	53	53	53	63	73	66	50	70	46	40	40	56	60	62	64	55	65	55	60	62	64	52	58	61	63	58	59	..	59.1
	Min.	40	44	32	25	27	43	31	29	34	43	48	43	39	38	36	31	28	36	50	47	37	29	44	60	35	29	42	51	45	23	..	37.7
Estherville	Max.	74	59	47	51	60	54	61	67	64	53	68	54	47	54	54	57	67	60	57	64	59	65	66	60	57	66	70	75	73	45	..	61.5
	Min.	44	33	21	23	41	37	31	36	35	41	47	42	34	32	30	27	29	44	47	47	32	26	36	38	29	33	43	55	44	23	..	34.5
Forest C'ty	Max.	62	45	27	45	53	39	57	50	52	47	73	60	47	50	50	55	61	67	60	61	56	69	59	53	55	67	68	62	48	31	..	53.8
	Min.	43	38	26	21	38	39	30	30	31	43	47	44	32	33	33	32	35	40	47	44	33	33	35	41	32	31	44	48	38	25	..	36.5
Galva	Max.	65	58	48	58	61	57	64	70	68	50	74	56	48	53	56	58	68	60	59	64	58	60	69	65	55	67	68	62	37	30	..	58.3
	Min.	43	38	25	21	43	38	24	27	29	50	51	43	35	30	29	30	29	45	48	42	32	25	35	41	33	33	47	55	37	23	..	36.8
G. Meadow	Max.	72	62	45	48	55	52	62	70	63	56	65	55	45	45	55	55	60	64	58	60	54	57	63	55	55	64	70	75	67	48	..	62.2
	Min.	47	42	30	25	35	41	32	35	38	45	46	41	35	35	35	31	31	38	45	46	35	30	35	49	41	35	50	61	41	25	..	39.8
Greene	Max.	68	62	64	52	57	50	61	72	65	57	75	60	44	46	52	57	65	66	60	60	48	42	36	42	34	31	43	50	37	26	..	51.8
	Min.	45	42	30	25	39	41	32	30	35	45	48	44	36	34	36	30	32	42	48	42	36	28	32	42	34	31	43	50	37	26	..	37.6
Greenfield	Max.	78	68	48	60	65	62	65	76	77	75	78	70	47	53	51	60	68	65	61	65	54	55	61	60	55	62	69	70	70	44	..	60.6
	Min.	46	41	28	24	43	36	33	35	37	41	51	47	36	35	32	37	40	45	51	42	35	28	35	42	35	33	45	52	40	28	..	42.1
Grinnell	Max.	78	69	45	51	60	57	62	73	69	61	75	70	47	46	50	55	60	68	62	61	54	55	61	60	55	62	69	70	70	45	..	61.1
	Min.	50	44	32	26	41	43	35	40	44	48	50	47	38	35	36	35	39	41	51	48	37	28	37	43	37	34	44	52	40	28	..	37.5
Grundy C'r	Max.	75	69	48	52	58	55	64	76	69	56	79	68	45	48	54	55	62	68	60	64	57	59	64	66	56	65	70	75	70	50	..	64.0
	Min.	45	43	31	23	36	38	29	32	35	46	49	45	38	34	35	31	35	41	50	46	36	27	31	44	36	31	44	52	40	28	..	38.5
Guthrie Cr	Max.	79	70	48	59	63	56	63	76	79	66	81	59	48	59	54	58	68	71	..	63	58	62	65	63	58	65	71	76	74	55	..	67.7
	Min.	45	42	30	22	45	42	27	28	39	55	46	48	38	36	35	35	28	48	46	47	38	28	35	43	36	31	38	52	36	27	..	38.1
Hampton	Max.	70	62	45	52	57	51	61	75	69	54	80	63	45	50	58	60	65	67	54	63	57	61	64	59	62	66	71	60	58	41	..	59.7
	Min.	45	40	29	25	40	40	33	36	40	45	48	45	35	33	36	32	33	44	50	45	35	32	37	40	33	36	45	53	35	25	..	39.4
Hanlonto'n	Max.	70	60	41	48	56	50	60	69	65	49	69	56	44	48	54	53	61	62	56	60	54	57	58	59	53	63	70	73	65	43	..	59.5
	Min.	44	39	27	23	25	38	30	30	35	44	47	43	34	33	35	31	31	40	47	45	33	36	34	38	32	31	43	45	32	25	..	37.7
Harlan	Max.	78	65	50	62	65	55	63	74	76	78	83	58	45	55	54	59	68	65	60	63	58	61	68	59	57	66	70	74	68	48	..	65.8
	Min.	43	38	27	24	43	40	25	28	32	54	44	46	37	32	31	36	30	47	46	46	37	28	33	41	36	27	47	54	34	29	..	41.8
Hopeville	Max.	78	67	43	58	62	56	64	77	77	63	78	70	51	50	53	57	65	72	64	63	57	58	63	64	54	65	70	74	65	47	..	65.8
	Min.	48	42	30	26	43	39	34	36	44	55	54	47	36	36	38	40	36	49	46	49	40	33	35	43	37	36	44	51	34	29	..	43.2
Humboldt	Max.	68	63	46	54	61	58	62	72	68	58	77	64	47	54	56	66	61	56	62	60	56	60	64	57	55	66	69	61	45	47	45	58.2
	Min.	46	41	28	22	44	40	32	30	36	48	49	46	34	34	44	34	45	50	46	36	32	30	42	33	32	49	44	35	31	27	..	38.2
Ida Grove	Max.	67	66	50	60	64	65	63	74	71	67	76	59	48	55	54	57	68	63	60	64	64	64	70	63	56	68	68	68	68	40	50	62.2
	Min.	42	40	26	23	45	39	30	32	31	52	52	45	37	33	31	32	30	47	48	46	35	28	39	42	35	34	49	40	31	24	..	37.1
In'pen'nce	Max.	70	64	43	49	55	52	62	71	66	57	75	66	44	41	52	56	58	65	60	62	54	56	62	50	55	63	69	70	68	43	..	58.0
	Min.	43	41	31	26	36	38	32	31	39	44	48	43	38	35	35	32	32	40	48	46	36	29	29	40	33	30	39	47	40	27	..	36.0
Indianola	Max.	78	53	48	57	59	60	65	78	75	69	79	74	49	51	51	57	65	72	59	63	59	60	61	60	57	64	69	75	69	46	..	62.0
	Min.	46	43	31	27	40	43	44	43	44	49	55	49	37	37	37	44	37	48	47	49	39	30	38	37	36	36	50	53	39	28	..	41.4
Iowa City	Max.	80	70	47	54	58	60	65	74	76	60	80	70	47	41	48	61	64	73	67	65	57	58	67	60	58	61	71	79	77	46	..	63.3
	Min.	47	45	38	27	38	43	35	33	38	48	51	45	39	34	37	37	34	42	52	48	43	34	31	45	38	34	39	51	46	29	..	40.0
Iowa Falls	Max.	70	58	44	52	57	52	61	72	67	60	75	57	45	48	55	54	52	67	55	61	55	51	30	38	33	29	44	52	32	23	..	48.8
	Min.	45	37	29	24	40	38	31	27	35	46	50	42	36	34	35	32	34	44	49	46	35	31	30	38	33	29	44	52	32	23	..	62.2
Keokuk	Max.	77	74	43	54	58	63	68	72	74	58	79	65	44	41	45	58	63	69	65	65	56	56	64	68	53	62	70	78	78	46	..	44.8
	Min.	54	59	31	32	41	51	40	42	48	54	56	51	40	38	37	43	39	48	51	51	45	38	38	49	39	37	45	54	61	33	..	64.5
Keosauqua	Max.	79	71	48	56	62	64	70	75	77	66	80	73	52	45	45	60	65	71	67	64	60	58	68	63	57	66	71	79	74	55	..	64.5
	Min.	49	46	32	27	42	45	32	32	40	54	57

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR APRIL, 1903—CONTINUED.

STATIONS.		DATE.																														Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Lansing..	Max	75	71	47	50	56	55	64	71	68	64	65	57	44	42	60	61	62	62	62	68	62	61	66	59	60	71	70	70	69	56	..	61.6
	Min..	40	46	43	30	37	45	33	28	40	45	46	38	38	38	37	35	29	35	45	48	52	31	30	44	35	28	52	40	54	26	..	39.0
LeMars....	Max..	69	58	49	60	63	57	63	71	71	60	61	55	50	57	57	60	68	65	59	68	62	65	73	64	58	68	71	61	39	45	..	60 9
	Min...	43	38	32	24	43	33	43	31	31	51	51	41	31	31	28	28	35	46	49	38	32	29	42	40	30	35	49	39	30	21	..	36.2
Lenox.....	Max..	78	68	50	61	63	59	65	76	78	77	80	72	50	53	51	58	67	71	62	62	58	60	65	64	53	65	70	74	67	46	..	64.1
	Min...	45	42	29	27	43	41	33	35	40	55	52	48	37	36	34	40	37	48	45	47	39	34	37	44	36	33	58	52	35	27	..	40.3
Leon	Max...	78	74	48	58	63	60	65	75	77	73	79	76	52	53	50	57	65	73	65	61	60	58	64	65	54	64	71	75	70	47	..	64.4
	Min...	49	43	41	29	44	44	34	38	43	56	58	52	38	37	37	41	37	48	46	50	41	33	37	48	37	31	45	54	42	29	..	41.8
Logan.	Max...	79	64	53	64	66	57	70	78	80	82	60	48	56	55	64	70	68	66	63	65	60	66	71	67	69	68	68	70	43	49	..	64.5
	Min...	40	40	28	26	28	39	28	53	56	45	26	38	34	35	38	35	46	48	45	47	39	29	40	44	35	36	48	43	31	35	..	38.2
Maquoketa	Max...	74	71	48	49	55	61	66	71	73	60	78	69	46	41	50	60	61	69	60	63	56	59	62	61	58	63	70	75	67	57	..	61 8
	Min...	47	45	32	27	33	44	33	28	37	46	49	45	39	34	35	35	28	34	49	42	38	33	27	43	35	26	35	50	51	29	..	37.6
Marsh'll't'n.	Max .	79	71	48	55	62	56	64	76	74	64	80	72	48	42	53	58	65	70	64	65	57	60	66	58	59	67	71	73	68	47	..	63.1
	Min ..	48	44	31	27	41	43	32	31	40	48	50	47	38	35	36	33	35	45	51	47	37	29	31	43	35	35	45	51	40	29	..	39.2
Mason City	Max...	78	63	46	56	66	50	60	68	64	59	71	60	45	48	56	58	63	63	58	61	58	59	59	50	56	66	70	61	56	46	..	59.1
	Min...	45	42	30	27	39	40	32	37	39	46	47	44	38	36	36	32	35	43	48	47	36	33	41	40	34	36	43	51	37	26	..	38.7
Monticello.	Max...	69	75	72	68	67	70	72	70	78	70	62	72	62	50	58	62	57	50	54	50	56	58	63	60	62	72	68	62	48	50	..	63.9
	Min..	55	33	30	28	33	35	34	37	45	35	32	42	37	34	33	28	25	32	30	31	30	28	33	35	33	40	34	35	28	25	..	33.8
Mt. Ayr	Max ..	78	65	49	59	63	55	64	75	77	73	79	70	50	53	51	59	61	72	65	62	58	59	63	65	54	65	70	74	67	47	..	63.4
	Min .	48	40	30	27	43	40	31	33	43	55	58	49	37	35	35	41	36	47	45	48	39	31	37	44	36	33	44	50	36	27	..	39.9
Mt.Vernon	Max...	78	67	53	56	56	66	75	81	84	61	86	64	45	40	49	68	67	71	63	68	58	65	64	55	64	66	69	75	72	47	..	64.5
	Min...	47	38	32	26	36	42	33	33	40	43	45	48	40	34	34	32	34	43	50	46	37	31	34	44	34	34	40	50	47	27	..	38.3
NewH'pton	Max...	71	64	43	49	55	49	59	70	65	57	70	58	44	46	58	57	59	64	59	61	55	57	63	49	56	63	70	71	63	43	..	57.9
	Min...	43	39	29	28	38	38	29	30	34	34	46	42	37	32	34	35	32	32	46	44	38	28	29	40	38	45	42	42	37	24	..	36.1
Newton ...	Max...	71	69	47	54	61	57	61	75	70	60	75	72	49	50	50	57	64	68	60	62	56	58	62	59	58	66	68	68	66	47	..	61.4
	Min...	47	43	30	21	40	43	30	34	41	50	50	47	37	34	36	34	36	44	44	47	37	30	35	43	35	33	42	50	39	28	..	38.7
Northwood	Max...	69	58	43	48	57	48	59	68	64	55	70	56	44	50	57	61	63	62	61	64	57	63	62	47	62	66	71	60	48	45	..	57.9
	Min...	43	39	27	24	38	39	31	31	37	45	47	43	35	33	35	31	40	40	48	45	33	30	35	37	32	32	41	47	31	25	..	36 5
Odebolt ...	Max...	68	64	48	61	63	61	63	74	72	65	79	57	47	53	55	56	70	64	56	66	63	70	66	59	79	65	68	65	41	46	..	62.1
	Min...	46	40	24	23	45	29	37	32	33	51	51	41	36	32	33	33	29	45	48	45	34	26	41	35	32	46	48	40	31	24		33.8
Olin..	Max...	75	69	46	49	55	59	64	71	68	60	77	68	45	41	49	55	58	65	61	55	65	55	63	58	54	61	70	75	75	54	..	60.7
	Min...	45	46	33	38	35	43	30	29	57	41	49	45	40	34	35	35	32	35	50	46	39	32	28	43	42	28	34	50	53	28	..	39.3
Omaha, N.	Max..	78	64	51	63	66	55	65	70	79	82	82	54	49	56	55	63	67	68	60	64	60	66	70	62	58	68	68	68	39	46	..	63.4
	Min...	53	38	30	31	49	41	38	45	44	57	54	47	40	36	35	43	41	50	48	48	44	41	47	44	36	40	55	38	29	27	..	42.3
Onawa.....	Max...	73	69	54	64	67	63	67	78	77	79	73	58	48	59	62	67	70	67	63	72	68	75	75	66	67	71	67	63	36	52	..	65.6
	Min...	47	40	26	27	45	38	27	32	34	55	46	43	38	31	30	35	34	48	47	44	38	32	41	41	34	35	49	36	30	23	..	37.6
Osage.....	Max...	70	62	42	49	56	48	60	69	67	56	71	56	42	46	56	57	60	63	57	60	55	57	60	47	53	64	71	63	57	42	..	57.2
	Min...	44	41	28	25	39	40	30	30	34	45	42	42	34	34	35	30	31	41	48	44	33	30	34	38	33	33	43	51	33	24	..	36.3
Osceola....	Max...	74	65	49	60	63	56	65	76	77	64	76	65	60	55	56	57	65	73	65	73	63	59	60	65	55	65	69	74	65	47	..	63.7
	Min...	49	56	31	27	40	43	30	38	40	55	54	43	38	56	37	38	35	47	45	49	40	33	37	44	37	34	45	52	54	28	..	41.8
Oskaloosa .	Max...	81	68	48	56	63	61	66	75	74	62	81	70	48	45	48	57	65	71	64	63	57	57	67	64	55	66	73	75	71	46	..	63 2
	Min...	48	44	31	24	41	44	32	30	37	51	53	48	39	37	37	37	36	44	50	49	41	30	31	44	36	30	43	52	41	33	..	39.6
Pacific Jct.	Max...	79	67	54	64	67	59	67	74	80	81	80	59	51	56	58	64	67	71	66	66	61	65	70	65	59	70	73	74	45	46	..	65.3
	Min...	47	43	30	25	47	38	30	32	37	56	49	48	38	32	33	43	36	50	46	46	40	28	40	43	37	32	50	45	32	27	..	39 8
Perry.....	Max...	80	70	43	59	63	56	65	76	73	64	79	67	48	53	53	58	70	71	56	62	57	60	64	57	57	68	70	66	59	48	..	62.4
	Min...	47	41	30	25	45	41	31	32	36	54	45	47	37	36	36	37	32	42	48	41	32	31	34	42	36	33	43	53	35	28	..	38.3
Plover.....	Max ..	68	55	41	53	59	56	63	69	67	55	75	55	50	55	53	57	69	60	63	66	55	60	63	56	55	63	70	58	39	40	..	58.0
	Min ..	36	36	26	24	44	35	31	30	36	43	45	39	34	30	27	30	34	45	41	42	40	29	36	39	29	30	44	37	33	25	..	35.2
Primghar .	Max...	67	54	45	54	59	55	58	66	65	55	72	55	47	54	53	57	68	59	55	65	58	64	69	56	56	68	69	56	32	..	..	58.3
	Min...	43	33	24	25	42	34	28	33	37	48	48	42	37	32	32	31	32	45	49	39	33	32	38	49	30	33	46	34	27	..	..	36 4
Red Oak..	Max..	72	66	47	57	59	58	60	69	72	72	72	62	52	54	54	60	64	65	60	60	57	59	64	61	61	61	65	68	66	43	.	61.3
	Min. .	49	45	33	31	47	43	34	35	41	53	56	51	41	37	38	44	39	31	51	50	43	34	42	48	40	34	52	56	36	29	..	42.2
Ridgeway..	Max..	70	61	46	53	56	50	62	73	69	51	65	55	45	45	58	60	62	64	60	64	58	64	61	49	62	65	72	62	64	48	..	59.2
	Min. .	45	40	30	25	37	41	31	32	39	44	48	42	34	32	34	29	32	40	49	46	35	28	37	39	33	34	44	52	35	25	..	37.1
Rockw'l Cy	Max...	73	60	48	56	64	55	50	75	70	60	82	58	48	54	50	57	70	69	68	63	60	60	65	55	55	65	70	65	45	45	..	60.5
	Min...	47	40	38	25	38	40	32	37	39	50	52	40	36	35	33	32	38	33	49	46	36	36	37	40	34	34	43	43	33	27	..	38 1
Ruthven ..	Max...	67	62	45	48	61	46	60	66	65	50	72	55	45	53	58	62	55	62	62	68	62	63	74	58	58	65	68	58	38	42	..	58.3
	Min...	45	36	31	39	45	32	30	37	38	47	55	43	34	34	34	38	32	45	40	42	32	31	39	39	32	37	45	35	30	24	..	37 4
Sac City....	Max..	67	63	48	59	62	59	62	74	71	64	78	56	47	54	54	57	68	64	55	64	60	63	68	63	57	68	66	63	40	47	.	60 7
	Min ..	47	37	27	34	43	39	30	32	37	52	52	44	36	33	32	32	31	45	49	45	36	32	36	41	35	32	45	40	31	25	..	37.7
St.Charles.	Max..	80	61	50	60	63	65	66	77	76	63	80	61	49	53	53	58	66	74	62	64	52	60	63	62	56	65	68	74	62	47	..	63.0
	Min...	49	42	31	27	45	43	33	40	45	55	54	49	38	37	37	38	35	48	47	48	40	32	39	48	36	35	46	53	36	28	..	41.1
Scranton ..	Max...	79	64	49	59	63	53	61	..	74	57	80	60	47	56	57	60	68	69	54	65	61	61	66	56	60	67	62	63	48	47	..	60.9
	Min...	47	40	29	25	43	38	31	..	42	53	48	46	36	34	34	34	33	46	48	46	37	32	36	42	35	35	34	47	33	27	..	38.3
Sibley	Max...	57	56	36	48	53	53	48	64	63	53	63	54	49	55	58	61	64	62	61	68	62	67	66	59	61	68	72	56	32	41	..	57.0
	Min..	8	31	24	23	41	37	26	30	31	48	46	39	36	32	31	30	30	45	48	37	32	27	38	40	29	34	46	32	27	19	..	34.2
Sigourney .	Max...	82	71	48	58	64	62	68	78	80	61	81	68	48	46	48	62	68	74	70	67	58	60	70	64	61	63	75	81	77	48	..	65.5
	Min...	41	43	26	26	40	43	32	33	40	49	49	48	38	35	36	35	35	44	47	47	41	31	33	35	36	30	41	51	42	30	..	38 9
SiouxC'nt'r	Max...	69	57	47	54	58	53	59	68	68	58	57	52	49	54	54	58	68	63	56	66	59	64	73	66	59	68	73	57	32	39	..	58 6
	Min...	43	35	26	26	39	37	30	33	38	50	50	39	27	28	30	32	32	41	43	37	32	34	35	39	30	32	45	29	27	20	..	34 6
Sioux City.	Max,..	65	55	50	62	65	53	63	71	75	67	60	50	50	56	56	60	66	66	57	69	61	66	76	58	64	69	69	59	32	45	..	60.5
	Min .	49	32	27	30	47	38	35	38	36	54	46	42	38	35	32	33	41	48	47	40	36	33	43	42	34	39	51	31	27	22	..	38 1
Storm L...	Max..	65	61	46	55	59	56	60	70	69	60	73	56	46	55	53	55	63	59	57	63	59	62	65	61	54	64	64	60	39	44	..	58.4
	Min...	61	36	25	24	43	37	33	37	37	50	51	43	35	33	31	31	38	45	49	43	34	35	41	40	33	37	48	36	30	23	..	38.0
Stuart	Max ..	79	68	48	59	65	56	64	74	75	63	79	69	49	52	52	56	68	72	62	62	57	58	66	60	56	66	70	72	66	45	..	62.9
	Min ..	46	40	28	24	43	40	32	37	39	58	58	45	32	34	34	36	33	46	44	45	36	32	35	43	35	34	45	20	31	25	..	37.7
Thurman..	Max .	76	68	53	63	65	69	65	75	79	80	81	59	51	57	53	55	63	63	69	62	63	64	69	67	58	68	69	73	45	46	..	64.4
	Min ..	47	42	30	25	49	40	28	28	35	57	35	49	40	34	32	38	44	35	51	48	41	29	44	48	37	32	50	44	23	27	..	38.7
Tipton	Max ..	76	73	50	54	55	62	67	73	75	64	77	67	47	43	48	63	63	70	64	67	61	64	61	59	60	65	71	75	77	55	..	63.6
	Min ..	50	46	35	32	36	45	36	39	45	46	49	47	35	35	36	37	37	43	51	47	47	36	36	45	36	39	42	54	55	30	..	41.4
Toledo	Max ..	81	68	47	54	61	57	65	75	72	60	79	68	47	47	52	57	64	70	61	65	57	59	66	58	57	65	72	72	69	46	..	62.4
	Min ..	46	44	32	25	40	44	31	29	38	46	50	47	39	35	36	32	33	45	52	48	37	28	29	38	34	29	44	49	40	28	..	38.3
Wapello...	Max ..	77	77	47	51	51	66	71	73	78	61	79	68	49	42	44	58	62	68	64	61	58	61	64	61	56	65	69	77	80	57	..	63.4
	Min...	55	47	33	31	35	44	38	39	45	48	52	49	41	35	37	39	39	48	51	49	45	40	35	47	38	34	44	55	57	33	..	42.9
Washin't'n	Max ..	80	73	64	52	59	63	68	74	74	55	78	58	53	42	46	59	63	71	65	63	57	58	65	55	55	65	70	65	45	45	..	63.4
	Min...	47	40	30	23	36	41	31	33	38	45	48	43	35	34	34	35	24	42	48	45	36	29	31	41	34	28	39	49	40	28	..	37.2
Waterloo..	Max ..	71	60	45	50	57	52	64	73	67	60	78	60	45	44	54	58	64	68	63	64	58	58	60	55	57	65	72	70	66	46	..	60.1
	Min...	45	42	32	26	40	42	33	29	37	45	49	45	38	35	36	32	32	44	49	47	39	29	30	44	34	31	42	51	39	28	..	38.2
Waverly...	Max...	70	62	44	51	57	59	61	73	64	54	73	61	45	44	54	57	62	58	.	63	56	57	64	51	55	65	71	62	65	44	..	58.7
	Min...	45	42	31	27	39	41	32	29	39	47	45	45	35	35	36	32	32	48	..	46	47	30	..	42	34	30	45	53	38	21	..	38.1
West Bend	Max...	70	59	46	53	60	55	61	69	66	55	56	46	77	53	53	57	66	59	58	63	59	62	63	56	58	65	69	65	44	46	.	58.8
	Min...	45	36	27	24	43	40	31	35	35	42	50	35	50	33	32	31	35	45	50	45	34	32	40	42	34	35	46	39	32	26	..	37.2
Whitten...	Max ..	75	72	45	52	59	58	61	74	69	59	77	65	48	47	53	55	63	68	65	61	61	57	64	50	55	65	70	68	66	45	..	60.9
	Min ..	45	42	29	24	39	41	28	32	49	46	48	45	36	32	34	31	35	43	49	45	35	27	32	40	33	30	43	50	37	25	..	37.5
Wilton Jc..	Max ..	78	72	47	51	56	61	67	67	72	62	78	69	..	42	47	58	65	62	70	60	55	59	65	65	57	64	70	76	78	51	..	62.9
	Min ..	50	47	33	28	38	43	33	33	40	47	50	45	40	34	35	38	41	32	40	41	41	37	30	56	35	30	40	51	42	31	..	42.7

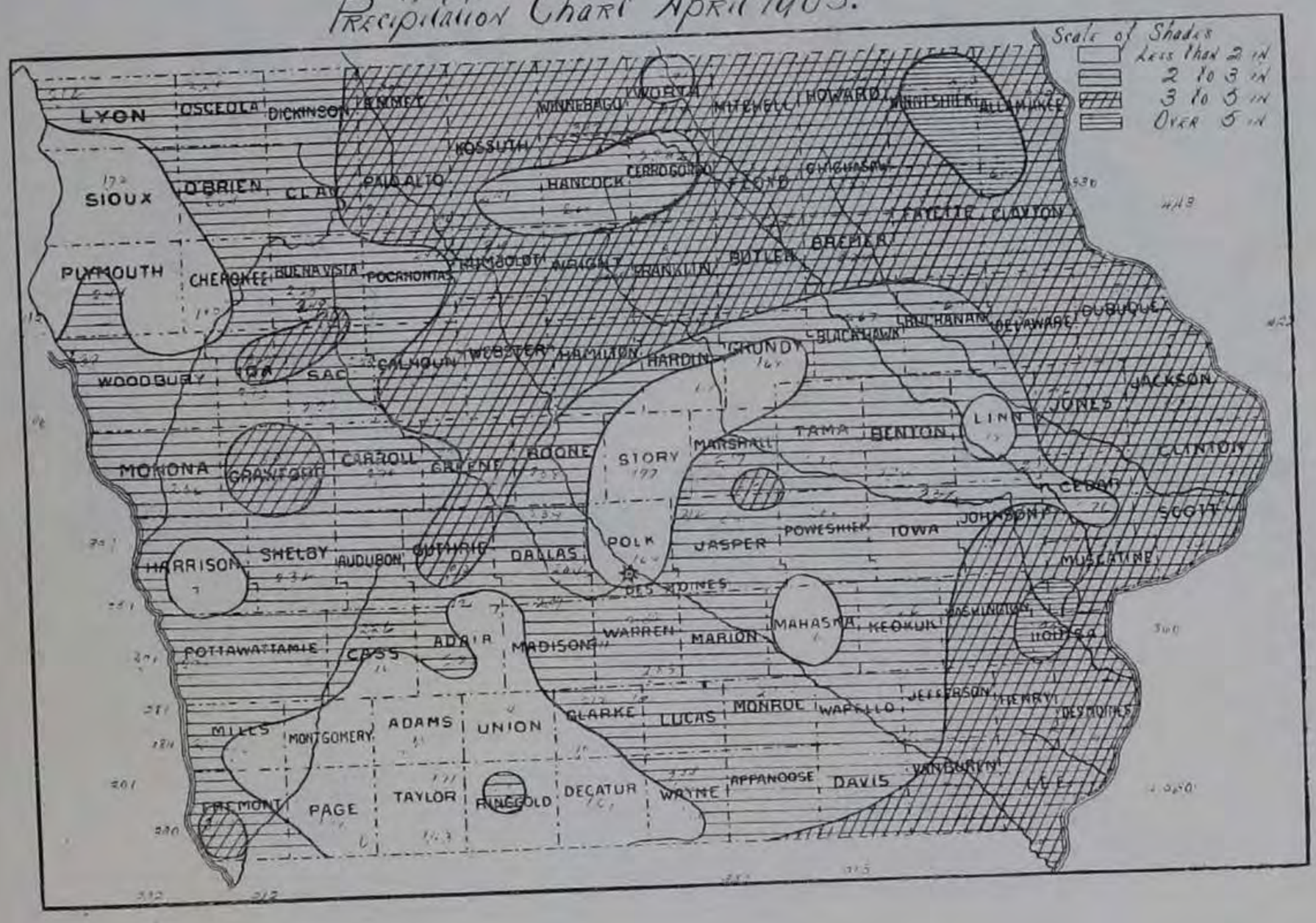
DAILY AND MONTHLY PRECIPITATION FOR APRIL, 1903.

STATIONS.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL.
	DAY OF MONTH.																															
Afton										.60		.22						.39		T			T						.24			1.45
Albia		.03	.10							1.51	.04		.06	.09	.05			T	.20				T		T				.27	.18		2.53
Algona	.30									.02	T	.20	.05					.40	.55	T								T	1.27	.12		2.91
Allerton		T	.20							1.00			T	.02	.01			.09	.14	T			T	.05					.15	.14		1.80
Alta	.09									.20	.13		.03					.97	.27	.03							.03	.20	.70			2.05
Alta (near)										.25	.30		.05					.63	.30								.04	.15	.71			2.49
Amana	T									.76		.48	.25	.18	.02				.05				T	.03	.08			T	.19	.35		2.39
Ames	.02					.01				.22	.30			.13	.01			.65	.04	.04			.02	T			T	.25	.24	.04		1.97
Atlantic										.41			.04					.19	.04				T					.92		.66		2.26
Baxter										.65		.53	.10					T										.57	.15	.12		2.11
Bedford		.16								.36			.02		T			.40	.03	.04			T				T	.13	.33	.06		1.53
Belknap																																
Belle Plaine	.10									.70	T	.40	.03		.16			T	.20				.09	T	.07			.30	.30	.40		2.75
Bonaparte			.88							1.70		.32	T	.12	T				.28				.05							.80		4.15
Britt	.21		T	T						.08	.08	.17	.07					.29	.32	.08			.03	T	T		T	.08	1.25	.03		2.69
Burlington			.98							1.24	.45	.17	.18	.26	.05			T	.18					.06	.03				.09	.28		3.97
Cedar Rapids	T									.92		.44	.13	.05	.04			.02					.03	.16	.03			.08	.07	T		1.97
Charles City	.26					T				.14	.08	1.32	.18		T			T	.45	.06			.08	.02	.10		T	.11	.71	.04		3.55
Clarinda			T							.48	.01		T						.33	.06	.05		T				T		.78	.21		1.92
Clear Lake										.15	T	.50	.10					.27	.48	.10			T				T	.17	.50	.08		2.35
Clinton	.15	.18									1.68	.75	1.74	.77					.01				.05		.27					.33		4.93
College Springs		.04								.40	T							.15	.40	.10			.02	.01			T	.02	.54	.18		1.86
Columbus Junction			.33							1.68	1.48	1.14	.07	.17	.02			T	.07	T			T	T					.55	.03		5.54
Corning										.73	.14		.02		T			.11		.03			T				T	.35	.45	.05		1.88
Council Bluffs										.29			T				T	.32	.05	.09							T	1.23	.74			2.72
Corydon		.03	.14							1.35			T	.06				.06	.20										.40	.20		2.44
Cumberland										.21								.11		T								.75	.25	.33		1.65
Danville			.65							1.35	.80	.45	T	T		T	T					T					T	.30	.25	T		3.80
Davenport			.29							.93	.61	.37	.31	.27	.01	T		T	.03	T	T			.10	.19			.03	.06	.22		3.42
Decorah	.23										1.47	2.44	.30	T				T	T				.21	.25				.11	.30	.07		5.38
Delaware	.38									.65	1.08	.50	.30										.20	.06				.42	.20	.56		4.35
Denison										.15	1.42	.01	.01					.12	1.07									.45	1.23	.05		4.51
Des Moines						T				.48		.02	.10	T	T			.39	.11	.04			T	T	T			.08	.20	.13		1.64
De Soto										.50		T	.12		T			.42	.14	.04							T	.80	.37			2.39
Dows	.17					.13				.20	.18	1.30	.23		T			.42	.47	.14			T				T	T	.80			4.04
Dubuque	.28	T				.02				.40	.59	.40	.68	.08	.01			T	.03	T			.01	.04	.19			.22	.04	.30		3.29
Earlham										.6	T		.08	T	T			.43	.02	.02					T		T	.16	.28	.11		1.73
Eldon			.20							.83			.08					.02					.10	.10					.02	.68		2.03
Elkader	.18	.01				.05				1.85		.63	.65	.10					.05	.05			.23		.15			.60	.13	.23		4.93
Esthersville	.26	.04			T	T	T			.24	.12	.05	.07					.54	.15	.04			.02	T			.10	.38	.98	.05		3.04
Forest City	.18									.3	.01	.37	.08					.23	.48				T		T			.10	1.52	.02		3.33
Fort Madison			1.32							2.15	.08		.27	.13	T	T			.25					T	T				.61	T		4.81
Galva	.80									.15		.75						.40									T	.50	1.03	.05		3.65
Gilman										.60		.45	.04	T	T			T	.05	.04			T	T	.07		T	2.10	.20	.01		3.66
Grand Meadow	.15	.19				.05					2.50	1.70	.10	.08	T				T				.39	.20				.35	.20	.09		6.00
Greene	.25									.18		1.48	.13						.36				.12	.03	.07			.30	.80	.05		3.77
Greenfield		T	.01							.62		.04	.10		T			.09	.20				T	T			T	.52	.58	.11		2.27
Grinnell										1.25									.20									.24	.35			2.04
Grundy Center	.11									.27		.32	.05	T	.04			.01	.16	.06			.01	T	.06		T	.31	.22	.07		1.69
Guthrie Center				T	T					.50	.30		.12		T			.51		.12			T					.55	.72	.20		3.02
Hampton	.24				.14					.42	.87	.13			.04			.53		.22			.06	.05			.08	.68	.16			3.62
Hanlontown	.18									.10	.03	.43	.07		T				.53	.04			.03	T	T		T	.10	1.10	.25		2.91
Harlan		T								.33			T			T		.27	T	T			T				T	.30	.36	.06		2.32
Hopeville		T								.88			.03					.43	T	T			T				T	T	.38			1.72
Humboldt	.22									.10	.70	.15	.08				.70	.21	.14								.08	1.08				3.49
Ida Grove	.06									.24		.84						.35	.21	.04								.23	.56	.20		2.73
Independence	T									1.15		.15		T	T				.10	T			.20	.10				.75	.12	.10		2.67
Indianola						T				.52		1.05	.05	T				.41	.16	T			T				T	.02	.10	.07		2.38
Iowa City	T									1.15	.23	.59	.15	.10	.04				.10	T			T	.07	.06			T	.14	.48		3.11
Iowa Falls	.15					.04				.19	1.08	T	.15	T	T			.23	.20	.01			.06	T	T		T	.44	.57	.03		3.15
Jefferson	.02									.52	.35		.17		.03			1.12	.03	.27									1.59	.03		4.13
Keokuk			1.03							1.69	1.17	.01	.19	.13	.03	.01			.20				T		T				.14	.31		4.91
Keosauqua			.91							1.46	.10	.27	.04	.06	.02				.39				.04	.01					.2	.90		4.49
Lacona						.06				.98		.08	.13	.12	.11			.48	.24	.10								.17	.22	.16		2.85
Lansing		.62			.46	T				.35	.70	1.05	.45	.10	.10				.15					.32				T	.37	.23		4.90
Larchwood	.90					T				.09	.01							.13	.17	T				T			T	.20	.62	T		2.12
Le Claire		T	.11	T						T	2.01	.21	.20	.33	.09	.03			.07		T			.3	.13	.02			.02	.21		3.46
Le Mars										.70							T	.33									.30	1.05	.10			2.48
Lenox										.49		.57	.05					.30	.04									.10	.34	.02		1.91
Leon			.40							.10								.40	.30										.15	.34		1.69
Logan									.02									.03		.05								.15	.50	.04		.79
Maquoketa	.23									1.05	.66	1.05	.76	.14					.08					.08	.27					.40		4.72
Marshalltown	.01					.02				.56		.76	.05	.02	.02			T	.14	.08			.02	.02	.03			.13	.23	.08		2.17
Monticello	.9c										1.55		1.25					T	.15	T				.10	T	.60			.10			4.65
Mason City	.26									.20		.75	.18					.13	.33	.04			.03					.16	.70	T		2.78
Mount Ayr		.07	.04							.95			.05					.17	.33	.01			T	T			T	.04	.37	.08		2.11
Mt. Pleasant			.75							.65	.10	.50	.10	.20	.02														.30	.50		3.12
Mt. Vernon										.72	.52	.52	.23	.10	.01				.01	.01			.02	.20				T	.04	.59		2.97
New Hampton	.27	.02								.28	.25	1.50	.18						.16				.05	.10				.19	.42	.05		3.47
Newton										.60		.20	.11	T	.04				.22	.03					.07			.95	.23	.34		2.79
Northwood	.55	.13				T				.13	.09	1.00	.10					.11	.38	.08			.07	T	T		T	.10	1.07	.03		3.84
Odebolt										.17		.33	T				.35	.03									T	.28	1.20			2.36
Olin	.17									1.50	.64		.07	.07	.01				T	T			.01	T	.19			T	.62			3.28
Omaha, Neb			T			T				.12			.01				.01	.23	.03	.05			T				T	.27	1.24	.04		2.01
Onawa										.46		.03					T	.35	.04	.03							.05	.35	1.35	.20		2.56
Osage	.25									.25	.22	1.65	.09					.04	.47	.07			.09		.03			.13	.60	.05		3.93
Osceola		T								.50	.08	T	.08	T	T			.30	.50	.10			T				.06	.20	.30	T		2.12
Oskaloosa										.75	.12			.02	.03			.20	T				T	T				.13	.18	.24		1.67
Pacific Junction										.17			T					.09	.04				T	T			T	.35	1.37	.09		2.11
Perry										1.10	.07		.18					.50					T					.44	T	.04		2.34
Plover	.21									.15		.25						.75	.10					.04				.22	.62	.10		2.44
Primghar	.20									.40								.27	.20	.07				T				.45	1.05			2.64
Red Oak			T	T						.25	T		T		T		T	.11	.11	T				T			T	.32	.72	.05		1.60
Ridgeway	.67	.01								.34	.71	2.31	.25	.02				.01	.01	.08			.21	.09	.04		.01	.07	.60	.25		5.68
Rockwell City	.50									.20		.10	.12					.80	.15	.05							T	.20	1.20	.12		3.44
Ruthven	1.00										.70							.85									T		.70			3.25
Sac City										.33								.52	.07	.06			T				T	.19	1.30	.08		2.55
St. Charles										.74		1.23	.07		T			.01	.60	.05			.01				T	.07	.25	.08		3.11
Scranton	T									T	.54		.25						.91	.05	.24							.11	.80	.07		2.98
Sibley	.18	.02								.44								.24		.08							.16	.16	1.00			2.28
Sigourney		T				T				.92		.47	.09	T	T				.10				.05	T					.28	.35		2.26
Sioux Center	.16									.20		T						.19	.23					T			T	.55	.29	.10		1.72
Sioux City	.10									.80	T	T					T	.39	.04	.03			T				.04	.45	.49	.05		2.39
Stockport			.55							1.24	.25	.29	.05	.04	.01				.24	T			.02		.21				.28	.48		3.66
Storm Lake	.08	T								.33	.01	.97	T					.74	.30	.03							T	.22	.88	.05		3.61
Stuart										.50		T	.16					.14	.03	.06								.67	.43	T		1.99
Thurman		T	T							.25			T						.20	.30			T	T			T	.34	2.10	.30		3.49

DAILY AND MONTHLY PRECIPITATION FOR APRIL, 1903—CONTINUED.

STATIONS.	DAY OF MONTH.																															TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Tipton	....	...	.05	....	....	....	....	..	...	1.00	.38	.66	.22	.13	.05	....	....	....	....	.04	...	..	...	....	.06	..	..	....	....	.17	....	2.76
Toledo	.10	....	..	....	....	....	....	....	....	.75	....	.48	T	....	.03	..	....	....	T	T	....	....	.02	....	....	..	....	.95	.18	.22	..	2.73
Wapello	....	....	.45	....		..	....	..	....	1.25	.60	.76	.03	.22	T	...	....	....	.08	T	....	....	1	....	..	..	....	....	.04	.50	....	3.93
Washington	....	....	.23	.03	....	....	....	..	....	1.15	1.00	.40	.09	.04	.05	..	....	.02	.05	....	..	..	.03	...	....	....	....	..	..	.67	....	3.82
Washta	.10	....	....	....	....	....	....	..	....	.15	....	....	T	....	....	....	T	.25	T	....	....	..	T	....			T	.10	1.30	.05	...	1.85
Waterloo	.13	T	...		....	.05	..	....	..	.24	.	.85	.04	T	.03	....		T	.15	.03	...	..	.05	T	.11	...	T	.41	.50	.08	....	2.67
Waukee	....	..	...	....	....	.10	....	....	....	.54	....		.07	....	T	....	....	.36	.32	.10	....	....	T		....	....	T	.30	.20	.15	..	2.04
Waverly	.20	.10	....	...	....	....	....	....	....	.21	.34	1.40	.08	....	..	....		.02	.15	...			.13	..	.13	..		.20	.20	.05	....	3.29
West Bend	.17	....	....	....	....	....	....	....	....	.13	..	.44	.03	....	..	....		.58	.41	.15	...		T	T	....	....	T	.20	1.28	.05		3.47
West Branch	....	....		.		....	....	..	....	1.45	.49	.69	.06	.24	.05	....	....	....	.07	..		....	...	.15	....	....	....	.	.08	.49	...	3.77
West Union	11	....		....	..	..	....	....	....	1.45	.78	.65	T	T	T	....	..	T	.06	.03	..		21	.10	....	..	....	....	.56	..	....	3 95
Whitten	..	....	....	....	....			...	....	.22	...	.24	.14	T	T	....	..	T	.15	T	....	....	T	..	....	..	....	.10	.23	.10	....	1.18
Wilton Junction	....				....	.....	....	....	....	1.20	1.50	.48	.13	.40	....	....	..	....	....	....	....	....	.22	..	.10	...	....	..	....	.75	..	4.78
Woodburn	..	T		....	....	....	....	....	.	1.02	...	....	.04	T	T	...		.41	.11	...	...	....	T	....	1	...	...	T	.52	....	....	2.10

Precipitation Chart April 1903.



MAY, 1903. No. 5.



MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

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MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIV. MAY, 1903. No. 5.

IOWA CROPS JUNE 1, 1903.

Reports of the regular crop correspondents of the Iowa Weather and Crop Service, made June 1st, have been received and tabulated for the state at large. The showing as to the acreage, as compared with last year is somewhat better than we had reason to expect in view of the adverse weather conditions and saturated state of the soil in the seeding and planting season. The county reports were generally mailed about the 27th to 30th of June, when the conditions were at their worst for the formation of a fair estimate as to the status of the crops.

The figures as to the acreage of corn, as compared with last year, must needs be revised, and will be included in the report for July 1st. It was impossible to make, during the last week in May, even an approximate estimate of the acreage that will be finally included in the corn harvest of this year. So the figures as to the corn acreage will be omitted from this report. The per centages of the acreage of the other staples are as follows, the figure 100 representing the area of last year:

Winter wheat, 83 per cent; spring wheat, 85; oats, 92; barley, 90; rye, 88; meadows, 101; potatoes, 94; flax, 87.

CONDITION OF CROPS AND FRUIT.—Winter wheat, 96; spring wheat, 93; corn already planted, 75; oats, 93; barley, 96; rye, 94; meadows, 109; pastures, 107; flax, 84; potatoes, 91; apples, 70; plums, 35; peaches, 40; cherries, 35; grapes, 70; strawberries, 90; blackberries, 92; raspberries, 85.

LIVE STOCK.—Cattle, 99; sheep, 99; hogs, 98; spring pigs, 89; horses, 96; foals, 95.

Last year at corresponding date conditions were rated as follows: Corn, 97 per cent; wheat, 99; oats, 98; barley, 100; rye, 99; flax, 98; potatoes, 103; meadows, 96; apples, 70; plums, 72; cherries, 70; grapes, 72; strawberries, 80; raspberries, 71; blackberries, 67.

CONDITION OF FRUIT JUNE 1.

Secretary Green, of the Agricultural Society, has issued the following report:

A summary of the reports for June shows a decline of 10 to 30 per cent in some varieties of fruit since the last report. The lowest percentage is in the Des Moines valley, the next lowest is in the Nishnabotna. The counties east of the Iowa river show the highest percentages in plums, cherries, currants and gooseberries; these fruits, if properly distributed, should bring a good price, as not more than one-fourth the usual crop will be harvested. Apples will be about half a crop in the southwest, from present indications, and three-quarters in the north and east. Strawberries, raspberries and blackberries are well distributed over the state, and will be a good crop unless injured by unfavorable weather conditions later in the season.

A summary for June is as follows: Apples, 68 per cent; pears, 22; plums, 27; cherries, 26; peaches, 30; grapes, 64; currants, 36; gooseberries, 34; red raspberries, 76; black raspberries, 72; blackberries, 90; strawberries, 86 per cent of a full crop.

WEATHER AND CROP CONDITIONS, MAY, 1903.

The month of May, 1903, scored a meterological record fairly comparable with that of May, 1892, which was characterized as the most unfavorable May for farming operations known in Iowa for a quarter of a century. The mean temperature for May, 1892, for the state, was 54°, or 5.7° below normal, and the average rainfall was 8.77 inches, or more than double the normal. In May, 1903, the temperature was 61.6°, which is slightly above normal, and the average rainfall for the state was 8.55 inches, or 4 52 inches above normal, and .22 of an inch below the total for May, 1892. The general weather conditions for the month this year were exceedingly unfavorable, but were notably better than the records show to have been prevalent eleven years ago. The temperature was seasonable except for very short periods at the first of the month and during the heavy storms the last week. The distribution of the rainfall was somewhat variable, ranging in amounts at local stations from 2.88 to 15.45 inches; but the average of each section was above 8 inches. The best conditions as to dryness of soil prevailed in the Mississippi river counties. The great interior basins of the Des Moines, Iowa and Cedar rivers were subjected to very heavy floods about the close of the month, causing much delay in farming operations and damage to all crops. From about the 3d to the 18th conditions were at their best, and during that half of the month the plowing, planting and other farm operations were in progress on the drier lands, with only occasional interruption by showers. Most of the corn that was planted was put in during that period. The protracted and very heavy storms during the last decade rendered field work impracticable in more than four-fifths of the state. At the close of the month not over two-thirds of the usual corn area had been planted. The germination was generally quick and satisfactory in the stand, but the fields soon became very foul from lack of cultivation, and much more than the usual amount of replanting was necessitated as a result of washing and flooding the fields. The general condition of wheat, oats, rye, barley and meadows was better than seemed to be possible during prevalence of the storms. The fruit crop suffered some damage by the frost and freezing temperature the first of the month, but the general condition of apples; berries and grapes is fairly good.

MAY RAINFALL IN IOWA, 1890-1903.

The following table gives the average rainfall for the state, in the month of May, for the period of fourteen years:

Year.	*Inches.*	*Year*	*Inches.*
1890	3.56	1898	4.67
1891	3.18	1899	6.23
1892	8.77	1900	3.31
1893	3.45	1901	2.35
1894	1.87	1902	5.39
1895	3.19	1903	8.57
1896	6.69		
1897	1.92	Average	4.50

SEASONABLE NOTES.

Within the past seven years many articles have been published under the caption "Lessons of the Drought." A new leaf has been turned, and we are called upon to study object lessons set in another chapter of human experience. Sodden fields, impassable roads, flooded bottoms, eroded hillsides, washed out and drowned out crops, furnish timely topics of interest to students of nature, tillers of the soil and business men of the country.

The people of New England, New York, Canada, and other portions of the east, have been stricken by the drought, while our fields were drenched and our people have been contending with the floods. We might swap literature with them just now, giving them the benefits to be derived from all the writings of all the people of this region who have essayed to tell all about the cause of droughts and how to cure them. We may safely loan them all of that sort of dissertations that have been filed away in libraries and lumber rooms, and if they should forget to return the articles we will not be much the poorer. When the metorological pendulum again swings toward the droughty side in this region, as it surely will in due time, we can then depend upon getting at short notice revised and enlarged editions of the essays that tell specifically how the people have been ruining their climate by draining their farms and cutting off trees somewhere or other.

About fifteen years ago, after the west had suffered some damage from drenching rains and floods, a gentleman of note as an author, wrote an elaborate article wherein he attempted to prove by facts and deductions that the heavy downpours of that period were due in considerable part to human agency. His theory was that the increasing use of steam power in this country, in form of stationary engines, locomotives, and steam heat in buildings, had largely added to the humidity of the air arising from solar evaporation, resulting in a vast increase in the total amount of precipitation. His very ingenious and seemingly plausible article was widely disseminated and elicited much favorable comment; but it was not sufficiently vigorous and well rooted to withstand the very severe drought that came with blistering effect within the next year or two. That theory had in reality more scientific backing than the correlated hypothesis that was broached a little later to account for the drought, viz: that it was the result of man's agency in the drainage and cultivation of western lands. The truth is, as we must allow, man is a puny creature when his strength is pitted against the mighty powers that cause the winds, rains and floods.

The world over the people have persistently trenched upon the rivers, floodlands, and shores of lakes and oceans. As a result of their folly thousands upon thousands have been overwhelmed by floods and tidal waves, and the burden of support of the survivors in times of calamity falls upon those who are wise enough to build their homes upon the uplands. The world is big enough and broad enough, and there is room for all its inhabitants upon the slopes and ridges, far above all high water marks. The bottoms that are subject to periodic overflow may be profitably used for pastures, meadows, truck gardens and cornfields in ordinary seasons. The occasional loss of crops would be trifling in comparison with the damage and risk of life resulting from flooding the homes of the poor, who have been induced to locate on cheap bottom lands. For sanitary reasons, as well as immunity from floods, human habitations should not be permitted in flood districts.

See Matt. 7:25. Anent the foolish man "which built his house upon the sand; and the rain descended, and the floods came, and the winds blew, and beat upon that house and it fell: and great was the fall of it." So the same sort of folly was committed in the olden time.

The Iowa lakes are now at the highest stage they have reached in eleven years. Spirit Lake is reported to have risen twenty-two inches, and many of the docks are under water. Those who a couple of years ago predicted the early drying up of those noted summer resort lakes are not saying anything about it just now.

A news special from Ottawa, Canada, dated May 30th, said no rain had fallen there for several weeks, and for the purpose of breaking the drought and preventing the outbreak of destructive fires the mayor requested the minister of militia to bring out his battery of big guns and bombard the heavens to jar down the moisture from the air. The rains will undoubtedly be copious hereafter—this season or some other year.

Observer Arthur Betts, from Ridgeway, Winneshiek county, reports a distinct shock of earthquake at 2:10 A. M. on the 21st of April. It was a low rumbling that shook the house, jarred windows, for space of about ten seconds, the apparent direction of the wave being from S. E. to N. W.

A dispatch from Utica, New York, dated June 10th, says that Prof. Carl Meyers, the rainmaker, accompanied by experts in the use of oxygen and hydrogen, has gone into the Adirondack forest preserves to conduct experiments in rainmaking by use of powerful explosives. Prof. Meyers' apparatus includes balloon bombs eight, ten and twelve feet in diameter, and he is quoted as saying that the local weather conditions would determine the time and method of exploding them. That is a wise thing to do in making such experiments. The barometer, wind direction and humidity should be carefully noted; then when things are just right you may begin firing, as Dewey said to Captain Gridley at Manila Bay. But how strange it seems to be trying to make rain fall in a great forest preserve! Possibly, however, the trees need to be awakened and set to work at their legitimate business as rainmakers. Those bombs will jar 'em.

FLOODS, DROUGHTS AND DISMAL PROPHECIES.

"Is America's Ruin Threatened by an Era of Floods?" Under this alarming headline the Chicago *Inter-Ocean*, of June 7th, published a half-page article written by John P. Brown, secretary of the International Society of Arboriculture, in which was uttered this solemn warning: "Within twenty-five years these great inundations, which have been steadily increasing in number and violence for sixty years, will be general through-

out the continent, and no section will be secure from periodical deluges; and within half a century the great agricultural regions of the continent will be sterile as the deserts of Arizona, or the plains of China." This most deplorable condition, Mr. Brown affirms, we are bringing upon ourselves by the rapid denudation of forest areas, stripping state after state of the fertilizing timber which for ages has chained the soil to the fields, fed the rivers with a steady flow and regulated the water supply.

This solemn warning is evidently uttered to promote the most excellent cause of arboriculture, by scaring people into good works in the line of tree planting. But the end to be attained, though good in itself, does not justify the questionable means employed in its promotion, such as dire prophecies of evil and irrational arguments or assumptions. There are some most convincing reasons that may be urged in favor of conservation of our remaining forest areas, and in behalf of tree planting on some of the slopes, ridges and practically useless lands in these prairie states, but in this work the appeal must be made to intelligent people, who may not be moved by specious arguments and warnings of awful calamities to come. This pessimistic prophecy uttered by Mr. Brown appears very like the familiar scare-crow that was made to do duty in the same good cause during our recent antedeluvian (before the flood) period of severe drought, the only difference observable being that the frightful figure is now togged out in a rubber suit to withstand the latter day wet weather!

When the excessively wet period began, about a year ago, we found a measure of comfort amid our watery woes in the thought that we had secured a short season of rest from being worried by good people who persisted in warning us that the climate of this section is being ruined by drainage of wet lands and cutting timber, and that this region will become sterile from droughts of greater frequency and severity in future years; that we can only be saved from utter desiccation by planting trees and taking up our tile drains. But now comes Prophet Brown, with a new chapter of lamentations, and a fresh batch of predictions of woes to come in the form of floods only a little less in amount than the Noachian deluge.

There is a confusion of tongues among these two classes of prophets, but they all agree that there is no way of escape from the predicted disasters except to take to the woods. Plant trees to save from droughts and make increased rainfall; and to prevent damaging floods, plant more trees. The trees make more rain, and then perform a beneficent office, we are told, by preventing floods by holding back a big portion of the surplus waters. Mr. Brown says the forests regulate the water supply and feed the rivers with a steady flow.

Seriously now, while it is true that in time of excessive rainfall the forests help to retard the outflow of a portion of the surplus waters, yet this is only a half-truth that has been made to give currency to unsound theories. In matter of fact, the capacity of a forest bed to serve as a reservoir of surplus waters depends upon its character as to density, the kind of trees, and the location, whether on rocky hillsides and mountains or level lands in the valleys. Millions of acres of forests on the rocky hillsides possess no appreciable capacity to retain moisture beyond the actual necessity of the trees, and they only serve a mechanical purpose in preventing erosion of the slopes. There are millions of acres of slopes now subjected to erosion that ought to be protected by trees, but that is far from allowing that such slopes would thereby prevent torrential rains or keep water from running down hill. The dense forests on level lands in the valleys do serve a beneficent end in retaining a portion of the surplus water, and in using a goodly portion of it in the growth of timber. In that respect there is but little to choose between a bottom land forest and a well drained and deeply tilled corn field on the same kind of soil, and the difference, if any, is on the side of the latter. That is to say, our best bottom land corn fields soak up and hold back from the streams more water than the average forest beds.

The floods and droughts of this abnormal season appear to have been sadly misplaced to serve as object lessons in support of Mr. Brown's theories and predictions. The early and later rains of nearly the whole continent were poured out upon the well-nigh treeless plains and valleys of the central west, producing disastrous floods, very nearly as heavy as those which visited this region fifty and sixty years ago. At the east from Ohio to Jersey and Maine, a very damaging drought held sway over a region including the Allegheny and Catskill mountains, the great Adirondack forest preserves, the Green and White mountains, and all the most heavily timbered regions of Maine, Ontario and New Brunswick. In large portions of the forests great destruction was caused by fires, and reports stated that even in some of the most dense forests the fires burned beneath the moss down to the roots of the greenest trees. In that time of greatest need the forests of that region did not "feed the rivers and regulate the water supply," nor did they have capacity to retain enough moisture to save the heaviest timber from destructive flames. In times of severe drought the trees consume for their own support the storage of moisture, and then the litter of the forest becomes dry as tinder, constituting an element of destruction instead of a source of water supply for streams.

So it appears that Mr. Brown's theory will scarcely hold water. He affirmed that great inundations have been steadily increasing in frequency and volume for the past sixty years, but refrained from offering evidence to sustain the statement. As a matter of fact, the flood of 1844 at St. Louis scored high water records that have not been reached since that time. In the Des Moines valley the volume of the flood in 1851 was the greatest ever known. And in that early period the cutting of the forests at the head waters of the Mississippi had not progressed very far. It would be an easier task to prove the reverse of Mr. Brown's assertion. Not only in the treeless central valleys, but also in the most heavily timbered regions of the south and east, the student may notice the erosive effects of great floods, which came at frequent intervals in the centuries before the axe of a civilized man had cut a tree to build a cabin. There have been floods and floods all along down the ages of human history, and in the most distant ages the vast forests of all the continents did not avail much in averting great disasters by floods. Note the formation of the vast delta at the mouth of the Mississippi as proving the occurrence of great inundations for unknown centuries.

While giving due credit to forests for their beneficent effects in the retention of a portion of excessive rainfall, we must also recognize the fact that the deeply tilled soils and subsoils of these western prairies perform the same good office in a larger measure, because they possess greater storage capacity than the average forest areas. In this section the floods have never invaded the valleys to any considerable extent until the deep soil, subsoil and drift deposits had been filled down to the impervious bed rock. So it may be proven quite readily that the mulched and moss-carpeted forests of the rocky hillsides, mountains and valleys of the east do not possess nearly as much storage capacity for moisture as an equal area of well cultivated tile-drained farming lands in Iowa.

It is a subject of general remark by people from abroad, as well as residents of this section, that these well-tilled fields possess a marvelous quality for withstanding both droughts and floods, and the reason is obvious. The storage capacity of the soil and the immense deposits of humus afford a large measure of immunity from ill effects of droughts which would ruin the crops on the lighter soils of the east. With a fair supply of moisture at the outset of the season, it has been found possible in this state to grow and ripen a good crop of corn with less than one-third of our normal rainfall for the crop season.

Prophet Brown, in attempting to sustain his prediction of disastrous floods that will ruin this treeless valley, says the excessive rainstorms that visit this section are caused by electrical disturbances, which are due to the absence of trees. Of this he says there is no doubt, and then hedges by saying: "To what extent this is true is not known." Exactly so; and because it is not known it is best not to indulge in dogmatic statements. We have been led to believe that the electrical disturbance in a storm is a result of rapid condensation of vapor and not the cause thereof; and that condensation of vapor into rain is due to dynamic cooling of the humid air. Mr. Br wn's mistake is in confounding causes and effects, like the man who expressed wonder that electricity possesses the power to make the dynamos revolve so rapidly in the power plants at Niagara Falls.

Our prophet who warns us that this valley will soon be washed into sterility in consequence of its treeless condition, does not stop to consider the fact that this region has been treeless very many centuries, and that during this period the rich humus of the soil has been stored up for the support of millions. The process of growth and decay, with alternations of wet and dry seasons, has been in operation for centuries, resulting in making a marvelously fertile plain, far away from the "fertilizing timber." And the fact that it was made rich under the same climatic and treeless conditions, gives us strong faith that it will retain its position as the granary of America for centuries to come.

Our faith in the substantial permanence of general climatic conditions in this valley is so strong that we unhesitatingly advise the farmers of Iowa to hold their farms as the richest legacies they can leave to their posterity for scores of generations. But if we gave credence to much of the talk of our over-zealous arboriculturists, we should exhort friends to get out and take to the woods, or climb a tree.

At the east the drought problem has been the foremost topic, while our people have been worried over the floods. And professional rainmakers exploited their theories while the drought was at its worst. The complex weather problems have been discussed at considerable length in the papers, but the sanest and most well considered article appeared in the editorial columns of the New York *Tribune*. Referring to proposed experiments in rainmaking the *Tribune* said:

"It is not at all strange that people whose interests are affected by the present drought in Canada, New England and the Middle Atlantic states should jump at any chance to secure relief. Some of their projects are, however, unpromising. Scientific men long ago became convinced that the occasional association between bombardment and rain after a heavy battle was purely accidental. They think that the precipitation would have come anyhow, owing to other causes, and point to the fact that many engagements in which artillery was employed were not attended with the same consequences. After testing the theories of General Dyrenforth ten years ago, the United States weather bureau reached the conclusion that explosions in the upper air had no effect whatever. Overlooking those experiments and conclusions, perhaps, one of the *Tribune's* contemporaries in this city promoted a similar venture in 1900, but with absolutely no success. A lot of vine growers in southern Europe are resorting to practically the same means to break up hailstorms. Possibly they, too, will in time conclude that their procedure is foolish. At any rate, it is hardly logical to resort to bombardment both to induce and to stave off precipitation.

"A partial but convincing explanation of the present drought is furnished by the daily weather maps. Any one who possesses the most elementary knowledge of meteorology is aware that rain and snow occur in this country only in connection with the great barometric depressions, which move in a generally eastward direction across the continent. The area in which most precipitation is observed is not at the center, but in advance of it, say from two hundred to five hundred miles. The great majority of these depressions, when they come as far east as the Mississippi valley, follow the great lakes and St. Lawrence valley to the Atlantic. Since the middle of April, however, all storms which have entered the country have departed from that rule. Either they would move out to the southward—perhaps entering the Gulf of Mexico—or they would die out. In the latter case precipitation would cease with the rising of the barometer at the center of the 'low.' To all appearances this abnormal behavior was due to the singular obstinacy of areas of high barometer which lingered over the lakes and blocked the path of the storms.

"Now, eccentricities of that sort are compensated by eccentricities of another kind in another part of the country or the hemisphere. While their cause is not fully understood, most meteorologists worthy of the name believe that both 'highs' and 'lows' are a product of the great currents which flow between equatorial and polar regions, and hence the general circulation of the atmosphere. Sooner or later nature herself, in some mysterious way, effects a readjustment in the distribution of pressure, as it appears on the weather maps. It may be asserted with perfect confidence, therefore, that such a change will occur in the route of rainstorms between the Mississippi and the Atlantic, though one cannot predict the exact time. Anybody can see, however, that the forces involved operate on a colossal scale. Possibly half of the globe will be affected in one way or another when a new chapter of meteorological history opens. To hope to hasten that transition by any means within the power of man, is the height of folly. One might with equal sanity expect to bale out the ocean with a thimble, or obliterate Pike's Peak with a firecracker!"

FORESTS AND FLOODS.

As this is a timely topic in this season of extremes, the following clipping, from the *Evening Wisconsin*, will be of interest:

"Henry Gannett, in the *Bulletin* of the American Geographical Society, attacks the theory set forth in many works on forestry, that the presence or absence of forests exerts an influence on the rainfall; and the *Monthly Weather Review*, edited by Prof. Cleveland Abbe, endorses his opinion. He also denies that floods in American rivers are more frequent than formerly, as a consequence of the removal of forests from their drainage areas. This relieves the lumbermen of Wisconsin from the imputation of homicide, for if the old and exploded notion were correct, the men who chop down trees in Wisconsin might be held morally responsible for the drowning of people in Louisiana caused by high water in the Mississippi

"The situation which exists in the arid regions of the earth, Mr. Gannett says is due to their physiography. The forms of their mountains, cliffs and canons are not such as are found in moist climates and attest that the regions in which they exist have been arid 'for thousands if not millions of years.' Popular theory regarding them has put the cart before the horse. 'Want of rain prevents the growth of trees; want of trees does not prevent rain.'

"So much as to the arid regions As to the floods, Mr. Gannett observes that 'where forests are cut away, land is seldom left bare; it is cultivated or covered with bushes which hold the water quite as effectively as forests' Records covering a long series of years show that floods in American rivers are not greater now than they were in the past. 'The Ohio river,' he remarks, 'has been gauged continuously for many years, and these gauges show no appreciable change in regimen, whatever changes may have been made in the forest cover of its basin' He might with equal truth have made the same statement concerning the Mississippi. At the beginning of the nineteenth century, when Wisconsin and Minnesota were given over to solitude and Indians, there were floods in Louisiana as forminable as any of the worst that occurred toward the century's close, when the forests over the large areas had been felled and the spaces that they once occupied had been utilized for farming. A field of corn or wheat will hold the water as effectively as a grove of trees.

"It is pleasant to note these conclusions of science. It would be sad to be forced to believe that a man could not procure the material for constructing a house in territory near the head of a watershed without endangering the habitation and jeopardizing the lives of people down the stream."

HEAVY WIND STORMS.

On the evening of Tuesday, May 26th, a very severe wind, storm swept over a considerable portion of the western and central districts. The storm was wide spread, covering an area of more than one third of the state, and at many places the velocity of the wind was not very far short of a tropical hurricane. Reports from all points as to the characteristics of the storm clearly prove that it was a wind squall, or straight blow of unusual force and destructiveness, and not of the nature of a tornado, or "cyclone," as was set forth in the sensational headlines of the newspapers, and the associated press dispatches. From the tenor of these dispatches the people abroad must have received the impression that a whole brood of tornadoes had been incubated and let loose to devastate some of the fairest cities and towns in the doomed state of Iowa. If all the places visited by the storm of the 26th had been struck by veritable tornadoes the list of fatalities would have been in the thousands, and the loss of property would have amounted to millions. Happily for the people the elements are more merciful than the exaggerated reports make it appear.

The city of Des Moines received the onset of the storm at about 6 P. M. Every part of the city felt the shock and suffered some measure of damage, but the greatest destruction was wrought along the 'Coon river bottoms, where the bluffs at the south deflected and intensified the force of the northwest wind. A number of weak buildings were wrecked at that point, though the aggregate of loss was very small in comparison with the reports that were published. The worst effect of the storm was the death of a man and child, by the wrecking of a frail and very unsafe building in which they lived.

The city of Creston was struck at about 5:15 P. M. The reports of damage, as given in detail in the Creston papers, show that the storm swept over the entire city, and continued to blow for the period of twenty minutes. If it had been a tornado, the pathway of the funnel would not have been more than a block or two in width, and the force would have been expended in less than two minutes; but the loss of life and property within that narrow path would have been very great, and sufficient to justify the most stunning headlines in the reports

The same storm visited Corning, Brooks, and numerous places in the southwest and south central counties, causing a good deal of damage at all points.

On the evening of Monday, May 25th, the state institution for the feeble minded, at Glenwood, was struck by a wind storm similar in character and force to the one above described. It was a straight blow from the north, leaving no indications of the effects of a tornado. The force of the wind was sufficient to unroof and materially damage portions of the structures, and two of the inmates of one of the dormitories were killed. Numerous local squalls were noted in various parts of the state the same evening. The last decade in May was a period of unusual meteorological disturbances, winds, downpours and floods, but happily we have no evidence as yet that any part of the state was visited by a tornado. A number of lives were lost, however, by wind storms of sufficient force to wreck the weaker class of buildings. In the observers' notes severe storms are noted on other dates than the ones referred to above.

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 29.95 inches; highest observed, 30.39 inches, at Davenport, Dubuque and Keokuk, on the 1st; lowest observed, 29.55 inches, at Dubuque, on the 27th; range for state, 0 84 inch.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 117 stations, was 61.6 degrees, which is 1 4° above normal. By sections the mean temperatures were as follows: Northern section, 60.4°; Central section, 61.9°; Southern section, 62.6°. The highest monthly mean was 65.2°, at Burlington; lowest monthly mean, 55.2°, at Estherville. The highest temperature reported was 91°, at Clinton, on the 20th; lowest temperature reported, 24°, at Bedford and Earlham, on the 1st and 3d. The average monthly maximum was 83 3°; average monthly minimum, 29.6°. Greatest daily range, 49°, at Larchwood; average of greatest daily ranges, 33.8°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 129 stations, was 8.55 inches, which is 4.52 cinhes above normal. The averages by sections were as follows: Northern section, 8.11 inches; Central section, 8.73 inches; Southern section, 8.80 inches. The largest amount reported was 15.45 inches, at Thurman; least amount reported, 2.88 inches, at Fort Madison. The greatest daily rainfall reported was 4.80 inches, at Thurman, on the 22d. Average number of days on which .01 of an inch or more was reported, 16.

WIND AND WEATHER.—Prevailing direction of the wind, southeast; highest velocity reported, 72 miles per hour, from the soutneast, at Sioux City, on the 21st. Average number of clear days, 9; partly cloudy, 12; cloudy, 10.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced	EXTREMES			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	29.96	30 39	1	29.56	27
Des Moines	29.95	30 38	1	29 61	27
Dubuque	30.00	30.39	1	29.55	27
Omaha, Neb	29.90	30.23	1	29.56	18
Keokuk	29.94	30.39	1	29.56	27
Sioux City	29.94	30.27	31	29.58	19
Means	29.95	30.39	1	29.55	27

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	6249	27	W	27
Des Moines	7499	48	SW	20
Dubuque	5311	28	S	19
Keokuk	5824	30	W	25
La Crosse, Wis	....	.....	.....	....
Omaha, Neb	7204	37	SE	22
Sioux City	10415	72	SE	21

OBSERVERS' NOTES.

AFTON.—*N. W. Rowell.* Greater rainfall in May, 1903, than in any one month in eight years past; 11.90 inches. Frost and ice on 1st and 3d.

ALLERTON.—*Rex Shriver.* Rain has fallen 21 days in May; very little over half of corn crop planted at close of month; meadows and pastures good.

ALTA.—*David E. Hadden.* Severe wind squall about 8 P. M. on 22d, damaged some buildings, windmills and trees, southwest and west of town. Mean temperature of the month one degree above the normal of the preceding thirteen years. The precipitation (6.96 inches), is 2.82 inches in excess of the average during the same period. Thunderstorms occurred on thirteen days; maximum temperature, 79°, is the lowest recorded in thirteen years, except in May, 1892, when it only reached

74°. Last frost on May 3d, which is from two to three weeks earlier than usual.

AMANA.—*Conrad Schadt.* The river was 6 to 8 inches higher than last year. The last decade of May was very wet and little farm work could be done.

ATLANTIC.—*J. W. Love.* Heaviest rainfall (12.37 inches), of any month on record here. Soil very wet and much land under water; rain fell on 20 days.

AUDUBON.—*Frank Mott.* More than twice as much rain in this month as in May, 1902.

BONAPARTE.—*B. R. Vale.* Rainfall 4.30 inches; first half of month seasonable; last half constant rainfall and cold; little farm work possible during last eleven days.

BRITT.—*Geo. P. Hardwick.* Rainfall 6.89 inches; excessively cloudy—not one clear day; field work retarded; but half of corn planted at end of month; severe wind and lightning on 23d, damaging windmills and buildings.

CLINTON.—*Dr. Luke Roberts.* Rain 5.45, or .15 of an inch above normal. During first and second decades rain was needed to germinate seeds and for plant growth; after that rain was plentiful and storms retarded work in fields.

COLUMBUS JUNCTION.—*H. E. Simpson.* Clear, dry weather forepart of month, followed by excessively wet and cold weather.

CORNING.—*Jerome Smith.* A violent wind storm on 26th, at 5:15 P. M, changing from southwest to northwest, caused considerable damage to trees and windmills.

DECORAH.—*F. H. Baker.* On 26th a hard wind blew down barns, windmills and a great many trees.

EARLHAM.—*Geo. Phillips.* May was abnormally wet, with 11.60 inches of rain, on ground already saturated; 7.46 inches fell in the last week.

ESTHERVILLE.—*Earle W. Peterson.* On night of 22d a very hard wind swept the country south of this place, destroying some buildings and much property. Heavy rain of the 25th flooded the Des Moines river.

FOREST CITY.—*J. A. Peters.* Greatest rainfall during the month (10.17 inches) ever recorded here for May within ten years; 20 per cent of corn ground will not be plowed.

GRAND MEADOW.—*F. L. Williams.* Rainfall 8.33 inches. On 26th a fall of 3.16 inches raised all streams, washed cornfields and damaged railroads; farm work backward; hay crop good.

GREENFIELD.—*J G. Culver.* Rainfall 13.50 inches. It was less than normal up to 17th, and since that date it was excessive, with unusual number of thunderstorms, many of them severe. On night of 26th 1.64 inches fell in 46 minutes, and a total of 3.82 for the whole day; corn badly washed out.

GRUNDY CENTER.—*E. S. King.* A very wet month; 11.04 inches of rain; small grain, pastures and meadows very heavy growth.

GUTHRIE CENTER.—*W. F. Brann.* On the 26th a heavy thunderstorm and high wind, caused damage by lightning and wind.

HANLONTOWN.—*Miss G. M. Paschen.* Corn planting begun the 8th; hard windstorm on evening of the 22d; potatoes and peas in blossom May 26th.

HUMBOLDT.—*H. S. Wells.* Rain, 7.50. For the past five months the rainfall was 12 34 inches; for same period last year it was 7.69. Much corn not planted on June 1st.

LANSING.—*J. Ackerman.* The rain on 27th caused heavy floods in this section, doing thousands of dollars' worth of damage; small rivers out of banks, and it will be impossible to plant some of the richest lands.

LARRABEE.—*H. B. Strever.* Rain for month, 10.52 inches. Heavy hailstorm about 1 P. M. on 24th; poultry, pigs and young lambs were killed, and much damage to crops and trees. At this place hail lay on the ground four inches deep. Bottom lands were flooded, and some cattle were washed away and drowned.

MARSHALLTOWN.—*B. S. Jones.* Rain, 8.46 inches. On May 31st the Iowa river reached a point higher than last year's high water mark; it is believed to be the highest since 1881.

MONTICELLO.—*C. E. Heisey.* Corn planting much belated by wet weather. On the 25th lightning struck in three places, damaging three houses and burning one large barn.

MT. VERNON.—*Rev. J. W Hubbard.* Not the amount, but the persistency of the rain told; there being fourteen consecutive days of rainfall; prevailing winds easterly.

NEW HAMPTON.—*R. H. Gurley.* Heavy hailstorm on afternoon of 12th; violent windstorm on night of 22d caused damage to barns and windmills.

OLIN.—*Nathan Potter.* The month was favorable for farm work up to 25th, after which date all field work was suspended because of rains and floods.

OSKALOOSA.—*Joseph Boyd.* On night of 26th a heavy thunder and hailstorm passed over, the hailstones being as large as hickorynuts.

OTTUMWA —*Dr. W. B. LaForce.* The Des Moines river was 22 feet above low water mark on May 31st and June 1st, breaking all records.

PERRY.—*J. A. Harvey.* A terrible windstorm evening of 22d; rainfall this month, 11.41 inches.

RIDGEWAY.—*Arthur Betts.* This May was 2° above normal. Rainfall, 8.70 inches, or 0 89 of an inch less than the amount in May, 1902; many severe thunderstorms; 262 hours of sunshine; gale on 22d was the worst that ever visited this section, destructive to trees, windmills and buildings.

SPIRIT LAKE.—*W. C. Drummond.* Rainfall, 13.03 inches; last ten days of month brought 7.18 inches, causing the worst washout of bridges known in years.

STORM LAKE.—*L. C. Burdick.* Damaging hail and snowstorm about twenty miles north and west on 24th; small grain doing well.

TOLEDO.—*H. P. Giger.* Severe windstorm on 26th.

VILLISCA.—*C. E. Matteson.* Hail on 20th destroyed crops in a radius of three miles. Rainfall for the year to date, 19.33 inches, of which 13.66 fell in May.

WAUKEE.—*E. J. Leonard.* Rainfall for the month, 10.78 inches; May, last year, 3.42 inches; June, last year, 8.57 inches. So this month breaks the record of any month last year by 2.21 inches.

WEST BEND.—*Ph. Dorweiler.* Month remarkable for excess of rain. Roads very bad and crop prospect poor.

DATES OF THUNDER STORMS

NORTHERN SECTION.

Algona, 8, 10, 19, 20, 22, 24, 26.
Alta, 9, 10, 11, 18, 19, 21, 22, 24, 25, 26, 27, 28.
Britt, 9, 20, 22, 23, 25.
Charles City, 9, 12, 22.
Clear Lake, 9, 20.
Dows, 10, 11, 12, 19, 22, 23, 26.
Elkader, 4, 5, 9, 10, 11, 12, 17, 22, 23, 26, 27.
Estherville, 9, 10, 20, 22, 23, 25.
Hanlontown, 5, 9, 10, 11, 12, 19, 20, 22, 23, 24, 25, 26.
Humboldt, 10, 19, 20, 22, 27.

Larchwood, 5, 9, 17, 18, 22, 23, 24, 26.
Le Mars, 9, 24.
Northwood, 9, 10, 11, 19, 20, 21, 23, 24, 25, 26, 27.
Osage, 4, 9, 10, 11, 12, 17, 19, 20, 22, 24, 26.
Plover, 9, 10, 19, 20, 23.
Ridgeway, 5, 9, 10, 11, 12, 17, 19, 20, 22, 23, 24, 25, 26.
Storm Lake, 9, 10, 11, 22, 23, 25, 26, 29.
Waverly, 5, 9, 10, 12, 13, 17, 22, 23, 25, 26, 27, 28.
West Bend, 9, 10, 11, 19, 22, 23, 24, 26, 27.

CENTRAL SECTION.

Amana, 9, 20, 22, 25, 26, 27.
Ames, 26.
Baxter, 13, 22, 26.
Carroll, 9, 11, 12, 13, 17, 19, 21, 25, 26, 29.
Clinton, 8, 22, 26.
Davenport, 11, 13, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30.
Delaware, 10, 17, 22, 25, 26, 27, 28.
Des Moines, 9, 12, 13, 14, 17, 20, 21, 22, 25, 26, 27, 28, 30.
Dubuque, 5, 9, 10, 11, 12, 16, 17, 22, 25, 26, 27, 28.
Grinnell, 11, 13, 20, 22, 26, 27.
Grundy Center, 5, 9, 10, 11, 12, 13, 17, 19, 21, 22, 25, 26, 27, 28.
Guthrie Center, 20, 26.
Harlan, 3, 10, 11, 12, 17, 20, 22, 23, 25.
Independence, 12, 17, 22, 25, 26.
Ida Grove, 19, 23, 26
Jefferson, 9, 10, 11, 12, 18, 20, 21, 22, 25, 26, 27 29.
Mt. Vernon, 9, 11, 20, 26, 27, 28.
Olin, 7, 11, 17, 20, 21, 22, 25, 26, 28, 29.
Onawa, 5, 9, 10, 11, 19, 22, 25, 26, 27, 28, 29.
Perry, 12, 13, 20, 22, 24, 25, 26, 27, 28.
Sac City, 2, 3, 10, 11, 12, 17, 19, 22.
Scranton, 21, 22, 23, 25, 26, 27.
Sioux City, 3, 9, 10, 18, 21, 24, 25, 26, 29.
Toledo, 28.
Vinton, 21, 22.
Waterloo, 5, 10, 11, 12, 22, 23, 26.
Whitten, 5, 9, 12, 13, 20, 22, 23, 25, 26, 27, 28, 29.
Waukee, 13, 17, 20, 22, 23, 25, 26, 27.

SOUTHERN SECTION.

Atlantic, 9, 11, 17, 18, 21, 25, 26.
Allerton, 9, 11, 17, 21, 22, 25, 26, 27.
Burlington, 4, 11, 13, 14, 21.
Columbus Junction, 11, 17, 21, 22.
Corning 13, 17, 20, 21, 22, 23, 25, 26, 27
Corydon, 22, 26.
Earlham, 11, 13, 16, 20, 22, 23, 25, 26, 27.
Ft. Madison, 9, 13, 18, 21, 22, 23, 24, 25, 27.
Greenfield, 9, 11, 13, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28.
Keokuk, 11, 13, 18, 21, 22, 23, 24, 25, 26, 27.
Lacona, 12, 13, 22, 25.
Lenox, 20, 21, 22, 23, 25, 26, 27.
Leon, 26.
Mt. Ayr, 25.
Omaha, 10, 16, 17, 20, 21, 22, 24, 25, 26, 27, 28, 29.
Osceola, 20, 21, 24, 25, 26, 27.
Oskaloosa, 21, 26.
St. Charles, 20.
Sigourney, 9, 11, 12, 13, 22, 23, 26, 27, 28.
Stockport, 9, 11, 14, 21, 23, 24, 25, 27.
Villisca, 11, 13, 17, 20, 21, 22, 24, 25, 27, 29.
Winterset, 12.

ERRATA IN MARCH REVIEW.

AFTON.—Mean temperature recorded 39.2° on page 8, should have been 40.0°. Mean maximum temperature recorded 50.3° on page 9, should have been 50.4°. Mean minimum temperature recorded 28.2° on page 9, should have been 29.6°. Total precipitation recorded .78 inch on pages 8 and 11, should have been .71 inch.

HAMPTON.—Mean temperature recorded 37.3° on page 7, should have been 37.6°. Mean maximum temperature recorded 46.1° on page 9, should have been 46.7°.

IDA GROVE.—Mean maximum temperature recorded 49.0 on page 9, should have been 49.1°.

IOWA FALLS.—Mean maximum temperature recorded 45.2° on page 9, should have been 45.3°. Maximum temperature on the 16th, page 9, should have been 47.0°. Maximum temperature on 24th, page 9, should have been 35 0°.

ODEBOLT.—Mean temperature recorded 39.0° on page 7, should have been 38 9°. Mean maximum temperature recorded 50.5° on page 10, should have been 50.2°.

OSCEOLA.—Mean temperature recorded 40.2° on page 8, should have been 41.6°. Mean maximum temperature recorded 50 0° on page 10, should have been 51.7°. Mean minimum temperature recorded 30.3° on page 10, should have been 31.6°.

VINTON.—Mean temperature recorded 39 3° on page 7, should have been 39.4°.

ALTA.—Total precipitation recorded .80 inch on page 7, should have been .81 inch.

WHITTEN.—Mean temperature recorded 33.2° on page 7, should have been 38.2°. Mean maximum temperature recorded 47.7° on page 10, should have been 47.8°.

MT. VERNON.—Mean temperature recorded 40.6° on page 7, should have been 40.5°. Mean maximum temperature recorded 51.2° on page 10, should have been 51.0°.

LARRABEE.—Mean temperature recorded 34.6° on page 7, should have been 34.8°. Mean minimum temperature recorded 24.0° on page 10, should have been 24 5°.

AMES.—Mean temperature recorded 38 6° on page 7, should have been 38.4°.

DENISON.—Mean temperature recorded 33.5° on page 7, should have been 38.5°.

LEON.—Precipitation on 22d, recorded .02 inch on page 11, should have been .20 inch. Precipitation on 23d, recorded .02 on page 11, should have been 20 inch. Total precipitation recorded 1 28 inches on page 8, should have been 1.86 inches. Total snow fall recorded 0 inches on page 8, should have been 6.0 inches.

TIPTON.—Precipitation on 23d, recorded 0, on page 12, should have been .20 inch. Total precipitation recorded 1.37 inches on page 7, should have been 1.57 inches.

ELDON.—Mean temperature recorded 45.0° on page 8, should have been 44.0°. Mean maximum temperature recorded 58.9° on page 9, should have been 56.7°. Mean minimum temperature recorded 31.0° on page 9, should have been 31.2°.

ERRATA IN APRIL REVIEW.

COLUMBUS JUNCTION.—Mean temperature recorded 52 3° on page 7, should have been 51.8°. Mean minimum temperature recorded 41.2° on page 8, should have been 40 2°.

EARLHAM.—Mean temperature recorded 50.0° on page 7, should have been 49.4°. Mean maximum temperature recorded 63.6° on page 8, should have been 62.6°. Maximum temperature on 24th, page 8, recorded 66.0°, should have been 60.0°.

MONTICELLO.—Mean temperature recorded 48.8° on page 6, should have been 48 4°. Mean maximum temperature recorded 63.9° on page 9, should have been 62.9°.

ODEBOLT.—Mean temperature recorded 48.0° on page 6, should have been 49.6°. Mean minimum temperature recorded 33 8° on page 9, should have been 37.1°.

AFTON.—Minimum temperature recorded 27.0° on the 30th, page 7, should have been 26.0° on the 4th.

ALGONA.—Minimum temperature recorded 25 0° on the 30th, on page 6, should have been 24 0° on the 4th.

HARLAN.—Minimum temperature recorded 25.0° on the 30th, page 6, should have been 24.0° on the 4th.

WASHINGTON.—Total precipitation recorded 3.82 inches on pages 7 and 11, should have been 3.79 inches. Daily precipitation recorded .05 inch on 19th, page 11, should have been .08 inch.

WASHTA.—Total precipitation recorded 1.85 inches on pages 6 and 11, should have been 1 95 inches.

WAVERLY.—Precipitation on 30th, of .05 inch on page 11, should have been .03 inch.

CLIMATOLOGICAL DATA FOR MAY, 1903.

NORTHERN SECTION.

STATIONS	COUNTIES	Elevation, feet	Length of record, years	TEMPERATURE, IN DEGREES FAHRENHEIT							PRECIP., IN INCHES				Number rainy days	SKY			Prevailing direction of wind	DATES OF THUNDER-STORMS.
				Mean	Departure from the normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from the normal	Greatest in 24 hours	Total snowfall (unmelted)		Number clear days	Number partly cloudy days	Number cloudy days		
Algona	Kossuth	1,213	28	61.4	†1.6	83	16, 21, 22	31	1	31	8.05	† 4.67	3.20	....	11	3	21	7	SE	
Alta	Buena Vista	1,513	11	59.4	†1.1	79	16, 21, 22	31	1, 3	30	6.96	† 2.75	1.47	....	20	6	18	7	S	
Alta (near)	Buena Vista	.....	..	.....			.....			.....	7.27	....	1.33	....	17	...	..	...	.....	
Britt	Hancock	1,230	8	61.6	†3.1	82	22	27	1	40	6.89	† 3.73	.99		17	0	20	11	NE	
Charles City	Floyd	1,012	11	60.5	†2.2	83	23	31	3	29	9.15	† 5.52	3.24		20	8	14	9	SE	
Chester	Howard	.....	....	59.6	...	81	16	27	3	32	9.44	.....	1.70	....	17	12	5	14	SE	
Clear Lake	Cerro Gordo	1,241	..	62.6	.....	.....	.....	29	3	41	7.54	.....	1.45	....	12	12	12	7	SW	
Decorah	Winneshiek	875	8	61.4	†1.5	87	23	32	3	37	6.75	† 3.42	1.89		15	...			.....	
Dows	Wright	1,142		60.4		80	16, 22	29	1, 3	31	9.33		1.65	....	15	11	9	11	SE	
Elkader	Clayton	727	21	62.1	†1.3	88	16	30	1	42	5.89	† 2.16	1.17	....	16	8	20	3	SE	
Estherville	Emmet	1,298	7	55.2	-3.0	86	23	29	3	43	10.69	† 7.87	3.50	....	15	7	7	17	SE, NW	
Fayette	Fayette	.....	12	60.0	†2.5	88	22	28	3	37	6.63	† 2.70	2.69	....	17	7	12	12	SE	
Forest City	Winnebago	1,226	8	59.6	†0.0	82	21	30	1	30	10.17	† 6.37	3.85	....	15	15	1	15	W	
Grand Meadow	Clayton	1,180	11	61.0	†3.0	82	16, 22	30	3	34	8.33	† 4.35	3.16		17	7	14	10	SE	
Greene	Butler	924	5	61.8	†1.7	84	16, 22	30	1, 3	35	6.37	† 2.88	1.82		17	6	14	11	SE, S	
Hampton	Franklin	1,155	12	62.0	†3.9	83	16, 22	31	1, 3	32	7.95	† 4.05	2.43	.	17	5	17	9	SW	
Hanlontown	Franklin	.....	.	60.4	.....	80	4, 16, 22	30	1	40	7.67	....	2.00	....	15	13	14	4	SE	
Humboldt	Humboldt	1,095	10	61.8	†1.7	89	23	30	3	32	7.50	† 4.49	1.20	.	17	12	9	10	SE	
Lansing	Allamakee	.....	...	61.8	.....	85	16	27	1	40	7.30	...	2.40		12	14	6	11	.....	
Larchwood	Lyon	.....	..	59.6		86	4	28	3	49	8.33	.....	1.68	....	10	14	12	5	S	
Larrabee (d)	Cherokee	1,366		59.6	.....	84	20, 22	30	1, 3	35	10.52		2.04	....	11	4	19	8	SW	
Le Mars	Plymouth	1,224	6	59.2	-1.1	80	16, 17	31	1, 2, 3	36	9.89	† 5.95	2.00		12	6	16	9	S	
Mason City	Cerro Gordo	1,132	...	61.6	.....	82	16, 22	32	3	30	7.57	.....	1.62	..	11	4	22	5	SE	
New Hampton	Chickasaw	1,169	..	59.8		79	16, 22	29	3	31	6.46	.....	1.66	....	15	9	13	9	S	
Northwood	Worth	1,222	6	60.2	†1.6	80	22	31	1, 3	32	6.95	† 3.37	1.78	...	19	6	18	7	SE	
Osage	Mitchell	1,184	11	60.2	†3.4	81	16, 22	30	3	31	8.23	† 4.38	1.81	....	16	7	12	12	S	
Plover	Pocahontas	1,190	5	61.3	†1.2	83	16	30	2, 3	33	8.01	† 5.03	3.31	....	15	8	9	14	S	
Primghar ‡	O'Brien	.....	....	59.0	...	78	16, 17, 20, 21, 22	32	3	31	7.62	...	1.60		14	15	0	16	NE	
Ridgeway	Winneshiek	1,215	....	62.8	.....	86	16	30	1, 3	33	8.70	...	2.65	....	19	10	14	7	S	
Ruthven	Palo Alto	.....	....	61.0	.....	81	22	32	3	30	5.78	... ...	1.33		6	13	5	13	SE	
Sheldon	O'Brien	1,422	....	58.6	.....	79	16, 21	30	1	36	9.00	....	1.96	...	12	10	8	13	S	
Sibley	Osceola	1,512	8	58.6	†0.3	80	21	29	3	35	9.00	† 5.56	1.77	....	14	3	19	9	NE	
Sioux Center	Sioux	.....	....	57.8	.....	80	17	30	1	36	7.73	.....	1.76	....	14	11	7	13	SE, S	
Spirit Lake (h)	Dickinson	1,450	8	60.7	†1.6	82	21	.....	.....	....	13.03	.....	3.10	....		...	..	....	.....	
Storm Lake	Buena Vista	1,440	7	59.4	†1.4	78	22	34	1	..	4.72	† 1.20	1.30	....	15	10	5	16	SE, S	
Washta	Cherokee	1,157	....	.....	.....	....	.....	.....	.....		10.80	.....	2.00	....	10	10	13	8	SE	
Waverly (a)	Bremer	942	6	61.0	-0.1	82	22	30	1, 3	32	6.66	† 2.85	1.60		15	8	14	9	S	
West Bend	Palo Alto	1,197	8	61.0	†2.0	84	22	31	3	31	8.62	† 5.87	3.58	....	16	8	13	10	S	
West Union	Fayette	.....	....	.....		...	.....	....	.....		8.28	....	4.06	....	12	12	0	19	SE	
Average	.....	.....	....	60.4	†1.4	82.6	.....	30.6	.....	34.7	8.11	† 4.24	....	....	15	8	13	10	SE	

CENTRAL SECTION.

Amana	Iowa	721	25	62.8	†3.0	85	22	29	1	34	7.30	† 3.05	2.16	....	18	10	14	7	S	
Ames	Story	926	20	62.3	†2.9	83	22	29	1	30	9.46	† 5.32	2.18	....	21	15	7	9	SE	
Baxter	Jasper	998		62.2	...	83	22	27	1	36	11.70	.....	2.60	...	16	8	1	12	SE	
Belle Plaine	Benton	828	12	62.8	†3.8	83	16, 20, 22	30	1, 3	32	7.53	† 3.31	2.51	...	17	2	26	3	SE	
Buckingham	Iowa	.....	12		....	...	.....	....	.....		7.57	.....	1.10	....	17	6	20	5	.....	
Carroll	Carroll	1,266	19	59.8	†0.7	85	22	29	3	38	9.54	† 4.98	2.68		15	8	10	13	.....	
Cedar Rapids	Linn	733	34	64.1	†4.4	87	17	33	1, 3	27	6.11	† 1.59	1.09		14	13	3	15	S	
Clinton	Clinton	609	31	64.2	†4.2	91	20	28	1	42	5.45	† 1.02	1.42	....	16	8	11	12	S, SW	
Davenport	Scott	606	11	64.2	†3.5	85	20	35	3	32	5.52	† 1.20	2.29	...	14	7	16	8	S	
Delaware	Delaware	1,083	8	60.6	†2.2	83	22	28	1	32	4.47	† .66	.75	....	13	8	19	4	SW	
Denison	Crawford	1,180	24	58.8	-1.8	81	22	29	3	33	9.92	† 6.32	2.34	...	14	15	7	9	N	
Des Moines	Polk	861	...	62.8	†2.4	83	22	31	3	31	10.64	† 5.94	3.02	...	20	3	19	9	S	
De Soto	Dallas	866	29	62.5	...	82	22	31	1	28	8.38	...	1.90	....	19	17	4	10	SW	
Dubuque	Dubuque	655	8	62.8	†2.9	83	16	33	1	32	4.25	† .26	2.28	....	18	6	9	16	SE	
Fort Dodge	Webster	1,126	...	60.0	....	82	22	31	1	28	.....	....	.....	...	...	12	0	19	.....	
Galva	Ida	1,290	9	60.2	-0.2	80	21	27	2	35	10.07	† 6.67	1.80	....	15	12	7	12	S	
Gilman	Marshall	1,052	11		...	...	.....	....	.....		8.24	....	2.05	....	15	4	18	9	S	
Grinnell	Poweshiek	1,023	6	61.7	†1.8	81	22	30	1	36	12.69	† 8.06	3.23		11	12	13	6	S	
Grundy Center	Grundy	976	....	61.0	†2.7	82	22	29	3	33	11.04	† 6.32	2.18	...	18	11	10	10	SE	
Guthrie Center	Guthrie	1,077	38	62.4	†1.2	84	22	29	3	37	14.16	† 9.38	4.34	...	16	3	22	6	SE	
Harlan	Shelby	1,192	....	61.3	....	83	22, 28	26	1	35	10.43	....	1.80		18	3	16	12	NE, SW	
Independence	Buchanan	921	43	63.8	†1.5	81	22	28	1	29	6.78	† 2.83	1.52	....	15	15	8	8	SE	
Ida Grove	Ida	1,220	9	61.2		81	16, 22	31	1, 3, 4	39	8.40	.....	1.40	....	14	1	22	8	S	
Iowa City	Johnson	685	..	63.8	†3.6	80	23	29	1	33	6.90	† 2.54	2.31	....	13	1	14	16	SE	
Iowa Falls	Hardin	1,107	..	60.6	†1.1	82	23	28	3	25	7.17	† 3.88	1.91	....	19	10	3	18	SE	
Jefferson	Greene	1,052	35	....	....	...	.....	....	.....	.....	14.29	.....	4.02	....	18	....	..	..	S	
LeClaire	Scott	576	9		....	...	.....	...	.....	.....	4.27	...	1.98	....	12	...		....	N, NE, SE, W	
Logan	Harrison	928	9	62.0	†1.0	84	23	29	1	31	5.77	† 1.55	1.45	....	15	11	7	13	SW	
Maquoketa	Jackson	688	48	61.2	†0.6	86	17	27	1	31	6.55	† 2.17	2.00	....	19	14	7	10		
Marshalltown	Marshall	947	35	62.5	†2.9	85	23	29	1, 3	29	8.46	† 4.01	1.75	....	21	11	8	12	...	
Monticello	Jones	925	14	62.2	†2.8	85	22, 24	29	3	42	6.30	† 2.43	1.75	....	9	7	14	10	SW	
Mt. Vernon	Linn	847	5	62.3	†1.6	87	16	29	1	38	7.05	† 2.37	1.80	....	18	12	9	10	.. ...	
Newton	Jasper	944	8	61.4	†0.5	82	22	28	1	31	13.07	† 8.61	3.40	....	17	10	16	5	SE	
Odebolt	Sac	1,356	...	61.5	-0.4	83	20, 22, 24	29	3	35	7.93	† 5.16	1.05		17	13	7	11	.. ..	
Ogden	Boone	1,088	....	60.0	-1.1	84	29	26	3	30	10.95	† 6.00	3.19	.	20	11	3	17	SE	
Olin (a)	Jones	760	....	62.0	....	87	22	27	1	38	5.55	.....	1.83	..	14	....	....	....	S	
Onawa	Monona	1,053		62.2	....	83	20, 22, 24	31	1, 3	33	14.76	.....	3.30		18	20	2	9	SE	
Perry (a)	Dallas	975	22	63.0	....	85	22	30	1, 3	35	11.41	.....	2.00	..	18		....	....	.....	
Rockwell City	Calhoun	...	....	61.4	....	83	16, 22	32	1, 3	35	11.09		1.67		17	12	12	7	.....	
Sac City	Sac	1,278	13	61.6	†.6	85	16	30	3	33	8.85	† 4.86	1.43		19	8	9	14	SE	
Scranton	Greene	1,172	5	61.4	..	83	16	31	3	32	12.00	.....	1.75	....	17		....	....	SE	
Sioux City	Woodbury	1,165	....	60.8	†2.4	81	17	34	1	28	11.78	† 8.11	2.83	....	16	4	11	16	NE	
Stuart	Guthrie	1,216	8	62.5	†1.0	83	9, 10	20	5	44	10.54	† 6.09	2.25	...	13	19	0	12	SW	
Tipton	Cedar	807	12	64.6	....	87	16	32	1	34	6.20	.....	1.85	....	13	10	13	8	S	
Toledo	Tama	856	15	61.1	-0.7	82	16	29	1, 3	32	8.78	† 5.07	2.00	...	21	11	13	7	SE	
Vinton*	Benton	810	7	62.4	†3.0	83	22	35	1	.....	5.10	† 1.89	1.40	..	11	.	....	....	SE	
Waterloo	Black Hawk	862	....	61.4	†1.4	84	17	30	1	29	7.85	† 4.11	2.52	...	20	16	1	14	SE	
Wilton Junct'n	Muscatine	683		63.8	†1.7	88	22	29	1	34	5.89	† 1.64	2.12	....	12	16	3	12	SW	
Whitten (c)	Hardin	1,036	...	62.0	....	82	26	27	1	32	10.44	.....	2.10	..	18	10	6	15	SE	
West Branch	Cedar	718	...	....	....	...	.....	....	.....	.....	6.76	... ..	2.45	..	14	5	19	7	S, SW	
Waukee	Dallas	1,039	....	...	....	...	.....	....	.....		10.78	.....	2.90	....	19	7	7	17	S	
Average	.....	.....	...		61.9	†1.8	83.9	.....	29.2	.....	33.2	8.73	† 4.16	.....	...	16	10	10	11	SE	

CLIMATOLOGICAL DATA FOR MAY, 1903--CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PREC., IN INCHES.				Number rainy days.	SKY.			Prevailing direction of wind.	DATES OF THUNDER-STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	7	63.6	†0.9	84	22	27	1	35	11.90	†7.56	2.20		16	2	18	11	SW	
Albia	Monroe	959	.	61.2	.	85	17, 23	30	1, 3	31	9.13	.....	2.52	...	17	11	6	14	SE	
Atlantic	Cass	1,164	11	62.0	†2.8	83	22	25	3	37	12.37	†8.23	2.57		20	2	12	17	SE, S	
Audubon (*k*)	Audubon	1,301	8	64 2	†4.3	83	21	.....	.....		....		.....	...	.....	...	...		.....	
Allerton	Wayne	.....	....	62.6	.....	83	22	28	1, 3	34	8.20	....	1.08	...	19	13	9	9	S	
Bedford	Taylor	....	....	61.8		81	22	24	1, 3	40	9 83	----	1.88	..	15	7	6	18	SE	
Bonaparte	Van Buren	.....	10	63 6	†1.1	84	16, 22	28	1	31	4.30	† .14	.80	....	12	...	.....		.....	
Burlington	Des Moines	544	...	65.2	.....	85	16	31	1	28	4.83	.....	1.13	....	13	10	9	12	SW	
Centerville	Appanoose	1,013	7	...	...	.....	....	.....	... .		.....	.....	.....		...	...	...	...	.....	
Chariton*	Lucas	1,042	7	61.4	-0.9	83	3	28	1	33	7.75	†3.67	1.29	....	15	9	15	7	S	
Clarinda	Page	1,069	12	62.9	† .6	84	16, 22	27	1	31	9 97	†5 39	2.00	..	15	10	12	9	S	
College Springs	Page		10	62.8	†1.4	82	22, 23	28	1	33	9. 10	†4.43	1.40		16	11	14	6	SE	
Columbus Jct.	Louisa	595	..	64.2		87	16	31	1	34	5 33	...	1.58	....	13	14	7	10	SW	
Corning	Adams	1,127	10	61.5	†0.9	81	22	30	1	2?	10.68	†6.06	2.00		14	4	21	6	SE	
Corydon	Wayne	992	9	61.8	†0.3	82	22	27	1, 3	36	7.70	†3.81	1.20		17	10	15	6	SE	
Council Bluffs	Pot'wat'mie	990	5	58.2	-4.5	86	20, 24	29	3	37	10.01	†5.51	1.37		13	8	17	6	NW	
Cumberland	Cass	.....	....	...	...	.....	.....	...			8.27	....	1.80		12	20	3	8	SW	
Earlham	Madison	....	....	61.6	...	81	22	24	3	38	11 60	....	2.50	..	16	6	8	17	S	
Fort Madison	Lee	516	51	..	.....	....	.....	....	.....	.....	2.88	-1.63	.86	....	9	4	11	16	SW	
Greenfield	Adair	.....	11	60.7	†0 5	80	22, 25	28	3	34	13.50	†9.10	3.82	....	17	11	10	10	SE	
Hopeville	Clarke	.....	11	62.2	†1.8	83	22	29	1, 3	37	8.59	†3.81	1.25	....	18	2	19	10	S	
Indianola	Warren	969	11	63.1	†2.5	83	22	30	1	32	8.39	†3.76	1 84	.	17	11	11	9	SE	
Keokuk	Lee	619	31	64 9	†2.3	85	22	32	1	26	3 16	- .51	1.40		10	9	15	7	SE	
Keosauqua	Van Buren	664	10	64.2	†1.4	87	22	29	1	28	4.84	+ .28	.90	..	16	5	9	17	...	
Lacona	Warren	.....	...	.....		....	....	.....	.....	.....	11.35	.... ..	2.34	..	19	4	17	10	.....	
Lenox	Taylor	1,250	7	61.9	†0.2	80	22	30	1	34	10.58	†5.87	2.97	..	16	12	7	12	S	
Leon	Decatur	1,120	....	63.3	.....	84	22	29	1	40	7.25		1.05	..	19	16	5	10	S	
Mt Ayr	Ringgold	1,236	8	61.7	-0.4	83	22	27	1	34	8 90	†2.47	1.94		22	4	10	17	SE	
Omaha, Neb	Douglas	1,113	32	62.9	†1.2	84	20	35	1	26	8.32	†3.95	1.43	....	19	8	15	8	S	
Osceola	Clarke	1,130	6	61.6	-0.4	83	23	28	1	30	7.16	†2.32	1.50		15	12	5	14	SE	
Oskaloosa	Mahaska	843	18	62.8	†2.5	80	22	30	1	31	9.68	†6.12	3 43	..	17	10	...	21	.....	
Ottumwa	Wapello	649	8	63.2	-0.2	87	17	36	1	31	7.90	†2.97	1.66	.....	14	6	7	18	SE	
Pacific Junction	Mills	960	....	62 8		83	22, 24	28	3	36	2.43	.....	2.18	....	18	3	17	11	S	
Pella	Marion	877	....	62.8		83	2?, 22, 28	29	1	3?	10. 16	.....	2.20	...	19	5	17	9	SE	
Red Oak	Montgom'ry	1,033	....	62.9	.....	79	16, 22, 24	33	1, 3	25	1.74	.....	2.43	....	17	2	23	6	SE	
St. Charles	Madison	1,070	....	62.4	.....	87	20	32	1	33	10 2?	.....	1.84		21	10	13	8	SW	
Sigourney	Keokuk	787	6	64.1	†0.3	80	15, 16, 20, 22, 28	29	1	41	8.69	†4.75	1.85		16	15	10	6	SE	
Stockport	Van Buren	....	....	....	.....	.....	.....	.....	... ...	.....	5.31	.....	.80	....	20	8	4	19	S, SW	
Thurman	Fremont	..	....	62.7		83	22	29	3	35	15.45	..	4.80	....	18	7	9	15	NE	
Villisca (*g*)	Montgom'ry	1,058	8	59.5	-2.6	82	19	27	1, 3	.....	13.66	†9.63	2.98	....	17	3	21	7	SW	
Wapello	Louisa	588	....	64.0	.....	85	20	33	3	27	5.59	...	1.08	....	12	9	19	3	SE	
Washington	Washington	769	20	62.0	†1.0	86	16	27	1	34	5 12	†1.56	1 75	..	14	....	....		SE	
Winters t	Madison	1,129	11	64.0	†3.0	85	9	27	3	41	9.20	†4.68	1 77	....	13	11	14	6	S	
Woodburn	Clarke	961	....					.....	.....	.....	7.23	....	1.55	.	15	9	10	12	SE	
Average		.....	....	62 6	†1.0	83.5	.....	29.0	.....		33.4	8 80	†4.20	.....	....	16	8	12	11	SE	
Av. for the state		.....	....	61.6	†1 4	83.3	.....	29.6			33.8	8 55	†4.20	.....		16	9	12	10	SE	

*Means determined from 7 A. M., 2 P M, and 9 P. M. observations, and maximum and minimum are taken from eye readings. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc §Not supplied with self registering instruments. † Above normal.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MAY, 1903.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mean
Afton	Max.	60	54	65	75	64	70	72	75	80	80	77	76	77	76	82	83	81	79	78	80	79	84	81	83	83	78	77	83	72	61	47	74.8
	Min.	27	41	30	43	54	43	46	45	54	56	55	67	57	54	54	55	58	68	57	50	59	60	60	59	59	57	53	56	61	45	41	52.4
Albia.....	Max.	47	60	52	63	73	64	72	70	76	80	79	76	76	79	75	80	85	79	79	78	82	73	85	80	77	81	80	75	83	70	50	69.9
	Min.	30	33	30	31	45	46	46	45	48	58	58	58	58	54	56	56	59	64	61	54	59	62	63	61	60	62	57	58	61	49	43	52.5
Algona	Max.	56	54	63	71	70	64	73	74	78	71	72	62	66	72	80	83	74	76	75	80	83	83	82	75	78	77	74	78	70	65	60	72.4
	Min.	31	37	32	41	48	41	44	44	55	53	50	47	46	55	55	57	59	61	56	50	58	57	61	52	59	61	57	55	59	47	44	50.7
Allerton...	Max.	57	53	62	72	63	70	70	75	79	77	76	72	71	74	79	81	77	76	76	79	76	83	79	78	79	77	74	81	72	64	48	72.6
	Min..	28	40	28	42	50	47	46	46	51	55	56	57	57	55	54	57	59	63	58	53	60	63	62	60	59	60	56	54	60	45	42	52.5
Alta	Max	55	49	60	69	69	65	69	72	76	66	65	58	66	71	76	79	75	74	71	77	79	79	69	76	74	73	72	76	65	58	56	69.6
	Min..	31	35	31	39	47	41	40	46	52	52	49	46	46	56	54	59	58	59	56	50	59	58	55	52	60	59	55	54	58	47	42	49.9
Amana ...	Max..	57	50	61	70	69	70	67	72	78	78	75	78	76	76	78	84	79	77	77	85	72	84	80	75	80	81	72	82	70	61	50	73.0
	Min..	29	42	32	42	52	42	44	44	48	55	57	59	58	56	49	50	58	63	62	52	63	62	65	58	63	62	58	57	60	46	45	52.7
Ames.....	Max.	59	51	64	74	62	69	70	72	78	78	73	74	68	76	78	81	75	81	71	76	75	83	77	79	82	75	74	82	75	61	51	72.3
	Min..	29	41	39	44	50	42	45	44	53	55	55	58	56	55	53	55	58	64	57	50	58	59	63	56	60	59	57	57	60	44	46	52.3
Atlantic ...	Max..	58	53	62	71	63	68	70	74	79	76	69	72	69	74	80	81	78	78	75	77	79	83	78	80	80	75	74	78	71	64	64	72.7
	Min..	30	41	25	42	49	40	42	45	47	56	56	57	55	48	48	56	60	62	56	50	59	59	61	56	59	60	58	57	61	47	45	51.2
Audubon ..	Max..	..	..	..	..	..	..	..	..	..	..	..	68	64	74	75	80	79	79	75	79	83	80	80	79	78	75	70	79	75	59	50	74.0
	Min..	..	..	..	..	..	..	..	..	..	..	..	55	50	56	52	65	60	59	56	49	66	57	55	54	54	55	50	53	56	44	52	54.4
Baxter.. ..	Max.	60	53	64	70	65	70	75	73	76	76	74	76	78	75	78	80	75	76	76	78	73	83	80	78	78	79	74	80	75	65	53	75.1
	Min..	27	42	28	43	49	43	43	48	53	55	57	57	54	54	52	55	58	62	56	49	59	59	60	55	60	58	54	54	58	43	44	51.3
Bedford. ..	Max..	57	54	64	74	64	68	71	74	78	75	69	71	75	72	79	78	78	76	75	72	71	81	76	79	79	74	75	76	71	64	48	71.5
	Min .	24	42	24	45	50	43	48	50	54	56	57	58	57	52	52	57	62	64	55	50	60	62	59	59	59	59	55	55	61	46	42	52.2
Belle Plain	Max..	57	50	62	70	73	70	66	72	77	80	77	80	78	75	78	83	82	77	75	83	66	83	80	77	72	78	73	80	70	49	49	72.3
	Min..	30	40	30	42	49	43	54	43	51	59	60	58	57	54	53	55	60	64	62	53	60	61	64	58	61	60	57	57	61	44	44	53.4
Bonaparte.	Max..	58	54	62	71	63	70	69	73	82	77	76	76	76	78	84	80	79	80	83	74	84	82	74	78	80	75	83	73	67	49	43	73.7
	Min..	28	41	31	42	49	49	45	44	51	57	59	59	58	53	55	56	60	64	64	54	63	62	64	62	62	63	58	56	60	49	43	53.6
Britt.....	Max.	59	50	68	69	75	63	81	74	78	74	76	62	67	77	80	80	77	81	78	80	78	82	76	78	80	78	72	79	71	69	56	75.2
	Min..	27	35	28	38	45	41	41	40	52	54	54	54	50	56	53	57	58	59	53	50	56	58	60	53	58	61	58	54	58	46	45	50.1
Burlington.	Max..	58	57	62	70	65	72	71	75	81	79	78	77	75	77	79	85	81	79	80	83	74	84	80	76	76	82	74	82	73	66	51	74.3
	Min.	31	42	45	45	51	51	45	46	53	59	63	65	59	62	65	56	63	66	65	58	62	62	66	60	62	63	59	59	61	51	44	56.1
Carroll	Max.	58	50	62	71	60	65	70	73	80	74	68	65	76	74	80	83	78	77	75	79	80	85	70	81	80	75	76	77	63	54	52	71.5
	Min..	31	41	29	41	51	42	40	42	52	53	54	55	49	52	48	51	53	60	50	53	56	51	59	43	59	60	59	54	60	31	42	48.1
Cedar Rap.	Max..	47	58	52	62	72	72	70	67	72	78	81	80	80	74	74	79	87	81	77	79	86	74	86	79	75	80	79	72	81	70	52	73.4
	Min .	33	43	33	41	53	45	44	43	52	56	60	62	60	55	53	54	62	64	65	61	64	65	71	60	63	63	60	59	60	46	45	54.8
Chariton ..	Max.	50	48	63	72	61	69	70	74	79	77	74	75	76	74	78	81	78	77	77	79	75	83	83	79	79	78	73	80	76	64	46	71.1
	Min..	28	45	30	41	47	44	41	44	52	55	55	57	57	56	54	55	62	55	52	60	62	61	59	60	62	55	52	60	45	42	51.8
Charles Cy.	Max..	43	56	54	61	69	66	63	66	71	69	75	75	79	65	71	77	78	82	77	75	82	77	83	79	76	78	77	66	76	69	55	70.6
	Min.	33	33	31	34	45	45	40	42	42	54	55	55	55	55	51	53	53	60	63	50	57	62	63	51	59	62	56	55	57	46	45	50.4
Chester ...	Max..	63	47	59	66	71	63	65	69	69	71	74	79	60	73	76	81	77	72	73	77	77	79	77	75	77	73	67	76	70	65	57	70.3
	Min..	36	38	27	43	42	40	35	37	50	53	53	56	58	53	46	52	57	59	59	46	54	59	60	48	55	57	57	51	55	43	42	48.9
Clarinda...	Max..	60	48	67	76	64	71	73	76	82	80	70	74	78	75	82	84	81	80	80	78	80	84	79	83	82	73	78	75	72	62	49	74.9
	Min..	27	39	29	42	51	45	48	50	51	55	54	57	56	52	52	56	61	68	54	48	60	60	58	59	58	57	55	55	60	47	43	51.8
Clear Lake	Max..	59	50	62	75	71	74	79	80	80	72	74	74	68	85	89	..	80	82	79	88	71	91	82	87	89	76	75	83	73	65	58	75.7
	Min..	32	37	29	41	44	40	38	39	51	52	50	55	49	54	49	53	56	61	58	47	55	56	60	49	57	60	56	53	56	45	42	49.5
Clinton....	Max.	62	59	62	70	76	72	70	75	85	85	84	86	78	78	79	90	87	83	82	91	76	88	84	79	78	85	75	83	79	59	52	77.1
	Min .	28	38	33	43	48	52	41	38	43	57	58	59	58	53	45	51	57	65	57	49	58	63	59	58	59	64	58	54	56	47	46	51.4
College Spr	Max .	59	49	65	73	67	68	71	77	79	79	70	73	73	73	80	80	79	77	74	77	80	82	82	80	80	74	76	80	72	62	47	72.8
	Min .	28	40	32	42	50	45	48	52	55	57	57	57	54	54	56	59	62	63	54	60	55	61	62	58	58	57	55	55	58	45	42	52.7
Colum. Jct.	Max .	60	54	63	72	67	73	69	72	75	80	78	80	78	80	87	87	82	81	83	86	75	87	82	74	80	82	73	76	76	58	51	74.9
	Min .	31	38	33	44	50	49	44	52	43	56	59	60	53	53	54	58	60	61	65	57	61	61	64	62	62	68	68	62	48	43	44	53.4
Corning ...	Max.	57	47	67	72	58	67	69	72	79	76	70	71	71	71	77	80	77	76	75	76	75	81	75	79	79	73	77	78	67	62	48	70.7
	Min..	30	37	58	43	50	42	45	45	52	59	55	56	56	53	49	55	60	62	55	52	60	60	60	59	58	57	55	53	60	44	42	52.3
Co. Bluffs..	Max..	61	50	66	72	71	69	74	78	81	77	68	69	70	80	81	82	83	81	78	86	80	70	77	86	80	70	63	75	68	60	67	73.8
	Min..	30	30	29	41	48	48	48	47	43	43	42	41	41	40	39	39	38	36	35	32	52	52	51	51	49	60	45	60	47	36	44	43.1
Corydon ...	Max..	52	52	63	72	62	69	69	75	78	77	73	72	75	73	77	81	71	76	76	78	75	82	79	78	77	76	74	79	72	64	48	71.9
	Min..	27	39	27	42	48	47	46	45	54	51	56	57	57	55	55	50	59	61	58	53	60	60	60	60	58	61	55	55	59	41	41	51.6
Davenport.	Max..	56	54	59	67	69	70	67	71	81	81	78	79	75	76	78	85	81	79	79	85	71	85	81	74	76	81	73	82	73	54	53	73.2
	Min.	36	42	35	47	53	53	45	42	49	60	63	63	61	54	53	58	63	68	64	59	63	63	66	62	62	64	60	59	54	46	45	55.2
Decorah....	Max..	57	49	62	69	67	68	68	73	68	73	77	78	65	73	77	82	79	74	74	79	75	82	87	78	75	74	69	76	71	58	57	71.4
	Min .	33	38	32	45	44	48	38	36	53	53	53	58	48	53	50	50	60	65	61	50	60	62	63	52	60	60	59	56	58	48	47	51.4
Delaware..	Max..	55	47	60	58	60	68	61	69	77	77	75	79	71	72	75	82	78	76	74	79	69	83	79	77	77	77	71	81	72	61	54	70.9
	Min..	28	40	29	32	41	43	38	40	46	54	55	58	58	49	46	50	62	62	50	58	60	67	66	65	61	56	56	54	42	43	50.3
Denison...	Max.	57	55	62	68	61	65	68	66	70	65	67	57	64	68	73	75	74	72	78	72	78	81	77	80	77	72	69	77	70	60	51	68.7
	Min .	31	37	29	41	48	44	38	44	51	55	55	53	49	49	49	59	60	62	57	52	57	56	60	52	56	55	56	55	58	46	44	49.9
Des Moines	Max..	57	49	62	70	63	68	69	73	77	75	72	75	75	74	76	81	77	77	76	80	73	83	77	79	78	74	75	81	67	56	50	71.6
	Min..	32	41	31	46	52	44	49	46	58	57	60	59	60	56	58	59	61	65	59	54	62	60	64	60	61	58	56	60	56	44	54	53.9
De Soto....	Max..	57	50	61	71	63	65	67	70	74	76	72	72	74	71	76	79	76	76	73	76	75	82	77	80	80	74	73	79	70	60	50	70.4
	Min.	31	42	33	45	52	44	48	47	55	58	60	60	59	57	54	57	61	65	60	52	63	61	64	59	63	60	58	59	60	46	45	54.1
Dows	Max..	55	51	60	68	63	64	64	70	75	73	71	75	67	71	76	80	73	74	73	76	74	80	76	76	77	74	71	77	76	64	53	70.3
	Min..	29	38	29	42	46	44	42	43	53	55	53	57	53	54	54	56	58	61	56	50	55	59	61	54	59	58	57	59	45	44	50.7
Dubuque...	Max	55	49	59	67	69	71	66	70	78	79	76	80	68	74	76	83	80	76	76	82	71	83	79	76	77	79	71	78	70	56	57	72.0
	Min .	33	41	35	46	51	45	43	42	50	48	61	64	58	52	50	51	62	66	64	56	65	61	64	58	59	61	58	56	56	47	46	53.5
Earlham...	Max	57	50	62	70	61	67	68	71	77	75	71	74	73	73	74	73	75	71	77	76	75	81	77	79	78	73	79	79	77	70	48	74.2
	Min..	29	40	24	42	48	39	41	40	51	42	41	55	54	52	47	57	62	55	47	50	57	58	59	53	58	57	54	55	58	42	42	49.0
Elkader....	Max.	55	46	60	68	68	70	68	74	73	81	75	83	72	80	80	88	75	76	78	82	73	84	80	80	78	78	72	83	70	62	57	73.2
	Min .	30	42	29	44	43	49	42	36	46	47	58	59	59	54	46	46	56	65	64	50	57	60	61	54	61	60	60	54	54	47	47	51.6
Estherville	Max.	41	51	45	53	61	60	58	60	63	60	48	56	50	58	66	70	72	72	70	64	73	77	86	70	84	67	66	71	75	66	58	61.6
	Min.	33	35	29	40	47	36	34	42	53	51	45	43	44	54	49	57	57	60	55	45	55	57	43	36	42	60	55	50	53	50	42	46.8
Fayette ...	Max.	56	46	60	67	62	65	66	70	68	77	77	80	72	74	77	82	78	76	73	79	72	88	77	77	78	75	70	78	69	60	58	71.2
	Min .	29	38	28	42	45	45	38	38	48	46	54	57	56	51	45	45	56	66	43	47	56	59	60	51	58	58	58	54	54	48	40	48.8
Forest C'ty	Max.	39	50	42	53	56	56	55	66	74	73	70	74	64	66	73	78	80	78	74	72	56	58	62	51	52	61	57	54	58	41	46	58.3
	Min .	30	42	31	40	47	43	40	43	53	54	50	57	49	55	53	52	58	62	58	52	56	58	62	51	52	61	57	54	58	41	46	52.3
Ft. Dodge.	Max..	54	54	54	63	65	63	64	68	72	72	70	62	68	72	75	80	76	73	72	76	79	82	79	78	77	72	73	76	70	65	58	69.7
	Min .	31	38	40	43	45	42	38	43	54	54	54	55	49	54	52	56	55	62	56	54	53	56	61	50	56	58	57	54	52	47	37	50.3
Galva.....	Max..	57	62	61	69	..	72	69	73	77	70	69	62	70	72	77	79	73	76	71	79	80	79	75	79	75	77	74	78	71	70	57	71.8
	Min..	30	27	29	38	..	40	37	46	50	53	50	48	47	54	49	56	56	57	54	45	66	56	54	49	59	56	55	50	59	40	40	48.5
G. Meadow	Max.	55	55	60	66	62	66	66	72	66	78	75	80	73	73	75	82	78	75	75	79	73	82	78	78	76	75	75	79	69	59	55	71.3
	Min.	32	38	30	43	48	46	39	38	48	54	56	58	56	50	47	51	57	62	62	52	57	57	60	54	59	60	57	54	59	45	45	50.6
Greene.....	Max..	58	57	61	70	65	64	68	74	72	76	75	81	68	77	80	84	75	77	74	80	80	79	79	80	79	76	71	80	71	63	54	72.6
	Min..	30	40	30	44	45	45	39	39	50	55	54	56	57	55	50	53	58	62	71	45	57	59	60	51	57	56	57	55	58	45	44	50.9
Greenfield.	Max.	55	50	62	72	65	67	69	73	76	75	72	75	71	72	77	79	77	76	73	77	79	80	77	79	80	75	70	79	70	60	47	72.1
	Min..	29	35	28	40	41	43	43	44	53	54	55	55	54	55	54	56	57	60	56	53	59	59	57	59	56	51	50	56	58	43	42	50.3
Grinnell ...	Max..	55	52	58	68	65	67	66	70	74	76	73	75	75	73	76	80	75	79	75	79	75	81	77	76	77	75	74	79	69	60	44	71.1
	Min.	30	43	32	32	52	41	41	43	53	53	59	59	57	55	55	58	60	54	60	54	66	60	60	58	62	61	57	57	60	45	44	52.1
Grundy C'r	Max..	56	50	62	68	66	67	61	70	71	77	74	77	74	72	78	81	74	76	73	76	71	82	75	76*	78	77	71	79	69	61	50	70.8
	Min..	31	41	29	42	47	39	42	42	50	54	56	57	56	53	52	54	58	63	61	51	53	59	61	55	62	60	57	55	59	43	44	51.2
Guthrie Cr	Max.	63	55	62	72	67	68	71	71	81	77	72	74	70	73	79	81	78	76	76	76	78	84	78	81	79	76	78	79	78	62	50	73.1
	Min..	32	41	29	47	50	43	46	44	44	56	56	58	50	53	50	53	60	62	57	50	60	60	62	54	59	57	58	56	60	45	45	51.8
Hampton..	Max..	57	50	62	72	64	70	70	73	77	75	74	80	69	78	81	83	73	77	75	80	79	83	76	78	79	76	71	80	71	50	54	72.5
	Min..	31	41	31	43	48	44	41	41	54	55	54	58	56	56	51	55	57	63	58	52	58	60	60	53	60	51	59	56	59	47	45	51.5
Hanlonto'n	Max.	55	50	64	80	70	60	63	70	72	70	70	67	63	75	76	80	73	73	77	75	77	80	73	75	75	75	76	78	67	63	56	70.3
	Min..	30	38	39	40	46	41	39	37	48	54	50	55	49	55	50	52	56	63	59	48	56	59	64	50	67	60	56	55	58	45	45	50.5
Harlan.....	Max..	58	52	62	71	69	66	72	75	79	77	71	67	68	74	81	82	80	79	74	81	81	83	76	82	81	76	76	83	70	61	51	72.8
	Min..	26	38	27	38	49	44	44	47	49	54	55	56	51	50	50	59	61	56	46	57	59	59	54	58	55	56	50	58	45	42	49.8
Hopeville..	Max .	58	50	66	72	61	68	69	75	80	75	70	73	75	73	78	81	77	76	72	78	77	83	81	80	81	75	74	80	69	61	48	72.1
	Min..	29	42	29	42	50	42	46	47	53	57	58	58	58	53	55	56	60	64	56	52	61	61	61	60	59	57	53	56	61	45	42	52.4
Humboldt.	Max	58	54	62	70	69	65	69	74	77	72	72	65	68	64	77	82	76	76	74	80	78	83	89	79	76	76	73	78	74	64	55	71.9
	Min.	32	40	30	42	47	44	39	44	57	56	54	54	50	56	53	56	60	64	54	52	58	59	61	53	61	60	59	56	60	48	45	51.7
Ida Grove..	Max.	58	56	63	70	72	67	69	74	80	72	66	62	69	72	79	81	78	78	74	80	79	81	77	80	76	76	74	78	70	61	56	71.9
	Min..	31	38	31	31	46	43	38	47	52	55	53	51	50	53	51	60	61	63	55	51	59	58	61	54	52	60	52	55	61	50	48	50.6
In'pen'nce.	Max.	54	49	58	65	66	66	65	69	71	76	74	77	74	73	74	80	76	75	73	76	75	78	75	76	78	77	74	78	70	63	54	70.0
	Min..	28	40	31	43	47	43	39	40	49	55	56	57	57	49	49	56	57	62	59	55	59	62	55	60	59	59	58	56	55	43	44	50.9
Indian

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MAY, 1903—CONTINUED.

STATIONS.		DATE.																														Mean.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Keokuk	Max.	56	61	60	71	61	69	69	74	80	77	76	75	73	76	79	83	81	78	80	82	77	85	81	72	77	83	76	81	70	67	51	73.6
	Min.	32	41	37	48	55	52	47	48	54	58	61	61	59	53	56	59	63	66	64	59	62	66	64	64	60	70	61	62	62	51	46	56.2
Keosauqua	Max.	55	59	55	64	73	65	71	71	75	82	79	77	77	71	76	79	84	80	79	82	85	76	87	84	76	81	81	77	86	72	54	74.6
	Min.	29	41	31	45	51	49	48	46	48	56	59	60	57	54	54	51	61	65	63	55	61	63	64	62	63	62	58	57	61	53	44	53 9
Larchwood	Max.	55	54	67	86	82	65	71	73	70	65	62	61	64	72	78	79	79	80	74	81	79	78	76	70	76	71	71	76	69	64	61	71 3
	Min.	31	36	28	37	40	36	40	46	54	45	43	42	45	51	54	58	60	60	52	50	56	57	52	53	56	54	52	50	58	50	40	47-9
Lansing	Max.	56	55	60	68	66	70	66	72	71	70	79	82	80	72	80	85	83	78	76	83	78	84	83	78	78	76	74	78	71	69	62	73. 3
	Min.	27	45	30	45	40	45	38	44	42	54	56	59	58	38	50	45	56	64	65	48	55	58	62	52	61	62	60	56	52	46	42	50. 3
Larrabee	Max	60	57	65	72	66	66	69	76	78	67	57	58	67	78	78	80	82	78	69	84	82	84	75	..	..	..	..	81	70	62	60	71. 1
	Min	30	35	30	39	45	37	39	46	52	50	45	45	46	53	55	58	58	60	53	48	58	58	58	..	..	..	..	53	52	50	48	48. 2
LeMars	Max.	57	61	65	70	71	68	71	73	75	62	53	57	68	75	79	80	80	79	74	78	79	80	75	70	73	75	76	77	68	63	56	70 6
	Min.	31	31	31	39	42	39	35	47	54	46	42	44	43	42	54	59	60	58	54	42	59	58	55	52	53	57	54	53	58	48	42	47. 8
Lenox	Max.	58	52	63	77	61	67	69	73	79	77	70	72	72	71	77	79	78	75	74	74	74	80	75	78	78	76	55	58	60	43	42	71. 3
	Min.	30	40	39	43	52	43	45	47	54	56	58	57	57	53	55	57	60	62	56	53	59	60	60	60	59	58	55	58	60	43	42	52.6
Leon	Max.	56	56	70	72	68	68	69	75	77	77	74	73	77	74	79	82	81	77	77	76	80	84	82	81	81	81	81	75	79	75	64	73. 8
	Min.	29	41	40	32	50	45	48	47	54	55	57	57	57	51	55	56	60	64	57	53	61	65	61	60	59	61	56	57	60	46	42	52. 8
Logan	Max.	60	54	65	71	70	67	70	76	82	78	75	75	67	70	77	82	80	75	70	72	74	80	84	79	78	78	76	77	68	70	69	73. 4
	Min.	29	32	40	42	49	46	57	50	51	55	52	53	54	49	56	58	56	50	56	54	58	58	55	56	50	50	54	55	50	50	44	50. 6
Maquoketa	Max.	46	57	50	61	67	70	72	68	72	81	81	79	81	71	77	56	58	78	86	80	77	78	84	70	84	81	77	82	74	82	72	73. 1
	Min.	27	34	32	42	45	42	35	35	42	50	58	61	57	51	43	45	51	62	63	45	54	61	72	63	54	60	61	59	56	55	45	49. 4
Marsh'll'n.	Max	47	60	47	64	72	70	45	44	47	52	58	58	57	55	79	80	77	64	60	51	55	59	62	55	61	60	55	56	59	44	41	73. 3
	Min	29	35	29	39	45	41	65	70	72	75	70	72	73	64	75	80	82	75	76	75	70	80	82	77	78	78	74	71	75	70	64	56	51. 7
Mason City	Max.	56	50	62	70	66	66	65	70	72	75	70	72	73	64	75	80	82	75	76	75	70	80	82	77	78	78	74	71	75	70	64	56	71. 1
	Min.	34	40	32	42	48	45	42	42	59	52	52	57	52	55	54	54	59	62	61	52	58	60	63	55	58	61	59	57	60	48	46	52. 2
Monticello	Max.	72	70	68	72	74	70	68	75	78	79	76	80	76	78	80	82	81	77	75	79	81	82	85	80	78	82	78	82	62	59	57	75. 9
	Min.	33	42	29	34	32	35	37	39	42	48	76	80	58	55	78	79	79	80	52	50	56	57	52	53	56	54	52	50	50	58	40	47-9
Mt. Ayr	Max.	58	49	63	71	60	69	66	72	71	70	79	82	80	72	80	85	83	78	76	83	78	84	83	78	78	76	74	78	71	69	62	73. 3
	Min.	27	40	29	42	49	43	47	48	55	54	56	59	56	38	50	45	56	64	65	48	55	58	62	52	61	62	60	56	52	46	42	50. 3
Mt. Vernon	Max.	55	49	62	75	65	75	71	76	80	77	76	84	73	85	86	87	77	75	77	74	75	77	74	59	60	61	61	56	55	57	44	44	51. 1
	Min.	29	40	31	40	46	42	40	39	49	54	55	59	57	54	51	49	59	61	55	54	62	74	79	76	75	77	74	69	75	75	..	56	70. 2
NewH'pton	Max.	54	49	60	66	63	64	65	69	67	72	74	77	68	74	75	79	77	74	74	79	77	74	59	59	52	57	58	56	54	..	44	43	49. 5
	Min.	30	38	29	..	43	41	39	39	49	49	49	55	56	52	48	52	74	77	61	50	56	59	62	76	78	77	72	70	77	70	61	49	71. 1
Newton	Max.	57	51	61	70	65	69	69	73	75	77	74	76	76	76	67	77	74	81	59	61	58	53	58	59	63	57	61	60	55	54	57	44	43	51. 6
	Min.	28	35	30	42	50	44	41	44	53	56	58	58	57	54	54	55	59	74	74	72	76	76	80	75	75	75	74	74	69	70	63	57	70. 5
Northwood	Max.	56	49	62	72	71	67	65	70	72	71	71	74	73	67	76	79	74	53	58	60	59	45	56	60	60	61	51	57	60	52	57	57	45	43	49. 9
	Min.	31	38	31	40	45	43	40	39	51	54	50	56	49	75	80	82	80	78	82	83	82	83	76	83	81	76	73	81	79	61	55	73. 4
Odebolt	Max.	60	55	64	71	70	66	72	74	79	71	70	52	51	49	56	51	52	60	65	62	49	49	56	56	50	60	59	55	54	60	47	42	49. 6
	Min.	31	32	29	41	44	43	39	40	51	54	68	69	66	62	68	75	78	82	79	78	79	81	77	83	77	80	80	79	75	84	67	51	70. 2
Ogden	Max.	46	55	46	64	65	63	62	70	67	52	53	53	55	54	54	52	54	56	60	56	49	56	56	60	53	56	57	56	54	57	45	42	49. 9
	Min.	28	40	26	41	48	40	42	43	52	53	53	55	80	72	73	74	62	82	76	75	84	75	87	78	76	77	83	72	80	70	62	52	72. 5
Olin	Max.	56	50	..	67	70	70	65	70	80	77	80	80	72	60	52	49	51	62	76	63	49	60	62	66	57	81	76	70	76	74	68	62	51	51. 6
	Min.	27	37		41	47	42	42	42	42	53	57	60	60	52	49	49	51	62	76	63	49	60	62	74	81	76	70	58	57	56	55	48	44	71. 5
Omaha, N.	Max.	59	52	62	70	68	67	70	73	78	74	66	64	68	76	79	80	81	79	74	58	61	61	60	78	60	77	74	78	77	70	62	56	54. 3
	Min.	35	41	36	45	54	50	50	54	57	57	52	51	55	53	60	62	62	65	55	58	60	60	58	60	57	61	59	58	58	60	50	45	72. 5
Onawa	Max.	59	56	64	71	73	70	70	74	80	66	63	62	74	74	80	80	80	80	80	74	54	59	64	73	78	76	75	69	75	69	62	56	51. 8
	Min.	31	38	31	41	46	44	39	51	52	55	53	53	50	52	54	59	62	64	73	78	81	74	73	78	81	77	76	75	69	75	69	62	56	70. 3
Osage	Max.	50	49	61	66	70	64	66	70	73	74	76	74	76	65	74	78	74	73	73	60	56	59	57	52	55	52	52	55	44	50	50	50	50 o
	Min.	31	38	30	42	45	43	39	39	51	54	53	57	52	55	49	52	58	62	76	63	49	52	58	62	60	56	59	57	52	80	50	50	71. 1
Osceola	Max.	47	64	47	65	72	60	69	68	75	76	76	65	74	75	73	77	81	74	63	77	78	76	56	53	56	59	60	52	57	60	48	42	52. 1
	Min.	28	44	31	43	51	43	46	45	54	56	57	52	57	55	74	78	55	76	77	74	78	79	83	69	83	79	74	78	79	73	80	70	61	48	72. 2
Oskaloosa	Max.	59	51	62	72	65	70	70	74	78	78	70	71	57	60	77	74	76	84	81	78	77	75	71	83	79	64	61	80	78	80	75	82	71	63	51	73. 0
	Min.	30	42	31	45	49	43	45	45	50	54	54	56	74	78	81	84	56	60	64	78	57	63	77	82	55	50	64	59	60	62	49	44	53. 4
Ottumwa	Max.	57	56	61	71	65	69	66	73	76	76	77	77	41	56	72	78	81	82	82	81	82	79	83	79	64	83	81	73	79	75	70	61	55	74. 0
	Min.	36	43	37	48	53	49	48	46	54	59	77	70	74	72	78	81	82	82	81	63	77	82	79	83	79	60	59	58	59	54	58	60	46	43	51. 6
Pacific Jct.	Max.	60	53	64	72	70	68	73	78	81	81	56	55	52	56	51	51	57	61	82	54	59	59	60	59	58	59	54	58	83	70	59	49	73. 4
	Min.	29	41	28	38	51	46	47	50	49	56	78	75	77	79	73	78	82	77	78	83	70	83	79	76	81	78	59	55	62	58	45	43	52. 2
Pella	Max.	58	50	63	73	50	68	70	75	82	55	55	58	57	55	58	55	59	63	77	58	52	61	60	78	85	82	77	80	81	73	61	50	73. 5
	Min.	29	41	31	43	50	41	43	43	51	77	74	76	71	75	80	82	77	77	77	79	78	85	78	61	82	77	80	80	82	60	45	46	52. 5
Perry	Max.	59	50	65	72	65	67	..	75	80	77	74	73	64	75	80	54	55	58	62	59	50	60	59	82	73	78	77	73	80	70	60	58	72. 0
	Min.	30	41	30	44	51	43	..	45	54	56	57	53	57	56	54	81	83	82	76	73	80	60	57	50	55	62	64	55	55	60	48	47	50. 6
Plover	Max.	58	56	63	70	70	64	69	70	80	73	74	63	66	50	55	53	62	60	59	50	78	60	57	72	72	72	72	71	74	68	61	59	69. 0
	Min.	31	30	30	40	46	40	40	47	55	54	50	49	66	73	68	78	76	77	72	50	78	78	78	72	72	72	72	71	74	68	61	59	69. 0
Primghar	Max.	56	52	63	70	68	64	71	73	74	60	59	73	66	73	68	78	76	77	59	49	75	51	57	58	53	59	60	55	52	58	51	42	49. 1
	Min.	33	35	32	39	45	38	40	45	53	49	45	43	45	54	54	58	58	55	59	73	75	75	79	77	79	77	76	73	74	70	64	51	70. 5
Red Oak	Max.	56	54	58	66	63	66	69	71	74	74	67	72	59	73	78	79	78	76	75	58	56	62	63	61	61	61	62	58	59	53	48	46	55. 2
	Min.	33	43	33	43	55	49	50	54	54	60	59	59	58	55	73	78	79	61	64	81	86	81	84	80	81	81	84	76	83	73	59	60	74. 3
Ridgeway	Max.	54	49	63	72	70	70	69	72	72	73	79	80	67	80	58	56	51	50	55	59	62	64	81	81	62	52	58	59	60	55	56	44	43	51. 2
	Min.	30	36	30	43	46	42	43	46	52	54	54	54	66	66	75	78	83	76	75	80	78	83	78	80	80	78	75	81	70	65	53	71. 8
Rockw'l Cy	Max.	53	53	61	70	71	65	56	71	78	75	74	54	54	48	52	55	58	58	55	48	57	58	58	54	58	58	61	58	46	60	66	47	51. 1
	Min.	32	39	32	42	48	44	42	42	48	58	54	65	60	65	70	69	79	76	78	77	80	79	81	78	72	79	75	76	77	79	74	76	71. 5
Ruthven	Max.	55	53	62	69	67	65	69	70	80	62	47	45	45	45	49	48	59	62	60	59	56	58	58	58	54	61	61	58	56	52	51	52	50. 5
	Min.	33	36	32	40	48	39	41	45	51	78	70	68	68	68	75	79	85	77	74	80	56	80	83	79	80	78	76	76	76	60	53	42	72. 1
Sac City	Max.	58	54	63	70	67	64	70	70	50	54	52	50	49	55	72	78	53	57	57	62	53	50	58	57	83	52	60	59	73	56	47	42	50. 4
	Min.	31	37	30	41	47	43	41	44	74	79	77	73	74	75	72	78	81	77	77	76	77	87	74	60	62	79	79	60	73	68	77	61	49	71. 9
St. Charles	Max.	57	48	63	72	60	50	42	51	45	56	58	57	57	57	55	56	56	59	64	57	54	80	60	81	81	62	57	54	76	80	70	60	50	72. 0
	Min.	31	39	32	46	50	42	51	68	74	79	77	73	74	57	75	80	83	76	76	75	80	58	58	61	82	79	77	59	59	55	59	45	42	50. 9
Scranton	Max.	58	51	63	63	68	69	67	70	80	75	55	55	57	52	55	52	55	57	77	56	48	72	79	77	70	72	72	74	75	75	70	60	61	69. 3
	Min.	32	39	31	34	50	45	42	43	53	52	55	55	57	64	72	76	79	77	76	74	72	50	55	54	72	57	57	55	51	58	51	40	47. 8
Sheldon	Max.	56	55	65	72	70	66	72	72	70	60	60	43	55	64	72	76	77	55	78	53	78	80	79	71	73	77	75	74	75	68	61	63	69. 0
	Min.	30	35	33	38	45	36	36	43	..	48	40	45	62	68	50	52	58	79	77	72	78	80	79	74	75	78	77	75	74	75	68	61	63	48. 1
Sibley	Max.	54	41	64	71	74	70	72	74	70	56	49	55	62	68	53	50	58	59	60	53	48	55	57	56	49	57	58	54	51	57	50	41	48	77. 1
	Min.	33	33	29	35	43	37	37	44	52	49	45	42	45	53	50	88	88	82	79	79	88	72	61	88	82	76	86	86	75	88	71	64	48	51. 1
Sigourney	Max.	57	51	65	76	68	78	76	80	83	83	84	83	82	84	51	52	58	60	61	62	51	61	59	63	73	72	71	73	74	69	61	58	68. 5
	Min.	29	40	30	35	51	41	41	41	48	55	56	50	50	62	51	76	78	80	78	72	77	78	78	57	57	52	56	53	53	57	52	40	47. 1
SiouxC'nt'r	Max.	54	52	64	70	69	65	71	74	71	58	49	44	37	56	68	51	77	52	78	76	78	77	81	72	76	75	72	56	56	77	76	59	57	69. 7
	Min.	30	34	31	39	47	36	35	44	53	74	62	53	56	68	71	77	78	81	78	76	78	77	81	58	57	58	57	58	58	59	50	44	60	51. 8
Sioux City	Max.	57	52	64	70	71	66	69	72	53	74	47	45	48	54	59	72	73	69	68	67	65	82	78	78	80	79	78	72	75	80	60	60	60	69. 3
	Min.	34	37	36	43	52	43	42	53	52	61	60	55	45	60	73	55	56	73	55	50	52	55	69	61	64	62	61	57	56	55	48	44	56	52. 1
Spirit L.	Max.	..	..	..	..	..	..	..	..	46	72	67	66	56	65	70	74	76	75	73	71	76	76	78	77	60	75	74	71	72	75	72	61	56	68. 4
	Min.	..	..	..	..	..	..	..	..	68	72	54	49	47	46	55	57	59	59	62	36	52	75	71	58	59	55	61	59	56	55	59	50	41	50. 3
Storm L.	Max.	54	51	60	66	68	63	61	68	46	52	54	49	47	46	55	57	59	59	62	36	52	75	71	83	79	72	75	78	60	55	61	50	73. 8
	Min.	34	36	35	41	47	41	38	46	52	88	88	84	83	81	75	80	82	78	78	75	75	71	83	79	72	75	78	60	55	58	41	43	51. 2
Stuart	Max.	58	53	64	72	65	50	42	43	43	50	55	60	58	63	54	54	55	59	63	58	52	75	59	53	82	80	75	77	73	70	63	49	72. 5
	Min.	28	40	20	43	50	67	68	70	75	79	76	67	72	72	75	78	81	80	79	75	82	75	83	78	82	59	59	57	57	59	59	47	45	52. 9
Thurman	Max.	59	54	64	71	67	68	70	75	50	59	57	52	57	52	54	58	62	64	54	80	58	60	59	83	77	79	79	72	82	72	61	51	74 8
	Min.	31	42	29	42	52	46	48	52	50	59	57	52	57	79	81	81	87	81	77	80	86	75	84	63	66	62	64	58	60	56	45	45	54. 3
Tipton	Max.	57	50	63	70	68	75	71	76	79	80	80	83	61	61	55	55	57	60	65	65	74	79	70	81	76	77	77	78	71	70	60	50	70. 8
	Min.	32	40	33	44	55	48	44	42	50	57	60	60	61	77	73	77	82	75	75	74	79	70	78	59	63	55	61	60	56	55	58	44	45	51. 4
Toledo	Max.	57	53	61	68	68	69	69	73	76	78	75	78	77	56	53	50	80	81	81	81	82	..	..	..	..	..	..	76	74	72	61	50	71. 4
	Min.	29	42	29	43	52	39	43	41	50	56	56	57	56	73	75	80	81	81	81	82	..	..	..	..	..	..	..	56	57	61	45	42	47. 6
Villisca	Max.	62	48	65	75	63	69	71	72	80	75	73	74	73	50	78	80	81	78	77	84	85	80	79	78	72	73	78	72	76	70	68	50	72 9
	Min.	27	35	27	40	50	44	46	47	49	50	76	76	53	50	78	80	81	78	77	84	85	80	79	78	72	62	65	59	58	60	48	45	55. 2
Wapello	Max.	56	51	55	72	65	73	72	73	78	76	59	60	61	77	78	79	86	80	78	79	79	68	84	80	74	78	82	74	81	71	63	50	73. 5
	Min.	37	41	33	48	52	53	41	46	51	78	80	80	78	77	78	79	86	80	78	79	79	68	84	80	74	78	82	74	81	71	63	50	50. 5
Washin't'n	Max.	57	51	61	71	65	71	69	74	81	47	54	56	57	57	57	50	54	58	61	58	53	65	79	74	82	74	63	79	76	73	78	71	55	70 9
	Min.	27	36	29	41	48	41	41	41	69	68	77	74	78	74	79	78	84	77	76	65	79	74	82	74	63	79	77	79	74	58	58	45	44	52. 0
Waterloo	Max.	46	56	50	61	68	66	68	65	69	51	55	57	58	52	50	75	51	59	62	63	49	59	72	62	54	63	79	75	74	75	70	62	53	70. 8
	Min.	30	42	39	45	48	42	41	41	67	76	76	78	71	75	75	81	75	75	74	79	72	82	76	..	55	61	59	56	54	47	45	51. 3
Waverly	Max.	58	50	62	68	62	67	66	70	67	53	56	56	58	57	54	51	54	60	62	62	51	82	79	84

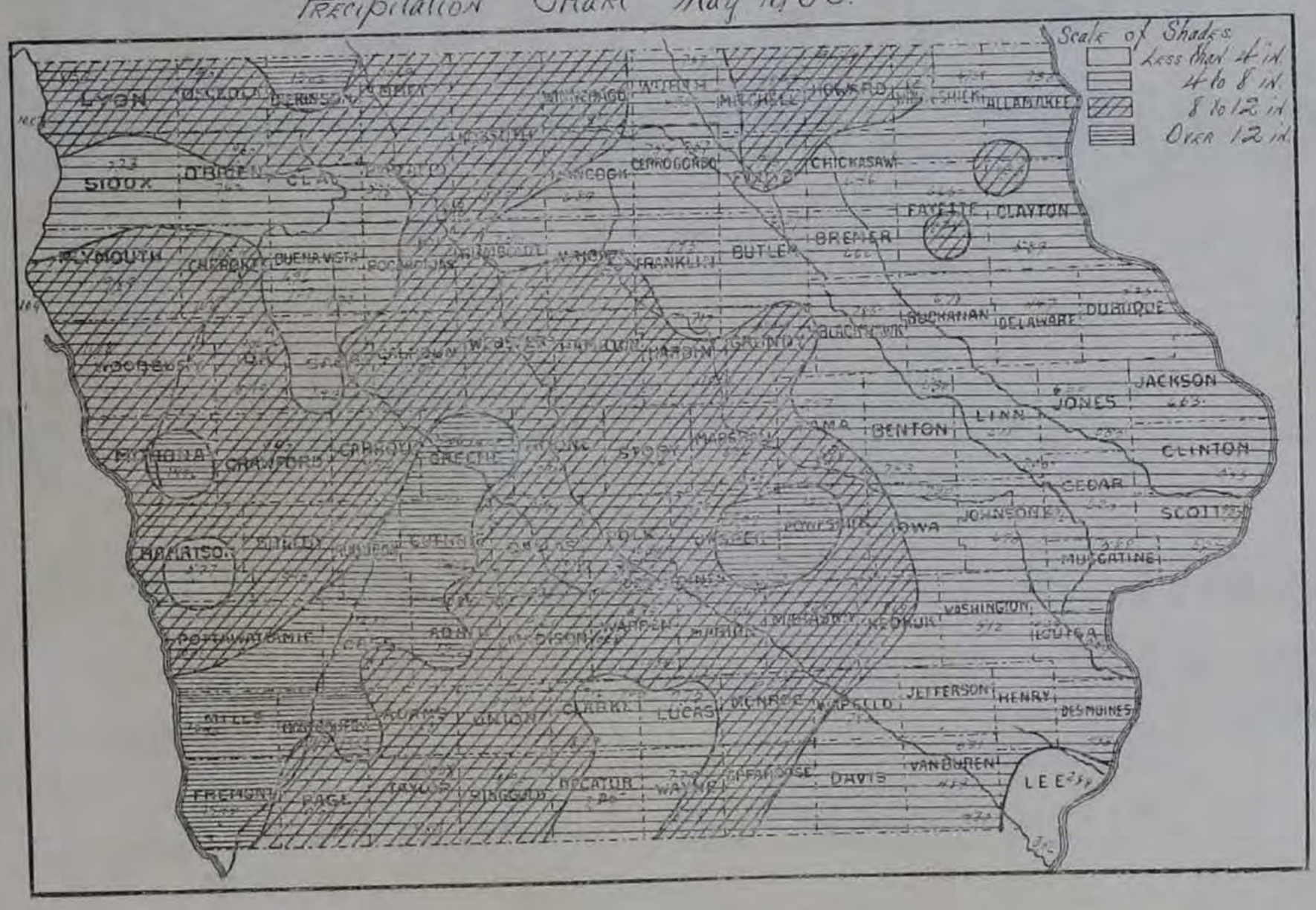
DAILY AND MONTHLY PRECIPITATION FOR MAY, 1903.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	.12	....	....	.04	T	....	....	.14	....	T	.50	.30	....	....	....	.38		T	.38	1.14	1.25	.44	....	.60	1.47	1.26	....	2.20	1.18	.50	11.99
Albia	....	....	.15	....	....	.05	....	....	....	.42	....	.13	.05	.16	....	....	T	.35	.33	....	.33	.91	03	.20	.09	.36	1.63	....	....	2.52	1.42	9 13
Algona	....	.45	....	....	T	..	....	....	....	.80	....	1.00	.15	....	.	....	T	T	.70	20	....	.80	....	3.20	10	.25	.40	....	....	....	....	8.05
Allerton	....	.16	....	....	T	....	....	....	.05	....	.32	.45	.32	.04	....	....	.38	T	.03	.06	.90	.95	.05	.43	.47	.86	.46	....	.56	.63	1.08	8 31
Alta	....	.23	T	....	....	....	....	T	.25	1.14	.83	.19	.05	..	....	....	.13		.66	....	....	1.47	.32	....	.35	.46	.02	.01	.57	....	.28	6.96
Alta (near)	..	.25	...	....	....	.	..	.02	.31	1.33	.71	.08	.14	....	....	....	.15	.50	....	....	1.32	.3	....	.3	.40	.29	.02	....	.93	....	.2	7 27
Amana	....	.15	..	....	....	....	....	....	.19	.02	.08		.07		...	....	.09	.12	.04	T	.45	.46	.01	..	20	1.58	.78	.18	.30	2.16	42	7.30
Ames	..	.15	.02	....	.23	T	..	....	.52	.15	.07	.22	.65	01	....	....	.49	T	.04	.08	....	1.04	23	....	.36	2.18	.74	.02	.47	1.42	.37	9.46
Atlantic	..	.30	.08	....	.06	....	..	....	.15	....	.55	.49	.07	....	.	....	.56	.16	.41	.20	1.30	.20	.04	..	2.10	2.57	.48	....	2.16	.40	.09	11 37
Audubon	....	....	.	.	....	....	..	.	....	.04	.43	.89	....	....	....	....	.58	.	....	.52	....	.84	.24	.	.27	1.14	.57	.03	1.70	1.15	.09	9.08
Baxter	....	.12	...	.	.	....	....	.	.23	T	.	.30	1.80	.	.	.	.10	....	05	.18	.2.	.82	.	....	.20	2.60	.75	.25	1.05	2 60	.40	11.20
Bedford	....	.15	....	.01	T	....	....	....	..	..	.80	.02	.07	....	....	.31		....	.19	T	1.57	.44	.40		1.54	1.88	....	....	.86	.58	1.0	9 13
Belle Plaine	.20	....	..	.	....	..	..	....	....	.10	....	.30	03	..	..	....	.10	....	.30	01	.05	.95	.02	T	.15	.75	1.01	.20	.30	2.51	.56	7.51
Bonaparte	....	....	....	....	..	....	....		.16		.18		.80	....	....	..	....	....	....	....	.52	.11	.26	.65	.16	....	.73		.24	.03	.46	4 36
Britt	..	.50	T	....	.05	....	....	T	.12	.79	.65	.62	.04	..	....	....	.07	....	.08	.26	....	.94	.23	T	.86	.58	.99	.02	....		.09	6.80
Buckingham	..	.27	....		.42		..	....	.07	.72	....	T	.47	....	....	....	.08	20	.20	.29	.10	.94	....	....	.40	1.10	.29	82	..	.96	.24	7.57
Burlington		.06	....	....	T	....	....	....	.	T	.06		.75	.12		....	....	....	....	....	.60	23	.23	.35	21	....	.45	....	.02	1.13	.60	4.81
Carroll		.53	....	T	T	....	..	..	..	1.20	....	1.05	.28	....	....	..	.22	..	.20	..	1.05	.12	....	14	.40	2.00	....	.05	2.08	10	.12	9 34
Cedar Rapids	T		....	..	....	T	..	....	....	.18	....	.05	.2		....	....	T	.12	.11	.06	.26	.77		T	.34	82	1.09	.62	T	.86	.60	9 16
Charles City	.04	.20	.30	.01	....	.12	....	....	T	.24	.47	.35	.84	.63	..		.10	....	.04	.13	.02	.78	.18	....	.85	.37	3 24	.24	....	....	....	9 15
Chester	....	1.66		.14	.25	.10	..	.	.08	54	.06	.88	.19	....		..	.23	.04	.14	..	..	.76	.20	....	1.12	1.35	1 70	..	....	....		9 44
Clarinda	..	.14	....	....	....	....	....	....	....		.30	.32	.03	.66	..	..	.32	....	.19	....	1.18	2.00	.46	..	.80	1.32	....	....	.11	1.11	.43	9 97
Clear Lake	..	.45	....	....	.12	....	..	....	1.05	1.15	.25	.35	....	....	....	....	T	....	.12	T	....	.75	.15	T	1.45	.80	.90	....	....	....	T	7 54
Clinton	..	.05	..	..	..	....	..	....	.01	....	.03	.03	.01	....				05	....	.01	.35	.18	.35	....	.11	1.15	.47	.15	....	1.42	1.58	5 45
College Springs	..	.11	.01	..	....	..	....	....	....	..	.40	.55	.20	....	..	..	.32	..	.31	.05	.35	1.05	....	..	1.33	1.40	.24	T	1.16	.78	.84	9 16
Columbus Junction	....	.08	....		T	..	....	....	.08		.30	....		..	....	..	.25		T	....	.30	.59		.28	.10	....	.82	.18	1 58	.42	.35	5 31
Corning		....	..	T	T		...	T	....	T	.62	.24	.68	T	....	....	.51	T	T	.39	1.89	2 00	.30	....	84	.83	.53	....	.84	.63	.38	10.68
Council Bluffs	..	.44	.21	....	....	..	.	....	....	1.00	1.00	.52	....	.	....	....	.11	.12		.60	1.01	....	....	.94	1.37	.70	.48	..	.73	.55	.21	10.01
Corydon	....	.17	.....	....	T	....	..	....	.04		.26	.57	48	....	....	..	.36	....	.05	.38	1.20	.67	..	.13	.35	.52	.69	..	.59	.47	.77	7 70
Cumberland	....	....	T	...	....	....	....	....	T	....	.20	.24	....	..	.31	....	.81	....	T	T	....	1.40	...	....	1.20	1.80	.30	1.10	.40	30	.21	8.27
Davenport	....	.02	..	T	....	..	....	....	....	..	.11	T	.02	..		....	....	T	T	....	.49	.08	.20	.05	.08	.87	.41	.38	.32	2.03	.46	5 59
Decorah	....	.57	.09	....	.25		....	..	.20	.42	.12	.12	.34	.	....	..	.65	....	.20	..	..	.49	.25	T	.58	1.89	.58		....		T	6.75
Delaware	....	.24	....	....	....	....	....	.	.47	.24	.	.13	..			....	.14	..	.05	..	.40	.75	....	....	....	.17	.64	.62		.60	.32	4 47
Denison	....	.63	....	....	....	....	....	....	T	1 71	.59	17	06	....	....	.	.27	....	....	T	....	1.57	.07	....	.44	2.34	.30	....	1.32	.34	.11	9 92
Des Moines	....	.09	....	T	T	....			.04	.14	.08	.36	.22	.28		....	.30	T	.05	.03	.07	1.38	.13	....	.18	2.08	1.38	.06	.94	2.52	.31	10.64
De Soto	....	.14	....	.01	T	....	....	....	.14	.04	.18	.35	.12	.02	....	....	.50	....	T	.26	.03	.78	.25	....	.18	1 90	.53	T	1.05	1.60	.30	8 38
Dows	....	.48	T	T	T	..	....	....	T	1.19	.54	.64	32	....	....	....	.4		.10	..	..	1.35	.18	....	35	1.65	1.51	.45	....	.06	.22	9 33
Dubuque	..	.12	T	.02	.04	....	....	....	.01	.01	.21	T	.08	....	....	....	.09	T	T	.01	.06	.50	.02	....	.10	1.40	1.11	.01	T	.35	.11	4 25
Earlham	..	.16	....		.06	....	....	.	T	....	.36	.78	.60	....	....	.81	....	....	....	.08	.03	.8	.40		.32	2.50	.74	T	1 82	1.82	.26	11.60
Elkader	....	.38	...	.18	.10	....	....	..	....	.04	.63	.15	.02	....	....		.08	....	.10	....	.12	1.02	.25		.60	.75	1.17	.	....	....	.30	5 89
Esthersville	..	.18	.02	T	...	....	....	..	T	.70	2.22	.40	.05		..	.02		T	40	.05	.01	1.95	1.00	....	3.70	.75	.24	....	....		....	10.69
Fayette	....	.35	.	.25	73		...	...	.19	T	.18	.01	....	....	....		.63		.07		.08	1.02	.18	.04	.10	2.69	.34	.15	...	....	.18	6.95
Forest City	....	.35	.06	...		T	..	..	....	T	.85	.39	.93	1.18			....	07	.07	T	.31	.83	.20	....	3.63	.20	1.00	.08	....	....	....	10.12
Fort Madison	....	T	....	...	T	..	....	....	T	....	T	.11	....	....	....	..	T	.02	..	....	.86	.35	.25	.45	.13	T	.52		.21	T	....	2.88
Galva	....	.20	.10	....		..		..	.70	1.10	.80	.12	.60		....	....	T	....	....		....	1.80		....	.80	1.45	.05	1.15	.85	.25	.10	10.07
Gilman	....	.16	....	...	.05	...		....	.08	.05	T	.22	.83	....		....	T	T	.10	.18	....	1.13	....	....	.18	1.17	.47	..	1.20	2 06	3	8.24
Grand Meadow		.33	....	.03	.25	....	.	....	.15	T	.80	.40	.25	....	....	....	43		.26	..	.04	73	.33	.02	.24	3.16	.71	..	....	....	.48	8.33
Greene	.37	..	....	....	.20	....	....		.22	.31	.13	49	.10	.04	....	....	.15		.03	.15	....	.85	.15	..	.32	1.82	.92	..	....	....	.12	6.37
Greenfield	....	.2	T	T	T	.	T	T	.37	T	.09	29	.56	T	..	....	1.02	T	T	.06	.23	1.95	.26	.	.80	3.82	.71	.16	1.11	1.63	.18	13.59
Grinnell	....	....	....		.15	..	....		....	....	.58	....	3.00	....	..	..	....		....	.95	....	.90	....	....	.18	1.19	1.17	.09	....	3.23	1.25	12.69
Grundy Center		.25	....	.03	.68	....	....	....	.17	T	.22	.10	1.50	....	..	..	.04	T	.05	.02	.20	.18			.12	2.18	1 61	1 36	T	1.14	.19	11.04
Guthrie Center		.29	T	....	T	....			....	.64	.37	1.07	T	....	....	....	.92	.10		.53	1.08	T	.21	.31	.29	3.52	.82	T	.94	2.86	.21	14.16
Hampton	....	.37	.02		.12	....	....	....	.19	.27	1.32	.25	....	....	....	..	.41	.06	.83	....	1.00	.2	....	.30	.50	2.43	.11	....	..	....	.30	7.05
Hanlontown	....	.42	....	..	....			....	.32	.85	.55	.63	.12	....		..	.02	.03	.33	....	....	75	.30	.06	....	.55	.74	....	....	..	T	7.07
Harlan	....	.34	.08	T	.02	..		....	....	1.59	.80	.42	.05		..	..	.32	....	.26	61		.80	24	....	.34	.84	.60	T	1.80	1.10	.22	10.43
Hopeville	....	.14	....	....	.04		....	T	.60	.03	.54	.60	.51	....	....		.45	T	.12	T	1.07	.40	.07	..	.46	1 2.	.61	....	.81	.43	.48	8.59
Humboldt		.70	.05	.	.01	....	....	....	12	1.18	.76	.32	.08	....	..	..	....	....	.60	34	....	1.20	.10		.28	.55	.86	.15	....		.20	7.50
Ida Grove	....	.55	.09	....	.07	....	....	....	1.40	....	1.18	.17	....	....	.	....	.	.05		1.00	....	1.23	.28	....	.64	.14	..	....	....	1 40	.20	8.40
Independence		.35	....	.03	.70	....	....	....	.10	.01	T	.30	..		....	....	.32	T	T	....	.25	1 5.	.15	....	.50	1.15	.50	T	....	.50	.40	6.78
Indianola	....	.12	....	....	.02	T	....	....	.01	.03	.08	.44		....	....		.16	T	....	.3.	.44	1.23	03	..	.32	1.09	1.16		1 84	.77	.34	8.39
Iowa City	....	....	.12	..	....	....			..	.19	.	.08	....	.04		....	..	.05	T	T	T	.99	T	.05	.11	.40	1.13	.25	T	2.31	1.18	6 90
Iowa Falls	...	.04	.20	.05	T	.26	....	....	.21	.60	03	.93	.08	....		..	....	.31	.02		T	.7	.26	.	.22	.42	1.91	.73	....	.10	.07	7.17
Jefferson	....	.32	....	....	.04	....	....	..		1.16	.16	1.24	.17	....	...		.57	.08		.03	....	1.41		....	.87	....	4.02	....	....	3.75	.47	14.32
Keokuk	..	T		....	T	...		....	..	....	T	T	.21	.02		....	T	06	T	....	.77	.04	06	1 40	.52	....	.06		T	T	.38	3.56
Keosauqua		..	....	....		.21	....	.	.	T	....	.08	.02	.50		....	....	.16	.09		.03	.58	.68	.26	08	.37	.47	.0'		.40	.90	4 84
Lacona	....	.21	....		05			....	.19	.04	.16	1.12	.80	.24		.	.16	....	.21	T	2.24	.87	.23	....	.39	.80	1.00	T	1.19	.78	.67	11 35
Lansing	....	.54		..	.30	....	..	....	.20	.10	.12	....	1				.44	.10	....	....	T	.70	.30	..	1.10	1 0.	2.40		....	..		7.30
Larchwood	..	....		....	.13	..	..		.50	1.60	1.30	.45		T	....	..	T	T	97	....	....	1.01	.52	.13		1.68	....		T	....	T	8.33
Larrabee	..	....	T		....	....	....	.02	1 01	1.19	.76	.51	....	....	....	....	T	1.54	..	....	1.34	1.55		2 04	.24	.18	....	....	T		.14	10.58
Le Claire	.02	....	T		....	....		....	..	....		T	.02	....	....	....	T	....	.02		..	.50	.02	.30	.03	.14	48	.41	T	1.98	.35	4 27
Le Mars	....	....	....	....	..		....	....	.30	.85	1.30	1.05	....		..	....	....	....	2.00	....	....	..	1.25	1.40	.01	.50	..	..	.90	.10	.20	9 80
Lenox	..	.13	....	T	....	....	....	....	....	....	.38	34	.40	..	....	....	.52	....	.15	.40	2.57	2.00	24	....	.6	58	.56	....	.20	1.05	.46	10.58
Leon	....	.19	..	....	.05	....		....	.11	....	29	.67	....	.24	....	....	35	....	.28	.20	1.05	.16	.11	.20	.34	.63	.72	....	.36	.37	.93	7.25
Logan	.20	....	.10	.05	....	..	....	....	50	.28	.30	.22	.08	....	....	....	.20	.07	....	....	....	....	....	.33	44	.	1.45	.05	.60	.10	..	5 77
Maquoketa	.05	.13	....		....	....	....	....	....	..	.02	13	....	.1.	....	....	.05	.07	.25	.05	....	.4	.18	.06	.14	.45	2.00	59	.05	.85	.90	6.55
Marshalltown	....	..	.25	.02	.01	.33			....	.16	.05	.18	.02	.14		..	....	.20	.06	..	.83	.83	.20	..	.19	1 20	1.75	.20	12	1.37	.35	8 40
Monticello	T	T	.		....				.15	T	.10	T	....		....	....	T	T	T	.10	1.31	....	....		.33	.91	1.75	.55	....	....	1.10	6 30
Mason City	....	.70	....	....	T	..	....	....	37	1.62		.55	.05	....	....		T		.27	T		.98	.20	.	1.05	.30	1 48	.	....	....		7.57
Mount Ayr	....	.16	....	.03	.08	....	....		.07	.28	.14	.64	03	.01	....		.67	....	07	.08	1.94	.15	.27	.01	77	.75	.91	T	.52	.66	.63	8.90
Mt. Vernon		.17	..	..	..	..		..	.10	.05	.20	....	.20	..	....	....	.18	.04	.01	.05	.47	.30	.01	....	.01	1.10	1.50	.53	....	1.80	.33	7.05
New Hampton	....	.41	....	....	.32	....	....		.23	.36	.10	1.14	....		....	..	.03	..	.09	....	....	.65	.22	....	.48	1.66	.75	.02			.65	6.46
Newton	....	.12		....	.11		....	....	.13	....	....	.18	.70	.11	.	....	T	T	.05	.86	.02	1.80	.	T	.20	3.40	.62	.34	.90	2.98	.55	13.07
Northwood	....	.44	....	04	.07	..		....	.20	1.11	.15	.18	.22	....			.02	....	.10	.27	.19	.71	.21	.10	1.78	.39	.75	....	....	....	.02	6.95
Odebolt	....	.58	.05		.05		....	....	.60	1.02	.40	.30	.05	....	....	....	.61		....	....	1.00	.05	..	....	.25	1.05	.40	....	1.00	.61	.06	7.03
Ogden	.05	.05	.25	.	.03	.11	....	....	.02	.92	.17	.29	.15	..	....	....	.	.67	.04	....		1.35	.14		.27	.35	3.19	.60	....	1.90	.38	10.93
Olin	....	.07			....	....	....	....	.64	....	.43	T	T	24	....		.10	T	T	.08	.26	.20	..	T	.18	..	1.83	.08	.09	1.67	.08	5 55
Omaha, Neb	....	.37	.05	.15	T	..	....	..	....	1.21	.38	.83	.08	....	..	..	.16	....	.05	.10	.65	.81	.01	.95	....	.93	.55	T	.53	.41	.10	8.32
Onawa	....	.86	T	....	1.05	....	..	....	1 41	1 37	1.21	.36	....	....		....	.03	....	3.30	.03		1.33	.65	....	16	.93	.17	.05	1.27	.45	.10	14.76
Osage		.68		.03	....	T	....	....	.09	.96	.16	1.06	.14	....	....	....	09	....	.11	....	.04	.76	.09	....	1.81	1.31	.88	....	....	....	.02	8.23
Osceola	T	....	.19	...	.02	T	....	....	....	....	T	.50	.30	.18	T	..	....	.28	.05	...	.7.	.60	70		.50	.25	1.50	....	....	1.01	.78	7.16
Oskaloosa	.10	....	....	....	.07	....	....	....	1 38	...	.10	.04	75	....		....	.21	.09	T	.35	.35	..	T	.06	.20	3.41	.78	T	.15	1.30	.32	9 68
Ottumwa	....	.14	....	....	.01	....	..	....	.80		.40	....	.91	....	....	.05	.20	....		....	.71	.53	....	.35	.07	.22	.68		.52	.37	1.37	7.90
Pacific Junction		.35	T	.06			....	....	....	.68	.57	.43	.17	....	.	....	.20	....	.09	2.04	.07	1.80	.18	....	1.12	2 18	.78	T	.92	.63	.16	12.43
Pella	....	.12		....	T	....		....	.09	.03	.08	.02	1.00	.76	....		10	T	....	.24	.46	.91	....	.04	.13	2.25	.27	.37	.70	2 15	.49	10.16
Perry	T	.65	T	.11	T	..		....	....	.40	.15	.37	.38	....	..	..	.97		.07	.14	T	.97	.25		.55	1.57	.87	.63	1.03	2.00	.33	11.41
Plover	.15	....	.	....	T	....	....	..	.31	.34	.94	.12	.11	..	....	....	.08	....	.42	T		.94	.23	3.31	....	.51	.16	.16	....	....	.23	8.01
Red Oak	..	.27	....	.04	....	....	....	.	....	T	.72	.17	.15		....	....	.43	....	.54	2 43	.87	1.15	.94	....	1.00	1 64	.43	T	.40	.34	.22	11.74
Ridgeway	....	.64	.14	....	.28	..	....	....	.31	.36	10	.57	03	..	....	..	.02	T	.09	.01	.01	2 65	.06	.08	.79	1.92	21	....	T	..	.43	8.20
Rockwell City	..	.65	.05	..	T	....			.05	1.60	.65	.78	.	....	....		....		35	.50	....	1.67	.35	....	30	1.28	.95	.30	.80	.41	.10	11.09
Ruthven	..	....	....	....	....	....	....	....	....	1.33	....	60	.	....		....	T	....	T	....	..	1.30	.90	1.00	....	.65	....	T	..	T	T	5 78
Sac City	....	.53	.22	..	.12	....	....	T	.04	1 26	.80	.40	....	....			.21		.32	.04	..	1.43	.20	....	.12	1.04	.42	.37	.48	.61	.24	8.85
St. Charles	....	.12	....	....	.03	.01		....	.10	.02	.22	.35	.10	.05	....	....	.27	T	.06	.88	.59	1.84	.10	....	.20	1.65	1.02	T	1.35	.67	.65	10.28
Scranton	....	.38	T		T	....	....	T	....	1.32	.40	.91	.01			....	.41	.	.09	.04	..	.13	.21	....	.52	1.45	.79	.78	.15	1.64	.23	12.06
Sheldon	.01	.	T	...		....	....	....	1.00	1.00	1.10	.40	....	....	....	.01	....	....	1.63	.05	....	....	1.15	.62	...	1 95	.10		....	....	T	9.00
Sibley	....	....	T	....	.04	....	....	....	.92	1.77	1.08	.07	....		....		T	.40	1.15	.04		.86	.58	.23	.65	.98	.23	....	....	....	....	8.60
Sigourney		.20	....	....	T	....	....	....	T	....	.25	.17	.76	....	....	T	.18	.07	....	....	.50	.70	.05	.10	....	.90	.54	.25	1.07	1.85	1.10	7.73
Sioux Center	....	T	....	....	.02	....	....	T	.15	1.08	1.42	.12	....		....	T	....	.24	.94	.02	....	.64	.33	.75	....	1.76	T	.18	....	..	.07	7.73

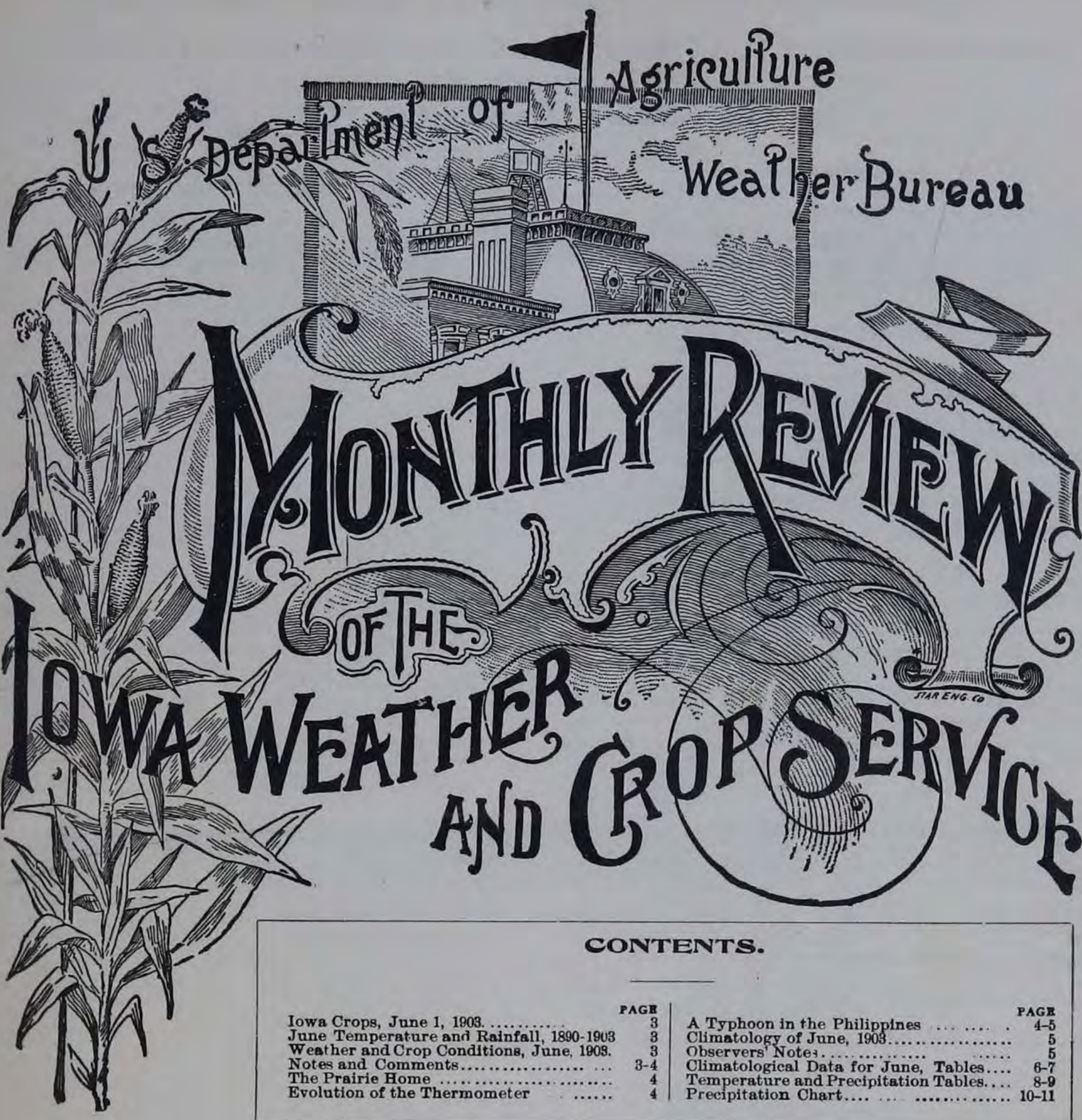
DAILY AND MONTHLY PRECIPITATION FOR MAY, 1903—CONTINUED.

STATIONS.	DAY OF MONTH.																														TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
ux City	...	.17	T		.	....	....	T	2 58	.90	1.48	.41	....	....	..	....	.02	.73	1.08		....	.88	.24	.02	.01	.47		..	2.27	.43	.09	1 .78
rit Lake	....			..	....		..		2.00	1.00	1.65	....	....	....	....	....	..	.75	.35	....	....	1.11	.60	.20	3.10	2.15	T	.12		....	T	13.03
ckport	....	.21	....	....	.02	...	..	..	.48	....	36	.0	.02	.58	..	T	.17	.03	.04	...	.58	.08	.54	.37	.31	.07	.80		.10	.22	.2	5.31
rm Lake	....	.22	T		T	.		T	.17	.59	.44	.29	.04			....	.20	....	....	T		1.30	.19	..	.12	.44	.04	...	.44	.12	.12	4.72
iart	.	.15	....		T		....	....	....		.01	.25	T	T	....	...	.72	T		.80	1.04		.75	.40	.90	2.25	T	..	2.20	.95	.72	10.54
urman	....	.32	....	.02	T		....	....	....	.80	.90	.35	T	.22		..	.10		.18	.72	T	4.80	.28		1 22	1.98	.51	.15	2.02	.60	.18	15.45
oton	...	.13		....		....	....	....	.19		T	....			....	..	.21		....		.52	.25	.15		.05	.75	1 17	.33	.22	1.8	.38	6.20
ledo	...	.17	....		.04	....	..		.10	.25		.53	.91	....	....		.25	.10	.06	.40	.10	1.10	....	.09	.74	.55	.14	.88		2.10	.27	8.78
lisca	..	.15	.15	T	T	...		T	..	.10	.43	.2	.20	....	....	....	1.28	...		2.98	2.65	.60	.. .	.75	.18	2.00	38	..	.92	.21	.48	13.66
nton	....	.20			.26	....	....	....	...	.24	.11	....	.07	....	....	....	1	T	T	.30	1.25	....	.07	T		1.40	T			1.24	.16	5.30
apello	....	J'			....		...		T	T	.2	....		08	....	....	....	T	....	....	.68	.36	.12	T	.50	.70	.55	.10	.73	1.08	.45	5.59
ashington	....	.06		....	....	...	....	....	.05			.02	...	...		..	.05			....	.37	.58	.05	06		.3	.96	06		1 75	60	5.12
ashta	.20		T	....		....	...	.	....	2.00	1.60	T	...			1	T		1.70	....	1 40	1.44	....	T	T	.74	.2	.	1.26	..	.2	10 80
aterloo	.02	.03	.2	.02	.05	.23		....		.37	.18	.44	.19	....	....	..		.21	.06	T	..	1.08	.37	..	0	1.18	2.52	.07		.21	.32	7.85
aukee	....	.15	....	06	.02	T	....	....	T	.01	.09	.2	.6	.06		....	.34		....	.95	.06	.93	.16	....	.24	2 63	.49	....	.96	2 90	.30	10.78
averly	....	.29	...	....	.10	....		....	.57	....	.06	.83	.60	....		....	.03	...	.10	....	....	.72	.39	....	.05	1.10	1.60	....		04	.13	6.66
est Bend	....	.30		....	.08	..	...	T	.30	.48	1.32	.26		....	....		.09	....	.26	.05	...	1.05	.25	3.52	.06	.35	.12	....			20	8.69
est Branch	....	.15	...		..	...		....	....	.04	.18	.05	....	...	....	..	.04	....		T	.57	.40	.09	....	.01	4		1.50	40	2.45	.4	6.76
est Union	.25			....	.23	....	....	....	.41	10		..	.18	....	..	..	.54	T	T	.91	...	.13	....	..	.94	4 06	.13	....	..	..	.31	8.28
hitten	....	.14		....	.45			....	.87	.07	T	.12	.70	.62		....	.17	.03	----	T	....	1.63	.10	....	.2	1.25	2.10	.55	.19	1.00	.20	10.44
lton Junction	....	.15		....		....	...	..		.03			.10		....	T	T	T		....	20	.58	.17	...	.21	.20	.70	T	.81	2 12	.62	5.89
interset	....	..	....	..	T	....		....	T	....	.04	.53	.42	T			.39		...	.10	.39	.71	.1	....	1.10	1.50	....		1.70	1.77	.36	9 20
oodburn	....	.11			T	...	....		.2	....	.43	.12	.67	....	....	....	.25	25		.59	.57	.07		....	.45	1.55		....	.95	.88	.14	7.23

Precipitation Chart May 1903.



JUNE, 1903. No. 6.



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1903.

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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIV. JUNE, 1903. No. 6.

IOWA CROP REPORT JULY 1, 1903.

Reports from county and township crop reporters for July 1st have been tabulated, showing the following percentages of condition: Spring wheat, 88 per cent; corn, 77; oats, 87; barley, 89; rye, 98; flax, 85; meadows, 104; pastures, 107; potatoes, 96; apples, 70; plums, 49; grapes, 78.

Last year at corresponding date the percentages were as follows: Wheat, 97; corn, 92; oats, 95; rye, 98; barley, 97; flax, 99; potatoes, 108; meadows, 99; pastures, 107; apples, 65; grapes, 65.

A revised estimate of the area of corn planted this year shows 87 per cent, or an average decrease of 13 per cent, compared with the area planted in 1902.

JUNE TEMPERATURE AND RAINFALL.

The following table shows the mean temperatures and average rainfall for the state, for the month of June from 1890 to 1903, inclusive. The figures show that the month just closed was the coldest June on record for the period of 14 years, and also the driest except one, which was June 1894.

YEAR.	Temperature, degrees.	Rainfall, inches.
1890	72.7	7.76
1891	69.1	5.39
1892	69.2	5.19
1893	71.2	3.91
1894	73.2	2.67
1895	69.7	4.32
1896	69.1	3.11
1897	69.1	3.81
1898	71.4	4.72
1899	70.7	5.04
1900	69.7	3.98
1901	72.3	3.71
1902	65.2	7.16
1903	64.6	2.86
Average	69.8	4.54

WEATHER AND CROP CONDITIONS IN JUNE 1903.

The month of June as a whole was unseasonably cool and dry, the daily mean temperature being 5.6 degrees below normal, and the deficiency in the average rainfall 1.52 inches. The records show that it was the coldest June in the last fourteen years, and the driest, except one (June 1894). On the first of the month the soil was saturated by the excessive rains of the last decade in May, the rivers were at flood-tide, and many thousand acres of bottom lands were flooded. The change from this saturated condition was gradual, the drying process being retarded by light showers, cool and cloudy weather, with less than the normal amount of sunshine during the first decade. This was altogether more favorable than would have been a sudden change to hot and dry weather, causing an encrusted surface of the soil. The cool and dry weather prevalent the larger part of the month was favorable for wheat and oats, checking the tendency to rust and rank growth, but corn needed much warmer weather to quicken the germination and growth of this belated crop Notably good progress was made, however, in replanting the washed out fields, planting the previously saturated area, and cultivating the early planted corn on dry uplands. The seasonable weather prevalent about the close of the month caused a marked improvement in the appearance and prospects of this important staple, the early planted fields were fairly well cultiuated, and in size and color were much nearer the normal condition than was deemed possible at the outset. Clover cutting was begun near the middle of the month and the hay harvest was quite general at its close, with prospect of a very heavy yield of both clover and timothy. The minor crops, such as potatoes, garden truck and berries, were generally in excellent condition. Apples appeared to be doing better than was indicated earlier in the season. The prospects for all soil products were so much better at the close than at the first of the month that there was a general spirit of rejoicing over the brighter outlook.

NOTES AND COMMENTS.

Thunderstorms have been very frequent and unusually destructive to farm animals this season, and as in former years wire fences have served as efficient conductors for the deadly bolts. A case in point was reported from Jefferson county. Lightning struck a large maple tree, and from its base was conducted by a wire fence to a bunch of steers thirty rods distant. Five of the steers were prostrated by the shock, three being killed, and two badly injured. The insurance company paid $105.00 to adjust a loss which might have been prevented by use of ground wires costing less than a dime. This is a story oft-repeated, with some variations.

On the evening of July 2d, according to eastern news specials, after a period of intense heat, a terrific storm swept over New York City. In the upper part of the city the wind blew at one time at the rate of 72 miles an hour, causing an immense amount of damage. Three deaths were reported directly traceable to the force of the wind. The eastern papers and press dispatches called it a heavy gale, and that fairly described the windstorm. In the west, however, it is customary to term that sort of dis-

turbance "a deadly cyclone," or "an awful tornado," with stunning headlines in the newspapers. Those eastern scribes are rather moderate in their reports of such things, and it would be well if westerners would follow their example.

The *Scientific American* says that Point Reyes, an important United States weather bureau and storm signal station, located on the California coast some thirty-five miles north of San Francisco, holds the world's record for high, strong, continuous winds. Last year Point Reyes captured this honor from the weather stations of the earth, and again this month (May) has gone several notches higher on the meteorological scale. On May 18, 1902, the wind at Point Reyes attained a velocity of 102 miles and hour, and for several minutes was rushing along at the furious rate of 120 miles per hour. A fearful gale lasted for three whole days, and at one time the winds in a playful mood ripped the cups from the anemometer. This year, on May 14, the winds commenced to blow again with the greatest violence. For four days the velocity registered averaged more than sixty miles an hour. For nine days the average velocity was fifty-two miles an hour. The total number of miles recorded on the anemometer was 11,223 miles. This is the highest velocity of wind for the time on record in the world.

"It is very curious," said the old professor of physics, "to see how many market gardners there are to raise things under glass, make money out of the process, and yet do not know why their heating frames and their hothouses remain hot inside. Now, as a matter of fact, the heat mechanism of a hothouse depends on a well known proposition of physics. I suppose you are acquainted with the fact that the energy from the sun travels in the form of little waves. The energy does not come down to us in straight lines; it comes, as it were, in a zigzag manner, dancing from side to side as it comes along. If these waves are very short, light is the result; if they are a trifle longer, they take the form of heat. If the light waves strike anything on the way down they are very apt to be turned into heat. Now, the waves which form light are so short that they will readily pass through glass, but the waves which form heat are so long that they will not pass through. From this, therefore, you may see why a hothouse remains hot. The energy from the sun passes into the house through the glass roof in the form of light. Then it strikes the objects in the house and is turned to heat. But this heat cannot pass out through the glass. The heat waves are too long. So the light keeps coming in and the heat keeps accumulating, and soon the hothouse becomes very warm indeed, even on the coldest days in winter."—*Boston Globe*.

It is stated that the everglades of Florida are to be drained, thereby rescuing 600,000 acres of good, rich land from the swamp where it has been submerged as long as our knowledge of the peninsula recurs. Dr. Wiley of the Department of Agriculture places an approximate value of $300 an acre on this land and adds that it will be capable of producing more sugar than the entire island of Cuba. The everglades extend through the southern part of the peninsula, south of Lake Okeechobee, an immense body of water lying near the cen'er of the state. The region is flooded at intervals, but it is several feet above sea level and can be drained by digging an immense ditch to the ocean. This is not a difficult matter as the ground is soft. For that reason it may be a task to keep the ditch open. For cultivation waterflows are suggested. Rice, cane and tropical fruits can be grown, as the everglades are below the frost line. If undertaken, this gigantic scheme will at least have the result of adding a large tract to our agricultural estate. It is an experiment and $2,000,000 of Philadelphia capital is interested, according to the story.—*New York Commercial*.

THE PRAIRIE HOME.

Outward far the rolling landscape reaches,
Loamy billows capped with harvest foam,
Level is the view, and subtly teaches
Man to take the prairie for his home.

Here is beauty, here is silent power,
Here the hidden forces crux and rest,
Here dead centuries have shed their dower—
On the spreading prairies of the West!

Winds are roaming—man need never wander,
Born to earth, he has a rich estate;
Seedtime, harvest and his trust grows fonder,
Here he needs alone to work and wait.

—*Chas. W. Stevenson.*

EVOLUTION OF THE THERMOMETER.

It is probably not generally known that the thermometer was invented by Galileo. When we remember that we owe to this one man not only the foundations of physical science, but also in large measure the pendulum, the compass, the telescope and the microscope, it may lead to a certain amount of modesty in our appreciation of modern inventions.

Galileo, probably in 1596, invented the open air thermoscope. Ferdinand II., of Tuscany, first sealed the glass, making the instrument independent of atmospheric pressure. Many improvements were gradually made, especially in the endeavor to fix points on a definite scale, the freezing point of water being first used by Robert Hooke in 1664. Of the three thermometers still in use, Fahrenheit's thermometer was invented in 1709, Reaumur's instrument in 1730, and the scale of Celsius—the centigrade scale—in 1742. None of these thermometers, however, is now used in the form in which it was originally devised. It is a somewhat curious fact that the instrument constructed by the German, Fahrenheit, is used most exclusively by the English speaking people. That invented by the Frenchman, Reaumur, is used chiefly in the north of Europe, while that of the Swede, Celsius, is used in French speaking countries. The centigrade scale, the zero point of which is the freezing point of water, is now used nearly universally in scientific investigations. The main objection to its common use is the length of the degree, the interval between the freezing point and the boiling point of water being divided into 100 instead of 180 degrees, as on the Fahrenheit scale. This makes the length of a centigrade degree nearly twice—nine-fifths—that of the familiar Fahrenheit degree.—*Popular Science Monthly*.

A TYPHOON IN THE PHILIPPINES.

H. Phelps Whitmarsh in the *Atlantic Monthly:* Yesterday nature bore herself proudly; now she appears overwhelmed and tearful. The plumed bamboos which held themselves so haughtily are now spread and bent under the incessant beat of the rain, and cataracts run through their battered leaves. The fields have turned to lakes, the streams are rivers, the rivers are floods; and these roofs of bamboo and nipa are irrigating pipes guiding numberless jets inside the houses.

In the meantime the rain has grown heavier. At intervals cold gusts of wind are flung from the north and the horizon darkens with clouds more black than ever. The barometer, moreover, has fallen a degree. In these suspicious days of the colla, every white man looks at this sentinel of the atmosphere more often than a vain girl looks into a mirror. The barometer to me in my loneliness is a welcome companion. When it falls, I prepare myself for the worst, and when it rises I anticipate the end of the storm.

The rain falls heavier and heavier; the world, seen from my window, is a muddy flood and my house an ark. The barom-

eter is still falling. The dial hand already points to the remark "with winds from the northeast and northwest the baguio approaches." Soon I can hear the wind coming. With a sudden gust to which the house heels like a ship, it is upon us. A great guava tree falls with a crash outside, and the nipa shutters go flying to leeward. The wind converts the raindrops into projectiles which pierce the house at all points with the violence of hailstones.

Night falls early; dark, drenching and furious. "The waters are out," and the storm carries with it a terrible note. And the glass is still falling. Will it never end? Rumors of destruction come in from the forest at intervals of a minute, together with the crashings of torn branches and the blowings, it seems, of a hundred horns. Gusts of wind and water combined come howling over the flood and hurl themselves against the house. At each onset the building cracks and staggers more than ever like a storm-tossed craft.

But at last the monster seems to be seeking its prey in another direction, and turns slowly eastward, hungry for more ruins. Southward, then, unless the law of storms is wrong, it will cause the greatest ravages. The vortex, to which all the radii of this gigantic wheel of the baguio converge, will pass through the south of the archipelago.

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 29.98 inches; highest observed, 30.44 inches, at Sioux City, on the 11th; lowest observed, 29.55 inches, at Sioux City on the 30th; range for state, 0.89 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 109 stations, was 64.6 degrees, which is 5.6° below normal. By sections the mean temperatures were as follows: Northern section 64.1 degree; central section 64.5 degrees; southern section 65.3 degrees. The highest monthly mean was 67.8° at Tipton; lowest monthly mean, 59.4° at Ogden. The highest temperature reported was 96°, at Cedar Rapids and Sigourney on the 26th and 30th; lowest temperature reported, 30°, at Denison, on the 4th. The average monthly maximum was 89.7°; average monthly minimum, 38.6°. Greatest daily range, 50° at Scranton; average of greatest daily ranges 34.1°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 125 stations, was 2.86 inches, which is 1.52 inches below normal. The averages by sections were as follows: Northern section, 2.84 inches; central section, 2.89 inches; southern section, 2.85 inches. The largest amount reported was 6.04 inches at Humboldt; least amount reported, .75 of an inch, at West Union. The greatest daily rainfall reported was 3.00 inches at Washta, on the 30th. Average number of days on which .01 of an inch or more was reported, 10.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 66 miles per hour, from the northwest, at Sioux City, on the 8th. Average number of clear days 13; partly cloudy, 10, cloudy, 7.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	29.95	30.29	11	29.67	19
Des Moines	30.00	30.39	11	26.63	30
Dubuque	30.02	30.35	11	29.68	30
Omaha, Neb	29.98	30.41	11	29.53	30
Keokuk	29.94	30.30	11	29.65	19
Sioux City	30.02	30.44	11	29.55	30
Means	29.98	30.44	11	29.53	30

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	4605	21	NE	1
Des Moines	4522	28	W	8
Dubuque	3735	22	NW	8
Keokuk	4740	20	NW	8
La Crosse, Wis.	4413	37	S	30
Omaha, Neb	4950	36	N	8
Sioux City	6701	66	NW	8

OBSERVERS' NOTES.

ALTA.—*David E. Hadden.* Compared with thirteen preceding Junes the month just closed was 5.4° cooler, and the precipitation was .91 of an inch below the normal.

AMANA.—*Conrad Schadt.* The Iowa river was at its highest on June 1st, being about six to eight inches above last year's flood mark.

BONAPARTE.—*B. R. Vale.* A seasonable month; too cool for corn till just at the close.

BRITT.—*Geo. P. Hardwick.* No serious storms except on morning of the last day, when high and damaging wind swept over south half of county; corn uneven and late; grain below average.

CLINTON.—*Dr. Luke Roberts.* Mean temperature 65.4°, which is 4.3° below normal, and 1.7° below June, 1902, which was then a record breaker as a cold June. The average of the first decade was 64°; second decade, 63.7°; third decade, 67.5°. Rainfall 1.66 inches, or 2.89 inches below normal. Very little fell after the 5th and crops were much in need of it before the close of the month.

COLUMBUS JUNCTION.—*J. B. Johnson.* On 1st and 2nd the Iowa river was higher than in 1881.

EARLHAM, R. F. D.—*Geo. Phillips.* Corn was smallest for years at close of month; small grain and grass never looked better.

ESTHERVILLE.—*Earle W. Peterson.* A severe windstorm swept through the northwestern part of Emmet county on afternoon of 24th; in its path, about three rods wide, all buildings were destroyed.

GRAND MEADOW.—*F. L. Williams.* The month was favorable to most crops; there were extreme variations between day and night temperatures.

HANLONTOWN.—*Miss G. M. Paschen.* There was frost on night of 11th which did some damage to corn and other tender vegetation on low ground.

HUMBOLDT.—*H. S. Wells.* Rainfall 6.04 inches; much low ground still unplowed; corn has made advance; haying begun; small fruit and apples good.

LARRABEE—*H. B. Strever.* Wet weather retarded field work first half of the month; frost on the 11th did little damage.

RIDGEWAY—*Arthur Betts.* Month was fine, with 333 hours of sunshine, though the temperature was 3 degrees below normal. I have been reporter since May, 1882, and never reported so small rainfall (1.22) for June. Northern lights were very beautiful on evening of 4th, passing beyond the zenith.

STOCKPORT—*C. L. Beswick.* Continued rainy weather the first six days and continued dry the last nine days of the month, with rain badly needed at close.

STORM LAKE—*L. E. Burdick.* Small grain rank; corn backward; potatoes commencing to rot. Rainfall for month 4.85 inches.

WASHTA—*H. L. Felter.* Rain 4.42 inches; a very heavy storm on night of 29th; lightning struck an elevator at Washta and burned it.

WAUKEE—*E. J. Leonard.* Rain 3.11 inches; month remarkably free from storms; only one heavy rain (1.61 inches) fell, on 18th; continuous northeast wind for nine days, from May 29th to June 6th.

WHITTEN—*Frank P. Butler, M. D.* Frost on morning of 12th but little damage resulting; rain on 30th was a great help to all vegetation, corn making rapid progress.

CLIMATOLOGICAL DATA FOR JULY, 1903.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	PRECIP., IN INCHES. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days	SKY. Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.	DATES OF THUNDER STORMS.
Algona	Kossuth	1,213	28	65.4	-4.6	91	29	41	12	34	4.26	- .14	2.40	....	10	7	19	4	NW	29,30
Alta	Buena Vista	1,513	11	63.3	-5.7	87	30	38	11	30	4.85	- .69	2.05	...	14	12	15	3	N	7,8,18,25, 29,30
Alta (near)	Buena Vista	....	....	.....	.....	.....	.....	.....	.....	.....	5.25	.....	1.81	....	14	....	....	....	.....	
Britt	Hancock	1,236	5	64.9	-3.6	90	30	36	12	38	2.58	-2.02	1.07	..	16	3	22	5	NE	28,29,30
Charles City	Floyd	1,012	11	62.6	-6.1	86	16,28,29	34	12	33	1.93	-2.86	.40	..	10	17	1	12	E,NW	30
Clear Lake	Cerro Gordo	1,241	....	67.4	.....	95	26	37	12	44	1.60	.....	.50	....	6	15	10	5	SW	
Chester	Howard	.....	....	61.8	.....	85	15	32	12	36	2.28	.....	.62	....	6	....	....	....	.....	
Decorah	Winneshiek	875	8	63.2	-5.5	88	15,30	39	12	30	1.57	-2.65	.62	..	7	....	....	....	.....	
Dows	Wright	1,142	....	63.4	....	88	30	37	12	33	3.07	.....	1.80	....	11	18	7	5	NE	30
Elkader	Clayton	727	21	64.0	-5.7	90	7	34	12	40	1.50	-2.33	.50	..	8	15	12	3	NW	7,8,18,29, 30
Estherville	Emmet	1,298	7	62.9	-5.7	86	30	38	11,12	33	3.36	+ .27	1.00	....	14	14	7	9	NW	29,30
Fayette (c)	Fayette	.....	..	61.8	-6.8	88	30	30	1,12	42	1.91	-3.70	1.10	....	7	....	....	....	NW	
Forest City	Winnebago	1,226	8	63.6	-4.5	85	29,30	38	12	30	1.70	-3.36	.68	..	7	17	1	12	W	
Grand Meadow	Clayton	1,180	11	63.8	-3.8	87	8	39	12	32	1.90	-3.23	1.10	.	8	14	11	5	NE,NW	29,30
Greene	Butler	924	5	64.4	-5.8	90	30	36	12	37	2.56	-1.39	1.00	....	10	6	15	9	SE, W	
Hampton	Franklin	1,155	12	65.0	-3.5	88	30	39	12	30	2.49	-2.48	1.12	....	12	10	11	9	NE	
Hanlontown	Franklin	.....	....	61.0	.....	88	30	35	12	34	1.23		.37	....	8	18	9	3	NE	8,20,29
Humboldt	Humboldt	1,095	10	64.8	-5.6	89	30	40	11,12	32	6.04	+1.63	1.67	....	13	14	11	5	NW	1
Lansing	Allamakee	.....	....	64.9	.....	87	7	35	12	42	2.08	.....	.70	..	5	16	7	7	.....	
Larchwood	Lyon	.....	....	64.6	...	91	29	35	11	44	3.34	.....	1.84	....	13	20	7	3	S	17,18,19,25, 26,29,30
Larrabee (a)	Cherokee	1,366	...	65.4	.....	93	28	34	11	41	3.02	.....	.96	...	11	11	14	5	.....	
Le Mars	Plymouth	1,224	6	64.8	-4.8	92	30	36	11	36	3.80	- .11	.70	....	12	8	18	4	S	
Mason City	Cerro Gordo	1,132	...	65.6	....	87	30	42	12	30	1.42	.....	.38	....	8	16	19	5	E	1,18,19,29,30
New Hampton	Chickasaw	1,169	...	.....	.....	.....	.....	37	12	.....	2.09	.....	.84	....	8	17	9	4	NW	
Northwood	Worth	1,222	6	63.4	-4.1	81	15,30	38	12	27	3.24	-1.21	1.51	....	10	16	9	5	NE,NW	19,29,30
Osage	Mitchell	1,184	11	63.1	-3.7	85	30	38	12	32	2.10	-2.20	.99	..	9	12	9	9	E,NW	4,19,29,30
Plover	Pocahontas	1,190	5	64.8	-5.0	90	30	38	11,12	34	3.50	+ .00	.71	....	13	15	8	7	SW	1,17,29,30
Primghar	O'Brien	.....	..	63.9	.....	89	30	37	11	33	3.22	....	1.00	..	10	22	..	8	NE	
Ridgeway	Winneshiek	1,215	....	66.3	.....	89	30	41	11,12	34	1.22	.....	.45	....	12	18	7	5	NE	4,18,29,30
Sheldon (b) ‡	O'Brien	1,422	....	63.4	.....	86	7,28,29	42	10	35	2.82	.....	.80	..	12	....	....	....	S,SW	
Sibley	Osceola	1,512	8	63.4	-4.1	87	30	36	11	34	3.82	- .56	1.28	....	12	5	21	4	SW	
Sioux Center	Sioux	.....	....	64.0	....	89	30	38	11	33	2.99	.....	.88	....	13	14	11	5	.....	8,18,19,25, 29,30
Spirit Lake	Dickinson	1,458	8	64.2	-4.6	88	28	42	11,12	31	3.27	.....	1.35	...	6	8	20	2	NW	
Storm Lake	Buena Vista	1,440	7	63.8	-4.2	87	29	38	11	30	4.85	- .03	1.95	....	16	15	8	7	SE	7,8,18,19, 26,29,30
Washta	Cherokee	1,157	....	....	.....	.....	.....	.....	.....	.....	4.72	.....	3.00	....	9	16	10	4	S	
Waverly	Bremer	942	6	63.6	-6.0	87	30	37	12	31	1.86	-2.80	.78	....	12	12	14	4	.....	6,18,29,30
West Bend	Palo Alto	1,197	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	.....	
West Union	Fayette	....	....	.....	.....	.....	.....	.....	.....	.....	.75	.....	.75	..	1	18	....	12	NW	
Average		.....	....	64.1	-4.9	88.1	.....	38.5	.....	34.1	2.84	-1.39	.....	....	10	13	11	6	NW	

CENTRAL SECTION.

Amana	Iowa	721	25	64.9	-5.0	93	30	36	12	33	1.33	-3.07	.48	....	8	13	11	6	NE	4,7
Ames	Story	926	20	64.8	-5.3	90	30	37	12	32	1.97	-2.58	.68	...	15	14	12	4	NE	18,29,30
Baxter	Jasper	998	...	64.4	.....	89	30	36	12	33	1.42	.....	.25	...	10	14	9	7	NE	
Buckingham	Iowa	.....	.....	...	.....	.....	.....	.....	.....	...	2.40	.....	1.21	....	6	9	20	1	.....	
Carroll	Carroll	126	12	64.0	-5.9	90	29,30	36	11,12,13	39	4.99	† .53	2.10	...	12	16	7	7	.....	6,18,24,29,30
Cedar Rapids	Linn	733	19	65.4	-5.5	96	30	41	11	40	1.14	-2.69	.33	....	8	7	17	6	NW	
Clinton	Clinton	609	34	65.6	-4.3	94	30	37	12	36	1.66	-2.80	.45	..	7	11	8	11	NE, NW	3,4
Davenport	Scott	606	31	66.1	-4.8	91	30	41	12	28	2.28	-2.11	1.04	....	6	13	7	10	W	3,4
Delaware	Delaware	1,033	11	63.2	-5.8	87	30	38	12	36	2.12	-1.94	1.30	....	8	13	14	3	NW	
Denison	Crawford	1,180	8	61.4	-7.5	86	30	30	4	36	3.17	- .41	1.45	....	10	18	7	5	N,S	
Des Moines	Polk	841	24	65.8	‡0.0	92	30	43	12	29	3.06	-2.30	1.56	..	12	5	17	8	SW	3,7,8,18,30
De Soto	Dallas	866	....	64.9	.....	89	30	42	12	31	3.82		1.46	..	13	19	5	6	NE	
Dubuque	Dubuque	655	29	64.6	-4.9	87	30	40	12	30	2.16	3.04	.68	....	11	14	8	8	NW	4,29,30
Fort Dodge	Webster	1,126		61.8	.....	87	30	37	12	38				....	....	....	....	....	.....	
Galva (c)	Ida	1,290	8	63.6	-5.8	89	30	34	11	40	4.07	† .19	1.80	..	6	....	....	....	.....	
Gilman	Marshall	1,052	....	.....	.....	.....	.....	....	.....	.....	2.56	.....	.42	....	8	16	8	6	E	
Grinnell (near)	Poweshiek	.....	....	65.3	.....	92	30	37	12	37	1.90	.....	1.23	....	11	13	11	6	NW	3,8,29,30
Grundy Center	Grundy	976	11	63.6	-5.9	88	30	38	12	33	3.14	-1.77	1.96	....	14	11	13	6	NE, NW	8,10,30
Guthrie Center	Guthrie	1,077	6	65.6	-4.7	91	30	38	11,12	37	3.62	- 02	1.00	..	10	12	15	3	NE	25
Harlan	Shelby	1,192		65.0	.....	91	30	37	11	36	2.83	.....	.83	....	13	6	20	4	SW	8,18,22
Independence	Buchanan	921	38	62.8	-6.1	87	30	35	12	30	3.32	-1.41	1.90	..	7	20	7	3	NW	4,30
Ida Grove	Ida	1,220	....	65.6	..	91	30	38	11	36	3.45	.....	1.52	..	12	8	20	2	S	24,25,29,30
Iowa City	Johnson	685	43	64.8	-5.6	89	29	39	12	32	1.95	-2.62	.59	....	10	2	15	13	N	
Iowa Falls	Hardin	1,107	9	62.2	-6.8	86	30	34	12	32	2.15	-2.04	1.00	....	9	14	7	9	NE	28,30
Jefferson	Greene	1,052	....	.....	.....	....	.....	.....	.....	.....	4.58	.....	1.20	...	16	....	....	....	NE	4,5,9,18,19, 25,29,30
LeClaire	Scott	576	....	.....	.....	....	.....	.....	.....	.....	3.04		.68	....	10			....	W	
Logan	Harrison	928	35	65.4	-4.8	93	29	38	11	49	3.73	-1.92	.88	....	9	17	8	5	E	
Maquoketa	Jackson	688	9	62.7	-8.0	87	8	33	12	35	2.10	-3.25	.67	....	9	16	10	4	NE	
Marshalltown	Marshall	947	9	64.1	-5.6	90	30	36	12	35	2.74	-1.46	.64	....	13	12	4	14	NW	30
Monticello	Jones	925	48	65.6	-3.0	89	30	36	12	38	4.03	- .24	1.95	....	8	13	8	9	SW	2
Mt. Vernon	Linn	847	35	66.1	-4.7	91	30	38	12	35	1.17	-2.88	.46	....	10	14	5	11	NE	30
Newton	Jasper	944	14	63.6	-7.1	90	30	38	13	37	1.87	-2.73	.54	...	11	14	13	3	NW	
Odebolt	Sac	1,356	5	65.2	-5.6	94	29	37	11	36	2.70	-1.61	.50	....	13	15	11	4	.....	
Ogden	Boone	1,088	8	59.4	-10.4	88	30	36	11	44	5.42	† .97	2.50	....	11	17	1	12	SE	
Olin	Jones	760	...	63.8	.....	90	30	35	12	33	1.42	.....	.75	....	9	12	14	4	E	
Onawa	Monona	1,053	....	67.2	....	93	30	43	11	34	3.85	.....	1.65	....	12	23	1	6	SW	4,8,9,10,19 20,24,25,30
Perry	Dallas	975	....	65.2	.....	87	30	40	12	32	3.09	.....	.80	....	11	....	....	....	.....	3,7,8,18,19 25,29
Rockwell City	Calhoun	....	....	65.8	.....	90	30	41	11,12	30	5.93		1.38	...	14	18	4	8	.....	
Sac City	Sac	1,278	22	65.0	-6.2	91	30	39	11,12	30	4.20	- .85	1.02		14	13	6	11	S	1,2,7,16,17,18 21,24,29,30
Scranton	Greene	1,172	....	.....	.....	94	29	.....	.....	50	4.24		1.50	....	13	...	....	..	SE	3
Sioux City	Woodbury	1,165	13	66.0	-4.3	93	30	40	11	30	5.65	†1.85	2.83	....	13	8	16	6	NE	
Stuart	Guthrie	1,216	5	64.2	-7.2	90	30	40	1	41	4.09	† .12	1.15	...	9			....	NW	
Tipton	Cedar	807	....	67.8	.....	92	30	40	12	33	.98	.....	.35	.	5	18	6	6	NE, NW	
Toledo	Tama	856	8	64.0	-6.7	89	30	34	12	35	2.07	-1.53	.80	..	6	14	12	4	NW	
Vinton*§	Benton	810	12	64.8	-6.1	83	27,30	46	12	.....	1.91	-1.71	.78	....	12	19	2	9	NW	
Waterloo	Black Hawk	862	15	63.2	-5.5	85	8,29,30	37	12	32	1.93	-2.03	.61	....	9	14	5	11	NW	4,30
Wilton Junction	Muscatine	683	7	66.0	-5.6	94	30	36	12	33	2.04	- .53	.63	....	6	16	7	7	N	
Whitten	Hardin	1,036	...	65.0	.....	90	29	35	12	38	3.45	.....	2.55	..	5	12	14	4	SE	3,8,19,30
West Branch	Cedar	718	....	.....	.....	.....	.....	.....	.....	....	1.57	.....	.54	....	7	....	....	....	.....	
Waukee	Dallas	1,039	....	.....	.....	.....	.....	.....	.....	....	3.11	.....	1.61		12	8	14	8	NW	18,30
Average		.....	....	64.5	-5.6	90.0	.....	37.7	.....	35.2	2.89	-1.48	.....	....	10	13	10	7	NW	

CLIMATOLOGICAL DATA FOR JUNE, 1903—CONTINUED.

SOUTHERN SECTION.

ATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
.....	Union	1,212	7	66.1	-6.1	94	30	38	12	34	2.97	-1.26	.68	....	11	9	13	8	NE	
.....	Monroe	959	....	64.4		89	29	38	12	32	3.93		1.97	....	7	17	2	11	SW, NW	
ic.	Cass	1,164	11	64.4	-5.6	93	30	36	11	42	3.34	-2 23	1.19	..	8	6	14	10	NE	8,18,21, 24,25
on †.	Audubon	1,301	8	64.6	-4.7	90	30	38	11	36	3.33	- .18	1.10	....	11	19	8	3	SW	
on	Wayne	.....	....	64.8	.....	90	30	36	12	32	3.90	.. .	1.30	....	10	18	9	3	NE	8, 18, 19
rd.....	Taylor	.....		64.6	.....	90	29, 30	38	12	38	1.50	.....	.47	....	7	11	13	6	NE	
arte	Van Buren ...	.....	10	65.8	-7.1	93	30	38	12	31	2.30	-1.42	.88		5	....	....	....	.....	
igton.....	Des Moines....	544	...	66.2	.....	91	30	40	12	31	1.75	.....	.52		8	15	7	8	SW, NW	
on.	Lucas	1,042	7	64.0	-7.1	90	30	37	12	32	3.61	- .25	1.00	....	9	16	0	14	N	
da.....	Page.	1,069	12	66.3	-5.9	93	29, 30	41	12, 13	36	3.29	-1.38	1.02		12	15	12	3	NE	
e Springs..	Page.....		10	67.0	-4.5	91	15, 30	42	12	36	1.44	-2.50	.62	....	9	20	6	4	NE	
ibus Junc'n	Louisa.	595	....	65.7	.....	91	30	40	12	39	2.69	.....	.55	.	6	15	10	5	NW	7,8,18,21,24, 25
ng.....	Adams	1,127	10	64.2	-6.7	89	30	40	11, 12	32	3.38	- .66	1.06	...	8	10	15	5	SW	
on.....	Wayne	992	9	64.4	-7.0	88	30	37	12	32	4.31	† .17	1.86	....	11	14	13	3	NE	8, 18
il Bluffs (*b*)	Pottawattamie	990	5	66.4	-7 3	91	29	42	12	40	1.83	-3.34	.60	....	7	16	11	3	NW	
erland.....	Cass	.....	....	.....	.....	....	....		.....	....	2 93	.....	1.35	...	8	21	2	7	NE	
lle.....	Des Moines	726	....			....	. . .	.....	.....	.....	3.64	.....	1.05	....	7	17	0	13	....	
am ...	Madison.	.....		62.6	...	88	30	34	12	38	4.20	.	1.28	..	12	10	5	15	E	7, 8, 18, 21, 24
Madison.	Lee	516	51	...	....	.	.....	.....	.....	.....	2.49	-1.76	1.75	.	8	6	14	10	S	2, 3, 4, 5, 18, 21
rfield....	Adair	....	11	64.1	-7.0	89	30	40	12	28	4.83	- .17	1.49	..	12	13	10	7	NE	3, 7, 8, 18, 21, 24, 25
ville.....	Clarke.....	.....	11	64.3	-6.2	93	30	39	12	39	3.06	-1.16	.86	.	12	5	18	7	.....	
uk	Lee	619	31	67.0	-5.5	91	30	44	12	26	1.40	-3.14	.46	..	8	11	16	3	NW	4, 8, 18, 21
uqua (*a*). ..	Van Buren	664	10	65.0	-8.5	89	29	36	12	34	2.41	-1.15	.72	....	8	...	...	...	.....	
na	Warren	.....		.....	....	.....	.....	.....	...	....	4.60	.....	1.00	..	13	7	17	6	.....	
r	Taylor	1,250	7	64.5	-6.3	89	30	40	12	26	2.65	-1.22	.91	...	9	18	8	4	NE	
.....	Decatur.....	1,120		66.2		91	30	39	12	30	2.64	.....	.85	....	11	21	7	2	N	4, 8
.....	Ringgold..	1,236	8	64.6	-6.7	85	18, 30	38	12	31	3.38	- .64	.67	....	11	11	10	9	NW	
yr.....	Henry.....	729	20	66.3	-5.9	94	30	42	11	39	1.05	-2.31	.60	....	5	16	13	1	SW	
leasant	Douglass.....	1,113	32	67.6	-3 9	95	30	48	1	24	1.31	-4.36	.47	..	11	14	11	5	N	7, 8, 18, 19, 20 21, 24, 29
a, Neb.																				
la.....	Clarke....	1,130	6	64.2	-7.3	88	30	37	12	34	4 13	- .01	1.80	...	11	20	3	7	NW	8
loosa.....	Mahaska	843	18	64.7	-5.4	91	30	38	12	29	1.73	-2.28	.37	....	8	15	4	11	SW	
nwa	Wapello	649	8	66.6	-6.5	91	30	45	12	31	2.37	- .84	1.20	..	7	15	10	5	SW	
ic Junction..	Mills.	960		66.6	.....	93	30	41	11	35	1.70	.	.48		7	6	22	2	S	
Oak	Montgomery..	1,033	....	66.3	....	91	30	46	11	29	3.25	.....	1.00		11	4	23	3	NE	8, 19, 21, 24, 25
harles.....	Madison.....	1,070	....	65 2	.....	91	30	41	12	28	5.21	.....	2.09	....	12	17	10	3	SW	18
urney	Keokuk	787	6	66.2	-7.3	96	30	35	12	39	1.72	- .99	.54	..	6	17	11	2	NW	3, 7, 8, 18
sport.....	Van Buren....	.....	...		.....	.	....	.....	.....	.....	1.42	.....	.53		10	21	1	8	NE	
man.....	Fremont	.....	---	66.2	.....	94	30	41	11	35	1.62	.....	.44	..	9	16	9	5	SW	
ello	Louisa... ..	588	....	64.8		89	30	42	12	22	2.99	.....	.80	....	7	18	11	1	W	
ington.....	Washington...	769	20	63.8	-8.7	92	30	35	12	34	1.70	-1.28	.64	...	6		....		E	
erset	Madison.	1,129	11	65.4	-5.4	92	30	39	12	36	4.23	-1.52	1.25	..	12	14	7	9	SE	7
dburn.....	Clarke.....	961	....	. ...	.....	.....	....	.....	.....		3.77	... .	1.67	....	11	12	12	6	NW	
Average.....	....	.....	..	65.3	-6.4	91.0	.....	39.5	.....	32.9	2.85	-1.44	.....	....	9	14	10	6	NE	
age for state	.....	.....		64 6	-5.6	89.7	.....	38.6	.....	34.1	2.86	-1.44	.....	....	10	13	10	7	NW	

Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. † Above normal.
eived too late to be computed with means. (*a*) One day missing; (*b*) two days, etc. § Not supplied with self-registering instruments.

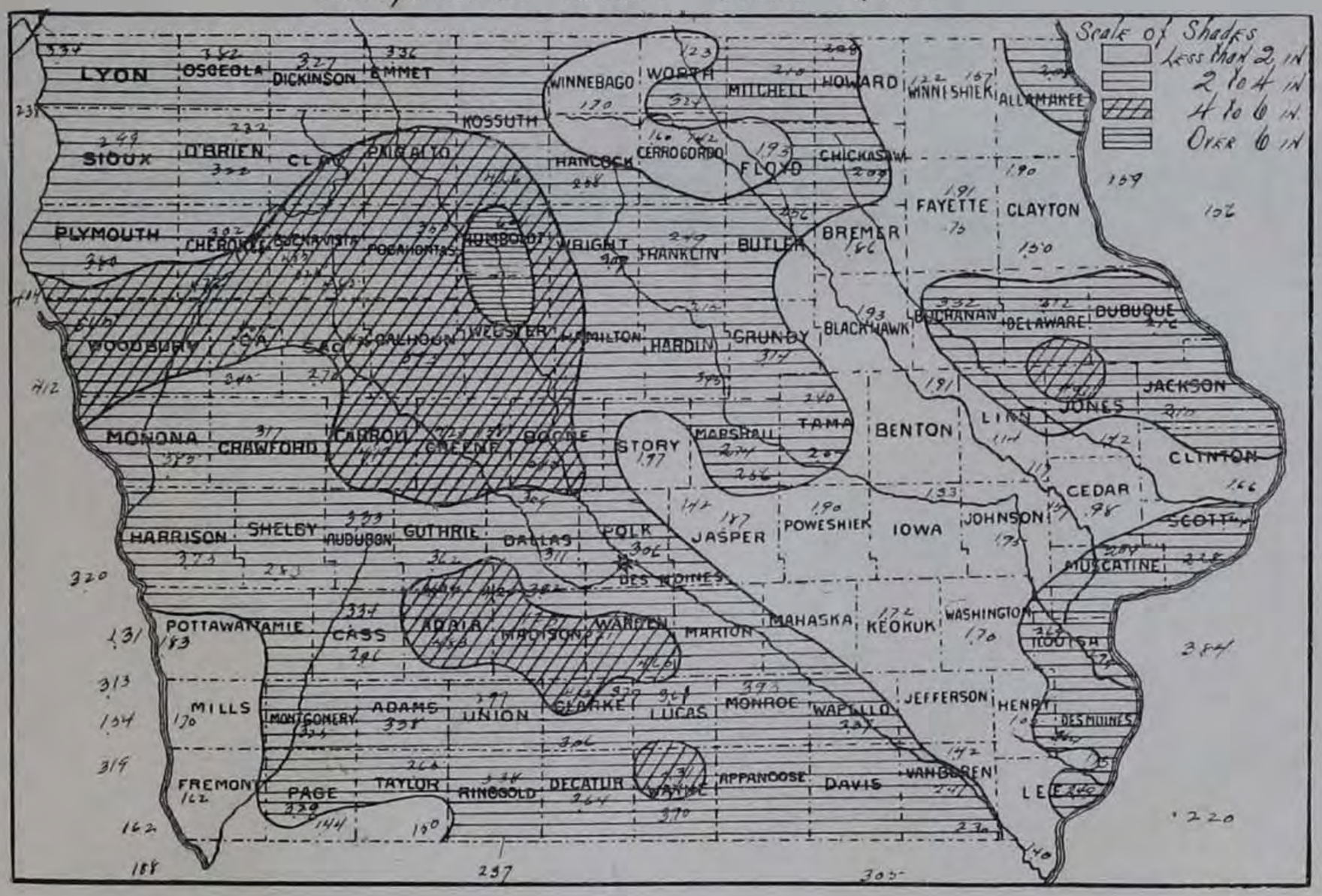
DAILY AND MONTHLY PRECIPITATION FOR JUNE, 1903.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	.38	....	.07	.02	.24	....	.16	.42	.04	...	....	....	....	....	....	....	....	.29	....	....	.68		....	.13	.54	....	....	....	..	....	....	2.97
Albia.	.70	.22	....	T	.07	.10	T	...	.15	....	....	....	....	....	....	....	....	....	1.97	...	....	.72	....	....	....	....	....	....	....	..	..	3.93
Algona	.40	.10	....	...	....	.20	..	.05	....	....	....	....	....	....	.02	....	....	.37	.25	....	.05	..	....	....	....	....	....	....	.42	2.40	....	4.26
Allerton	.70	.09	.03	.16	T	....	.	.10	T	....		....	....	....	....	..	.	1.30	.19	T	1.00	.32	....	.01	....	....		....	....	....	....	3.90
Alta.	.28	....	.10	.09	....	....	T	.26	.03	T	....	....	....	....	....	.19	....	.68	.54	.03	.27	....	....	.23	.04	....	....	....	2.05	.06	....	4.85
Alta (near)	.17	.01	.04	.12			.13	.22	.21	..	....	....	....	....	....	.20	....	1.39	....	....	.28	....	....	.53	.08	....	....	....	1.81	.06	....	5.25
Amana	.48	.06	T	.01	.10	....	.22	.02		....	....	....	....	....	....	..	..	....	....	....	.17	.27	....	....	....	....	....	..	....	....	....	1.33
Ames.	.13	.06	.03	.03	.02	....	....	.01	.02	...	....	....	....	....	....	..		.49	23	.01	.18	.03	....	.01	....	....	..	....	.04	.68	....	1.97
Atlantic	.38	....	....	.05	.		T	.22	T		....	..	..	....	....	...	....	T	.16	....	1.19	....	.12	.52	.70	....	....	T	....	....	..	3.34
Baxter	.25	...	.05	.10	.10	....	...		.05	....		....	....	....	....	....	....	.10	....	12	.15	.25	....	....	....	....	..	....	....	.25	....	1.42
Bedford.	.23	.18	.11	.07	T	....	....	.08	T	....	....	....		....	....	....	...		....	T	.47	....	....	T	.36	..	....	..	....	....	..	1.50
Bonaparte	.50	....	...	.03	.88	....	....	....	....	....	....	..	.	....	...	...	....	.30		....	.59	....	....	....	....	....	....	....	....	....	....	2.30
Britt	.17	.03	.01	.05	.01	..	.01	.13	T	.01	....	....	..		....	..	....	.42	.04	.01	.08	.01	....			....	..	.17	.36	1.07	..	2.58
Buckingham	.28		T	T	.09	....	....	.05	T	T		...	....	..	..	T	..	T	.18	T	.59		....	T	....	....	..	T	T	1.21	....	2.40
Burlington	.52	.04	.46	.15	.23	....	....	....	T	.06	..	..	..		....	....	....	....	T	....	.26	.03		....	.....		....	....	..	..	....	1.75
Carroll	.18	.15	.05	T	..	....	.42	.05	....	....	....	....	....	....	....	....	..	1.70	.40		....	.68	T	.35	....	....	....	....	.40	.61	....	4.99
Cedar Rapids	.33	T	.05	.30	.06	.	T	.02	....		....	....	....	....	....	..	....	T	T	....	.32	.04	....	....	..	....	....	....	.02	....	..	1.14
Chariton	.50	T	.17	.64	.15	....	....	.22	T	T	....	....	....	....	....	....	..	55			1.00	.15	....	.23	....	....	....	....	....	....	..	3.61
Charles City	.40	.10	....	..	.30		.04	....	.05	....	....	....	....	..	....	..	....		.04	.38	....	.18	....	..	....	....	.	.04	.	.40	..	1.93
Chester	.56	....	....	..	....	..	....	.10		....	....	....	....	....	....	....	....	....	.50	....	.13	....	....	....	....	....		....	.37	.62	..	2.28
Clarinda	.64	.20	.03	.16	.05	....	....	.23	.09	....	....		....	....	....	....	....	....	.03	....	.78			.06	.11	.91	....		....	....	....	3.29
Clear Lake	.25		..	T		....	....	.10		T	....	....	....	....	....	....	..	.30	....	....	.10	D	....	....	....	....	....	....	.35	.50	...	1.60
Clinton	.32		.12	.45	.41	....	....	....	....	.02	...	....	....	....	....	....	....	....	.14	....		.20	....	....	....	....	....	....	....	....	....	1.66
College Springs	.23	.05	T	.01	.01	..	....	.12		....	....	....	....	....	....	....	....	....	.02	....	.36	....	....	.02	.62	....	....	....	....	....	....	1.44
Columbus Junct'n	.40	.13	.31	.81	....			....	....	T	..	....	....	....	....	....	....	....	T	....	.49	.55	....	....	....	....	....	....	....	....	....	2.69
Corning.	.39	.04	T	T	.06	..	T	.83	T	....	....	....				....	....	.29	....		.73	....	....	.01	1.06	....	..	T	....	T	....	3.38
Council Bluffs	.60	T	.02	.36	.01	....	....	.21	....		....	....			....	....	....	T	....	....	.27	....	T		.36	....	....					1.83
Corydon	.61	.07	.08	.06	.08	.01	..	.22	T	T	....	....	....	....	....	....	....	1.86	.08	....	.84	.29	....	.11	..	....	....	....	....	....	....	4.31
Cumberland	.10	....	T	.02	....	....	..	T	....	....	....	..	....	..	....	....	....	.35			1.35	....	.35	.26	.38	.15	....	....	....	....	....	2.96
Danville	.85	.50	.67	1 05	T	..	....	..	....	....	....		T	....	....	...	T	....	T	.14	.32	.11	....	....	....	....	....	....	....	....	....	....	3.64
Davenport	.87	T	.05	.18	.14	....	....	....	....		T	....	....	....		....	....	T	T	T	.33	.71		....	....	....	....	....	T	..	...	2.28
Decorah	.47	....	....	.04	....		....	....	....	...	....	....	....	....	....	.02	.10	..	.13	....	.19	....	....	....		....	....	....	....	.62	....	1.57
Delaware	....	....	....	.20	....	.02	....	....	.05	.	....	....	....	....	T	....	....	.10	.15	T	.25	.05	....	....	....		....	....	T	1.30	....	2.12
Denison	.08	T	..		T	....	.27	.18	....	....	....		....	....	....	...		.04	.62	.04	1.45		....	14	....	.15	....	....	.20	T	....	3.17
Des Moines	.17	.05	.07	.04	.08		T	.10	.08	T	....	....	....	....	....	....		1.47	.09	....	.80	.09	....	T	T	....	....	..	....	.02		3.06
De Soto	.30	.05	.25	.40	.10	....	T	.40	.09	T	....	....	....	....	....		....	1.46	.10	.02	.56	.05	..	....	..	....	..	..	....	.04	..	3.82
Dows	.22	.04	T	.17	...	....	T	.08	.10	.10	.	....		..	....	....	....	T	.27	....	.09	.07	....			....	....	T	.13	1.80	..	3.07
Dubuque	.47	.10		.06	.12	....		T	.08	.01	..	....	....	....	....	T	....	.03	.50	...	.09	.02	....			....	....	....	....	.68	...	2.16
Earlham	.46	.11	.39	.06	.02	..	.01	70	.01	....	....	....	....	....	....	....	....	.57	....	T	1.28	T	....	.08	.51	....	....	T	....	....	....	4.20
Elkader	.31	...	...	.05	.02		..	03	...	....	....	..	....	....	....	T	....	.05	....	....	.50	06	....	..	....	....	....	....	....	.48	..	1.50
Estherville	.04	.15	.05	.55	.04	.03	...	T	.15	T	T	....	...	....	....	...	....	.55	20		....	.16	....	..	20	T	..	.08	.16	1.00	....	3.36
Forest City	.12	T	.	T	....	....	....	T	.12	....	...	....	....	....		....	....	.45	.10	T	T	.12	...	..	....	....	....	.11	T	.68	....	1.70
Fort Madison	.30	T	.19	.13	1.75	....	....	.05		T	. .	....	..	....		....	....	.14	....	....	.70	.23	....		....	....	....	..	....	....	....	2.49
Galva	.20	T		....		....	....	....	....	....	....	....	....	....	T	....	....	....	.50	T	.50	...	....	.75		....	....		.32	1.80	....	4.07
Gilman	.30	T	.25	T	.30	T	T	T	....	T	....	....	....	....	....	..	....	.10	.18		.21	.42	....		....	....	....	....	T	.80	...	2.56
Grand Meadow	.06	T	....	.02	.03	....	....	....	....	....	....	....	....	....	....	....	....	.02	....	....	.55	.10	....	....	..	....	....	T	.02	1.10	....	1.90
Greene	.44	.09	....	.43	....	.03	....	....	....	....	....	....	....	....	...	....	....	.09	.10	...	.18	.08	....	....	....	....	....	....	.12	1.00	....	2.56
Greenfield	.36	.07	.31	.20	.08	..	.01	.52	T	....	....	....	....	....	....	..	...	.28	.04	....	1.33	.02	....	.12	1.49	T		....	....	T	..	4.83
Grinnell	.05	.08	.05	T	.20	....	.05	T	.05	.03	....		..	....	..	....	....	.08	.08		.48	.75		....	..	....	..	T	T	T	....	1.90
Grundy Center	.10	.04	.18	.05	.01	....		T	.01	.11	....	....	....	....	....		..	....	.08	..	.07	.40	....	.08		....		.03	.02	1.96	..	3.14
Guthrie Center	.20	T	.31	.43	.09		T	.11	T		....	....	....	....	....	....	..	.78	.13	....	.55	....	..	.02	1.00		....	....	....	T	....	....	3.62
Hampton	.13	...	.05	.04	....	.37	.	.08	....	.05	....	....	....	....	....	.04	....	.13	.11		.28	....						.09	1.12	....	....	2 49
Hanlontown	.18	....	....	T	....	....	....	T		.12	....	....	....	....	....	....	....	....	.09	.04	.03	....	....	....	....	....	....	.20	.37	.20	....	1.23
Harlan	.12	.08	T	.02	T	....	.04	.23	.02	T	....	....	....	..	....	..	....	.68	.24	.01	.83	T	....	.42	.11	.03	....	....	....	....	....	....	2.83
Hopeville	.51	.03	.04	.10	.03		.07	.21	.03	....	....	....	....	....	...	..	..	.31	....	....	.86	....	....	.07	.80	....	....	....	....	....	....	....	3.06
Humboldt	65	....	.01	.26	..	....	1.11	20	.07	T	..	..	....	..		....	....	.35	.41	.61	.40	....	....	....	....	....	....	.15	.15	1.67	....	6.04
Ida Grove	.06	....	.02	....	.02	....	....	....	.05	...	....	..	....		....	....	....	.21	02	....	1.07	....		1.52	.07	.06	....	..	.17	.18	....	3.45
Independence	.05		....	.20	....	....	....	.01	..	01	...	....	....	....	....	....	.05	....	....	....	....	1.10	....	..	....	....	....	....	T	1.90	....	3.32
Iowa City	.59	.41	T	.04	.39	.05	....	T	.04	..	.03	....	....		....	....	..	....	.	.03	T	.34	.03	....	....	....	....	....	....	T	....	1.95
Iowa Falls	.23	.15	T	.40	.01	....	....	....	T	.01	T	....	....	....	....	T	....	....	T	.10	....	.24	....	....	....	....	..	.01		1.00	....	2.15
Jefferson	...	.25	.12	.15	.40	..	.03	.05	.15	....	...	....	....	....	..	....	....	1.20	.30	....	.32		....	.03	.33	....	....	T	.45	.80	....	4.58
Keokuk	.46	.05	.04	.07	.15		....	.18	....	....	....	..	....	....	....	....	....	....	.30	....	.15	....	....	..	..	....	....	....	....	....	..	1.40
Keosauqua	.71	.30	.02		.10	.02	....	....	.07	....	....	....	....	....	....	....	....	....	.47	....	..	.72	....	....	....	..	....	....	....	.	....	....	2.41
Lacona	.56	.01	.44	.27	.45	....	..	.20	.20	...	...	....	....	....	....	....	....	1.00	....	10	1.00	.30	....	....	.05	....	....	....	....	.02	....	4.60
Lansing	.20	.28	....		....	....	....	T	....	....	....	....	....	....	....	....	....	....	....	.55	.35	....	....	....	....	....	....	....	....	.70	....	2.08
Larchwood	.15	T	T	T	T	.1	T	.13	.14	....	....	....	....	....	....	T	....	.11	.08	.05	.21	....	.10	....	.09	.17	....	..	.14	1.84	....	3.34
Larrabee	.22	.02	.05	.07	.18	....	T	.21	T	T	....	....	....	....	....	.33		.53	....	....	....		.30	.15	.	....	....	.96	....	..	3.02
Le Claire	.52	.68	.09	.56	.11	.22	....	....	....	....	.02	....	....	....	....	....	....	.	....	.33	....	.48	.03	....	....	..	.	....	....	....	..	3 04
Le Mars	.28	....	T	T	T	...	...	.35	.07	T	..	....		....	..	.06	...	.04	.70	.28	.46	....	....	.60	.30	..	....	....	.25	.41	....	3.80
Lenox	.41	.01	.10	.10	T	....	..	.18	....	....	....	....	....	....	....	....	..	.10	....	....	.91	....	....	.16	.68	....	....	....	..	....	....	2.65
Leon	.46	.08	....	.20	.08	....	....	.25	05	....	....		..	....	..	....	....	.05	.85	....	.50	.07	...	.05	....	.	....	....	....	..	..	2.64
Logan	.60	.10	...	.10	....	....	.45	....	....	....	....	....	....	..	....	....	....	.75	.25	....	.53	...	....	....	.07	.88	....	....	....	....	....	....	3.73
Maquoksta	.05	.11	T		.35	.14	....	....	T	....	....	....	....	....	....	....	....	....	.25	.20	..	.30	.03	....	..	..	....	....	....	.07	....	2.10
Marshalltown	.30	.22	.03	.46	08	.02	..	....	.01	.01	.02	....	....	....	....	....	....	....	.12	.40	....	.43	...	..	....	....	....	....	....	.64	...	2.74
Monticello	T	.15	1.01	.10	T	...	T	.32	....	T	....	....		....	....	....	T		.10	.15	....	.25	....		....	....	....	....	1.95	....	....	4.03
Mason City	.30		....	....	.06	....	....	.07	....	....	....	....	....	....	....	....	....	.12	.10	....	.04	....	....	....	....	....	....	T	.35	.38	....	1,42
Mount Ayr	.33	.11	.33	.02	.09	....	....	.67	T		...	....	....	....	....	....	....	.55		....	.65	....	....	.12	.50	.01		T	....	..	....	3.38
Mt. Pleasant	60	....	.13		.01	....	....	.01	....	T	....	....	....	....	....	....	....	T	....	T		.30	....	....	....	....	....	....	....	..	....	1.05
Mt. Vernon	.46	T	.01	.10	.35	T	T	....	.01	T	....	....	....	....	....	T	..	.02	.01	T	.18	.02	....	....	..	....	....	....	....	.01	..	1 17
New Hampton	.37	....	....	.12	..	..			....	..	....	....	..	....	....	....	....	.01	.20	.23	.15		...	..	...	..	....	....	.17	.84	....	2.09
Newton	.35	.05	.10	.08	.07	....	....	.04	T	.04	....	....	....	....	....	....	....	.16	06		.54	.38	....	....	....	....	....	....	T	....	....	1.87
Northwood	.30	...	.07	....	....	....	....	.20	T	T	....	....	....	....	....	.02	....	.01	1 51	T	.04	....	....	....	....	....	....	.04	.74	.31	....	3.24
Odebolt	.21	.05	....	.08	.05	....	.30	.04	.02	....	....	....	....	....	....	....	....	.30	.30	...	.50	....	....	....	.25	....	.30	..		.30	....	2.70
Ogden	.35	.17	T	.24	.20	..		.17	....	.06	....	..	....	....	....	....	....		2.50	....		.13	....	.03	...	.77	....	....	....	.80	....	5.42
Olin	.05	T	.02	.01	.40	....		....	....	.01	..	....	....		....	....	....	.02	.01	T	.15	....	....	....	....	....	....	....	....	.75	..	1.42
Omaha, Neb	.38	.05	T	.05	.01	....	....	.08	T	..	....	....	....	....	....	....	....	T	.10	.02	.33	T	....	.01	.05	.23	....	T	....	T	....	1.31
Onawa	.18	.09	....	.16	T	....	T	.19	.03	.02	..	....	....	....	....	....	..	..	.04	.05	1.65	....	....	.16	1.26	....	....	....	....	.02		3.85
Osage	.35		.05	.02	..	....	....	T	....	....	..	..	....	....	..	....	....	....	.99	T	.15	.02	....	....	....	....	....	.02	.26	.24	....	2.10
Osceola	.06	.17	T	.01	.03	.04	....	T	.65	T	T	....	....	....	....		....	....	1.80	...	.80	.20	....	.01	.07	....	....	....	....	....	....	....	4.13
Ottumwa	.06		.08	.15	.70	....		.03		....	..	.	....	....	..	....	....	.15	....	....	1.20		....	....	....	....	....		....	....	....	2.37
Pacific Junction	42	.08	....	....	T	....	....	.28	T		....		....	..	.	....	..	T	T	.48	....	....	....	.02	.25	17	....	....		....	..	1.70
Perry	.16	.14	.16	.06	T	....	16	.08	.03	T	....		....	..	.	....	..	T	T	.48	....	....	....	.02	.25	17	....	....		....	..	1.70
Plover	.46	.22	.08	T	....		....	.11	.08	.04	....	....	....	....	....	....	....	.80	.40	....	.46	..	....	....	.64	....	....	....	T	....	....	3.09
Primghar	.20	T	T	T		....	T	.26	.20	.07	....	....	....	....	....	.03		.20	.58	....	.44	....	....	.24	....	....	....	....	.08	.71	....	3.50
Red Oak	.48	.08	T	T	.01	...	...	1.00	.01	...		....	....		....	....	....		.12	....	.48	.04	...	.08	.37	.58	....	T	....	1.00	....	3.22
Ridgeway	.09	T	....	.01	...	...	....	.07	.01	.01	....	..	....	....	.03	....	....	.13	.13	...	.12		....	....	....	....	....	.04	.13	.45	....	3.25
Rockwell City	.35	.08	....	.20	.05	.20	.18	...	....	....	..	....	....	..	..	....		1.38	.75	...	.25	.30	..	....	.93	....	....	.05	.25	.96	...	1.22
Sac City	.21	.16	T	T	T	..	.23	.21	.04	T	....	....	..	....	..	04	....	.83	.69	.05	.47	....	...	.06	....		....	.04	.15	1.02	..	5.93
St. Charles	.55	.05	.67	.14	.07	....	.07	.60	.03	....		....	....	....	....		..	2.09	....		.82	.02	..	.10	....	....	....	T	...	T	....	4.20
Scranton	.22	.08	.15	.14	.06	....	.05	.04		...	....	...		....	....	....	....	....	.96	.11	.33	..	....		.20	....	....	....	.40	1.50	....	5.21
Sibley	.11	....	.11	T	.04	....	.11	.12	.25	.01	....		....	....	....	....	....	.96	T	....	.14	...	....	.50	....	....	....	....	.19	1.28	....	4.24
Sigourney	.42	.05	.54	T	.17	....	....	.08		T	....	..	....	....	....	....	....	T	T	....	.46	....	....	....	....	....	....	....	....	....	....	3 82
Sioux Center	.22	.14	.03	T	T	..	.12	.11	.12	T	....	..	....	....	..	T	....	.08	28	T	.20	..		.16	.88	....	..	....	.27	.38	....	1.72
Sioux City	.30	.24	.01	.02	....	..	....	.06	.01	T	....	....	....	....	....	T	..	...	.41	.03	2.83	....	....	.39	.40	..	....	....	.25	.70	....	2.99
Spirit Lake	T	T	T	....	....	....	30	.16	T	T	T		....	....	....	....	....	.85	....	....	.	....	....	....	.36	....	....	....	.25	1.35	....	5 65
Stockport	.10	.15	.25	.05	.02	.01	....	.11	T	T	...	....	...	....	....	....	....	.05	.15	..	.53	....	....		....	..	....	....	....	....	....	3.27
																																1.42

DAILY AND MONTHLY PRECIPITATION FOR JUNE, 1903—CONTINUED

STATIONS.	DAY OF MONTH.																														TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Storm Lake	.42	.05	.04	.04	....	....	.01	.35	.03	T	...	....	....	....	....	.11	....	.93	.40	....	.31	.03		.09	....	.09	....	....	.21	.74	....	4.85
Stuart	.20	.04	.07	.08	.35	....	.30	.56	T	...	....	....	....	....	....	....	....	.59	...		1.15	....			.75	....	....	....	....	....	...	4.09
Thurman	.44	.12	.08	.02	T	...	.	.06	....	....	..	....	....	...	....	...			T	T	28		T	.15	.42	.05	....	....		....	....	1.62
Tipton	.26	...	.16		.14	.07		....	....	T	..	....	....	....	..	..	....	T	T		.35	..	....		..	....	..	....	T		....	.98
Toledo	.30	....	.25	T	.15	....	T	....	T	....	....	....	....	....	....	....	....	...	T	....	.55	....	....	....	....	..	..	....	.02	.80	....	2.07
Vinton	.12	T	.05	.13	.21	.04	....	.03	....	....	....	....	....	....	....	....	..	.05	.05	..	.78	.04	....	....	....	....	....		.37	.04	....	1.91
Wapello	.55	.05	.79	T	.15	....	....	T	....	.19	....	....	....	....	..	....	....	...	..	....	.80	.46	....	....	....	....	....	....	....	...	....	2.99
Washington	.44	.09	.11	.15	.27	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.64	....	....	....	....	....	....	....	...	....	1.70
Washta	.13	T		T	....	..	....	.05	.10	....	....	....	....	..	....	T	....	.40	.08		.43		....	.30	....	....	....		.23	3.00	..	4.72
Waterloo	.28	.08	....	.04	.22	.02	....	T	T	....	T		....	....	....	....	....	.09	T	.04	....	.61	....	....	....	..	....	T	....	.55	....	1.93
Waukee	.25	.06	.13	.02	.16	....	T	.12	.06	.02	.	..	..	....	....	....	....	1.61	.05	T	.48	.15		T	....	....	....	....	....	T	....	3.11
Waverly	.15	.09	.01	.16		....	.02		....		....	....	....	....	....	.	....	.08	.05	.01	.13	.28	.....	....	....	....	....	....	.10	.78	....	1.86
West Branch	.53	.05	T	.08	.54	....	....	....	....	.05	..	....		....	...	....	....	....	T	..	.24	.08	....	....	..	....	....	....		....	....	1.57
Whitten	.11	....	.44	.10	T		....	T	T	T	.	....	...	....	....	....	....	T	.25	T	T	T	..	...	....	....	....	T	T	2.55	....	3.45
Wilton Junction	.63	...	.10	.10	.60	....	....	....		....	....	....	....		....	....	....		....	.	.45	.16	....		....	....	....	..	....	..	....	2.04
Winterset	.46	.06	.22	.09	.10	....	.60	.43	T	....	....	..	....	...	....	....	....	1.25	....	.15	.76	.07	....	.04	..	....	....	....	....	.....		4.23
Woodburn	.17	.04	.04	.10	.13	.01	....	.69	T	T	....	....	....	..	...	..	.	1.67	....	T	.77	....	.07	.08	...	....	....	....	....	....	....	3.77

Precipitation Chart June 1903.



JULY, 1903. No. 7



MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

STAR ENG. CO

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CENTRAL STATION, DES MOINES, IOWA.

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BERNARD MURPHY, STATE PRINTER.
1903.

THE IOWA WEATHER AND CROP SERVICE

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Allerton	Rex Shriver
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Delaware	Wm. Ball
Decorah	F. H. Baker
Denison	Prof. W. C. Van Ness
Des Moines	*Geo. M. Chappel
De Soto	R. D. Minard
Dows	A. C. Fuller
Dubuque	*Orin Parker
Earlham, R. F. D.	Geo. Phillips
Eldon	T. Madden
Elkader	Chas. Reinecke
Estherville	Earle W. Peterson
Fairfield	Prof. W. W. Mendenhall
Fayette	R. Z. Latimer
Fort Dodge	C., R. I. & P. Agent
Ft. Madison	Miss L. A. McCready
Galva	D. W. Farnsworth
Gilman	Jas. L. Wylie
Grand Meadow (Postville P.O.)	F. L. Williams
Greene	J. L. Cole
Greenfield	J. G. Culver
Grinnell	Prof. J. S. Buck
Grinnell (near)	A. O. Price
Grundy Center	Ed King
Guthrie Center	W. F. Braun
Hampton	E. C. Grenelle
Hanlontown	Geo. W. Paschen
Harlan	C. A. Reynolds
Hopeville	M. T. Ashley
Humboldt	H. S. Wells
Ida Grove	Dr. T. A. Collett
Independence	E. F. Wulfke
Indianola	Prof. L. Tilton
Iowa City	Prof. A. A. Veblen
Iowa Falls	J. B. Parmelee
Jefferson	Isaac Young
Keokuk	*Fred Z. Gosewisch
Keosauqua	Prof. J. A. Landes
Knoxville	Casey & Belville
Lacona	Agent C., B. & Q. R'y
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Larchwood	Rev. Geo. A. Wickwire
Larrabee	H B. Strever
Lenox	J. L. Hurley
Le Mars	Dr. T. E Cole
Leon	Millard F. Stookey
Logan	Mrs. M. B. Stern
Maquoketa	Frank Keeney
Marshalltown	Branch S. Jones
Mason City	J. S. Mills
Monticello	C. E. Heisey
Mount Vernon	Rev. J. W. Hubbard
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Ridgeway	Arthur Betts
Rockford	J. R. Waller
Rockwell City	C. M. Randall
Ruthven	F. M. Fitzgerald
Sac City	J. A. Sodestrom
St. Charles	C. W. Minard
Scranton	Willis E. Lamb
Sheldon	J. B. Frisbee
Sibley	H. G. Doolittle
Sigourney	Mrs. R. F. Ashbaugh
Sioux Center	Jacob de Ruyter
Sioux City	*U. G. Purssell
Spencer	S. Gillespie
Spirit Lake	W. C. Drummond
Stockport	C. L. Beswick
Storm Lake	L. E. Burdick
Stuart	Hon. John Herriott
Thurman	C. R. Paul
Tipton	F. K. Gregg
Toledo	Herbert Giger
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Washington	Wm. A. Cook
Washta	H L. Felter
Waterloo	M. L. Newton
Waverly	H. S Hoover
Whitten	Dr. Frank P. Butler
Wilton Junction	J. M. Rider
Winterset	B L. Sprinkle
West Bend	Phil Dorweiler
West Union	J M. Lisher
Woodburn	C. B. McDonough

*U. S. Weather Bureau.

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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

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IOWA CROP REPORT, AUGUST 1, 1903.

Reports from township and county crop correspondents of he Iowa Weather and Crop Service have been tabulated, showng the following estimates of the condition of the staple crops on August 1, 1903: Spring wheat, 82 per cent; corn, 73; oats, 77; millet, 96; flax, 84; buckwheat, 89; pastures, 104; sorghum, 84; potatoes, 80; apples, 65; grapes, 80.

At corresponding date last year the estimates were as follows: Spring wheat, 84; corn, 93; oats, 83; flax, 91; potatoes, 107; apples, 66.

WEATHER AND CROP CONDITIONS, JULY, 1903.

July was characterized by frequent and sudden alternations from high to low temperatures. The daily mean for the month was about two degrees below normal, the first decade being unusually warm, the second decade unseasonably cool, and the third decade bringing the two extremes of temperature. The average rainfall for the state, 4.83 inches, was .91 of an inch above the July normal. The distribution was very unequal, the average of the northern section being 6.49, the central section 5.28, and the southern section 2.73 inches. The heaviest amounts of rainfall were reported at stations in the N. E. district. The most destructive storm of the month occurred on the afternoon of the 20th, sweeping across the state on a direct line from Lyon and Osceola southward to Adams, Taylor and Ringgold, its pathway varying in width from one to eight miles. At numerous points along this line the storm was accompanied by high winds and very heavy hail, causing almost total loss of growing crops within an area of more than three hundred square miles.

In portions of the southern section drouthy conditions prevailed for many days, causing some detriment to growing crops; but the closing week brought relief in form of generous showers. On the whole the month was favorable for haymaking and harvesting of wheat, oats, barley and rye. The hay crop proved to be one of the best ever produced in the state, and the greater part of it was secured in excellent condition. Wheat and oats were generally harvested in good condition, but on account of the rust and blight the yield has been disappointing, though the quality of the grain will be greatly superior to the output of last year. The corn crop made fairly good progress during the month, though the temperature was somewhat unfavorable about half of the time. The early planted portion of the crop reached the earing stage while the late planted corn was generally small and unpromising. The outlook for the crop as a whole was not encouraging at the close of July. Reports indicated generally favorable prospects for late potatoes, early apples, grapes and vegetables. Millet, buckwheat, flax and sorghum were rated good in condition.

CROP AND WEATHER NOTES.

The St. Louis correspondent of the *Northwestern Miller* says that all the wheat arriving at St. Louis is of so high a milling quality that the millers feel elated over the bright prospects of having at least the quality, if not the quantity, of wheat to grind this year. The lower river boats are bringing in sacked lots and every sample shown so far has been fully up to milling grade, besides being hard and perfectly sound.

It really takes a most extraordinary year to beat in a crop way a country that raises some crops over an area 3,000 miles long and 2,000 miles wide, says the *Minneapolis Journal*. Of the wheat crop of 1902, 362,000,000 bushels were winter sown and 307,000,000 spring wheat. The lower Missouri valley produced about 184,000,000 bushels, the upper Mississippi and Red river valley 187,000,000; the Pacific coast 61,000,000; the Atlantic coast states 42,000,000, and the Ohio valley and lake states 132,000,000. It is not in the natural order of things that weather conditions will be such as to ruin both winter and spring wheat over such a large area and with such marked difference in climate.

A news special, dated Crawford, N. H., July 28th, notes a remarkable fall in the temperature in the region of the White Mountains, as follows: With three inches of snow on Mount Washington, trees prostrate along the Crawford Notch carriage road, and Jackson Village cut off from the outside world by the blowing down of the telegraph and telephone poles, the record of unseasonable weather during this unusual summer is broken to-day. At the Summit House, on Sunday evening at 8 o'clock, the thermometer registered 30 degrees. Yesterday morning it was only 16 degrees above zero. A terrific northwest gale blew all night, the equal of which the Summit dwellers say they have not seen in years. With the wind came snow, and fully three inches cover the mountain top.

Alfalfa is comparatively a new plant in this country, but in Asia it was known and cultivated before the dates of the most ancient history. It grew in abundance in Assyria and Persia, and at an early day found its way to southern Europe, and thence with the Spanish conquerors to Mexico and Peru. It was grown to some extent, but not appreciated, in the eastern states, long before it was recognized as of material value anywhere in this country. In portions of South America it has escaped from the fields and grows wild over large areas. It is now grown largely in all the arid and semi-arid regions of the

world, and is everywhere recognized as the most valuable forage plant known for all sections where rainfall is scant. But it is by no means confined to arid sections, but is grown and esteemed where rainfall is abundant. Its most perfect development, however, seems to be where it can get sufficient moisture by means of its long tap root, and does not have to depend upon rains.—*Exchange*.

CLIMATE OF THE NORTHWEST.

The northwest leads in the great variety of its climatic conditions. Far removed from ocean influences, it has a climate all its own and of the extreme sort. No monotony about it. We have a taste of all climates found anywhere on earth and some which are found nowhere else. It is nature's grand experimental laboratory, the place where Leyden jars, electric batteries, refrigerators, furnaces and retorts, manipulated by the great chemist of the universe, evolve and liberate the snow-capped cumuli cloud mountain surcharged with its awful voltage of electricity, and burden of tropical humidity; where is cradled the cyclone demon of the air, the laboratory combination of mysterious forces; where is set free the blizzard, the incarnated spirit of vast polar seas and mighty icebergs; a climate whose furnaces give an equatorial heat and a tropical summer, and whose refrigerators invest us with an arctic temperature in winter. Intermingled with these extremes are other types—serene and peaceful days when the earth smiles and blushes at the heavens' tender caress, nights so calm and silent that were it not for the night cry or the whippoorwill, the chir-r of a tree toad or the distant barking of a dog the star set heavens might seem to look down upon an uninhabited world. Under these forceful and constantly changing climatic conditions the very best there is in man is being brought out and developed; he becomes of necessity virile, energetic, aggressive; the dolce far niente of perennial sunshine is to him unknown, and so mid the storm and the great wind, the heat and the cold, the turmoil and calm, there is being evolved—there is nowhere else—a type of manhood and womanhood unexcelled on earth.—*J. S. Trigg*.

FLOOD LESSONS.

A large section of the middle west has been this season visited by floods of greater magnitude than have been known for sixty years. The resulting loss of life has been great and the destruction of property almost immeasurable. Some facts, which in a general way have been known, yet but little heeded, have been terribly emphasized as a result of these floods. One of them is that the settlement and improvement of a country tend to a quick release of excessive rainfall, the universal system of draining, tiling and ditching incident to the reclamation of all wet lands insuring the rapid movement of the water to the streams and rivers, these augmenting the flood in the seagoing streams with a cumulative effect. Another fact which has been made very plain is that the general effect of man's work on the country has been in the way of narrowing the original waterways and obstructing the natural outlets for flood waters. This has been brought about by the desire of municipalities and railways to curtail as much as possible the length of their bridges and the filling up of ancient ravines to secure valuable building sites, it being shown that a western city, one of the worst sufferers by the late flood, had actually narrowed the main channel of the river which passed through it 150 feet in the manner above indicated, besides having filled up and obliterated numerous gulches and bayous on the one-time river bottom which were the safety valves for the flood seasons of fifty years ago. Another fact developed, and one which more particularly concerns the farmer, is that his low lands, the marsh and bog of the pioneer days, which of late years he has broken up and cropped and not tile drained, are now well under way back to the primeval bog conditions and will remain unprofitable land for him until he can either get it seeded down or properly underdrained. The last lesson is that there is no visible or permanent change in progress of climatic conditions. These remain as they always have been, cycles or periods with a marked tendency toward extreme heat, cold, drouth or flood following each other with a certain fixity of purpose, but according to no regular known periodicity. The high water marks of 1903 will furnish plenty of material for future thought and study.—*J. S. Trigg*.

THE RELATIONS OF FORESTRY TO ZOOLOGY.

It has been pointed out recently by H. A. Surface, professor of Zoology at Pennsylvannia State College, that there is a direct and important connection between forestry and zoology, and he gives several examples of how this connection exists. Aside from the clearing of forest growths which naturally drives the denizens of the woods from the cleared localities, he finds that the effect of forest destruction on streams is a far-reaching one. Clear streams, flowing perpetually through wooded country, are the natural haunt of the trout; but if the country in which these streams rise or have their courses is destructively cut over, the streams themselves become intermittent, muddy, and in some cases only a succession of warm and slime-covered pools in midsummer. As such they are fit only for the lurking places of the mud-sucker and the carp. In the larger streams and rivers which, under natural conditions, are the homes of the desirable game fishes, the black bass and pickerel, which pass the winter in deep pools in a state of partial hibernation or quietude, the changes are more to be deplored when the watershed is deforested. Floods arising from the destruction of the trees bring down immense quantities of silt, "washings," sand, etc., and deposit them in the deep pools, where the current runs slower, so that the quiescent fish are covered and destroyed. Another disastrous result comes from the washing of the fishes out of their places of winter abode, dashing them against rocks and ice and in some cases leaving them stranded to gasp out their lives after the water subsides.

The setting aside of forest reserves will not only keep the forest and the beauty of the landscape, but will restore game and song birds to their original haunts, protect the wild animals, and preserve the most desirable fishes—the trout, bass, and pickerel.—*Exchange*.

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 29.96 inches; highest observed, 30.23 inches, at Dubuque, on the 31st; lowest observed, 29.53 inches, at Davenport, on the 17th; range for state, .70 inch.

TEMPERATURE.—The monthly mean temperature for the state, as shown by the records of 112 stations, was 72.9 degrees, which is 1.5° below normal. By sections the mean temperatures were as follows: Northern section, 71.0 degrees; central section, 72.9 degrees; southern section, 74.7 degrees. The highest monthly mean was 77.4°, at Keokuk; lowest monthly mean, 68.5°, at New Hampton. The highest temperature reported was 100°, at Thurman and Sigourney, on the 9th and 27th; lowest temperature reported, 40°, at Chester, on the 31st. The average monthly maximum was 92.7°; average monthly minimum, 46.4°. Greatest daily range, 39°, at Lansing, Clarinda, Earlham; average of greatest daily ranges, 31.3°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 124 stations, was 4.83 inches, which is .91 of an inch above normal. The averages by sections were as

follows: Northern section, 6.49 inches; central section, 5.28 inches; southern section, 2.73 inches. The largest amount reported was 12.72 inches at Elkader; least amount reported, .94 of an inch, at Belknap. The greatest daily rainfall reported was 5.12 inches, at Delaware, on the 10th. Average number of days on which .01 of an inch or more was reported, 9.

WIND AND WEATHER.—Prevailing direction of the wind, south; highest velocity reported, 48 miles per hour, from the northwest, at Sioux City, on the 1st. Average number of clear days, 17; partly cloudy, 9; cloudy, 5.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	29.95	30.17	24	29.53	17
Des Moines	29.97	30.20	31	29.61	17
Dubuque	29.98	30.23	31	29.59	17
Omaha, Neb	29.93	30.18	31	29.62	17
Keokuk	29.95	30.16	26	29.59	17
Sioux City	29.96	30.22	31	29.60	2
Means	29.96	30.23	31	29.53	17

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	5034	32	NW	10
Des Moines	5497	29	NW	28
Dubuque	4666	38	NW	9
Keokuk	5074	30	SE	3
La Crosse, Wis.	4896	27	N	9
Omaha, Neb	5731	34	N	20
Sioux City	8545	48	NW	1

OBSERVERS' NOTES.

ALTA.—*David E. Hadden*. On the 20th a hailstorm lasting 7 minutes caused much damage west and southwest of town.

AMANA.—*Conrad Schadt*. Fine weather for harvesting and threshing; corn made good growth during month.

ATLANTIC.—*J. W. Love*. A severe storm of wind, rain and hail occurred at 4:30 P. M. on 20th, damaging crops, buildings, trees and electric lines.

BEDFORD.—*E. E. Healy*. A severe hailstorm on 20th destroyed corn in a wide belt.

BONAPARTE.—*B. R. Vale*. A very seasonable and satisfactory month; rain was needed at its close for corn and pastures.

BRITT.—*Geo. P. Hardwick*. A month of variable temperature, but no severe storms; wheat blighted and oats rusted badly.

CLINTON.—*Luke Roberts*. A good month for farmers. Rain 5.27 inches, which is 1.11 above normal. Mean temperature about normal; highest, 96°; lowest, 51°. Mean of first decade was 77.1°; second decade, 69.6°; third decade, 78.9°.

CORNING.—*Jerome Smith*. A destructive hailstorm on afternoon of the 20th, covered about one-third of the county.

CUMBERLAND.—*J. H. Reppert*. Much damage done to corn and small grain by wind and hail on 20th.

EARLHAM.—*Geo. Phillips*. Poorest show for corn crop for years; best hay crop.

FORREST CITY.—*J. A. Peters*. Harvesting grain begun on 25th, and about 80 per cent in shock by close of month. Early planted corn in silk.

FORT MADISON.—*Miss L. A. McCready*. July was a very dry month; no good rain between 5th of June and 29th of July. Oats very light and poor prospect for corn

GRAND MEADOW.—*F. L. Williams*. On 9th rain washed roads and fields badly; barley harvest begun on 14th; on 16th first field corn in tassel; oats badly rusted; wheat crop light.

GRINNELL.—*A. O. Price*. Fine month for harvest work; hay extra in yield and quality, secured in fine condition. Wheat, oats and barley in shock.

HANLONTOWN.—*Miss G. M. Paschen*. Haying commenced on 6th; barley harvested 13th; commenced oats harvest on 22d.

HUMBOLDT.—*H. S. Wells*. Rain, 5 39 inches; no high winds; corn and potatoes doing well.

OLIN.—*Nathan Potter*. First part of July was too wet for cultivating corn; last half of month all that could be desired for hay and grain harvest, but too cool for rapid growth of corn.

OSKALOOSA.—*Jos. Boyd*. A fine month for securing the hay crop.

RIDGEWAY.—*Arthur Betts*. A pleasant month; 358 hours of sunshine; growing weather. With good corn weather till September 15th, this part of Iowa will have a good corn crop.

WASHTA.—*W. L. Felter*. On July 3d water in small streams was highest ever known.

WAUKEE.—*E. J. Leonard*. Rain was well distributed through the month; heavy thunderstorms and high winds were lacking, and there has been very little uncomfortably hot weather.

LENOX.—*J. L. Hurley*. On the 20th a severe windstorm came with the hail, damaging windmills, barns and outbuildings. Two large barns north of town were blown to pieces and some parts scattered eighty rods. Corn almost a total failure in the hail strip from eight to twelve miles wide.

ERRATA IN MAY REVIEW.

ALBIA.—Mean maximum temperature recorded 69.9° on page 12, should have been 70.0°.

CLARINDA.—Mean temperature recorded 62.9° on page 11, should have been 63 0°. Mean maximum temperature recorded 74.0° on page 12, should have been 74.1°.

DELAWARE.—Total precipitation recorded 4.47 inches on pages 10 and 14, should have been 4.77 inches.

EARLHAM.—Mean temperature recorded 61.6° on page 11, should have been 60.0°. Mean maximum temperature recorded 74.2° on page 12, should have been 71.0°.

LANSING.—Mean temperature recorded 61 8° on page 10, should have been 62.0°. Mean maximum temperature recorded 73.3° on page 13, should have been 73.6°.

OSCEOLA.—Mean maximum temperature recorded 71.1° on page 13, should have been 71.2°.

BELATED REPORTS.

VILLISCA.—*June*. Mean temperature, 67.0; highest, 91° on the 30th; lowest, 42° an the 10th; greatest daily range, 33°. Total precipitation, 3.82 inches; greatest in 24 hours, 1.08 inches, on the 21st; prevailing direction, southwest. Number of clear days, 11; partly cloudy, 16; cloudy, 3; rainy, 10.

WEST BEND.—*June*. Mean temperature, 65.7°; highest, 88° on the 30th; lowest, 39° on the 11th; greatest daily range, 35°. Total precipitation, 3.03 inches; greatest in 24 hours, 1.72 inches on the 29th and 30th. Number of rainy days, 11.

BELLE PLAINE.—*June*. Mean temperature, 64.1° highest, 90° on the 30th; lowest, 38° on the 12th; greatest daily range, 30°. Total precipitation, 2 81 inches; greatest in 24 hours, 1.06 inches on the 22d; prevailing direction, southeast. Number of clear days, 15; partly cloudy, 12; cloudy, 3; rainy, 6.

CLIMATOLOGICAL DATA FOR JULY, 1903.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	72.2	-1.7	92	7,25	49	31	33	2.77	- .20	1.10	....	6	13	16	2	SE	4, 8, 9, 10, 17
Alta	Buena Vista	1,513	11	69.6	-3.3	89	7,9	45	31	26	6.81	+2.78	1.79	....	9	14	15	2	S	3, 8, 10, 17, 20, 26, 28
Alta (near)	Buena Vista		....	.....	.....	....	.....	..	.....	...	6.23	.....	1.92	....	8	...	....	....	.....	
Britt	Hancock	1,236	5	71.0	-2.0	93	9	46	31	31	3 45	- .16	1.12	....	11	6	23	2	SE	8, 9, 26, 28
Charles City	Floyd	1,012	11	71.0	-2.8	93	10	44	31	31	7.36	+4.55	1.90	..	10	20	3	8	E	8, 9, 28
Clear Lake	Cerro Gordo	1,241	....	73 1	...	98	8	45	31	36	4.95	....	2.20	..	8	16	12	3	NW	9
Chester	Howard	.....	...	69.1	.....	90	25, 28	40	31	31	4.15	.....	1.75	....	6	23	5	3	SE	
Decorah	Winneshiek	875	8	71.8	-1.0	90	7	47	31	26	8.14	+5.51	3.09	....	6	....	...	...	.....	
Dows	Wright	1,142	....	70.2	.....	91	9	47	31	31	9.50	.....	3.28	....	7	21	7	3	SE	8, 9
Elkader	Clayton	727	21	72.4	-1.6	93	9	46	31	33	12.72	+8 55	5.00	....	9	20	8	3	NW	2, 3, 8, 9, 10, 17, 27, 28
Estherville	Emmet	1,298	7	70.9	-2.3	90	8, 17	43	31	37	7.21	+3.63	3.00	....	16	13	6	12	NW	17, 18
Fayette	Fayette	.....	...	70.6	..	91	9, 28	42	31	31	10.71	...	3.42	....	10	18	9	4	SE	2, 3, 8, 9, 10, 12, 28
Forest City	Winnebago	1,226	8	71.2	-1.6	91	8, 28	45	31	34	3.78	+ .35	1.71	....	9	22	2	7	S & W	
Grand Meadow	Clayton	1,180	11	68.8	-2.2	87	7	48	31	23	10.85	+7.11	4.02	....	8	16	9	6	SW	
Greene	Butler	924	5	71.9	-3 6	92	27	45	31	35	8 90	+5.63	3 41	..	8	12	11	8	SE	
Hampton	Franklin	1,155	12	72.3	-0.5	92	7	46	31	29	9.70	+6.12	2.91	....	7	13	14	4	NW	
Hanlontown	Franklin	.....	...	69.6	.....	89	7	43	31	29	3.89	.....	2.00	....	10	23	6	2	NW	7, 8, 10, 17, 20, 26, 28
Humboldt	Humboldt	1,095	10	72.2	-1.9	92	9, 25	48	31	26	5.39	+1.80	1 68	.	8	21	7	3	NW	8, 9, 10, 17
Lansing	Allamakee	.....	....	72.6	.....	91	7, 8	45	30	39	5.25	.....	2.75	..	8	14	8	9		
Larchwood	Lyon	.....		71.0	.....	94	25	45	31	30	5.83	.....	2.10	....	11	21	7	3	S	1, 8, 9, 11, 17, 26
Le Mars	Plymouth	1,224	6	71.4	-2.8	92	25, 27	45	31	34	5.46	+ .92	2 05	..	7	13	15	3	SE	
Mason City	Cerro Gordo	1,132	....	72.4	.....	93	7	49	31	28	5.94	.....	2.75	....	8	10	17	4	NW	
New Hampton(a)	Chickasaw	1,169	....	68.5	.....	91	9	45	31	.....	8.08	.....	3 42	....	10	19	9	3	NW	9, 17
Northwood	Worth	1,222	6	69.6	-2 8	87	7	46	31	25	3.41	+ .17	1.72		8	14	15	2	NW	9, 11, 17, 20, 26 28
Osage	Mitchell	1,184	11	69.9	-0.9	90	7	45	31	31	6.39	+3.06	2.41	..	10	9	14	8	S	8, 9, 10, 11, 16, 17, 28
Plover	Pocahontas	1,190	5	71.0	-4.3	93	9	44	31	28	5.30	+ .98	1.84	....	10	22	1	8	SW	4, 8, 9, 17, 20, 21
Primghar	O'Brien	.....	....	70.0	.....	88	5, 7	41	31	34	4.52	.....	1.05	..	7	20	0	11	NW	
Ridgeway	Winneshiek	1,215	....	73.5	.....	98	7	50	31	31	6.12	....	2.47	....	10	15	15	1	S	2, 3, 8, 9, 10, 16, 17, 21, 25, 26, 27, 28
Sheldon (c)	O'Brien	1,422	....	70.4	.....	90	25	43	31	33	6.22	.	1.80	..	11	14	12	5		
Sibley	Osceola	1,512	8	69.4	-2.0	89	8	45	31	31	5.93	+2.20	1.23		12	17	2	12	... ..	
Sioux Center	Sioux	.....	..	70.4	.....	90	25	45	31	31	2 70	.....	1.00	....	8	15	11	5	S	1, 9
Storm Lake	Buena Vista	1,440	7	70.2	-2.9	89	9	46	31	25	5.83	+1.55	1.42	....	9	18	9	4	SE	4, 7, 8, 9, 10, 17, 20, 26, 28
Washta	Cherokee	1,157	....	.....		....	.....	....	.....		7.14	.	3.32	..	6	17	13	1	S	
Waverly	Bremer	942	6	71.3	-2.9	91	9	47	31	26	7.50	+4.20	2.87	....	9	16	11	4	NW	2, 8, 9, 10
West Bend(a)	Palo Alto	1,197	8	72.2	-0 9	92	9	48	30	31	4.55	+1.21	1.30	....	9	....	....	....	.....	
West Union	Fayette	.....	....	.....	.....	.....	.....	.....	.....	.....	11.12	.....	4 20	..	8	22	0	9	SW	
Average		.....	....	71.0	-2.2	91.2	.....	45.4	.....	30 6	6.49	+3.00	....	...	9	17	9	5	NW	

CENTRAL SECTION.

Amana	Iowa	721	25	73.5	-0.5	94	9	51	14, 31	31	2.47	-1.66	.78		8	17	12	2	S, NW	
Ames	Story	926	20	73.4	-1.8	93	9, 27	50	14	32	4.77	+ .33	2.36	...	11	20	8	3	NE, SE	17
Baxter	Jasper	998	..	73 1	.....	94	9	50	30, 31	31	3.61	.....	1.25	..	8	12	13	6	SW	
Belle Plaine	Benton	828	12	72.6	-1.0	93	9	50	31	25	3.47	+ .05	1.35	...	8	17	12	2	SE	
Buckingham	Iowa		....	....	.....	....	.....	.....	.....	....	2.41	.....	.96		6	11	20	0	.....	
Carroll	Carroll	1265	12	72.2	-1 8	95	9	44	31	35	5.59	+2.24	3.05	..	10	20	8	3	... .	3, 4, 8, 9, 17, 20, 23, 28
Cedar Rapids	Linn	733	19	73.8	-1.3	96	7, 9	52	30	29	4 94	+1.28	1.15	.	9	12	14	5	S	
Clinton	Clinton	609	34	73.6	-0.2	96	8, 9	51	19	35	5.27	+1.30	2.38	...	8	15	9	7	NW	1, 8, 9, 10, 17
Davenport	Scott	606	31	74.4	- .6	95	9	55	13	26	4.47	+ .81	1.44	....	11	13	16	2	W	1, 2, 3, 8, 10, 11, 16, 17, 21, 28, 29
Delaware	Delaware	1,083	11	70.8	-1.9	90	7	46	31	30	10.50	+7.03	5.12	....	9	17	11	3	S	
Denison	Crawford	1,180	8	70.8	-3.0	86	9, 26	49	13	25	5.28	+ .96	3.43		10	...	...	0	S	
Des Moines	Polk	841	24	74.3	-0.1	94	9	55	31	27	3.62	+ .09	1.42	....	10	8	19	4	SW	1, 3, 8, 10, 20, 28, 29
De Soto	Dallas	866	....	73.0		92	9	50	31	28	4.44	.....	1.11	..	10	24	4	3	SW	
Dubuque	Dubuque	655	20	72.4	-1.9	91	9	23	31	26	7.10	+2.82	2.10	..	9	10	15	6	NW	
Fort Dodge	Webster	1,126		70.0	.....	89	9	45	31	29	...	.....	..	..	..	26	0	5	.....	
Galva	Ida	1,290	8	70.6	-3.8	94	9	44	31	30	4.32	+1 01	1.15	....	9	15	9	7	SE	
Gilman	Marshall	1,052	..	....	.....	.	.....	..	.....	...	4.49	. ...	1.54	...	7	14	12	5	S & W	
Grinnell(near)	Poweshiek	.....	...	73.3	..	94	9	49	5	36	3.79	.....	1.20	....	8	17	11	3	SW	3, 4, 8, 9, 10, 11, 17, 20, 2[illegible]
Grundy Center	Grundy	976	11	71.4	-1.0	92	9	46	31	28	6.19	+2.43	2.00		9	19	9	3	S	3, 8, 10, 17, 26, 28
Guthrie Center(a)	Guthrie	1,077	6	72 8	-1.4	95	9	47	31	30	5.35	+1.48	2.26	....	10	16	13	2	SE, SW	
Harlan	Shelby	1,192	....	73.3	.....	95	9	46	31	36	5.05	.....	2.28	....	10	10	17	4	S	1, 4, 8, 10, 17, 21, 22, 28, 29
Independence (d)	Buchanan	921	38	70.5	-2.8	90	9	47	31	....	....	....	3.85	.....	.	...	....	....	....	1, 3, 8, 9, 17
Ida Grove	Ida	1,220		72.2	....	92	9	46	31	31	4 43		.96	....	11	..	..		S	8, 9, 18
Iowa City	Johnson	685	43	74 8	+0.5	96	10	53	13	31	4.76	+ .32	1.20	...	7	11	14	6	NW	
Iowa Falls	Hardin	1,170	9	71.2	-2.0	92	10	45	31	31	6.58	+3.56	1.49	....	11	20	5	6	SE	1, 2, 4, 8, 9, 10, 11, 18, 26, 29
Jefferson	Greene	1,052	....	.....	....	....	.....	.....	.....	.....	3.89	.....	1.75	..	8	....	....	...	S	4, 8, 17, 20, 28
LeClaire	Scott	578	....	.....	....	....	.....	.....	.....	.....	4.54	.....	1.30	..	10	...	....	....	S	
Logan	Harrison	928	35	.....	.....	...	.....	47	31	.....	4.96	+ .23	2.30	....	10	18	5	8	S	
Maquoketa	Jackson	688	9	72.2	-3.1	93	10	48	31	31	7.68	+4.11	2,18	....	10	21	2	8	NE	
Marshalltown	Marshall	947	9	73.8	+0 1	96	10	46	31	33	6.12	+1.99	1 96	....	13	18	5	8	SW	4
Monticello	Jones	925	48	74.1	+1.2	93	9, 26	46	30	37	8.40	+4.32	3.00	..	7	23	5	3	SW	
Mt. Vernon	Linn	847	35	73.8	-1 0	96	8	49	31	33	4.10	+ .12	1.59	..	10	21	4	6	W	
Newton	Jasper	944	14	72 9	-2.3	93	9	51	31	27	5.30	+1.71	1.18	..	7	16	10	5	S	

CLIMATOLOGICAL DATA FOR JULY, 1903—CONTINUED.

CENTRAL SECTION—CONTINUED.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted)		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Odebolt	Sac	1,356	5	73 4	-2.7	97	9	44	31	34	4.87	- .25	1.85	....	10	23	4	4	.....	
Ogden	Boone	1,088	8	71.5	-3.5	95	10	45	31	36	5.09	†1.57	1.95	....	8	20	8	9	SE	
Olin	Jones	760	.	72.3		93	28	51	31	33	7.50	.	2.24	....	9	17	13	1	NW	
Onawa	Monona	1,053		75.0	....	96	9	52	31	26	7.21	.....	2.78	....	12	26	2	3	SE	3, 4, 8, 12, 14, 17, 21, 22, 29
Perry	Dallas	975	....	73.8	....	94	28	50	31	32	3.64	....	2 25	..	8	17	8	6	....	16, 17, 20, 28
Rockwell City	Calhoun		..	72.2	.....	95	9	48	31	31	6.64	.	2.50	..	8	17	5	9	.....	
Sac City(b)	Sac	1,278	22	71.9	-4.0	95	9	46	31	30	7.26	†3.32	2.40	....	9	...	....	..	SE	8, 9, 10, 17, 26, 28
Scranton	Greene	1,172	...	73.6	.....	96	6	47	31	34	4.88	.	1.53		10	20	7	4	SE, S	17, 23
Sioux City	Woodbury	1,165	13	72.5	-1.8	93	7	51	31	27	5.57	†2.20	1.40	..	11	11	11	9	S	
Stuart(a)	Guthrie	1,216	5	75.4	-1.2	96	27	50	31	35	3.18	-1.79	1.18	..	6			....		
Tipton	Cedar	807	...	75.8	.....	97	9	52	30	28	6.36		3.41	....	8	18	11	2	SE, SW, NW	
Toledo	Tama	856	8	72.4	-2.5	92	9	46	31	30	4.43	†1.20	1.50	....	8	15	11	5	NW	
Vinton*§	Benton	810	12	72.5	-1.3	92	9	55	30, 31	.....	4.71	†1.76	1 22		9	25	2	4	SW	
Waterloo	Black Hawk	862	15	72.7	-1.3	95	10	46	31	34	9.08	†4.80	2.78	....	9	18	8	5	W	
Wilton Junction	Muscatine	683	7	74.1	-1.4	97	8, 9	53	14, 30, 31	33	6.36	†1.54	3.66	..	5	10	7	5	S	9, 10, 17, 28
Whitten	Hardin	1,036	..	72.8	.....	93	7, 9	47	31	33	4.63	.....	2.15	....	11	18	9	4	SW	8, 9, 11, 17, 26, 28, 29
Waukee	Dallas	1,039	....	.....	...	.. .	.....	....	.....	....	4.32	.....	1.60	....	11	12	12	7	SW	8, 10, 17 20, 21, 22, 28, 29
Average				72.9	-1.6	91.5	.....	48.8	...		30.9	5.28	†1.64	.....		9	17	9	5	S	

SOUTHERN SECTION.

Afton	Union	1,212	7	74.8	-1.5	97	10	48	31	36	2.83	-1.49	1.86	....	7	15	12	4	SW	
Albia	Monroe	957	....	75.0	....	96	11, 28	49	30, 31	35	2.21	... .	1.10	..	8	17	9	5	SW	
Atlantic	Cass	1,164	11	74.2	†0.4	97	9	44	31	38	3 68	- .22	1.02	..	9	6	11	14	S	8, 10, 17, 20, 28, 29
Allerton	Wayne	.....	....	74.0	.....	94	10	50	31	33	3 92	.....	1.66	..	8	24	5	2	SW	4, 11, 17, 20, 21, 29
Bedford	Taylor	.....		74.0	..	94	10, 16	48	31	38	2.48	.... .	1.23	....	10	15	7	9	SE	
Belknap	Davis	877	7	76.0	-0.2	96	8	55	30	31	.94	-3.43	.33	....	4	28	2	1	S	
Bonaparte	Van Buren	.....	10	75.4	-1.2	96	8	53	14	34	2.74	- .55	1 07	..	5	....	....	....	.....	
Burlington	Des Moines	544	6	75.6	.....	94	9, 10, 26	55	14	28	1 82	- .80	.72	....	6	23	5	3	SW	2, 11, 17
Chariton	Lucas	1,042	7	72.9	-2.4	93	10	50	31	32	4.43	-2.26	1.05	....	6		....	....	S	
Clarinda	Page	1,069	12	75.6	-0 8	98	9	48	31	39	2 02	-2.40	.75		9	19	8	4	S	
College Springs	Page		10	76.4	†1.0	96	10, 16	50	31	30	2.34	-3 01	.85	..	7	20	7	4	SE	
Columbus Junc'n	Louisa	595	....	74.2	.....	95	9	53	13, 30, 31	31	1.58	.....	.56	..	5	18	12	1	NW	3, 10, 28
Corning	Adams	1,127	10	73.6	-1 0	93	9, 10	47	31	31	2.51	-1 49	.89	..	7	11	17	3	SE	10, 15, 20, 21 28, 29
Corydon	Wayne	992	9	73.3	-2 8	93	10	50	31	31	2.94	- .66	1.81	..	9	16	9	6	SW	11, 28
Cumberland	Cass	.....	....	.....	....	.....	.....	.....	.....	...	6 69	.....	2.21	..	7	27	2	2	SW	
Danville	Des Moines	726	....	.....	....	.....	.....	.....	.....	.....	1 75	.....	.85	..	6	....	....	....	.....	
Earlham	Madison	.....	...	71.4	.....	91	9, 10, 27	42	31	39	3 62	... .	1.09	....	9	19	6	6	S	1, 3, 20, 21, 28, 29
Fort Madison	Lee	516	51	....	.....	.....	.....	.....	....	.....	1.70	-2.15	.67	..	6	10	17	4	S	10, 17, 28, 29
Greenfield	Adair	....	11	73.0	-1.8	92	9	40	5, 31	30	2.43	-1.92	1 05	....	7	15	10	6	S	1, 2, 3, 4, 7, 8, 10, 15, 17, 20 22, 28, 29
Hopeville	Clarke	.....	11	74.1	-0.3	95	8, 9, 10	49	31	34	2 21	-2.11	.78		11	8	18	5	S	
Indianola (b)	Warren	969	11	75.0	-0.8	94	9	52	31	.....	.....	.....	2 70	....	....		..	....	.....	
Keokuk	Lee	619	31	77 4	†0 5	96	10	57	13	28	1.27	-2.87	41	..	7	17	14	0	SW	1, 11, 17, 21 28, 29
Keosauqua	Van Buren	664	10	75.6	-1.3	97	9, 11, 27	53	31	34	2.72	-1.00	1.03	....	8	12	17	2	.....	
Lacona	Warren	.....		.....		.....	.....	.....	.....	.....	1.99	.....	.50	....	6	22	3	6	.....	
Lenox	Taylor	1,250	7	73.8	-1.2	92	8, 9, 27	49	31	36	4.23	- .61	1.60	..	8	21	5	5	S	
Leon	Decatur	1,120		75 5	.....	96	10	49	31	33	1.88	.....	.52	....	10	24	4	3	S	10
Mt. Ayr	Ringgold	1,236	8	74 8	-1.1	94	8, 10, 27	50	12, 31	36	4.33	. 52	2 20	....	10	10	15	6	E, S	
Omaha, Neb.	Douglass	1,113	32	76.4	†0.2	98	9	56	31	26	2.67	-2 08	1.18	...	12	10	14	7	S	1, 3, 8, 10, 13 15, 17, 20 22, 28, 29
Osceola	Clarke	1,130	6	74 4	-1.9	95	11	49	31	32	2.45	-1.95	.65	..	7	22	2	7	.....	
Oskaloosa	Mahaska	843	18	74.8	-0 3	94	9, 27	53	22, 30, 31	29	1.61	-2.23	.56	....	8	27	1	3	SW	17
Ottumwa	Wapello	649	8	75 2	-1 8	98	27	51	21	37	1.78	-2.13	.46	....	9	20	9	2	SW	22, 28
Pacific Junction	Mills	960		75 2	....	97	9	50	31	32	2.88	.....	.92	....	9	11	18	2	SE	
Red Oak	Montgomery	1,033	....	76.2	...	94	9	55	31	27	2.34	... .	1.28	....	9	7	23	1	SE	4, 8, 10, 14, 15 17, 21, 27 28, 29, 31
St. Charles	Madison	1,070	....	73.8	.....	95	10	50	31	27	4.19	.....	1.31	..	10	19	10	2	NW	
Sigourney	Keokuk	787	....	76.0	.....	100	27	50	31	38	2.71	.....	1.30	....	7	20	11	0	.....	10, 17, 21, 28 29
Stockport	Van Buren	....	...	.....	.....	.....	....		.....		2 53	.....	.63	.	7	19	6	6	SW, NW	3, 10, 11, 21
Thurman	Fremont	.....	...	76 0	...	100	9	47	31	35	3 06	.....	1.20	..	5	19	6	6	SE	
Wapello	Louisa	588	....	74.8	.....	94	9	56	13	26	2.59	.....	1.23	..	6	23	8	0	SW	3, 10, 16
Washington	Washington	769	20	72.9	-4 2	96	9	50	13, 20, 31	33	1.52	-1 71	.62	....	5	....		..	SW, NW	
Winter-set (a)	Madison	1,129	11	74.4	‡0.0	96	28	45	31	33	4.34	-1.13	1.55	....	7	23	7	1	S	20
Woodburn	Clarke	961	....		.....	.....	....		.....	.....	3.41	.....	.89	..	9	18	10	3	SW	3, 10, 20, 28
Average		.....	..	74.7	-1.0	95.3	....		50.1	.....	32.4	2.73	-1.64	...	....	8	18	9	4	S, SW	
Average for state		.....		72 9	-1 6	92.7	....		46.4	.....	31.3	4.83	†1.00	.	....	9	17	9	5	S	

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Above normal.
‖ Received too late to be computed with means. (a) One day missing; (b) two days, etc. §Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JULY, 1903.

STATIONS.		DATE.																														MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton. ...	Max..	92	89	81	77	85	90	93	96	96	97	85	84	85	88	88	93	87	82	84	92	87	78	86	90	91	93	95	93	84	82	76	87.5
	Min ..	73	69	69	69	54	59	68	68	72	73	66	55	55	58	62	64	69	61	55	56	62	57	59	57	60	62	65	66	64	53	48	62.2
Albia.	Max..	92	90	87	89	75	84	89	92	95	95	96	86	81	80	85	87	88	86	83	84	89	88	81	87	91	92	94	96	94	84	70	87.4
	Min .	72	70	71	67	58	61	63	71	73	74	68	59	54	53	59	63	66	63	59	57	60	55	58	59	61	64	66	69	64	49	49	62.5
Algona. ..	Max.	88	87	81	76	89	87	92	89	91	83	84	77	78	81	82	87	82	82	78	72	81	79	83	91	92	87	91	84	82	68	72	83.1
	Min ..	66	67	67	60	56	61	69	69	68	69	60	58	55	53	57	61	64	57	58	56	59	66	60	60	67	62	69	69	55	50	49	61.2
Allerton .	Max..	89	85	85	76	83	86	89	92	92	94	85	80	79	83	84	87	87	82	83	88	87	79	85	88	89	93	93	92	83	75	71	85.3
	Min ..	72	69	70	63	54	60	69	69	70	72	65	59	56	61	63	66	70	63	57	55	65	55	62	58	59	64	65	68	64	54	50	62.8
Alta.	Max..	80	82	79	71	78	85	89	82	89	77	80	75	75	78	79	86	75	76	78	82	79	76	81	83	87	83	86	80	79	66	64	79.1
	Min ..	61	67	64	57	53	62	70	65	69	65	62	59	52	54	58	60	62	56	56	54	60	58	57	62	66	65	66	68	57	49	45	60.0
Amana. ..	Max..	91	90	88	77	83	88	92	92	94	86	85	78	77	82	83	85	78	80	79	82	83	80	82	88	91	89	91	93	83	75	75	84.5
	Min ..	75	71	72	70	58	58	65	71	72	69	65	62	52	51	56	61	67	62	59	57	63	57	57	56	60	65	67	71	66	53	51	62 5
Ames	Max..	90	88	80	75	83	87	91	89	93	89	82	78	77	86	[illegible]	89	84	81	80	83	82	79	85	87	91	87	93	92	82	75	70	84.3
	Min ..	71	71	71	61	55	59	67	66	72	71	65	60	55	54	[illegible]	63	67	60	60	57	65	58	59	60	61	69	69	65	66	52	50	62.5
Atlantic..	Max.	89	86	95	78	85	90	94	95	97	94	88	85	86	85	87	95	82	82	86	91	89	72	84	89	93	91	94	93	85	73	69	87.2
	Min ..	67	71	71	58	50	61	66	73	74	72	67	56	51	57	63	60	61	57	53	53	63	55	60	53	62	64	66	69	64	52	44	61.1
Baxter. ..	Max.	90	88	83	75	83	85	92	90	94	88	88	81	81	85	83	85	84	82	80	84	85	78	84	87	89	88	91	90	85	75	74	84.7
	Min .	72	71	72	62	53	58	67	69	71	69	64	56	51	54	58	60	67	59	58	55	63	55	59	59	62	67	67	65	65	50	50	61.5
Bedford ..	Max.	91	83	77	76	80	85	87	92	91	94	87	85	85	83	86	94	85	83	87	92	90	78	86	88	92	93	92	90	84	71	76	85.9
	Min ..	71	69	59	59	51	59	69	69	72	74	66	59	56	61	64	64	69	61	55	54	64	58	61	59	60	68	62	66	64	55	48	62.1
Belknap..	Max..	90	88	88	77	80	86	89	96	95	94	82	79	85	90	89	89	88	81	83	85	88	85	90	88	89	93	94	93	80	71	83	86.7
	Min ..	75	73	73	70	61	62	67	69	69	68	65	60	57	65	62	62	63	66	62	65	65	60	59	63	64	69	70	70	70	55	63	65.2
Belle P....	Max..	87	90	87	76	80	83	92	88	93	84	83	77	75	79	80	82	75	79	79	80	82	78	82	87	86	88	88	91	82	69	74	82.4
	Min ..	73	72	72	67	58	60	67	71	70	68	65	60	53	53	59	62	63	60	59	57	63	58	59	63	62	65	67	69	65	54	50	62.7
Bonapar'e	Max..	92	89	89	81	84	89	92	96	95	95	86	80	80	84	84	84	87	84	85	87	88	83	85	90	93	95	95	94	85	77	78	87.3
	Min .	75	69	70	70	59	57	74	73	75	73	68	62	57	53	60	63	67	63	58	54	63	69	57	58	59	63	66	68	61	54	54	63.6
Britt. ...	Max.	87	88	86	75	82	86	89	88	93	81	85	76	79	81	83	86	76	78	75	83	78	83	86	86	91	88	90	88	79	69	72	82.8
	Min ..	65	66	66	60	51	61	68	64	68	65	56	54	49	49	56	60	64	55	56	53	57	54	59	59	63	66	69	65	60	49	46	59.1
Burling'n	Max..	91	87	88	82	82	88	91	92	94	94	85	82	79	82	83	84	86	81	82	83	88	83	83	89	91	94	91	93	84	76	77	86.0
	Min ..	75	73	69	70	59	61	67	72	75	73	68	66	56	55	62	63	69	64	60	57	67	60	63	64	63	69	68	73	65	57	5[illegible]	65.2
Carroll ...	Max..	89	86	81	76	84	88	92	93	95	89	92	82	80	83	84	89	85	80	83	87	86	76	82	88	90	87	91	92	82	70	71	84.9
	Min ..	65	78	65	57	53	58	69	65	65	69	63	52	50	5[illegible]	57	60	65	55	54	52	60	55	55	56	55	68	[illegible]6	69	64	50	44	59.6
Cedar R..	Max..	93	92	89	72	83	91	96	89	96	85	86	78	78	81	82	84	75	80	78	83	83	80	82	91	92	86	92	94	84	71	74	84.5
	Min ..	71	69	69	61	62	68	72	69	69	66	64	56	56	57	58	66	63	61	60	63	60	61	61	64	70	65	67	65	55	52	56	63.1
Chariton .	Max.	88	84	84	75	82	85	89	92	92	93	81	79	78	82	85	86	86	80	83	87	85	72	85	86	89	91	92	89	83	77	75	83 7
	Min ..	72	79	71	61	54	58	67	69	70	74	62	59	55	57	60	64	63	73	58	53	64	55	60	57	59	59	64	63	62	54	50	62.1
Charles C.	Max.	87	92	87	85	76	81	84	90	87	93	79	82	74	74	80	80	84	73	78	75	79	79	84	82	85	91	80	89	91	81	69	82.3
	Min ..	66	67	71	67	53	59	63	68	63	65	59	58	50	49	54	58	63	59	59	54	60	54	56	56	60	63	68	68	65	50	44	59.6
Chester...	Max..	83	87	83	74	82	82	88	89	88	79	82	81	75	79	77	83	76	78	75	79	79	84	82	84	90	82	85	90	79	67	70	81.0
	Min ..	68	59	70	64	52	57	64	64	62	61	54	50	47	47	52	58	64	55	56	51	57	60	56	53	62	64	63	66	57	49	40	57.2
Clarinda..	Max.	94	87	77	80	85	91	92	97	98	96	84	87	87	84	90	96	88	86	91	96	94	75	90	94	95	94	97	95	88	69	74	88.7
	Min ..	71	70	70	58	52	58	68	70	71	72	68	58	56	61	66	65	68	62	59	57	64	59	60	60	60	58	63	66	65	54	48	62.5
Clear L.	Max..	95	92	85	77	90	95	94	98	91	86	85	80	83	83	81	92	81	84	81	84	82	89	93	94	94	85	95	86	80	72	75	86.6
	Min ..	66	64	70	60	57	60	64	66	66	69	57	51	56	49	53	58	65	55	57	55	61	58	58	58	65	65	69	65	60	48	45	59.6
Clinton ...	Max..	92	95	91	87	85	91	95	96	96	88	86	80	80	83	82	86	77	83	81	83	86	85	86	90	92	89	88	95	83	76	78	86.6
	Min ..	73	68	68	65	55	58	62	68	68	67	68	61	54	51	55	56	62	63	60	56	58	56	56	55	58	64	61	66	62	57	52	60 7
College S.	Max..	92	86	82	77	85	88	91	95	95	96	86	87	84	87	87	96	87	85	87	95	93	80	86	93	93	95	94	93	85	70	75	87.9
	Min .	71	70	70	59	55	61	70	70	71	74	68	62	60	63	68	68	70	62	63	60	66	61	63	65	69	63	67	68	64	57	50	64.8
Colum. J.	Max..	91	90	90	81	83	88	93	94	95	92	86	79	77	81	83	84	83	81	80	82	85	72	84	83	92	92	92	94	85	80	76	85.4
	Min .	74	70	71	70	60	67	58	70	73	66	67	64	53	55	59	59	67	62	59	55	62	58	58	67	61	64	66	70	64	53	53	63.1
Corning ..	Max.	89	84	78	74	79	86	88	92	93	93	87	81	83	82	84	91	83	83	86	90	87	75	82	88	90	90	92	91	83	71	71	84.7
	Min .	71	69	69	53	53	65	73	70	72	73	67	57	52	62	63	64	67	60	57	55	62	57	61	59	68	62	67	68	63	54	47	62.6
Corydon.	Max..	88	83	84	76	82	88	88	91	92	93	87	83	81	82	83	85	85	82	83	86	88	75	83	86	88	90	92	90	85	71	74	84.6
	Min ..	71	69	70	65	55	60	67	69	70	72	65	58	55	58	61	61	65	60	58	55	63	55	61	58	60	63	67	66	63	52	50	62.0
Davenpo't	Max..	90	89	88	82	82	87	90	92	95	88	87	78	78	80	80	82	79	80	80	81	85	80	82	89	92	87	90	92	80	72	72	84.2
	Min ..	76	67	70	67	62	65	69	73	71	66	69	63	55	57	59	58	68	63	62	59	66	61	62	63	69	70	[illegible]5	70	67	56	58	64.6
Decorah. .	Max..	83	88	83	77	80	84	90	87	87	89	80	77	74	76	78	82	77	79	78	80	82	79	84	83	88	78	84	87	82	67	70	81.6
	Min ..	68	64	72	65	57	60	68	74	68	68	61	59	52	53	53	62	65	63	61	58	63	57	59	57	64	69	66	68	62	55	47	61.9
Delaware.	Max..	86	88	88	78	83	84	90	87	89	79	81	74	74	80	78	84	72	76	75	81	78	81	80	86	87	83	87	89	83	69	74	81.4
	Min ..	73	65	70	66	55	58	62	70	65	65	60	5[illegible]	50	51	52	57	64	67	55	55	60	55	59	56	61	69	60	68	62	49	46	60.1
Denison ..	Max..	81	81	80	74	80	83	85	85	86	85	76	79	71	76	77	83	83	75	75	76	76	76	75	81	86	85	85	84	74	71	67	79.2
	Min ..	64	71	66	57	55	65	72	68	72	70	64	60	49	55	59	60	65	58	53	60	60	55	59	59	67	67	66	68	70	64	52	62.3
Des M....	Max	90	86	79	73	81	87	90	91	94	89	87	81	80	82	85	86	81	82	81	84	85	75	83	87	89	88	92	90	85	68	72	84.1
	Min ..	72	73	70	61	57	63	70	72	75	71	68	64	58	61	62	65	69	63	61	57	64	59	63	62	64	67	68	67	65	55	55	64.5
De Soto...	Max..	86	83	79	73	80	85	88	89	92	89	83	78	78	81	82	86	82	80	80	84	82	77	81	85	87	86	89	89	89	69	70	82 4
	Min .	72	72	71	61	55	60	71	71	75	76	67	61	58	57	61	64	68	62	61	56	63	57	60	69	59	66	66	67	66	54	50	63.7
Dows. ...	Max..	85	85	80	73	81	85	89	84	91	81	82	74	75	80	79	83	78	78	75	78	78	78	81	85	88	87	88	87	79	66	69	80.7
	Min ..	67	62	59	60	54	60	67	66	63	68	60	57	52	52	56	60	64	58	58	55	59	56	57	59	62	68	70	66	60	49	47	59.6
Dubuque.	Max..	88	90	86	80	82	85	90	89	91	82	85	76	76	79	76	81	73	79	76	79	80	82	83	86	90	80	83	90	82	69	73	82.0
	Min ..	73	69	71	64	60	62	67	72	67	67	63	62	53	55	55	60	65	62	60	60	65	60	60	60	68	69	60	67	65	55	53	62.9
Earlham .	Max.	88	83	78	75	80	85	87	90	91	91	85	82	81	82	83	87	80	81	83	87	84	75	83	86	89	88	91	90	84	71	71	83.6
	Min .	63	69	67	58	60	56	67	69	71	72	66	55	50	50	57	58	67	57	53	48	58	50	58	56	59	63	64	64	62	49	42	59.1
Elkader ..	Max.	80	90	86	75	87	87	92	89	93	80	88	80	80	82	80	88	80	81	75	80	84	85	85	88	91	80	88	[illegible]2	85	75	76	84.2
	Min ..	78	67	73	70	55	56	63	74	66	67	61	58	50	50	52	59	60	58	58	55	59	55	59	55	60	70	63	67	63	52	46	60.5
Esthervi'e	Max.	87	83	85	80	80	81	85	90	83	84	86	87	78	87	85	80	90	82	81	79	77	78	79	83	84	89	87	89	82	79	79	82.9
	Min ..	63	63	66	52	50	55	68	63	65	64	59	56	52	50	56	68	62	57	58	55	56	54	57	57	68	67	66	67	61	48	43	58 9
Fayette...	Max .	88	88	84	78	81	85	90	87	91	78	82	76	74	76	79	83	73	76	75	77	79	83	83	86	89	79	88	91	82	72	74	81.5
	Min .	68	67	72	68	59	56	64	68	60	66	58	58	48	48	51	58	62	58	56	54	60	53	58	55	62	67	62	70	60	50	42	59.7
Forest C'y	Max..	88	83	88	80	78	82	88	91	88	89	82	84	77	79	81	81	85	77	81	77	80	78	81	84	84	[illegible]8	84	91	81	82	69	82.6
	Min ..	65	64	66	65	58	60	65	65	68	64	58	56	52	51	54	60	63	56	53	55	57	58	61	60	65	66	65	69	65	48	45	59.9
Ft. Dodge	Max.	82	83	81	73	78	82	87	84	89	81	79	76	74	80	82	85	82	79	76	78	80	79	81	82	84	84	85	87	84	75	68	80.6
	Min ..	66	68	66	58	53	61	71	63	76	68	59	57	50	51	53	60	54	56	56	52	55	53	58	66	65	65	64	66	62	49	45	59.5
Galva.....	Max..	84	83	82	73	80	86	89	85	94	87	85	71	75	80	82	88	80	78	79	85	80	78	82	80	91	84	89	85	85	71	67	81.7
	Min .	61	69	64	56	53	62	71	69	70	66	60	55	50	55	58	58	65	64	54	51	55	56	55	57	65	66	65	65	62	47	44	59.6
Grand M.	Max.	83	86	84	73	66	70	87	80	84	74	81	72	62	76	70	80	72	76	68	75	..	73	80	82	84	77	82	80	79	70	72	76.3
	Min ..	71	64	71	61	56	60	64	72	64	66	62	62	52	56	53	58	64	58	58	54	61	57	57	57	64	70	62	66	63	60	48	61.2
Greene ...	Max..	86	89	82	75	84	88	93	89	91	80	84	77	79	85	85	89	76	80	78	81	82	85	87	90	90	83	92	89	81	69	75	83.7
	Min .	68	66	70	63	52	58	65	66	66	66	60	56	51	50	54	60	66	57	57	54	60	56	61	58	61	71	68	66	63	50	45	60.1
Greenfi'ld	Max..	89	88	84	74	78	87	90	91	92	90	85	78	77	82	83	88	..	80	81	85	82	82	84	85	87	83	88	90	82	76	70	83.9
	Min ..	70	70	70	58	48	62	71	73	73	75	67	58	55	58	60	64	67	58	53	58	58	58	57	58	66	67	66	62	64	52	48	62 2
Grinnell (near)..	Max.	93	89	89	74	85	88	92	90	94	88	82	77	76	82	82	86	85	78	77	85	81	80	82	89	90	90	91	91	80	74	74	84.3
	Min ..	74	73	72	64	49	60	67	67	73	66	65	59	52	55	60	63	66	59	58	56	64	54	60	62	60	66	70	67	64	51	51	62.3
Grundy C	Max..	86	86	82	72	82	84	90	87	92	83	85	78	78	79	81	83	78	79	77	83	83	78	82	85	89	88	89	89	82	69	72	82.3
	Min ..	70	68	68	65	54	58	66	68	70	67	61	57	50	51	55	60	66	58	57	55	58	55	59	59	62	68	69	64	63	50	46	60.5
Guthrie C	Max.	89	..	..	75	83	87	91	91	95	91	79	..	78	84	86	90	83	80	82	88	83	72	83	87	91	87	93	93	74	67	69	84.0
	Min ..	69	70	70	59	53	58	69	72	74	71	67	57	52	55	60	61	60	59	57	57	62	55	62	55	63	67	66	65	..	52	47	61.5
Hampton .	Max.	87	88	84	75	83	86	92	85	92	80	84	77	78	82	83	85	77	79	76	82	81	81	86	87	90	88	90	90	82	69	74	83.0
	Min ..	69	68	72	62	57	60	66	67	67	68	62	59	55	53	55	60	67	59	59	58	61	59	60	58	63	70	69	67	64	51	46	61.6
Hanlont'n	Max..	82	87	80	76	80	83	89	85	88	77	80	72	73	77	78	82	85	77	73	77	77	81	81	84	88	80	88	86	80	68	70	80.1
	Min ..	67	61	65	60	54	62	66	65	69	64	56	55	51	48	52	58	65	56	57	54	54	54	60	56	65	65	69	69	60	48	43	59.0
Harlan....	Max.	88	87	85	75	83	88	92	92	95	90	86	83	80	85	86	93	82	80	82	90	85	82	83	89	93	91	91	93	81	73	70	85.6
	Min ..	66	69	67	57	51	60	70	72	72	70	65	57	54	60	62	61	68	59	56	54	60	57	60	59	60	64	62	65	63	51	46	61.0
Hopeville.	Max..	91	85	79	75	83	88	91	95	95	95	79	79	80	85	84	89	84	81	84	90	86	74	84	90	91	93	94	92	83	72	73	85.3
	Min ..	73	70	68	60	56	59	69	69	71	75	66	59	56	59	64	65	70	61	60	56	64	58	60	59	61	64	66	66	64	53	49	62.9
Humboldt	Max..	86	88	82	74	83	88	90	86	92	78	82	76	78	82	82	87	80	80	79	80	80	80	84	86	92	86	90	89	88	72	72	83.0
	Min ..	68	68	68	60	69	62	70	66	68	68	60	58	54	54	60	63	68	60	59	54	60	56	58	60	66	68	68	71	64	50	48	62.2
Ida Grove	Max.	86	85	82	75	81	87	90	86	92	85	84	77	79	80	82	89	88	83	78	85	82	77	82	85	91	88	89	86	80	70	67	82.9
	Min ..	63	71	66	58	55	63	72	68	72	69	64	57	53	57	61	61	60	67	56	54	60	58	60	60	68	68	61	66	61	52	46	61.5
Indep'nce	Max..	84	86	84	74	79	82	89	86	90	79	82	76	73	79	78	80	74	77	75	77	78	80	82	84	87	85	..	..	.	..	..	80.4
	Min ..	72	68	76	64	55	57	65	70	64	66	63	56	51	51	53	58	65	58	58	56	59	53	60	57	59	71	..	..	..	..	..	60.6
Indianola	Max..	90	85	80	75	82	86	90	92	94	93	84	81	80	..	..	..	..	82	84	86	84	76	83	87	90	90	92	91	90	76	73	85.0
	Min ..	71	72	72	61	57	60	70	71	74	70	79	60

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JULY 1903—CONTINUED.

TATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
uk..	Max.	92	85	89	80	84	88	92	95	95	96	89	82	81	86	85	86	88	83	86	86	90	83	85	90	93	94	94	93	86	80	75	87.5
	Min ..	76	75	73	72	62	63	70	75	76	75	71	68	57	59	64	65	70	64	63	59	68	61	63	64	65	70	73	76	68	59	58	67.2
ing. .	Max..	86	90	86	82	82	86	91	91	86	74	86	84	80	80	80	82	78	80	81	84	83	82	85	87	90	84	82	90	89	84	86	84.2
	Min ..	61	62	75	71	55	62	68	78	68	68	62	50	52	48	50	62	60	55	60	61	60	55	60	57	62	63	63	64	70	45	62	60.9
hw'd	Max..	88	85	80	72	80	86	89	84	84	81	83	77	77	80	83	88	81	78	80	85	82	82	85	86	94	86	90	87	77	69	68	82.2
	Min ..	60	63	60	55	51	63	71	62	70	61	67	67	51	56	58	58	61	53	52	55	58	58	58	61	76	63	65	65	62	46	45	59.9
ars ..	Max.	84	87	82	71	81	87	91	82	90	82	84	79	78	81	79	89	82	79	80	87	82	77	83	85	92	87	92	81	79	71	66	82.9
	Min ..	60	69	64	56	55	66	71	66	70	64	59	55	51	57	61	59	62	55	55	53	56	59	56	60	69	61	68	68	64	47	45	60.0
x....	Max..	87	83	80	74	79	85	87	92	92	91	86	79	78	83	83	89	83	81	85	88	87	79	82	88	89	91	92	91	84	79	72	84.5
	Min ..	71	71	68	58	55	60	69	72	73	74	66	60	58	63	62	65	70	61	59	52	63	59	61	60	63	63	66	69	63	54	49	63.1
.. ....	Max..	91	90	86	76	86	80	89	93	95	96	95	82	82	84	85	90	87	83	85	89	87	87	86	90	90	93	94	94	90	85	77	87.6
	Min ..	72	70	70	62	70	56	68	69	71	74	66	60	57	63	64	60	70	62	61	57	64	58	60	57	61	64	61	70	66	55	49	63.4
an	Max..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
	Min ..	62	60	62	62	53	55	55	65	74	72	65	61	54	58	63	63	60	58	60	57	63	60	59	60	61	65	64	67	65	55	47	60.9
no'ta.	Max..	90	90	90	86	80	84	86	90	90	93	88	88	80	79	82	79	84	77	83	80	82	85	84	83	88	90	87	87	90	83	75	84.9
	Min ..	67	65	71	69	55	54	59	68	69	64	65	63	50	50	53	58	62	60	58	56	58	53	55	52	58	65	62	63	62	52	48	59.4
shlt'n	Max..	89	91	92	85	76	85	89	94	92	96	86	89	82	81	84	85	87	78	82	81	84	86	79	87	89	92	91	94	95	85	71	86.4
	Min ..	68	69	72	67	54	59	64	71	71	68	63	58	52	53	56	60	63	59	59	56	60	55	57	58	60	65	70	70	65	52	46	61.3
on C..	Max..	85	89	83	73	86	89	93	89	88	80	81	76	78	81	81	85	77	80	78	79	81	83	87	89	90	83	92	87	80	69	74	82.8
	Min ..	69	67	72	63	58	62	67	69	68	64	59	58	54	55	55	61	65	59	59	57	63	59	63	61	62	68	70	69	66	51	49	62.0
ticel'o	Max..	88	89	90	88	89	91	90	89	93	88	85	87	78	75	80	83	79	80	82	84	87	89	90	89	90	93	92	90	82	75	68	85 9
	Min ..	72	79	75	68	62	67	68	66	76	70	69	68	57	59	60	68	58	50	52	58	52	49	53	58	62	75	64	68	53	46	48	62.3
Ayr..	Max..	83	85	80	75	85	88	90	94	93	94	85	83	83	87	87	93	85	85	88	93	90	77	85	91	90	92	94	90	86	76	77	86.6
	Min ..	70	69	66	59	57	59	69	69	71	73	66	50	58	63	63	66	69	61	60	57	62	59	60	60	64	65	68	69	64	55	50	62.9
Ver'n	Max..	93	88	85	78	90	89	94	96	94	88	92	78	80	89	87	85	75	82	79	83	84	87	89	90	93	89	93	89	86	75	75	86 3
	Min ..	73	69	72	68	57	60	64	69	67	64	63	60	55	53	54	59	65	59	57	56	61	57	60	59	60	66	62	65	63	51	49	61 2
H. ..	Max..	81	84	80	74	..	..	90	84	91	77	80	73	73	77	77	80	73	76	73	..	76	80	82	82	86	76	85	87	78	70	72	79.2
	Min .	65	65	67	63	53	..	..	66	64	65	58	55	49	50	52	57	57	55	55	54	54	57	60	58	58	..	63	65	61	48	45	57.8
ton ..	Max..	91	84	82	73	82	82	91	91	93	87	83	79	79	82	83	86	78	79	80	82	83	77	79	87	89	88	92	91	79	70	73	83.1
	Min ..	74	73	68	61	56	60	65	70	73	70	65	60	55	56	60	62	67	60	60	57	65	58	58	61	62	62	69	70	64	53	51	62.7
thw'd	Max .	81	85	82	73	79	82	87	83	86	76	80	73	72	76	77	81	77	76	73	76	76	80	82	81	86	81	85	84	84	66	71	79.1
	Min .	66	62	66	60	56	58	66	65	67	67	58	56	53	51	54	60	61	57	57	56	60	58	63	58	63	66	68	70	62	49	46	60.0
bolt ..	Max..	90	89	85	76	85	90	94	91	97	86	88	88	84	87	88	94	85	83	89	85	86	75	87	90	93	90	93	90	83	75	71	86.7
	Min .	62	69	66	56	53	60	71	65	71	68	62	55	50	55	59	60	65	55	52	59	57	56	59	58	64	67	64	67	66	48	44	60 1
en....	Max..	90	91	86	88	77	83	89	92	90	95	87	87	81	82	84	86	88	81	83	81	85	86	78	85	86	91	86	91	92	85	73	83.8
	Min ..	65	65	69	57	52	60	59	59	64	67	62	55	50	50	52	58	52	55	53	51	51	52	55	56	59	62	64	65	60	49	45	57.2
.....	Max..	90	88	87	85	79	84	90	90	90	83	82	77	82	78	80	80	75	79	78	81	80	84	81	86	89	88	88	93	86	76	73	82.2
	Min ..	72	75	67	67	57	57	62	70	66	66	66	63	52	62	58	59	68	60	58	55	59	56	59	66	59	66	89	92	82	69	66	62.4
aha, N	Max..	90	85	81	76	83	89	93	94	98	92	86	79	82	85	88	92	80	82	86	92	88	78	85	89	92	86	91	86	91	92	85	85.6
	Min ..	71	75	61	59	61	66	74	77	78	75	70	63	64	65	68	68	66	63	65	66	66	65	65	67	72	71	74	72	65	58	56	67.3
wa....	Max.	89	87	86	75	82	89	93	91	96	87	85	82	77	82	82	88	87	82	84	87	85	83	82	87	91	89	91	88	83	77	68	85.0
	Min ..	65	74	66	57	58	65	73	74	75	72	67	62	58	60	65	65	67	60	60	61	64	64	63	64	70	72	69	71	68	56	52	65.1
ge.....	Max..	82	87	82	72	82	85	90	85	89	77	82	73	74	80	81	85	78	77	77	55	55	56	62	57	62	67	68	64	61	49	45	59.0
	Min .	67	63	68	56	53	56	66	65	67	62	57	56	52	49	52	59	65	57	57	55	55	56	62	57	62	67	68	64	61	49	45	59.0
eola...	Max..	93	91	86	80	77	82	87	90	93	94	95	83	75	79	83	83	88	88	86	85	89	87	76	87	98	88	91	94	93	85	69	86 3
	Min .	73	69	70	63	55	58	64	70	73	75	67	59	56	56	60	67	68	61	59	57	61	56	60	56	56	65	67	68	65	53	49	62.5
aloosa	Max..	89	88	86	..	86	88	92	92	94	93	83	78	78	83	84	85	84	81	82	84	87	80	85	90	92	92	94	92	83	75	75	85.6
	Min ..	75	73	73	67	56	60	71	72	75	73	69	63	54	54	62	67	70	63	60	55	64	53	57	63	59	61	70	72	64	53	53	63.9
umwa	Max..	90	88	87	77	81	88	91	92	94	95	95	84	80	78	82	84	84	85	83	84	90	88	83	89	91	95	97	98	96	86	75	86.9
	Min ..	70	68	67	64	64	65	70	70	71	68	64	62	60	61	62	65	61	66	61	60	51	57	60	62	63	63	69	68	64	55	54	63.4
ific J'n	Max..	91	87	81	76	83	90	93	95	97	95	89	83	85	87	89	94	84	85	86	92	87	78	85	89	92	91	92	93	83	74	65	86.8
	Min ..	71	71	67	58	54	61	71	72	73	73	69	60	55	62	66	65	65	65	57	60	62	62	62	61	65	65	66	68	62	56	50	65.7
ry.....	Max..	86	80	80	73	78	81	92	92	93	87	86	83	81	87	88	91	86	82	82	88	84	76	85	90	93	88	93	94	83	72	72	84.7
	Min .	71	73	71	61	55	62	71	69	74	73	65	59	51	56	61	64	65	60	59	56	63	58	60	58	61	68	66	66	67	52	50	62.8
ver....	Max..	83	86	86	76	82	87	90	85	93	79	87	77	76	80	82	89	74	79	77	80	77	82	84	83	56	64	68	66	67	64	48	44	60.0
	Min ..	64	65	66	58	58	60	68	64	66	65	60	58	58	55	60	62	60	56	58	53	55	55	59	81	84	87	86	87	79	76	67	67	80.7
mghar	Max..	82	83	80	82	88	85	88	84	87	82	81	75	76	77	78	87	80	76	76	82	79	80	81	59	51	68	65	65	67	60	47	41	59.4
	Min ..	60	65	65	59	54	54	71	65	70	63	58	58	54	53	58	59	60	54	55	54	60	60	59	84	86	88	89	90	89	82	76	69	85 0
l Oak..	Max..	88	84	82	78	79	86	88	91	94	92	89	82	81	82	86	89	85	81	84	90	87	83	84	86	88	89	90	89	82	76	69	85 0
	Min ..	73	74	75	61	58	66	73	75	77	78	73	63	60	66	68	69	70	66	62	63	67	66	65	67	67	68	71	72	67	59	55	67 5
geway	Max..	87	92	85	81	86	88	98	93	95	85	82	80	78	87	78	89	75	79	75	87	84	85	88	87	94	82	93	88	82	70	74	84.7
	Min ..	72	66	74	71	55	60	67	71	70	64	60	59	54	56	55	61	65	59	57	57	60	60	62	62	64	71	64	71	62	52	50	62.3
ckw'l C	Max .	87	87	85	79	69	82	92	85	95	80	86	80	80	81	84	89	83	81	81	86	85	82	82	87	92	86	92	92	83	71	70	83.8
	Min ..	67	70	65	59	55	55	65	65	69	68	63	61	54	55	56	61	63	58	60	55	55	58	58	58	62	68	66	66	65	51	48	60.6
City..	Max..	88	85	81	76	82	88	92	86	95	84	84	79	78	81	..	89	78	80	82	84	..	82	78	87	92	90	90	87	81	71	66	83.3
	Min ..	65	69	65	58	55	60	69	66	69	66	62	58	53	55	..	59	60	57	58	55	..	58	58	58	65	67	65	65	66	50	46	60.5
Cha'les	Max..	87	82	79	74	82	86	89	91	94	95	84	80	80	83	83	86	81	81	83	86	84	75	82	87	89	90	92	90	82	68	72	83.7
	Min ..	72	72	70	61	56	61	69	71	75	71	69	61	58	60	60	65	70	62	61	59	63	59	62	60	64	68	68	66	66	54	50	64.0
anton.	Max..	93	81	82	78	87	90	93	93	96	87	89	84	85	87	87	91	80	82	84	88	86	73	86	90	94	88	93	91	84	70	70	85.9
	Min ..	67	70	68	59	53	58	68	66	70	70	65	59	56	55	57	61	64	58	58	56	62	58	68	57	63	68	64	63	65	50	47	61.4
eldon ..	Max..	88	85	77	..	78	86	89	80	89	79	85	78	78	..	..	86	83	80	80	80	82	75	83	85	90	85	89	83	78	68	76	81.9
	Min ..	59	72	62	..	54	62	70	62	69	61	57	55	57	..	..	52	61	56	55	50	57	57	52	60	65	64	64	65	63	48	43	59.0
ley	Max..	87	81	86	77	72	80	86	89	79	83	80	85	77	78	79	79	86	77	75	67	82	80	76	83	83	87	86	88	79	78	67	80.4
	Min ..	60	64	65	55	56	51	70	64	68	62	56	56	50	53	57	58	61	54	54	51	56	57	58	59	69	60	66	65	62	47	45	58.5
ourn'y	Max..	95	93	90	78	89	94	97	98	99	99	91	84	83	90	92	93	80	84	84	89	84	85	90	92	95	98	100	96	85	74	82	89.8
	Min ..	75	77	71	67	56	56	67	69	73	67	66	60	52	53	58	60	67	63	54	64	65	56	56	58	60	62	62	65	63	53	50	62.1
ux C'r.	Max..	84	85	79	71	79	85	89	80	89	80	82	77	79	80	79	89	79	78	78	85	85	81	83	85	90	86	88	85	77	68	68	81.4
	Min ..	61	60	61	55	54	63	71	62	70	63	61	59	54	54	58	59	62	57	58	53	60	56	52	58	68	64	63	66	65	47	45	59.4
ux C'y.	Max..	86	86	75	72	80	88	95	87	90	79	84	79	76	81	80	87	78	81	82	88	83	72	82	84	92	86	91	86	91	82	79	70	65	81.9
	Min ..	64	69	58	55	60	67	73	68	74	68	64	57	55	59	65	64	64	60	60	61	60	63	61	66	73	65	69	70	61	53	51	63.1
rm L..	Max..	83	82	79	76	78	84	87	82	89	79	83	75	75	78	78	85	78	77	77	80	80	75	80	82	88	83	86	83	78	67	65	79.7
	Min ..	62	69	65	56	58	63	71	65	69	65	60	56	52	57	59	60	64	57	57	55	61	61	57	62	68	65	67	68	61	49	46	60.8
art. ..	Max..	90	90	80	..	85	79	93	95	94	95	92	89	86	87	87	90	80	82	84	80	80	79	85	91	93	94	96	93	84	74	74	86 6
	Min ..	71	71	69	..	63	59	69	75	77	71	70	65	58	60	62	66	60	74	60	58	60	59	59	58	58	64	67	63	63	63	50	64,1
urman.	Max..	91	85	83	80	85	90	93	96	100	97	73	84	84	86	87	93	85	82	82	88	93	89	82	86	89	91	90	92	92	87	77	70	87.7
	Min ..	72	73	72	59	51	63	74	72	74	72	70	59	55	63	69	65	67	59	57	60	62	64	62	63	69	62	66	72	64	56	47	64.2
pton....	Max..	93	91	89	82	88	88	93	94	97	86	88	84	83	85	85	85	78	82	82	84	88	82	88	91	93	89	93	93	83	78	77	86.8
	Min ..	75	74	72	71	61	63	67	77	72	65	67	66	55	57	60	60	67	62	61	60	64	62	62	63	66	69	66	71	65	52	56	64.8
ledo....	Max..	87	90	86	74	83	86	91	88	92	83	86	81	80	81	82	83	79	79	78	84	84	80	84	87	89	86	90	91	82	71	74	83.6
	Min .	73	70	71	64	54	58	67	71	73	67	63	58	50	51	56	60	67	60	57	55	61	54	56	58	59	68	68	68	64	52	46	61.3
apello..	Max..	91	90	85	77	81	84	87	90	94	89	81	80	80	81	82	84	80	81	81	83	80	88	79	83	88	91	88	89	91	81	77	72	84.0
	Min ..	72	74	71	71	61	63	66	72	74	70	62	56	57	63	62	68	65	62	58	66	66	62	64	65	62	68	72	67	59	59	65.5
shi'ton	Max..	90	88	88	77	83	89	92	92	96	93	86	80	79	82	84	86	80	80	81	83	83	80	85	90	92	92	93	94	83	77	76	85.6
	Min ..	72	68	70	58	56	58	64	69	72	66	65	59	50	52	57	58	65	60	56	50	60	55	57	57	60	60	65	66	61	51	50	60.2
aterloo.	Max..	88	88	90	83	76	84	86	94	86	95	80	86	79	78	80	82	84	76	82	78	81	83	83	84	87	91	87	90	94	85	70	84.2
	Min ..	69	69	72	68	56	68	60	70	68	68	62	60	52	52	55	57	62	60	60	58	58	57	57	58	60	65	67	66	65	51	46	61.2
averly..	Max..	85	87	82	73	81	85	90	85	91	78	82	75	74	78	79	82	77	78	75	78	79	79	82	84	88	83	87	89	81	69	72	80.9
	Min ..	70	67	71	65	55	60	69	89	68	67	62	60	53	52	56	61	67	59	59	56	61	57	63	60	62	68	68	67	64	52	47	61.7
.Bend..	Max..	84	87	85	85	85	86	90	88	92	78	85	78	77	83	83	89	76	79	77	81	84	86	86	90	89	89	84	79	68	..	..	83.6
	Min ..	66	67	67	60	56	63	69	64	69	64	60	58	52	54	52	60	64	56	57	53	55	61	59	59	66	66	68	69	60	48	..	60.9
hitten..	Max..	89	86	64	76	85	88	93	88	93	85	84	77	79	85	87	88	86	80	78	85	83	84	85	88	92	90	90	91	79	69	75	84.6
	Min ..	69	67	71	62	53	58	66	65	70	66	61	57	51	52	56	72	62	57	58	65	60	51	58	58	60	68	69	68	63	49	47	60.9
ilton J.	Max..	91	94	91	85	78	89	95	97	97	92	88	82	80	82	81	79	82	83	80	85	86	83	82	89	92	92	91	96	85	75	78	86.5
	Min ..	74	71	73	64	56	56	65	69	73	66	66	65	56	85	84	85	89	83	84	87	89	88	86	86	87	94	90	95	96	86	79	73	87.1
inters't	Max..	83	..	83	75	85	86	90	91	94	94	90	85	85	84	85	89	83	84	87	89	88	86	86	87	94	90	95	96	86	79	73	87.1
	Min ..	69	71	67	59	54	..	..	70	78	74	71	57	52	55	57	62	68	60	55	55	60	54	60	56	62	65	68	68	63	51	45	61.6
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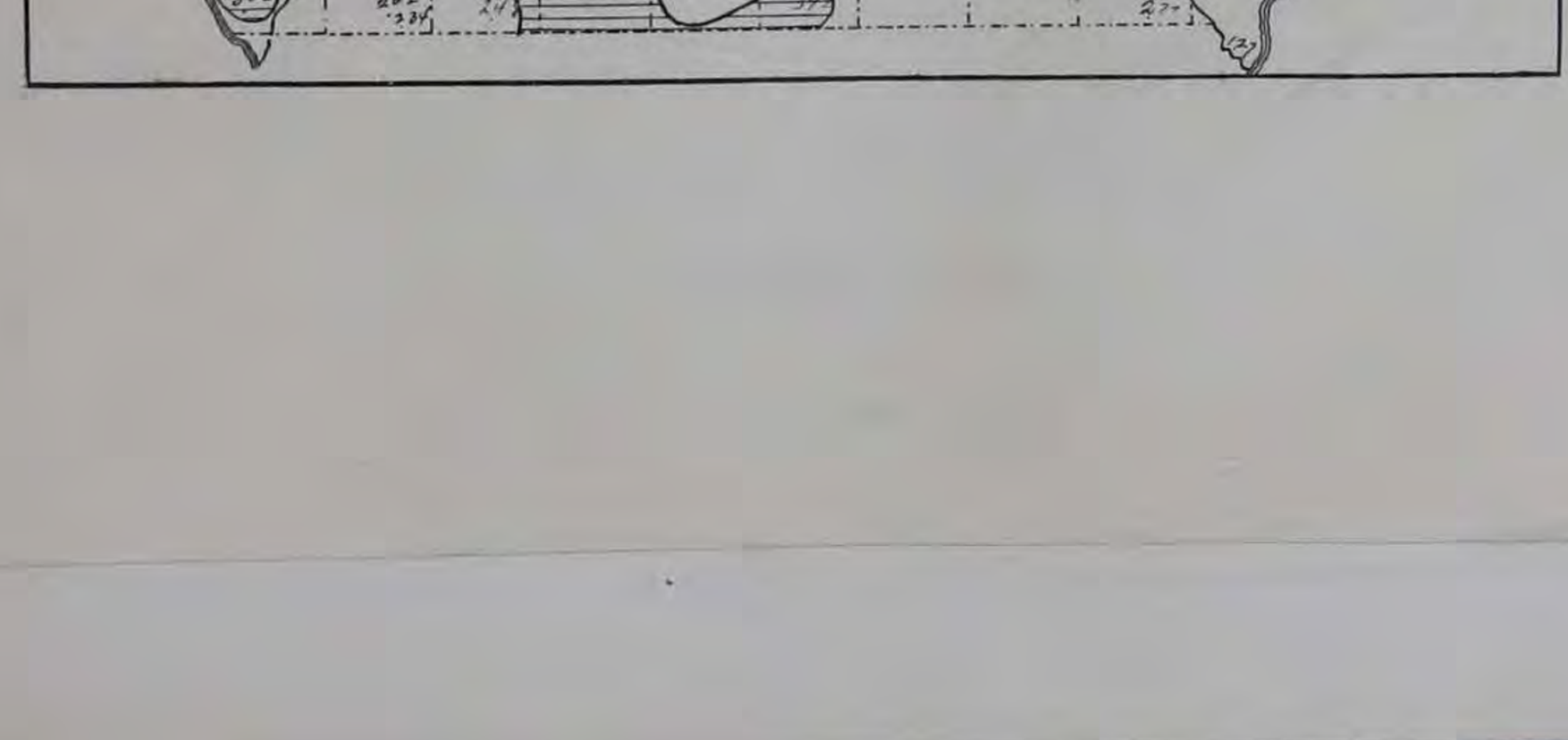
DAILY AND MONTHLY PRECIPITATION FOR JULY, 1903.

STATIONS.	DAY OF MONTH. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	[illegible]
Afton	.04		1.86							.53	.07						T			.14		.04						.15				[illegible]
Albia			.04	.41						T	.20						.05				.20		.01						1.10	.20		[illegible]
Algona				.30				.70	.45	.20							1.10									.02		T				[illegible]
Allerton	T		.19	.55							1.66						.21			.12	.13	.09							.97	T		[illegible]
Alta		.09	.30	.72				1.79		.53							1.30			78						1.27		.03			T	[illegible]
Alta (near)			.90					1.92		.60							1.20			.92						.25		.11			.33	[illegible]
Amana		T	.11	.5[illegible]				.03	.07	.52						T	.78				T						T	.02	.35			[illegible]
Ames	T	.06	.60	.04				.34		.18							2.36			.08	.19	.03						.36	.53		T	[illegible]
Atlantic	.25		.17					.05		.30							1.02			1.02		.12						.15	.60		T	[illegible]
Baxter			.43	.10				.03		.85							1.25						.05					.30	.60			[illegible]
Bedford	.01		1.23								.05		.02			T	.27			.02	.44	.05							.30	T	.08	[illegible]
Belknap			.33	.07							.30						T			T		T							.24			[illegible]
Belle Plaine			.30	.95				.20		1.35						T	1.10				.10					T	.02		.45			[illegible]
Bonaparte			.56							.21	1.07										.82							.08				[illegible]
Britt	T		.01	.60				.40	.68	.12	.02						1.12			.08	.03					.11	T	.28			T	[illegible]
Buckingham		.29							.16	.96							.02			T						T		.50	.48			[illegible]
Burlington			.57							T	.72					.11	.26											T	.13		.08	[illegible]
Carroll			.26	.48				.45	.65		.05						3.05			.30			.13					.18	.04			[illegible]
Cedar Rapids	.26	T	1.15					.90	.13	.03							1.06									.20		.29	.02			[illegible]
Chariton	T		.95	.50							1.05						T			T	.78	T						.45	.70			[illegible]
Charles City	1.15			.35	T			.04	1.73	1.90	.14	T					.28	1.53			.04					T			.20			[illegible]
Chester			.12	.08					1.28								1.75									.17		.75				[illegible]
Clarinda	.02			.75										.06			.13			.04		.15							.73		.15	[illegible]
Clear Lake		T	.05	.20				.20	2.20	.07	T						1.40			T						.07		.76				[illegible]
Clinton		.35	.20	.16					.53	2.38							1.08											.57				[illegible]
College Springs			.46	.56							T		T		.01		.25				.01	T							.85		.20	[illegible]
Columbus Junct'n	T		.29							.50	T					.10	.53				T								.10			[illegible]
Corning	T		.89	.18				T			T	T	T	T	T		T			.50	.10	.02						T	.78		.04	[illegible]
Corydon	.02		.11	.18							1.81						.52			.09		.06						.04	.11			[illegible]
Cumberland				.60						T						2.20					2.21	.08						1.00	.40		.20	[illegible]
Danville		.10	.85				T										T	.50									.15	T	T	.05	.10	[illegible]
Davenport		.70	.49	.06					.07	1.24	.20					1.00	.48				.01							.16	.06			[illegible]
Decorah				1.60					3.09	.15							2.12								T		.30	.88				[illegible]
Delaware		.47	.23	.68				.27	.90	5.12							2.56									.02		.25				[illegible]
Denison				.52				.19	.04	.20	T						3.43			.28		.19				.10		.18	.15			[illegible]
Des Moines	T		.92	.01				.34	T	.30							.31			.01	.30	.01						.47	.95			[illegible]
De Soto	T		.60	.05				.22		.41							.55			.05	1.11	.05						.65	.75		T	[illegible]
Dows			.05	.05				.42	2.30	3.28							2.60									T		.80				[illegible]
Dubuque		.36	.01	.42				T	1.75	1.63							2.10	T								.69	.04	.10	T			[illegible]
Earlham	.50		.70	.10													.26			.19	.53	.06						.19	1.09		T	[illegible]
Elkader		.58		.80					4.06	.46						.02	5.00										.65	1.00	.15			[illegible]
Estherville	.20	.04	.24	3.00	.03			1.00	.56	.15	.02	.01				T	1.00	.50			.04					.20	.18		1.53			[illegible]
Fayette		.04	2.10	.34				.95	2.52	.39	.49					.06	3.42									T		.40				[illegible]
Forest City				.34	T			.22	.30	.57	.10	.50					1.00	.71									.05					[illegible]
Fort Madison			.45							T	.33					.18	.15			T		T						.03	.67	.07		[illegible]
Galva	T		.62	.20				.64	.23	.96							.14			1.15						.18		.21				[illegible]
Gilman			.58	.14				.33	T	1.54					T		1.06			T		T				T		.26	.58		T	[illegible]
Grand Meadow		.43	.86						4.04	1.25							3.20								T	T	.70	.37				[illegible]
Greene			.24	.12				.30	2.28	3.41							1.87			T						.03		.65				[illegible]
Greenfield	T	T	.78	.08			T	T									.29			.12		.11						.72	.33		T	[illegible]
Grinnell (near)	.01		.30	.35				.41		1.20							.60			T	T	.02						T	.90			[illegible]
Grundy Center		.27	.87					.30	.03	1.07							2.00			T						.41		1.17	.07			[illegible]
Guthrie Center	T		.46	.55				.11		.06							2.26			.41		.11						.71	.66		.02	[illegible]
Hampton			.15					2.91	2.74	.47							2.42									.01		.90				[illegible]
Haniontown			.10	.43				.29	.63	.05	.28						2.00			.04	.05					T		.02				[illegible]
Harlan	.09	.04	T	.62				.49		.34		T	T	T			2.28			T	.06	.09						.13	.91		T	[illegible]
Hopeville	.03		.78	.11				.08		.47	.02						.10			.25		.04						1.	.20			[illegible]
Humboldt				.40				1.20	1.68	.68							.93				.15					.28		.02	T			[illegible]
Ida Grove	.42		.17	.29				.70	.43	2.27								.96		.11		.12				.63		.29				[illegible]
Independence	T		.40	.10				.10	1.40	2.45							1.50									T						[illegible]
Indianola	.05		.46					T									.10											2.70			.70	[illegible]
Iowa City		T	.23	.29					.33	1.15	1.20							.80											.76	T		[illegible]
Iowa Falls	.04	.06		.23	T			.09	1.23	.63	.86						.03	1.20			T						1.49		.72			[illegible]
Jefferson			.17	.07				1.75									1.52			.15		.02						.20			.01	[illegible]
Keokuk			.20	.12				T			.36						.05				.07	T						T	.41		.06	[illegible]
Keosauqua				.53							.25	1.03					.03	.02			.77		.03						.06			[illegible]
Lacona			.45	.39						.19							.10			.36								.50				[illegible]
Lansing	.10	.30		.2[illegible]					2.75	.22							1.10									.20		.30				[illegible]
Larchwood	.10		.53	.24				.82	.10	.05	.08	.05					2.10									.68		.08			T	[illegible]
Le Claire		.22	.38	.23					.67	.70	.61					.22		1.30			T						T		.19	.02		[illegible]
Le Mars	.25		2.05	.70				.59	.04						T		1.60											.23			T	[illegible]
Lenox	.02		1.12	.37						T	.17						.07			1.60	.18							T	.70			[illegible]
Leon	.06		.25	.27							.22	.11					.39			.25		.08							.25	T	T	[illegible]
Logan				.88			.02			.07			.18		.05		2.30		.04		.12								.75		.07	[illegible]
Maquoketa	.02	.73	.16	.61					1.73	2.18	.71							1.03											.41	.05		[illegible]
Marshalltown	.30	.07		1.09					.06	.07	.03	1.25				.01	.21	1.96									.03		.97	.07		[illegible]
Monticello	1.65		.75						1.50	3.00	.10					T	1.10									.30	T	T				[illegible]
Mason City			.10	.26				.25	2.75	.12	.45						1.45			T						T		.56				[illegible]
Mount Ayr	.10		2.20	.50							.60			T	T		.10			.31	.18	.06							.25	T	.06	[illegible]
Mt. Vernon		.05	.25	.50				.50	.25	1.57						.13	.62									T		.08	.18			[illegible]
New Hampton		.21	.18	.23				.07	3.42	.55						.11	3.00									.08		.23				[illegible]
Newton			1.50	.25				.13		1.18							1.69			T	.05								1.10			[illegible]
Northwood			.10	.23	T			.19	1.08	.03	.02				T		1.72			.04						T		T				[illegible]
Odebolt	.40	.05						.97	.75	.07							1.85	.45				.05				.20		.08				[illegible]
Ogden		.28		.38				.46	.36								.26	1.95			.25								1.15			[illegible]
Olin		1.25		1.00				.10	2.00	2.24						.33	.58											.04	.01			[illegible]
Omaha, Neb	.01		.01	.13				T		T			.01	.08	.02		.72				.12	.17						.22	.96		.22	[illegible]
Onawa	.50		1.25	1.42				.15		.26		.05	.05	.04			2.78				.22	.27						T	.22		T	[illegible]
Osage			.15	.22				.34	.96	.04	.02					.01	2.20			.04						T		2.41				[illegible]
Osceola				.52							.65						.60	.02			.50		.02						.14	T		[illegible]
Oskaloosa	T		.41	.15						.33	.02						.28			T		.02						.04	.36	T		[illegible]
Ottumwa			.16	.02						.61							.36			T	.46	.01						.02	.14			[illegible]
Pacific Junction			T	.30				.12					T	.06	.04		.92				.28	.05							.85		.26	[illegible]
Perry	T	.08	.50					T									2.25			.05		.07				.12		.21	.36		T	[illegible]
Plover			.04	.47				1.84	1.00	.24							1.00			.06	.38					.16		.11				[illegible]
Primghar			.05	.70				.45	.17						T		.85			.50							.80				T	[illegible]
Red Oak			.26	.06				T		T	T		T	.03	T		.22			T	.09	.02						.16	1.28		.22	[illegible]
Ridgeway		T	.38	.02				.05	2.47	.06	.01						2.04								T	.02	.15	.02				[illegible]
Rockwell City			.15	.41			2.50		1.01	1.05							1.40			.02					T		.10					[illegible]
Sac City	.18		T	.15				1.47	.49	2.40							1.52			.19						.40		.46	T			[illegible]
St. Charles	.06		1.31	.12							.30						.10			.04	.55	.05						.54	1.12			[illegible]
Scranton			T	.11		.01		1.17	.35	.01	T						1.58			.18		.07						1.35	.05		T	[illegible]
Sheldon	.10	1.27	.15					.75	T		.15	.02			.10		1.12			1.80						.73		.03				[illegible]
Sibley			.23	1.23				1.01	.11	.10		.07				.01	1.22	.93			.68					.37			.08			[illegible]
Sigourney	T		.03							.28	.10						.44				.39	T						1.30	.17			[illegible]
Sioux Center	.09		.74	.15				.18	T	T		.15			T		1.00					T				.36		.03				[illegible]

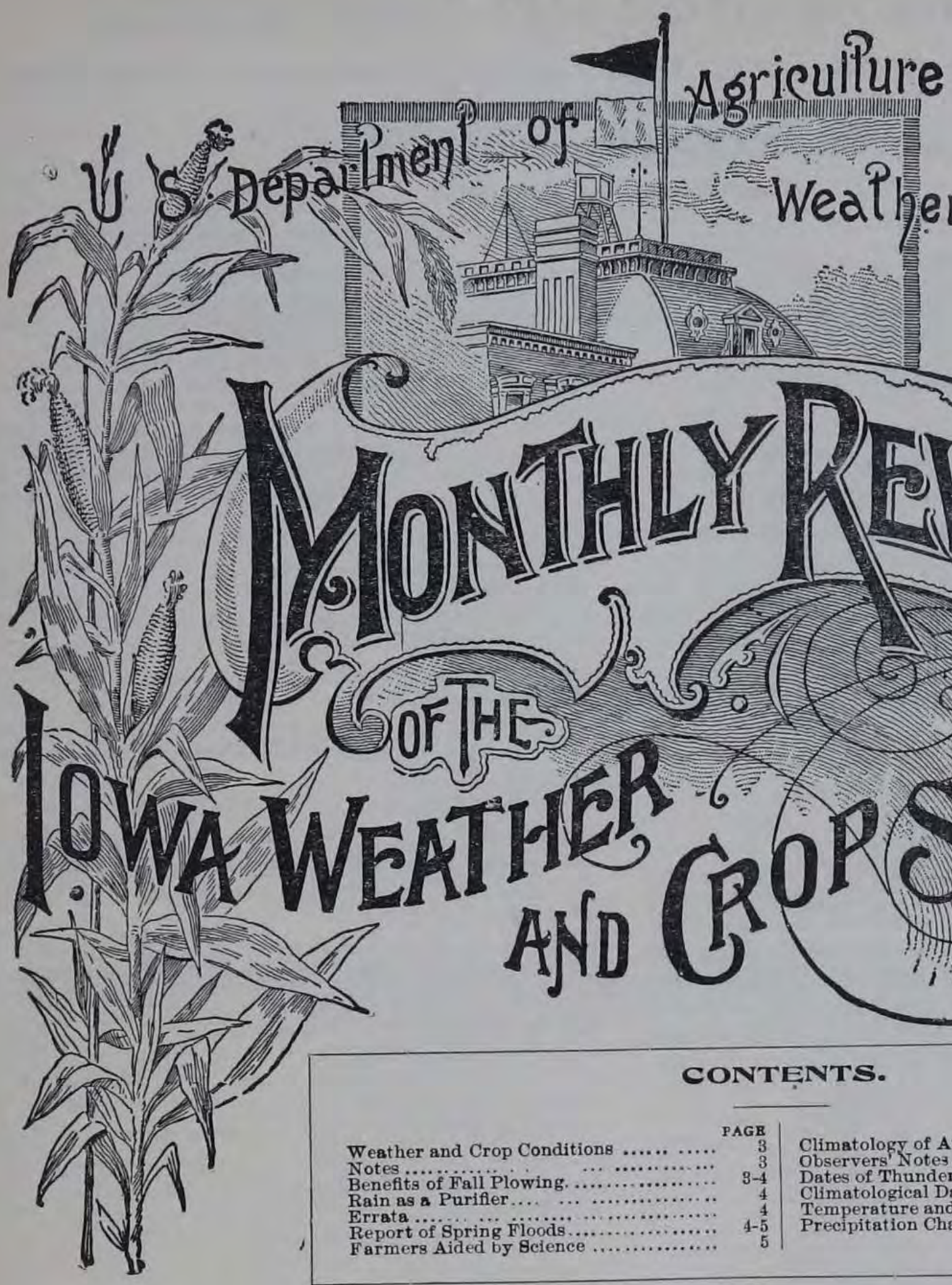
DAILY AND MONTHLY PRECIPITATION FOR JULY, 1903—CONTINUED.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sioux City	....	....	1 01	.88	...		. .	.38	....	.73		....	T	.	.04	....	.97	....	....	..	.09	.01	..	....	....	1.40	....	.04	....	....	.03	5.57
Stockport	..	....	.36	...	..	..	....	....	....	.60	.63	....		..	....	....	.25	....	...	....	.51	T	....		....	....	....	....	.17	..	.01	2.53
Storm Lake	T		.05	.40	..	...	.59	.79	.11	1.16	....	....	..		....	..	1.42	....	.	.45	....	....	...	....	....	.70	...	.16	...	..	...	5.83
Stuart	T	.70	..	....		....	....	.22	...	...		....	....	T	....	...	1.1c	...	....	T	T	.15	...	....	....	....	....	.10	.83	..	..	3.18
Thurman	....	....	T	.52	..	...	....	T	..	T	T	....	T		T	..	1.20	.....	....	....	.78	T	....	....	....	....		....	.28	..	.28	3.06
Tipton	T	.10	.31	.43	..	..	.	T	....	3.41	...	....	....	..	....	.52	.83		....			....	....	....	....		....	.05	.71	...	....	6.36
Toledo	....	....	.03	.60	....	....	....	.25	.25	1.25	....	...	..	....	T		1.30	....	...	..	..	....	....	....	..	.20	....	....	.55	....	....	4.43
Vinton	....	.38	.09	.02	...	....	....	.46	1.00	1.10	...	..	....	....	....	1.22	....	....		..	....	..	....	....	....	.06	....		.38	....		4.71
Wapello	....		1.23	..	....	....	..	....	....	.70	.10	....	....	....	....	.16	.20	....	....	....	....	....		....	....	..	....	....	....	....	.20	2.59
Washington	....	....	.08	...	....	....	....	...	....	.47	.15	....	...	....	....	.....	.63	....	....	.04	..	....	....	....	....	....		....	.15	...	....	1.52
Washta			3.32	....	....	....	....	.23	....	2.25	....	T	....	....	T		.87	....	....	T		T	..		....	.38	....	.09	....	....	..	7.14
Waterloo	T	.25	T	.40	...	....	..	.24	.5	2.39	1.26	...	.	....	....	....	.55	2.78		....	T		....	....	....	T	T	....	71	....	....	9.08
Waukee	.02		.56	.04		....	...	.15		1 02	....	....	....		..	...	.57	..		.05	.26	.05	....	.	...	..	..	.60	1.00	...	T	4.32
Waverly	...	.18	.28	.12	.....	....		.15	1.94	2.87	...	....	....	....	....	....	1.44	.	...	.02	....	....	....	....	.	...		.50	....	.	....	7.50
West Bend	....	....	....	.55	....	..	.	.81	1.08	.14	....	T	....	....		....	1.30	..	....	.06	....	..	....	....	....	.20	.11	.30	....	....	....	4.55
West Union	....	.54	1.55		...	....		.60	4.20	.37	....	....	....	....	.03	....	3 56	..	..	....	....	....	..	....	....	....	....	27	..	..		11.12
Whitten	....	.53	.35	.10	....	...	....	.28	.02	.57	.04	....	....	...	T	..	2.15			....	....	...	....	....	....	.42	.03	T	.14	....	....	4.63
Wilton Junction	....	....	.08		....	....	....	....	....	3.66	.73	.47	....	..	....		.73	....	....	....	....	....	....	....	....	....	....	.68	....	....	....	6.35
Winterset	....	....	1.04	.11	..	.	....	....	...	....	....	..	....		....	....	.13	....	....	.10	1.35	.06		..	....	....		....	1.55	....	....	4.34
Woodburn	...	..	56	.09	..	..		....	...	89	.05	....	....	....	....	....	.09	....	....	.72	07	..	..	....	..	....	....	.74	.20			3.41

Precipitation Chart July 1903.



AUGUST, 1903. No. 8.



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BERNARD MURPHY, STATE PRINTER,
1903.

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Columbus Junction	J. B. Johnson
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Dows	A. C. Fuller
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Newton	Hon. J. P. Beatty
Northwood	Dr. J. H. Darey
Odebolt	E. Starner
Ogden	E. Sayre
Olin	Hon. Nathan Potter
Omaha, Neb	*L. A. Welsh
Onawa	C G. Perkins
Osage	G. D. Pattingill
Osceola	Mrs. S. Lewis
Oskaloosa	Jos. Boyd
Ottumwa	Dr. W. B. La Force
Pacific Junction	Agent C., B & Q. R'y
Pella	L. L. Davenport
Perry	J. A. Harvey
Plover	J. S. Smith
Primghar	Jasper N. Marsh
Red Oak	J. S. Cole
Ridgeway	Arthur Betts
Rockford	J. R. Waller
Rockwell City	C. M. Randall
Ruthven	F. M. Fitzgerald
Sac City	J. A. Sodestrom
St. Charles	C. W. Minard
Scranton	Willis E. Lamb
Sheldon	J. B. Frisbee
Sibley	H. G. Doolittle
Sigourney	Mrs. R. F. Ashbaugh
Sioux Center	Jacob de Ruyter
Sioux City	*U. G. Purssell
Spencer	S. Gillespie
Spirit Lake	W. C. Drummond
Stockport	C. L. Beswick
Storm Lake	L. E. Burdick
Stuart	Hon. John Herriott
Thurman	C. R. Paul
Tipton	F. K. Gregg
Toledo	Herbert Giger
Vinton	T. F. McCune
Villisca	C. E. Matteson
Wapello	Geo. W. Schofield
Washington	Wm. A. Cook
Washta	H L. Felter
Waterloo	M. L. Newton
Waverly	H S Hoover
Whitten	Dr. Frank P. Butler
Wilton Junction	J. M. Rider
Winterset	B L. Sprinkle
West Bend	Phil Dorweiler
West Union	J M. Lisher
Woodburn	C. B. McDonough

*U. S. Weather Bureau.

WEATHER-CROP OBSERVERS.

Reporting for the Weekly Bulletin.

Agency	J. H. Van Zandt
Albia	Wm. Mercer
Allerton	James Piper
Alta	Jonas Cushman
Blairstown	T. H. Weil
Burt	R. Jain
Cedar Rapids	Hon. A. J. Fuhrmeister
Charles City	W. B. Towner
Chariton	C C. Burr
Clarksville	F. M. Russell
Correctionville	Hon. W. B. Chapman
Corwith	Wm. Oxley
Council Bluffs	L. Prouty
Creston	M. V. Ashby
Danville	Sherman Matthews
Dunlap	Hon. B. F. Roberts
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Fort Dodge	R. W Blaine
Fruitland	R. T. Hummel
Goldfield	D. M. Stephens
Geneva	Wm. H. Thompson
Hartwick	Fred McCulloch
Harlan	H. B. Kees
Hesper	G. E. Dillingham
Humeston	Hon. S. H. Moore
Independence	Geo. H. Wilson
Indianola	H D. Guthrie
Ireton	J. M. Sherman
Lake City	C. B. Hamilton
Le Mars	Hon. Henry Schrooten
Manson	J. D. Skinner
Marshalltown	Hon. S. B. Packard
Mapleton	A. Lamb
Mt. Pleasant	W. S. Wright
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Monroe	J. A. Dibel
Nevada	Geo. C. White
Northwood	T. L. Bolton
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Pella	J. H. Ver Steeg
Pittsburg	G. C. Duffield
Red Oak	Hon. J. L. Stratton
Rock Rapids	D. E. F. Merrill
Rossville	T. B. Wiley
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Shenandoah	Reuben Mullison
State Center	E. P. Thompson
Stuart	W. W. Bailey
Toledo	W. G. Malin
Van Horne	Spencer Smith
Waukee	E. J. Leonard
Weldon	Ed Worden
Winterset	H. A. Kinsman
West Branch	Wrigley Smith
West Union	H. B. Blackman
Wilton	Thos. Boot
Wiota	I. S. Coomes
Woodward	Geo. Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIV. AUGUST, 1903. No. 8.

WEATHER CROP CONDITIONS, AUGUST, 1903.

August was cooler than usual, with a large excess of rainfall, humidity and cloudiness. The daily mean temperature for the state was 69.1°, which is 3.1° below normal, and exactly the mean of August, 1902. There have been two colder Augusts in the past thirteen years—in 1890 and 1897. The average rainfall, 6.64 inches, was 3.43 inches above normal, and the heaviest state average in any August of which we have records. The southern section received the larger amount, an average of 8.74 inches, the greater part of which fell in the last week of the month, when it was much needed and beneficial, though some local damage resulted from excessive downpours. For the state there was an average of twelve clear days, and nineteen cloudy or partly cloudy. Considerable progress was made during the fair weather periods in threshing and other farm operations. Haymaking was continued throughout the month, when the weather permitted, securing a large amount of aftermath, wild hay, and second crop of clover for seed and fodder. More than the usual amount of plowing was done, with generally favorable conditions of soil for this work. Threshing returns indicated generally light and unsatisfactory yield of wheat, oats and barley; the yield of timothy seed has been unusually heavy. The development of the corn crop was all that could be expected under the prevalent weather conditions. At the close of the month the early planted corn, about forty per cent of the whole area, had reached the roasting ear stage, or a little beyond, giving promise of reaching maturity within twenty days, under favorable conditions. The balance of the crop was in various stages of growth, indicating need of very good ripening weather for a full month or more to place the bulk of it beyond danger of harm by frost. The outlook for the crop as a whole was at that time very unsatisfactory. The late potato crop made fair growth in dry and sandy soil, but there were reports of damage by rot in many localities. The crop of early and fall apples gave good returns, especially in the northern half of the state; but winter apples were very unpromising. Pasturage made a heavy growth, giving assurance of abundant fall feed for stock.

NOTES.

As the apple in prime condition will soon be here again, it is well to remember, says the cooking club, that this fruit contains a larger percentage of phosphorus than any other fruit or vegetable. This phosphorus is admirably adapted for renewing the essential nervous matter of the brain. The acids are also of great value for people of sedentary habits, whose livers are sluggish in action, these actions serving to eliminate from the body noxious matters, which if retained, would make the brain heavy and dull, or bring about jaundice or skin eruptions. Some such experience must have led to the custom of using apple sauce with roast pork and similar dishes. The malic acid of ripe apples, either raw or cooked, neutralizes any excess of chalky matter engendered by eating too much. Apples are useful as a disinfectant for the system, and have considerable value as an antidote for tobacco and liquor. Under all conditions and in all cases there is no fruit so beneficial or harmless as the apple.—*Exchange.*

There has been some speculation as to the cause of the crop deterioration which occurred just before harvest this year. The *Commercial West* notes the remarkable deterioration which cut the crop down from 800,000,000 bushels, the earliest optimistic report of the "probable" crop made by the government, to 625,000,000, the present estimate. It is well known, and has been noted before in the *Modern Miller*, that the deterioration was not caused by a series of calamities in the way of frosts, drouths or insects, and in searching for an explanation the *Commercial West* advances the novel theory that the sun's rays were absorbed in the atmosphere and plant life did not receive enough heat and light. The theory is credited to one Duvigneaud, of a Minneapolis grain commission company, who discovered that the July sun was not sufficient to give the usual actinic effects in camera work and that photographic plates were under-developed, where the usual amount of time was allowed. The theory is strengthened by a professor in the Smithsonian Institute, who claims that this year there has been an unusual decrease in the transparency of the atmosphere, probably due to volcanic dust from Mt. Pelee, or to an overdose of moisture in the atmosphere.—*Modern Miller.*

BENEFITS OF FALL PLOWING.

Cultivation is probably the most important feature connected with the handling of soils. Nature has placed large quantities of plant food in our soils, and it depends upon our skill and knowledge how far we can make use of and work this mine for the benefit of our crops. Cultivation is vital, and the subject is so wide that one scarcely knows where to begin. For spring grains I try to plow in the fall. When the furrows are well and evenly set up and are frozen, and when the frost comes out, fertilization takes place and the soil is left in a fine granulous condition. Plant food is liberated and a warm seed bed is formed. When plowing for spring grain is left until the spring, our teams are plowing when they should be surface cultivating and drilling in the seed. Every day's delay in getting in grain after the soil is dry enough to work means fewer bushels at

threshing time. Soil plowed in the spring, too, is colder on the surface than that plowed in the fall, which involves slower germination and vegetation. As to the proper depth to plow, it seems to me that is a question which each farmer must decide for himself, according to his own soil, conditions and crop requirements. If the soil of a given field is deep, say ten or twelve inches, and that field were plowed in the fall for spring grain, I would try to plow it about seven inches deep. But if by some mischance that field were not plowed until the spring I would plow it lighter, as the deeper the plowing the colder the surface turned up. If that field were plowed in the fall for mangels, I would try for about eight inches. But if the surface soil of this field is only six or seven inches deep, I would try to plow it only five or six inches deep. In other words, the depth of the soil, the time of plowing and the nature of the crop grown are all factors in determining how deep to plow. I do not wish to bring any subsoil to the surface if I can avoid it. Sometimes, however, the surface soil is so shallow that some of the subsoil must necessarily be brought to the surface in plowing. If I have a deep soil I want to give the roots of the plants liberal feeding grounds, because they will, if allowed, strike down deeply. As to the question of frequency of plowing, it appears to me that that also depends upon soils and circumstances. Heavy, compact soils require most plowing than lighter ones. Such soils tend to get hard and bake and become inert, and hence require the plow to open them and improve their mechanical condition. The plow, too, is the surest and quickest way to destroy many sorts of weeds. Where the land is clean and the soil will permit it, surface cultivation with a disc or spring tooth often forms better seed-bed than the use of the plow.—*A. W. Pearl, in Farmers' Review.*

RAIN AS A PURIFIER.

The health department has often called the attention of the public to the fact that rain is a great purifier, and there is some highly interesting testimony to the same effect in a recent number of the *London Lancet* which is fortified by references to recent examination and analysis.

Beginning with June 13th London had a continuous rainfall for five days, the total precipitation being estimated at 3.8 inches. On the third day of the period a supply of raindrops was secured for an investigation, and it was found that the solid matters contained therein amounted to 9.1 grains per gallon. Among the constituents noted were common salt, ammonium sulphate, organic ammonia, soot and suspended matters and nitrates. The *Lancet* assures us that the quantity of ammonia sulphate, .625 grains, was remarkable, and that its chief origin is the consumption of coal. Salt contributed .8 grains and soot and suspended matter 5 grains. With this analysis and an estimate of 6,437,229,860 gallons for the total rainfall over the London country area as the basis of the calculation, it is figured that the enormous downpour "represents the washing out of no less than 3,738 tons of solid impurities, of which 330 tons consisted of common salt, 267 tons of soot and suspended matters." Another interesting computation is given as follows: "Regarding the combustion of one ton of coal to produce 20 pounds of ammonium sulphate (a very fair average) the quantity of coal represented by the storm would be 29,904 tons."

The *Lancet* adds that besides the purification which is shown by the analysis there is a bacteriological purification also, which of course is a very important factor in the beneficient work of the rain.—*Chicago Record.*

ERRATA IN JUNE REVIEW.

FT. MADISON.—Total precipitation recorded 2.49 inches on pages 7 and 10, should have been 3.49 inches.

LANSING.—Mean minimum temperature recorded 51.2° on page 9 should have been 51.7°.

STUART.—Mean temperature recorded 64.2° on page 6, should have been 64.4°.

Mean maximum temperature recorded 73.4° on page 9, should have been 73.5°.

REPORT OF SPRING FLOODS.

REPORT SHOWS TOTAL LOSS FROM FLOODS WILL REACH $40,000,000.

WASHINGTON, D. C., September 2.—Dr. Frankenfield of the United States weather bureau has completed and sent to the printer an exhaustive report on the floods of the Missouri and Kaw rivers. The report is the most comprehensive thing of the kind ever attempted by the government.

His report will show that the spring floods of 1903 in the Missouri and Kaw rivers and upper Mississippi were the most destructive in the history of the country and were the greatest in the volume of water, with the exception of 1844. The fact that a lesser volume of water in 1903 created greater havoc is due to the narrowing of the channels of the river by the march of civilization up and down the water courses and the reclamation of lowlands. Dr. Frankenfield corrects an erroneous popular impression that forests make rains. He says that while they do not make rains, they are valuable in that they retain the moisture. In recent years the denuding of the forests makes it possible for the water to reach the water courses much quicker than when there were extensive forests This causes quicker rises in the water courses and enlarges the possibilities of destruction.

In support of the assertion that there was a greater volume of water in the flood of 1844 than in that at Kansas City of this year, Dr. Frankenfield says that the water was two feet higher at Kansas City than this year and three and a half feet higher at St. Louis. Recent years have seen the river at Kansas City reduced in width from 2,000 to 1,100 feet. This illustrates the contraction of the water course and the resultant increase in the speed of the current. There were sixteen bridges swept from their foundations by the Kaw river during this year's flood. Some of these were not more than 400 feet long and this is a further illustration of the contracting of the courses of streams. Present day construction of bridge approaches is tending all the time in the direction of solid embankments of masonry and these have the effect of a dam. This increases the back water and the height of the stream at these points.

The report asserts that the total loss from the floods in the upper river was in round numbers $40,000,000. This is neither speculative nor an estimate, but is based upon actual investigation by the observers of the weather bureau. The loss in the vicinity of Topeka, Des Moines and Kansas City was largely to crops, railroad rights of way and bridges, and to the commercial interests along the river. A loss of $11,500,000 was sustained between Hannibal and St. Louis on the Mississippi, and between Alton and Kansas City on the Missouri. The loss in the immediate vicinity of Kansas City was $15,500,000.

Usually the agricultural interests suffer greatest from the flood, but Dr. Frankenfield remarks that the high water of this year distributed its ravages with impartiality. The farming interests sustained about a third of the loss, the railroads another third and the balance was to the commercial interests of cities and the loss of personal property. The loss from the destruction and damaging of bridges alone amounted to $750,000. The total area overflowed by the spring floods was 3,500 square miles. As large an area has been overflowed before, but with less disastrous results. This year 320,000 acres of land in the "American" bottoms opposite St. Louis from Alton to the Kashaskia river were overflowed.

In the state of Missouri alone about 1,000,000 acres were submerged. The floods were severe tests to the levee system. On the Mississippi side the levees were badly broken from about Warsaw to Hamburg. The Hunt, Lima, Lake, Indian Grove and Sny levees suffered severely. The three first ran from Warsaw to the bluffs at Quincy, and the Sny continues the

chain to Hamburg for about fifty miles. The severe test applied to the Sny levee demonstrated its superiority for that sort of engineer construction work. It had a serious break in only one place and that was where the Alton railroad uses it as a right of way to get into Louisiana.

The Skunk river levee broke, putting 15,000 acres of land under water. Dr. Frankenfield says that a good portion of the water was drained off the land in time for late seeding and raising of fair crops. He comments on the great commercial loss because of the overflowing of large portions of the cities of Kansas City, Topeka and Des Moines. While this is not generally known, he asserts that in the city of Des Moines seven square miles were overflowed.—*Press Special.*

FARMERS AIDED BY SCIENCE.

No book is more certain of a large circulation than the "Year Book" of the Department of Agriculture. One of the most interesting articles in the new volume relates to the results of experiment station work. Our agricultural experiment stations now form the most complete system of agricultural research in the world and the results they attain are influencing our farmers to a large extent.

There are sixty of these stations, employing nearly 1,000 trained scientific and practical men; and they are in operation in every state and territory, including Alaska, Hawaii, Porto Rico and the Philippines. The stations have existed as a national enterprise for fourteen years and the outlay for agricultural investigation in that time has been at the rate of $1 for nearly $3,000 worth of farm products, which cannot be considered an extravagant outlay.

Here are some results of the work of the stations:

Our farmers spend over fifty million dollars a year for fertilizers and the stations therefore have given particular attention to this subject. Fraud and extravagant assertions about fertilizers have been largely eliminated from the business and thousands of farmers are buying fertilizers more intelligently and economically. They also know just what they are using in terms of nitrogen, phosphoric acid and potash with the reason for using them.

The annual loss to our farmers from waste of barnyard manure is estimated at seven million dollars. Many of the stations have given special attention to the economic use of manure on the farm, with the result that better methods for its care and use are being employed.

The successful introduction of Mansury barley, for which the Wisconsin station is mainly responsible, has increased the yield of barley over a wide region, with results worth millions of dollars.

Kaffir corn was introduced about fifteen years ago by the stations in California, Kansas and Oklahoma. It has been found specially suited to regions of scanty rainfall. The crop in Kansas alone in 1899 was valued at over six million dollars.

A variety of oats introduced by the Department of Agriculture and tested and improved by the Wisconsin and other stations has been widely distributed and is grown with an average yield wherever it is sown of from three to five bushels an acre.

The various macaroni wheats which have been tested under varying conditions by a number of the stations have proved so successful that the United States will probably produce all the macaroni it consumes in the course of a few years.

The investigations of the experiment stations in the southern states have convinced farmers that many varieties of forage plants may be more successfully grown in the south than was supposed and have laid the foundation for a wide development of the live stock and dairy industries of that region.

The Department of Agriculture and the Connecticut State Station, co-operating with local tobacco growers, have within the last three years demonstrated that a fine grade of Sumatra wrapper tobacco may be grown under shade in the Connecticut valley. Professor Whitney says that this discovery will increase the value of light lands of the Connecticut valley over 200 per cent.

Speaking of the work of the Minnesota station in breeding wheat, W. S. Harwood has recently written that it is not only quite possible, but is indeed an established fact, that wheats superior to the best the world has possessed may now be produced. By the use of the new wheats the crop of the hard wheat region of the northwest may be increased from three to five bushels to the acre.

The stations of the northwestern states have extended the limits of corn culture by proving, by careful selections of varieties and modified methods of culture, that this crop may be grown in regions heretofore believed to be unsuited to corn culture.

The stations have been prominent in the investigations which have led to the new system of forcing vegetables in the field and under glass for supplying the markets with fresh vegetables at all seasons of the year. For example, the winter culture of lettuce in eastern North Carolina is now yielding over $100,000 a year. The Ohio station discovered that onions started in the greenhouse or under frames from seed and then transplanted to the open field produced larger onions and earlier and heavier crops than by the usual methods of tillage and seeding. This discovery is changing the methods of onion culture.

These are only a few of the many ways in which the experiment stations are helping agriculture. Their investigations relating to protective measures against plant diseases and injurious insects, the storage and utilization of fodder crops, breeding and dairying, the protection of farmers against fraud and many other topics have been of the utmost value.—*New York Sun.*

CLIMATOLOGY OF THE MONTH OF AUGUST, 1903.

BAROMETER.—Mean pressure, 29.96 inches; highest observed, 30.19 inches, at Dubuque, Keokuk and Des Moines, on the 1st, 3d and 31st; lowest observed, 29.63 inches, at Sioux City, on the 24th; range for state, 0.56 inches.

TEMPERATURE.—The mean monthly temperature for the state, as shown by records of ninety-nine stations, was 69.1°, which is 3.1° below normal. By sections the mean temperatures were as follows: Northern section, 67.0°; Central section, 69.3°; Southern section, 70.9°. The highest monthly mean was 75.0°, at Logan; lowest monthly mean, 63.8°, at New Hampton. The highest temperature reported was 101°, at Logan, on the 24th; lowest temperature reported, 41°, at Ogden, on the 31st. The average monthly maximum was 91.6°; average monthly minimum, 47.3°. Greatest daily range, 45°, at Logan; average of greatest daily ranges, 31.4°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 110 stations, was 6.64 inches, which is 3.45 inches above normal. The averages by sections were as follows: Northern section, 5.51 inches; Central section, 5.67 inches; Southern section, 8.74 inches. The largest amount reported was 17.74 inches at Woodburn; least amount reported, 2.55 inches at Toledo. The greatest daily rainfall reported was 11.22 inches, at Chariton, on the 27th. Average number of days on which .01 of an inch or more was reported, 11.

WIND AND WEATHER.—Prevailing direction of the wind, southwest; highest velocity reported, 44 miles per hour, from the southeast, at Sioux City, on the 1st. Average number of clear days, 12; partly cloudy, 10; cloudy, 9.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	29.94	30.17	3	29.72	23
Des Moines	29.98	30.19	31	29.72	23,27
Dubuque	29.98	30.19	1	29.73	24
Omaha, Neb	29.95	30.19	31	29.69	23
Keokuk	29.94	30.19	3	29.74	27
Sioux City	29.97	30.18	30	29.63	24
Means	29.96	30.19	1,3,31	29.63	24

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	4606	27	S	5
Des Moines	4985	30	W	24
Dubuque	4360	24	NW	8
Keokuk	4774	30	NW	28
La Crosse, Wis.	4532	49	N	5
Omaha, Neb	4874	35	SW	24
Sioux City	6850	44	SE	1

OBSERVERS' NOTES.

ALTA.—*David E. Hadden.* Frequent and heavy rains during the month, with total of 6.28 inches; several destructive electric storms and some hail; bright aurora on evening of 21st.

AMANA.—*C. Schadt.* On the 1st 0.42 of an inch of rain fell in ten minutes—7:32 to 7:42 P. M. Weather has been too cool for corn, but favorable for harvest and threshing.

ATLANTIC.—*J. W. Love.* A very wet and cool August.

BELKNAP.—*A. W. Rankin.* Heavy rain, greatly needed, on 26th, 27th and 28th; damaging hailstorm on 28th.

BONAPARTE.—*B. R. Vale.* A cool but growing month; 7.53 inches of rain, but none too much; fall plowing begun and pastures improved.

BRITT —*Geo P. Hardwick.* Cool, with excessive cloudiness; no damaging winds; ground in good condition for plowing; much tiling being done.

CHARITON.—*C. C. Burr.* Rainfall in August 14.05 inches. The storm of the 27th (11.22 inches) was accompanied by excessive lightning and three barns were burned. The floods washed away bridges and covered lowlands, floating away hayricks which looked like steamboats going down the streams.

CLINTON.—*Dr. Luke Roberts.* Rainfall 4.79 inches, which is 1.77 above normal; mean temperature 2° below normal; no other August during the last twenty-five years gave a lower mean temperature; coldest day was the 30th; per cent of cloudiness high. It was not golden weather for maturing corn.

POSTVILLE. — *F. L. Williams.* The month was noted for cool nights and heavy rains; corn late and oats light.

HANLONTOWN.—*Miss G. M. Paschen.* Threshing from shock and fall plowing commenced on first of month; oats light, ranging from twenty to thirty-one pounds per bushel.

HOPEVILLE.—*M. T. Ashley.* About 5 P. M. on the 26th a terrific electrical storm occurred; three fires from effects of lightning were visible during the storm. The rainfall of the 26th and 27th made a total of 10.08 inches—the heaviest since this station was established.

JEFFERSON. — *Isaac Young.* Hail at Scranton on 14th destroyed several hundred acres of corn.

LEON.—*Millard F. Stookey.* The floods of the 26th and 27th swept away bridges and culverts, and damaged corn on bottom lands.

OLIN.—*Nathan Potter.* August has been cool, and the corn crop was delayed in ripening.

OSCEOLA.—*Mrs. S. Lewis.* Between 5:30 on the 26th and 5:30 on the 27th the amount of rainfall was 9.34 inches, of which amount 7.68 fell in thirteen hours.

RIDGEWAY.—*Arthur Betts.* The coolest August on record here, and the smallest daily range, but the mean minimum was lower in 1898 and 1902. There were 249 hours of sunshine, or 57 per cent. Pretty northern lights on 21st.

VILLISCA.—*C. E. Matteson.* An unusual month of thunderstorms and excessive rains and floods; much damage to crops on bottom lands.

WAUKEE.—*E. J. Leonard.* Cool and wet; rainfall, 9.33 inches; last year for August, 6.89 inches; farm work delayed and corn endangered by retarding its growth.

WOODBURN.—*C. B. McDonough.* Rainfall, 17.74 inches; greatest amount in twenty-four hours, 14.61, began at 6 P. M. on the 26th; much damage was done to railroad and country bridges.

DATES OF THUNDERSTORMS.

NORTHERN SECTION.

Algona, 23, 24, 26.
Alta, 1, 3, 7, 9, 14, 18, 22, 23, 24, 26.
Charles City, 3, 4, 5, 10, 25.
Elkader, 1, 3, 5, 8, 14, 25, 26, 28.
Grand Meadow, 1, 3, 5, 8.
Britt, 3, 4, 25, 26, 27, 28.
Larchwood, 7.
Hanlontown, 3, 4, 8, 24.
Northwood, 2, 3, 4, 5, 10, 14, 21, 23, 24, 25, 28.
Osage, 3, 4, 5, 14, 24, 26, 28.
Ridgeway, 1, 3, 4, 5, 9, 10, 14, 23, 24, 26, 28.
Sioux Center, 3, 8, 9.
Storm Lake, 1, 3, 8, 9, 15, 25, 26.
Waverly, 9.
West Bend, 3, 23, 24.

CENTRAL SECTION.

Amana, 1, 3, 5, 24, 26.
Ames, 3.
Carroll, 1, 3, 9, 13, 14, 24, 26, 27, 28, 29.
Clinton, 3, 5, 25.
Grinnell (near), 3, 5, 8, 14, 26, 27.
Grundy Center, 1, 3, 26, 28.
Harlan, 1, 3, 5, 7, 9, 12, 14, 18, 25, 26, 27.
Iowa Falls, 3, 4, 5, 15, 18, 25, 26, 29.
Jefferson, 1, 3, 14, 24, 26, 27.
Mt. Vernon, 25, 26, 27, 28.
Olin, 3, 5, 26, 28.
Onawa, 1, 5, 7, 8, 14, 22, 24, 26, 27.
Perry, 1, 3, 8, 9, 14, 24, 26, 27.
Sac City, 1, 3, 12, 14, 25, 26.
Vinton, 3.
Waterloo, 1, 3, 28.
Wilton Junction, 1, 27.
Whitten, 1, 3, 8, 19, 25, 26, 27, 28.
Waukee, 1, 3, 5, 8, 9, 12, 14, 26, 27.

SOUTHERN SECTION.

Afton 28.
Atlantic, 1, 3, 5, 9, 12, 14, 19, 24, 26, 27.
Audubon, 14, 24, 26.
Allerton, 1, 5, 10, 12, 13, 25, 27.
Bedford, 14.
Belknap, 28.
Corning, 1, 3, 5, 7, 9, 10, 12, 15, 19, 25, 26, 27, 28.
Corydon, 5, 27.
Columbus Junction, 5, 13, 25, 26, 27.
Earlham, 3, 5, 9, 12, 14, 24, 26, 27.
Ft. Madison, 9, 19, 26, 27.
Greenfield, 1, 3, 5, 6, 7, 9, 11, 12, 15, 25, 26, 27, 28.
Hopeville, 23.
Indianola, 5, 10, 24, 25, 27.
Keosauqua, 28.
Lenox, 27.
Leon, 3, 5, 7, 26, 27.
Red Oak, 1, 3, 5, 7, 8, 9, 10, 12, 14, 15, 18, 19, 24, 25, 26, 27, 28.
St. Charles, 25, 26, 27, 28.
Sigourney, 1, 5, 10, 25, 26, 27.
Stockport, 1, 5, 12, 27, 28.
Thurman, 1, 3, 12, 24, 25, 26, 27.
Villisca, 1, 3, 5, 7, 10, 11, 12, 14, 19, 26, 27, 28, 29.
Wapello, 5, 25, 27, 28.
Woodburn, 5, 9, 14, 24, 26, 27, 28.

CLIMATOLOGICAL DATA FOR AUGUST, 1903.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	68.1	-3.1	91	4	47	30,31	34	3.90	†3.2	1.00	....	9	10	16	5	SE	
Alta	Buena Vista	1,513	11	66.5	-4.6	88	4	47	8	32	6.28	†2.66	1.65	....	14	13	13	5	S	
Alta (near)	Buena Vista										6.04		1.93		13					
Britt‡	Hancock	1,236	5	67.2	-3.2	90	4	43	31	34	4.50	†1.54	1.09	....	11	5	19	7	SE, SW	
Charles City	Floyd	1,012	11	65.9	-5.5	89	25	46	7	33	4.38	†1.80	2.00	....	13	14	1	16	SW	
Clear Lake	Cerro Gordo	1,241	....	68.6		91	2	46	30	34	9.59		6.00	....	11	12	13	6	NW	
Decorah	Winneshiek	857	8	65.8	-5.2	84	4	48	7,12	30	8.07	†6.39	1.73	....	13					
Dows	Wright	1,142	....	67.0		89	4	44	30	30	4.47		1.28	....	9	16	6	9	SE	
Elkader	Clayton	727	21	68.7	-2.3	91	24	47	31	38	7.18	†4.37	2.20	....	9	13	12	6	NW	
Estherville	Emmet	1,298	7	66.2	-4.8	89	5,25	43	31	34	3.26	-.04	.90	....	9	15	1	15	NW	
Forest City‡	Winnebago	1,226	8	66.8	-4.7	90	4	48	9,11,12	34	4.38	†1.02	1.54	....	8	15	0	16	SW	
Grand Meadow	Clayton	1,180	11	65.2	-4.0	86	4	48	30,31	24	9.52	†6.98	5.40	....	11	3	17	11	SE	
Greene	Butler	924	5	67.8	-5.5	90	4	45	30	32	5.16	†3.02	1.43	....	10	7	13	11	W	
Hampton	Franklin	1,155	12	69.0	-1.4	93	23	48	30	30	5.28	†2.36	1.61	....	11	8	16	7	SW	
Hanlontown	Worth			66.3		88	21	45	31	30	6.15		1.70	....	13	20	6	5	SE, NW	
Humboldt(*a*)	Humboldt	1,095	10	70.6	†1.3	91	4	45	31	30	3.21	†.40	1.34	....	9	23	4	4	NW	
Larchwood‡	Lyon			68.0		89	4	45	30	29	4.87		1.10	....	8	12	12	7	S	
Larrabee‡	Cherokee	1,366	....	68.2		92	4	46	30,31	32	5.83		2.00	....	12	10	16	5		
Le Mars	Plymouth	1,224	6	67.5	-5.1	89	4	45	11,31	30	5.79	†3.24	1.20	....	11	9	15	7	N, S	
Mason City	Cerro Gordo	1,132	....	67.8		90	4	47	30	28	6.23		2.80	....	13	3	20	8	S	
New Hampton(*d*)	Chickasaw	1,169	....	63.8		85	24	45	30	26	4.75		1.89	....	9	14	11	6	NW	
Northwood	Worth	1,222	6	66.0	-8.6	84	4,24	47	30	25	6.94	†3.69	1.75	....	14	13	9	9	NW	
Osage(*a*)	Mitchell	1,184	11	64.1	-3.6	85	2,4,24	45	30	30	4.43	†1.51	1.46	....	13	9	10	12	S	
Plover	Pocahontas	1,190	5	67.9	-4.0	90	4	44	31	29	4.25	†1.16	1.94	....	10	19	4	8	S	
Primghar	O'Brien		....	66.8		88	3,4	43	11	30	5.35		1.75	....	8	20	0	11	NE	
Ridgeway	Winneshiek	1,215	....	68.5		90	4,21	48	30	31	5.87		1.30	....	17	13	10	8	S	
Sibley	Osceola	1,512	8	65.0	-4.7	88	4,22	44	30,31	31	3.91	†1.33	.71	....	11	13	3	15		
Sioux Center	Sioux			67.5		90	4	45	30	28	4.33		1.38	....	11	12	9	10	S	
Storm Lake	Buena Vista	1,440	7	67.0	-4.5	86	4,24	46	30	28	7.65	†4.73	2.40	....	13				SE, NW	
Washta	Cherokee	1,157	....								5.08		2.75	....	10	15	9	7	S	
Waverly	Bremer	942	6	67.6	-4.6	88	24	49	7,30	29	3.06	†.70	.65	....	13	6	17	8		
West Bend	Palo Alto	1,197	8	67.0	-2.9	90	4	45	30	30	3.61	†.42	1.32	....	11	11	12	8	S	
West Union	Fayette		....								6.19		1.85	....	9	13	10	8		
Average				67.0	-4.0	88.6		45.8		30.2	5.51	†2.38			11	12	10	9	S	

CENTRAL SECTION.

Amana	Iowa	721	25	69.4	-1.4	94	23	50	7,30	31	7.31	†3.96	2.35	....	11	11	11	9	SW	
Ames	Story	926	20	69.4	-3.0	92	23	49	31	33	3.70	†.31	1.35	....	14	17	10	4	SW	
Baxter	Jasper	998		69.2		93	23	46	30	30	5.35		2.35	....	8	11	14	6	SW	
Belle Plaine	Benton	828	12	69.8	-1.0	93	23	50	7,10,12, 30,31	31	5.46	†1.97	1.78	....	10	11	11	9	E	
Buckingham	Iowa		....								7.11		5.10	..	10	8	20	3		
Carroll	Carroll	1,265	12	68.6	-2.7	92	23	42	9	33	6.00	†2.38	1.95	....	10	13	2	16		
Clinton	Clinton	609	34	69.4	-3.5	93	23	48	7,12	34	4.79	†1.44	1.69	....	10	10	11	10	NW	
Davenport	Scott	606	31	70.7	-2.1	94	23	53	31	25	4.68	†1.10	2.21	....	8	11	9	11	SW	
Delaware	Delaware	1,083	11	66.7	-3.4	88	23	47	7,30	23	4.14	†1.36	1.39	....	11	7	18	6	SE, SW	
Des Moines	Polk	891	24	70.2	-1.8	92	23	50	31	27	6.72	†3.46	3.19	....	13	5	15	11	SW	
De Soto (*a*)	Dallas	866	....	69.0		91	23	48	31		6.40		2.00	..	14				SW	
Dubuque	Dubuque	655	29	68.4	-3.2	90	24	51	7	27	5.27	†2.12	1.22	..	14	10	12	9	NW	
Fort Dodge	Webster	1,126		67.2		89	4	46	30	32						14	0	17		
Galva (*b*)	Ida	1,290	8	67.1	-4.7	89	23	44	30	34	6.11	†2.97	2.56	..	7				SW	
Gilman (‡)	Marshall	1,052	..								4.85		1.68	....	11	10	18	3	S	
Grinnell(near)	Poweshiek		....	68.8		94	23	49	30	28	7.13		4.55	..	8	11	7	13	SW	
Grundy Center	Grundy	976	11	68.7	-2.3	91	23	46	30	31	4.03	†1.03	1.55	..	11	10	12	9	S	
Guthrie Center	Guthrie	1,077	6	68.2	-4.9	93	4	44	31	35	5.65	†1.46	1.14	....	7	9	17	5	SW	
Harlan	Shelby	1,192	....	69.2		92	23	44	31	34	9.39		2.96	....	13	6	16	9	SW	
Independence (*e*)	Buchanan	921	38	67.6	-2.7			46	30											
Iowa City	Johnson	685	43	70.0	-1.7	97	23	51	7,12,30,31	36	3.45	-.65	1.74	....	9	4	10	17	SW	
Iowa Falls	Hardin	1,170	9	66.6	-3.9	89	4	45	31	31	2.77	-.15	.90	.....	12	14	5	12	SE, NW	
Jefferson	Greene	1,052	....								6.17		1.85	....	10	6	20	5	S	
LeClaire	Scott	576	....								4.26		1.61	....	12				S	
Logan	Harrison	928	35	75.0	-2.2	101	24	48	11,31	45	11.66	†7.84	2.70	..	10	16	5	10	S	
Maquoketa	Jackson	688	9	68.6	-3.7	95	23	46	12	36	5.24	†2.49	2.00	....	14	12	5	14	NE	
Marshalltown	Marshall	947	9	69.4	-2.8	94	4,23	47	30	36	3.23	†.09	1.35	....	14	14	1	16	SE, NW	
Monticello	Jones	925	48	72.0	-1.8	95	23	46	12	37	4.54	-.01	1.75	....	6	9	8	14	SW	
Mt. Vernon	Linn	847	35	69.1	-2.4	93	4,23	47	30	36	4.72	†2.24	1.28	....	12	11	8	12	W	
Newton	Jasper	944	14	69.0	-3.4	92	23	50	30,31	27	9.02	†5.38	5.25	....	10	15	8	8	S	
Odebolt	Sac	1,356	5	70.8	-3.8	92	4	43	31	36	6.44	†2.75	2.00	....	10	17	9	5		
Ogden	Boone	1,088	8	68.0	-5.0	91	23	41	31	37	5.47	†1.78	1.80	....	11	17	2	12	SE	
Olin	Jones	760		68.7		92	23	49	11,12	30	5.02		1.50	..	7	11	12	8	SW	
Onawa	Monona	1,053		70.9		91	4	51	31	28	11.62		5.00	....	13	23	2	6	S	
Perry	Dallas	975	....	70.0		93	23	48	31	30	8.31		2.22	....	10					
Rockwell City	Calhoun			69.2		94	5	48	30	30	4.93		1.15	..	11	17	6	8		
Sac City	Sac	1,278	22	69.2	-3.4	90	4,5	47	31	30	6.16	†2.66	1.65	....	12	12	8	11	S	
Sioux City	Woodbury	1,165	13	69.3	-2.3	90	4	47	31	28	5.67	†2.48	2.16	..	13	7	13	11	SE	
Stuart	Guthrie	1,216	5	70.5	-4.1	96	25	48	31	32	5.23	†2.67	1.07	....	10					
Tipton	Cedar	807		71.8		96	23	52	30,31	31	2.57		1.11	....	9	9	14	8	NE	
Toledo	Tama	856	8	69.2	-3.7	92	23	48	7,11,31	34	2.55	-.60	1.20	....	8	7	14	10	NW	
Vinton*§	Benton	810	12	68.2	-2.7	91	23	51	30		3.94	†1.78	1.21	....	7	20	2	9	SE	
Waterloo	Black Hawk	862	15	68.0	-2.8	90	24	46	30	33	5.17	†1.50	1.76	....	10	9	15	7	SE, NW	
Wilton Junction	Muscatine	683	7	70.4	-2.8	96	23	48	7	34	3.52	-.22	1.81	..	6	16	8	12	SE	
Whitten	Hardin	1,036	..	68.8		93	23	45	30	31	3.42		.82	..	7	12	8	11	SW	
Waukee	Dallas	1,039	....								9.33		2.65	..	13	12	12	7	NW	
Average				69.3	-2.7	92.6		47.4		32.2	5.67	†1.92			10	12	9	10	SW	

CLIMATOLOGICAL DATA FOR AUGUST, 1903—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted)		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	7	71.0	-3.3	94	23	48	31	31	12.34	†9.11	9.30	....	13	10	10	11	SW	
Albia (*h*)	Monroe	957	....	70.8	.....	95	4	50	11	34	7 49	.....	.....	....	...	...	...	...	SE	
Atlantic	Cass	1,164	11	70.1	-1.8	92	4,23	44	31	35	9.10	†6.20	3.35	....	13	7	9	15	S	
Allerton	Wayne	.....	....	71.0	.....	95	23	49	10,11,31	36	11 58	.....	9.25	....	11	18	9	4	NW	
Bedford	Taylor	.....		70.4	.....	90	25	45	31	32	7.46	.....	4.41	....	11	14	8	9	NE	
Belknap	Davis	877	7	72.2	-1 4	95	24	53	20	37	6.72	†2.67	3.50	....	8	...	...	...	NW	
Bonaparte	Van Buren	.....	10	71.5	-3.8	98	23	48	7	41	7.53	†4.13	4.77	....	8	...	...	...	.....	
Burlington	Des Moines	544	6	72.8	.....	95	23,24	51	11	30	7.63	.....	3.64	....	8	15	7	9	SW	
Chariton	Lucas	1,042	7	69.9	-4.3	93	23	43	31	34	14.05	†10.77	11.22	....	7	19	0	12	SW	
Clarinda	Page	1,069	12	71.6	-3.0	95	23	47	31	31	9.50	† 6.04	5.20	....	14	12	15	4	S	
College Springs‡	Page		10	72.2	-2.2	95	2	52	12,31	33	8.36	† 5.18	4.25	....	10	18	10	3	NW	
Columbus Jct.‡	Louisa	595	....	70.4	.....	96	23	40	11,30,31	31	9.10	.....	3.05	....	10	9	17	5	N, SE	
Corning	Adams	1,127	10	69.4	-3 6	90	23	45	31	29	13.80	†10.84	8 02	....	12	11	14	6	SW	
Corydon	Wayne	992	9	65.9	-8.8	95	23	49	31	35	10 14	† 6.64	8.10	....	12	13	10	8	SW	
Council Bluffs‡	Pottawatt'mie	990	5	.....	.....	.....	.....	.....	.....	.....	13.09	† 9.63	8.30	....	10	...	...	...	.....	
Cumberland	Cass	.....	....	.....	.....	.....	.....	.....	.....	.....	9.32	.....	3.17	....	11	15	5	11	S	
Danville	Des Moines	726	....	.....	.....	.....	.....	.....	.....	.....	5 97	.....	2 85	....	4	...	...	...	....	
Earlham	Madison	.....		67.8	.....	90	4,23	43	31	33	8 20	.....	2.95	....	12	14	8	9	S,SE,SW	
Fort Madison	Lee	516	51	.....	.....	.....	.....	.....	.....	.....	5.09	† 1 50	1.67	....	7	5	12	14	SW	
Greenfield	Adair	.....	11	69.0	-4.0	89	23	48	11,31	25	8.87	† 6.34	4.79	....	14	13	7	11	S	
Hopeville (*a*)	Clarke	.....	11	71.1	-2.0	95	23	49	31	28	12.24	† 9.43	10 31	....	14	...	...	...	.....	
Indianola	Warren	969	11	71 8	-1 2	93	23	51	13,29,31	33	7.54	† 3 52	1.90	....	7	12	9	10	SW	
Keokuk	Lee	619	31	73.6	-0.9	96	28	52	31	27	4.80	† 1.97	2 07	....	9	10	16	5	SW	
Keosauqua	Van Buren	664	10	73.0	-2.3	98	24	49	7,31	38	6.18	† 3.06	4.33	....	10	7	15	9	.....	
Lacona	Warren	.....		.....	.....	.....	.....	.....	.....	.....	9.16	.....	6.20	....	10	11	10	10	....	
Lenox	Taylor	1,250	7	70 6	-3.1	92	4	49	31	28	10.60	† 7.46	7.15	....	12	23	2	6	.....	
Leon	Decatur	1,120		71.6	.....	93	5,23	50	12	31	10.48	.....	7.25	....	12	21	5	5	S	
Mt. Ayr	Ringgold	1,236	8	7 22	-1.9	93	23	50	31	30	6.85	† 4.18	3.59	....	12	10	12	9	SW	
Mt. Pleasant	Henry	729	20	73.2	-0.1	98	4	48	31	34	5.32	† 3.32	2 50	....	6	17	9	5	SW	
Omaha, Neb.	Douglass	1,113	32	71 6	-2.1	92	23	54	31	23	12.50	† 9 16	7.03	....	14	9	13	9	S	
Osceola	Clarke	1,130	6	70.6	-4.1	94	23	50	12,31	34	11.30	† 8.61	9.34	....	14	...	...	...	SW	
Oskaloosa	Mahaska	843	18	70.6	-1.3	94	23	52	31	31	5.72	† 2.76	1.78	....	9	15	2	14	SW	
Pacific Junction	Mills	960	..	70.6	.....	91	24,25	48	31	33	6.28	.....	1.55	....	12	10	20	1	SE	
Red Oak	Montgomery	1,033	....	71.3	.....	88	4	52	31	21	11.61	.....	6.14	....	13	7	20	4	SE, S	
St. Charles	Madison	1,070	....	70.8	.....	93	23	50	31	31	7.43	.....	2 45	....	12	14	11	6	NW	
Sigourney	Keokuk	787	....	71.8	.....	98	22,23 24	49	7,11,12	39	6 37	.....	2 65	....	8	18	11	2	SW	
Stockport	Van Buren	.....	...	.....	.....	.....	.....	.....	.....	.....	5 91	.....	4 01	....	10	16	4	11	SW	
Thurman	Fremont	.....	...	70.5	.....	90	4,23	46	31	30	6.37	.....	1.58	....	11	15	9	7	SW	
Villisca	Montgomery	1,058	8	69.6	-3.1	90	23	48	31	25	12.02	† 8.20	6.15	....	13	6	21	4	SW	
Wapello‡	Louisa	588	....	71.4	.....	96	23	52	11	29	5.60	.....	4.60	....	5	13	16	2	E	
Washington	Washington	769	20	67 8	-5.6	98	23	48	31	34	4 76	† 2.40	3.23	....	5	...	...	...	SW	
Winterset	Madison	1,129	11	71.2	-1.5	95	23	47	11,12	34	8.47	† 5.53	3.65	....	11	22	4	5	E	
Woodburn	Clarke	961	....	.....	.....	.....	.....	.....	.....	.....	17.74	.....	7.71	....	13	9	19	3	SW	
Average		.....	..	70.9	-2.8	93 5	.....	48.7	.....	31.8	8.74	† 5.81	.....	....	11	13	10	8	SW	
Average for state		.....		69.1	-3.2	91.6	.....	47.3	.....	31.4	6 64	† 3.37	.....	....	11	12	10	9	SW	

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. † Above normal.
‡ Received too late to be computed with means. (*a*) One day missing; (*b*) two days, etc. § Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR AUGUST, 1903.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max.	84	90	92	93	84	77	82	79	83	74	71	69	81	83	78	79	83	86	82	84	88	93	94	90	84	90	78	78	79	71	74	82.4
	Min	59	60	65	69	66	61	52	58	54	58	50	49	58	63	60	58	54	59	63	54	63	62	67	71	66	66	64	58	56	52	48	59 5
Albia	Max.	80	88	92	95	85	77	80	79	81	74	71	74	79	80	84	74	84	87	81	84	90	94	..	..	..	..	..	..	..	..	..	82.0
	Min	52	58	71	71	72	62	53	57	53	59	50	52	56	62	65	58	55	56	64	53	58	65	68	..	..	..	..	..	..	..	..	59.5
Algona	Max	73	86	89	91	87	78	87	80	78	72	73	69	75	72	76	79	83	82	80	84	85	80	80	81	82	70	68	71	65	69	74	78.0
	Min	55	60	64	68	70	49	53	56	50	50	49	50	57	62	63	64	57	61	58	56	67	67	65	68	62	57	55	59	58	47	47	58.2
Allerton	Max.	79	86	91	91	84	78	80	78	82	75	71	72	82	81	82	75	89	88	83	86	88	92	95	87	89	89	82	83	70	71	76	82 4
	Min	57	60	67	70	66	61	52	58	53	49	49	51	60	63	64	61	54	58	63	50	61	61	67	71	68	67	65	60	57	53	49	59.5
Alta	Max.	75	84	86	88	84	74	70	78	82	68	70	64	70	74	73	76	78	80	78	80	82	80	81	85	76	64	70	66	63	68	72	75 5
	Min	55	60	63	70	66	58	53	47	50	51	49	51	56	62	60	56	56	59	58	55	66	65	65	66	62	59	57	56	54	49	49	57 5
Amana	Max.	72	86	79	89	84	76	77	79	78	72	72	75	71	80	82	75	81	85	80	82	89	86	94	90	81	71	76	80	68	66	73	79.0
	Min	57	64	66	65	71	61	50	60	52	57	51	51	59	63	65	57	54	56	63	51	58	65	69	73	68	63	62	64	58	50	51	59 8
Ames	Max.	74	86	86	90	85	81	73	78	78	73	69	70	71	76	78	79	85	83	80	84	88	85	92	88	81	74	75	73	66	68	73	78 8
	Min	56	61	63	70	73	61	52	60	53	56	53	51	56	63	61	59	59	57	61	51	67	64	65	73	67	61	65	60	59	50	49	59 9
Atlantic	Max.	80	89	90	92	85	81	74	82	83	75	69	77	77	83	77	80	84	86	86	84	88	90	92	89	81	79	78	79	70	74	79	81.7
	Min	60	62	64	70	71	57	53	57	51	55	46	46	58	59	57	53	53	53	59	54	67	63	68	72	65	65	64	58	57	52	44	58.5
Audubon	Max.		.	.	..	..	..	..	..	..	..	..	..	..	83	76	79	83	85	82	84	88	86	91	88	81	73	79	80	67	73	78	....
	Min		.	.	..	..	..	..	..	..	..	..	..	..	62	56	52	52	51	55	47	64	63	64	70	62	59	65	56	56	48	40	....
Baxter	Max.	76	85	77	90	86	82	76	80	80	70	75	70	72	77	82	75	84	85	83	83	85	83	93	88	84	80	80	82	70	71	72	79.9
	Min	55	60	63	67	71	58	51	59	50	55	51	50	58	62	61	57	55	56	59	52	64	65	69	73	65	62	60	60	56	46	47	58.6
Bedford	Max.	80	85	88	89	84	80	82	79	82	78	69	67	82	81	79	79	83	85	85	83	85	88	89	84	90	82	80	80	68	73	73	81.0
	Min	60	58	65	70	72	57	50	58	52	59	50	50	61	62	61	59	51	55	62	54	65	63	70	74	67	67	66	56	58	57	45	59.8
Belknap	Max.	78	84	92	94	85	78	80	78	78	81	78	80	79	79	83	80	84	86	82	90	90	92	94	95	90	90	90	80	70	69	73	83 5
	Min	60	65	69	70	70	64	60	60	55	56	54	54	64	65	66	63	57	63	65	53	64	68	68	74	74	68	66	65	59	55	57	62.9
Belle P.	Max.	74	85	82	90	84	76	78	79	75	76	73	75	72	78	83	75	81	85	82	83	87	84	93	90	78	73	76	81	70	68	74	79 4
	Min	58	60	64	65	71	60	50	60	56	50	53	50	58	59	63	57	56	58	62	52	61	65	69	73	68	60	61	63	58	50	50	60.3
Bonapar'e	Max.	77	88	94	96	94	80	80	76	83	77	76	76	78	84	89	75	85	89	84	87	91	95	98	95	88	91	82	84	70	70	77	84.1
	Min	57	57	67	71	63	62	48	59	53	59	50	50	50	63	67	68	56	54	63	51	56	51	57	70	70	66	67	61	57	53	50	58.9
Britt	Max	76	86	88	90	87	72	77	80	81	69	74	72	76	74	77	79	81	85	77	84	85	82	84	87	78	67	69	72	66	71	74	78.1
	Min	55	59	63	64	70	55	48	55	46	51	46	48	57	62	63	52	55	58	55	50	65	66	65	66	61	56	55	59	52	45	43	56.2
Burling'n	Max.	77	88	91	94	92	80	78	78	80	81	76	84	72	83	89	77	82	87	82	85	86	90	95	95	86	88	82	82	71	63	74	82.7
	Min	60	64	68	73	66	63	52	63	55	59	51	54	61	64	70	64	60	59	64	56	66	65	71	74	72	70	67	68	57	55	56	62 8
Carroll	Max.	80	88	90	91	89	79	78	81	83	72	71	67	72	82	77	79	82	84	84	86	85	83	92	90	80	81	78	79	68	76	77	80.8
	Min	55	68	62	62	71	55	52	58	42	53	46	50	53	57	55	54	52	55	55	51	59	65	67	70	64	60	61	55	55	49	44	56.6
Chariton	Max.	72	85	89	90	85	76	78	77	80	74	72	70	70	80	81	73	83	87	81	85	87	91	93	87	85	88	83	80	73	70	76	80.7
	Min	54	59	68	69	66	62	50	52	52	57	54	49	50	60	61	60	71	65	64	51	61	63	69	72	63	65	64	60	54	52	43	59.1
Charles C.	Max	74	86	79	86	84	72	77	81	78	68	72	72	75	73	72	75	82	85	78	83	87	79	81	89	71	64	67	76	65	68	73	76.5
	Min	51	56	66	64	68	59	46	50	47	55	49	47	52	56	61	55	52	53	56	50	54	66	56	65	64	53	57	53	55	47	48	55.3
Clarinda	Max.	83	89	93	94	86	84	81	81	84	79	67	64	85	84	81	80	84	88	87	86	90	93	95	88	88	84	85	84	69	76	80	83.6
	Min	60	60	64	68	68	59	52	57	55	57	52	50	61	60	61	58	53	56	61	55	63	61	68	71	66	66	65	58	57	55	47	59.5
Clear L.	Max.	75	91	88	90	89	77	77	81	83	72	77	72	79	71	80	84	89	86	85	89	89	89	88	88	80	65	65	54	58	54	46	80.2
	Min	53	62	62	59	70	57	59	58	50	50	49	48	55	60	62	55	55	53	57	57	65	67	60	65	60	55	54	58	54	48	48	58.9
Clinton	Max.	78	88	84	92	78	78	76	80	78	78	75	78	67	85	83	78	82	85	84	84	88	88	93	92	86	72	76	80	70	64	75	80.5
	Min	60	64	64	66	64	57	48	55	53	56	50	48	56	59	64	62	54	55	62	50	55	63	67	67	66	62	60	62	57	52	49	58.4
College S.	Max.	81	95	89	91	90	81	82	82	85	75	66	62	82	81	79	80	83	83	83	86	87	90	92	89	81	79	78	79	70	74	79	81.7
	Min	60	62	68	70	70	62	67	67	68	61	53	52	62	61	65	61	55	60	63	60	64	64	70	67	68	68	65	57	58	57	52	62 5
Colum. J.	Max.	75	88	88	95	86	77	78	79	79	75	75	78	75	83	83	78	83	86	82	82	90	89	96	94	83	85	75	80	70	63	73	81 4
	Min	57	61	66	66	67	64	51	60	53	53	50	54	53	61	66	50	52	57	64	53	59	62	67	72	63	64	64	64	57	50	50	59.5
Corning	Max.	78	84	89	81	81	77	77	79	77	73	67	66	78	81	75	75	79	83	81	81	85	88	90	86	81	85	79	78	70	70	75	79 2
	Min	60	61	65	70	67	59	53	56	52	58	49	58	59	62	61	55	51	54	63	56	65	64	69	73	66	67	65	57	57	55	45	59.7
Corydon	Max	76	84	89	91	83	79	78	78	80	76	73	70	79	79	84	74	83	88	85	86	88	90	95	86	88	90	84	81	69	72	77	72.1
	Min	57	60	66	70	66	60	52	57	52	58	51	50	61	63	63	60	53	58	64	51	61	67	62	72	69	66	65	60	57	51	49	59.7
Davenpo't	Max.	76	86	86	92	77	76	75	76	78	75	73	76	65	81	84	75	82	84	82	82	87	86	94	93	85	73	74	80	67	60	74	79 2
	Min	59	66	68	71	63	61	55	64	55	59	54	56	57	62	66	63	60	62	65	57	63	68	72	74	69	66	63	64	58	54	53	62.2
Decorah	Max.	67	82	75	84	82	77	73	77	76	69	71	78	71	68	73	79	82	76	77	81	73	76	83	80	..	63	69	61	61	65	70	73.6
	Min	59	62	67	66	65	58	48	60	51	58	53	48	55	60	64	62	55	60	59	53	62	69	67	64	60	50	57	51	56	49	49	58.0
Delaware	Max.	68	85	75	87	84	74	75	79	77	70	72	72	72	78	73	75	81	84	77	80	84	80	88	87	78	65	66	75	64	62	71	76.1
	Min	54	62	65	66	66	50	47	60	50	57	49	48	56	59	62	56	55	58	59	54	58	64	67	65	64	56	57	60	55	47	49	57.3
Des M.	Max.	77	85	89	91	86	76	74	79	79	72	71	69	73	78	79	77	82	85	82	82	88	87	92	87	75	77	73	78	68	70	74	79.2
	Min	57	62	64	72	72	62	54	59	54	57	53	54	60	64	61	63	56	59	64	55	67	66	72	67	66	63	67	60	60	53	50	61.1
De Soto	Max.	77	85	87	89	84	74	78	79	71	..	68	67	73	78	76	75	80	82	80	82	81	85	91	87	81	74	72	76	66	70	74	77.3
	Min	57	62	65	71	60	54	61	52	59	..	52	50	59	65	61	60	55	59	65	58	67	67	70	74	67	63	67	59	59	52	48	60 6
Dows	Max	72	85	85	89	84	81	75	77	77	69	71	69	72	73	76	75	80	82	77	81	85	81	85	87	79	70	63	73	65	68	74	76.9
	Min	54	61	63	66	73	57	51	59	47	51	46	51	57	60	58	55	52	56	53	51	65	66	67	70	61	58	58	59	55	44	45	57.1
Dubuque	Max.	73	85	74	88	83	73	73	78	75	71	73	73	73	78	79	78	82	85	79	82	86	88	92	95	88	85	90	77	81	68	70	77.1
	Min	57	65	64	67	63	58	51	59	55	59	54	52	58	62	65	62	56	50	61	55	62	70	72	67	63	58	57	58	58	53	52	59.8
Earlham	Max.	78	85	88	90	85	77	75	78	81	72	69	65	75	79	76	78	81	85	81	82	86	88	90	86	81	82	75	78	68	71	75	79.4
	Min	56	60	67	69	65	56	47	57	45	55	44	43	56	63	55	55	48	52	61	46	64	65	67	66	64	61	65	54	55	49	43	56.2
Elkader	Max.	66	84	80	89	89	76	75	81	80	72	75	75	76	75	73	81	87	88	83	88	87	88	89	91	80	66	66	80	65	68	81	79.3
	Min	57	63	65	66	67	59	57	61	50	57	50	47	56	60	63	61	54	56	58	50	57	62	68	69	65	53	59	60	57	43	47	58.1
Esthervi'e	Max.	74	85	87	89	85	73	73	77	78	70	72	67	75	74	75	79	82	84	80	83	84	84	77	89	79	76	66	68	69	74	75	77.5
	Min	53	55	63	64	68	56	48	53	48	47	48	47	52	57	62	52	57	60	55	50	59	65	63	65	62	45	55	56	50	45	43	54.9
Forest C'y	Max.	78	87	83	90	87	75	74	78	80	68	77	70	78	72	78	80	82	86	80	83	85	80	84	88	76	61	67	72	65	72	76	77 8
	Min	55	53	63	63	67	57	47	55	48	50	48	48	54	58	61	54	55	57	59	53	58	62	64	61	61	56	52	55	55	49	50	55.7
Ft. Dodge	Max.	72	79	81	89	88	81	70	77	76	70	70	67	67	74	76	78	80	81	80	82	81	82	85	87	77	75	76	73	63	68	74	76.7
	Min	53	58	62	69	73	55	62	57	48	53	48	49	56	63	56	60	52	58	54	50	65	66	67	66	64	60	60	56	58	46	43	57.6
Galva	Max.	76	86	87	88	88	78	78	78	81	70	74	69	74	81	76	78	80	84	80	81	..	81	89	..	87	70	75	70	64	72	74	78.2
	Min	55	60	63	69	70	54	52	55	47	52	43	50	54	62	57	52	51	56	54	51	..	64	65	..	62	65	64	53	55	44	45	56.0
Grand M.	Max.	66	82	72	86	80	69	70	70	73	66	79	71	72	74	69	74	79	81	70	70	81	76	81	84	79	65	66	69	69	59	72	73 1
	Min	56	62	63	68	69	58	49	60	50	50	50	49	52	58	63	62	55	59	58	55	62	60	65	63	62	55	56	59	56	48	48	57.4
Greene	Max.	70	88	82	90	86	78	77	81	81	71	74	73	77	75	75	78	85	86	80	84	85	80	84	89	79	67	67	75	64	69	77	78 3
	Min	55	62	64	64	74	57	48	61	49	49	49	49	56	61	62	56	53	59	55	53	64	67	65	65	60	55	57	60	54	45	46	57 2
Greenfi'ld	Max.	77	85	87	88	84	78	76	76	78	76	71	67	75	79	76	75	78	78	76	80	83	88	89	87	84	82	76	75	74	68	70	78.9
	Min	59	62	67	71	65	61	55	56	53	53	48	50	51	64	63	64	54	53	54	60	62	67	64	73	66	64	61	57	54	50	48	59.2
Grinnell (near)	Max.	76	86	82	88	81	77	78	78	78	72	74	75	73	81	79	75	80	83	78	81	88	85	94	89	82	76	75	75	67	67	72	78.9
	Min	57	60	62	67	67	59	52	61	50	57	50	52	58	52	63	58	56	59	63	53	63	64	68	68	66	63	61	62	50	49	50	58.7
Grundy C	Max.	72	87	83	89	87	74	76	80	77	71	73	72	71	75	80	73	85	85	81	83	83	88	91	88	80	68	71	79	67	71	77	79.3
	Min	55	60	63	66	72	56	49	61	49	56	49	52	56	61	60	60	54	56	56	53	63	66	67	72	65	57	60	61	54	46	47	58 1
Guthrie C	Max.	78	89	88	93	86	80	76	80	82	73	70	66	78	80	77	77	80	83	88	86	88	85	91	89	82	74	76	80	68	72	74	80.3
	Min	57	61	63	68	71	58	52	59	49	56	48	48	58	64	57	57	52	55	61	51	55	55	56	57	57	54	53	51	58	50	44	56.0
Hampton	Max.	72	88	85	91	86	76	76	80	81	71	75	72	75	74	79	81	85	84	79	86	88	90	83	89	78	67	67	77	64	69	80	79.3
	Min	54	62	63	65	74	59	50	60	51	54	50	52	57	61	61	58	57	60	56	56	67	67	68	63	64	57	58	60	55	48	49	58 6
Hanlont'n	Max.	68	85	81	87	84	75	73	78	77	69	70	67	73	70	75	75	80	83	75	80	88	80	77	86	77	64	64	66	66	70	74	75.4
	Min	53	60	63	63	71	55	48	55	47	51	48	48	54	61	64	55	53	60	55	71	67	68	63	65	61	55	55	58	56	45	45	57.2
Harlan	Max.	82	89	89	90	87	79	74	81	84	70	70	69	77	85	77	79	80	85	82	84	89	86	92	89	79	79	79	78	67	72	75	80 7
	Min	59	59	61	68	70	57	53	59	50	55	46	49	57	61	58	54	52	53	60	53	64	62	63	68	63	63	64	57	56	52	44	57 7
Hopeville	Max.	81	88	91	93	84	78	81	79	..	74	69	68	78	81	78	76	84	88	81	86	89	92	95	88	85	90	77	81	68	70	77	81.7
	Min	59	62	68	70	64	60	53	59	..	56	51	50	60	63	62	60	55	59	64	56	63	63	68	73	67	67	66	58	57	53	49	60.5
Humboldt	Max.	74	88	86	91	86	76	80	79	71	73	70	73	78	76	78	82	82	80	82	87	80	86	89	..	82		74	73	65	69	73	82.9
	Min	56	62	60	60	74	52	60	49	53	49	50	57	64	60	54	54	60	58	52	67	66	66	69	58	64	60	60	59	59	47	45	58.2
Indep'nce	Max.	68	84	77	86	83	74	70	78	74	68	70	72	73	72	77	76	81	83	77	80	85	77	86	87	..	..	..	..	..	..	76	77.2
	Min	55	64	64	66	69	58	48	60	57	57	50	48	57	58	60	60	55	55	60	57	59	64	66	66	..	..	..	..	..	..	46	58.0
Indianola	Max.	91	85	90	92	85	84	76	78	81	84	83	82	78	81	85	85	86	84	86	86	87	89	93	86	80	85	71	78	78	70	76	83.1
	Min	64	53	66	73	70	63	56	59	57	53	65	63	51	53	60	57	60	60	59	60	57	56	70	74	68	63	67	60	51	53	51	60.4
Iowa City	Max.	75	88	83	93	84	76	79	80	82	74	75	79	70	84	85	78	86	82	82	85	90	93	97	92	84	78	78	83	69	65	70	81.3
	Min	55	59	65	65	70	63	51	53	54	58	52	51	55	58	64	57	55	56	56	53	54	62	68	72	69	63	62	63	58	51	51	58.8
Iowa Falls	Max.	75	86	85	89	84	73	76	78	78	70	72	74	74	76	77	76	82	83	78	81	86	83	83	88	73	70	70	76	65	68	74	77 7
	Min	48	55	63	64	68	57	48	49	47	53	48	51	53	57	58	55	51	52	54	49	53	66	66	69	65	57	59	59	54	46	45	55.5
Keokuk	Max.	77	88	92	95	93	81	79	75	81	78	75	77	79	83	87	74	83	87	83	83	89	93	96	94	89	90	80	84	70	69	73	83.1
	Min	61	67	70	74	66	66	56	60	57	63	54	58	64	64	70	66	63	60	65	57	63	67	73	76	71	72	69	67	59	56	52	64.0
Keosa'qua	Max.	77	89	94	96	94	82	83	79	84	84	75	78	81	85	88	90	86	90	86	90	92	95	98	93	91	92	80	88	75	75	79	85.6
	Min	60	63	68	71	72	63	49	54	54	60	51	50	55	64	66	54	60	54	58	51	54	62	65	72	72	70	64	68	55	55	49	60.3
Larchw'd	Max.	75	86	88	89	85	78	75	78	78	78	76	71	75	80	81	82	83	84	80	83	87	87	..	83	83	78	75	67	64	74	77	79.2
	Min	55	54	63	68	66	54	53	55	50	46	47	53	52	65	55

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR AUGUST 1903—CONTINUED.

STATIONS.		DATE.																														MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Lenox....	Max..	80	87	90	92	86	78	78	79	82	74	71	65	78	80	76	75	79	84	81	83	86	89	91	87	83	87	79	79	68	70	74	80.4
	Min ..	60	62	65	77	67	63	55	59	54	59	54	51	59	61	62	59	53	60	64	57	64	63	70	73	67	67	65	58	57	55	49	60.9
Leon.	Max..	83	88	91	92	93	78	78	77	82	82	75	71	80	82	80	79	82	85	86	83	83	90	93	90	87	88	84	82	75	70	73	82.6
	Min ..	59	61	67	70	62	64	54	58	56	59	52	50	60	62	64	61	57	59	66	55	54	63	70	73	69	67	66	60	58	54	51	60.7
Logan	Max..	90	94	97	99	97	87	91	90	87	88	83	90	88	93	97	93	94	94	95	95	95	97	97	101	90	89	89	95	87	92	87	92.3
	Min ..	58	60	64	68	71	59	55	59	55	57	48	51	56	58	58	56	55	56	59	51	50	52	61	64	65	65	64	58	58	52	48	57.8
Maquo'ta.	Max..	74	87	81	91	88	71	75	79	78	76	76	77	68	80	81	78	84	87	84	84	94	86	95	90	86	66	71	82	70	63	77	80.0
	Min ..	53	59	64	66	68	60	47	52	50	57	49	46	53	56	61	60	51	53	65	48	56	66	65	68	66	58	59	61	56	52	48	57.2
Marshlt'n	Max..	77	90	88	94	87	77	80	81	81	75	75	75	74	81	83	76	85	87	84	87	89	82	94	93	77	70	76	83	71	72	78	81.8
	Min ..	50	56	63	63	69	59	50	53	60	56	50	49	53	58	62	59	53	55	59	51	53	65	60	72	66	59	61	61	58	47	48	56.9
Mason C..	Max..	70	88	80	90	86	77	75	77	78	68	72	69	75	69	76	79	83	84	78	83	86	80	78	88	82	69	65	69	62	67	74	76.7
	Min ..	58	62	64	64	72	61	51	61	52	54	50	51	57	51	64	57	59	64	60	57	68	68	66	66	64	57	55	59	56	47	50	58.9
Monticel'o	Max..	73	88	84	86	90	82	85	89	90	88	82	83	85	88	75	72	83	80	82	87	88	89	95	94	91	88	82	86	89	80	82	85.0
	Min ..	49	58	49	62	65	58	52	58	55	53	48	46	48	52	48	52	55	58	57	62	65	75	78	80	79	75	70	52	59	58	49	59.1
Mt. Ayr..	Max..	82	87	91	92	84	82	79	80	83	89	69	67	81	83	82	78	85	88	86	85	..	91	93	87	86	90	86	82	82	74	79	83.5
	Min ..	59	62	61	70	68	62	55	58	55	59	52	55	60	62	62	61	57	61	65	58	..	63	68	73	67	..	66	..	58	55	50	60.8
Mt. Pl'snt	Max..	90	89	90	98	92	90	89	90	92	89	84	83	82	82	88	79	83	87	80	89	89	84	96	95	86	90	83	81	71	68	73	85.9
	Min ..	69	58	60	67	65	61	59	60	64	62	64	59	58	58	66	58	55	53	59	55	55	59	66	70	68	65	65	65	56	51	48	60.6
Mt. Ver'n	Max..	70	88	78	93	80	76	77	82	82	77	73	74	65	79	83	84	89	88	81	89	89	87	93	89	80	68	68	81	64	62	81	79.9
	Min	56	63	65	65	63	60	49	59	52	56	52	52	55	60	63	55	59	58	62	53	56	62	68	71	65	59	59	60	55	47	49	58.3
New H. ..	Max.	65	82	78	84	82	71	72	76	..	69	70	70	72	70	72	70	..	81	76	78	83	..	..	85	68	65	64	72	63	67	70	73.2
	Min ..	54	54	63	64	68	56	46	..	46	53	47	47	52	57	57	54	54	..	56	52	60	58	..	..	61	52	55	56	53	45	47	54.3
Newton ..	Max	75	85	87	89	87	75	76	77	77	72	70	72	71	78	79	73	81	83	80	82	86	84	92	86	80	76	71	74	67	69	72	78.3
	Min .	56	61	64	68	68	62	53	59	52	57	52	52	58	63	62	59	57	59	62	55	64	65	69	73	66	61	62	59	57	50	50	59.8
Northw'd	Max	66	82	79	84	82	74	73	76	75	69	69	69	73	71	75	76	78	82	79	79	83	76	78	84	77	66	65	71	63	66	71	74.5
	Min	55	62	64	64	70	57	50	55	50	51	49	58	54	59	63	56	59	62	57	57	64	66	65	64	60	55	55	58	55	47	49	57.4
Odobolt ..	Max..	80	90	90	92	91	81	80	81	85	72	75	70	74	82	77	87	85	85	84	85	87	87	88	91	88	74	79	72	65	74	79	84.8
	Min ..	55	62	63	70	72	62	52	64	48	52	47	50	53	60	50	54	55	52	55	55	66	64	63	55	64	61	60	56	56	46	43	56.9
Ogden.. .	Max..	75	87	90	90	89	76	80	84	79	73	73	70	73	80	80	80	84	85	83	85	87	85	91	89	89	76	78	84	68	74	78	82.2
	Min .	45	53	62	60	67	55	50	50	45	54	45	47	50	55	56	56	50	51	54	50	51	62	53	69	58	58	59	54	54	45	41	53.8
Olin	Max..	76	85	79	88	82	79	75	79	78	73	74	76	68	80	83	77	80	84	80	80	88	86	92	90	83	71	72	77	68	61	72	78.6
	Min ..	56	65	67	69	65	60	50	59	52	57	49	49	58	61	65	57	53	55	63	50	57	65	67	69	67	61	60	60	57	50	50	58.8
Omaha, N	Max.	78	85	90	91	83	76	72	80	81	72	64	66	80	83	77	77	81	83	83	84	88	89	92	90	76	80	79	75	65	70	76	79.5
	Min ..	60	66	67	74	70	66	63	62	63	57	56	56	62	66	63	61	62	62	64	60	69	68	71	68	68	67	66	62	58	58	54	63.7
Onawa. ...	Max..	81	85	90	91	88	82	76	81	81	72	73	70	74	81	79	78	83	82	84	85	87	83	89	88	73	74	75	78	69	62	79	80.0
	Min .	60	65	65	72	73	62	60	63	57	57	52	54	58	65	62	58	58	62	62	60	67	67	68	70	67	64	65	57	57	57	51	61.8
Osage.....	Max..	65	85	76	85	84	74	74	79	77	67	71	70	74	69	74	..	81	83	77	81	84	77	76	85	78	63	64	72	62	67	74	71.6
	Min .	55	62	65	65	71	58	47	56	50	53	49	48	53	59	64	..	51	53	54	52	63	65	65	65	58	53	55	58	53	45	47	56.6
Osceola ..	Max..	75	86	87	91	93	84	77	78	78	81	74	71	70	79	81	79	76	83	87	83	84	90	92	94	88	83	89	78	80	76	71	81.7
	Min ..	53	53	68	68	73	62	52	58	55	60	51	50	53	62	61	60	55	57	63	55	57	65	66	73	68	66	65	59	53	53	50	59.6
Oskaloosa	Max..	75	84	90	93	85	76	77	76	78	72	70	74	73	78	78	73	82	84	82	83	89	91	94	88	82	88	72	80	69	69	72	79.9
	Min ..	58	62	67	76	70	62	52	60	52	58	50	49	61	65	64	59	56	57	63	52	62	66	73	76	71	66	66	63	59	53	52	61.3
Pacific J'n	Max..	80	87	90	90	84	80	73	81	83	75	67	66	82	85	82	77	80	85	82	84	87	89	91	91	80	87	87	77	66	67	73	80.9
	Min ..	59	60	65	69	67	61	56	57	57	61	51	51	61	63	60	57	56	52	60	60	64	63	66	74	65	67	67	56	57	57	48	60.2
Perry.....	Max..	79	88	89	92	86	80	77	82	81	71	70	69	74	81	77	78	82	85	81	84	88	85	93	89	80	74	76	79	67	71	74	80.1
	Min	56	61	64	70	72	61	54	60	51	56	51	51	58	64	56	58	55	59	61	54	67	66	62	73	68	63	68	54	59	50	48	59.8
Plover....	Max..	75	87	87	90	87	73	75	80	82	71	75	71	73	80	77	78	81	84	82	83	85	83	84	88	81	67	68	77	66	67	73	78.4
	Min ..	55	59	64	66	72	56	55	52	48	53	46	63	55	60	60	53	55	57	53	52	65	64	65	68	64	60	58	55	55	46	44	57.4
Primghar	Max..	71	84	88	88	82	73	70	76	78	75	73	66	71	75	74	78	81	81	78	81	84	82	82	87	86	65	66	67	62	68	74	76.3
	Min ..	56	57	64	70	63	56	55	53	51	48	43	52	55	63	62	57	59	61	56	56	66	67	66	67	62	58	56	52	55	47	47	57.4
Red Oak..	Max..	76	82	87	88	86	78	75	78	78	74	67	66	78	80	77	73	78	81	79	81	85	87	87	86	83	83	78	77	74	68	73	78.8
	Min ..	63	64	69	73	70	65	60	61	60	61	57	55	62	66	63	60	59	60	63	61	68	69	71	75	70	71	68	63	59	59	52	63.8
Ridgeway	Max..	66	87	79	90	87	80	81	84	82	70	72	73	75	70	73	79	85	86	82	83	90	78	79	89	79	65	65	74	68	69	71	77.8
	Min ..	56	60	69	67	73	60	50	50	52	56	50	50	54	59	63	62	60	63	60	56	65	70	67	65	60	55	56	50	58	48	51	59.2
Rockw'l C	Max .	78	87	87	92	94	79	79	81	80	70	71	70	72	80	76	80	81	85	85	85	86	88	88	90	73	73	80	75	67	72	79	79.9
	Min ..	56	61	61	68	73	57	55	58	52	52	55	53	55	55	58	58	55	59	58	59	66	65	65	68	64	60	61	56	55	48	50	58.6
Sac City..	Max .	77	88	89	90	90	85	72	80	80	70	70	66	70	78	74	80	81	82	81	82	85	83	86	89	80	72	78	71	67	72	76	80.1
	Min .	55	61	63	70	73	58	53	53	50	53	48	53	54	60	59	56	55	59	57	55	66	65	64	69	64	61	60	58	57	48	47	58.3
St. Cha'les	Max .	78	85	89	91	86	75	77	78	80	72	70	69	75	80	77	77	81	86	83	83	87	91	83	85	83	86	74	78	69	70	75	80.1
	Min ..	58	63	66	72	66	63	63	60	54	59	52	52	59	65	63	61	57	61	66	57	56	66	76	74	67	64	66	60	59	53	50	61.5
Sibley	Max..	70	75	84	86	88	84	75	67	78	50	68	74	66	74	73	75	82	82	83	81	83	85	88	67	87	76	64	65	67	62	72	75.1
	Min ..	50	55	59	65	67	54	51	54	47	47	45	50	52	57	59	53	55	59	53	50	55	65	64	64	61	58	55	53	53	44	44	54.8
Sigourn'y	Max	76	92	94	97	85	78	80	80	83	76	77	79	77	86	88	77	90	90	86	89	93	98	98	98	85	93	78	83	71	76	80	84.9
	Min ..	57	60	64	64	67	60	49	58	51	57	49	49	58	62	63	55	55	58	62	50	60	62	67	70	66	60	62	62	57	52	50	58.7
Sioux C'r.	Max..	75	85	89	90	87	79	76	77	77	68	75	66	75	76	75	80	81	81	79	82	85	86	82	80	80	71	67	67	62	69	75	77.6
	Min ..	56	58	64	69	67	56	53	54	51	49	49	52	54	64	61	54	56	60	58	54	64	66	65	65	62	59	57	53	54	45	49	57.4
Sioux C'y.	Max.	78	84	89	90	87	77	72	78	80	69	70	66	73	80	76	78	81	82	84	84	88	81	83	89	76	67	68	69	63	72	75	77.7
	Min ..	59	63	63	74	71	60	56	58	56	54	49	56	59	65	59	57	57	64	60	63	70	66	68	71	66	63	59	55	54	55	47	60.6
Storm L..	Max..	75	83	85	86	85	76	..	70	77	78	78	71	64	70	73	73	76	79	81	78	79	83	80	82	80	77	64	71	68	63	70	76.3
	Min ..	55	63	63	70	69	57	..	57	50	51	49	51	54	59	59	54	59	60	58	58	60	67	65	68	62	60	57	55	56	46	48	58.0
Stuart. ..	Max..	80	84	90	92	86	78	70	79	82	85	72	74	76	83	76	77	80	85	89	83	86	79	85	94	96	75	75	78	68	75	73	81.1
	Min ..	56	57	58	68	66	60	50	60	61	52	50	50	58	64	59	58	56	60	70	73	72	65	72	65	..	..	60	57	57	54	48	59.9
Thurman	Max..	80	87	89	90	86	78	76	80	83	76	69	62	80	82	79	76	80	83	83	83	87	89	90	88	81	85	80	78	68	70	74	80.4
	Min ..	59	63	66	73	56	63	55	57	57	60	52	51	60	61	60	58	55	56	58	59	67	67	71	74	67	68	67	57	57	58	46	60.6
Tipton....	Max	74	84	81	92	84	80	80	81	79	78	80	67	78	82	86	80	86	89	88	88	91	88	96	93	87	77	72	82	72	63	77	81.8
	Min ..	57	64	67	68	67	62	55	63	59	54	57	58	60	62	67	62	60	62	71	58	60	66	69	73	69	65	60	63	58	52	52	61.8
Toledo....	Max..	73	87	83	90	83	83	78	79	78	73	74	75	70	77	82	75	83	83	83	83	86	81	92	90	80	70	77	80	80	72	76	79.9
	Min ..	57	60	64	65	75	59	48	59	50	57	48	49	56	62	59	60	54	53	60	49	63	64	68	74	66	58	61	62	56	49	48	58.4
Villisca...	Max..	77	82	89	89	85	82	78	75	76	75	72	72	75	74	74	73	75	82	81	82	86	89	90	88	84	82	76	78	65	79	72	79.1
	Min ..	60	70	65	70	66	62	54	52	55	52	50	52	59	56	58	57	54	54	53	64	69	64	68	72	70	67	65	62	57	57	48	60.1
Wapello..	Max..	77	84	86	88	79	78	76	74	78	77	70	74	68	81	85	77	83	87	86	82	90	89	96	94	85	84	71	77	69	63	69	79.9
	Min .	59	65	68	71	67	65	53	62	57	62	52	54	59	64	69	65	57	58	66	54	62	67	71	76	72	71	67	67	60	56	53	62.9
Washi'ton	Max..	76	86	85	92	72	74	75	78	75	69	70	72	65	74	79	69	78	82	84	84	92	94	98	93	84	88	72	81	79	66	74	79.0
	Min ..	55	61	65	50	59	50	50	52	56	56	49	50	51	61	65	56	54	57	58	51	57	61	67	72	67	61	62	60	55	49	48	56.6
Waterloo.	Max..	75	69	86	77	88	86	75	75	82	79	72	75	74	78	76	82	75	83	87	83	84	87	82	89	90	75	67	70	69	67	69	78.6
	Min ..	56	57	63	63	67	61	49	61	51	59	50	49	53	55	60	62	54	54	68	52	55	67	66	68	66	57	59	61	55	46	48	57.5
Waverly..	Max..	68	84	77	85	84	80	73	77	78	69	72	71	74	73	75	73	81	83	78	81	85	78	84	88	80	67	67	75	65	68	73	76.3
	Min ..	57	64	65	67	74	60	49	62	52	58	52	51	58	61	61	59	53	57	58	52	63	68	67	68	63	57	59	60	55	49	50	59.0
W.Bend..	Max..	73	82	89	90	86	74	77	79	78	69	74	69	74	77	75	82	81	83	79	82	84	82	85	87	78	67	70	72	63	69	75	77.6
	Min ..	56	60	63	67	70	51	52	57	48	51	47	49	50	61	60	52	51	59	54	52	62	67	65	68	63	58	52	57	56	45	46	56.4
Whitten..	Max..	78	88	86	91	86	80	79	80	79	72	75	77	75	80	79	76	83	85	79	83	87	84	93	89	85	72	74	78	67	68	73	80.0
	Min ..	55	60	63	65	72	57	50	61	48	55	48	52	57	61	59	58	53	56	57	52	62	65	66	71	64	58	60	54	58	45	46	57.7
Wilton J.	Max..	79	88	87	94	85	78	78	80	81	78	76	80	69	85	86	78	86	86	83	83	89	90	96	95	87	76	80	81	74	65	75	82.2
	Min ..	56	62	67	66	65	58	49	57	57	54	50	53	57	62	64	60	55	56	61	52	55	50	64	68	69	63	62	63	56	52	49	58.6
Winters't	Max..	78	87	91	93	85	79	77	85	84	75	72	68	76	80	78	77	82	89	85	86	90	91	95	90	83	80	74	81	75	72	78	82.0
	Min ..	56	60	63	70	65	58	52	68	50	57	47	47	62	65	57	66	52	57	67	60	70	69	72	75	64	66	69	61	61	51	52	60.5

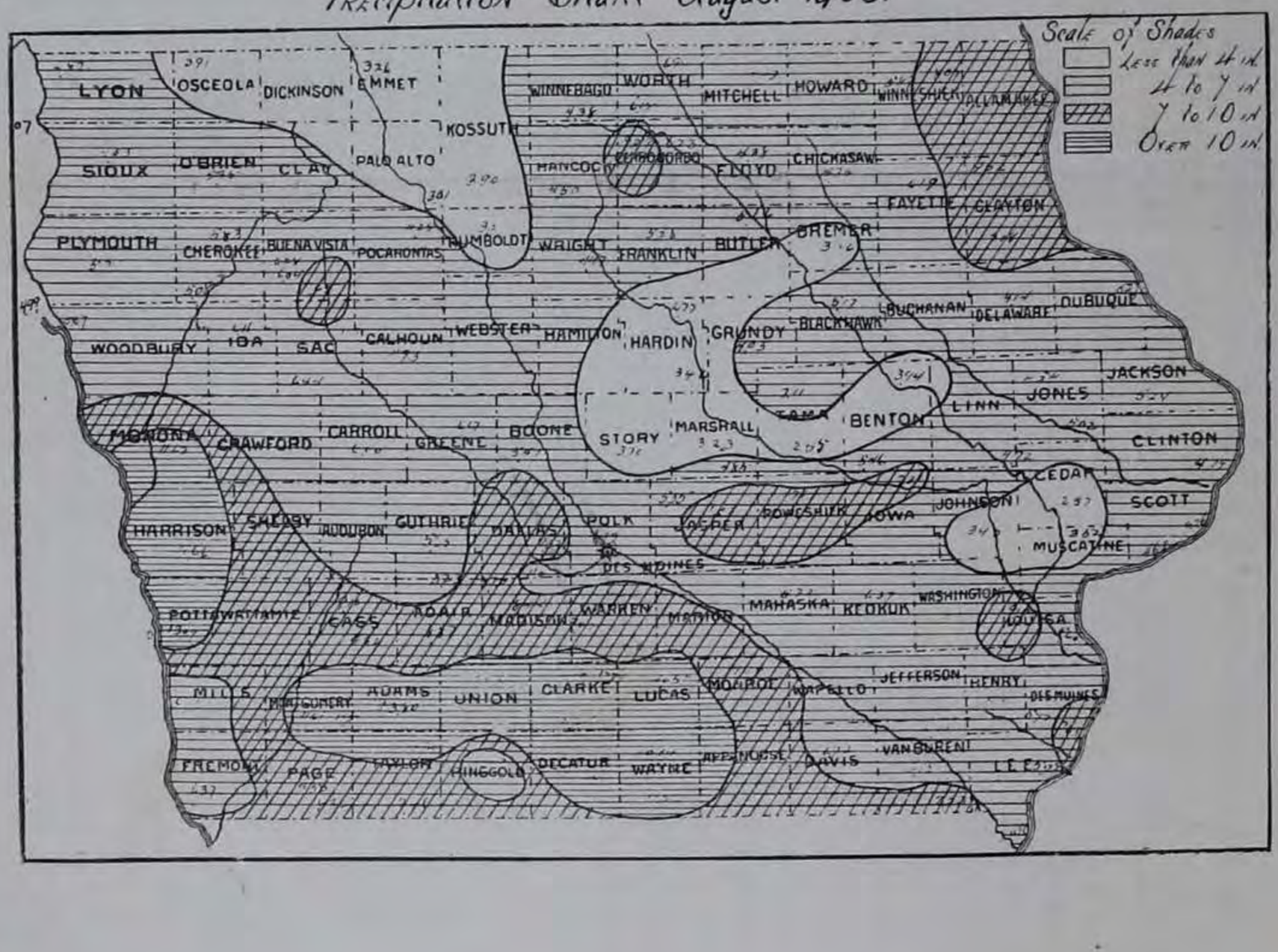
DAILY AND MONTHLY PRECIPITATION FOR AUGUST, 1903.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	.24	....	.03	....	.14	....	.20	....	....	.46	.11	.49	...	....	.24	....	....	....	.03	....	....	....	...	..	.20	.29	9.30	.53	..	....	....	12 34
Algona	.45	....	.80	....	....	....	T	.05	..	..	T	....	....	.05	....	....	....	....	....	..	....	.02	.40	.30	....	1.60	.23	....	....	....	....	3.90
Allerton	.75	....	T	....	.87	....	.10	T	.10	.08	.45	.02	..	.02	....	....	....	..	...	....			....	T	.34	.10	9.25	T	T	....	...	11.58
Alta	.45	...	.54	....	....	..	.20	....	.16	....	....	.29	....	1.54	....	....	....	.03	....	....	T	.06	.02	1.04	.10	1.65	.10	.10	....	....	....	6.28
Alta (near)	..		.68		.	....	.23	....	.03	....	....	.27	....	1.42	....	...	....	.05	....	....	..	.07	.14	1.02	....	1.93	.09	.08	.03	....	....	6.04
Amana	2.25	.42	.43	.17	.28	....	T	....	....	....	....	.05	.03		..	....	....	..	T	..	..	T	....	T	1.53	.27	1.60	.18	...	....	....	7.31
Ames	.31	....	1.35	....	.03	....	.01	.11	.04	.02	.	.07	.04	....	..	..	....	....	....	....	....	T	..	....	.14	1.07	.43	02	...	...	...	3.70
Atlantic	1.15		.72	....	.93	....	T	....	.82	.04	.10	.32	....	.25	....	....	....	.11	.03	....	...	....	....	.58	....	3.35	.70	...	....	..	....	9.10
Baxter	.28	....	1.75	....	.40	..	....	.20	....	....	...	.12	....	T	....	....	....	....	....	..	..	....	....	..	....	2.35	.20	.10	..	....	..	5.35
Bedford	.30	....	.20	...	.09	....	.29	....	....	.52	.21	.47	..	2.00	....	....	....	....	.10	....	....	..	....	....	...	.87	4.41	....	T	....	....	7.46
Belknap	.35	....	..	...	.72	....	T	.51	....	.25	...	.10	....	....	....	....	....	....		..	....	....	....	....	.14	T	3.50	1.15	....	....	..	6.72
Belle Plaine	.75	....	1.05	..	.10	...	....	.20	....	....	....	.13	.12	....	....	....	....	....	....	....	....	....	..	..	.30	.45	1.78	.58	....	....	...	5.46
Bonaparte	.38	....		....	1.19	...	....	.30	....	.14	.	T	.08	....	....	....	....	..	....	....	....	....	....	.	.32	....	4.77	.35	..	....	....	7.53
Britt	.32	....	.68	.34	..	....	....	T	T	.04	....	T	..	.38	....	..	....	....	....	..	....	.06	.16	.	1.00	1.09	.23	.20	T	....	..	4.50
Buckingham	.12	...	5.10	....	....	....		.04	....	....	..	.07	..	.07	..	...	....	.08	....	..	....	....	..	.12	..	1.05	.16	.30	....	....	....	7.11
Burlington	.03	....	.16	....	2.03	....	T	.06	....	....	....	T		....	..	..	....	....	.86	....	....	....	..	.	.45	....	3.64	.40	T	....	....	7.63
Carroll	.46	....	1.61	....	....	....	....	.05	.46	....	....	....	.20	1.10	....	....	....	....	....	....	....	....	..	.07	....	....	1.95	.05	.05	....	....	6.00
Chariton	.80	T		...	.71	....	T	T	....	.55	....	T	.35	....	....	....	....	....	....	....	....	....	....	T	.22	...	11.22	.20	..	..	.	14 05
Charles City	.	.27	.25	.40	.06	....	....	T	.04	.34	..	....		T	.23	..	....	....	....	....	....	T	.04	T	.10	....	2.00	.10	.48	.07	..	4.38
Clarinda	.49	...	.34		.04	....	.68	....	.34	....	....	.36	.73	.62	...	....	....	.07		....	....	....		.18	.30		5 20	.15	...	....	...	9.50
Clear Lake	.20	....	.65	6.00	T	....	....	....		.35	....	....	....	.25	..	....	....	....	....	....	..	T	.20	...	.38	1.21	.05	.25	.05	...	....	9 59
Clinton	.08	.38	..	....	.97	....	....	.02	....	.10	....	....	.20	....	.40	..	..	....	...	....	....	....	...	.40	.55	....	1.69	....	..	....	....	4.79
College Springs	.75	....	..	....	.01	....	.42	....	..	.22	.33	.66	....	..	.68	....	....	T		....	....	....	....	....	.12	.92	4.25	....	....	....	....	8.36
Columbus Junct'n	.13	....	.04	....	.83	....	T	.07	....		....	....	3 05	....	....	....	....	....	T	..	....	....	....	....	.80	.92	3.05	.19	.02	....	....	9.10
Corning	.30	....	.15	....	.20	....	.20	T	T	.10	.13	.65	T		1.92	..	....	.	.08	....	..	....	..	....	..	2.00	1.85	8.02	T	T	....	13.80
Council Bluffs	1.01	....	.60	....	..	....	....	....	....	.50	.26	.28	....	.21	....	....	....	.05	....	..	....	....	....	2.00		8.30	1.88	....	....	..	....	13.09
Corydon	.51		.04	.	.34	...	.09	T	....	.25	.05	.33	.03	..	T	....	..	....	....	....	..	....	....	....	.05	.11	8.10	.24	....	....	....	10.14
Cumberland	....	.80	..	.35		....	.30	....	...	.20	.25	1.10	..	. .	.45	..	....	....	....	..	....	.30	..	.	.90	1.50	3.17		..	....	....	9.32
Danville	.10	....	...	T	T	....	....	....	.	..	....	2.55		T	..	....	....	....	..	....	....	T	....	....	....	2 85	.47	T	....	....	....	5.97
Davenport	.04	T	.11	....	1.18	....	..	T	....		....	T	.14	....	....	..	....	....	T	....	....	T	....	....	.70	.02	2.00	.49	T	T	....	4 68
Decorah	.02	....	.82	....	.78	...	..	..	....	1.73	..	....	..	1.34	...	....	....	....	....	....	T	.02	.10	.02	.10	1.08	.53	.55	.08		....	8.07
Delaware	.70	.15	1.39	.12	.13	....	....	....	....	....	....	....	....	.05	....	....	....	....	....	....	....	T	....	....	.39	.72	.23	.24	.02	....	....	4.14
Des Moines	.30	..	.72	....	.49	....	T	.43	.16	.53	....	.08	....	.05	.08	....	....	....	.02	..	T	T	....	T	.56	1.86	1.44	T	T	T	....	6.72
De Soto	.31	...	.70	.11	....	....	.57	.08	.03	....	..	.25	....	....	.10	T	....	....	....	..	..	....	....	....	.80	2.00	1.23	.10	.06	...	..	6.40
Dows	.20	....	.55	.03	....	....	....	....	....	....	..	....	..	.15	....	..	....	.09	....	....	....	....	....	....	.81	1.15	.21	1.28	...	....	....	4.47
Dubuque	.52	.71	1.10	.12	.92	..	....	.02	.01	.02	....	....	....	..	01	....	....	....	....	....	....	T	T	T	.66	.90	.13	.26	.09	T	....	5.27
Earlham	.12	..	.41	....	1.43	....	.05	.06	.15	T	T	.48	....	..	.12	..	...	....	....	..	....	....	....	.77	....	2.95	1.65	.01	T	....	....	8.20
Elkader	1.66	....	1.13	....	.60	....	....	1.10	....	....	....	....	....	.05	....	..	....	....	....	....	....	....	....	....	.12	2.20	T	.20	.12	..	....	7.18
Estherville	.18	.12	.40	...	....	....	....	.26	....	T	....	....	T	T	.50	T	...	....	....	....	....	T	T	T	T	.40	.90	.30	.20	T	....	3.26
Forest City	.10	....	.74	.60	....	....	....		....	.46	....	....	....	....	.51	....	....	....	....	....	..	....	....	....	.43	....	1.20	.34	....	....	....	4.38
Fort Madison	T	...	....	....	1.35	T	..	.18	.02	..		T	.09	....	....	..	....	....	.18	....	....	..	.....	...	....	....	1.87	1.40	T	....	....	5.09
Galva	.50	....	.55	...	....	....	....	.90	T	..	....	.20	....	.80	....	....	....	T	....	....	....	....	..	....	.60	2.56	....	T	T	....	....	6.11
Gilman	.12	....	.99	....	.29	..	.01	.01	.02	....	....	.19	T	T	...		....	....	....	....	....	....		...	1.40	.	1.68	.13	.01	T	T	4.85
Grand Meadow	2.00	...	1 28	....	.68	....	....	.02	....	.03	..	....	....	35	..	....	....	....	..	....	....	.02	T	T	.36	....	3.40	.04	1.34	....	....	9.52
Greene	.26	....	.40	1.25	....	...	..	....	....	....	....	....	..	.19	..	....	....	....	....	....	....	.05	T	....	.36	1.43	.25	.85	.14	....	....	5.16
Greenfield	.02	....	.52	...	1.32	.10	....	....	.33	T	.03	.40	....	....	.30	....	....	T	.14	....	....	....	....	.33	T	2.76	.53	.04	.02	....	....	8.87
Grinnell (near)	.20		1.55	...	.30	T	..	T	....	....	....	18	...	T	.05	..	....	....	....	..	....	....	....	....	.30	2.00	2.55	T	T	....	..	7.13
Grundy Center	.14	....	1.55	.02	....	....	....	.01	....	....	.	.12	....	.02	....	..	....	.04	....	....	T	....	....	T	.32	1.16	.17	.48	....	....	....	4.03
Guthrie Center	.36	....	1.03	....	....	...	T	....	....	....	....	.42	....	.25	T	....	....	T	....	....	..	....	..	1.00	....	1.14	.85	.	....	....	..	5.05
Hampton	.25	..	.77	.47		....	.02	.02	..	....		....	....	.18	....	..	....	.23	....	....	....	....	..	.82	....	1.61	.68	.23	....	....	..	5.28
Hanlontown	.28	....	.76	1.70	.02	....	....	.20	....	.20	....	....	....	.61	.02	....	....	....	....	....	....	....	T	.39	.25	1.21	.50	.11	....	....	6.15
Harlan	.52	....	2.20	....	.20	..	.05	.04	.23	T	.01	.52	....	.92	T	..	...	.10	....	..		T	...	T	.77	2.9	.76	T	T	T	....	9.39
Hopeville	.23	...	.01	..	.26	....	.18	.18	.08	..	.08	.40	..	.21	....	....	....	....	.06	..	....	....	....	.03	....	.23	10.8	21	..	....	....	12.24
Humboldt	.30	....	....	....	....	.12	.34	....	....	....	.20	....	....	.01	....	....	....	....	....	....	....	....	....	T	.40	1.34	.0.	.48	T	....	....	3.21
Independence	.40	....	1.60		....	....	....	....	....	....	....	....	....	.35	....	....	....	.05	....	....	....	....	....	T	T	.20	1.90	1 34	T	T	....	....	7.54
Indianola	....	...	.75		1.10	....	....		....	1.40	....	T	.85	....	..	..	....	..	T	....	....	....	T	..	.23	....	1.74	.26	.01	T	....	3.45
Iowa City	T	.36	....	.50	.	.26	....	T	....	....	....	..	.07	.02	....	....	....	....	....	T	....	....	T	..	.64	..	.90	.13	.14	T		2.77
Iowa Falls	.08	.08	.34	.18	.02			T	.02	.....	...	....	T	T	.09	T	....	....	.15	....	....	T	T	....	.17	..	2.03	.06	....	..	....	6 17
Jefferson	.45	...	1.85	...	....	..	....	.22	.03	.	....	.06	....	1.30	....	..	....	....	....	..	.25	....	..	....	.11	T	2.07	.81	....	....	....	4.80
Keokuk	....	....	....	....	1.12	....	02	T	....	.24	T	.16	....	....	.02	....	....	....	.25	....	..	....	....	....	.16		3 00	1.95	.05	....	....	6.18
Keosauqua	.21	....	....		....	21	....	....	.40	.11	....	....	.07	....	....	....	....	....	.02	....	....	.	..	....	.50	....	6.20	..	..	....		9.16
Lacona	.55	....	.	....	.46	..	.06	.75	.47	....	.14	..	....	.03	....	....	..	....	....	....	....	....	..	....	....	1 00	.20	....	.	....	..	4.87
Larchwood	1.10	....	.32	....	....	....	.32	....	.13	..	....	....	....	.80	....	.....	....	1.00		..	....	....	....	....	....	2.00	.93	.03	.06		..	5.83
Larrabee	.50	....	.29	....	.	..	.29	T	T	.	....	.15	T	1.33		....	....	T	....	..	....	.10	.02	.13	....	2.00	.93	.03	.06		..	5.83
Le Claire	....	.03	....	.03	....	.61	....	..		....	....	..	.41	.15	.02	.03	..	....		....	....	....	...	....	.90	..	1.61	.43	.03	.01	....	4 26
Le Mars	.85	.12	.43	....	....	....	T	.86	.58	....	....	.20	....	.50	....	....	....	T	....	..	T	.05	...	....	....	....	1.20	.90	.10	....	....	5.79
Lenox	.15	....	.10	....	.36	....	.17	.15	..	.10	.10	.46	....	....	1.40	..	....	....	.....	..	.	...	....	....	.15	.81	6 65	..	....	..	....	10.60
Leon	.27	....	.15	...	.81	....	.13	.02	....	.71	.07	.58	....	....	...	.18		.16	.0	....	..	....	....	....	....	.25	7.25	....	....	..	..	10.48
Logan		2.70	....	.88	....	...	.37	....	....	....	.05	.90	...	1.40	....	...	....	.22	....	....	....	..	....	.25		2.41	2.28	....	....	..	....	11.66
Maquoketa	....	.40	...	.47	..	2.00	....	.05	.06	....	..	..	.15	.05	.15	.02	....	....	....	....	..	....	....	....	.25	.32	1.12	.09	.40	.03	....	5 24
Marshalltown	.04	.02	.74	.05	.	.16	....	.02	...	.02	..	....	.20	....	.02	....	....	....	.01	....	....	T	....	T	T	1.10	1.35	.13	.15	....	...	3.23
Monticello	.05	1.75	.30	T	.15	....	....	T	....		....	T	T	....	T	....	..	..	....	....	T	....	....	T	T	1.10	1.19	....	..	....	....	4.53
Mason City	.17	..	.50	2.80	.13	....	....	.12	.38	....	....	....	....	.33	....	....	....	....	....	....	....	....	T	.05	.10	1.00	.25	.30	.10	....	....	6.23
Mount Ayr	.25	....	.0	..	.37	....	.18	....	T	.30	.12	.55		....	.25	....	..	....	....	....	....	....	....	.04	T	1.10	3.59		.03	..	....	6.85
Mt. Pleasant	1.00	...	....	....	.		.10	....	....	....	..	....	T	....	....	....	....	....	.75	....	....	..	..	....	.45	....	2.50	.52	....	....	....	5.32
Mt. Vernon	1.00	.18	.68	....	.18	....	....	....	....	....	....	.01	.24	....	.02	..	..	....	....	....	..	....	..	....	.22	.38	1.10	.70	.01	....	..	4.72
New Hampton	.47	....	.41	.05	..	....	....	....	....	.65	....	....	....	.13	....	....	....	....	....	..	....	....	....	....	.21	1.89	.50	.44	....	..	..	4 75
Newton	.13	....	1.29	....	1.52	....	....	.18	....	.11	....	.08	....	T	.04	....	....	..	....	....	....	....	....	....	....	5.25	.28	.14	....	....	..	9.02
Northwood	.30	.27	.90	1 61	.04	..	....		T	.29	....	....		.35		....	..	....	....	....	T	.02	T	.01	.73	1.75	.35	.30	.02	....	....	6.94
Odebolt	.40	....	1.26	....	....	....	.12	.45	.35	....	....	.33	....	....	....	1.30	..	....	....	....	....	....	....	....	....	2.00	.13	....	.10	..	..	6.44
Ogden	....	....	1.80	20	....	....	....	T	.31	.10	....	....	.10	....	.22	....	....	....	....	.01	....	....	....	....	....	.15	.10	1.40	....	.08	....	....	5.47
Olin	.08	....	.83		1.50	....	T	.	....	....	....	T	.27	....	....	....	....	....	....	....	....	....	....	T	.10	1.30		.94	T	..	..	5.02
Omaha, Neb	1.15	....	.39	....	.32	....	.11	T	....	.10	.14	.57	....	.07	.04	....		.01	....	....	....	.03	....	1.05	.10	5.00	.80	....	T	....	....	12.50
Onawa	.80	...	2.23		.02	..	.11	....	.27	..	....	.40	....	.35	....	....	....	.46	..	....	....	.01	T	T	.26	1.46	.41	.74	.03	....		....	11.62
Osage	.26	.0	.58	.03	.29					.15	....	..		.22		....	..	....	.01	....	..	....	....	....	.12	.21	7.68	1.66	.34	T	....	4.43
Osceola	....	....	.04		..	.40	....	.12	.10	.14	...	.08	.35	.14	....	....	..	....	.01	....	..	....	....	....	.47	1.04	1.78	T	T	...	..	11.30
Oskaloosa	.83	...	.09	....	1.00	....	....	.27	.16	...	....	.08	....	...	.	....	..	....	....	....	..	....	....	T	.38	.08	1.55	....	....	....	....	5.72
Pacific Junction	.98	....	.50	....	.20	....	.37	....	.04	....	.27	.70	....	T	.57	..	....	.46	....	....	. .	-	....	....	.38	.08	1.55	....	....	....	....	6.28
Perry	.57	..	1.22	....	.10	....	T	.55	2.22	..	....	.04	....	.39	T	....	....	..	..	....	....	..	..	T	.10	1.94	1 12	T	T	....	..	8.31
Plover	.42	....	.70	....	....	...	.06	....	0.2	....	....	....	....	.03	....	....	....	..	....	....	....	.09	.11	.05	....	1.94	.77		....	....	....	4.25
Primghar	.60	T	.50	....		..	T	.79	.04	....	..	.15	T	1.75	....	....	..	....	....	....	T		T	T	...	1.40	..	.12	T	....	...	5.35
Red Oak	.64	....	.48	.	.16	....	.07	.09	T	.90	.19	.50	....	..	.81	....	....	.40	T	....	....	....	....	T	.30	.93	6.14	T	....	T	....	11 61
Ridgeway	.51	.15	.67	.03	.40	....	....	....	.50	.17	....	....	....	.77	.01	....	....	....	....		T	.03	.05	.42	.01	1.39	.36	.44	.05	....	..	5.87
Rockwell City	.30	....	1.15	....	....	....	.03	.15	.70	..	....	.25	....	.35	....	....	....	....	....	....	....	....	....	....	65	.85	.35	.15	..	....	....	4 93
Sac City	.38	..	.90	T	....	....	.26	.14	.02	....	....	.38	..	1.65	....	..	.	T	....	..	....	T	....	..	.80	1.34	.20	.03	.06	....	....	6.16
St. Charles	...	....	.17	..	1.65	....	.06	.20	.02	02	T	.23	....	....	.10	....	....	....	....	....	....	....	....	....	.50	2.45	2.02	.01	T	T	..	7.43
Sibley	.50	....	.30	..	.	....		.12	..		....	....	.17	....	.44	....	....	....	.02	....	....	....	....	.01	...	.50	.71	.46	.68	T	....	3.91
Sigourney	.71	....	.13	....	.63	....	T	.20	....	.17	..	T	T	....	.	....	....	....	....	....	....	....	....	....	1.38	2.65	.50	....	....	....	....	6.37
Sioux Center	.82	...	.18	....	....	..	.06	.77	.12	....	....	.16	....	.18	....	....	..	.06	....	..	T	.	....	....	....	1 38	.48	.12	T		..	4.33
Sioux City	1.02	...	.48	....	....	...	.16	.11	.23	....	..	.42		.32	.01	..	....	....	....	..	....	.07	....	....	...	2.16	.57	.09	T	.03	....	5 67
Stockport	.10	.02	....	....	1.00	..	T	.17		.10	....	.03	.05	....	....	....	....	....	....	..	....	....	..	....	.17	T	4.01	.26	...	....	....	5.91
Storm Lake	.47	...	.71	....	.	....	...	.16	.27	.13	..		.23	....	2.40		....	....	.14	....	....	....	T	T	.95	.72	1.35	.03	.09	T	....	7.65
Stuart	.17	.50	....		.12	..	....	....	.04	...	....	1.10	....	....	.40	..	.....	.	...	..	....	..	....	..	1.07	.75	1.00	.08	.	....	..	5.23
Thurman	1.58	...		.52	....	.15	....	.10	....	...	....	.28	1.20	....	....	.90	....	....	.28	....	....	...	..	T	.50	.24	.62	..	..	....	....	6.37
Tipton	.38	.11	.34	....	.15	....	....			....	....	.10	....	....	....	..	....	....	....	....	..	....	....	....	.10	.14	1.11	.14	....	....	....	2.57
Toledo	.20	...	.50	....	T	..	T	T	.02	....	....	.20	..	T	....	....	..	....	....	....	....	....	....	....	.22	....	.35	1.01	0.5	T	....	.	2.55

DAILY AND MONTHLY PRECIPITATION FOR AUGUST, 1903—Continued.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Villisca	.65	....	.23	....	.28	..	.12	.30	....	.12	.42	.60	..	1.85	....	.....	...	....	.30	....	....	..	....	...	....	.98	6.15	T	.02	....	..	12.02
Vinton	.72	....	1.21	....	T	..	....	.05	...	...	....	....	.04	....	....	....	....	.03	..	....	....	..	....	T	.	....	.99	.90	...	....	....	3.94
Wapello	.22	....	....	....	.47	....	T	T	....	T	....	....	....	..	....	....	....	....	..	....	....	..	....	..	.15	T	4.60	.16	....	....	....	5.60
Washington	.38	....	.08	....	....	....	..	....	....	..	....	..	....	....	....	....	.	....	..	....	....	....	....	....	.13	....	3.23	.94	....	....	....	4.76
Washta	.40	....	44	....	.	....	.47	....	.27	....	....	.17	....	.14	....	....	....	....	....	....	..	.69	....	.15	....	2.75	.20	T	T	....	....	5.08
Waterloo	.	.41	1.20	1.76	.03	....	..	.02	...	....	..	....	...	T	..	....	....	....	.08	....	....	....	....	....	.61	.58	.02	.46	T	....	..	5.17
Waukee	.70	....	.78	.	.04	...	.01	.53	.10	..	....	.18	..	1.90	.13	....	..	....	..	....	....	....	.	T	.93	2.65	1.30	.08	....	....	..	9.33
Waverly	.30	..	.57	.59	.01	....	....	.01	....		..		....	.03	....	....	....	..	..	....	....	....	.01	....	.18	.65	.20	.47	.03	.01	....	3.06
West Bend	.32	....	.59	...	...	....	....	.19	....	.02	.	T	....	.02	....	..	..	....	....		T	.12	.29	.35	....	1.32	.38	T	.01	...	....	3.61
West Union	1.49	T	.63	.46	....	....	..	....		....	..	....	....	.23	....	..	..	....	....	..	....	..	....	.61	....	1.85	.15	.72		....	....	6.19
Whitten	.52	....	.67	....	....	....	...	T	T	....	....	.20	..	T	....	....	....		T	....	..	..	.	...	.53	.82	.28	.40	T	....	....	3.42
Wilton Junction	.28	..	.35	..	.27	..	...	....	....	....	....	T	T	....	....	..	....	....		....	..	....	....	....	.43		1.81	.38	....	....	....	3.52
Winterset	.15	...	22	....	1.26	....	.05	....	.30	.26	....	.27	....	..	.11	..	....	....	....	....	....	..	....	....	.72	3.65	1.45	....	....	....	....	8.44
Woodburn	.70	....	T	....	.18	....	.10	.13	.65	T	.06	.25	....	.06	....	..	...	....	.03	..	...	....	...	.07	....	7.00	7.71	.75	....	..	....	17.74

Precipitation Chart August 1903.



SEPTEMBER, 1903. No. 9.

U. S. Department of Agriculture
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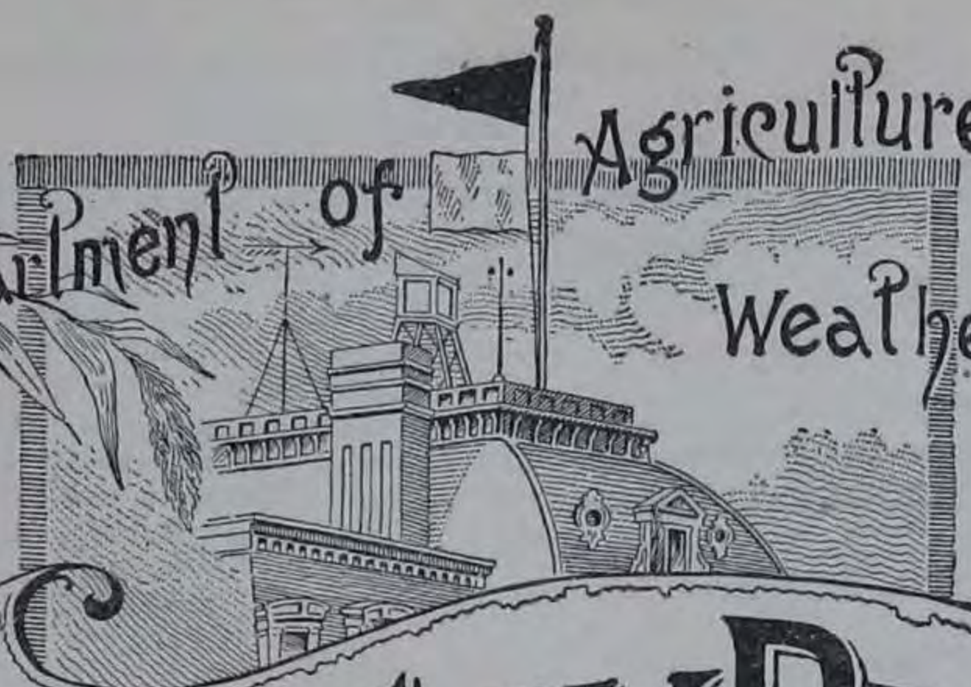

MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

STAR ENG. CO

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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIV. SEPTEMBER 1903. No. 9.

WEATHER AND CROP CONDITIONS.

September was cooler than usual, with some excess of rainfall, cloudiness and humidity. The daily mean temperature, 60.8° for the state, was 3.4° below normal. The average number of cloudy days was 10, and partly cloudy 6, with 14 days of clear skies and sunshine. On the whole the month was materially better in all the elements than September, 1902. Frosts were noted at numerous stations, in all districts, on 16th, 17th, 18th, 24th and 27th, ranging from light to heavy; but little damage resulted to farm crops except in quite limited areas. The main detriment caused by the cold and frosty period was the delay in bringing belated corn to full maturity. The period of most unfavorable weather and heaviest rainfall was from the 4th to the 16th. In the last half of the month there were about twelve days of ideal weather for maturing crops, harvesting, threshing and plowing. During this time corn made very good progress, and at the close of the month fully 80 per cent of the crop was well matured, the balance requiring one to two weeks of frostless weather and generally favorable conditions to make it safe. At the best there was but little expectation of bringing all of the belated portion of the crop to maturity, as some of it was still green and soft at the close of September. A considerable amount of the early corn was cut and put into shocks after the first appearance of frost. Fall pasturage was never better, and seldom as good at this time of the year. Fair progress has been made in harve ting the minor crops, and a good deal of second crop hay has been secured. Fall plowing is well advanced, much more than the usual acreage having been done with the soil in excellent conditlon. The potato harvest showed a very light yield, and much damage by rotting. The fall apple crop was fair, but winter apples are inferior in size and quality. On the whole September was a fairly satisfactory month, though below normal in tenperature and sunshine. The adverse features of the month were the natural sequence of the preceding abnormal spring and summer. There is much cause for congratulation and thankfulness, that under such unusual conditions the yield of staple crops will be sufficient to afford a liberal surplus for export to regions of less productiveness.

NOTES AND COMMENTS.

The weather records at Manila, P. I., show a total of 37 inches of rainfall in the month of June, 1903.

Abnormally wet seasons always insure poorer crops and smaller profits than abnormally dry ones. In a dry season a man is able to save what he raises, while in a wet one the loss is enormous on every hand.—*J. S. Trigg.*

Whi'e irrigation schemes are being promoted in the West, the Iowa farmer is making plans to tile his wet lands.

Corn experts are needed all along the northern limit of the corn belt to show to corn growers the folly of attempting to grow varieties of corn only suited to the more southern latitude of Kansas and Nebraska. One season with another, only corn which will mature in ninety or ninety-five days should be planted.—*J. S. Trigg.*

The health of the hog population of the country continues surprisingly good, says the *Chicago Live Stock World*. Sick pigs are abnormally scarce at market centers, an infallible indicator, and reports from producing districts are equally optimistic. The growing pig crop has doubtless not enjoyed a very strong diet. Old corn has been scarce and high priced and the new corn crop is late. Meanwhile the maturing pig has reveled in an abundance of clover, a condition that is largely responsible for his good health. Never before has such a wasteful abundance of this great legume been seen in the corn belt. A healthy pig, however, soon becomes invalided when allowed his fill of new corn, and at present prices there is every inducement to force him into market conditions as soon as grain is available. Because the porcine population is healthy now it does not follow that there is any assurance of a continuance of such conditions.

According to the bureau of statistics of the Department of Commerce, the value of the tropical and sub tropical products brought into the United States the past year was over $400,000,000. In 1895 the value of this class of merchandise imported was only $300,000,000; in 1875, $200,000,000, and in 1870, $140,000,000. Thus, the value of the tropical products brought into the country in the year just ended was about three times as much as in 1870, twice as much as in 1875, and one-third more than in 1895.

Tropical islands of the United States contributed nearly $50,000,000 worth of the $400,000,000 value of tropical products brought into the country last year. Over $26,000,000 of this was from Hawaii, more than $11,000,000 worth from the Philippines. In 1896 they contributed $19,000,000 worth to the tropical requirements of the country.

The hay crop of the United States in 1903, according to an estimate of the *Cincinnati Price Current*, has amounted to about 62,750,000 tons, which is about 3,000,000 tons larger than the crop of last year, and about 5,500,000 tons or nearly 10 per cent above the average of the past ten years. Compared to the

yield in 1902 this makes a shortage in the New England States of 3,847, and a gain in the group of states comprising New York, New Jersey, Pennsylvania, Ohio, Michigan and Indiana of 4.11 per cent, and in Illinois, Wisconsin, Missouri, Kansas and Nebraska a gain of 4.20 per cent. New York, Michigan and Indiana show slight losses, and New Jersey, Pennsylvania and Ohio slight gains.

Three New York firms have recently secured three African mahogany logs, all parts of the same tree, which brought at an auction sale in Liverpool the unprecedented sum for the produce of one tree of $15,728. The first measured 21 feet long, 38 inches deep at the butt and contained 1,386 square feet; the second's length was 23½ feet, depth at the butt, 44 inches, and it contained 2,441 feet; the length of the third was 25½ feet, it was 46 inches deep at the butt and contained 3,025 square feet. These logs are said to have produced the finest African mahogany veneers the United States has seen.

Dr. Kennedy, secretary of the Iowa Board of Health, says in a recent issue of the *Health Bulletin:* "We verily believe, and have often declared, from a personal experience and observation in Iowa covering more than forty-four years, that there is not a more invigorating and healthful climate in the world than in Iowa if people will only use common sense and observe the laws of hygiene in preparing to meet these frequent and sudden climatic and electrical manifestations. This is not said in the interests of any immigration company or commercial exchange, but is the honest conviction of the writer."

S. A. French, residing near Geneva, Franklin county, has succeeded in raising two crops of strawberries this season. The second crop was ripening October 5th and the berries are said to have a fine flavor and color.

The top of the building of the Philadelphia Hospital is to be used as a roof garden for the tuberculous patients. The hospital roof, 26 by 150 feet, is covered with a canvas roof, to which are attached sideflaps for use when protection from sun or rain is necessary, and will be fitted up with beds, so that the patients may be kept in the open air 24 hours of the day. Dr. Martin is quoted as saying that not only as a mere sleeping place and a space to work about in has this been planned. It is expected that flowers and shrubbery will be scattered on the roof, and that it will really be a garden, with walks and shade, attractive to the patients. In planning the construction of hospitals hereafter, will not architects have to allow for this excellent method of treating patients? And why only for the tuberculous? And why for the sick alone?—*American Medicine.*

THE RAINMAKER IN AUSTRALIA.

In connection with the droughts in Australia we have received abundant details of the efforts made to force rain from the unwilling clouds.

At a meeting of the Chamber of Commerce of Broken Hill, Thursday, July 2, the mayor submitted the formula given by Mr. J. J. Phelps, of Sydney, and his method was indorsed by several. The formula consists in using sulphuric acid and zinc. The hydrogen set free ascends with aqueous vapor "in spiral columns which are hollow when they reach the rainbelt in the atmosphere, and the cold air in that region rushes down to the warmer air below."

Any one can try this simple well-known chemical experiment for making hydrogen, but we have every assurance that no rain will result and no cold air will rush down and no rainbelt will be found in the atmosphere. This, in fact, was the experience of Mr. Allen and the Australian committee at Stephen Creek, which reported that "the experiments were not successful, owing to there being rather too much wind to allow the column of gas to ascend perpendicularly."

The failure of Mr. Allen was complete; the excuse was quite unphilosophical and unneccessary.

Previous to Mr. Allen's fiasco, a much more imposing attempt had been made by Dr. C. DeLacy McCarthy, who is said to be "a graduate of Trinity College, Dublin, who spoke with the utmost confidence on the question of the production of rain, saying: 'I will start to work on Wednesday, and you will have rain by Saturday.'"

The Government of South Australia, the Chamber of Commerce, and the water companies of Broken Hill had united in bearing the expense of a special train to bring Dr. McCarthy and five assistants and apparatus from Petersburg. He did not wish the details of his method known except that in general—

"He forces chemical fumes into the air for a great distance which create a vacuum in the fourth, fifth and sixth strata of air. The center of a heat storm is thus formed and the cold air descends, resulting in a heavy tropical rain The secret of the chemicals was given him by a man in America. He had improved on the system with the aid of a clever Japanese chemist. He changes his methods to suit varying conditions. It may require thirty-two hours of continuous work to achieve success. He produced rain in twenty-two hours in Victoria."

Dr. McCarthy delayed three days before beginning; meantime the sky clouded over and predictions were received from Mr. Barrachi, Director of the Meteorological Office, at Melbourne, forecasting rain within three days. McCarthy's experiments began on Wednesday, a furious dust storm prevailed with northwest winds; although the wind and dust were distressing, he announced that "the vacuum is working still further up," But the wind veered to the south and all chance of the predicted rain from the west seemed to disappear. Eventually, "on July 3, Dr. McCarthy suspended operations, saying that conditions were all against him." He expected to resume when favorable predictions should be published by the Meteorological Office.

A few days before this Mr. Rutter, with several local chemists, "Had sent up a column of hydrogen which was followed by clouds and light rain, and they felt certain that a heavy downpour would have resulted had they continued their efforts." Probably they realized that the clouds and light rain had nothing to do with their hydrogen gas.

In their extremity the Broken Hill people naturally clutched at the flimsiest straws, "listening even to Mr. F. J. Mars, engineer of the local electric light works, who urged that huge kites should be sent up carrying dynamite to be fired by electricity."

We have given much space to this interesting episode in the great Australian drought, as we hope it may prove to be the last occasion on which the rainmakers will attempt to delude the suffering people with their chemicals, their upper vacuum, their dynamite, and their false theories

The time has not yet come when man may plow the atmosphere for rain as he plows the soil for crops. If mines must be worked and towns built in arid regions, let the promoters of these schemes be required to build aqueducts and bore wells sufficient in advance to supply the needed water, not waiting until the droughts come and the people die. Every place on this globe has its rainy years and its dry years. Areas of cold and heat, wind and calm, rain and drought appear and move and disappear in regular succession. We must prepare for them and provide against disaster. We cannot control the weather, but we may control ourselves.—*U. S. Monthly Weather Review, July, 1903.*

UNPRODUCTIVE ACRES.

The unproductive acre on the farm is a different proposition rom the unproductive cow in the dairy. Both are bad leaks, ut with the cow which does not pay for her board regeneration s impossible, and she should be sent to the feed yard, but the nproductive acre cannot be thus got rid of and becomes a roblem involving regeneration. It may be a hillside, poor soil, washing badly, for which one of two things may be done—it can e got into grass and kept there, or it may be planted with fruit r forest trees. The acre may be a strip all round the line fence grown up to weeds and bramble. This should be reclaimed by breaking up and seeding down. It may be a wet acre in the middle of the field which a little job of tiling will reclaim, or, if this cannot be done, it would grow a lot of nice willows. Then it may be an acre and perhaps more which has been so starved and robbed that oats a foot high or ten bushel of corn is all it will produce, in which case seed down with clover and give it twenty-five loads of barnyard manure to the acre. There is still another acre bordering the public highway which should be so treated that it will produce a ton or more of good hay each year instead of a useless mass of weeds and rubbish. We would not be looking for more land until these unproductive acres were reclaimed and utilized if we were in your place. So far as the old cow is concerned, see that Chicago gets her and not your neighbor or the local butcher.—*J. S. Trigg.*

MODERN FARM LIFE.

In the course of a speech before the farmers of Whitman county, Washington, Gov. Henry McBride said: "Farm life is not what it was twenty-five years ago. You have more of the comforts and conveniences of life. You are not so isolated. The building of railroads, the extension of the telegraph and telephone systems, the construction of highways, and increased mail facilities have brought the farmer in closer touch with the world at large. The farmer of today, especially in localities covered by the free rural delivery system, receiving as he does his daily mail, is as well posted and can feel the great throbbing pulse of humanity as well as the dweller in the city.

"This is in utter contrast with the loneliness pervading farm life in former years—a loneliness that tempted many a boy and girl cityward when, in many instances, it would have been much better for them had they remained in their old homes. With the rapid advancement along material lines—with better schools—with greater opportunities for social intercourse—with the opening up of all the avenues of information, thus bringing it in closer touch with the great outside world, farm life has become more attractive, and there is no longer danger of the urban population increasing at the expense of the rural. And this is well; for an intelligent, contented, sturdy and self-reliant class devoted to agricultural pursuits is one of the chief bulwarks of any state or nation."

CLIMATOLOGY FOR THE MONTH OF SEPTEMBER, 1903.

BAROMETER.—Mean pressure, 30.03 inches; highest observed, 30.40 inches, at Sioux City, on the 23d; lowest observed, 29.45 inches, at Sioux City, on the 12th; range for state, 0.95 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 104 stations, was 60.8°, which is 3.4° below normal. By sections the mean temperatures were as follows: Northern section, 59.0°; Central section, 61.1°; Southern section, 62.4°; The highest monthly mean was 66.2°; at Belknap; lowest monthly mean, 56.9°; at Forest City. The highest temperature reported was 94°, at Logan, on the 1st; lowest temperature reported, 28°, at Larchwood, on the 16th. The average monthly maximum was 84.8°; average monthly minimum, 33.6°. Greatest daily range, 51°, at Clarinda and Marshalltown; average of greatest daily ranges, 34.8°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 116 stations, was 3.81 inches, which is 0.61 of an inch above normal. The averages by sections were as follows: Northern section, 3.94 inches; Central section, 3.46 inches; Southern section, 4.09 inches. The largest amount reported was 8.79 inches, at Larrabee; least amount reported, 1.42 inches, at Waukee. The greatest daily rainfall was 4.09 inches, at Larrabee, on the 11th and 12th. Average number of days on which .01 of an inch or more was reported, 10.

WIND AND WEATHER.—Prevailing direction of the wind, south; highest velocity reported, 42 miles per hour, from the northwest, at Sioux City, on the 26th. Average number clear days, 14; partly cloudy, 6; cloudy, 10.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	30.03	30.28	18	29.65	26
Des Moines	30.05	30.30	23	29.59	25
Dubuque	30.06	30.27	24	29.62	26
Omaha, Neb	30.00	30.34	16	29.49	25
Keokuk	30.04	30.28	23	29.70	25, 26
Sioux City	30.01	30.40	23	29.45	12
Means	30.03	30.40	23	29.45	12

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	4981	30	S	12
Des Moines	6287	37	S	12
Dubuque	5084	28	SE	12
Keokuk	5045	24	S	12
La Crosse, Wis.	5.53	30	S	2
Omaha, Neb	6661	32	N	13
Sioux City	9855	42	NW	26

OBSERVERS' NOTES.

ALLERTON.—*Rex Shriver.* Corn was uninjured by frost during the month and dried up rapidly

ALTA.—*David E. Hadden.* Unusually fierce lightning on morning and evening of 13th, with temperature at 40. First frost of season on 16th, mainly light, and killing only in exposed places; last decade of month brought ideal fall weather.

ATLANTIC.—*J. W. Love.* First frost on 16th, said to have been a benefit to corn; ducks fly southward on 13th.

BAXTER.— *W. T. Thorp.* No frost in this locality to do damage as yet.

BONAPARTE.—*B. R. Vale.* Rain 5.95 inches, following 5.44 the last six days of August. Too much moisture, but otherwise a seasonable month; vegetation luxuriant.

BRITT.—*Geo. P. Hardwick.* First half wet; last half more favorable to belated corn; whole season so cool and wet that

half a crop results; severe loss by hail on 13th in strip of country from east center to southwest corner.

CLEAR LAKE.—*John Cobb*. Quite hard frosts on 24th, but did not seem to kill anything.

EARLHAM, A. D.—*Geo. Phillips*. Corn made rapid progress last days of the month, and except a small area of very late planting was safe from danger of harm by frost.

ESTHERVILLE.—*Earle W. Peterson*. Up to last of month the corn remained unharmed by frost, and will be a better crop than was expected.

FOREST CITY.—*J. A. Peters*. Frosts on 18th and 24th did very little damage, and last week was favorable to corn.

GRAND MEADOW.—*F. L. Williams*. Many fields of corn still green, and frost did little damage; most of it safe at close of month; pastures extra good; oats proved the poorest crop ever raised here.

GREENFIELD.—*J. G. Culver*. No frost sufficient to injure the tenderest vegetation; 70 per cent of corn safe at close of month, and will have more sound corn than last year.

GRINNELL.—*A. O. Price*. No killing frosts during the month; pastures seldom better; fall plowing nearly finished and ground in fine condition.

GRUNDY CENTER.—*E. S. King*. All corn past frost; very little harm done by frosts on 17th, 18th, 24th and 27th; fall work well advanced.

HANLONTOWN.—*Miss G. M. Paschen*. Corn cutting began 21st and mostly finished by 30th; not as large acreage as last year; upland corn good well filled ears; potatoes light and subject to rot.

HARLAN.—*C. A. Reynolds*. September has been a very acceptable month in this vicinity.

HOPEVILLE.—*M. T. Ashley*. No frost except very light on 17th and 18th; no vegetation hurt; much green corn at close of month needing ten days to ripen.

HUMBOLDT.—*H. S. Wells*. Quite favorable weather for ripening corn; threshing completed and grain little damaged.

LARRABEE.—*H. B. Strever*. Heavy rainfall during first half of month; frost on 16th did considerable damage to late corn.

OGDEN.—*E. Sayre*. No frost to kill tender vines up to 30th; corn was then doing finely.

OLIN.—*N. Potter*. First and last of month favorable for maturing the corn crop; middle period cold and cloudy with frosts on 18th that did damage on low ground.

PACIFIC JUNCTION.—*H. H. McCartney*. Frost on 16th was not killing on account of continued cloudy weather; 40° always shows white frosts in this locality if clear and calm at time.

RIDGEWAY.—*Arthur Betts*. Month was two degrees warmer than September, 1902; last decade was fine; killing frost of 18th was general hereabout, with temperature 27° to 33°; about 90 per cent of corn fields were deadened, and will be much soft corn; we had 234 hours sunshine, or 63 per cent; aurora on 26th.

SAC CITY.—*J. A. Sodestrom*. No damage by frost on 16th.

STOCKPORT.—*C. L. Beswick*. An unusual month; only four days in which wind was not in south, southeast or southwest.

TOLEDO.—*H. P. Giger*. On 17th frost was averted by clouding over a little about midnight; other frosts did not seem to do much harm.

WAUKEE.—*E. J. Leonard*. Except the rainy period, 4th to 14th, the month was generally clear and cool; light frost on 18th and 24th did no damage; most of corn well matured, but late portion needs a little more time.

WEST BEND.—*Ph. Dorweiler*. First half month rainy, and last half fine; no killing frost.

WHITTEN.—*Dr. Frank P. Butler*. Frost on 17th and 24th did but little damage to corn; the crop has never been in better condition in this section; potatoes rotting and a poor crop; fall pastures excellent; much fall plowing down.

ERRATA IN JULY REVIEW.

BELLE PLAINE.—Total precipitation recorded 3.47 inches on pages 6 and 10, should have been 4.47 inches.

DECORAH.—Mean temperature recorded 71.8° on page 6, should have been 71.5°. Mean maximum temperature recorded 81.6° on page 8, should have been 81.1°.

ESTHERVILLE.—Total precipitation recorded 7.21 inches on pages 6 and 10, should have been 7.71 inches.

FOREST CITY.—Total precipitation recorded 3.78 inches on page 6, should have been 3.79 inches.

IDA GROVE.—Daily precipitation recorded .96 inch on 18th, on page 10, should have been .98 inch. Total precipitation recorded 4.43 inches on pages 6 and 10, should have been 4.31 inches.

WILTON JUNCTION.—Total precipitation recorded 6.37 inches on page 7, should have been 6.35 inches.

CLIMATOLOGICAL DATA FOR SEPTEMBER, 1903.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	60.2	-1.7	85	2	36	24	36	3.90	† .81	1.60	.....	7	11	12	7	SE	
Alta	Buena Vista	1,513	11	57.9	-5.7	80	22	32	16	36	7.05	†4.49	2.30	....	13	12	11	7	S	3, 6, 7, 11, 13, 30
Alta (near)	Buena Vista		....	...	...	...	.....	.....	.....	.....	7.83	.....	3.60	..	12	....	...	...		
Britt	Hancock	1,236	5	58.7	-3.8	85	2	32	24	35	4.43	† .25	1.12	...	12	7	16	7	SW	7, 11, 13
Charles City	Floyd	1,012	11	57.3	-5.8	83	2	32	18, 24	44	2.06	- .82	.42	....	11	15	0	15	SE	8, 11, 14, 15
Clear Lake	Cerro Gordo	1,241	....	59.9		87	2	33	24	34	5 10	.....	2.35	...	9	13	10	7	SW	
Decorah	Winneshiek	857	8	59.4	-3.0	81	22	32	18	32	2.94	- .45	.72	....	15	...	....	.		
Dows	Wright	1,142	...	59.6		83	2	33	18	33	2.00	.....	.60	....	10	17	5	8	SE, S NW	
Elkader	Clayton	727	21	61.6	-0.6	86	2, 8, 21	31	18	39	2.67	-1.12	.75	.	9	16	7	7	SE	4, 7, 8, 12, 14 26
Estherville	Emmet	1,293	7	57.2	-4.4	84	3	32	24	44	3.83	† .73	1.75	....	12	15	4	11	NW	
Forest City	Winnebago	1,226	8	56.9	-5.7	84	26	31	28	38	3.67	- .61	2.00	....	8	18	1	11	S	
Grand Meadow	Clayton	1,180	11	59.0	-2.1	79	2	35	11, 24	27	4.27	†1.23	1.49	....	10	13	8	9	SW	
Greene	Butler	924	5	60.4	-4.8	84	2	33	18	33	1.81	-1.40	.35	....	11	12	4	14	S	
Hampton	Franklin	1,155	12	61.4	-1.2	86	2, 3, 8	36	18, 24	34	2.09	- .95	.52	..	12	10	14	6	SW	
Hanlontown	Worth	.....	...	58.4		82	1, 22	32	24	32	4.03	.	.75	....	13	14	8	8	S	11, 12, 13, 30
Humboldt	Humboldt	1,095	10	61.0	-1.6	90	21	35	24	34	5.23	†1.76	2.70	..	9	13	5	12	NW	
Larchwood	Lyon	.....	....	60 0	....	85	22	28	16	39	1.92	.....	.83	..	8	12	11	7	N, S	11
Larrabee	Cherokee	1,366	....	58.8	.....	86	2	29	16	36	8.79	.....	4 09	..	12	13	10	7	SW	6, 7, 11, 12, 13, 30
Le Mars	Plymouth	1,224	6	57.8	-5.8	84	1, 25	32	16	34	3.80	† .85	1.35	....	7	13	8	9	S	
Mason City	Cerro Gordo	1,132	...	60.4	.....	82	2, 22	38	18	30	4 04	.....	1.25	....	10	8	14	8	S	6, 7, 11, 14
New Hampton(b)	Chickasaw	1,169	....	57.0	.....	80	2, 22	31	18	31	1.66	.....	.40	....	7	13	5	12	NW	
Northwood	Worth	1,222	6	58.0	-2 8	80	22	31	18	28	4.46	† .80	1.17	....	13	11	9	10	SE, SW	2, 3, 4, 6, 11, 13, 30
Osage	Mitchell	1,184	11	58.0	-1.5	81	2	32	18	33	3.86	† .26	1.21	....	14	11	4	15	S	2, 4, 6, 7, 11, 13, 26
Plover	Pocahontas	1,190	5	59.6	-5.3	86	2	33	24	34	5.65	†1.64	1.52	.	9	15	6	9	S	11, 13, 14
Primghar	O'Brien	.....	....	58 5	.....	83	1	35	24, 27	34	3.79	.....	1.00	....	7	13	0	17	S	
Ridgeway	Winneshiek	1,315	....	61.0	...	85	25	32	18	37	3.13	.....	1.00	..	17	14	10	6	S	2, 3, 4, 6, 7, 8, 11, 12, 13 14, 15, 26
Ruthven	Palo Alto	.....	....	60.0	....	85	2	34	16	34	4.91	.....	1.10	....	7	12	6	12	S	
Sheldon	O'Brien	1,422	..	59.1	.....	84	2, 22	30	16	39	1.84	.	.77	.	9	....	...	....	S	
Sibley	Osceola	1,512	8	56.2	-5.5	84	22	30	16	36	2.80	- .26	.66	....	11	14	6	10		
Sioux Center	Sioux	.....	....	59.0	.....	83	1, 2, 21, 25	30	16	36	1.51	.....	.45	....	8	14	6	10	S	2, 7, 11, 13
Storm Lake	Buena Vista	1,440	7	57.6	-5.9	82	3	32	16	35	6.49	†3.47	2.66	....	13	17	4	9	SE	6, 7, 12, 13, 14
Washta	Cherokee	1,157	....	.....	.....	.....	.....	.....	.....		5 19	.....	1.25	....	10	13	10	7	S	
Waverly	Bremer	942	6	60.7	-2.5	82	21, 22	34	24	34	1.76	-1.26	.41		9	14	4	12	S	4
West Bend	Palo Alto	1,197	8	59 1	-2.1	84	2	30	27	31	5.47	†2.26	1.48	..	12	12	7	11	S	7, 11, 13
Average				59.0	-3.6	84.8	.....	32.5	....	34.8	3.94	† .58	.....	....	10	13	7	10	S	.....

CENTRAL SECTION.

Amana	Iowa	721	25	61.8	-0.4	84	7, 8	33	18	32	4.43	†1.19	1.07	....	11	18	12	5	S	6, 7, 8, 12, 14, 30
Ames	Story	926	20	60.5	-3.1	82	2, 25	34	18	36	1.46	-2.15	.45	....	7	16	8	6	SE	
Baxter	Jasper	998	...	60.6		83	8	33	24	31	1.77	.....	.72	..	5	12	12	6	SW	
Belle Plaine (†)	Benton	828	12	58.8	-5.3	84	3	36	24	30	3.97	†1.30	.9	...	10	11	12	7	SE	
Buckingham	Iowa	.....	....	.....	.....	.....	.....	.....	.....	.....	2.19	.....	.62		9	13	13	4	.....	
Carroll	Carroll	1,265	12	60.2	-3.2	86	26	30	24	39	1.74	-1.19	.32	....	12	18	4	8	.....	
Cedar Rapids	Linn	733	19	61 8	-2.0	86	8, 9	37	18	32	4 06	†1.38	1.56	....	13	12	8	10	S	
Clinton	Clinton	609	34	62.2	-1.1	86	7	32	18	35	6 12	†3.02	2.44		9	14	4	12	SW	9, 26
Davenport	Scott	606	31	63.8	-0.9	86	7	40	18	28	7.09	†3 91	3 54	....	11	14	6	10	S	7, 8, 9, 10, 14, 15, 26
Delaware	Delaware	1,083	11	59.0	-2.8	82	7	33	18	31	3 78	† .56	1.04	..	10	14	10	6	S	
Des Moines	Polk	831	24	61.9	-1.3	84	25	39	18	33	1.62	-1.47	.53	....	12	11	6	13	SW	5, 7, 13, 14, 15
De Soto	Dallas	866	....	62.4		84	25	36	16, 18, 24	32	1.81	.....	.53	....	7	16	2	12	SW	
Dubuque	Dubuque	655	29	61.8	-1.4	84	7	35	18	28	3.20	- .89	.77	..	12	15	8	7	S	4, 6, 7, 8, 10, 12, 14, 26
Fort Dodge (c)	Webster	1,126		61.4	....	84	22	31	24	31		.....	.....	..		....	..	....	.....	
Galva (b)	Ida	1,290	8	58.6	-6.7	84	3	31	16, 27	40	4.25	†1.35	2.00	....	5			....	SW	
Gilman	Marshall	1,052			....	.....	.....	.....	.....		2 21	.....	.47	....	11	12	7	11	S	
Grinnell (near)	Poweshiek	.....	....	60 6	.....	83	3, 7	34	18	43	3.63	.	1.58	....	12	14	4	12	SW	7, 8, 12, 14
Grundy Center	Grundy	976	11	60.4	-2 9	82	2, 3, 21, 22	34	18, 24	34	4.23	†1.03	1.42	....	11	14	4	12	S	6, 7, 9, 12
Guthrie Center (†)	Guthrie	1,077	6	60.6	-3.7	87	7	32	16	32	2.88	- .29	1.22	....	7	15	10	5	SE	
Harlan	Shelby	1,192	....	59.7	.....	84	3, 7	31	16	35	1 90	.....	.50		10	12	10	8	S	7, 9, 10, 11, 12, 30
Independence	Buchanan	921	38	59.4	-2.3	81	3, 7, 8	32	18	31	3.05	-1 07	1.50	...	8	13	7	10	SW	4, 7, 14
Iowa City	Johnson	685	43	61.8	-1.7	87	8	34	18	41	5.38	†1.55	1.98	....	11	9	8	13	S	
Iowa Falls	Hardin	1,170	9	57.8	-4 8	83	8	31	18, 24	47	1.45	-1.85	.74	....	10	15	3	12	S	6
Jefferson	Greene	1,052	....	...	.....	.....	.....	.....	.....	...	4 24	.....	1.83	....	11	....	....	....	S	7, 12, 14, 15
LeClaire	Scott	576	....	.....	.....	.....	.....	.....	.....		8.23	.....	2.43	....	10	....	....	....	SW	
Logan	Harrison	923	35	61.8	-2 4	94	1	34	16	44	1.66	-1 44	.95	....	5	18	2	10	S	
Maquoketa	Jackson	688	9	60.5	-3.7	86	7	30	18	47	3.48	† .62	1.48	....	8	16	6	8	SW	
Marshalltown	Marshall	947	9	60.6	-4.1	87	21	33	18	51	3.07	† .70	.97	....	15	10	6	14	NW	
Monticello (†)	Jones	925	48	.....	.....	.....	.....	.....	.....	...	4.57	† .66	1.17	....	10	13	5	12	SW	
Mt. Vernon	Linn	847	35	61.5	-1.2	84	7	33	18, 24	33	4.64	†1.96	1.00	....	14	13	6	11	S	
Newton	Jasper	944	14	61.1	-2.1	81	2	37	18, 24, 27	33	2.41	- 70	.74	....	8	16	4	10	S	
Odebolt	Sac	1,356	5	60.6	-2.5	85	1, 2, 3	32	24	34	4.68	†1.73	1.65	....	8	17	4	9	.....	
Ogden	Boone	1,088	8	60.2	-5 0	90	4, 5	30	27	45	2.10	-1.77	.90	..	7	16	3	11	SE	
Olin (a)	Jones	760	....	62.0	....	85	8	32	18	30	3.42	.....	1.45	....	6	....	....	....	S	7, 8, 9, 12, 30
Onawa	Monona	1,053	.	63.5	.....	86	25	35	16	34	4.30	.....	1.08	..	11	20	2	8	SE	7, 11, 13, 14, 30
Perry	Dallas	975	....	61.4	.....	84	6, 8, 25	33	18	35	2.08	.....	.76	....	8	10	7	13	.....	
Rockwell City	Calhoun		...	65.6	....	85	2	34	16	33	5 26	.....	2.85	....	9	16	7	7	.....	
Sac City	Sac	1,278	22	59.4	-4.0	84	3	32	16	33	4.22	† .91	1.02	..	12	14	3	13	S	6, 7, 11, 12, 13
Sioux City	Woodbury	1,165	13	60.8	-4.4	86	25	33	16	37	3.06	† 97	.76		9	13	6	11	S	
Stuart	Guthrie	1,216	5	60.8	-6.6	85	3, 7	34	16	33	3.54	†1.63	.95	..	7	20	2	8	SW	
Tipton	Cedar	807	..	64.1	.....	87	7	35	18	30	5.30	.	1.30	..	11	13	10	7	S	
Toledo	Tama	856	8	61.0	-3.6	83	21	31	18	33	2 64	- .30	.72	..	12	14	7	9	SW	
Vinton*§	Benton	810	12	60 7	-2.5	82	21, 22	36	24	.....	4 42	†1.67	1 01	....	10	17	5	8	SE	
Waterloo	Black Hawk	862	15	60.2	-2.2	88	2	33	18	34	2.75	-1.39	.66	..	9	10	11	9	S	7
Waukee	Dallas	1,039	....	.....	.....	.....	.....	.....	.....		1.42	.....	.39	....	8	18	2	10	S	7, 14, 30
Wilton Junction	Muscatine	683	7	63.6	-1.2	85	7, 8	34	18	31	4.93	†1.86	2.48		9	15	0	15	S	7, 30
Whitten (b)	Hardin	1,036	..	59.4	.....	82	2, 3	33	18, 24	30	2.82	.....	1.82	....	7	...	....	....	S	
Average				61.1	-2.9	84.8	.....	33.4	....	35.3	3.46	† .40			10	16	6	9	S	.....

CLIMATOLOGICAL DATA FOR SEPTEMBER, 1903—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted)		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	7	61.0	-4.9	84	3	34	18	33	3.38	- .06	71		9	14	3	13	SW	
Albia	Monroe	957	...	62.0	.....	87	7,8	31	24	36	5.02	....	1.42	..	13	...	...		SE	
Allerton	Wayne	...	....	62.4	.....	85	7	35	17	36	6.90	.....	2.61		11	15	5	10	S	5, 8, 9, 14, 15, 26
Atlantic	Cass	1,164	11	61.5	†2.4	87	8	30	27	36	2.01	- .49	.60		10	10	4	16	S	7, 13, 30
Audubon	Audubon	1,301	8	60.2	-3.7	86	8	30	16, 24, 27	39	2.78	† .00	.79	..	10	14	3	13	S	7, 13, 14
Bedford	Taylor	.....	...	61.9	.....	83	25	32	27	36	4.00	.	1.18	....	10	15	3	12	S	
Belknap	Davis	877	7	66.2	-1.6	87	19	40	17	42	5.08	†1.65	2.50	....	10	....	....		S	
Bonaparte	Van Buren	.....	10	63.7	-4.6	84	3	36	18	31	5.95	†1.89	3 08	....	7	....	....		.....	
Burlington	Des Moines	544	....	66.1	.....	88	7	40	18, 24	31	5.81	.....	2.51	..	9	17	6	7	S	
Chariton	Lucas	1,042	7	62.0	-4.5	87	2	35	17, 18.24, 27	34	2.78	- .18	1.15	....	6	14	11	5	SE	
Clarinda	Page.	1,069	12	61.4	-5.8	88	3, 25	35	16, 24, 27	51	2 46	† .08	.63	..	9	13	7	10	S	
College Springs	Page	.....	10	62.7	-5.4	84	3, 7, 8, 25	35	16	31	2.99	† .64	.94	....	7	18	4	8	SE	
Columbus Jct.‡	Louisa	595	....	63.2	.....	84	7, 8	37	18, 24	28	5 48	.....	2.00	.	10	15	10	5	SE	
Corning	Adams	1,127	10	60.7	-5.1	81	3, 7, 8	34	24	30	3.47	†1.27	1.30		9	13	9	8	SW	5, 14
Corydon	Wayne	992	9	62.4	-4.8	84	7	36	17, 24	35	5.16	†1.72	2.35	..	10	16	2	12	S	8, 9, 14
Council Bluffs‡	Pottawatt'mie	990	5	.....	.....	.....	.....	32	16	.....	1.71	-1 64	.62		6	18	2	10	NW	
Cumberland	Cass		...	.....	.....		.....	...	.....		1.70	.....	.60	...	8	14	7	9	SW	
Earlham	Madison	.....	...	59.8	.....	83	8	31	18	37	1.91	.....	.51	....	10	16	4	10	S	7, 30
Fort Madison	Lee	516	51	.....	.....	.....	.....	.....	.....	.....	6 37	†2.55	2.11	....	7	13	7	10	SW	
Greenfield	Adair	.....	11	61.4	-4.1	82	2, 22, 25	33	16	41	2.15	- .85	.62		12	15	6	9	S	4, 5, 7, 9, 11, 12, 13, 15
Hopeville. (a)	Clarke	.....	11	61.6	-5.0	83	6, 7, 8, 25	36	16, 17	31	3.97	† .90	.74	....	9	13	5	12	S	
Indianola	Warren	969	11	62.1	-3.9	84	3, 6	36	18, 24	33	4.23	†1.09	2.00	...	11	10	10	10	SE	4, 7, 8, 9, 13, 14, 15
Keokuk	Lee	619	31	65.6	-0.8	89	7	41	24	30	7.16	†3.64	2.79	....	10	15	5	10	S	5, 7, 8, 9, 12, 14, 15, 26, 30
Keosauqua	Van Buren	664	10	63.1	-4.9	86	8	37	18	40	6.50	†1 99	3.43	....	10	10	6	14	.....	
Lacona	Warren	.....	1	.....	....	.....	.....	.....	.....	.....	4.15	.....	1.02		11	6	20	4	.....	
Lenox	Taylor	1,250	7	61 8	-4.3	83	25	35	16	33	3.70	† .91	1.20	..	11	19	4	7	S	
Mt. Ayr	Ringgold	1,236	8	62.9	-4.5	85	25	36	16	32	5.88	†3.17	1.80	..	11	13	4	13	SW	
Mt. Pleasant	Henry	729	20	62.6	-2.3	87	14	33	17, 18	32	6.15	†2.98	2.70	....	9	15	10	5	SW	
Omaha, Neb.	Douglass	1,113	32	63.2	-1.6	87	25	36	16	31	2.50	- .41	1.08		11	12	6	12	S	5, 7, 9, 12, 13
Osceola	Clarke	1,130	6	63.8	-2.1	86	8, 9	35	16	38	3.61	- .11	.69		10	16	4	10	SE	
Oskaloosa	Mahaska	843	18	61.9	-2.6	84	7	36	17, 18, 24	32	3.12	† .10	1.25	....	10	16	0	14	SW	
Pacific Junction	Mills	960	....	61.3	.....	84	6, 11, 25	33	16	36	2.49	.....	1.35		7	14	7	9	S	
Red Oak	Montgomery	1,033	...	63.0	...	82	7	39	16	28	2.84	.....	1.12	.	9	11	12	7	S	5, 7, 9, 13, 14, 26
St. Charles	Madison	1,070	...	63.0		84	3	36	16	32	2.70	.	.68	....	13	16	8	6	SW	
Sigourney‡	Keokuk	787	6	63.0	-3.0	88	3, 7, 8, 20	34	18	45	6.86	†4.02	2.26	....	9	17	8	5	SW	7, 8, 9, 12, 14, 15
Stockport	Van Buren	.....	...	.....	.....	.	.....	.....	.....	.....	7.34	.....	2 29	.	9	13	8	9	S	8, 9, 14, 26
Thurman	Fremont	.....	....	62.2	....	85	25	32	27	30	2 87	.....	1.02	....	9	18	5	7	SW	
Wapello (a)	Louisa	588	....	62.9	.....	82	7	38	18	25	5.47	.....	2.15	....	9	...	..	....	.....	4, 9, 14, 15, 26
Washington	Washington	769	20	61.0	-3.7	87	7	34	18, 24	40	4.76	†2.38	1.55	....	9	..	....	....	SW	
Woodburn	Clarke	961	....	.....	...	.....	.....	.....	.....	.....	5.02	.	1.20	...	9	14	2	14	SW	7
Average	.....	.....		62.4	-3.4	84.9	.....	35.0	.....	34.2	4.09	†1.09	.....	....	9	14	6	10	S	
Average for state	.....	.....	....	60.8	-3 3	84.8	.....	33.6	.....	34.8	3.81	† .69	.....	...	10	14	6	10	S	

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Above normal.
‡ Received too late to be computed with means. (a) One day missing; (b) two days, etc. § Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR SEPTEMBER, 1903.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Afton.....	Max..	78	81	84	74	67	82	83	83	72	70	81	79	77	72	54	54	55	67	75	77	71	81	74	66	82	72	67	73	65	69	..	72.8
	Min .	49	53	55	59	53	53	64	59	56	46	57	62	48	49	46	35	36	34	48	52	53	54	49	36	49	47	38	39	42	59	..	49.3
Albia.....	Max..	82	84	85	74	64	85	87	87	66	75	80	80	75	68	56	48	57	69	78	76	82	83	64	67	83	65	69	75	68	..	..	73.5
	Min .	54	57	48	60	55	55	63	63	64	48	49	56	53	55	52	42	37	38	41	53	57	57	55	31	37	53	39	42	48	50	..	50 4
Algona...	Max.	80	85	80	70	72	74	79	79	70	73	66	75	60	49	50	50	53	65	74	76	80	80	78	70	80	76	63	71	69	70	..	70.6
	Min .	52	60	61	64	50	54	63	59	57	46	51	57	39	42	44	39	40	37	47	53	58	57	42	36	49	49	38	45	46	58	..	49.7
Allerton .	Max..	81	82	83	75	66	84	85	84	70	74	82	78	79	71	55	52	57	68	77	77	80	81	69	67	83	75	70	74	69	70	..	73 9
	Min ..	50	55	56	63	55	57	64	60	56	47	55	64	54	53	51	38	35	37	49	54	52	54	53	36	47	49	36	43	49	58	..	51.0
Alta.	Max.	80	80	80	65	69	77	77	77	62	72	72	72	45	47	46	54	50	67	74	76	80	80	67	66	81	70	67	74	68	64	..	68.6
	Min ..	53	61	59	54	48	55	57	50	49	44	51	45	38	42	39	32	38	36	49	55	56	58	42	35	53	39	34	39	49	56	..	47.2
Amana. ..	Max..	78	82	83	72	72	76	84	84	73	71	76	80	71	70	64	53	55	65	75	77	79	79	68	63	79	71	62	71	70	71	..	72 5
	Min ..	49	56	58	61	54	56	64	61	59	50	52	65	50	57	53	45	38	33	46	54	53	55	51	37	47	48	36	44	45	56	..	51.1
Ames	Max.	78	82	81	75	68	79	79	81	71	72	75	73	63	62	52	52	52	66	75	77	81	81	70	65	82	74	68	72	63	68	..	71.2
	Min ..	52	58	59	61	55	57	59	57	56	49	52	62	44	43	42	41	40	34	44	53	55	55	49	36	46	47	39	42	47	59	..	49.8
Atlantic..	Max.	81	83	85	75	64	84	83	87	71	74	82	77	61	60	52	68	56	63	79	79	84	85	72	68	86	75	70	77	64	73	..	73.9
	Min ..	50	58	61	58	55	59	63	51	53	39	53	61	43	46	46	32	34	33	52	56	56	59	47	33	52	45	30	37	50	60	..	49.1
Audubon.	Max.	82	83	83	73	63	84	82	86	69	73	79	76	60	60	51	58	54	70	79	79	84	84	70	69	85	74	70	78	64	73	..	73.2
	Min ..	46	57	60	58	54	58	61	48	49	42	50	60	42	43	44	30	36	31	41	54	51	55	45	30	50	45	30	39	49	59	..	47.3
Baxter. ..	Max.	77	82	80	74	70	80	80	83	70	72	78	77	70	70	55	50	50	65	75	78	82	80	73	64	80	62	64	73	65	68	..	71 6
	Min ..	51	56	57	58	54	58	65	59	57	47	53	60	45	48	47	41	37	36	45	55	54	55	50	33	47	42	36	42	46	57	..	49.7
Bedford..	Max..	77	80	82	76	69	82	81	81	72	71	81	76	77	74	53	51	67	67	76	76	81	72	71	81	83	74	68	74	63	71	..	73.6
	Min ..	47	56	56	68	56	60	67	56	57	42	55	61	49	49	47	35	36	35	50	53	55	33	51	55	50	48	32	38	50	59	..	50.2
Belknap..	Max.	75	80	82	70	68	81	86	85	75	76	82	83	82	83	70	70	67	67	67	79	82	85	65	72	78	70	70	78	75	86	..	77.0
	Min ..	57	60	64	68	58	58	63	68	62	54	58	58	59	62	55	45	40	45	45	57	58	58	59	41	42	66	42	51	54	57	..	55.4
Bonapar'e	Max..	81	83	84	80	70	84	88	85	72	74	80	85	78	83	68	58	59	67	78	80	82	83	66	67	82	71	67	75	73	74	..	75.7
	Min .	48	53	56	61	56	58	63	63	62	50	51	69	56	64	53	44	37	36	48	52	53	53	51	37	46	50	38	44	45	55	..	51.7
Britt.	Max.	80	85	83	65	68	75	79	82	65	73	69	74	57	49	53	53	54	65	74	72	81	82	68	64	80	73	62	68	71	67	..	69.7
	Min ..	48	60	58	54	50	53	64	51	53	40	50	57	34	43	44	40	39	33	47	53	57	57	43	32	4	47	33	41	45	59	..	47.7
Burling'n	Max.	79	83	84	84	70	82	88	83	74	75	81	85	78	83	68	55	58	67	79	81	84	83	71	69	80	71	66	78	72	75	..	76.2
	Min .	52	63	62	63	62	59	66	67	64	54	55	70	63	66	54	46	41	40	51	54	53	57	55	40	59	51	50	51	58	57	..	56 0
Carroll ...	Max..	82	82	83	72	71	82	80	83	68	73	76	72	52	50	52	60	57	69	78	80	82	84	62	68	86	58	71	77	68	..	..	71.7
	Min ..	52	60	61	56	52	55	62	50	50	49	50	65	37	42	45	30	37	35	48	55	57	56	44	32	54	50	34	38	46	56	..	48.6
Cedar R..	Max.	80	85	84	69	71	75	86	86	66	75	75	83	70	71	58	51	53	66	78	80	83	83	63	65	81	68	64	73	73	71	..	72.9
	Min ..	51	52	60	61	54	55	56	63	64	52	52	55	51	52	55	45	40	37	38	50	57	58	57	38	39	49	40	42	47	49	..	50.6
Chariton .	Max	79	87	83	72	68	83	84	86	73	74	81	78	77	76	54	54	57	67	76	77	80	81	72	61	82	70	69	70	70	70	..	73.7
	Min ..	49	54	55	61	54	57	62	60	56	46	55	62	52	52	50	38	35	35	50	54	52	55	52	35	49	47	35	44	47	57	..	50.3
Charles C.	Max	79	83	81	67	67	69	81	81	64	73	72	78	60	54	54	52	54	64	75	77	80	81	58	63	80	60	61	66	72	..	..	69.2
	Min .	47	50	51	49	52	51	55	58	53	46	46	52	41	46	48	43	36	32	33	33	57	55	50	32	36	45	35	41	41	47	..	45.4
Clarinda..	Max..	84	85	88	76	68	87	85	85	65	78	86	74	77	56	53	61	61	74	80	80	83	86	67	72	88	59	75	80	62	..	..	74 0
	Min ..	51	54	56	59	55	61	64	57	62	44	46	59	50	50	48	35	37	37	39	48	52	57	51	35	37	49	35	48	39	50	..	48.8
Clear L...	Max.	78	87	85	76	78	74	79	86	71	76	65	71	62	52	51	53	52	69	76	80	84	82	70	67	83	73	64	72	70	65	..	71.7
	Min ..	54	58	61	56	50	51	62	55	51	48	48	60	38	42	44	39	38	37	44	54	55	58	45	33	49	43	37	39	40	56	..	48 1
Clinton ...	Max..	78	82	85	71	73	75	86	84	72	74	81	85	76	85	74	56	57	65	76	78	81	80	67	62	78	72	61	70	74	70	..	74 3
	Min ..	46	53	57	58	55	55	59	63	61	53	48	64	55	55	55	49	40	32	44	51	49	49	47	38	43	49	37	43	42	56	..	50.2
College S.	Max..	78	81	84	75	68	83	84	84	72	69	83	74	78	72	53	56	56	67	76	77	80	82	68	66	84	72	69	75	62	75	..	73.4
	Min ..	52	54	58	60	55	58	62	59	56	46	54	51	59	56	46	35	37	39	49	54	55	56	..	38	49	44	38	43	50	60	..	50.8
Colum. J.	Max.	77	81	83	75	70	78	84	84	75	72	78	82	78	83	72	55	57	65	75	77	79	80	69	64	77	72	62	71	72	72	..	74.0
	Min .	51	55	58	61	56	56	63	64	51	50	52	68	56	66	52	45	38	37	50	55	55	55	54	37	46	52	39	45	48	46	..	52.3
Corning ..	Max..	77	79	81	77	67	80	81	81	69	69	79	75	75	70	58	59	55	66	75	75	79	80	68	64	73	72	67	72	62	70	..	71.7
	Min .	53	57	52	59	53	59	66	59	54	43	53	56	49	47	45	35	35	38	51	53	55	57	50	34	..	43	35	41	51	59	..	49.7
Corydon..	Max	78	82	83	74	66	83	84	83	71	74	81	78	77	72	55	52	58	62	76	77	80	81	73	62	83	76	71	74	69	68	..	73.4
	Min ..	52	56	56	62	55	57	64	61	56	47	55	62	53	53	50	38	36	37	50	54	59	56	51	36	48	50	37	44	49	57	..	51 4
Davenpo't	Max..	77	82	83	72	71	73	86	83	72	73	78	83	73	83	68	54	55	64	76	78	81	81	66	63	78	71	62	72	72	72	..	73.4
	Min ..	53	60	63	62	56	56	64	66	63	54	56	65	60	66	54	45	41	40	52	56	59	57	47	51	50	47	41	48	50	58	..	54.3
Decorah. .	Max..	77	79	78	67	66	62	78	77	71	73	69	78	64	67	62	50	51	62	74	75	78	81	74	60	77	77	57	53	71	63	..	69.0
	Min ..	49	62	63	53	53	47	60	63	57	51	55	59	45	48	48	42	38	32	47	58	56	55	45	33	50	45	39	40	45	57	..	49.8
Delaware.	Max..	75	79	80	70	67	68	82	81	68	70	73	72	69	71	64	52	52	62	74	75	78	78	68	61	77	70	59	64	70	68	..	69.6
	Min ..	49	57	58	58	50	52	60	60	56	48	48	62	44	50	50	43	35	33	43	53	53	53	43	34	44	47	34	41	42	52	..	48.4
Des M....	Max.	78	82	82	73	65	82	81	82	68	73	77	77	72	55	54	53	53	67	77	78	81	82	68	65	84	73	68	75	65	68	..	71.9
	Min ..	54	58	59	61	56	60	67	60	54	49	54	60	51	50	45	40	42	39	49	56	58	58	49	39	51	43	40	48	48	59	..	51.9
De So'o...	Max..	80	81	81	74	64	82	81	83	72	73	81	77	66	64	53	55	55	68	76	78	82	82	71	68	84	75	70	76	65	70	..	72.9
	Min ..	52	58	62	61	56	60	67	59	56	47	54	62	56	49	48	36	42	36	48	56	57	58	50	36	52	48	38	46	48	60	..	51.9
Dows.	Max	79	83	82	75	67	74	79	82	73	73	71	74	60	52	57	52	52	66	74	77	80	80	71	63	81	73	64	70	69	68	..	70.7
	Min .	49	59	59	57	51	54	63	54	52	45	50	59	39	44	46	40	37	33	46	56	56	57	46	34	47	46	34	40	44	57	..	48.5
Dubuque.	Max.	77	81	82	72	68	68	84	82	69	75	74	83	71	71	67	53	54	63	75	77	81	81	68	61	77	69	59	65	72	66	..	71 8
	Min .	51	60	61	59	52	56	62	65	56	52	54	65	51	55	51	46	40	35	50	56	57	56	48	40	50	48	39	45	45	56	..	52.0
Earlham .	Max.	78	81	82	72	63	82	82	83	70	72	80	76	71	63	52	53	54	67	76	77	81	81	70	65	82	72	69	74	63	70	..	72.0
	Min .	45	54	59	57	48	56	65	56	54	44	49	59	41	45	45	32	35	31	46	53	54	55	46	30	49	45	32	42	48	57	..	47 7
Elkader ..	Max..	82	86	82	75	80	70	81	86	75	76	76	75	70	65	60	60	55	65	78	81	86	82	69	66	80	65	62	67	74	66	..	73.2
	Min ..	47	59	64	60	53	48	65	61	57	48	50	64	45	51	51	45	34	31	47	58	55	52	52	33	48	48	36	43	38	55	..	49.9
Esthervi'e	Max.	74	84	73	65	65	74	80	78	67	75	72	75	47	48	47	54	54	67	75	78	80	83	55	65	81	64	63	71	72	..	..	68.5
	Min .	57	57	59	49	49	51	63	51	50	46	48	52	36	40	42	38	38	35	42	50	51	53	40	32	37	48	37	38	40	47	..	45.9
Forest C'y	Max	78	81	82	67	74	68	80	82	64	76	72	74	52	50	50	53	53	66	76	79	82	82	56	65	84	59	62	59	72	66	..	68.8
	Min ..	50	53	59	55	50	50	64	52	54	42	44	51	38	42	44	39	39	34	36	47	57	56	44	34	35	50	33	31	32	35	..	45.0
Ft. Dodge	Max.	81	83	74	71	69	77	78	82	79	72	72	..	..	..	..	..	54	69	71	79	83	84	70	67	68	64	68	75	67	68	..	73.0
	Min ..	50	60	59	56	51	56	64	51	53	45	54	..	..	..	..	..	41	39	50	56	59	61	46	31	38	36	38	42	49	61	..	49.8
Galva.....	Max.	81	..	84	75	68	79	81	81	69	..	73	74	60	48	48	54	57	67	75	75	80	81	57	65	81	71	69	75	69	69	..	70.2
	Min ..	53	..	57	54	49	54	63	48	50	..	49	58	36	41	44	31	..	35	49	53	56	56	42	32	51	39	31	35	46	59	..	47.1
Grand M.	Max..	75	79	69	68	69	65	78	77	70	70	71	77	66	60	60	51	51	61	72	76	78	78	68	60	78	70	58	63	70	65	..	68 4
	Min ..	50	59	63	55	50	50	59	62	58	50	52	60	43	46	50	43	36	35	46	56	56	54	48	35	49	46	36	43	44	55	..	49.6
Greene ...	Max.	79	84	82	73	62	72	82	83	75	74	68	76	63	55	57	50	53	66	76	80	83	82	73	66	81	73	63	69	74	67	..	71.4
	Min ..	49	59	61	58	51	52	63	58	55	47	51	65	41	46	48	41	37	33	44	54	57	56	48	34	47	47	36	41	44	57	..	49.3
Greenfi'ld	Max..	76	80	82	76	61	80	80	79	75	69	79	75	78	68	52	52	54	65	73	75	78	82	74	65	82	75	75	70	68	70	..	72.3
	Min .	54	56	60	59	55	52	66	59	56	46	53	62	46	46	45	33	37	37	50	55	57	59	47	37	51	45	34	46	49	59	..	50.4
Grinnell.	Max.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	57	52	53	64	74	75	79	78	72	61	78	72	62	71	..	..	..	....
	Min ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	41	38	38	48	55	57	47	51	36	48	48	39	45	..	..	..	....
Grinnell (near)..	Max..	75	82	83	72	70	81	83	82	74	67	75	77	72	68	55	51	52	65	73	75	78	79	73	62	79	73	62	70	68	68	..	71.5
	Min .	51	58	57	60	53	58	63	60	55	47	51	60	47	50	50	41	36	34	45	54	55	55	51	36	36	45	36	43	45	57	..	49.6
Grundy C	Max..	78	82	82	73	69	75	81	81	69	73	74	76	60	64	55	51	56	65	75	78	82	82	71	64	81	72	65	74	71	65	..	71 5
	Min ..	50	58	60	59	50	55	65	59	55	46	50	59	42	48	49	41	35	34	48	51	56	57	46	34	49	46	35	40	45	56	..	49.3
Guthrie C	Max.	81	82	79	82	66	75	87	72	72	72	78	70	66	60	52	53	55	66	75	76	79	72	70	65	83	77	67	74	75	66	..	71.6
	Min ..	50	60	53	60	56	59	54	54	46	53	54	60	42	46	48	32	40	35	48	56	56	56	47	34	53	48	35	49	45	59	..	49.6
Hampton	Max.	81	86	86	74	71	79	81	86	73	77	77	68	60	52	52	52	54	70	78	82	85	85	70	68	84	72	67	75	75	67	..	72.8
	Min ..	52	59	62	59	53	55	64	56	56	48	52	60	40	45	46	41	39	36	48	56	57	59	48	36	50	46	37	49	45	48	..	50.1
Hanlont'n	Max.	82	77	80	64	65	70	79	80	68	73	66	72	58	50	50	51	52	65	74	77	81	82	70	64	81	72	62	67	72	68	..	68.9
	Min ..	52	56	62	55	50	49	63	53	53	44	49	58	38	44	44	40	39	34	45	54	55	59	44	32	50	48	35	38	40	57	..	48 0
Harlan....	Max.	79	81	84	73	63	84	82	83	67	72	80	75	56	49	51	55	54	66	76	76	80	82	68	65	82	70	68	73	62	73	..	71.6
	Min ..	49	54	57	58	55	59	63	50	52	41	52	56	43	44	45	31	35	34	45	50	53	55	46	33	47	48	33	39	46	60	..	47.8
Hopeville.	Max..	79	82	82	72	61	83	83	83	68	72	81	74	77	70	54	52	55	68	76	78	81	82	69	68	83	71	68	74	65	68	..	72.6
	Min ..	52	54	56	60	54	58	66	61	54	46	55	62	62	51	47	36	36	37	48	54	54	56	48	37	48	42	38	43	48	59	..	50.7
Humboldt	Max.	81	84	82	75	71	78	80	81	71	73	68	74	65	51	53	58	52	66	75	77	90	82	73	65	82	78	63	72	69	68	..	71.9
	Min ..	51	60	62	59	51	56	64	53	53	45	54	64	40	45	45	41	40	36	47	55	56	60	45	35	50	50	39	40	47	60	..	50.1
Indep'nce	Max.	77	80	81	71	66	71	81	81	70	72	72	75	68	66	62	51	52	63	75	76	80	80	67	63	78	70	62	68	70	65	..	70.4
	Min ..	48	56	58	59	52	52	62	57	56	49	49	48	43	48	44	43	37	32	44	53	55	53	50	34	43	48	37	41	42	55	..	48.3
Indianola.	Max..	80	83	84	72	64	84	74	83	71	73	79	78	75	69	54	52	54	68	77	79	82	83	70	67	83	74	68	75	65	68	..	72.9
	Min ..	51	56	58	61	55	59	65	61	57	47	53	64	48	50	48	37	39	36	50	56	55	57	56	36	50	47	37	44	47	59	..	51.3
Iowa City	Max.	81	85	85	74	74	79	87	86	69	76	80	82	73	76	61	53	55	63	78	80	83	83	63	66	81	70	65	75	73	75	..	74.4
	Min ..	49	49	58	59	54	55	56	64	67	51	51	54	52	54	57	46	39	34	37	46	53	53	53	37	37	46	38	39	45	47	..	49.3
Iowa Falls	Max..	79	82	82	70	69	76	79	83	67	73	76	75	63	54	53	52	52	65	74	77	82	81	59	64	81	57	64	71	71	..	..	70.0
	Min ..	45	47	59	59	50	51	57	56	52	45	46	53	39	45	48	41	36	31	35	47	54	54	47	31	34	48	34	38	39	47	..	45.6
Keokuk ..	Max..	78	83	86	82	74	85	89	80	71	75	82	85	75	83	66	51	57	66	77	79	80	81	68	65	80	72	65	73	72	74	..	75.1
	Min ..	53	59	64	66	60	59	67	69	68	55	56	73	64	66	55	46	41	42	51	56	56	58	56	41	50	51	42	52	50	58	..	56.1
Keosa'qua	Max..	81	84	85	81	70	84	86	85	69	75	80	84	75	84	63	50	59	67	75	78	80	81	67	61	80	71	67	74	70	69	..	74

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR SEPTEMBER 1903—CONTINUED.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Le Mars..	Max..	84	83	80	65	70	80	79	76	72	73	72	74	56	48	48	54	53	67	74	76	81	80	75	84	84	75	70	73	69	69	..	70.5
	Min .	56	63	59	51	48	55	56	56	51	42	52	56	38	38	42	32	39	39	50	54	57	60	41	42	50	42	34	39	53	59	..	45.1
Lenox	Max..	79	81	82	75	68	81	81	82	74	70	80	76	75	72	52	54	55	67	75	76	79	80	73	66	83	74	68	72	63	70	..	72.8
	Min ..	53	56	58	58	58	58	65	59	56	46	54	61	49	48	46	35	38	38	50	53	55	56	50	36	50	49	37	44	50	59	..	50.7
Logan	Max..	94	90	92	93	93	90	92	84	78	80	82	76	50	45	50	55	57	67	76	80	81	82	83	76	82	70	72	68	72	76	..	76.2
	Min .	50	52	54	52	51	58	60	52	52	46	40	52	46	42	38	34	37	38	54	50	52	46	48	46	50	48	50	38	44	48	..	47.3
Maquo'ta.	Max..	79	82	83	74	73	71	86	85	67	77	78	84	75	81	68	54	59	60	76	78	83	82	68	65	80	73	64	73	74	..	..	74 2
	Min ..	44	49	55	56	53	54	54	62	63	50	46	48	51	54	61	47	38	30	41	46	49	47	47	32	33	47	30	38	39	39	..	46.8
Marshlt'n	Max..	81	81	85	76	74	80	83	85	63	77	77	79	69	57	57	51	58	69	79	81	87	85	64	69	86	65	69	78	72	..	..	73 7
	Min .	49	51	58	59	52	53	56	59	58	47	48	53	44	48	51	42	37	33	41	50	56	54	50	34	35	49	36	37	42	43	..	47.5
Mason C..	Max..	78	82	79	71	67	69	78	79	74	74	66	71	63	51	50	50	52	64	75	77	81	82	73	65	81	73	61	68	71	65	..	69.7
	Min ..	54	60	63	59	51	53	62	57	58	46	54	61	43	45	46	42	40	38	47	57	67	60	49	39	51	51	39	42	45	57	..	51.2
Mt. Ayr..	Max..	80	84	84	74	68	84	84	83	72	74	82	77	78	71	55	56	59	70	77	80	82	82	72	68	85	75	70	75	67	69	..	74.6
	Min ..	53	55	56	61	54	58	64	61	57	47	55	59	51	51	46	36	39	38	50	53	55	55	50	39	53	46	39	45	50	59	..	51.2
Mt. Pl'snt	Max..	77	80	83	79	68	81	86	85	75	71	81	84	77	87	73	55	59	64	74	75	78	79	67	62	77	73	62	71	72	74	..	74 3
	Min .	46	50	55	59	56	57	62	62	61	50	50	68	56	64	52	44	33	33	47	52	52	53	51	36	45	49	37	42	46	55	..	50.8
Mt. Ver'n	Max..	80	81	82	72	72	75	84	81	70	75	74	77	74	71	66	53	53	65	73	76	82	83	68	66	79	67	66	77	69	69	..	72 7
	Min .	51	56	52	62	51	53	62	61	57	50	50	70	49	57	53	43	36	33	46	53	61	54	46	33	44	47	36	43	45	54	..	50.3
New H. ..	Max.	75	80	78	71	64	67	79	79	72	71	72	76	63	54	54	50	51	62	74	76	79	80	..	61	79	73	57	64	73	64	..	68.9
	Min ..	48	58	59	55	49	49	49	..	53	45	49	49	39	44	44	40	34	31	43	52	55	..	45	32	33	46	33	39	43	..	..	45.0
Newton ..	Max.	76	81	80	75	69	80	79	79	72	69	75	76	70	69	56	52	52	65	74	76	79	80	78	63	80	75	64	71	66	67	..	71.5
	Min	52	56	58	59	55	58	64	59	57	47	52	62	47	50	50	41	39	37	47	54	54	55	50	37	47	48	37	43	48	57	..	50.7
Northw'd	Max.	76	78	78	65	64	69	77	77	70	71	67	72	61	51	50	51	51	61	72	74	78	80	70	63	78	70	58	65	70	63	..	67.7
	Min ..	49	60	62	55	51	50	62	54	55	48	50	59	41	43	45	40	39	34	44	53	55	56	45	36	47	46	36	39	43	56	..	48.4
Odebolt ..	Max	85	85	85	77	71	83	81	84	73	74	74	74	62	48	49	52	55	69	76	78	81	82	72	66	82	80	70	75	68	67	..	72.6
	Min .	52	63	59	52	51	56	64	50	51	47	52	60	38	42	44	37	39	35	50	54	55	52	44	32	52	48	38	37	48	59	..	48.7
Ogden....	Max.	82	79	90	90	80	84	82	85	66	76	78	78	62	55	56	58	55	68	76	79	85	87	85	68	88	60	72	78	68	70	..	74.6
	Min .	42	48	57	57	57	56	58	54	52	41	42	52	38	43	44	34	36	34	56	46	55	55	44	35	45	50	30	33	40	44	..	45.9
Olin	Max.	75	80	82	76	70	72	83	85	74	70	78	80	73	78	..	68	59	62	75	70	75	80	63	61	76	69	60	67	71	70	..	72.5
	Min ..	47	55	55	60	54	54	60	60	59	60	50	70	52	59	..	47	36	32	45	65	55	55	51	35	43	53	36	45	43	55	..	51.4
Omaha, N	Max.	82	84	83	74	64	86	83	86	74	73	83	76	57	49	49	58	54	68	78	79	82	85	70	69	87	77	71	76	64	74	..	73.2
	Min .	59	62	64	60	55	61	66	60	53	49	57	57	45	44	44	36	37	43	54	57	60	61	50	44	56	49	42	50	56	60	..	53 1
Onawa....	Max..	85	85	85	79	66	83	82	84	77	75	76	76	68	48	49	59	57	70	79	81	84	83	77	71	86	79	75	76	67	69	..	74.7
	Min ..	57	63	62	59	56	60	66	55	58	47	56	60	45	42	43	35	42	44	51	55	59	61	48	42	52	52	39	46	54	61	..	52 3
Osage.....	Max	78	81	80	68	65	67	77	78	68	71	67	74	62	51	52	48	51	61	72	74	77	79	69	61	78	71	58	64	71	64	..	67.9
	Min ..	48	60	58	56	49	48	59	57	55	45	49	62	41	44	47	41	38	32	44	52	55	55	45	33	45	48	36	39	43	56	..	48 0
Osceola...	Max..	78	82	83	73	83	83	86	86	67	75	84	80	76	51	54	52	57	69	78	80	84	81	75	70	85	66	70	76	66	74	..	74.1
	Min .	50	53	57	59	54	63	66	63	64	47	49	58	50	49	50	35	36	36	38	51	56	56	52	37	37	53	39	45	45	53	..	53.4
Oskaloosa	Max..	78	81	82	74	66	81	84	82	74	72	75	79	72	68	57	51	54	65	66	73	79	79	70	64	79	73	65	7:	68	72	..	71.9
	Min	50	58	56	62	54	60	65	63	57	51	55	65	54	55	51	43	36	36	49	56	55	57	53	36	47	48	37	47	47	54	..	51 9
Pacific J'n	Max..	80	81	83	75	65	84	83	82	67	71	84	76	60	53	49	56	55	68	76	77	80	83	67	67	84	74	68	77	62	77	..	72 1
	Min ..	54	56	61	60	56	62	67	55	55	44	54	60	48	45	45	33	36	39	48	55	55	57	50	36	51	48	35	41	50	60	..	50.5
Perry.....	Max..	81	83	83	73	69	84	82	84	72	73	78	74	62	61	53	55	53	68	77	78	82	82	71	67	84	74	68	75	65	69	..	72 7
	Min .	51	59	61	61	56	59	65	56	51	46	52	62	44	47	47	36	41	33	45	51	57	57	48	36	50	46	37	42	46	60	..	50.1
Plover	Max..	83	86	83	68	80	75	80	82	65	74	67	75	60	52	66	52	52	67	76	77	82	83	69	66	82	60	65	72	68	70	..	71.3
	Min ..	50	58	60	54	50	55	65	48	50	45	48	67	38	42	41	38	39	34	45	52	56	58	43	33	52	34	38	38	39	60	..	47 8
Primghar	Max..	83	82	78	64	69	77	77	79	66	72	65	71	58	46	46	55	56	67	70	75	80	81	70	66	78	72	67	73	68	65	..	69.2
	Min	54	63	59	51	51	55	55	59	53	46	50	37	37	44	42	30	37	37	56	54	55	58	39	35	52	38	35	42	50	59	..	47.8
Red Oak..	Max..	77	80	80	76	69	81	82	80	77	71	79	77	70	69	52	53	53	66	74	74	79	80	73	65	80	76	63	73	66	71	..	72.2
	Min ..	56	60	63	62	57	62	68	61	56	49	58	63	51	47	46	39	42	43	53	58	60	61	50	40	54	49	41	45	56	62	..	53.7
Ridgeway	Max..	77	80	80	72	66	66	83	81	70	76	72	78	66	60	59	50	51	62	78	80	83	82	70	69	85	72	64	67	77	69	..	71.5
	Min ..	52	64	64	57	53	49	59	63	56	49	54	60	44	47	48	44	40	32	47	57	60	56	47	37	48	45	36	41	46	57	..	50.4
Rockw'l C	Max..	83	85	83	79	72	74	80	83	74	73	71	74	67	50	53	54	50	67	75	22	82	83	72	66	82	75	76	75	68	70	..	72.3
	Min ..	53	60	60	68	52	55	57	53	50	45	50	63	41	43	45	34	39	39	45	49	55	55	45	38	49	49	36	41	45	58	..	48 8
Ruthven .	Max..	80	85	80	65	68	75	78	78	75	73	74	73	63	47	46	56	51	67	76	78	82	84	74	66	82	81	68	70	70	65	..	71.0
	Min ..	55	60	60	51	50	53	61	49	53	50	45	58	37	42	43	34	39	39	48	67	56	59	40	36	53	47	43	35	46	58	..	48.9
Sac City..	Max .	80	83	84	75	68	80	80	82	72	73	71	77	49	49	50	55	52	69	75	77	81	82	70	66	82	74	69	75	67	60	..	70.9
	Min .	51	62	58	56	52	55	64	50	52	47	49	..	39	43	44	32	38	36	46	56	54	56	44	35	51	45	36	39	45	58	..	49.4
St. Cha'les	Max .	79	82	84	74	61	83	81	83	70	72	80	77	75	70	58	51	56	64	76	79	82	82	70	70	83	74	70	76	76	68	..	78.6
	Min .	54	58	60	60	54	58	67	60	53	48	55	63	49	49	50	36	41	38	50	57	57	58	50	38	52	55	40	46	53	60	..	52.3
Sheldon ..	Max..	75	84	79	74	78	80	72	77	72	74	68	72	54	49	50	57	54	70	76	77	82	84	77	72	82	72	69	75	69	75	..	71 6
	Min .	55	60	57	50	50	52	62	48	51	44	48	50	35	39	42	30	35	40	42	55	53	57	39	33	50	46	33	40	46	55	..	46.6
S.bley	Max..	81	81	74	67	68	77	75	76	68	74	71	70	46	48	45	56	56	67	74	77	60	84	57	67	82	56	68	75	74	..	..	68.1
	Min ..	47	58	57	49	50	51	59	48	48	40	42	53	36	39	40	30	31	36	38	50	53	54	38	32	34	49	32	41	42	52	.	44.3
Sigourn'y	Max	82	85	88	78	71	84	88	88	73	75	80	84	75	83	59	53	56	76	85	88	84	85	70	65	70	71	82	80	85	80	..	77.4
	Min ..	50	52	54	60	55	57	61	61	57	48	48	63	51	51	51	43	35	34	48	50	53	53	47	37	40	45	37	39	40	40	..	48.7
Sioux C'r.	Max..	83	83	80	65	71	80	78	76	68	73	69	73	51	48	45	53	53	68	74	76	83	82	73	67	83	73	69	76	70	67	..	70.3
	Min ..	56	60	59	50	50	56	63	47	53	44	50	51	36	38	42	30	40	36	49	53	55	59	40	34	51	47	36	40	51	59	..	47.8
Sioux C'y.	Max	82	85	80	63	68	83	80	80	63	74	76	76	50	48	46	55	53	69	77	78	82	82	68	69	86	77	74	76	66	70	..	71.2
	Min ..	59	68	62	54	51	60	58	52	53	50	56	50	40	40	38	33	38	41	52	55	60	61	44	38	54	48	37	44	56	58	..	50.3
Storm L..	Max..	81	81	82	65	63	78	77	80	62	72	73	69	46	47	47	55	52	68	74	76	80	80	53	65	80	58	69	74	66	..	..	68.2
	Min ..	50	57	62	54	48	51	57	52	54	48	50	54	38	42	42	32	35	38	40	53	56	58	41	35	43	50	36	39	43	51	..	46.9
Stuart	Max..	79	82	85	75	65	83	85	68	60	59	82	75	65	62	53	53	53	65	74	80	81	80	82	65	81	80	71	76	66	69	..	71.8
	Min ..	52	57	62	60	55	58	57	56	54	56	45	60	60	45	46	34	38	35	49	52	54	53	47	36	50	48	38	46	48	47	..	49.9
Thurman.	Max..	79	81	83	78	69	83	84	82	69	70	82	78	69	57	50	55	55	68	76	77	80	82	76	66	85	79	69	74	65	73	..	73.1
	Min ..	52	58	62	61	57	62	69	53	55	42	56	62	49	46	45	34	36	39	52	57	59	62	50	35	55	46	32	38	53	62	..	51.3
Tipton....	Max	80	83	84	76	75	77	87	83	74	75	77	83	76	78	70	55	54	65	76	79	83	83	70	66	79	71	65	71	73	70	..	74.6
	Min ..	54	58	61	64	56	56	64	63	59	53	53	74	55	64	54	45	40	35	48	55	56	57	55	41	50	50	40	46	48	55	..	53.6
Toledo....	Max..	78	82	82	75	73	77	82	82	69	75	75	78	69	69	55	50	55	66	77	77	83	82	70	65	80	73	73	73	71	68	..	72 8
	Min ..	47	56	58	59	53	55	62	60	55	48	50	61	44	44	49	41	34	31	48	55	54	58	47	33	49	47	35	43	46	56	..	49.3
Wapello..	Max..	73	79	78	71	64	77	82	81	75	69	75	81	77	77	71	57	54	62	74	76	79	80	68	61	78	70	60	63	..	70	..	71.1
	Min ..	52	57	62	64	56	59	64	67	62	54	54	70	61	63	55	47	43	38	49	54	57	57	54	45	49	53	43	48	..	50	..	54.7
Washi'ton	Max..	79	83	83	76	68	81	87	84	67	73	77	82	72	80	60	51	56	66	78	78	81	82	68	65	81	69	66	75	71	72	..	73.0
	Min .	48	52	56	60	53	54	61	62	55	47	50	62	52	59	49	42	36	34	42	53	53	53	45	34	41	42	36	42	45	50	..	48.9
Waterloo.	Max..	80	85	83	72	69	72	81	83	67	75	74	79	69	60	55	51	55	67	81	79	84	84	61	65	81	64	66	70	75	..	..	72.0
	Min ..	49	52	59	60	53	53	56	60	56	48	49	60	45	47	52	43	37	33	35	52	56	52	51	34	39	49	37	42	44	48	..	48.4
Waverly..	Max..	76	81	80	74	66	70	79	81	70	73	71	77	64	57	55	55	54	65	75	77	82	82	70	64	80	72	62	67	73	66	..	70.6
	Min ..	50	59	62	58	53	53	64	60	56	48	53	63	44	48	48	44	39	35	47	55	59	55	51	34	46	48	37	43	57	56	..	50.8
W.Bend..	Max.	81	84	83	65	70	74	79	81	67	73	66	75	57	50	49	53	52	67	75	78	82	83	56	66	82	74	65	72	79	67	..	69.8
	Min ..	56	59	60	54	49	60	63	51	53	44	50	56	38	43	43	38	40	37	46	54	56	60	42	33	49	46	30	41	44	58	..	48.4
Whitten..	Max..	78	82	82	78	70	80	80	81	75	..	76	..	77	63	54	50	53	64	70	76	80	80	70	63	80	73	63	70	70	68	..	71.7
	Min .	49	57	57	60	51	55	63	55	54	.	45	.	41	45	48	40	36	33	41	45	54	54	47	33	45	45	35	40	43	52	..	47.2
Wilton J.	Max..	78	82	84	77	74	77	85	85	80	74	79	83	82	83	71	56	60	64	75	78	80	75	66	64	77	74	63	72	74	72	..	74.5
	Min ..	47	58	58	63	55	55	63	63	57	52	50	69	54	65	55	46	40	34	47	54	52	66	53	35	47	53	37	54	46	52	..	52.7

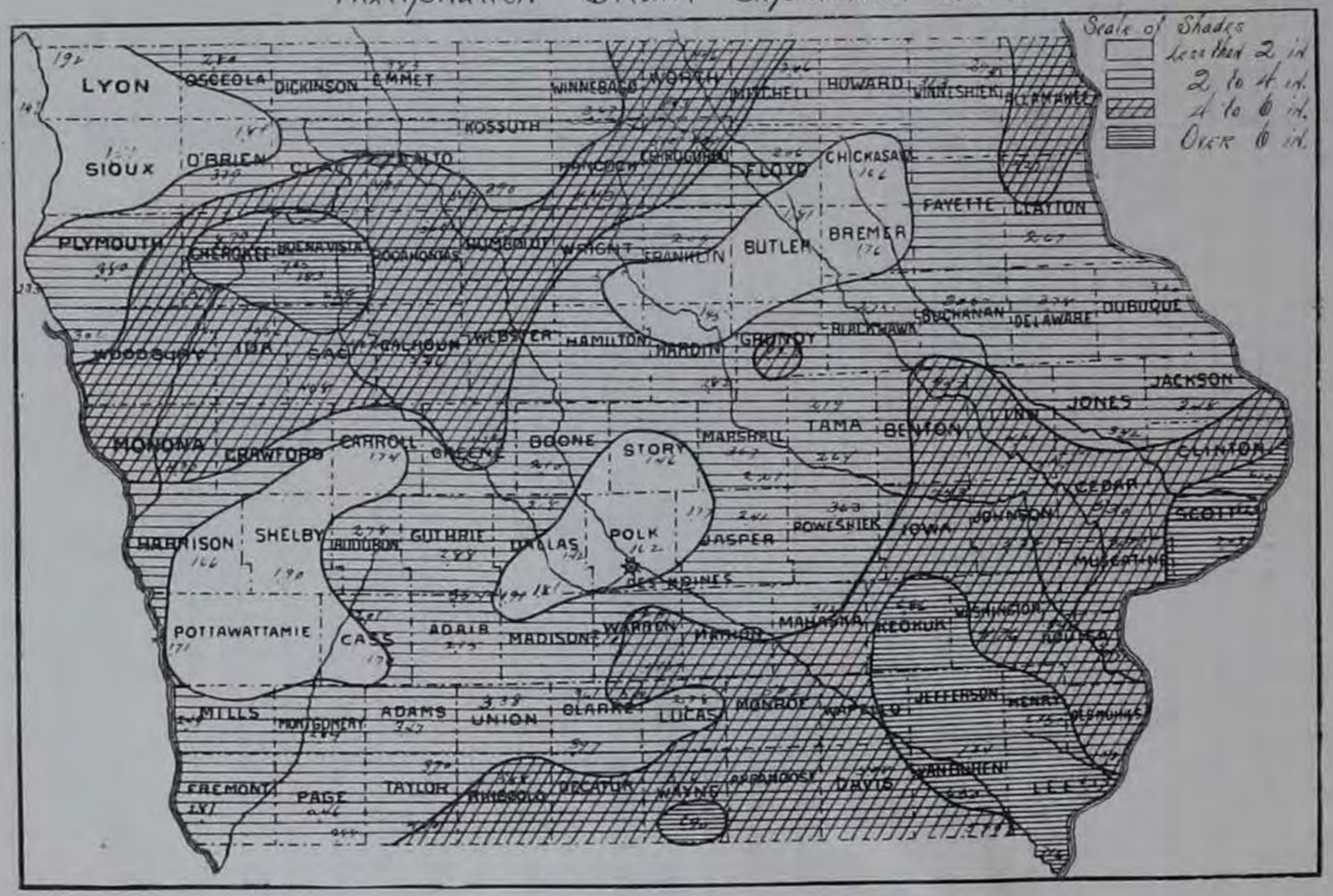
DAILY AND MONTHLY PRECIPITATION FOR SEPTEMBER, 1903.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	....	....	....	.67	....	.71	.43	.48	....	....	.36		.55	.10	....	T	....	....	....	....	....	....	..	....	.05	....	....	T	.03	....	3.38
Albia	..	....	....	...	.12	.16	...	1.02	.85	1.42	..	....	.25	.10	.35	.28	.01	.03	..	....	....	..	....	..	....	..	.31	..	...	.12	..	5.02
Algona	...	....	.	.30	.70	.03	....	.07	....	....	....	.80	....	1.60		....	....		....	....	....	....	..	....	....	....	....	..	..	.40	....	3.90
Allerton	....	....	..	.02	1.45	-	T	1.25	2.61	.04	T	.03	T	.86	29	....	....	....	....	..	....	....	....	..	..	.24	....	....	.04	.07	....	6.90
Alta	....	...	..	...	.02	2.30	T	..	.07	....	1 12	.63		2.05	.05	..	.18	....	..	....	....	..	....	....	....	.04	....	....	.02	.57	...	7.05
Alta (near)	....	..	..	..	....	3.60	.06	...	.09	..	.80	.61	1.80	.08	.08	.14	...	....	..	....	....	....	....	....	....	.04	....	....	.03	.50	....	7.83
Amana	....	..	....	T	T	.26	T	.53	1 07	.05	T	1.07	.12	.31	.18	..	.01	...	....	....	....	....	....	....	....	.22	....	....	....	.61	...	4.43
Ames	....	....	...	....	....	.04	.45	....	.31	...	T	.24		.20	.10		..	....	....	....	....	..	..	....	..	.12	....	....		....	...	1.46
Atlantic	....	..	...	....	.3	...	T	....	.36	-	....	.60	.24	.10	.10	.02	....	..	..	....	....	..	..	....	....	.08	..	....	.04	.17	....	2.01
Aububon	....	....	....	..	.15	..	.79	..	.36	..	.06	.78	...	.57	.10	.01	....	....	....	....	....	..	....	....	....	.07	....	..	...	.03	....	2.78
Baxter	....	....	....	...	...	....	.72	.	23	..	....	.27	....	.45	...	....	..	..	..	..	..	..	....	..	....	.10	....	....	....	....	....	1.77
Bedford	....	....	....	T	1.18	....	.90	.04	.74	...	....	.13		.45	.11	..	...	..	....	....	..	..	..	..	....	.05	..	....	.32	.08	....	4.00
Belknap	....	....	....	....	.40	....	T	.40	2.50	.25	....	T	.48	.06	.40	..	.06	....	....	..	....	....	....	....	....	.48	....	....	...	.15	....	5.08
Bonaparte	....		...	...	.17		...	50	3.08	....	....		.32	...	.95	....	....	..	..	..	..	....	....	....	....	.73	....	....	....	.20	....	5.95
Britt	....	T	T	.05	.02	.60	.08	T	.06		.80	.22	1.12	1.08	.04	T	.02	....	..	....	....	....	....	....	T	....	....	....	T	.34	....	4.43
Buckingham	....	..	.07	....	....	....	.58		.37	....	....	....	. .	.62	.1	....	.01	....	....	....	....	....	..	....	....	.10	....	....	.26	.06	....	2.19
Burlington	....	....	....	....	.11	....		.33	2.51	.81	....	....	.08	.30	79	....	....	....	....	..	....	....	....	....	....	.75	....	....	....	.13	..	5 81
Carroll	....	....	....	....		.17	.06	.10	.32		.04	.25	....	.26	.04	.14	.12		....	....	....	....	....		.	.08	....	..	..	.16	....	1.74
Cedar Rapids	....	..	....	.18	T	.20	.07	.46	.03	1.56	....	....	.55	.28	.13	.05	....	.02	....	....	..	....	....	....	..	....	.16	....	....	.37	..	4.06
Chariton	....	....	....	....	....	....	.52	....	1.15	T	....	.20	T	.50	.25	....	....	..	....	....	....	..	....	....	..	.16	....	....	T	T	....	2.78
Charles City	....	T	....	..	.02	.16	....	.19	....	.10	....	.35	.11	.42	.18	.04	T	....	....	....	....	....	....	....	..	....	.15	....	....	.34	..	2.06
Clarinda	..	....	..	....	.25	.	....	.12	.30	.52		T	.30	.45	.18	....		....	....	....	.	....	....	....	....	T	T	....	.07	.27	..	2.46
Clear Lake	....	....	....	....	T	.50	....	.05	.05	....	2.35	.50	.20	1.00	.15	....	T	....	....	....	..	....	....	....	.	T	....	....	....	.30	....	5.10
Clinton	....	....	....	.04	....	.05	....	.30	....	2.44	.71	....	....	1.68	.18	....	....	....	....	....	....	....	....	....	..	.60	....	....	....	.12	....	6.12
College Springs	....	..	..	....	.25	....	.30	....	.94	..	..	.45	....	.83	.20	....	.02	....	....	....	....	....	....	....	..	T	....	....	....	....	....	2.99
Columbus Junct'n	....	....	..	..	T	..	.30	.44	2.00	.53	....	.02	.37	.42	.79	T	....	....	....	..	....	....	....	....	....	.40	....	....	....	.21	....	5.48
Corning	....	..	....	....	T	1.30	....	.25	T	.63	....	T	.26		.44	.24	..	.05	....	....	..	....	....	....	....	.05	..	....	.25	T	....	3.47
Council Bluffs	....	..	..	....	.23	....	.20	.56	....	....	..	.62	....	....	.10	..	..	....	..	....	..	....	....	..			....	....	T		....	1.71
Corydon	....	....	....	....	.78	....	..	.64	2.35	.04	....	.07	.01	.78	.21	....	T	....	....	..	....	....	....	....	....	.25	....	....	.03	T	..	5.16
Cumberland	....	..	...	....	....	....	.02		.40	.02	T	.60	.30	.10	.	....	....	....	....	....	....	....	....	....	....	..	.06	....	....	.20	....	1.70
Davenport	....	....	....	T	.01	.10	....	.35	2.78	.94	....	T	.11	1.77	.51	..	T	....	....	....	....	....	....	....	....	.41	.02	....	....	.09	....	7.09
Decorah	.03	....	..	.16	.09	.18	.15	.72	.02	.06	T	.42	T	.57	.13	....	.02	....	....	..	..	....	....	....	....	10	....	....	.02	.27	....	2 94
Delaware	....	....	....	.03	.04	.15	...	.72	.30	....	..	.78	....	1.04	.15	..	..	....	....	....	....	....	....	....	....	.10	....	....	....	.47	....	3.78
Des Moines	....	....	..	T	07	....	.52	.02	.24	.12	T	.04	....	.2	.08	....	.05	..	..	....	....	....	....	....	..	.17	....	....	.03	.02	....	1.62
De Soto	....	...	....	....	T	....	.50	...	.15	-	.12	.28	....	.53	.11	....	T	....	....	..	....	....	....	....	....	.12	....	....	T	....	....	1.81
Dows	....	....	....	....	.	.60	.07	.12	.17	.03	..	.53	.06	.18	T	....	T	....	....	....	....	....	....	..	....	.05	....	....	..	.21	..	2.00
Dubuque	....	T	....	.17	.10	.07	T	.44	.42	.23	..	.05	.63	.77	.06	T	....	....	....	..	..	....	....	....	..	.22	T	....	....	.04	....	3.20
Earlham	....	....	....	....	.10	.	.41	.03	17	.16	.08	.31	T	.51	.10	....	T	....	....	....	....	....	....	....	..	.04	....	....	T	T	....	1.91
Elkader	....	....	....	.05	.07	.15	....	.60	.12	....	..	.75		.53	....	....	....	....	....	....	....	....	....	....	....	15	....	....	....	.25	....	2.67
Estherville	....	....	....	.02	.04	.20	.18	T		....	....	1.00	.34	1.75	.10	.05	.04	.03	..	....	..	....	..	....	....	....	....	....	....	.08	....	3.83
Forest City	....	T	....	.23	....	.49	.10	T	T	....	....	.50	.20	2.00	.10	....	....	....	....	....	....	....	....	....	....	....	..	..	....	.05	....	3.67
Fort Madison	....	....	....	....	.21		.72	....	1.57	2.11	....	....	....	....	.55	....	..	....	....	....	....	....	....	....	....	1.03		....	T	.24	....	6.37
Galva	....		T		....	.99	....	....	....	....	....	2.00	.26	.95	.05	....		....	....	....	....	....	....	....	....	....	T	T	T	T	....	4.25
Gilman	....	....	....	T	T	T	.30	.47	.27	.08	....	.18	.01	.40	.16	....	T	....	....	....	....	....	....	....	....	.07	....	....	.07	.20	....	2.21
Grand Meadow	....	....	....	....	.06	.08	...	1.29	.10	....	....	.38	....	.66	.10	....	T	....	....	....	..	....	....	....	....	.06	....	....	.05	1.49	....	4.27
Greene	....	....	....	....	.06	.15	.15	.13	.12	.07		.23	....	.35	16	..	....	....	....	....	....	....	....	....	....	.14	....	....	....	.25	....	1.81
Greenfield	....	..	....	T	.43	.02	.02	....	.23	.09	.08	.62		35	.20	....	....	....	....	....	....	....	....	....	....	.02	....	....	.07	.02	..	2.15
Grinnell (near)	....		....	.02	.12	.	.30	.95	.63	.05	....	.53	T	.25	.15	....	T	....	....	....	....	....	....	....	..	.15	....	....	.20	.28	..	3.63
Grundy Center	....	T	...	T	....	1.42	.41	.68	.12	.12	....	.60	T	.56	.03	....	.01	....	....	....	....	....	..	....	....	.06	....	....	T	.22	....	4.23
Guthrie Center	....	...	....	....	....	1.22		.31	....	....	.09	.63	....	.33	T	T		....	....	....	....	....	....	....	....	.19	....	....	.11	T	....	2 88
Hampton	....	....	....	.03	.52	.07	.28	..	.4	....	....	.33	.14	13	....	.07	.04	....	....	....	....	....	..	..	....	.09	....	....	.15	.10	..	2.09
Hanlontown	....	.03	T	.50	.08	.54	.03	.01	.05	....	.31	.39	.75	.69	.11	T	....	....	..	....	....	....	....	....	....	....	....	....	....	.54	...	4.03
Harlan	...	....	....	T	.02	T	.36	....	.44	....	.01	.50	T	.40	.05	.11	T	....	....	..	....	....	....	....	....	.08	....	....	.01	.03	....	1.90
Hopeville	....	....	....	....	.74	....	.67	.66	.58	..	....	.	....	.64	.30	....	....	....	....	..	....	....	....	....	....	.14	....	..	.20	.04	..	3.97
Humboldt	....	....	....	....	....	.68	.11	....	.08	....	2.70	.25	.88	.32	.04	....	....	....	....	..	..	....	....	..	....	....	....	....	....	.17	....	5.23
Independence	....	...	....	.10		.30	1.50	T	.18	...	....	.25	....	.25	T	....	....	....	....	....	....	....	....	....	....	T	....	....	02	.45	....	3.05,
Indianola	....	...	....	T	.07	T	.53	2.00	.51	.10	....	T	.	.52	.16	....	.01	....	....	....	....	....	..	....	..	.16	....	..	.09	.08	..	4.23
Iowa City	....	....	....	....	....	.12	....	.46	.10	.98	....	....	.71	.72	.42	.12	....	.15	....	..	..	..	....	....	.	....	.28	....	....	.32	....	5.38
Iowa Falls	...	....	....	....	T	.74	T	.11		.06	....	T	.15	.17	.03	.03	.06	T	....	....	....	....	....	....	....	....	.05	....	....	.05	....	1.45
Jefferson	....	....	....	....	....	....	1.83	....	.37	....	.02	.68	.01	.33	.22	....	.15	....	....	....	....	....	....	....	....	.20	....	....	.10	.33	....	4.24
Keokuk	....	....	....	....	.53	....	....	.44	.93	1.86	....	T	.10	1.47	.46	.	....	....	....	....	....	....	....	....	....	.87	.06	....	....	.44	....	7.16
Keosauqua	....	....	....	....	.17	.07		.36	.45	2.98	....	T	.22	...	1.14	.23		T	....	..	..	....	....	....	....	....	.70	....	....	.18	....	6.50
Lacona	....	.....	....	..	.30		1.02	.33	.68	....	....	.25	....	.50	.25	.15	.07	....	..	....	....	....	....	....	....	.30	....	..	.30	....	....	4.15
Larchwood	....	....	....	T	....	.30	.15	....	....	....	.10	.83	.05	.02	T	T	....	..	..	....	....	....	....	....	....	.06	....	....	T	.41	....	1.92
Larrabee	..	....	....	.01	.15	.30	.67	....	....	..	3.35	.74	2.91	.03	.04	T	T	....	....	....	....	....	....	....	....	.12	....	....	.05	.42	....	8.79
Le Claire	....	....	..	..	T	.09	.02	.49	2.07	1.93	....	..	.11	.30	2.43	.32	T	T	..	....	....	....	..	....	....	....	.47	....	....	....	..	8.23
Le Mars	....	...	..	.05	....	1.35	.50		T	....	.85	.30	.65	.10	....	T	....	....	....	..	....	..	.	..	....	....	....	....	....	....	....	3.80
Lenox	..	....	..	T	1.20	..	.55	.20	.58	....	....	.25	....	.33	.20	..	.05	....	....	....	....	....	....	..	....	.06	....	....	.25	.03	....	3.70
Logan	....	...	....	.	.10	....	....	....	.35	....	..	.95	.	....	.20	....	....	....	....	....	....	....	....	....	....	....	.06	....	....	....	....	1.66
Maquoketa	....	....	..	....		....	.20	.42	.	....	....	....	1.48	.62	.07	.22	..	...	....	....	..	....	..	..	....	...	.32	....	....	.15	....	3.48
Marshalltown	....	....	....	.	.01	02	.35	....	.97	.01	.31	....	.08	.73	.27	.05	.03	.03	.01	....	....	....	....	....	....	....	.07		....	.13	....	3.07
Monticello	...	....	....	....	T	T	.60	.55	....	1.17	T	T	.17	1.00	.69	.04	.10	T	....	....	....	....	..	....	....	....	.15	....	T	.10	T	....	4.57
Mason City	....	....	....	....	T	T	.60	.18	.04	.05	....	1.25	.37	.12	.96	.17	....	..	....	....	..	....	....	..	....	....	T	....	....	....	.30	....	4.04
Mount Ayr	..	....	....	....	T	1 80	..	.95	.42	1.00	.08	....	.80	....	.05	.40	....	....	....	....	....	....	....	....	....	.10	....	....	.25	.03	....	5.88
Mt. Pleasant	....	..	....	....	....	T	....	.	.15	2.70	.56	..	.02	.25	.60	.92	..	....	....	....	....	....	....	....	....	.55	....	....	....	.40	....	6.15
Mt. Vernon	..	..	....	....	.13	.01	.17	.13	.50	1.00	.39	....	.25	.76	.05	.67	....	.01	..	....	....	....	....	....	....	26	....	....	....	.31	..	4.64
New Hampton	....	....	....	....	..	.29	.03	.40		..	....	.25	..	.38	....	....	....	..	....	....	....	....	....	....	....	.22	....	....	....	.09	...	1.66
Newton	....	....	....	....	....	....	.29	.74	.34	....	....	.40	....	.28	.10	....	.	....	....	....	....	....	....	....	....	.15	....	.11	....	....	....	2.41
Northwood	...	.12	T	.04	.06	.55	.04	T	T	....	.48	.43	1.17	.74	.11	.02	T	....	....	....	....	....	....	....	....	.02	....	....	T	.68	....	4.46
Odebolt	..	....	....	....	....	.10	T	....	.30	....	.95	.84	1.65	.60	....	....		..	....	....	....	....	....	....	....	.12	....	....	T	.12	....	4.68
Ogden	....	....	....	....	..	T	T	.90	...	.31	....		.33	.20	.04	...	.12	....	....	....	....		....	....	....		....	....	....	.20	....	2.10
Olin	....	..	..	T	....	.20	.42	1.45	....	....	..	1.10	....	.	....	....	.	..	....	....	....	....	....	....	....	.15	....	....	....	.10	....	3.42
Omaha, Neb	..	....	....	T	.23	..	.01	....	.43	..	.02	1.08	T	.58	.03	T	.01	..	..	....	....	....	....	....	..	.01	....	....	.02	.08	....	2.50
Onawa	....	....	T	....	.02	..	.02	....	.50	.	.65	1.08	.13	.97	.07	.02	.02	....	....	....	....	....	....	....	....	T	..	..	T	.82	....	4.30
Osage	...	.02	T	.10	.08	.45	.07	.40	.07	.03	.61	.34	T	1.21	.05	T	....	.	....	....	....	....	....	....	....	.04	..	..	T	.39	....	3.86
Osceola	..	....	..	....	.52	.25	....	.65	.69	.57	....	.	.25	.30	.05	.25	T	....	....	....	....	....	....	....	....	....	....	....	....	.08	..	3 61
Oskaloosa	....	....	....	....	.47	....	....	.47	1.25	....	.02	.16	..	.25	.24	T	T	..	....	....	....	....	....	....	....	.10	..	..	.06	.10	...	3.12
Pacific Junction	....	...	. .	..	.16	....	....	....	35	....	....	.40	....	1.35	.05	....	.08	....	....	....	....	....	....	....	....	....	....	....	.10	..	....	2.49
Perry	....	....	....	....	....	....	.76	....	.29	....	....	.30	T	.25	.12	....	.02	..	....	....	....	....	....	....	....	.22	....	....	.12	T	....	2 08
Plover	....	..	...	....	....	.77	.09	....	.03	...	1.51	.32	.67	1.52	.	....	.04	....	....	....	....	....	....	....	....	...	....	....	....	.70	....	5.65
Primghar	....	....	T	T	....	.35	.40	.	T	....	.56	1.00	.38	.77	....	..	T	....	....	....	.	....	....	....	....	T	....	....	....	.39	....	3.79
Red Oak	....	....	....	....	1.12	....	.01	...	.40	.11	T	.38	....	.41	.10		T	....	....	....	....	....	....	....	....	.03	....	..	.28	T	....	2.84
Ridgeway	...	.01	T	.34	.05	.25	.27	.05	.06	....	.48	.16	.03	1.00	.05	.03	.01	...	..	....	....	....	....	....	....	.06	....	....	.20	.08	....	3.13
Rockwell City	....	....	....	..	...	2.85	....	..	.15	....	.52	.60	.62	.30	.05	....	....	....	....	....	....	....	....	....	....	.05	....	....	T	.12	....	5.26
Ruthven	...	...	T		....	.80	T	....	....	....	1.10	.95	.46	.80	.20	....	T	....	..	..	....	....	....	....	....	T	..	....	T	.60	....	4.91
Sac City	....	....	.02	T		1 00	.10	...	.13	....	1.02	.39	.59	.48	.12	..	.22	..	....	....	....	....	....	....	....	T	....	.	.01	.14	....	4.22
St. Charles	....	....	..	T	.25	.02	.60	.40	.47	.03	.04	.05	...	.68	.10	...	.01	....	....	....	....	....	....	....	..	....	....	....	.03	.02	....	2.70
Sheldon	....	....	....	....	.01		.50	....	....	....	.10	.77	.05	.10	.20	T	....	....	....	....	..	....	....	....	....	.05	..	....	T	.06	....	1.84
Sibley	...	....	....	T	.05	.21	.20	.25	..	....	....	.66	.58	.59	.09	....	07	..	..	....	....	....	....	....	....	T	.05	....	..	.05	....	2.80
Sigourney	....	..	....		T	..	T	1.15	2.26	....	....	.05	.03	1.17	.35	....	T	....	....	....	....	....	..	....	....	.25	....	....	.60	1.00	....	6.86
Sioux Center	....	....	....	.06		.18	.19	....	....	....	.02	.40	.05	.16	....	T	....	....	....	....	....	....	....	....	....	T	....	....	T	.45	..	1.51
Sioux City	....		T	T	T	T	.41	....	T	..	.76	.74	.53	.16	.08	.11	....	....	....	....	....	....	....	....	....	.02	....	..	T	.25	....	3.06
Stockport	...	...	....	....	.12		...	.38	2.29	.40	....	T	.84	2.25	.17	T	T	..	...	....	....	....	....	....	....	.70	..	....	T	.19		7.34
Storm Lake	....	....	..	T	T	2.66	.04	T	.01	.06	...	1.02	1.13	.05	.03	.12	.01	....	....	....	..	....	....	....	....	.02	....	....	....	.01	...	6.49
Stuart	....	..	..	....	....	....	.95	..	.50	....	.45	.90	..	.50	.12	....	....	....	....	..	....	....	....	....	....		....	....	.12	....	....	3.54
Thurman	....	....	....	....	.10	...	....	....	1.02	.04	..	.83	.02	.38	.08	..	.09	. .	....	....	....	....	....	....	....	T	..	....	.31	T	....	2.87

DAILY AND MONTHLY PRECIPITATION FOR SEPTEMBER, 1903—CONTINUED.

STATIONS.	DAY OF MONTH.																														TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Tipton	....	....	....	....	....	.16	....	.50	1.30	.81	....	.04	.84	.70	.38	....	.11	....	....	..	..	....	..	....	....	.30		....	....	.22	....	5.36
Toledo	....	....	....	..	.50	...	.72	...	.30	..	....	.25	.02	.20	.20	....	....	....			..	....	....	....	....	.10	....	....	.10	.25	....	2.64
Vinton	....	....	....	....	....	.85	1.01	.63	.44	....	..	....	.32	.57	.07		....	....	....		....	....	....	.	....	.10	....	....	.27	.16	....	4.42
Wapello	....	....	....	....	....	....	....	.31	2.15	.60	..	....	.13	.54	.83	T	.02	....	....	....	....	....	....	....	....	.56	....	....	....	.33	....	5.47
Washington	....	..	....		....	....	....	.36	1.35	1.55	....	.04	.55		.24			....	....	....	....	....	....	....	....	.32	....	....		.35	....	4.76
Washta	....	..	T	T	T	1.25	.25	T	.10	....	1.05	.50	.25	.88	.08	T	.10	....	....	....	....	..	....	..	....	T	....	....	T	.73	....	5.19
Waterloo	....	....	..	....	..	.62	....	.66	T	.18	...	T	.37	.53	.12	.01		T	....	....	....	....	....	....	..	....	.04	....	....	.22	...	2.75
Waukee	...	....	....	....	....	....	.23	.02	.14	.05	T	.35	....	.39	.14	..	T		....	....	....	....	....	..	....	.10		...	T	T	....	1.42
Waverly	....	....	....	....	.07	.28	.09	.18	.05	....	...	.41	....	.28	T	....	....	...	....	....	....	....	..	..	....	.11	..	....	....	.29	....	1.76
West Bend	....	....	.02	.02	....	.87	1.12	..	.04	..	1.05	.3	....	1 48	.65	....	.04	....	.	.	....	....	..	....		T	....	....	T	.43	...	5.47
Whitten	....	....	..	T	...	1.82	.10	.10	.17	....	..	...	.37	.20	.06	....	T	....	....	....	..	....	.	....	....	T	....	....	T	T	....	2.82
Wilton Junction	....	....	....	T	....	.26	.48	.09	2.48	....	....	.29	....	.62	.16	T	.08	....	....		....	....	..	....	....	.47	....	....		T	..	4.93
Woodburn	....	....	....	...	.84	...	1.16	T	1.20	..	....	.47	..	.75	.19	....	.02	..	...	....	....	....	..	....	....	.10		....	.29	T	....	5.02

Precipitation Chart September 1903.



OCTOBER, 1903. No. 10.



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BERNARD MURPHY, STATE PRINTER
1903.

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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIV. OCTOBER 1903. No. 10.

WEATHER AND CROP CONDITIONS.

October was an ideal autumn month. The mean temperature was slightly above and the rainfall below the normal, and the percentage of sunshine was higher than usual. The bulk of the rainfall came in the first seven days, and generally with but little disturbance of the elements. No trace of snow was reported during the month. The first general killing frost occurred on the 18th, at which time there was practically very little of value exposed to damage by freezing temperature. The greater portion of the late planted corn was fairly well matured before the middle of the month, and the percentage of soft and chaffy corn will be but little more than is found at the close of average seasons. Reports are received of very many fields planted as late as June 15th which were well ripened by October 10th and ready to be cribbed before the close of the month. The amount of fall plowing in the state at large is much greater than in recent years. A limited acreage of fall wheat and rye has been sown, and the conditions have been favorable for germination and growth, insuring a good stand. The fall pasturage was never better, being very green and succulent at the close of October. The dry weather was favorable for harvesting potatoes, apples, and all late maturing crops. The potato crop is generally light, with considerable damage by rot, though some localities report a fair yield. The yield of winter apples has been much below the average. Forage crops and garden truck have made excellent yield. As a whole October has been a remarkably fine month, making an exceptional record in view of the adverse weather conditions of the preceding season.

NOTES.

In the noted case of Frost vs. Corn, called for trial in the September term, the Clouds appeared as intervenors, causing postponement of the issue till the October term. And that "saved the bacon."

An interesting feature of Iowa's dairy exhibit at the World's Fair will be a statue in butter of John Stewart, the pioneer creamery man of this state. It will be life size, and will be kept frozen in a glass case throughout the summer.

The New York Sun estimates the value of the staple farm crops of America this year to be, in round numbers, $2,500,000,000. These figures do not include the large increment of value in the use of grain and forage for the production of beef, pork, mutton, dairy and poultry products, etc.

According to statistics compiled by the U. S. Commissioner of Education, the total enrollment of pupils in the common schools of the United States during the year was 15,925,887, or over 20 per cent of the entire population. The grand total of all educational institutions, public and private, is over 18,000,000 pupils. These astounding figures show the real greatness of this nation.

EXTRACTS FROM NATIONAL BULLETIN.

October, 1903, was warmer than usual in the Pacific coast and Rocky Mountain districts and over the northern and central portions of the country to the eastward, the average daily temperature excess ranging from 3° to 6° over the northern portion of the Lake region, in the upper Missouri Valley, over the western portions of the middle and northern Plateau districts and on the central and north Pacific coast. Nearly normal conditions prevailed in the Southern States, there being slight deficiencies in the south Atlantic and west Gulf districts.

There was less than the usual rainfall over the greater part of the Lake region, central Mississippi Valley, South Atlantic and east Gulf States, southern and western Texas, upper Missouri Valley, and generally throughout the Rocky Mountain and Pacific coast districts, the month being without appreciable rainfall in western North Dakota and in portions of New Mexico, Arizona, and southern California. The deficiency over a large part of the Lake region, east Gulf, and South Atlantic States ranged from 1 to more than 2 inches, while over the Florida Peninsula it was from 2 to more than 7 inches. In eastern Texas, portions of Kansas, southern Missouri, eastern Nebraska, Minnesota, the upper Ohio Valley, and in the middle Atlantic coast districts the rainfall was much heavier than usual, most of the districts named receiving from 4 to 6 inches, while in northern New York and the middle Atlantic coast districts amounts ranging from 6 to more than 12 inches are reported.

As a whole the month averaged mild and was generally favorable for farming operations, although plowing and fall seeding were delayed on account of dry soil, in portions of the central Mississippi and Ohio valleys, and late crops in the central and east Gulf States suffered from drought. The Middle Atlantic States experienced heavy rains and very high winds during the latter part of the first decade, causing damaging freshets in northern New Jersey and southeastern New York. Heavy and killing frosts occurred in the central and east Gulf and south Atlantic States from the 25th to the 28th, with freezing temperatures as far south as the northern portions of Mississippi, Alabama, Georgia and South Carolina.

SUN SPOTS AND ELECTRICAL STORMS.

British as well as American scientists attribute the electrical storms of October 31st to sun spots. The effect on the telegraph and telephone service was as noticeable in Great Britain, France and Switzerland as in the United States, and there were striking displays of aurora borealis in parts of Europe, as there were in Chicago on Saturday and Sunday nights.

Since the appearance of the great sun spot of February, 1892, the theory as to the relation of such spots to the earth has changed somewhat. In most particulars, however, the theories then advanced have been accepted. For example, it is conceded that during the prevalence of sun spots the earth's magnetism is intensified, and that auroral phenomena are more numerous.

The immense size of a sun spot which appeared in September, 1891, surprised astronomers. The enormous dimensions of the sun spot of February, 1892, were a still greater surprise, and there was that year greater interest in solar physics among scientists and students than in any previous year.

This sun spot, or aggregation of sun spots, was 148,500 miles in length and 87,750 miles in breadth, and covered an area of 10,000,000,000 square miles. It was visible to the naked eye for several days, and disturbed the people as greatly as it interested the astronomers.

There never was a better opportunity for observation, and then as now there was very general agreement that large spots on the sun were coincident with electric and magnetic disturbances on the earth. Since then experiments with the cathode ray and radium have led scientists to a better understanding of the relations between light and electrical phenomena.—*The Inter Ocean*.

THE RELATION BETWEEN BACTERIA AND SOIL.

An account of some interesting experiments made at the Agricultural Institute of Bonn-Poppelsdorf upon the nitrifying bacteria is contributed by Dr. Wohltmann to the last number of the Journal fur Landwirthschaft (Am. Mo. Rev. of Rev.)

All plants require nitrogen; but although an abundant supply exists free in the atmosphere, most of them are unable to use it, and depend upon what is found in chemical combination with other substances in the soil. If the soil is poor in nitrogenous compounds, there can not be a luxuriant growth of vegetation upon it. But peas, beans, and others of the family of leguminous plants contrive to form partnerships with certain kinds of bacteria which, in some way, act upon free nitrogen and change it chemically into compounds that can be used by the plants, and also change nitrogen compounds that are not available into compounds that can be used. These bacteria form nodules about as large as pin heads on the roots of the plants. On account of this characteristic, poor soil is often planted with peas, beans, etc, in order to enrich it by the compounds of nitrogen formed in this way.

Since 1898, the author has been making observations upon the appearance of these bacteria in the most varied soils of temperate, sub-tropical, and tropical climates, and has found that they are not constantly associated with plants of this family, but may either be present or entirely absent. For example, at the experiment station of Kwai, in East Africa, at an altitude of 1,650 meters above sea level, in a soil rich in humus and nitrogen, he found peas growing luxuriantly and blossoming, but without a single nodule on their roots. From these observations it seemed worth while to find out how the formation of root nodules varies in the most important cultivated plants according to the different soils and fertilizers used, and for this purpose about three hundred experiments were made with seedlings planted in eleven different kinds of soil common in the valley of the Rhine, and in soils mixed with three kinds of fertilizers.

In determining the effect of soil on the formation of nodules, the chief things considered were the condition of the plants, the amount of humus present, the amount of nitrogen, and the mineral constituents of the soil.

In general, the results supported the well-known rule that crude, uncultivated ground is poor in nodule-forming bacteria or lacks them entirely, and that the improved condition and productiveness of soil is correlated with increase of the bacteria, although there were some exceptions to this. With regard to the humus constituent of the soil, its warming and loosening properties act favorably for the development of nodule-forming bacteria, and the effect can be detrimental only when the amount of humus is very great. This is shown by certain chalky earths of the highlands, which, on account of their antiseptic properties, due to humus, may be free from bacteria.

The soils used for experimentation were made to vary greatly in the amount of nitrogen present, but, except for certain kinds of soil from the moors, it seemed that the amount of nitrogen made no difference with the presence or absence of these bacteria unassociated with plants. Rich nitrogenous earth formed by the decay of basaltic rocks was specially poor in them, and they were also lacking in poor alluvial soil and in red clay. Calcium carbonate and potassium phosphate in the soil exert a favorable influence upon the growth of the bacteria.

The author concludes that when the soil is rich in nitrogenous fertilizers, preferably ammonium nitrate, leguminous plants may be free from nodule-forming bacteria. Apparently, their association with the bacteria is not a necessity, but an expedient, and whenever there is a supply of nitrogenous matter in the soil they dispense with the bacteria and with the free nitrogen which the bacteria make available, and instead, use the nitrogen found in chemical combination in the soil. In that case, the plants would not make the soil richer in nitrogen, but would impoverish it like other cultivated plants. The presence or absence of nodules on the roots varies with the amount of nitrogen in available compounds in the soil, and the value of a fertilizer may be estimated from the number and size of the nodules upon the roots of the plants.—*Medical Herald*.

PROFESSOR PARVIN'S EARLY WEATHER RECORD.

The late Prof. Theo. S. Parvin was the pioneer voluntary meteorological observer in Iowa, and the records of his observations cover a full third of a century. He began the scientific study of the climate in 1839, at Muscatine, and continued the service at Iowa City after his removal to the latter place in 1860 to accept a professorship in the State University. In relation to his work in that line the *Cedar Rapids Republican* recently published the following interesting narration, by permission of Mr. Joseph Morcombe, who is engaged in writing the biography of Mr. Parvin:

"The journals to which reference is made and from which the best information is derived, reveal many new lines in which Mr. Parvin employed his industry. February 4, 1893, he notes revision of his meterological journal. This recalls to mind the fact that from his first residence in Iowa he made careful, daily observations of weather conditions. Several of the books containing these records are before us ruled into appropriate columns, containing several daily readings of the thermometer and barometer, direction and velocity of wind, hours of cloudiness and sunshine, etc. This was a purely voluntary labor, begun and kept up primarily for the benefit of the community and to disprove by actual figures the absurd stories current in the East of intense summer heat and arctic winters in the new territory beyond the Mississippi. The government had not then adopted the wise policy of stationing trained observers over the country to collect data and to forecast general conditions. The

Masonic Poet, Rob Morris, of genial memory, somewhere in his reminiscent writing, tells of visiting his friend Parvin at his Iowa home and gives a humorous account of the enthusiastic devotion which led his host, clad only in the robes of the night, and in a frigid temperature, through the guest chamber and into the freezing air outside that he might not neglect reading his instruments.

"But this unique meteorological record had a use and value of which its compiler had no idea when reading his observations day by day. Copies of these records, with summaries and averages, were regularly furnished to and carefully preserved by the Smithsonian Institution at Washington. These constituted the only accurate and available data of the kind. When the southerners at the outbreak of the civil war destroyed Harper's Ferry and captured the arsenal at that place, it was determined by the federal government to create a depot for war supplies, which would be secure alike from foreign and domestic foes. The island in the Mississippi between the cities of Davenport and Rock Island, formerly the site of Fort Armstrong, was the chosen spot. But this selection brought out opposition from other interested localities and for a time threatened the plans of the government with congressional disapproval. The strong argument of those opposed to Rock Island was that the Mississippi was closed by ice for nine months of the year. But it fortunately occured to some friends of the new location that Parvin's records were at hand and could not be gainsaid and accordingly these were procured from the Smithsonian institution. The truth triumphed and the present great arsenal was located at a point evidently designed by nature for such an institution. Among the letters preserved among Mr. Parvin's papers, and dating from those early years are several received from leading scientists of the time, testifying to the value of these observations."

VALUABLE CORN TESTS.

A news special from Ames states that the I. S. C. Department of Agronomy has begun some experimental work to test the shrinkage of corn stored in cribs, and also the germinating qualities of seed corn under various conditions as to selection, storage, temperature and humidity. In the most important test as to shrinkage, the corn will be in the average condition of the crop when placed in farmers' cribs. A crib having capacity to hold 6,000 pounds will be built upon scales; and will be weighed daily at the time of filling, and weekly thereafter for a full year. The object of the seed corn experiment is to determine the effect of artificial heat, the effect of cold, and the common methods in use among corn producers,

Corn in three stages of development will be used in the tests—mature, immature and mediumly developed corn. Each class of corn will be stored in different storage conditions. Corn will be stored in the corn cribs, the attic, seed rooms, closed oat bins, under artificial heat, in the green house, the cellar, buried in the ground and sealed in air tight glass jars. Some will be hung by the husks, some shelled and stored in sacks, some taken in the spring from the shock, and some that has been left on the surface of the ground. In all these ways seed corn is kept by different men. It is the plan to determine what is the best and most practical way for Iowa farmers. The producing value of the seed is what counts. In the spring the value of the seed will be tested.

CLIMATOLOGY OF THE MONTH OF OCTOBER, 1903.

BAROMETER.—Mean pressure, 30.08 inches; highest observed, 30.58 inches, at Dubuque, on the 26th; lowest observed, 29.19 inches, at Sioux City, on the 6th; range for state, 1.39 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 105 stations, was 52.2°, which is 0.3° above normal. By sections the mean temperatures were as follows: Northern section, 50.7°; Central section, 52.1°; Southern section, 53.8°. The highest monthly mean was 57.7°, at Belknap; lowest monthly mean, 47.2°, at Belle Plaine. The highest temperature reported was 90°, at Chariton, on the 3d; lowest temperature reported, 16°, at Earlham, on the 27th. The average monthly maximum was 80.4°; average monthly minimum, 25.4°. Greatest daily range, 57°, at Carroll; average of greatest daily ranges, 39.7°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 115 stations, was 1.95 inches, which is 0.49 of an inch below normal. The averages by sections were as follows: Northern section, 2.12 inches; Central section, 1.78 inches; Southern section, 1.95 inches. The largest amount reported was 4.50 inches, at Harlan; least amount reported, 0.32 of an inch, at St. Charles. The greatest daily rainfall reported was 2.90 inches, at Ruthven, on the 6th. Average number of days on which .01 of an inch or more was reported, 5.

WIND AND WEATHER.—Prevailing direction of the wind, south; highest velocity reported, 58 miles per hour, from the west, at Sioux City, on the 7th. Average number of clear days, 19; partly cloudy, 6; cloudy, 6.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	30.07	30.54	27	29.45	7
Des Moines	30.12	30.57	26	29.34	6
Dubuque	30.10	30.58	26	29.39	6
Omaha, Neb	30.08	30.53	26	29.26	6
Keokuk	30.08	30.55	27	29.40	6
Sioux City	30.06	30.56	26	29.19	6
Means	30.08	30.58	26	29.19	6

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity	Direction.	Date.
Davenport	5197	34	W	6
Des Moines	6281	42	SW	3
Dubuque	4546	30	N W	17
Keokuk	5107	36	W	6
La Crosse, Wis.	5519	36		6
Omaha, Neb	6503	34	NW	7
Sioux City	9628	58	W	7

OBSERVERS' NOTES.

ALLERTON.—*Rex Shriver.* Heavy frosts of 18th, 24th and 27th killed vegetation generally, but corn was too well matured to be injured.

ALTA.—*David E. Hadden.* First week in October was wet and changeable; during balance of month this county enjoyed ideal Indian summer weather, clear, mellow and warm, which came opportunely for maturing corn and finishing fall work.

AMANA.—*Conrad Schadt.* Weather fine and pleasant, and corn had ample time to ripen; large part of crop husked and better than expected.

BONAPARTE.—*B. R. Vale.* Rain 3.78; a severe local storm and wind on night of 6th; warm weather since; much plowing done; pastures good; corn husking begun.

BRITT.—*Geo. P. Hardwick.* First half of month changeable but last half pleasant; corn being cribbed after 25th; pastures better than usual; potatoes scarce.

CLINTON.—*Dr. Luke Roberts.* Rainfall 1.85 inches, 0.55 below normal; temperature normal; sunshine in excess of normal; a good month for hardening corn and securing the crop and general outdoor work.

EARLHAM.—*Geo. Phillips.* The corn crop is 50 per cent be'ter than was thought possible sixty days ago.

CARROLL.—*Moses Simon.* A fine month; geraniums and other tender flowers still in bloom on 31st.

GRAND MEADOW.—*F. L. Williams.* First killing frost of season on 18th; corn ripened well and potatoes were fine; month was ideal for farm work.

GRUNDY CENTER.—*E. S. King.* More fall plowing than for years. Last half of month made fine corn; only about ten per cent soft.

HANLONTOWN.—*Miss G. M. Paschen.* Began husking corn on 23d, but some began about 14th; corn well dried out and promises a good yield.

JEFFERSON.—*Isaac Young.* Last half of month fine; considerable plowing and husking corn done.

OLIN.—*Nathan Potter.* October has been an ideal fall month; cribbing corn begun about 20th, and mostly in good condition.

PERRY.—*J. A. Harvey.* Total rainfall 2.35 inches; month very fine for the farmer.

RIDGEWAY. *Arthur Betts.* No rain after 17th, 241 hours of sunshine, or 72 per cent; second season of roses from 12th to 24th; roads dry and dusty; much hazy weather.

WAUKEE.—*E. J. Leonard.* Weather unusually fine, over two-thirds of the days absolutely cloudless; first killing frost here was on 9th and late corn was injured.

WEST BEND.—*Ph. Dorweiler.* An ideal month, the finest October on record.

WHITTEN.—*Frank P. Butler, M. D.* Twenty-one clear days, and the warmest October for years; this section has an immense corn crop and quality good; being rapidly harvested.

WILTON.—*J. M. Rider.* Last half of month very favorable for curing corn and farm work.

GRINNELL.—*A. O. Price.* Last half of month perfect; 90 per cent of fall plowing done; corn husking well advanced.

ERRATA IN AUGUST REVIEW.

BEDFORD.—Total precipitation recorded 7.46 inches on pages 8 and 11, should have been 9.46 inches.

CARROLL.—Mean temperature recorded 68.6° on page 7, should have been 68.7°.

COUNCIL BLUFFS.—Total precipitation recorded 13.09 inches on pages 8 and 11, should have been 15.09 inches.

EARLHAM.—Mean temperature recorded 67.8° on page 8, should have been 68.0°.

Mean minimum temperature recorded 56.2° on page 9, should have been 56.5°.

GUTHRIE CENTER.—Total precipitation recorded 5.65 inches on pages 7 and 11, should have been 5.05 inches.

WEST UNION.—Total precipitation recorded 6.19 inches on pages 7 and 12, should have been 6.14 inches.

BELATED REPORTS.

BELLE PLAINE.—September. Mean temperature, 58.8°, highest 84°, on the 3d; lowest 36°, on the 24th; greatest daily range 30°. Total precipitation, 3.79 inches; greatest in 24 hours, .90 inch. Number of clear days, 11; partly cloudy, 12; cloudy, 7; rainy, 10. Prevailing direction, southeast.

CHESTER.—September. Mean temperature, 57.8°; highest 82°, on the 3d; lowest 29°, on the 18th; greatest daily range, 33°. Total precipitation, 4.46 inches; greatest in 24 hours, 1.00 inch; prevailing direction, southwest. Number of clear days, 16; partly cloudy, 5; cloudy, 9; rainy; 14.

DENISON.—September. Mean temperature, 60.6°; highest 84°, on the 25th; lowest, 32°, on the 27th; greatest daily range, 38°. Total precipitation, 1.87 inches; greatest in 24 hours, .55 inch; prevailing direction, south. Number of rainy days, 8.

LEON.—September. Mean temperature, 62.4°; highest, 82°, on the 6th, 7th, 8th and 11th; lowest, 37°, on the 18th; greatest daily range, 32°. Total precipitation, 4.45 inches; greatest in 24 hours, 2.35 inches; prevailing direction, south. Number of clear days, 17; partly cloudy, 2; cloudy, 11; rainy, 11.

IOWA WEATHER AND CROP SERVICE.

CLIMATOLOGICAL DATA FOR OCTOBER, 1903.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				SKY.				Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days	Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	52 0	†3 6	76	3, 19	26	26	32	1.40	- .73	.50	....	3	17	9	5	SE	3, 6
Alta	Buena Vista	1,513	11	51.6	†0.9	79	19	28	26	39	1.12	-1.14	.92	....	5	17	11	3	S	3, 6
Alta (near)	Buena Vista		....	.....	.....	.....	.....	.....	.....		1.16	....	1.04	....	3	...	...	...	.....	
Britt	Hancock	1,236	5	50.1	-1.9	77	3	25	¶	43	1,76	- .62	.90	..	7	14	12	5	SW	
Charles City	Floyd	1,012	11	49.0	-1.5	79	3	22	27	43	1 84	- .29	.72	....	9	....	....	....	SW	7
Clear Lake	Cerro Gordo	1,241	....	50.2		75	3	26	26	36	3.08	.....	1.15		5	18	7	6	SW	
Decorah	Winneshiek	857	8	50.0	-0.6	77	3	23	27	37	2 13	- .37	1.24	...	6	....			.....	
Dows (a)	Wright	1,142	....	52.6		84	17	25	26, 27	49	1.63	.....	.76	....	5	22	3	6	S	
Elkader	Clayton	727	21	50.2	†0.8	78	3	20	27	41	1 46	-1.54	.60	....	6	17	11	3	SE	3, 6, 14
Forest City	Winnebago	1,226	8	48.6	-0.6	80	3, 19	27	27	48	1.76	- .81	.78	..	6	20	4	7	S	
Grand Meadow	Clayton	1,180	11	50 3	†0.3	77	2	28	26	30	2.11	- 58	1.10	...	4	15	8	8	SW	3, 6
Greene	Butler	924	5	50 3	-3.8	78	3	23	27	34	1.85	- .44	81	....	6	16	7	8	SW	
Hampton	Franklin	1,155	12	52.5	†2.2	80	3, 19	28	26	40	1.82	- .92	.80		5	16	9	6	SW	2, 3, 6
Hanlontown	Worth	.....	...	49 8	.....	77	19	24	27	42	2.17	.	1.00		5	24	1	6	SE, SW, NW	2, 3, 6
Humboldt	Humboldt	1,095	10	51.8	†2.3	79	19	24	26, 27	44	2.41	† .63	1.14	....	5	25	4	2	NW	
Larchwood	Lyon	.....	....	51.6	.....	79	19	28	16, 26, 27	44	2.16	.....	.80	....	4	19	10	2	S	3
Larrabee	Cherokee	1,366	....	51.3	....	78	2	26	27	39	2.05	.....	1.73	....	5	21	7	3	SW	6, 30
Le Mars	Plymouth	1,224	6	51.0	-1.6	79	2, 19	25	26	43	.....	.....	.....	....	...	16	13	2	S	
Mason City	Cerro Gordo	1,132	...	51.6	.....	74	3	31	26	34	3.25	.....	1.40	....	5	13	9	9	S, SE	6, 15
New Hampton (a)	Chickasaw	1,169	....	49.4	.....	77	3	24	24	38	1.48	.....	.70	....	6	20	4	7	S	
Northwood	Worth	1,222	6	49.8	-1.2	75	3, 19	26	24, 27	39	2.13	- .43	1 04	....	5	22	3	6	SW, NW	3, 6, 7
Osage	Mitchell	1,184	11	48.8	†2 1	75	3	25	26	37	2.99	† .48	1.25	..	5	18	5	8	S	3, 6
Plover	Pocahontas	1,190	5	51.0	-1.9	78	3	24	28	40	1.43	-1.02	1 29	....	2	21	7	3	S	
Primghar	O'Brien	.....	...	50.6	.....	77	3	28	25, 26	37	3.22	.....	2.30	....	4	20	0	11	NW	
Ridgeway ‡	Winneshiek	1,215	....	53.2	.....	82	3	28	18, 24, 26	38	2 02	....	1.13	....	8	19	7	5	S	3, 6
Ruthven (b)	Palo Alto	.....	...	53.8		89	19	30	16, 26	52	3.30	.	2.90	....	2	19	3	9	S	
Sibley (c)	Osceola	1,512	8	48.8	-2 0	73	2	27	27	36	3.98	†2.18	1.14	....	7	17	10	4	N, SE	
Sioux Center	Sioux	.....	..	50.7	.....	78	19	27	27	40	3.75	.	2.82	...	4	15	10	6	S	3, 6
Storm Lake	Buena Vista	1,440	7	50.0	-4.2	78	19	20	26	43	1 32	- .36	.79	....	4	19	6	6	SE	
Washta	Cherokee	1,157	....	.....	.....	.....	.....	.....	.....		1.93	.....	1.47	....	3	23	7	1	S	
Waverly	Bremer	942	6	50.8	-2.8	79	3	23	27	41	1.87	- .97	.64	....	7	15	10	6	S	3, 6, 15
West Bend	Palo Alto	1,197	8	50.8	†2.1	79	3	23	26	42	1 05	- .79	.47	....	4	18	7	6	SE	
Average				50 7	-0.4	78 1	.....	25.4	...	40.1	2.12	- .42			5	18	7	6	S	

¶ 18, 24, 26, 27.

CENTRAL SECTION.

Amana	Iowa	721	25	51.6	†1.7	81	3	23	27	35	2.15	- .55	.85	....	7	20	7	4	NW	3, 6
Ames	Story	926	20	51.6	†0.7	80	19	23	27	41	1.07	-1.45	.46	..	5	23	5	3	SW	
Audubon	Audubon	1,301	8	51.8	†0.9	83	2	18	27	44	2.72	† .43	1 42	..	6	17	6	8	SE	3, 6
Baxter	Jasper	998	...	51.8	.....	80	3	25	¶	40	1 23	.	.65	....	2	23	2	6	SW	
Belle Plaine	Benton	828	12	47.2	-3 2	75	3	22	27	37	1.34	- .89	.90	..	5	21	6	4	SE	
Buckingham	Iowa	.....	....	.....	.....	.....	.....	.....	.....	.....	1.45	.....	1.25		4	19	10	2	.....	
Carroll	Carroll	1,265	12	53.8	†2.7	84	18	26	26	57	1.39	- .97	.54	....	5	22	3	6	.. .	2, 3, 6
Cedar Rapids	Linn	733	19	52.0	†0.7	80	3	26	27, 28	41	1.48	-1.10	.66	....	7	11	13	7	NW	
Clinton	Clinton	609	34	51.4	†1.0	83	3	21	27	40	1.85	- .56	1.41	....	8	17	2	12	SW	3, 6, 14
Davenport	Scott	606	31	54.2	†2.1	82	3	32	24	27	2.27	- .35	1.52	..	7	15	9	7	SW	3, 6, 7
Delaware	Delaware	1,033	11	49.8	†1.0	79	3	25	27	35	1.69	- .60	.75	..	4	20	7	4	S, NW	6, 7
Des Moines	Polk	841	24	53 8	†1.6	82	3	29	24	39	1.32	-1.72	.60	....	6	13	10	8	SW	2, 6
De Soto	Dallas	866	....	54.0	.....	86	19	20	27	43	.55	.....	.22	....	5	23	2	6	SW	
Dubuque	Dubuque	655	29	52.4	†1.8	81	3	28	27	30	1.72	- .99	.90	....	5	18	9	4	NW	3, 6
Fort Dodge (a)	Webster	1,126		53.0	.....	80	20	31	5, 9, 27	38	2.02	...	1.10	.	4		....	....	.....	6
Galva (b)	Ida	1,290	8	50.8	-0.5	79	19	24	26	46	.93	- .83	.93		1	..	..	..	SW	
Gilman	Marshall	1,052		.....	.....	.....	.....	.....	.....	.....	1.72	.	.79	....	5	21	4	6	S, NW	
Grinnell	Poweshiek	1,023	9	52.2	†5.0	73	3	28	26	33	1.45	- .92	.65	....	5	20	4	7	SW, W	
Grinnell (near)	Poweshiek	.....	....	52.0	.....	79	3	28	18, 26	26	1.35	.....	.88		6	18	4	9	SW	2, 3, 7, 14
Grundy Center	Grundy	976	11	51.6	†0.3	80	3	25	24	39	1.05	-1.72	37	....	7	22	0	9	NE	14
Guthrie Center (a)	Guthrie	1,077	6	55.8	†3.4	83	22	22	27	46	2.75	† .53	2.00	....	5	16	3	11	NW	6
Harlan	Shelby	1,192	....	52.1		81	2	25	26	37	4.50	.....	2.80	...	6	17	7	7	S	2, 3, 6
Independence	Buchanan	921	38	50.6	†1.7	80	3	23	27	33	1.85	- .52	.50	....	4	21	6	4	SW	14
Iowa City	Johnson	685	43	51.9	†0.9	81	3	21	28	46	3.60	† .81	1.95	..	6	8	13	10	W	
Iowa Falls	Hardin	1,170	9	48.4	-1.8	78	3	21	27	46	1 72	- .66	.68	..	6	20	3	8	S	4, 7
Jefferson	Greene	1,052	....	.....	.....	....	.....	.....	.....	.....	2.52	.....	1.28	....	6	12	16	3	SE	6
LeClaire	Scott	576	....	....	.....	.....	.....	.....	.....	.....	3.17	.	1.99		8				N	
Logan	Harrison	928	35	51.8	-0.5	81	2	23	19, 28	38	1.60	- .86	.40	....	6	18	4	9	NW	
Maquoketa	Jackson	688	9	50.2	-4.3	81	3	18	27, 28	46	2.24	- .59	1.15	..	6	18	6	7	NE	
Marshalltown	Marshall	947	9	51 8	-1.1	83	3	21	27	47	1 61	- .92	1.32	....	7	....	...		NW	
Monticello	Jones	925	48	50.4	†1.0	85	2	20	27	46	2 20	- .54	.95	..	5	20	3	8	SW	
Mt. Vernon	Linn	847	35	51 5	†1.2	79	3	25	24	37	1.16	-1.12	.49		8	23	3	5	W	
Newton	Jasper	944	14	52.0	†0.3	79	3	26	27	37	1.08	-1.41	.72	....	3	24	4	3	S	
Odebolt	Sac	1,356	5	51.9	-4.5	78	2, 19	25	27	40	.79	-1.71	.52	....	4	21	6	4	.. ...	
Ogden	Boone	1,088	8	51.8	-1.3	84	3	25	18, 27	49	1.80	- .86	.82	....	6	25	0	6	SE	
Olin	Jones	760	....	51.4	....	81	3	21	24, 27	34	1.87	.....	1.20	..	5	18	8	5	SW	6
Onawa	Monona	1,053	.	50.2	.....	84	19	30	27	44	1.71	.....	1.14	....	7	23	3	5	SE	2, 3, 6, 12
Perry	Dallas	975	....	52.8	....	82	3	25	27	41	2.35	.....	1.12	.	5	...	...	...	.....	
Rockwell City ‡	Calhoun		....	53 0	.....	80	19	27	26	39	1.70	.....	.65	...	4	21	7	3	.....	
Sac City	Sac	1,278	22	53.2	†1.3	80	19	25	27	42	.82	-1.57	.94	.	4	22	3	6	S	2, 6
Sioux City	Woodbury	1,165	13	53.6	†2.6	84	19	31	26	40	3.24	†1.54	2 02	..	6	16	7	8	SE	
Stuart (b)	Guthrie	1,216	5	49.2	-7.2	80	2, 3	18	27	44	1.03	-1.95	.43	....	6	....	....	..	.....	
Tipton	Cedar	807	....	53.8	.....	81	3	28	24	34	1.67	.....	.71	.	5	20	6	5	SW	
Toledo	Tama	856	8	52.5	†0.1	81	3	20	27	43	1.37	- .59	.90	....	3	18	7	6	SW	
Vinton *§	Benton	810	12	51.0	†0.6	80	3	22	27	....	1.67	- .80	1.46	..	4	25	2	4	NW	
Waterloo	Black Hawk	862	15	51.6	†2.1	82	3	23	27	41	2.05	- .28	1.84	..	6	22	5	4	SE	6, 15
Waukee	Dallas	1,039	....	.....	.....	.....	.....	.....	.....	.....	1.22	.	.50	..	4	21	3	7	NW	2, 3, 6, 14
Wilton Junct. (d)	Muscatine	683	7*	53.0	†0.4	82	3	22	27	36	2.85	†1.06	1.45		3	....	....	....	NW	6, 7
Whitten	Hardin	1,036	..	51.0	.....	80	3	24	24, 27	38	1.24	.... .	.50	..	4	21	6	4	SE, SW	3, 6, 15
West Branch	Cedar	718	..	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	...	..	....	....	....	.....	
Average			....	52.1	†0 3	80.8	.....	24.3	.....	39.8	1.78	-.72	...		5	19	6	6	SW	

¶ 18, 24, 25, 27.

MONTHLY REVIEW OF THE

CLIMATOLOGICAL DATA FOR OCTOBER, 1903—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted)		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	7	53.2	-0.6	82	2,3	26	27	36	1.96	- .84	89		4	17	8	6	SW	
Albia	Monroe	957	..	52.8	.....	80	3	23	26	43	2.26	.....	1.10	...	7	21	0	10	NW	
Allerton	Wayne	....	....	54.2	.....	81	2	28	24,27	38	2.22	.....	.95	..	7	22	6	3	NW	2,3,6
Atlantic	Cass	1,164	11	52.6	†0.7	83	2	21	27	49	2.12	- .53	1.48	...	5	17	4	10	NW	6
Bedford	Taylor	.....	..	53.4	.....	81	2,3,20	25	18	45	1.78	.....	.74	...	5	20	4	7	SE	
Belknap	Davis	877	7	57.7	†2.0	83	3	34	18,27	40	2.32	† .45	.92	....	6	24	4	3	S	
Bonaparte	Van Buren	.....	10	53.3	-2.4	85	3	26	24,25	37	3.78	†2.15	2.13	....	5	....	...	...	.....	
Burlington	Des Moines	541	..	55.6	.....	83	3	29	27	33	2.74	.....	1.23	....	5	23	1	7	S	6,7
Chariton	Lucas	1,042	7	53.4	-1.3	90	3	26	24	41	2.10	- .48	1.10	..	4	16	8	7	SE, SW	
Clarinda	Page	1,069	12	54.8	†0.4	88	2	26	27	56	1.17	-1.49	.36	....	5	19	8	4	SE	
Columbus Jct.	Louisa	595	....	53.4	.....	81	3	26	27	39	3.28	.....	1.35		6	22	7	2	S	6
Corning	Adams	1,127	10	53.2	-0.9	80	2,3,19	28	18,27	38	.84	-1.63	.34	....	5	18	8	5	SE	2,6
Corydon	Wayne	992	9	54.0	-1.0	81	3,19	26	24,26	41	1.74	- .94	.59	..	7	19	6	6	S	
Cumberland	Cass	.....	...	.....	.....	.....	.....	.....	.....	.....	2.15	.....	1.10		5	24	0	7	S	
Earlham	Madison	.....	..	51.2	.....	82	3	16	27	42	.90	.....	.42	..	4	23	0	8	S	2,6
Fort Madison	Lee	516	51	.....	.....	.....	.....	.....	.....		2.75	† .02	2.58		3	15	10	6	SW, NW	3,6,14
Glenwood	Mills	.....	15	54.8	-1.1	83	3	31	27	36	1.25	-1.36	.50	...	3	15	12	4	SW	
Greenfield	Adair	.....	11	53.3	-0.3	82	3	29	26,27	37	1.52	- .73	.33	....	7	22	3	6	S	1,2,6
Hopeville	Clarke	....	11	54.3	-0.3	81	2,3	30	18,24	36	1.45	- .78	.60	....	5	20	5	6	NW	
Indianola	Warren	969	11	53.6	-0.5	81	3	27	24,26	38	1.27	- .78	.51		5	....	...		NW	2,6
Keokuk	Lee	619	31	55.6	†1.5	84	3	32	27	28	3.23	†1.07	1.89	....	5	19	8	4	SW	2,3,6,14
Keosauqua	Van Buren	664	10	52.1	-4.1	82	3	22	27	33	3.42	†1.70	1.63	....	5	....	...	....	.....	
Lacona	Warren	.....	1	.....	.....	.....	.....	.....	.....	.....	2.13	.....	.74	....	6	18	12	6	.....	
Lenox	Taylor	1,250	7	51.8	-2.5	81	3	29	18	37	1.13	†1.84	.55	....	5	23	4	4	S	
Leon	Decatur	1,120		53.9	...	80	2,3	29	27	35	1.27	.....	.58		5	22	5	4	S	
Mt. Ayr	Ringgold	1,236	8	55.0	-0.3	83	2	29	18	39	1.03	-1.37	.35	..	8	15	9	7	SE	
Mt. Pleasant	Henry	729	20	52.4	‡0.0	82	3	23	27	34	2.72	† .96	1.58	.	8	19	10	2	SW	3,6
Omaha, Neb.	Douglass	1,113	32	56.4	†3.5	85	19	36	27	37	1.19	-1.28	.54	....	9	15	9	7	S	2,3
Osceola‡	Clarke	1,130	6	55.0	†0.4	84	2	29	27	40	.88	-2.09	.60		4	20	1	10	NE	
Oskaloosa	Mahaska	843	18	53.0	†1.2	80	3	23	27	36	1.68	- .59	1.02		6	23	1	7	SW	
Ottumwa (*a*)	Wapello	649	8	55.4	-0.1	83	3	26	27	38	2.49	- .15	1.33	....	2	16	7	8	W	
Pacific Junction	Mills	960	..	53.5	..	85	2	27	26	43	1.69	.....	1.05		5	17	8	6	N & S	
Red Oak	Montgomery	1,033	..	54.4	.....	80	2	29	27	32	1.21	.....	.52		6	16	11	4	S	6
St. Charles	Madison	1,070	..	55.6	..	83	19	28	27	45	.32	.....	.18	....	5	21	4	6	NW	
Sigourney	Keokuk	787	....	52.8	.....	82	4	24	27	44	1.13	.....	60	....	3	23	7	1	NW	6,7,14
Thurman	Fremont	.....	....	54.1	.....	84	2	25	27	43	2.78	.....	1.20		5	20	3	8	SW	
Washington	Washington	769	20	51.7	-0.4	83	3	25	24,27	39	2.98	†1.46	1.40	....	4	....	....	....	NW	
Woodburn	Clarke	961	...	....	..	.....	.....	.....	.....	.....	1.53	.....	.72	....	5	20	3	8	NW	6
Average	.....	.....		53.8	-0.3	82.3	.....	26.5	.....	39.1	1.95	- .27	.....	....	5	19	6	6	S	
Average for state	.....	..	....	52.2	-0.1	80.4	.....	25.4	.....	39.7	1.95	- .47	.....		5	19	6	6	S	

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Above normal.
‡Received too late to be computed with means. (*a*) One day missing; (*b*) two days, etc. §Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR OCTOBER, 1903.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Afton	Max	70	82	82	70	70	69	61	59	63	65	64	66	64	58	59	61	54	64	77	70	71	60	54	64	64	54	57	66	64	68	63	64.9
	Min	59	58	63	44	37	58	46	42	34	35	38	37	45	50	48	35	36	28	46	43	44	44	34	28	40	29	26	33	37	38	52	41.5
Albia	Max	67	75	80	72	69	72	63	61	61	62	66	65	67	59	60	62	51	64	79	76	76	55	54	61	66	56	59	68	67	68	68	65.5
	Min	58	58	63	46	38	40	50	44	34	36	39	38	45	46	47	36	37	31	33	43	43	43	33	30	31	23	28	30	39	40	45	40.2
Algona	Max	65	72	76	67	63	68	54	59	59	63	70	65	59	61	65	60	57	70	76	70	65	60	49	61	67	55	58	60	65	69	62	63.6
	Min	53	55	58	43	36	52	44	42	31	41	42	41	47	43	46	33	35	32	46	41	37	38	34	30	41	26	29	34	41	40	39	40.4
Allerton	Max	71	81	80	72	72	70	67	64	64	63	67	67	67	64	60	62	64	64	79	75	77	62	55	62	65	59	59	68	65	68	65	66.9
	Min	61	58	66	45	39	57	48	42	34	40	41	37	47	51	44	34	34	29	41	44	42	42	31	28	38	29	28	32	36	43	50	41.6
Alta	Max	57	76	74	65	65	65	58	56	62	64	64	61	64	66	59	62	48	69	79	71	69	56	52	65	64	54	58	68	65	64	60	63.3
	Min	53	58	47	43	34	54	44	41	33	41	41	40	44	44	38	30	31	30	42	44	40	36	32	32	42	28	30	38	43	42	41	39.8
Amana	Max	68	69	81	67	63	70	63	58	57	59	62	62	65	65	60	59	53	61	69	66	66	56	51	54	65	51	54	63	63	63	62	62.1
	Min	61	58	62	44	38	52	50	44	36	33	37	40	46	50	52	43	42	30	36	45	41	42	29	25	32	30	23	28	36	42	48	41.1
Ames	Max	65	71	79	70	64	69	60	59	63	61	64	62	65	63	59	62	53	62	80	71	70	59	50	63	64	55	58	68	65	64	61	63.8
	Min	57	57	59	49	34	52	25	44	33	37	39	34	45	49	49	35	37	30	39	42	42	40	32	26	35	29	23	31	37	39	45	39.5
Atlantic	Max	65	83	82	72	72	73	62	60	67	65	67	67	64	59	57	64	57	69	81	75	75	62	57	67	67	60	61	71	67	66	57	66.8
	Min	57	58	56	40	33	56	46	40	28	40	45	35	44	50	46	29	35	25	32	34	35	39	31	24	30	22	21	32	40	42	49	38.5
Audubon	Max	67	83	80	76	72	72	61	60	66	66	67	64	61	62	55	64	59	68	81	75	74	60	55	68	65	58	62	69	66	65	60	66.5
	Min	55	56	56	40	31	51	45	42	27	36	43	32	45	49	45	28	33	24	31	36	35	36	32	22	29	28	18	29	33	36	45	37.0
Baxter	Max	69	70	80	71	65	67	63	60	62	62	64	66	65	67	62	63	56	65	78	72	70	59	54	60	56	56	57	67	66	65	61	64 5
	Min	56	55	61	42	38	53	47	42	32	37	38	36	45	49	48	32	37	25	39	43	40	39	31	25	25	26	25	30	37	40	42	39 1
Bedford	Max	72	81	81	73	78	72	62	62	68	65	67	66	63	59	55	63	55	66	80	81	78	59	52	65	66	59	59	68	64	63	58	66.3
	Min	59	60	61	40	40	55	48	40	29	41	43	39	47	53	49	29	37	25	37	36	43	41	30	27	35	29	30	34	36	38	49	40.6
Belknap	Max	72	80	83	70	82	72	65	65	69	62	69	65	65	62	68	60	53	50	81	76	75	66	60	75	65	68	70	74	74	74	80	69.4
	Min	65	62	69	49	45	60	51	47	42	41	45	44	47	53	49	40	41	34	37	48	49	44	36	35	45	37	34	37	37	50	55	46 1
Belle Pl	Max	65	72	75	54	60	63	63	60	58	60	63	65	65	66	60	62	51	64	47	43	42	53	62	44	40	35	36	40	47	50	50	55.0
	Min	57	58	60	40	37	40	50	43	33	39	40	41	45	69	62	60	63	51	62	75	72	76	56	55	58	66	55	59	66	65	66	70	65.5
Bonapar'e	Max	70	73	85	72	68	73	66	62	61	61	64	66	69	62	60	63	51	62	75	72	76	56	55	58	66	55	59	66	65	66	70	65.5
	Min	60	57	67	46	45	56	50	44	34	36	37	39	44	51	43	40	40	28	39	44	43	43	30	26	26	28	27	29	33	44	46	41.1
Britt	Max	63	70	77	68	64	68	57	57	58	61	67	66	66	64	58	60	49	68	77	66	65	56	47	60	61	51	55	64	64	64	62	62.4
	Min	54	56	54	39	30	59	44	39	31	40	37	47	43	48	46	29	34	25	32	37	33	36	26	25	35	25	25	30	37	34	37	37 8
Burling'n	Max	70	74	83	75	72	73	66	60	66	64	67	69	71	65	64	64	51	61	78	74	75	61	57	57	65	55	58	66	66	66	71	66.4
	Min	63	62	62	50	47	58	52	45	38	42	42	44	47	52	52	47	40	31	42	42	45	46	31	31	41	33	29	33	40	48	52	44.7
Carroll	Max	83	81	65	72	71	67	63	65	66	68	65	66	67	56	64	59	71	84	77	78	75	60	65	67	60	64	72	68	68	64	64	68.2
	Min	54	53	52	40	32	53	42	40	28	40	38	35	42	46	45	28	33	27	53	40	46	37	30	30	36	23	28	35	42	45	43	39.5
Cedar R	Max	67	71	80	71	65	71	62	58	60	61	64	65	65	65	60	61	52	62	73	70	71	53	51	58	63	51	57	66	65	65	63	63.4
	Min	57	58	58	46	39	40	53	45	37	37	38	40	40	40	51	47	43	32	32	39	43	44	33	28	29	32	26	26	30	40	41	40 7
Chariton	Max	68	81	90	74	70	68	62	60	64	63	65	65	64	60	59	63	54	68	80	75	70	57	54	61	65	59	58	67	60	67	65	65.7
	Min	59	56	65	44	38	56	46	45	32	39	39	37	46	50	43	34	38	27	39	42	39	40	32	26	39	27	30	32	37	42	60	41.2
Charles C	Max	60	69	79	70	72	67	58	56	58	60	62	65	64	67	56	59	50	63	73	65	66	50	50	59	62	50	56	65	65	63	67	62.1
	Min	56	56	56	41	30	32	46	42	30	35	40	37	40	42	49	35	35	20	30	33	35	35	26	25	26	25	22	28	30	37	36	35.9
Clarinda	Max	74	88	86	76	77	76	67	68	74	70	72	67	65	62	55	60	57	71	87	80	76	60	61	71	68	65	70	74	69	63	..	70.3
	Min	57	60	64	41	46	46	45	42	30	40	42	40	41	48	50	33	36	28	31	37	38	30	31	28	33	28	26	32	36	35	39	39.3
Clear L	Max	64	70	75	65	65	65	56	57	69	60	63	64	64	65	58	51	51	62	73	67	66	57	47	59	60	52	56	63	62	64	62	62.0
	Min	54	55	55	45	31	44	44	37	33	37	37	35	48	42	45	35	33	32	33	40	35	37	31	27	39	26	28	35	42	35	38	38.5
Clinton	Max	75	67	83	69	66	78	64	59	59	62	64	68	68	67	65	60	54	59	68	68	68	55	49	53	66	50	54	63	63	65	69	63.8
	Min	62	56	55	43	48	51	51	44	34	33	35	38	45	47	50	48	35	28	35	40	36	39	29	28	28	28	21	28	30	35	45	39 0
Colum. J.	Max	69	73	81	69	64	74	65	58	58	61	63	66	68	66	59	59	52	59	69	68	70	58	53	55	66	52	55	64	63	65	70	63.6
	Min	60	57	66	48	42	58	52	43	36	38	39	42	45	41	49	45	39	30	39	44	46	41	31	27	44	33	26	30	38	46	51	43.0
Corning	Max	68	80	80	71	69	71	63	67	63	63	64	64	62	57	54	62	54	66	80	71	74	60	54	64	65	56	57	68	64	63	58	65.1
	Min	60	59	61	40	38	56	46	41	30	41	42	38	41	52	50	32	35	28	52	41	39	40	36	31	35	29	28	36	39	41	49	41.3
Corydon	Max	72	80	81	76	72	69	62	61	68	64	66	67	67	64	59	63	54	64	81	77	78	63	60	62	69	60	60	63	65	67	64	67.1
	Min	60	57	66	45	37	58	45	41	33	39	39	39	46	50	43	29	37	29	40	41	42	42	40	26	39	26	27	33	33	40	50	41.0
Davenpo't	Max	72	68	82	69	65	74	62	57	60	61	63	64	68	64	60	59	51	58	68	72	70	57	51	54	65	52	55	64	64	64	69	63.3
	Min	62	58	61	50	40	55	52	45	38	42	42	43	47	48	52	49	39	34	45	47	47	40	33	33	41	32	33	37	43	49	52	45.0
Decorah	Max	68	66	77	68	62	63	58	53	57	63	63	65	67	66	57	58	63	60	72	67	65	70	42	52	60	50	57	64	62	66	63	62.1
	Min	54	55	60	43	31	41	44	42	33	33	38	37	33	39	50	42	36	29	35	42	36	42	30	24	33	27	23	32	38	37	40	38.0
Delaware	Max	68	65	79	67	62	69	64	54	56	60	61	62	62	63	56	57	51	57	68	65	65	52	47	53	61	49	54	62	63	63	63	60.6
	Min	59	52	59	41	35	47	46	40	32	34	34	38	42	45	49	42	40	28	45	36	46	37	28	26	31	26	25	27	30	39	45	39 0
Des M	Max	66	75	82	73	66	70	63	61	61	62	64	63	65	62	61	62	51	66	81	71	72	61	53	62	66	55	59	68	66	66	58	64 9
	Min	58	59	55	46	34	56	48	43	35	41	40	41	48	52	46	36	35	31	42	48	46	42	35	29	41	34	29	34	40	45	49	42.7
De Soto	Max	66	80	82	73	70	71	62	61	66	64	67	65	65	60	61	65	57	70	86	76	77	61	55	65	66	56	62	71	68	69	61	67.0
	Min	58	57	64	43	35	56	48	44	31	39	38	36	48	51	49	35	37	29	43	42	43	40	36	25	41	26	20	32	38	40	45	40.9
Dows	Max	78	80	..	78	68	78	68	62	60	60	67	65	65	66	68	67	84	75	80	72	68	68	61	60	73	59	55	66	64	65	6	68.3
	Min	55	56	57	41	32	51	42	41	30	37	38	38	45	45	48	32	35	28	59	70	68	68	56	46	51	63	50	55	65	65	64	64	61 9
Dubuque	Max	69	65	81	70	62	72	60	57	58	59	62	64	65	63	58	58	51	59	70	68	68	56	46	51	63	50	55	65	65	64	64	61 9
	Min	60	54	56	46	42	51	48	45	38	36	41	41	42	43	52	48	40	34	43	47	43	40	35	32	38	33	28	35	42	47	47	42.8
Earlham	Max	65	81	82	73	79	71	61	65	63	65	65	65	60	59	63	56	54	66	81	75	73	61	54	64	66	58	58	69	65	65	60	65.9
	Min	55	52	61	37	30	52	39	27	37	35	30	39	49	47	30	34	33	24	40	34	38	37	30	26	37	21	16	29	36	37	40	36.4
Elkader	Max	65	62	78	73	67	69	65	55	60	54	51	63	65	65	58	59	53	62	75	71	68	55	50	58	65	55	53	67	68	66	67	62.8
	Min	60	58	62	41	33	42	47	43	32	30	33	34	38	38	52	45	41	27	39	38	32	40	27	22	31	23	20	26	38	37	39	37.7
Forest C'y	Max	64	71	80	70	65	68	56	52	61	62	65	67	66	68	54	56	54	66	80	67	67	49	60	61	63	57	56	66	67	65	64	63 1
	Min	44	45	67	40	32	40	44	40	33	36	40	39	45	44	43	32	33	27	32	42	35	37	30	29	38	29	27	28	34	36	38	34.2
Ft. Dodge	Max	64	72	78	..	69	65	60	58	62	65	66	64	65	55	62	68	72	70	76	80	70	60	51	58	60	55	59	68	66	65	69	65.1
	Min	57	55	60	..	31	48	45	44	31	43	39	42	47	47	35	41	40	37	35	42	41	39	35	32	32	33	31	35	42	40	51	41 0
Galva	Max	60	78	76	53	65	70	60	57	62	64	60	61	66	66	57	..	63	67	79	70	69	60	52	64	59	54	..	..	32	40	40	41	38.0
	Min	56	54	52	40	30	51	44	40	28	40	42	40	45	46	45	..	27	29	33	34	31	35	29	28	26	24	..	32	40	40	41	38.0
Grand M.	Max	64	63	77	67	59	65	64	54	56	59	61	68	67	63	59	58	48	56	70	65	63	57	48	56	60	49	55	62	63	63	65	60.7
	Min	58	56	62	44	34	45	45	42	34	35	36	38	41	44	50	41	39	29	40	42	45	35	29	28	37	28	27	35	40	41	40	39.9
Greene	Max	63	68	78	70	66	66	57	56	59	62	64	65	65	65	58	58	51	35	36	29	34	39	35	39	29	26	33	25	23	29	37	37	38	38.4
	Min	58	57	61	43	32	48	46	42	32	36	37	35	43	44	58	55	62	55	62	78	73	74	68	54	65	65	60	60	65	67	68	60	65.7
Greenfi'ld	Max	67	80	82	69	72	72	65	57	62	65	65	65	65	66	50	47	32	34	31	41	43	41	41	34	32	30	29	29	34	42	40	45	40.9
	Min	57	53	63	44	36	53	45	..	38	39	41	39	46	50	47	32	34	31	41	43	41	41	34	32	30	29	29	34	42	40	45	40.9
Grinnell	Max	65	69	73	68	63	68	65	58	56	59	62	62	64	64	59	59	57	64	71	66	66	62	49	57	63	55	51	54	63	62	61	61.9
	Min	58	57	63	47	37	54	50	43	36	40	39	41	46	50	49	37	38	31	43	45	43	40	33	31	39	28	32	35	42	44	50	42.6
Grinnell (near)	Max	65	70	79	69	67	68	65	59	56	59	61	63	64	65	58	58	53	62	71	62	66	60	49	57	63	55	54	54	64	65	63	62.1
	Min	58	57	56	43	35	53	48	43	34	40	39	40	42	56	48	35	35	28	57	45	40	39	33	31	39	28	32	35	38	43	50	41.9
Grundy C	Max	65	68	80	72	65	67	62	60	61	61	64	66	68	64	60	57	62	54	64	77	71	70	58	52	60	54	58	62	66	65	66	63.7
	Min	56	58	61	43	35	51	46	41	31	38	36	38	44	45	50	33	36	27	38	41	37	38	27	25	36	26	28	33	40	41	46	39.5
Guthrie C	Max	66	75	..	70	78	78	78	76	..	66	64	66	67	65	64	58	62	74	82	80	79	83	78	65	69	60	68	73	68	67	65	70.3
	Min	58	57	54	51	41	46	54	54	30	42	40	42	54	49	51	32	43	28	40	38	40	41	32	27	38	24	22	34	42	40	40	41.4
Hampton	Max	65	69	80	73	68	68	58	57	65	66	67	68	70	68	55	61	51	61	80	74	72	58	50	67	64	59	60	68	68	66	68	65.3
	Min	56	57	58	43	33	49	45	41	34	37	36	35	45	44	48	34	36	30	40	38	37	39	32	29	40	28	29	35	41	42	41	39.7
Hanlont'n	Max	65	68	75	68	62	65	65	51	58	60	62	64	63	65	54	58	49	64	77	68	66	66	55	46	66	60	54	57	66	66	66	61	62 2
	Min	54	55	51	40	30	50	44	40	30	35	38	35	46	41	46	32	34	29	35	37	34	35	28	28	38	26	24	32	40	32	39	37.4
Harlan	Max	63	81	80	69	68	73	62	59	64	63	64	62	63	55	63	55	63	68	78	70	71	53	51	58	63	51	57	66	65	65	63	63.4
	Min	56	58	55	42	35	56	46	42	30	42	39	47	50	45	30	35	27	36	40	38	39	32	27	35	27	25	30	32	35	39	47	39.3
Hopeville	Max	68	81	81	73	71	69	62	60	66	63	65	63	63	58	56	62	51	65	79	77	76	60	59	64	65	57	59	69	65	66	62	66.3
	Min	60	59	61	45	39	56	46	46	34	40	41	38	47	51	48	35	37	30	43	44	42	40	34	30	40	32	29	34	38	41	51	42.3
Humboldt	Max	78	65	73	68	64	66	60	59	60	64	66	66	66	66	67	59	60	50	70	79	66	68	56	46	51	63	50	55	65	65	63	67	62.1
	Min	58	57	55	44	34	52	48	45	30	42	41	36	45	47	48	32	38	30	35	38	38	38	32	30	37	24	24	32	38	38	41	39.5
Indep'nce	Max	64	66	80	69	64	67	58	54	58	68	62	64	65	66	56	57	53	59	72	67	66	55	48	55	63	51	55	66	64	62	59	61,7
	Min	59	55	58	66	33	48	48	41	33	35	35	38	43	45	51	40	39	27	35	41	39	39	27	25	32	24	23	27	35	39	46	39.5
Indianola	Max	65	78	81	73	69	70	62	61	62	62	64	63	65	59	60	62	55	65	80	73	74	61	55	62	66	55	59	69	66	62	60	65.1
	Min	58	49	53	44	38	56	49	44	33	39	39	44	48	52	50	35	35	29	42	43	43	41	33	27	46	27	28	34	40	34	58	42.0
Iowa City	Max	71	71	81	70	76	70	63	58	66	63	67	68	69	68	59	61	51	63	73	73	72	53	52	58	66	56	59	67	65	68	69	65.4
	Min	52	59	59	45	40	40	53	45	36	35	35	40	40	44	50	46	43	29	39	37	38	38	29	24	22	31	23	21	26	35	45	38.4
Iowa Falls	Max	66	71	78	70	65	68	60	58	53	60	64	66	65	66	56	61	49	66	76	67	68	50	48	60	63	52	56	65	63	63	64	61.1
	Min	57	57	61	40	30	31	45	40	30	31	38	33	34	44	46	32	33	26	30	33	38	38	26	22	27	25	21	30	31	38	41	35.7
Keokuk	Max	70	72	84	66	69	73	63	61	58	61	63	65	69	65	56	54	51	46	43	34	46	50	47	46	33	33	46	34	32	38	40	50	53	46.6
	Min	64	63	68	53	49	58	54	47	40	41	40	45	46	68	63	61	61	51	62	74	70	72	55	53	57	65	54	55	65	65	68	..	64.3
Keosa'qua	Max	70	74	82	65	69	73	64	61	60	62	64	66	66	66	39	47	47	39	43	30	41	42	40	46	33	25	26	27	22	24	31	34	45	39.9
	Min	58	58	64	47	43	44	55	45	37	34	36	36	39	63	66	50	62	52	73	79	70	67	69	57	70	70	65	59	70	61	58	60	64.1
Larchw'd	Max	67	77	74	56	65	62	59	58	63	67	64	64	56	63	66	57	62	52	73	79	70	67	69	30	32	34	28	28	35	41	42	29	39.1
	Min	46	53

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR OCTOBER 1903—CONTINUED.

STATIONS.		DATE.																													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Lenox....	Max..	68	80	81	71	69	72	61	60	63	62	64	62	61	57	54	61	52	65	78	72	74	64	54	64	65	55	57	68	64	64	59	64.9
	Min .	59	59	63	45	38	56	46	41	35	40	42	39	48	51	48	34	36	29	41	44	42	40	30	30	38	31	30	34	38	40	48	41.8
Leon.....	Max..	70	80	80	70	63	69	69	60	61	62	63	65	64	64	59	61	56	63	77	72	72	63	54	60	59	60	56	66	63	66	62	64.9
	Min ..	60	58	62	47	40	57	48	43	36	41	42	39	46	52	46	36	38	30	42	46	44	43	36	30	41	31	29	35	38	43	52	42.9
Logan....	Max..	70	81	80	67	68	75	68	62	60	65	66	66	65	64	67	68	59	65	61	75	64	67	56	65	60	56	65	67	65	64	60	65.9
	Min ..	48	54	50	47	36	45	50	37	35	44	44	44	40	45	40	38	34	30	23	37	36	35	32	31	30	28	32	23	24	32	42	37.6
Maquo'ta.	Max..	78	68	81	72	67	73	62	60	63	62	65	63	68	64	65	60	60	54	70	74	72	56	52	55	68	54	58	66	66	67	68	64.9
	Min ..	55	55	55	41	38	39	55	44	43	30	30	34	35	43	47	47	42	38	28	28	33	33	26	20	20	22	18	18	20	28	39	35.6
Marshlt'n	Max..	66	72	83	75	69	68	68	62	63	64	66	67	70	69	66	64	53	66	79	73	73	54	54	62	68	56	59	69	68	66	61	66.2
	Min ..	57	57	60	44	34	36	47	42	32	34	37	37	39	46	48	34	34	28	35	38	41	40	28	23	29	26	21	22	32	38	41	37.4
Mason C..	Max..	63	67	74	67	62	65	56	56	57	60	62	62	64	66	60	57	57	61	73	66	65	57	49	60	60	53	57	64	65	64	62	61.6
	Min ..	57	57	60	45	36	50	46	42	35	40	40	40	48	44	50	35	37	33	39	44	39	43	33	32	40	31	33	36	43	40	42	41.0
M'nticello	Max..	75	85	82	75	65	62	60	69	65	65	64	65	62	64	70	75	72	70	65	60	64	62	65	65	63	68	65	62	67	65	67	67.2
	Min ..	60	68	52	33	37	39	40	31	32	33	37	30	40	37	26	29	33	32	29	26	27	28	24	28	25	22	20	23	34	37	35	33.7
Mt. Ayr..	Max.	70	83	82	75	74	70	62	63	69	60	69	65	63	63	59	63	54	67	81	78	78	67	58	65	65	57	61	70	65	65	59	67.1
	Min ..	59	59	64	46	39	55	45	42	39	39	41	41	49	51	49	36	37	29	42	46	46	41	34	32	40	33	30	36	40	40	50	42.9
Mt. Pl'snt	Max..	72	73	82	75	67	75	64	60	57	65	61	65	68	60	60	58	51	58	70	68	68	58	52	52	63	55	52	61	63	66	69	63.5
	Min .	59	56	60	45	42	53	51	44	36	36	35	39	43	50	46	41	41	26	36	45	40	44	32	25	33	31	23	28	35	43	46	41.4
Mt. Ver'n	Max.	67	67	79	69	72	65	58	52	58	65	69	65	69	62	58	60	57	58	71	73	68	53	52	55	62	57	57	63	61	59	67	62.8
	Min ..	60	55	60	42	35	52	49	40	33	36	37	35	44	47	51	44	40	27	37	42	42	40	30	25	33	27	27	28	34	44	48	40.2
New H. ..	Max.	63	64	77	76	60	..	59	52	57	58	60	62	63	64	60	56	54	60	73	66	64	56	47	57	61	51	55	64	64	63	65	61.0
	Min	55	53	59	42	38	40	43	..	30	38	36	37	42	42	42	44	35	25	35	35	34	38	38	24	33	26	25	29	45	37	38	37.9
Newton ..	Max.	67	70	79	69	64	67	67	60	58	60	63	65	65	64	60	60	57	65	75	68	68	63	52	59	63	53	56	65	63	65	62	63.6
	Min ..	57	57	57	45	36	53	42	42	35	38	38	40	46	46	48	35	37	28	40	44	41	39	32	27	38	29	26	31	39	43	43	40.4
Northw'd	Max	63	67	75	66	60	65	55	53	55	59	61	63	64	65	56	57	50	64	75	67	64	56	47	60	60	51	56	64	65	64	62	60.9
	Min .	54	55	53	42	33	48	42	42	32	38	39	37	48	42	46	48	34	28	36	45	36	33	30	26	38	27	24	29	35	35	40	38.8
Odebolt ..	Max.	65	78	75	66	66	69	62	58	63	64	66	64	65	68	56	64	54	70	78	71	70	61	51	65	65	55	69	74	65	65	62	64.6
	Min ..	55	55	51	41	32	52	44	41	29	42	44	38	43	48	46	32	34	38	38	39	34	35	31	30	33	26	25	36	38	41	45	39.2
Ogden.. .	Max..	65	78	84	72	70	71	68	65	65	66	68	67	65	69	67	65	50	70	85	75	73	55	55	68	68	60	65	71	70	68	..	67.9
	Min ..	44	54	59	41	31	37	42	36	27	34	37	36	37	44	49	27	29	25	34	35	35	35	26	26	27	30	25	28	36	36	39	35.6
Olin	Max..	72	67	81	70	67	72	65	57	56	64	60	62	65	64	60	64	53	58	68	66	65	55	50	53	63	53	53	63	62	67	64	62.2
	Min ..	62	56	63	40	42	52	50	43	34	32	40	44	45	48	52	46	44	28	34	43	44	41	27	21	31	27	21	23	32	37	44	40.5
Omaha, N	Max..	66	85	78	70	71	82	63	62	68	66	67	58	61	60	55	66	51	70	85	74	75	65	56	70	66	59	61	69	66	61	57	66.5
	Min ..	58	61	55	48	44	60	49	45	40	47	50	47	51	52	47	38	38	39	48	47	46	43	37	40	44	37	36	42	46	48	48	46.2
Onawa....	Max.	65	82	76	63	69	73	67	65	66	68	66	60	64	63	59	68	56	73	84	75	74	65	62	70	71	59	62	72	66	66	59	67.4
	Min ..	57	58	60	47	39	57	47	43	36	46	47	50	47	49	48	33	36	35	40	42	41	40	33	34	39	31	30	36	42	46	45	43.9
Osage.....	Max..	65	65	75	67	61	65	55	51	54	59	60	63	62	65	57	55	55	60	71	64	62	56	45	57	53	48	53	63	63	63	61	59.8
	Min .	55	55	57	40	31	47	45	42	32	36	38	35	45	41	50	35	35	29	34	38	34	39	28	26	33	25	26	31	38	37	38	37.9
Osceola...	Max..	72	84	83	70	76	71	65	65	66	66	66	70	65	57	67	64	61	80	81	76	74	54	65	70	66	63	65	69	69	70	66	68.9
	Min	58	57	63	37	35	39	47	43	35	40	37	42	36	47	48	34	37	30	45	44	42	50	36	30	40	30	29	32	39	43	45	41.0
Oskaloosa	Max..	67	74	80	69	66	70	62	60	58	62	65	65	65	61	58	60	54	64	76	70	71	61	53	60	65	54	58	63	67	66	65	64.2
	Min ..	60	54	66	45	40	56	50	45	34	40	39	40	45	51	48	37	39	29	43	42	43	40	30	24	39	29	23	31	40	45	53	41.9
Ottumwa	Max..	68	76	83	75	73	72	65	62	62	63	66	67	70	62	60	66	..	65	80	80	78	..	56	62	68	60	60	70	67	70	70	68.1
	Min .	58	60	66	47	40	56	49	44	35	35	40	40	44	51	48	38	42	32	44	43	48	43	32	28	42	30	26	32	36	48	53	42.8
Pacific J'n	Max..	69	85	80	74	70	79	70	62	66	65	69	60	63	58	46	64	57	67	79	70	72	55	57	67	66	52	61	68	65	60	55	65.5
	Min ..	58	61	60	44	37	59	48	41	31	43	46	44	49	51	52	30	37	30	36	36	36	40	28	31	35	27	31	34	40	42	50	41.5
Perry.....	Max..	66	78	82	71	67	71	62	59	61	63	65	65	66	66	59	62	53	68	80	71	70	59	52	65	65	54	59	69	66	65	62	65.4
	Min .	58	58	59	46	36	54	47	44	33	39	33	38	47	50	48	33	32	29	39	41	40	40	34	28	37	28	25	30	36	37	48	40.2
Plover....	Max..	62	75	78	69	66	66	63	60	61	63	62	67	64	65	56	55	60	66	77	70	73	75	62	50	60	53	56	58	67	66	59	64.0
	Min ..	53	59	68	40	31	59	43	38	29	34	33	35	43	43	38	36	28	26	38	44	38	43	26	30	29	26	28	24	32	37	40	37.9
Primghar	Max..	62	74	77	60	61	63	56	56	61	64	64	58	62	66	53	60	49	61	76	67	66	55	53	60	52	57	61	67	67	59	58	61.5
	Min ..	53	4	51	41	41	33	36	39	33	43	44	56	43	43	43	32	33	32	39	58	36	35	31	40	28	28	31	37	41	43	40	39.6
Red Oak..	Max..	68	80	79	70	68	78	63	59	63	63	63	64	63	60	56	63	55	61	74	66	68	62	54	63	64	60	57	64	63	62	58	64.1
	Min ..	61	62	59	49	44	61	48	44	36	48	50	46	51	53	50	37	39	34	42	41	40	42	37	35	39	31	29	36	42	45	53	44.6
Ridgeway	Max..	70	68	82	68	67	69	57	56	63	62	64	68	70	74	60	60	56	66	77	71	70	58	53	64	69	59	61	70	71	70	72	66.0
	Min ..	59	55	54	43	32	50	45	43	33	40	38	40	49	45	51	38	38	28	39	42	37	39	31	28	38	28	29	33	40	41	43	40.8
Rockw'l C	Max .	61	76	74	75	70	70	60	58	61	63	64	61	65	65	56	62	59	69	80	70	68	69	67	64	60	63	58	67	65	65	66	65.5
	Min ..	55	54	55	56	55	52	45	43	35	40	40	38	45	46	48	33	32	33	41	40	38	37	35	30	38	27	28	33	38	38	43	40.4
Ruthven .	Max..	64	71	74	68	63	63	..	52	60	62	63	62	63	65	..	62	..	68	89	73	71	64	58	64	62	58	59	70	65	63	66	65.1
	Min ..	52	54	55	45	35	52	44	42	33	42	43	39	46	55	48	30	41	32	37	59	48	54	32	34	39	30	32	38	43	40	44	42.4
Sac City..	Max.	68	78	73	67	66	69	59	59	62	64	66	64	64	66	61	62	58	71	80	77	70	60	53	64	64	63	59	69	65	65	62	65.4
	Min ..	50	55	54	44	59	59	44	41	31	41	40	37	44	46	46	32	34	29	43	42	38	37	34	30	39	32	25	34	42	49	40	41.0
St. Cha'les	Max..	65	82	82	82	72	68	62	64	68	65	67	66	64	58	62	64	55	66	83	79	79	62	58	76	68	56	65	72	69	60	60	68.0
	Min ..	59	58	65	46	37	5'	48	42	36	40	39	37	48	51	50	36	38	32	46	45	45	41	36	31	44	30	28	37	41	44	49	43.1
Sibley	Max..	59	73	70	65	60	59	40	58	66	66	64	57	55	68	62	62	49	..	68	68	67	..	62	63	52	44	59	46	46	40	..	58.9
	Min ..	50	50	58	40	32	51	43	39	30	43	43	44	45	42	42	28	..	30	..	35	32	35	..	32	40	28	27	34	34	44	36	38.8
Sigourn'y	Max..	79	75	80	82	69	70	64	60	60	67	66	70	70	65	59	81	57	63	75	72	72	60	54	60	65	59	58	68	68	67	69	67.0
	Min ..	39	44	43	45	39	51	50	44	34	35	35	38	38	49	48	37	37	28	40	44	44	40	29	27	28	28	24	29	35	44	48	38.5
Sioux C'r.	Max.	59	77	74	58	65	60	55	57	62	66	65	57	60	66	56	62	49	68	78	68	67	60	53	66	63	55	57	67	67	59	59	62.5
	Min ..	50	53	52	41	32	52	39	40	34	43	45	47	44	44	45	30	31	28	39	39	36	35	32	32	38	28	27	34	37	42	36	38.9
Sioux C'y.	Max..	59	83	78	62	66	68	62	59	65	66	66	54	63	66	58	69	46	74	84	73	71	51	56	72	65	56	60	70	65	60	60	64.8
	Min ..	51	57	52	40	36	56	49	42	33	46	49	48	46	48	44	34	34	37	44	40	39	37	37	36	42	31	35	39	44	46	42	42.4
Storm L..	Max..	60	75	64	65	66	50	57	60	62	64	61	63	66	57	60	50	68	78	70	68	58	53	60	60	55	58	68	64	63	62	..	62.2
	Min ..	53	53	53	39	35	53	45	41	31	42	40	40	42	46	42	30	34	35	40	27	30	36	31	29	34	20	28	35	38	36	34	37.8
Stuart. ..	Max..	70	80	80	70	66	71	61	72	61	62	63	65	64	61	57	61	57	..	76	68	68	62	50	61	..	63	56	60	64	82	61	65.4
	Min ..	57	59	42	46	35	44	47	42	23	29	34	26	34	38	38	23	26	..	32	32	31	28	25	20	..	19	18	25	19	28	38	33.0
Thurman.	Max..	69	84	80	70	68	78	70	62	68	64	67	62	61	58	53	62	58	67	81	69	73	65	56	68	67	57	59	67	64	58	55	65.8
	Min ..	60	62	62	41	39	60	52	47	38	45	47	41	49	52	47	30	37	28	38	38	35	42	44	28	35	27	25	31	42	40	52	42.4
Tipton....	Max..	75	67	81	72	70	72	63	57	63	62	67	66	64	65	62	60	53	60	70	71	70	58	54	55	65	56	57	65	65	65	68	64.5
	Min ..	64	58	63	48	43	55	52	44	36	40	39	41	47	49	51	47	42	30	40	46	44	43	32	28	37	33	30	31	39	33	51	43.1
Toledo....	Max..	66	70	81	73	67	68	63	59	63	62	66	68	70	69	60	62	55	66	78	73	72	59	55	60	67	56	59	69	68	66	62	65.5
	Min ..	58	57	62	42	34	51	49	42	31	37	38	36	46	48	50	36	38	27	35	42	41	39	27	21	34	26	20	29	38	43	48	39.5
Washi'ton	Max..	74	83	71	64	70	64	60	60	62	66	68	65	63	53	62	53	62	74	72	74	57	55	58	67	56	59	67	66	67	74	..	65.1
	Min	57	55	48	43	39	50	48	41	33	35	34	39	41	42	40	39	33	26	36	42	39	34	27	25	32	28	25	28	35	43	50	38.3
Waterloo.	Max.	65	70	82	74	66	68	62	57	61	61	65	67	68	70	68	61	52	63	76	72	69	55	52	62	65	52	59	69	68	65	66	64.8
	Min .	55	57	57	44	33	40	49	42	33	34	37	38	42	44	47	38	36	30	35	41	38	35	28	24	33	25	23	28	36	41	45	38.3
Waverly..	Max..	64	66	79	70	70	66	58	55	56	60	62	64	65	67	56	59	55	60	75	67	66	54	48	58	62	51	56	65	65	64	64	62.2
	Min .	59	56	61	44	34	50	48	42	33	38	40	39	45	45	50	37	37	29	34	42	37	40	28	25	33	25	23	30	39	40	43	39.5
W.Bend ..	Max.	59	73	79	67	64	64	60	57	61	63	65	66	66	66	56	62	49	70	78	68	65	57	50	63	62	54	58	68	66	66	66	63.3
	Min .	49	55	56	43	32	52	43	42	31	39	40	36	45	44	46	30	34	30	36	40	34	33	31	30	37	23	27	31	41	38	39	38.3
Whitten..	Max.	66	70	80	69	64	68	62	59	58	60	62	64	65	65	59	60	55	64	74	66	66	51	48	58	63	54	55	65	63	65	63	62.9
	Min	56	57	61	42	33	50	45	40	30	38	38	38	55	45	49	33	35	26	37	42	37	38	27	24	35	25	24	30	37	40	45	39.1
Wilton J.	Max.	75	80	82	70	65	73	65	58	59	63	64	66	65	67	63	..	.	..	63	..	67	68	53	53	65	56	54	63	62	66	70	65.0
	Min	57	57	64	44	42	52	53	45	34	37	37	37	45	47	47	..	..	..	37	..	42	40	27	23	33	29	22	27	36	42	50	41.0

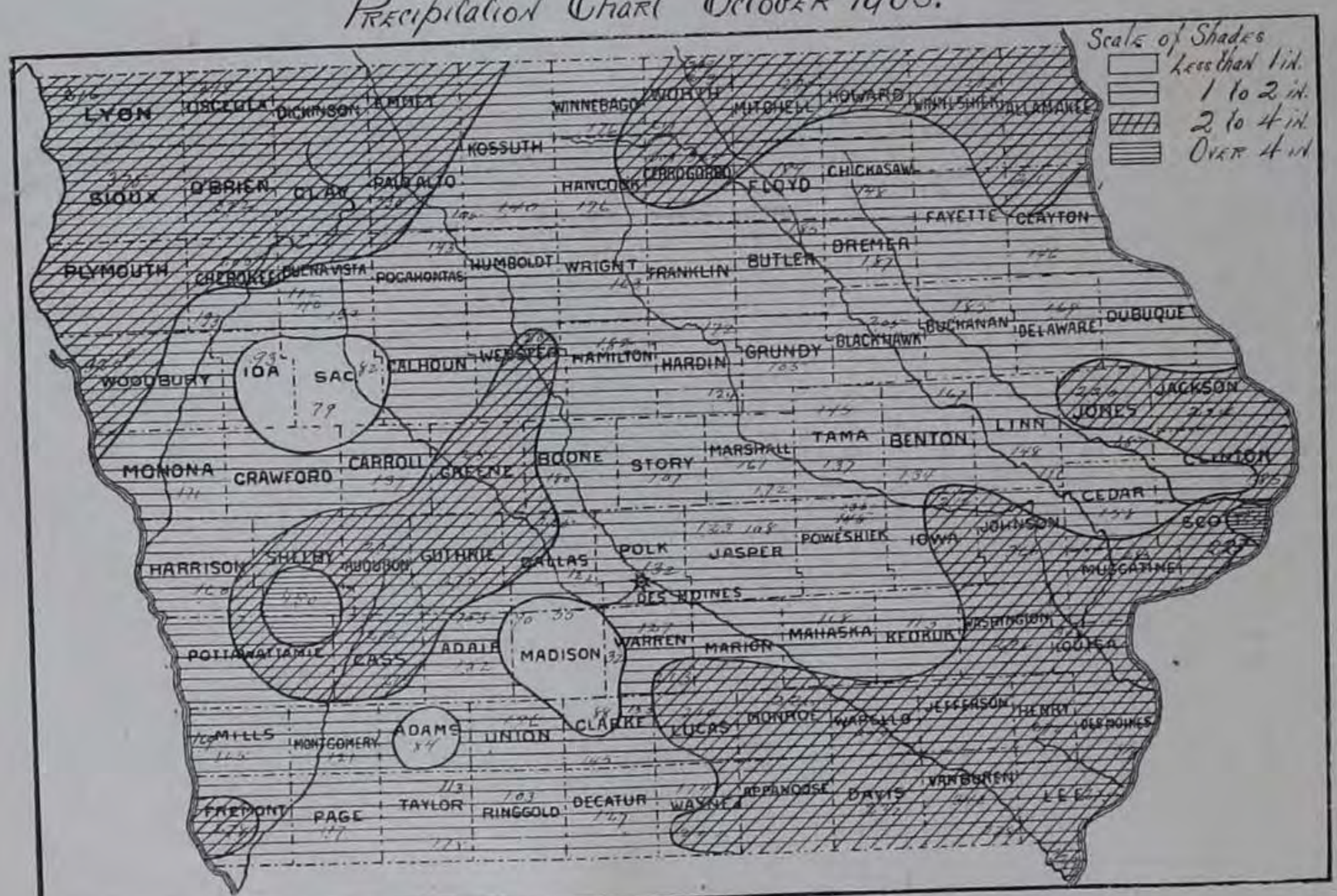
DAILY AND MONTHLY PRECIPITATION FOR OCTOBER, 1903.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	.89	....	....	....	.81		....	....	....	....	....	..	.11	.15	....	....	..	....	....	...	....	....	...	..	....	...	..	....	..	T	1.96
Albia	.02	.02	1.10	.13	....	....	.65	....	....	....	..	....	..	...	.12	.	....	....	....	....	....	..	..	....	....	..	....	....	....	T	.22	2.26
Algona	....	....	.50	....	....	.45	....	..	....	..	....	....	....	..	.45	..	..	....		..	....	....	..	....	....	....	....	....	....	..	....	1.40
Allerton	T	.95	.35	....	..	.29	.45	....	....	....	....	....	....	.06	.02	....	.	....		..	..	....	..	....	..	....		..	....	..	.10	2.22
Alta	.03	....	.08	....	..	.92	....	....	....	....	....		....	....	.09	..	..	..	....	....	....	..	..		....	....	....	....	....	....	..	1.12
Alta (near)	....	.05	.07	....	....	1.04	....	.	....	....	..	....	....	....	..	....	..	....	..	..	....	....	....	....	..	....	....	....	..	..		1.16
Amana	.18	.22	.85	....	.	.21	.55	....	....	..	....	..	....	....	T		..	....	....	..	..	....	....	..	..	..	..	....	..	02	.12	2.15
Ames	.35	.17	.05	....	....	.46	T	....	....	....	....	....	....	.04	..	..	....	..	..	....	....	....	....	..	....	....	....	....	....	T	..	1.07
Atlantic	....	T	..	..	....	1.48	....	....	....	....	..	..	T	.05	.15	....		....	....	....	..	....	....	..	....	..	..	..	..	..	.26	.18	2.12
Audubon	....	.60	.27	....		1.42	....	..	....		..	....	..	.04	.17	....	....	....		....	....	....	....	....	....	....	....	....	....	....	.22	2.72
Baxter	...	.58	....	....	....	.65		..	..	....	....		..			..	....	....	....	....	....	....	....	....	....	....	....	....	....	..	...	1.23
Bedford	....	.74	T	....	....	.48	T	....	....	.	....	....	....	.28	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.16	.12	1.78
Belknap	...	.92	.10	....	....	.33	.57	..	....	....	....	....	....	.33	T	....	....	....	....	....	..	....	....	....	....	....	....	....	....	..	.07	2.32
Belle Plaine	.11	T	30		....	.90		..	....		....	....		T	.	....	.	....	....	..	....	....	....	....	..	....	....	....	....	.01	.02	1.34
Bonaparte	....	1.27	.29	....	....	1.63	.50	...	..	.	....	....	.09		....	....	....	....	..	..	....	....		....	..	....	....	....	....	....	....	3.78
Britt	.02	12	.44	..	....	.90	.01	.08	....	....	....	..	..	T	.19	....	....	....	.	..	....	....	....	....	....	....	....	....	..	....	....	1.76
Buckingham	....	.13	02	..	....	1.25	...	..	...	....	....	....	..	.02		....	....	....	....	....	....	....	....	....	.		....	..	..	....	....	1.45
Burlington	...	.47	.06	....	..	.8	1.23	....	....	....	..	....	....	T	.12	....	....	....	..	....	....	....	..	....	..	....	..	....	....	T		2.74
Carroll	..	.54	09	....	....	.48		....	..		...	....	..	.20	..			....	....	....	....	....	..	....	....	....	..	....	....	....	.08	....	1.39
Cedar Rapids	.19	....	.14	.26		.02	.66	..	....	....	....	....	..	....	...	.13	....	..	....	....	....	..	..	....	..	....	..	....	....	....	.08	1.48
Chariton		1.10	T	....	.30	.20	T	....	...	....		....	..	....	.		..	....	....	....	....	..	....	....	....	....	....	....		.50	2.10
Charles City	.12	.04	.25	52	....	.10	.72	.04			....	....			.20	.05	....		....	..	....	....	..	....	..	..	....	....	....	....		1.84
Clarinda	..	.36		....	....	....	35	....	....	....		....	....	.35	....	....	....	....	....	....	....	....	....	....	....	.	....	.	....	....	.11	1.17
Clear Lake	.55	.28	.35	....		1.15	T		....	....	....	..	....	....	.75	....	..	..	..	....	..	..	....	....	....	....	....	....	....	....	....	3.08
Clinton	....	.05	.11	....	....	....	1.44	....	...	....	....	....	....	....	.17	....	....	..	....	....	....	....	....	....	....	....	....	....	....	.02	09	1.85
Columbus Junct'n	....	.53	.39	....	....	1.35	.90	.	....	....	....	....		....	.06	.	....	....	..	....	....	....	....	....	....	....	..	...		....	.05	3.28
Corning	....	.21	..	....	..	.34	T			...		....		.02	.05	....	....	..	..	....		....	....	....	....		....	....	....	....	.22	.84
Corydon	....	.59	.03	....	....	.21	.49	....	....		....	....	T	.22	.05	....	..	..	..	....	....	....	....	....	..	..	..		....	..	....	.15	1.74
Cumberland	.20	..	....	..	....	1.20	....	....	....	....	..	....	T	T	.40	....	....	....	....	..	..	..	..	....	....	....	..	....	....	..	.20	.15	2.15
Davenport		.25	.45	..	....	.30	1.22	....	....	..	..	..	....	....	.02	.01	....	....	....	..	..	..	..	....	....	....	....	....	....	....	T	.05	2.27
Decorah	.03	.02	.46	....		1 24	.04	....		....	....	....	....		0 34	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.13
Delaware		....	.30	....	....	.75	.42		..	....	..	....	....	....	.22	.	....	....	..	..	....	....	....	....	....	....	....	....	....	T		1.69
Des Moines	T	.59	.04	....	....	.60	T	....	....	..		..	..	.07	.01	....	....	....	....	..	....	....	....	....	....	....	..	....	....	....	....	.01	1.32
De Soto	....	.22	.04	..	....	.20	.04			.	....	....	....	.05	T	....	.	..	....	....	....	....	....	....	....	..	..	....	....	..	T	.55	
Dows	..	.30	.22	..	....	.30	.05	...		....	....	....	....	....	.76		....	..	....	....	....	....	....	....		....	....	....	....	....		....	1.63
Dubuque	T	.01	.74	....		.24	.60	T	....	....	....	....	....		.07	T	T	..	....		....	....	....	....	....	....	....	.	....	T	T	1.72
Earlham		.42	...		....	.36	..	....	..	....		....	.08	.06	....	....	.	....		....	....		....	....	....	..	....	....	....	.	T	.90
Elkader	.05	.02	.50	....	....	.60	T		....	..	....	....	....	.05	.24	.	....	....	....	....	....	....	....	....	....	....	....	....	....	....		1.46
Forest City	.05	25	..	.26	....	..	.78	T	....	..	....	....		..	.30	.12	....	..	....		....	....	....		....	....	....	....	....	....	....	....	1.76
Fort Dodge	....	.32	.15	...	...	1.10	....	...		....	....	....	T	.45	....	..	..	....	..	..	....	....	....	....	....	....	....	....	....	T	....	2.02
Fort Madison	T	....	.12	....	....	2 58	T	..	....	....	....		....	05		..	....	....	....	..	..	..	..	....	....	....	....	....	..	....	....	2.75
Galva	....	....	..	....	....	.93		..	....	....	..	..	....	T	T	...	....	....	..	....	....	....	....	....	....	....	....	....	....	T	....	.93
Gilman	.19	.60	T	....	..	.79	T	....	..	....	....	....		.03	T	....	....	....	....	....	..	....	....	....	....	....	....	....	....	.11	....	1.72
Glenwood				....		.50	T	..	....	....	..	....	....	T	.25	...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.50	1.25
Grand Meadow	....	.10	.55	..	....	1.10		..	....		..	..	....		.36	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....		2.11
Greene	.10	.2	.22			81	.04	....	....	....	....	..	....	....	.45	....	....	....	....	....	....		....	....	....	....	....	....	....	....	....	1.85
Greenfield	30	.33	....	....	....	.30	T			....	....	....	....	.05	.30	.01	....	....	....	....	.	....	....	....	....	....	....	....	....	....	23	1.52
Grinnell	.14	.41	.10			.85		...		....	....	....	....	15			....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	1.45
Grinnell (near)	.07	.15	.15	....	....	.60	.28	....	....	..	....	..	....	.10		....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	1.85
Grundy Center	.03	.21	.06	....	....	.37	.22	..	..	..		....	....	.04	.12	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	1.03
Guthrie Center	....	.17		....	....	2.00		....	....	....	....	..	....	.05	.14	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	.39	2.75
Hampton	....	.24	.28	....	..	.80	T			.	....	....	..	.45	.05	....	....	....	....	....	.	....	....	....	..	....	....	....	....	....	....		1.82
Hanlontown	.03	.08	.60		...	1 00	.04	.02		....	.		...	....	.40	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	2.17
Harlan		2 80	.07	....	..	1.25	T	.	....	T	....	T	.01	.06	....	....	..	....	....		....	....	....		....	....	....	....	T	.31	....	4.50
Hopeville		.60	T	....	....	57	T		....	....	....	....		.17	.08	..	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	.03	1.45
Humboldt	.34	.10	.22	....		1 14		...	....	....	....	....	....		.61	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.41
Independence	....	.40	.45	..	....	.50	T	....			..	....			.50	....	....	..	....	....	....		....	....	....	....	....	....	....	T	....	1.85
Indianola	T	.49	T			.51	T	....	.	....	..	..		.19	.03	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	.05	1.27
Iowa City	63		54	.34	..	....	1.95	T	....		....	....	....	....	T	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	.05	.09	3.60
Iowa Falls	.19	T	.11	.19	....	T	.53	T	....	....	....	....		....	.68	.02	..	....	....	..	....	....	....		....	....	....	....	....	....	....		1.72
Jefferson		.45	.27		....	1 28		....	....	.	....			...	.20	....	....	....	....	....	....	....	....	....	....	..	....	....	....		.32	2.52
Keokuk	...	1.21	.01	....	....	.97	.92	..	....	....	....	..	..	.12		....	....	....	....	....	....	....	....		....	....	....	....	....	T	T	3.23
Keosauqua			1.22	.40			1.68	....	....				..		15	..	....	....	....	....	....	....	....		....	....	....	....		....	.02	3.42
Lacona	...	74		....	....	.47	.41	....	..	....	....		.21	.17	.13	....	....	....		....	....	....	....	..	....	....	....	....	....	T	2.13
Larchwood	...	T	.76	....	....	.8		....	....	....	10	.50	....	....	T	....	....		....	....	....	....	....	....	....	....	....	....	....	....		2.16
Larrabee	....	....	.17		....	1.73	T	....	....	....	.10		....	.02	T		....	....	....	....	....	....	....	....	....	....	....	....	....	0	T	2.05
Le Claire	.09	....	09	.81	..		1.99	02	.	....	....	....	....	....	.14	T	....	....	..	....		..	....	..	..	....	..	....	....	.02	.01	3.17
Lenox	....	.35	....	.	....	.55		....		....	....	....	....	T	.05	.	....	.	....	....	....	..	....	....	....	....	....	....	....	.05	.13	1.13
Leon		.45	.08	...	....	.18	.40	....	...		....	.		.16	....	....	....	....		....	..	....	..	....	....	....	....		....	....	...	1.27
Logan	.08	.40	....	...	.30	...		....	....	....	....	....	....	.15	....		..	..	....	....	..	....	....	....	....	....	....	....	.37	.30	1.60
Maquoketa	.34		.06	.60	....	..	1.15	.06	.		....	....	....	..	.03	T	....	....	....	....	....	....	....	....	....	....	....	....	....		T	2.24
Marshalltown	.03	.04	.13	....	....	....	1.32		...	....					.05	.02	..		....	....	..	..	....	....	..	....	....	....	....	....	.02	1.61
Monticello	T	.10	.90	.20	.05	T	.95	T		....	....	....	....	T	....	....	....	....	....	....	....	....	....	....	....	..	....	....	T	T	...	2.20
Mason City	.50	.45	.33		....	1 40	....		....		....	..	....		.57	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....		3.25
Mount Ayr		.22	08		....	.35	.03	....	....	....				.17	.05	....	..	..	....	....	....	....	....		....	.	....	....	..	.09	.09	1.03
Mt. Pleasant		.15	.51	.01	....	40	1.58		....	....	....		....		.04	..	....	....	....	....	..	..	..	....	....	....	....	....	..	.01	.02	2.72
Mt. Vernon	.08	.07	.21	....	....	2 5	.49			.	....	....		T	.02	....	....	....	....	....	..		....		....	....	....	....	....	.02	.02	1.16
New Hampton	.02	.	.52	....	..	70	.03	....	....	....		....	....	.02	.19	....	....	....	....	....	....	....	....	....		....	....	....	....	....	....	1.48
Newton		72			..	.3		....		..	....	....	..	.05		....	....	....	....	....	....	....	....	....	....	....	....	....	....	....			1.08
Northwood	..	05	.49	.	....	1.04	.03		...		....	....	....	...	.52	.	....		....	..		...	....	....	....	....	....		....			2.13
Odebolt	...	.14	.03		..	.52	....	..	....	....	....	..	....	.10		...		....	....		....		..	....	....	....		....		....		.79
Ogden	.50	T	.30	.16	....		82		....			....	..	...		.10	....	....	....	..	....	....	...	....		....	....	..	....	....	.12	1.80
Olin	....	.30	..		...	1.20	T	....		....		....	....	T	.31		....		....	....	....	...	T	....	....	....	....	....	..	.01	.05	1.87
Omaha, Neb	....	.02	.01	..	..	.31	T	....	....	....	T	.05	03	.06	07	..	....	....		....	....	....	....	....	.	..	....		....	.22	.42	1.19
Onawa		1.14	03			.10			...	....	T	31	....	.03	.08	...	....	..	....	....	....	....	....	....	....	....	....	....	....	..	.02	1.71
Osage	.39	.34	.47	....	....	1.25	T	....	....	....			....	...	54	....	....	....	..	....	....	....	....	....	....	....	....	....	..	..		2.99
Osceola	...	.20	..	..	..	..	60	..			....	....	....	.05	.03		....	..	..	..	....	....			....	..			....	T		.88
Oskaloosa	..	1.00	02		....	.5	....		....	....	....	....	....	.02	T	....	....	....	....	....	....	....	....	....	....	....		....	....	.05	.03	....	1 68
Ottumwa	..	1.16	....	....	....	1 3		....	....	....	....	....	....	T	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....		2.49
Pacific Junction		....	....	....		.4		....		....	....	.03	.03	.18	....	....	....	....	....	....	..	..	....	....	....	....	....	....	....	T	1.05	1.69
Perry	T	.40	.50		.	1.12		....	....		....	....	....	.09	T	....		....	....	....	....	....	....	....	..	....	....	....	....	....	.24	2.35
Plover			.14		....	1.29	....	....	..	....	....		....	....	..	....		....		....	....	....	....	.	....	....	....					1.43
Primghar		.07	.50	..		2.30		....	....	....	.35		..	..		....	....	....	....	..	....	....	....	....	....	....	....	....	....	T	....	3.22
Red Oak	.03	.04	..	....	...	.51	T		....	....		T	....	.03	.08	....	..	....	....	....	....		.	.	....	....	....			T	.52	1.21
Ridgeway	.11	.15	.33		....	1.13	.01	....	....	....		....	..	.12	.16	....	.01	....	....		....	..		....	....	....	....		....	....		2.02
Rockwell City	..	25	.20	....	....	.65		..	....	....	....	....	....	T	.60	..	....		....	..	....	....		....	....	....	....	....	....	....	T	1.70
Ruthven	...	.40			....	2.90		....		....		....		..	.		....	....	..	....	....		....		....	....	....	....	....	....		3.30
Sac City	...	24	.10			.34		...	....	....	....	....	....	....	.14	....	....	....	....				....	....	....	....	....	....	..			82
St. Charles			.18	..		T	.02		....	....	..	....		.06	.05		....	....	..	....	....	....	....	....	....	....	....	....		....	.01	.32
Sibley	.55	T	02	.59		1.07	1.14	.01		....	..	.60	T	....		.....	....	....	....	....	....	....		....	....	....	....	....	....			3 98
Sigourney		....		.25	..	.2	.60	....		....			....	T		....	....	....	....	....	....	....		....	....	....		....	....	T	T	1.13
Sioux Center		....	48			2.82		....	....	..	T	.45		..	T	....	....	....	....	....	..	....	....	..	....	....	....	....	....	02		3.75
Sioux City	T	02	.44	..	..	2 02	..		....		.01	.74	.01		T	....	....		....	....		....	....	....	....	....	....	..	....	..		3.24
Storm Lake	.79		.07	..	..	.43			....	....	....	....			.03		..	....		..			....	....	....	....						.32
Stuart		.19			....	.43	.01	....		....				.04	.15	..		....	....		....		....	..		....	....	..	..	..		1 03
Thurman	.	....		....		1.20	....	T	...	....	....	T	.08	1.10	T		....	....	....	....	....	....	..	....				...	..	.10	.3	2.78

DAILY AND MONTHLY PRECIPITATION FOR OCTOBER, 1903—CONTINUED.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Tipton	....	.36	.16	....	....	.34	.71	....	....	....	....	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.10	1.67
Toledo	....	.32	....	....	....	.90	....	....	....	....	....	....	....	.06	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	06	.15	1.37
Vinton	....	.06	T	....	....	1.46	....	....	....	....	....	....	....	....	.05	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.03	1.67
Washington	....	1.40	.28	....	....	1.22	....	....	....	....	T	.10	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.98
Washta	T	T	.36	....	....	1.47	....	....	....	....	....	....	....	....	.50	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	1.93
Waterloo	.05	....	.07	.08	....	.01	1.34	T	....	....	....	....	....	.10	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.05
Waukee	T	50	.30	....	....	.32	T	....	....	....	....	....	....	.02	.63	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	1.22
Waverly	.05	.10	.33	....	....	.64	.10	....	....	....	....	....	....	T	.29	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.87
West Bend	....	.04	.25	....	....	.47	....	....	....	....	....	....	....	T	.50	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.05
Whitten	T	.35	.22	....	....	.17	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.24
Wilton Junction	....	....	1.20	....	....	1.45	.20	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	T	2.85
Woodburn	....	.54	T	....	....	.72	.02	....	....	....	....	....	....	.17	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.08	1.53

Precipitation Chart October 1903.



NOVEMBER, 1903. No. 11.



U. S. Department of Agriculture

Weather Bureau

MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE



STAR ENG. CO

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DES MOINES:
BERNARD MURPHY, STATE PRINTER
1903.

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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIV. NOVEMBER 1903. No. 11.

IOWA CROPS—FINAL REPORT, 1903.

AVERAGE YIELD PER ACRE; TOTALS FOR THE STATE; CURRENT FARM PRICES, DEC. 1, 1903.

Following is a summary of crop reports from correspondents of the Iowa Weather and Crop Service, showing the average yield per acre and totals of staple soil products, and the average prices at the farms or nearest stations December 1, 1903. In this showing of the value of the season's output of grain, forage, etc, no reckoning is made of the increment in value gained by consumption of soil products on the farms in the production of beef, pork, mutton, horses, butter, poultry, eggs, etc. Usually the prices obtainable for the crops at the close of the season do not express more than two-thirds of the actual value of the staple products of the soil.

THE CORN CROP.—In estimating the output of this crop the most difficult problem is to determine the extent of loss of acreage caused by floods and adverse weather conditions in the season of planting and cultivating. As a result of inquiry and careful computation it appears that the corn area actually cultivated and harvested this season is approximately 7,398,310 acres. The returns of township assessors show that the area planted in 1902 was 8,925,068 acres, and by comparison it is shown that the reduction this season amounted to about 1,526,748 acres. The average yield per acre for the state this year was 31 bushels, and the aggregate product is estimated at 230,511,310 bushels. The average farm price on December 1st was 36 cents per bushel, making the aggregate value $82,984,071. Last year the product was much inferior in quality though much larger in amount, and the value was computed at $83,000,000. The yearly average for 13 years has been $69,633,000.

In respect to quality of the grain and actnal commercial value, the corn crop of this season is fully 20 per cent better than the output of 1902.

WHEAT.—Winter wheat acreage harvested 84,934 acres; yield per acre, 16 9 bushels. total yield, 1,435,380 bushels; average price 70 cents per bushel; total value $1,004,766. Spring wheat area harvested 752,488 acres; average yield 12.6 bushels per acre; total product 9,481,350 bushels; price per bushel 65 cents; total value $6,162,877. Aggregate value of wheat $7,167,643. Last year the value was $7,062,640. Average yearly value for past thirteen years, $10,524,000.

OATS.—The oats crop this season has been below the average in yield per acre and weight per bushel, as a result of adverse conditions. The area harvested was 3,822,882 acres; average yield 25.9 bushels per acre; total product, 99,012,660 bushels; aggregate value, at 30 cents per bushel, $29,703,798. Last season the product was 92,907,000 bushels, valued at $22,907. The average yearly output for thirteen years has been 117,118,000 bushels, and the value $25,420,000.

BARLEY.—Area harvested, 493,108 acres; yield per acre, 24 7 bushels; total product, 12,179,790 bushels; average price, 37 cents per bushel; total value, $4,506,522. The yield and value are about the thirteen-year average.

RYE.—Area harvested, 123 273 acres; average yield 15.6 bushels per acre; total product, 1,923,060 bushels; current price, 44 cents per bushel; total value, $846,146.

FLAX.—Area harvested, 40,823 acres; yield per acre, 8.7 bushels; total yield, 355,160 bushels; current farm price, 78 cents per bushel; total value, $277,024

POTATOES —Area harvested, 113,433 acres; average yield, 5.38 bushels per acre; total product, 6,082,694 bushels; average farm price, 75 cents per bushel; value of product, $4,562,020. The total yield is about half the 13 year average; total value about the average of the 13 year period.

HAY.—(Tame). Average yield per acre, 1.9 tons; total product, 5,216,404 tons; current farm price, 5.75 per ton; value of crop, $29,994,323

HAY.—(Wild). Yield per acre, 1.3 tons; total product, 1.191,345 tons; average price, $4.95 per ton; total value, $5,-897,157. The hay crop as a whole (tame and wild) is nearly 900,000 tons in excess of the 13 year average.

PASTURAGE.—This most important soil product has been at its best in the recent wet seasons, when the cereal crops have suffered much detriment from excessive moisture. It is not measurable by the ton or bushel, and its value can only be estimated approximately by considering it as the basis of stock growing and dairying. From this point of view it will be a conservative estimate to figure the output of pastures and all other grazing lands at an average of $300 per farm. This makes a total value of $68,000,000 for the state.

Corn fodder in shock and fields is worth at least $10,000,000.

Sorghum, broom corn and sweet potatoes are worth about $750,000.

TABULATED CROP SUMMARY.

Crops.	Total Products.	Farm Values Dec. 1.
Corn	230,511,310 bus.	$ 82,984,071
Wheat	10,916,730 bus.	7,167,643
Oats	99,012,660 bus.	29,703,798
Barley	12,179,790 bus.	4,506,522
Rye	1,923,060 bus.	846,146
Flax	355,160 bus.	277,024
Potatoes	6,082,694 bus.	4,562.020
Hay (tame)	5,216,404 tons	29,994,323
Hay (wild)	1,191,345 tons	5,897,157
Pasturage (estimated)	.....	68,000,000
Timothy and Clover Seed	.....	1,225,000
Corn Fodder	.....	10,000,000
Sorghum, Broom Corn and Sweet Potatoes	.....	750,000
Fruits and Vegetables	.....	10,500,000
Total Value		$256,413,704

FINAL CROP REPORT, 1903.

AVERAGE PER ACRE AND TOTAL YIELD BY COUNTIES.

Counties.	Corn.		Winter Wheat.		Spring Wheat.		Oats.		Rye.		Barley.		Flax.		Potatoes.		Hay (tame).		Hay (wild)	
	Bushels per acre.	Total bushels.	Bushels per acre.	Total bushels.	Bushels per acre.	Total bushels.	Bushels per acre.	Total bushels.	Bushels per acre.	Total bushels.	Bushels per acre.	Total bushels.	Bushels per acre.	Total bushels.	Bushels per acre.	Total bushels.	Tons per acre.	Total tons.	Tons per acre.	Total tons.
Adair	25	2,299,400	8	2,720	12	118,200	25	741,250	15	3,900	24	14,210	....	.....	38	44,460	1.5	72,430	1.2	8,210
Adams	25	1,605,000	20	25,220	11	35,320	21	268,170	20	10,860	20	20,400	....	.....	40	30,560	1.8	52,500	1.0	1,570
Allamakee	40	1,641,200	15	15,600	12	38,320	30	1,388,300	10	14,200	30	209,760	8	3,240	40	43,680	2.0	78,520	1.0	2,310
Appanoose	25	1,160,250	15	23,250	....	.....	27	263,950	10	23,910	....	.....	....	.....	25	28,300	1.7	71,740	2.0	1,640
Audubon	30	2,141,100	16	640	12	235,320	22	703,340	18	2,970	25	58,100	....	.....	45	41,710	2.0	51,860	2.0	8,460
Benton	32	3,682,810	....	.....	15	25,720	30	1,939,350	12	10,080	25	339,600	....	.....	60	107,340	1.5	58,740	1.0	7,480
Black Hawk	34	2,752,200	20	940	12	5,760	28	1,502,480	16	27,840	29	107,010	....	.....	80	110,640	1.9	58,050	1.6	18,960
Boone	26	2,081,110	....	.....	11	34,310	24	1,100,640	11	5,412	20	5,400	....	.....	45	49,000	2.0	40,900	1.5	24,300
Bremer	35	1,351,420	....	.....	12	5,040	24	1,229,520	20	27,700	24	36,680	....	.....	62	82,460	1.8	31,050	1.2	18,720
Buchanan	40	2,439,200	....	.....	12	7,680	25	1,326,870	18	12,610	25	38,000	....	.....	80	76,320	2.0	71,680	1.5	18,550
Buena Vista	33	2,699,080	....	.....	15	54,660	24	1,255,680	16	6,720	22	68,640	....	.....	60	78,640	2.0	37,200	1.5	24,000
Butler	28	2,514,540	....	.....	12	4,830	25	1,819,000	13	22,100	20	16,400	....	.....	80	100,320	1.9	33,420	1.5	10,420
Calhoun	20	1,312,140	....	.....	9	40,410	23	1,391,310	10	2,790	21	80,010	....	.....	30	25,200	2.0	32,840	1.4	16,250
Carroll	40	2,950,720	....	.....	12	198,600	25	1,363,620	18	4,680	20	65,420	....	.....	50	86,150	2.0	42,360	2.0	30,740
Cass	28	2,831,360	....	.....	14	269,080	25	755,250	20	9,120	22	23,760	....	.....	45	69,750	1.8	62,290	1.5	4,110
Cedar	41	3,805,210	22	18,260	16	21,120	32	1,095,680	17	30,460	30	365,300	....	.....	80	89,280	2.5	97,950	1.5	1,240
Cerro Gordo	31	2,302,060	....	.....	11	10,560	28	1,836,520	16	8,128	25	52,250	6	10,460	80	104,800	1.8	41,770	1.3	14,180
Cherokee	38	3,370,220	....	.....	11	240,790	31	1,491,510	15	1,650	26	135,460	....	.....	40	49,600	2.0	40,090	1.5	19,560
Chickasaw	27	1,553,170	....	.....	15	15,150	26	1,780,640	15	11,670	24	63,120	13	66,430	72	87,264	1.9	46,380	1.5	16,270
Clarke	21	1,010,520	20	9,600	.....	.....	21	332,910	15	7,690	....	.....	....	.....	45	21,010	1.6	72,430	1.0	610
Clay	24	1,677,360	....	.....	10	62,300	25	1,290,250	15	15,300	22	391,730	8	13,640	52	41,020	1.5	28,630	1.4	29,270
Clayton	41	2,920,450	16	28,416	13	75,730	28	1,831,160	16	80,720	30	188,600	....	.....	82	63,960	2.0	91,620	1.5	4,980
Clinton	35	3,773,100	18	9,450	12	32,480	24	817,040	15	48,150	22	113,410	....	.....	70	81,970	2.0	88,640	1.5	6,310
Crawford	33	3,484,470	....	.....	10	424,270	25	952,750	14	9,870	20	56,360	....	.....	50	98,556	2.0	65,020	1.3	12,240
Dallas	35	3,157,700	20	38,080	14	53,760	30	1,094,280	20	15,200	30	25,200	....	.....	50	43,750	2.0	49,390	1.5	14,130
Davis	25	1,028,050	13	23,530	....	.....	23	350,060	10	24,480	....	.....	....	.....	30	19,500	1.8	84,020	1	160
Decatur	24	1,427,280	16	24,690	.....	.....	25	398,500	12	8,940	....	.....	....	.....	40	46,080	1.6	86,970	1.0	670
Delaware	32	2,645,760	20	1,220	16	20,960	28	1,352,540	20	38,200	33	168,960	....	.....	50	58,150	1.6	60,360	1.0	7,910
Des Moines	22	938,520	18	63,180	15	7,200	26	653,120	16	15,680	....	.....	....	.....	58	46,790	1.8	35,800	1.0	500
Dickinson	25	916,250	....	.....	10	52,500	22	581,680	12	4,200	20	362,600	10	14,600	45	22,950	1.8	13,960	1.5	22,140
Dubuque	42	2,563,260	15	2,370	15	55,590	24	1,256,400	20	41,920	33	83,820	....	.....	60	115,200	2.0	91,65	1.4	3,990
Emmet	33	1,348,710	....	.....	12	31,680	33	1,14 ,800	10	2,730	30	246,300	10	14,760	58	23,890	2.2	23,910	1.8	20,770
Fayette	35	2,895,200	18	3,240	12	36,360	25	1,660,250	20	23,200	30	152,700	9	17,820	70	114,100	2.0	97,240	1.5	10,780
Floyd	28	2,069,760	....	.....	12	5,240	26	1,636,700	17	23,290	31	119,040	8	20,080	45	85,050	1.8	31,950	1.4	10,220
Franklin	33	2,887,830	....	.....	12	21,720	29	1,998,390	12	10,080	25	25,550	....	.....	50	51,450	2.0	40,260	1.0	17,190
Fremont	30	3,116,100	12	90,480	11	22,770	25	222,550	20	10,820	....	.....	....	.....	60	38,400	2.0	28,170	1.0	5,710
Greene	20	1,355,700	....	.....	12	27,720	22	867,240	12	1,800	24	53,040	....	.....	51	32,380	2.0	36,410	1.2	14,520
Grundy	40	3,428,560	....	.....	12	27,780	25	1,565,720	5	1,870	22	233,080	....	.....	70	106,750	2.0	43,480	1.0	8,100
Guthrie	28	2,231,480	20	8,800	13	122,330	26	900,920	20	4,940	30	31,200	....	.....	52	28,080	2.2	62,890	1.8	9,210
Hamilton	25	1,564,500	....	.....	12	37,080	22	1,047,420	14	980	20	15,600	7	5,740	53	69,960	1.8	33,400	1.5	33,150
Hancock	30	1,567,800	....	.....	13	61,490	25	1,837,000	20	5,800	24	62,640	9	12,780	40	36,480	1.5	26,110	1.5	28,510
Hardin	31	2,706,610	....	.....	11	49,610	27	1,402,110	16	3,680	21	15,330	....	.....	62	87,180	1.8	37,130	1.5	22,140
Harrison	35	3,653,650	15	4,350	12	367,680	25	383,750	15	18,330	30	31,830	....	.....	65	90,450	2.2	20,750	1.5	19,980
Henry	30	1,737,600	15	32,400	12	840	25	863,000	15	67,800	22	40,370	....	.....	70	35,420	2.0	44,250	1.0	140
Howard	25	1,146,250	....	.....	15	10,120	30	1,694,400	18	2,340	28	161,640	10	61,800	48	44,160	1.8	53,280	1.2	14,010
Humboldt	36	1,554,840	....	.....	12	53,160	32	1,200,640	16	2,240	30	60,900	10	11,220	80	35,640	2.4	35,400	1.5	21,240
Ida	28	2,555,020	....	.....	10	189,860	23	792,350	15	5,400	22	97,460	....	.....	40	36,880	2.0	41,420	1.2	5,410
Iowa	39	2,678,910	30	7,500	19	25,080	30	1,029,600	20	13,800	28	122,920	....	.....	70	86,100	2.2	97,370	2.0	2,100
Jackson	33	2,337,720	17	6,630	15	61,560	22	787,380	18	60,100	30	104,200	....	.....	75	87,000	1.8	77,390	1.5	6,070
Jasper	35	3,664,150	15	16,200	13	99,600	27	1,168,830	16	19,680	30	.....	....	.....	58	118,610	1.8	62,570	1.2	2,410
Jefferson	31	1,465,990	14	34,440	12	840	27	511,920	16	93,280	20	46,120	....	.....	65	31,850	1.7	51,612	....	.....
Johnson	38	3,421,520	15	12,300	14	17,220	27	1,081,620	15	52,020	28	176,120	....	.....	71	91,590	2.0	87,260	1.5	2,320
Jones	35	2,696,400	....	.....	12	15,360	26	901,300	16	33,320	30	186,600	....	.....	70	59,570	2.0	90,420	1.5	1,500
Keokuk	28	2,383,180	14	22,540	12	9,840	25	785,500	18	57,780	24	79,440	....	.....	55	46,750	1.5	59,800	1.0	870
Kossuth	22	2,464,220	....	.....	13	197,380	24	1,591,380	15	3,300	25	139,250	9	28,980	35	55,780	1.5	34,660	1.0	50,670
Lee	30	1,530,900	15	109,650	....	.....	21	439,340	15	90,090	20	2,420	....	.....	50	58,050	1.6	60,360	1.0	210
Linn	2	2,793,920	18	1,800	12	25,320	30	1,413,900	16	23,370	25	23,570	....	.....	65	99,480	1.5	60,430	1.0	5,210
Louisa	28	1,335,320	15	45,600	13	910	28	617,080	15	60,450	20	18,800	....	.....	58	28,520	2.0	32,070	1.5	710
Lucas	27	1,193,930	20	25,400	.....	.....	30	412,800	14	25,760	....	.....	....	.....	25	12,250	1.5	63,550	1.0	350
Lyon	28	1,975,120	....	.....	11	379,390	27	1,295,190	15	2,550	25	1,063,000	7	1,540	58	70,180	2.0	16,720	1.5	20,070
Madison	35	2,486,750	15	21,150	12	43,680	27	510,030	20	13,800	30	51,600	....	.....	45	27,090	2.0	77,020	1.5	4,470
Mahaska	32	3,020,150	15	24,750	12	20,520	30	952,500	15	31,560	25	70,250	....	.....	40	35,600	2.0	61,880	1.0	940
Marion	31	2,706,920	15	46,200	12	44,120	20	569,600	16	31,040	22	20,240	....	.....	58	48,720	2.0	51,220	1.0	1,190
Marshall	42	4,178,160	....	.....	15	93,750	24	1,294,080	20	11,020	25	64,350	....	.....	58	66,120	1.8	50,580	1.0	2,200
Mills	31	2,179,610	17	36,720	10	71,200	23	264,100	16	8,480	20	8,400	....	.....	45	38,250	1.8	29,510	1.2	4,910
Mitchell	25	1,379,250	....	.....	10	23,000	23	1,399,300	14	8,540	25	324,000	8	38,120	22	27,060	1.5	36,780	1.0	3,290
Monona	32	2,882,240	20	18,400	11	646,200	30	541,920	10	11,070	25	132,250	....	.....	50	60,500	2.0	8,680	1.5	42,840
Monroe	25	1,175,250	12	3,840	12	1,320	28	284,640	11	10,450	20	6,400	....	.....	40	22,400	2.0	61,760	1.0	420
Montgomery	32	2,738,560	13	30,230	12	128,510	25	348,000	15	7,400	20	6,600	....	.....	50	34,500	2.0	64,880	1.0	1,510
Muscatine	35	2,398,600	20	49,800	15	23,100	28	602,560	18	96,380	23	149,730	....	.....	65	130,650	2.2	52,820	1.0	3,070
O'Brien	30	2,420,800	....	.....	15	267,150	30	1,672,200	15	4,200	20	522,600	8	3,040	50	61,150	2.0	35,620	1.5	20,870
Osceola	21	844,620	....	.....	8	97,680	20	692,600	18	2,160	17	494,870	6	4,690	32	20,160	1.7	18,130	1.5	12,420
Page	28	2,886,520	18	164,750	13	65,540	22	269,940	20	26,200	25	28,000	....	.....	70	62,370	1.8	34,890	1.5	4,620
Palo Alto	28	1,726,720	....	.....	11	30,470	26	1,187,680	10	3,500	28	173,740	7	23,120	40	32,360	1.7	16,670	1.0	31,960
Plymouth	33	3,597,660	....	.....	12	858,360	25	1,028,000	15	7,350	22	225,060	8	1,680	50	96,250	2.0	35,840	1.0	27,910
Pocahontas	30	2,903,500	....	.....	12	25,720	25	1,053,000	20	9,440	22	68,420	8	20,960	40	43,560	1.8	21,920	1.2	38,650
Polk	38	3,794,900	16	20,360	15	61,650	31	1,107,910	18	14,760	20	2,620	....	.....	55	108,680	2.0	43,670	1.8	17,880
Pottawattamie	32	5,735,360	12	12,120	12	469,320	23	690,230	16	12,960	22	221,010	....	.....	48	117,120	2.0	67,180	1.5	19,690
Poweshiek	35	3,169,460	15	1,300	13	34,190	26	1,003,860	16	8,960	30	130,200	....	.....	72	76,320	2.1	91,490	1.2	770
Ringgold	25	1,730,600	14	13,020	10	130	23	490,360	12	10,080	25	4,520	....	.....	30	13,590	2.2	53,960	1.4	890
Sac	36	3,432,600	....	.....	13	118,820	31	1,617,580	20	5,800	28	145,880	11	1,210	70	71,750	1.9	47,530	1.3	15,880
Scott	41	3,065,710	21	46,620	16	115,440	25	559,970	17	37,500	25	714,600	....	.....	85	364,650	2.0	53,580	1.5	6,930
Shelby	30	3,218,700	....	.....	13	415,870	22	591,140	16	5,920	21	133,770	....	.....	50	65,300	2.0	55,860	1.5	12,910
Sioux	33	4,033,480	....	.....	12	756,720	28	1,422,680	15	1,620	26	876,660	10	4,200	42	58,880	1.7	18,156	1.6	37,120
Story	30	2,652,300	22	3,520	14	21,940	26	1,363,180	18	8,820	23	11,730	....	.....	60	48,840	2.0	44,980	1.5	22,990
Tama	34	2,902,080	....	.....	13	93,860	26	1,252,160	13	6,630	22	398,640	....	.....	70	113,750	2.0	81,780	1.4	7,420
Taylor	28	1,615,600	15	70,810	....	.....	22	855,740	13	13,780	19	20,330	....	.....	52	33,890	2.0	69,480	1.6	810
Union	25	1,223,000	18	2,880	12	1,320	22	409,600	16	4,320	21	8,610	....	.....	52	41,860	2.0	85,426	1.2	1,240
Van Buren	28	1,123,080	16	44,160	....	.....	22	260,260	12	54,060	....	.....	....	.....	50	20,750	1.8	65,440	1.5	45
Wapello	31	1,552,170	20	50,140	12	2,160	25	366,000	15	73,650	23	24,960	....	.....	53	48,760	1.7	54,890	1.5	180
Warren	31	2,517,820	20	24,200	14	3,240	27	618,560	17	31,620	24	48,720	....	.....	51	40,290	1.8	73,950	1.5	2,460
Washington	35	2,296,350	18	27,180	14	4,480	23	749,910	14	42,280	30	115,200	....	.....	70	48,370	2.0	52,430	1.0	180
Wayne	22	1,150,160	15	2,370	....	.....	30	447,120	12	13,320	....	.....	....	.....	43	17,630	1.8	107,540	1.5	830
Webster	25	2,263,500	....	.....	15	78,950	30	1,986,930	15	3,900	26	30,160	8	6,480	55	57,210	2.2	42,520	1.5	50,070
Winnebago	20	818,800	....	.....	12	99,840	22	882,420	....	.....	23	25,760	8	18,200	50	30,400	2.0	23,870	1.5	23,610
Winneshiek	33	2,098,860	18	1,980	13	92,560	25	1,756,300	19	6,840	26	268,060	10	72,130	30	35,280	1.8	85,670	1.5	9,020
Woodbury	35	2,366,230	18	10,080	12	516,120	30	914,220	13	10,530	30	222,360	9	2,250	45	65,250	2.0	2,860	1.5	22,780
Worth	32	1,157,440	....	.....	12	48,120	31	980,140	15	2,550	30	54,990	11	63,910	45	33,300	2.0	33,520	1.5	15,640
Wright	25	1,861,000	....	.....	15	62,700	24	1,388,640	15	2,625	24	39,120	8	12,080	40	29,280	2.0	38,440	1.6	29,100
Total for state		230,511,310	....	1,435,380	....	9,481,350	....	99,012,660	..	1,923,060	....	12,179,790	....	355,160	....	6,082,694	....	5,216,404	....	1,191,345
Av. per acre	31	.....	16.9	.....	2.6	.....	25.9	.....	15.6	.....	24.7	.....	8.7	.....	53.8	.....	1.9	.....	1.3	.....

NOVEMBER WEATHER AND CROPS.

November was unusually dry and seasonably warm, with ess than the average amount of atmospheric disturbance. Con- itions were favorable for farm operations, and excellent prog- ess was made in cribbing the corn crop in good condition. 'he cobs contained more than the usual amount of moisture, ut the dry weather and freezing temperature prevented damage y heating in the cribs. The small acreage of fall wheat and ye suffered no material injury from dry weather and freezing. 'he weather was highly favorable for stock feeding and pastures fforded good feed throughout the month. The supply of water or stock is ample for the winter.

NOTES AND COMMENTS.

All that is known about sun spots is that their appearance is lue to terrific disturbances in the solar photosphere and that hey are coincident with magnetic storms in the terrestrial at- nosphere. To say that the latter are caused by the former is a very loose way of stating the case. The two phenomena are evidently connected, and both are probably caused by an iden- ical and still undiscovered force of nature.—*Philadelphia Rec- ord*.

A San Francisco special dated November 7th, says: All hands stood aghast on the American bark Oregon while a tremendous waterspout, the mightiest ever reported, passed two miles astern of the vessel. The Oregon was then, September 12th, in south latitude 15 49 and longitude west 152.06 on her way from Newcastle, N. S. W., to this port with coal.

Captain Parker says there was a moderate breeze from the north and the air had a queer "feel" when the water two miles away was rushing and foaming up to an astounding height. This water eruption crossed the wake of the Oregon, and as it did so, rose higher and formed the spiral waterspout to the sky overhead. It was at least two miles high. Captain Parker es- timates that in its most slender part the waterspout was six feet through. He says that for fully a mile around the base of the waterspout there was a frightful surf, higher by far than any breakers seen on the beaches. "If it should have hap- pened to pass over the ship," says Captain Parker, "it would have torn masts and yards out of her and finally swamped her." Members of the crew were badly frightened during the progress of the unusual phenomenon.

Mr. Fred. M. Taylor, postmaster, Titusville, Fla., reports that on September 17th, during a thunderstorm shortly after sun- set, each electrical discharge was accompanied by small typical strokes of only a few inches in length between neighboring rain drops. These were synchronous with the main discharge, and when they struck the hands or face produced a sharp stinging ensation.—*U. S. Weather Review, September 1903*.

Cablegrams from Europe, dated Nov. 30th, brought reports of damaging storms of rain, snow and sleet, covering Italy, Bel- gium and Great Britain. The barometric depression at Rome was the lowest recorded at the government station for the past twenty-five years. The disturbance extended to the coast of Al- giers, where torrential rains, lasting thirty-four hours, caused great damage on land and sea.

In its insular possessions the United States has volcanoes to burn. The Philippines are abundantly supplied with them. Mayon, 8,970 feet high, has had twenty-two violent eruptions since 1776, destroying thousands of human lives and much prop- erty. One eruption, in 1897, continued nine months, and was quite destructive. Manila is frequently shaken by earthquakes radiating from volcanic centers.

What is the value of the product of the pastures and other grazing lands of the state? This is a problem to be solved by experts who have made a study of farm statistics. Our great herds of live stock obtain a large percentage of their living and growth in flesh by grazing in the pastures in spring and summer and in meadows and grain fields in other seasons of the year. This enormous output of the soil cannot be expressed in tons or bushels; it is marketed in form of beef, pork, mutton, wool, dairy products, etc. How much of the total value of the live stock industry should be credited to the grasses which are trans- formed into flesh? This is not an easy question.

THE AGRICULTURAL REPORT.

Secretary Wilson has submitted to the President his annual report of the Department of Agriculture for the year 1903, this being the seventh report made by Mr. Wilson since his accept- ance of that office.

Secretary Wilson reviews at length the production and ex- ports of American agricultural products. The increase in the exports of farm products for the half century ended in 1901, was from $147,000,000 at the outset to $952,000,000 in the closing year of the period. For the year 1903 the exports amounted to $878,000,000, an amount second only to the total for 1901.

Of grain and grain products, the export exceeded in value $221,000,000, and in the supply of animals, meats and meat products the value of exportation was $211,000,000.—Discussing the balance of trade, the secretary shows that the favorable bal- ance to the credit of this country is due entirely to the farmers. The balance of trade in favor of farm products during the last fourteen years, no year excepted, aggregated $4,806,000,000. In products other than those of the farm during the same period, the balance of trade was adverse to this country to the extent of $865,000,000. Our farmers not only canceled this immense ob- ligation, but placed $3,940,000,000 to the credit of the nation when the books of the international exchange were balanced. He concludes that "it is the farmers who have paid the foreign bond-holders."

Reviewing the magnitude of agricultural production, after giving the figures of the most important crops, Mr. Wilson states that the value of all farm products, not fed to live stock, for 1903 considerably exceeded their value in the census year, when it was given as $3,742,000,000.

According to the department's inventory of farm animals for January 1, 1903, the value of horses was over $1,000,000,000 and of mules nearly $200,000,000. The value of cattle of all kinds considerably exceeded $1,300,000,000, of sheep $168,000,- 000, and of hogs $365,000,000.

The secretary reports a gratifying extension in public educa- tion along meteorological lines. Regular courses of lectures or classes have been conducted by weather bureau officials in not less than twenty colleges and universities. Many of the repre- sentatives of this bureau have, moreover, delivered occasional addresses in other classes or colleges, and to teachers of schools. The demand for instruction on these subjects increases rapidly.

A distinct advance by the weather bureau is noted in the preparation of daily weather charts at their different levels, i. e., the sea level, and at the 3,500-foot and 10,000-foot planes. So far this improvement is confined to the barometric pressure, but it is most important to secure charts of the temperature on the two upper planes as well, and unfortunately these can be secured only by means of balloon and kite ascension.

PHYSIOLOGICAL EFFECTS OF DIMINISHED AIR PRESSURE.

In a communication published in *Science* for November, 1901 (page 696), Mr. H. H. Clayton, of Blue Hill Observatory, gives some observations on the number of his pulse-beats, noted during a recent ascent of Pike's Peak by railroad. The pulse increased from 78 beats per minute at Manitou (6,662 ft.) to 92 at the summit of the mountain (14,147 ft.). Mr. Clayton's note recalls some similar observations made by the writer in Peru in 1897, during two ascents of El Misti (19,200 ft.), then the site of the highest meteorological station in the world, established by Professor S. I. Bailey, and operated by the southern station of the Harvard College Observatory at Arequipa. Both ascents were made on mule-back, so that no physical exertion was necessary. The first ascent was on October 7th, the start being from the Observatory (8,050 ft.) on October 6th. Although provided with clinical thermometers and with a sphygmograph, the writer suffered so severely from mountain sickness that he made very little use of his instruments. His temperature at 5:30 P. M., October 5th, twelve hours before leaving Arequipa, was 98°.4; his respiration 24, and his pulse 90. On the summit of El Misti the body temperature was 96°.4; the respiration 34, and the pulse 110. Twelve hours after arrival at Arequipa the figures were 98°.0, 24 and 85 respectively. A rather unsatisfactory sphygmograph curve was obtained on the summit.

The second expedition to El Misti was made on November 9, 1897, and on this trip the writer suffered much less from mountain sickness than on the previous one. At an altitude of 15,700 feet a short walk of about 100 yards was taken to the instrument shelter. Two stops were necessary on the way, to get breath. An hour after this exercise, the pulse was 128, the body temperature 97.°.0 and the respiration 30. The corresponding figures twelve hours before leaving Arequipa were 91, 98°.6 and 20. The night was spent at 15,700 feet. The body temperature immediately after waking in the morning was 96°.2; the pulse 112, and the respiration 30. Twenty minutes after reaching the summit, the temperature was 97°.2, the pulse 120, and the respiration 32. In an hour and a half the respiration was 35, the pulse and temperature remaining the same. In two hours the temperature was 96°.8, the pulse 112, and the respiration 34. Three fairly good sphygmograph curves were obtained on the summit. These curves possess some interest as being, so far as I have been able to learn, the first, with possibly one exception, to be secured at so great an altitude as 19,200 feet. At any rate, no curve from so great an altitude was reproduced until a copy of one of these tracings from the Misti summit was printed in an article by the writer in the *Journal of the Boston Society of Medical Sciences* for June, 1898.

On the second expedition to El Misti the descent was begun two hours and a half after reaching the top. At the hut at the base of the mountain (15,700 ft.), after walking to and from the shelter, the pulse was 130, but the respiration had decreased to 30 One hour after arriving at Arequipa the temperature was 98° 2, the pulse 116, and the respiration 22, and twelve hours after arrival the pulse had fallen to 82—about the writer's normal at the Observatory—and the respiration to 22, the normal being 20.

In counting the pulse on the summit it was quite unnecessary to place the finger on the wrist. The heart-beats could plainly be *heard*.—*R. DeC. Ward, in Science.*

MISSOURI RIVER CLOSED DECEMBER 1.

The channel of the Missouri river at Sioux City was closed by ice December 1st, which date is about four days earlier than the average closing at that point for the past twenty-six years. The earliest date in that period is December 12, 1896, and the latest January 20, 1889. The following table, compiled from local records by the Journal of that city, is of interest:

YEAR.	DATE OF CLOSING.
1873	December 12
1879	November 30 and December 8
1880	November 18
1881	December 30
1882	November 21
1883	November 30
1884	November 22
1885	December 5
1886	November 19
1887	November 27
1888	January 20, (1889)
1889	November 21 and January 1 (1890)
1890	January 4 (1891)
1891	November 25 and December 25
1892	December 17
1893	November 20
1894	December 28
1895	November 29
1896	November 12
1897	November 27
1898	November 22
1899	December 20
1900	November 20
1901	December 17
1902	December 5
1903	December 1

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 30.14 inches; highest observed, 30.65 inches, at Dubuque, on the 20th; lowest observed, 29.38 inches, at Dubuque, on the 11th; range for state, 1.27 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 105 stations, was 34.2 degrees, which is 0.1 below normal. By sections the mean temperatures were as follows: Northern section, 32.2 degrees; Central section, 34.0 degrees; Southern section, 36.3 degrees. The highest monthly mean was 39.0 at Osceola and Red Oak; lowest monthly mean, 30.0, at Estherville. The highest temperature reported, was 76°, at Pacific Junction, on the 1st; lowest temperature reported, 5° below zero, at Carroll and Audubon, on the 18th and 26th. The average monthly maximum was 68.3; average monthly minimum, 3.1. Greatest daily range, 43, at Osceola; average of greatest daily ranges, 30.9.

PRECIPITATION.—Average precipitation for the state, as shown by records of 116 stations, was 0.52 of an inch, which is 0.85 of an inch below normal. The averages of sections were as follows: Northern section, 0.17 inch; Central section, 0.57 inch; Southern section, 0.82 inch. The largest amount reported was 1.74 inches, at Allerton; least amount reported, Trace, at Algona, Charles City, Forest City, Mason City, Northwood and Whitten. The greatest daily rainfall reported was 1.38 inches, at Washington, on the 10th and 11th. Average number of days on which .01 of an inch or more was reported, 3.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 43 miles per hour, from the northwest, at Sioux City, on the 9th. Average number of clear days, 13; partly cloudy, 8; cloudy, 9.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	30.11	30.62	20	29.39	11
Des Moines	30 16	30 63	19	29.43	12
Dubuque	30.13	30.65	20	29.38	11
Omaha, Neb	30 14	30.67	18	29.49	10
Keokuk	30.13	30.62	20	29.55	11
Sioux City	30.14	30.61	18	29 43	12
Means	30.14	30.65	20	29.38	11

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	5.796	30	W	9
Des Moines	6.769	35	W	9
Dubuque	5 613	32	NW	23
Keokuk	5.867	34	SW	12
La Crosse, Wis	6.155	27	W	9
Omaha, Neb	7.145	37	NW	9
Sioux City	10.059	43	NW	9

OBSERVERS' NOTES.

ALLERTON—*Rex Shriver*. Corn is nearly all in crib. The yield is fairly good but the quality is generally poor.

ALTA—*David E. Hadden*. November was comparatively dry and pleasant. The first snowfall of the season was on the 24th—amount one inch. Light aurora was noticed on the evening of 18th.

AMANA—*Conrad Schadt*. The weather was dry, affording sufficient time for the soft corn to dry out. Husking is about finished. Cold weather in the middle of month put a stop to plowing.

AUDUBON—*Geo. E. Kellogg*. First snow of the season fell on the 13th.

BONAPARTE—*B. R. Vale*. A dry and pleasant month. No storms and not excessively cold. Farm work progressed finely.

BRITT—*Geo. P. Hardwick*. Precipitation for the month, .05 inch, the least of any November during past seven years. Ground frozen after the 12th. The dry weather during the past weeks has been beneficial for unripe corn, nearly all of which has been gathered.

CHARLES CITY—*C. H. Priebe*. Unusually fine weather. Only a trace of snow during entire month.

CLINTON—*Luke Roberts* Rainfall, 0.78 inch, being a deficiency of 1.12 inches as compared with the normal. The mean and minimum temperature and the number of clear days were above normal. The first snow of the season fell on the 28th.

EARLHAM—*Geo. Phillips*. No snow on ground at close of month. Ten per cent of corn still in fields.

GRAND MEADOW (Postville P. O).—*F. L. Williams*. The month was very dry and favorable for farm work. Stock pastured all the month

GRUNDY CENTER—*E. S. King*. Corn all husked and fall work was never in better shape.

HANLONTOWN—*Miss G. M. Paschen*. The yield of corn averaged from 50 to 60 bushels per acre. Many farmers had finished husking by 21st.

JEFFERSON—*Isaac Young*. The ground froze on the 16th.

LEON—*M. F. Stookey*. The first snow of the season fell on the 13th.

MOUNT AYR—*A. F. Beard*. Thunder on the nights of 3d and 8th, and during the day of 4th.

OGDEN—*E. Saire*. The first snow of the season fell on the 24th, amount 1.00.

RIDGEWAY—*Arthur Betts*. Thunder showers on the 9th. Ground frozen since the 22nd.

WASHINGTON—*Wm. A. Cook*. The first snow fell on the 13th.

WHITTEN—*Dr. Frank P. Butler*. The first month in over six years that there has been no precipitation to record.

ERRATA IN SEPTEMBER REVIEW.

AUDUBON.—Total precipitation recorded 2.78 inches on page 8 and 11, should have been 2.79 inches.

COLLEGE SPRINGS.—Mean temperature recorded 62.7° on page 8, should have been 62.1°.

DOWS.—Total precipitation recorded 2.00 inches on page 7 and 11, should have been 2.02 inches.

ROCKWELL CITY.—Mean temperature recorded 65.6° on page 7, should have been 60.6°.

TIPTON —Total precipitation recorded 5.30 inches on page 7, should have been 5.36 inches.

OMAHA, NEB.—Mean temperature recorded 63.2° on page 8, should have been 63 0°. Mean maximum temperature recorded 73.2° on page 10, should have been 73 0°.

BELATED REPORTS.

DENISON.—October. Mean temperature 51.0°; lowest 22° on the 18th; greatest daily range 49°; total precipitation .89 inch; greatest in 24 hours .63 inch on the 6th; number of rainy days 2.

ESTHERVILLE.—October. Mean temperature 50.2°; highest 79° on the 20th; lowest 24° on the 27th, greatest daily range 45°; total precipitation 2.49 inches; greatest in 24 hours 1.70 inches on the 7th; prevailing direction, southeast; number of clear days 16, partly cloudy 5, cloudy 10, rainy 8.

FAYETTE.—October. Mean temperature 49.4°; highest 79° on the 3rd; lowest 18° on the 27th; greatest daily range 41°; total precipitation 1.73 inches; greatest in 24 hours .90 inch on the 6th; prevailing direction, southeast; number of clear days 20, partly cloudy 3, cloudy 7, rainy 5.

SHELDON.—October. Mean temperature 51.0°; highest 79° on the 19th; total precipitation 3.31 inches; greatest in 24 hours 2.35 inches on the 6th; number of rainy days 3.

SPIRIT LAKE.—October. Mean temperature 51.2°; lowest 28° on the 26th; total precipitation 4.00 inches; greatest in 24 hours 4 00 inches on the 5th and 6th; number of rainy days 1.

STOCKPORT.—October. Total precipitation 3.47 inches; greatest in 24 hours 1.40 inches on the 2nd; prevailing direction, northwest; number of clear days 20, partly cloudy 5, cloudy 6, rainy 4.

VILLISCA.—October. Mean temperature 50.6°; highest 82° on the 2nd; lowest 25° on the 25th; greatest daily range 38°; total precipitation 1 27 inches; greatest in 24 hours .60 inch on the 6th; prevailing direction, northwest; number of clear days 20, partly cloudy 9, cloudy 2, rainy 4.

WAPELLO.—October. Mean temperature 53.0°; highest 79° on the 3rd; lowest 27° on the 26th; greatest daily range 27°; total precipitation 2.05 inches; greatest in 24 hours .80 inch on the 6th; prevailing direction, southwest; number of rainy days 4.

CLIMATOLOGICAL DATA FOR NOVEMBER, 1903.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days.	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	33.8	†1.7	70	2	4	23	31	T	-1.22	T	T	0	9	11	10	NW	
Alta	Buena Vista	1,513	11	32.2	†1.3	68	2	2	26	26	.62	-.41	.50	1.0	4	10	13	7	NW	
Alta (near)	Buena Vista										.79		.62	1.5	3					
Britt	Hancock	1,236	5	31.4	-.9	68	1	0	26	29	.05	-.67	.03	T	2	3	23	4	NW	
Charles City	Floyd	1,012	11	30.5	-.2	69	1,2	0	26,27	33	T	-1.34	T	T	0	12	5	13	E, NW	
Decorah	Winneshiek	857	8	32.2	†0.7	68	1,2	3	26	29	.18	-1.36	.18		1					
Dows	Wright	1,142		32.4		68	2	-1	26	29	.10		10	T	1	17	0	13	NW	
Elkader	Clayton	727	21	32.4	†0.3	72	1,2	2	26	36	.21	-1.47	.16	T	2	11	12	7	NW	
Estherville	Emmet	1,298	7	30.0	†0.9	69	2	0	26	37	.06	-1.11	.02		3	15	2	13	NW	
Fayette	Fayette			31.0		69	1,2	-1	26	42	.06		06	T	1	15	9	6	NW	
Forest City	Winnebago	1,223	8	31.0	†0.1	73	2	0	25	31	T	-1.09	T	T	0	15	4	11	W	
Grand Meadow	Clayton	1,180	11	31.2	-0.3	68	2	2	26	32	.28	-1.26	.14	.5	5	8	10	12	NW	
Hampton	Franklin	1,155	12	33.3	†1.9	72	2	2	26	32	.19	-1.37	.14	T	3	8	20	2	NW	
Hanlontown	Worth			31.2		68	1,2	-1	26	32	.08		04	.4	2	20	2	8	NW	
Humboldt	Humboldt	1,095	10	34.6	†1.7	69	1,2	2	26	23	.08	-1.31	.06		2	24	4	2	NW	
Larchwood	Lyon			31.1		70	2	1	17	35	.17		.10	1.6	2	15	11	4	N	
Larrabee	Cherokee	1,306		32.4		69	1	-1	26	30	.26		.14	1.8	2	12	12	6	NW	
LeMars	Plymouth	1,224	6	33.4	†.5	68	2	3	17	31										
Mason City	Cerro Gordo	1,132		33.4		68	1	4	26	24	T	-1.00	T		0	6	17	7	NW	
New Hampton	Chickasaw	1,169		30.4		70	2	-2	26	30	.05		.05	.5	1	13	6	11	NW	
Northwood	Worth	1,222	6	31.8	†.8	69	2	2	26	24	T	-1.43	T	T	0	16	9	5	NW	
Osage	Mitchell	1,184	11	31.2	†2.8	66	1,2	0	26	26	.03	-1.36	.06	.6	1	11	9	10	NW	
Plover	Pocahontas	1,190	5	32.2	-1.3	69	2	3	26	39	.04	-1.41	.04	T	1	18	2	10	NW	
Primghar (b)	O'Brien			33.5		66	2	1	17	29									NW	
Ridgeway	Winneshiek	1,215		34.6		73	2	1	26	34	.11		.05		4	12	12	6	NW	9.
Ruthven‡	Palo Alto			32.6		70	8	-4	17	34	T		T		0	12	2	16		
Sibley	Osceola	1,512	8								02	-.89	02	.2	1	9	12	9	N	
Sioux Center	Sioux			31.8		67	1,2	2	17	30	.10		.10	1.0	1	8	8	14	S	
Storm Lake	Buena Vista	1,440	7	31.8	-1.7	68	3	3	26	32	.52	-.30	.51	.1	2	15	6	9	NW	
Washta	Cherokee	1,157									.70		.55	1.5	2	14	11	5	NE	
Waverly (a)	Bremer	942	6	31.8	-1.7	69	1	2	25	29	.08	-1.26	.05	T	2	8	11	11		
West Bend	Palo Alto	1,197	8	33.9	†3.8	69	1	1	26	32	.03	-1.30	.02	T	2	11	9	10	S	
Average				32.2	†0.6	69.0		1.1		31.1	0.17	-1.13		0.4	2	13	9	8	NW	

CENTRAL SECTION.

Amana	Iowa	721	25	33.5	†0.7	66	1	5	26	25	.60	-1.15	.35	T	3	11	14	5	NW	
Ames	Story	926	20	35.2	†2.3	68	1	5	26	28	.14	-1.03	.10		2	28	1	1	NW	
Audubon	Audubon	1,391	8	34.5	†0.5	66	1,4	-5	26	30	.94	-.50	.60	2.2	6	8	11	11	S	
Baxter	Jasper	998		34.2		70	1	2	26	31	.20		.20		1	14	6	10	SW	
Buckingham	Iowa										.29		.28	T	2	8	19	8		
Carroll	Carroll	1,365	12	34.4	†1.6	73	4	5	18	35	.44	-.59	.30	3.0	3	18	4	8		
Cedar Rapids	Linn	733	19	33.8	-1.5	67	1	7	27	34	.45	-.94	.36		3	10	8	12	NW	
Clinton	Clinton	609	34	35.0	-0.1	67	1,2	8	26	28	.78	-1.10	.71	.3	6	9	7	14	NW	
Davenport	Scott	606	31	36.2	-0.6	68	1	9	26	24	.70	-1.36	.53	T	3	10	11	9	W	11.
Delaware	Delaware	1,033	11	31.4	†0.2	67	1,2	1	26	26	.36	-1.20	.29	.5	3	13	13	4	NW	
Denison	Crawford	1,180	8	35.1	†1.3	67	1	-1	26	32	.46	-.39	.36	1.0	2	19	2	9	N	
Des Moines	Polk	841	24	36.2	-0.2	69	1	10	17	25	.31	-1.40	.25	0.1	2	9	10	11	NW	
De Soto	Dallas	866		35.4		67	1	3	26	29	1.04		.60	1.0	5	15	4	11	NW	
Dubuque	Dubuque	655	29	34.4	-0.6	70	2	7	26	26	.75	-1.35	.69	.4	4	11	12	7	NW	
Fort Dodge	Webster	1,126		33.0		68	3	5	26	35	.41		.39		2					
Galva	Ida	1,290	8	31.6	-0.6	69	2	-3	26	32	.05	-1.10	.05	.5	1				NW	
Gilman	Marshall	1,052									.18		.18	T	1	13	6	11	NW	
Grinnell	Poweshiek	1,023	9	33.9	-0.6	64	1,3	3	26	25	.24	-1.29	.23	T	2	10	10	10	W	
Grinnell (near)	Poweshiek			33.4		66	1	2	26	27	.25		.25	T	2	13	10	7	SW	
Grundy Center	Grundy	976	11	33.3	†1.2	68	1,2	0	26	30	.21	-.97	.15	T	2	15	6	9	W, NW	
Guthrie Center	Guthrie	1,077	6					0	26	36	1.32	†.41	.65	1.2	7	10	10	10	SE	1.
Harlan	Shelby	1,192		35.0		66	1	1	26	31	1.02		.34	7.2	8	6	16	8	SE, S	4.
Independence	Buchanan	921	38	32.1	-0.8	69	2	1	26	29	.16	-1.20	.15	T	2	16	9	5	NW	
Iowa City	Johnson	685	43	34.2	-1.1	72	1	6	26	38	.97	-1.36	.72		2	5	12	13	W, NW	
Iowa Falls	Hardin	1,170	9	31.0	-0.4	68	1	0	26,27	28	.09	-1.12	.09	T	1				NW	
Jefferson	Greene	1,052									.23		.15	.8	3	4	16	10	NW	
LeClaire	Scott	578									.70		.47	T	3				NW	
Logan	Harrison	928	35	35.5	10.0	65	1,4	6	19	34	1.54	†.39	.40	5.8	7	12	6	12	NW	
Maquoketa	Jackson	688	9	32.8	-3.6	68	1	4	27	39	1.13	-.25	.87		5	12	7	11	NE	
Marshalltown	Marshall	947	9	33.1	-1.7	70	1	3	26	38	.40	-.76	33	T	4	10	7	13	NW	
Mt. Vernon	Linn	847	35	32.6	-1.6	67	1,3	2	26	30	.93	-.35	.72	.4	8	15	4	11	NW	
Newton	Jasper	944	14	34.6	†0.7	67	1	2	25	27	.16	-1.59	.16	T	1	19	4	7	S	
Odebolt	Sac	1,356	5	33.7	-2.1	70	1	0	26	32	.36	-.63	.15	1.8	4	17	3	10		
Ogden	Boone	1,088	8	33.3	-0.9	69	3	-1	26	37	.25	-.74	.15	1.0	2	17	0	13	NW	
Olin	Jones	760		33.8		66	1	4	26	22	1.01		1.00	T	2	11	7	12	NW	
Onawa	Monona	1,053		36.6		69	1	7	17	24	1.34		.50	5.7	7	17	1	12	SE	
Perry	Dallas	975		35.6		69	1	4	26	30	.36		.14	1.0	4					
Rockwell City	Calhoun			33.6		66	4	1	27	36	.50		.45	.5	2	12	10	8		
Sac City	Sac	1,278	22	34.3	†0.6	68	2	3	26	30	.26	-.89	.14	1.0	2	10	12	8	NW	
Sioux City	Woodbury	1,165	13	34.8	†0.5	68	2	5	17	26	.96	†.14	.45		4	7	9	14	NW	
Stuart (a)	Guthrie	1,216	5	34.0	-0.8	65	2	6	26	32	.84	-.04	.69	1.5	3				NW	
Tipton	Cedar	807		35.4		70	1	8	26	30	1.53		1.17		1	11	14	5	SW	
Toledo	Tama	856	8	33.8	-1.4	70	1	1	26	29	27	-1.14	.20	T	2	14	8	8	NW	
Vinton*§	Benton	810	12	33.4	-0.4	69	10	3	26		.20	-.90	.20	T	1	23	3	4	NW	
Waterloo	Black Hawk	862	15	34.0	-0.7	70	1,2	2	26	30	.19	-1.19	.08	T	3	13	9	8	W	
Waukee	Dallas	1,039									.98		.72	0.5	5	12	13	5	NW	
Wilton Junction	Muscatine	683	7	34.6	-1.8	69	1	5	26	30	1.67	†.56	.96	T	2	22	3	5	NW	
Whitten (b)	Hardin	1,096		32.2		67	1	0	26	32	T		T	T	0				NW	
West Branch	Cedar	718																		
Average				34.0	-0.3	68.0		2.9		30.3	0.57	-0.83		1.0	3	13	8	9	NW	

CLIMATOLOGICAL DATA FOR NOVEMBER, 1903—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted)		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	7	36.3	†1.3	67	1	4	26	27	.88	-.13	.27	4.0	4	9	11	10	NE, NW	
Albia	Monroe	957		36.2	.....	70	9	8	26	42	.64	....	.40	T	4	16	1	13	SE	
Allerton	Wayne	....	....	36.1		70	1	3	26	30	1.74	.....	.67	2.0	6	16	5	9	NW	11
Atlantic	Cass	1,164	11	36.2	†2.2	67	1	....	.....	34	1.24	†.54	.60	6.0	4	6	4	20	S	3
Bedford	Taylor	....	....	36 9	.....	67	1	5	19	38	.87	....	.57	1 2	6	9	6	15	NW	
Belknap‡	Davis	877	7	41.0	†1.4	75	3,4	9	26	38	1 51	-.21	1.00		4	...	..	....	N, E, S, NW	
Bonaparte	Van Buren	....	10	35 6	-2.0	68	1	8	26	31	.94	-.95	.80	5.0	3	....	..	....	.....	
Burlington	Des Moines	541	....	37.2		72	1	9	26	28	.84	.....	.50	T	4	13	9	8	SW	
Chariton	Lucas	1,042	7	36 0	-1 8	69	1	4	26	26	.11	-1.09	.10	.1	2	10	12	8	NW	
Clarinda	Page.	1,069	12	37.5	†0.5	71	1	7	18, 19	42	1.13	†.18	.71	.8	7	5	15	10	SE	
College Springs	Page.	....	10	37.6	-0.3	64	1,8	8	18	27	.34	-.54	.23	.3	3	18	3	9	SE	
Columbus Jct.	Louisa.	596	....	36.1		70	1	7	26	32	.74	.....	.65	.2	3	18	9	3	NW	
Corning	Adams	1,127	10	35 9	-0 9	65	1	-1	26	28	.85	- 01	.25	3.5	6	7	15	8	NW	
Corydon	Wayne	992	9	36.2	-1.2	68	1	2	26	32	1.26	-.13	.72	1.8	6	14	5	11	NW	
Council Bluffs	Pottawattmie.	9.0	5	....	.....	....	.....	8	17		.92	-.15	.57	....	4	11	12	7	.....	
Cumberland	Cass	.....	....	....	....	.....	.....	.....	.....	.....	.78	.....	.70	7.0	2	17	6	7	N	
Earlham (a)	Madison.	..		33.6		63	1	-3	26	32	.76	.	.46	1.2	4	11	6	13	S	
Fort Madison.	Lee	516	51			....	.....	.....	.....	.....	1.34	-.81	.51	....	4	7	11	12	SW	
Glenwood	Mills.	..	15	37.2	-1 2	67	4	7	17	26	.35	-.50	.25	1.0	2	5	16	9	NW	
Greenfield	Adair	....	11	35.8	†0.5	68	1	1	26	40	.65	-.37	.32	2.8	5	15	9	6	NW	1
Hopeville	Clarke.	...	11	35 2	-0.3	69	1	1	26	26	78	-.11	31	....	5	9	12	9	S	
Indianola	Warren	969	11	35.9	-1 6	69	1	3	26	26	.73	-.45	.48	1.2	5	11	8	11	NW	
Keokuk	Lee	619	31	37.5	-1.3	67	3	11	26	28	.87	-1.25	.44	2.8	5	12	11	7	NW	
Keosauqua	Van Buren	664	10	34.5	-4.1	68	1	9	26, 27	36	.74	-.73	.62	.3	3	7	7	16	.....	
Lacona	Warren	.....		....		.....	.....	.....	.....	....	.94	.....	.37	1.0	6		...	....	.....	
Lenox	Taylor	1,250	7	35.9	-0 9	66	1	2	26	30	43	-.64	.16	1.7	5	12	11	7	NW	
Leon	Decatur	1,120		37.1	...	68	1	6	26	27	.84	.....	.54	5.4	3	17	2	11	E	
Mt. Ayr	Ringgold	1,236	8	37.1	-0.2	67	1	6	26	30	.63	-.56	.25	2.0	5	12	4	14	NW	3
Mt. Pleasant	Henry	729	20	34.8	-2 1	70	1	6	26	29	.99	-.57	.70	T	4	14	10	6	SE	
Omaha, Neb.	Douglass	1,113	32	38.2	†1.6	65	8	8	17	24	1.01	-.05	.61	1.8	9	7	12	11	S	1,3
Osceola.	Clarke.	1,130	6	39.0	†2.4	69	1	5	26	43	.58	.-59	.35	2.0	3	12	6	12	N	
Oskaloosa	Mahaska	843	18	35.3	-0.9	70	1	4	26	36	.57	-.97	.35	T	2	16	3	11	W, NW	
Pacific Junction	Mills.	960	..	37.4	.....	76	1	8	21	29	.19	. ..	.05	.9	5	5	15	10	N	
Red Oak	Montgomery	1,033		39.0	.....	65	1	10	17	33	.36	.	.15	2.0	6	7	15	8	S	
St. Charles	Madison.	1,070	....	36.9	....	68	1,8	4	26	30	.63	.....	.21	2.1	7	12	12	6	NW	
Stockport	Van Buren	.....	..	.....	.....	.....	.....	..	.....	.....	.85	.....	.75	T	3	11	7	12	NW	
Thurman	Fremont	.....	....	37.3		62	1,3	7	18, 19	31	1.05	.	.30	.2	5	15	3	12	NW	
Villisca	Montgomery.	1,058	8	34.5	-1 7	62	1	7	17	35	.99	†.06	.32	3.0	6	16	9	5	NW	
Wapello	Louisa.	588		37.0	.....	68	1	9	26	25	.79	.	.60	0.8	3	15	7	8	NW	
Washington	Washington	769	20	34 2	-1.4	70		3	26	31	1.46	†.13	1.38	...	3	....	..	..	NW	
Winterset (f)	Madison.	1,129	11	35.4	†0.0	66	8	1	26	34	.....	.....	....	1.0	...	....	....	....	.....	
Woodburn	Clarke	961		.....	..	.....	.....	.....	....	...	1.04	.	.50	1.5	3	12	7	11	NW	
Average	.....	....	....	36.3	-0.6	67.9	.....	5.3	.....	31.4	0 82	-.40		1.8	4	12	8	10	NW	
Average for state	.....		....	34.2	-0.1	68.3	.....	3.1		30.9	0.52	-.79	....	1.1	3	13	8	9	NW	

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Received too late to be computed with means. a, One day missing; †, two days, etc. §Not supplied with self registering instruments. †Above normal.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR NOVEMBER, 1903.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Afton.	Max.	67	62	65	62	55	45	55	64	59	53	50	50	45	47	50	46	24	22	36	40	46	51	46	31	29	24	36	38	35	30	..	45.4
	Min.	48	47	57	48	38	23	28	42	41	27	32	30	26	29	31	24	8	8	10	23	25	26	30	20	19	4	12	25	23	18	..	27.2
Allia.	Max.	67	66	66	55	48	46	66	63	70	54	48	54	42	42	48	32	20	25	36	41	45	51	36	31	31	24	36	35	29	..	..	45.1
	Min.	48	48	53	52	42	23	24	32	52	25	27	32	28	22	32	31	11	9	10	14	24	27	34	21	13	8	15	26	25	11	..	27.8
Algona.	Max.	64	70	67	65	54	44	55	62	62	49	48	45	44	34	40	42	24	24	38	39	51	45	40	25	25	24	34	40	39	24	..	43.9
	Min.	46	39	45	39	28	23	30	43	36	26	30	31	25	19	26	17	6	8	8	24	25	18	17	9	15	4	18	27	21	9	..	28.7
Allerton.	Max.	70	61	67	58	53	46	55	65	58	54	52	53	41	46	51	50	26	25	39	40	45	50	43	29	30	27	34	37	35	29	..	45.0
	Min.	48	54	44	45	38	24	30	40	39	26	34	30	27	27	34	24	10	8	9	21	23	27	28	19	20	3	10	23	24	10	..	26.6
Alta.	Max.	68	68	62	58	44	45	58	62	57	49	44	42	42	36	36	34	14	22	31	40	50	45	37	23	23	23	32	37	33	25	..	41.0
	Min.	48	44	51	44	29	23	31	46	31	26	26	26	24	22	25	18	3	6	6	26	25	20	16	12	10	2	15	27	18	7	..	23.4
Amana.	Max.	66	61	63	56	53	42	49	63	55	49	48	52	42	39	46	45	25	23	31	38	41	45	44	28	29	22	33	34	36	28	..	42.8
	Min.	48	47	54	46	35	25	27	38	39	26	36	31	26	26	30	25	11	9	7	25	25	24	24	14	16	5	12	22	21	11	..	26.2
Ames.	Max.	68	64	65	65	57	45	55	65	57	52	48	49	45	44	40	40	22	23	30	40	49	46	44	27	28	24	33	38	35	25	..	44.1
	Min.	49	48	55	47	34	22	27	38	35	25	32	31	25	36	27	21	8	8	10	26	24	22	23	14	26	5	15	25	23	10	..	27.4
Atlantic.	Max.	67	60	64	65	52	47	59	65	59	55	50	50	48	48	45	40	21	25	35	42	47	54	39	26	30	25	37	40	36	30	..	45.4
	Min.	49	50	52	41	33	21	32	45	36	26	31	28	21	20	30	22	9	9	4	28	28	24	25	16	20	..	16	25	25	18	..	27.0
Audubon.	Max.	66	59	63	66	52	47	59	65	58	53	48	48	45	41	40	38	20	23	34	41	47	50	45	25	27	22	34	39	35	27	..	43.9
	Min.	48	49	51	41	31	19	29	44	32	24	29	29	20	23	28	19	6	7	25	27	25	23	19	15	19	-5	16	23	22	16	..	25.1
Baxter.	Max.	70	62	68	63	55	44	54	65	58	53	43	53	43	39	41	42	22	24	33	39	46	45	44	25	32	25	34	34	34	25	..	44.2
	Min.	47	47	46	50	34	20	27	38	35	22	34	28	24	22	26	20	8	7	6	24	23	20	23	11	16	2	11	23	23	8	..	24.2
Bedford.	Max.	67	62	64	61	59	47	53	64	61	61	55	51	46	43	53	50	23	24	36	40	52	51	45	30	36	39	30	38	36	28	..	46.8
	Min.	51	53	48	46	30	23	23	42	39	23	32	34	25	25	34	24	9	8	5	23	25	25	27	21	8	18	22	24	25	18	..	27.0
Belknap.	Max.	64	66	75	75	65	55	68	67	65	65	62	58	60	66	67	60	32	30	35	40	40	50	50	40	40	25	36	35	30	30	..	50.7
	Min.	53	55	55	53	42	29	30	42	43	29	35	35	32	32	36	32	13	10	13	26	26	26	36	20	22	9	10	27	25	15	..	30.4
Bonepar'e	Max.	68	61	66	61	51	44	53	67	58	52	52	54	40	43	51	48	26	25	35	41	43	50	45	24	33	24	34	37	34	29	..	45.0
	Min.	45	53	52	48	36	23	26	36	36	23	35	29	26	28	30	26	14	10	9	21	22	25	23	16	20	8	11	22	23	12	..	26.3
Britt.	Max.	68	65	66	58	48	43	53	63	55	49	46	44	46	32	43	36	16	22	30	40	48	40	35	25	25	23	34	38	34	25	..	41.7
	Min.	45	44	38	35	28	22	29	40	31	41	30	25	19	16	24	15	4	6	1	9	25	17	15	8	12	0	14	21	17	2	..	21.1
Burling'n	Max.	72	62	71	58	52	48	56	66	59	53	56	55	41	43	59	52	29	21	34	40	43	51	42	27	28	22	31	37	33	33	..	45.8
	Min.	51	55	54	50	37	29	30	38	38	29	37	34	30	31	34	29	15	11	12	21	25	28	25	17	15	9	15	24	23	15	..	28.7
Carroll.	Max.	70	64	69	73	57	50	63	62	51	53	50	49	46	40	39	28	26	32	38	42	51	50	36	23	27	26	36	39	26	27	..	44.8
	Min.	46	44	53	42	30	18	28	45	40	27	29	32	23	24	26	20	5	-5	1	27	28	2	20	12	18	-3	12	18	21	14	..	24.1
Cedar R.	Max.	67	65	63	57	45	43	50	64	56	51	47	52	42	36	44	38	19	23	33	37	43	45	32	28	30	22	30	35	31	28	..	41.9
	Min.	49	49	50	47	42	27	26	30	39	27	27	33	30	28	27	34	13	11	10	12	12	24	24	15	18	8	7	17	25	12	..	25.8
Chariton.	Max.	69	61	58	57	52	45	55	65	61	54	51	54	43	45	47	50	25	24	37	40	45	51	47	29	33	26	37	37	35	21	..	45.0
	Min.	49	51	48	43	39	24	25	40	42	45	33	30	26	28	32	24	10	9	7	18	24	25	27	18	20	4	12	24	24	11	..	27.1
Charles C.	Max.	69	69	59	64	44	42	51	65	54	50	46	49	40	31	41	33	17	20	27	37	45	41	25	27	21	21	33	40	28	25	..	40.5
	Min.	36	38	42	40	30	22	22	28	38	23	23	26	23	20	19	29	7	6	7	9	2	17	16	12	11	0	0	18	25	7	..	20.5
Clarinda.	Max.	70	60	67	58	53	51	61	65	50	60	50	52	45	51	52	32	20	27	49	40	49	53	41	27	39	25	43	42	40	34	..	46.9
	Min.	50	52	46	45	41	24	26	36	43	27	32	32	30	26	29	26	10	7	7	13	23	29	29	25	22	16	17	20	32	29	.	28.1
Clinton.	Max.	67	67	64	66	53	45	52	62	58	52	51	53	44	39	49	47	20	23	32	37	43	43	43	31	30	24	28	33	33	31	.	44.3
	Min.	44	47	53	49	29	31	25	34	36	23	33	31	35	25	28	28	14	11	9	16	23	19	27	15	14	8	9	28	19	7	..	25.7
Col. Sp'gs.	Max.	64	60	63	56	53	47	58	64	56	57	53	53	33	29	28	35	25	10	8	12	26	25	26	28	25	22	18	20	28	25	..	46.0
	Min.	55	54	44	47	40	26	32	3	33	53	51	51	54	42	40	49	50	29	24	40	40	42	49	45	27	30	25	32	36	33	..	29.2
Colum. J.	Max.	70	61	67	64	53	44	51	61	43	26	31	31	33	28	32	28	13	9	11	28	26	26	23	16	18	7	15	20	21	14	..	44.8
	Min.	48	52	50	50	38	26	27	31	43	26	31	31	33	28	32	28	13	9	24	35	40	46	51	43	26	28	24	34	38	36	29	27.4
Corning.	Max.	65	59	62	61	57	45	58	62	57	59	51	51	45	47	50	44	24	24	35	40	46	51	43	26	28	24	34	38	34	32	..	45.0
	Min.	50	53	48	45	36	23	32	48	33	27	32	32	23	25	33	23	8	7	7	23	27	24	24	21	19	-1	15	28	23	17	..	26.8
CouncilB.	Max.	..	..	..	..	..	..	..	..	..	35	36	35	41	40	41	31	21	8	9	12	12	12	12	17	25	23	21	23	21	25	17	..	28.7
	Min.	47	42	44	48	42	44	35	42	58	55	53	54	45	48	51	51	27	26	40	41	46	51	46	31	32	29	34	37	35	28	..	40.3
Corydon.	Max.	68	60	65	58	56	46	56	61	39	25	33	30	27	26	32	24	9	7	8	20	21	26	30	16	19	2	10	23	23	9	..	26.0
	Min.	48	52	45	45	40	23	28	40	39	25	33	30	27	26	32	24	9	7	8	20	21	26	30	16	19	2	10	23	23	30	..	44.6
Davenpo't	Max.	68	60	66	63	51	42	49	63	58	54	56	54	41	40	50	47	24	22	32	37	43	45	46	32	31	24	34	34	34	25	..	44.2
	Min.	48	52	53	50	35	27	29	40	37	30	36	35	32	30	31	24	14	12	13	24	27	28	23	17	18	9	17	28	19	4	..	24.2
Decorah.	Max.	68	68	58	67	52	48	52	68	57	53	44	48	35	42	41	18	18	26	35	42	38	37	32	29	25	24	29	35	35	30	..	46.8
	Min.	43	39	38	47	30	24	37	40	34	36	33	26	22	25	16	8	7	9	8	25	21	20	14	6	9	3	13	24	19	9	..	22.8
Delaware.	Max.	67	67	64	64	50	40	49	61	54	48	45	48	44	41	40	40	24	20	26	34	38	40	40	26	26	20	28	30	32	29	..	40.9
	Min.	46	43	50	44	29	19	22	39	35	22	31	25	22	20	25	20	7	7	6	11	22	20	20	16	11	1	8	21	16	6	..	22.1
Denison.	Max.	67	64	64	58	56	47	59	64	59	52	49	49	45	41	41	37	21	24	36	42	48	49	46	28	25	25	35	40	35	26	..	44.1
	Min.	49	45	54	42	32	21	34	46	35	28	28	33	33	30	27	20	6	7	4	27	27	22	24	14	19	-1	12	27	23	15	..	26.1
Des M.	Max.	69	59	65	62	49	45	56	66	58	54	48	52	44	39	45	38	18	25	35	40	49	50	43	27	30	24	33	40	35	25	..	44.1
	Min.	51	52	55	49	34	27	32	45	34	29	34	31	29	31	32	18	10	10	10	28	28	24	23	18	18	10	16	28	23	14	..	28.2
De Soto.	Max.	67	60	64	61	54	47	58	66	56	56	50	52	46	41	42	41	21	26	40	43	46	51	45	25	25	18	28	33	24	18	..	44.1
	Min.	50	51	55	44	36	21	29	42	34	27	33	32	23	30	29	21	8	9	12	27	28	24	24	16	19	3	14	24	24	12	..	26.7
Dows.	Max.	66	68	62	65	59	43	53	64	59	49	45	46	45	38	38	32	21	20	30	38	47	41	39	24	24	16	33	39	36	24	..	42.4
	Min.	47	41	48	37	30	21	28	41	34	22	30	27	22	18	25	20	5	7	7	23	24	17	17	10	11	-1	13	22	20	4	..	22.3
Dubuque.	Max.	69	70	63	58	54	41	48	63	56	50	46	53	44	39	44	42	24	20	29	35	41	41	37	29	28	22	34	36	30	34	..	42.3
	Min.	47	44	49	46	34	26	29	39	36	27	34	33	29	26	29	24	11	10	39	40	49	51	40	34	27	22	37	36	34	25	..	26.5
Earlham.	Max.	68	59	65	62	55	45	58	..	65	54	50	48	45	40	44	40	22	24	39	40	49	51	40	34	27	22	37	36	34	25	..	44.1
	Min.	44	47	48	40	35	15	26	..	36	23	30	22	18	23	25	21	5	6	9	18	24	24	21	13	18	-3	22	23	22	16	..	23.1
Elkader.	Max.	72	72	64	65	48	45	51	65	45	51	45	45	50	45	34	33	21	22	24	30	40	44	38	29	32	31	26	29	32	27	26	41.2
	Min.	42	36	41	44	38	20	23	37	38	24	37	27	23	19	23	23	8	9	6	9	28	18	22	19	14	2	9	25	25	24	..	23.5
Esthervil	Max.	68	69	61	64	44	45	58	63	43	48	43	28	28	23	15	22	15	3	4	7	9	25	17	15	9	11	26	27	29	32	30	40.1
	Min.	40	37	36	40	26	16	21	35	40	23	28	28	23	15	22	15	3	4	7	9	25	23	20	16	15	6	5	20	16	6	..	19.8
Fayette.	Max.	69	69	61	65	53	43	63	64	55	50	44	49	45	40	41	36	18	18	27	35	43	40	33	27	26	24	32	34	39	24	26	42.0
	Min.	45	37	41	38	28	18	21	31	35	20	31	33	20	18	21	16	6	7	5	9	23	15	18	15	20	6	-1	27	24	6	..	20.1
Forest C'y	Max.	72	73	60	44	44	44	55	65	43	50	45	44	42	34	40	25	15	23	37	38	25	26	40	24	0	4	21	39	22	4	..	40.8
	Min.	42	42	45	37	32	23	29	34	41	23	28	26	20	16	23	21	4	4	6	25	26	24	28	26	24	5	18	34	33	26	..	21.8
Ft. Dodge	Max.	65	59	68	54	57	52	58	65	61	51	50	46	45	41	39	39	22	22	31	42	50	48	42	27	25	24	34	38	35	25	..	43.4
	Min.	32	28	33	20	26	23	30	35	35	28	30	33	25	24	30	29	7	9	22	35	42	50	48	42	27	24	34	38	35	25	..	22.5
Galva.	Max.	59	69	64	..	48	46	..	63	59	50	45	44	44	38	37	34	17	4	6	22	27	23	21	19	18	-3	15	23	21	8	..	41.6
	Min.	48	42	38	..	29	20	..	31	34	25	25	30	19	23	47	39	23	30	39	43	50	51	49	32	27	27	43	44	35	26	..	21.7
Glenw'd.	Max.	66	60	63	67	56	50	61	66	62	57	54	39	39	29	38	29	7	8	13	29	27	28	27	23	20	18	28	32	35	27	..	47.3
	Min.	51	52	48	47	38	27	33	47	39	42	29	48	39	33	38	35	25	18	26	33	41	38	35	26	25	22	25	31	26	28	..	27.0
Grand M.	Max.	67	68	62	64	54	40	49	63	56	46	39	48	39	33	38	35	25	7	8	10	25	18	20	16	12	2	10	23	19	8	..	46.0
	Min.	45	49	45	32	30	20	26	36	33	25	25	27	24	19	23	23	7	7	8	10	25	18	20	16	12	2	10	23	19	8	..	24.6
Greenfi'ld	Max.	68	58	65	64	65	57	58	60	57	60	51	50	47	45	45	44	21	24	35	41	47	50	45	45	40	24	35	37	35	33	..	43.9
	Min.	47	50	51	49	32	28	29	33	29	20	29	32	25	28	29	21	6	6	8	7	24	23	23	15	17	1	13	23	22	17	..	41.8
Grinnell.	Max.	64	60	64	56	53	42	50	63	56	49	45	51	41	38	42	41	23	22	30	32	44	45	42	28	16	3	9	24	24	10	..	43.0
	Min.	48	49	54	48	35	25	28	38	40	26	36	32	28	24	28	23	10	8	8	22	23	21	24	15	16	3	9	24	24	10	..	42.1
Grinnell (near).	Max.	66	60	62	58	53	42	50	63	58	48	45	50	43	38	42	40	24	22	28	38	44	45	43	28	27	22	32	32	32	25	..	44.8
	Min.	48	50	53	47	35	25	27	36	37	24	35	29	24	24	28	24	8	7	5	23	39	44	42	40	25	29	24	35	35	27	..	43.0
Grundy C.	Max.	68	68	63	66	56	44	51	65	56	49	48	52	45	42	41	38	25	23	32	39	44	42	40	25	29	24	35	35	35	27	..	46.0
	Min.	47	43	54	41	32	21	26	39	36	22	34	22	20	18	26	23	7	7	4	23	24	18	21	13	9	0	10	21	24	4	..	24.8
Guthrie C.	Max.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	28	22	7	..	7	28	28	23	26	16	19	0	10	25	24	17	..	28.7
	Min.	49	50	49	45	36	20	29	45	37	28	31	30	24	29	39	37	16	21	33	41	48	41	35	26	28	27	34	37	33	33	..	40.3
Hampton	Max.	71	72	60	68	52	45	54	66	56	46	46	46	32	27	35	39	37	16	21	33	41	48	41	35	26	28	15	22	24	12	..	43.9
	Min.	46	41	50	38	30	22	28	42	33	24	32	27	25	20	24	16	6	7	8	21	26	19	17	10	14	2	14	22	21	9	..	23.6
Hanlont'n	Max.	68	68	57	67	48	43	54	64	58	50	47	40	42	31	40	37	16	24	30	37	50	33	35	27	24	24	34	37	35	27	..	44.8
	Min.	45	43	40	38	28	18	28	32	31	21	28	26	21	11	22	14	4	4	6	11	26	26	15	7	10	-1	13	21	20	2	..	24.1
Harlan.	Max.	66	59	64	63	50	46	57	62	58	52	45	47	45	44	42	35	19	23	36	40	48	51	42	29	30	27	37	40	35	31	..	44.2
	Min.	51	49	52	45	34	25	32	43	33	25	29	30	24	29	30	19	6	8	5	24	41	46	49	43	25	27	27	36	39	34	29	30.1
Hopeville.	Max.	69	60	66	48	53	45	56	66	56	54	53	52	44	47	57	40	20	20	24	30	40	52	40	38	25	27	24	34	39	40	24	44.1
	Min.	48	53	46	39	33	24	31	39	33	26	33	32	28	28	33	20	9	8	9	23	28	27	22	20	18	1	11	24	23	18	..	25.0
Humboldt	Max.	69	69	64	66	58	44	58	65	60	52	47	45	48	40	28	40	20	20	24	30	40	52	40	38	25	27	24	34	39	40	24	44.1
	Min.	49	41	50	40	30	20	30	45	36	26	31	31	24	20	28	20	6	8	8	24	42	29	36	27	27	10	18	25	24	6	..	23.6
Indep'nce	Max.	67	69	60	62	52	42	50	64	55	48	44	49	44	37	40	38	23	8	7	16	30	18	21	13	10	1	10	19	20	7	..	41.3
	Min.	45	44	52	42	33	20	24	35	38	20	36	23	25	22	26	26	8	8	7	16	30	18	21	13	10	1	10	19	20	7	..	22.9
Indianola.	Max.	69	60	65	61	53	45	57	63	57	54	50	52	45	39	45	43	20	24	35	42	48	50	46	28	26	24	33	38	36	26	..	44.7
	Min.	50	52	53	48	36	24	29	43	34	26	34	33	26	34	30	22	10	9	9	26	39	43	46	33	27	30	24	30	35	30	32	27.1
Iowa City	Max.	72	62	69	58	46	47	52	67	51	54	47	54	41	39	47	38	20	24	33	39	46	50	45	25	15	16	6	7	19	26	12	48.0
	Min.	49	49	51	48	43	25	24	29	37	24	28	31	25	25	35	25	9	9	8	30	29	46	42	30	25	27	27	34	41	27	24	25.3
Iowa Falls	Max.	68	67	64	65	45	43	52	64	54	50	46	48	45	41	50	46	23	24	37	39	46	50	45	27	25	10	10	19	22	5	..	41.3
	Min.	41	42	43	30	31	21	22	28	39

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR NOVEMBER, 1903—CONTINUED.

STATIONS.		DATE.																														MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Larchw'd	Max..	..	70	65	58	44	46	57	61	58	49	43	43	39	34	35	32	16	21	28	43	52	42	37	24	24	37	..	..	37	25	..	41.5
	Min ..	..	..	40	44	26	20	35	44	30	28	24	26	30	16	23	13	1	5	2	26	22	19	12	12	16	2	..	..	20	5	..	20.7
Larrabee.	Max..	69	68	61	60	43	48	59	64	57	51	44	42	44	39	43	34	16	22	33	44	52	44	36	24	24	26	35	38	36	28	..	42 8
	Min ..	45	42	48	37	27	19	33	43	29	22	26	28	20	18	25	15	4	5	3	26	25	20	15	10	10	-1	13	28	18	4	..	21,9
LeMars ..	Max..	64	68	60	60	50	45	57	64	58	48	44	42	44	30	42	32	19	23	35	43	50	44	39	25	23	25	39	40	35	27	..	42.8
	Min ..	43	42	47	40	29	25	35	43	35	23	26	31	22	24	27	16	3	8	6	25	25	22	17	14	19	10	17	21	20	13	..	23.9
Lenox....	Max..	66	60	62	60	55	46	58	64	53	54	53	50	45	47	50	47	25	23	37	40	46	50	43	26	26	24	36	38	35	30	..	45.1
	Min ..	50	52	48	47	37	24	30	41	37	26	31	33	27	26	32	24	7	6	7	22	23	25	25	20	18	2	14	27	23	17	..	26.7
Leon.....	Max..	68	61	65	60	58	45	55	59	60	54	53	52	44	45	53	53	26	28	35	39	44	50	46	33	28	26	35	38	35	27	..	45.7
	Min ..	50	54	46	48	40	25	31	43	40	27	34	34	28	29	34	24	11	9	12	22	25	28	32	21	20	6	12	27	25	18	..	28.5
Logan....	Max..	65	64	62	65	48	47	50	62	64	58	56	54	48	45	42	38	24	20	31	42	46	48	45	35	33	38	40	38	26	27	..	45.4
	Min ..	40	38	36	35	35	23	18	38	30	30	28	34	35	30	33	20	7	8	6	29	27	25	20	21	21	19	27	22	18	14	..	25.6
Maquo'ta.	Max..	68	67	67	67	49	45	50	64	56	52	46	55	47	37	45	39	22	24	35	36	42	44	34	33	33	28	29	34	30	34	..	48.7
	Min ..	39	40	42	44	40	20	19	25	35	22	23	27	23	24	24	30	12	10	9	8	15	17	20	16	13	5	4	17	24	10	..	21.9
Marshlt'n	Max..	70	67	65	66	48	45	53	66	55	51	47	51	47	36	41	31	18	23	32	39	46	46	31	24	29	29	35	36	29	26	.	42.7
	Min ..	46	45	46	47	34	22	24	23	44	23	24	33	26	24	24	30	9	8	8	9	24	21	22	14	14	3	4	18	24	8	.	23.5
Mason C..	Max..	68	68	62	64	55	44	51	63	55	49	44	44	42	37	40	36	22	22	29	37	45	42	36	28	24	22	32	39	34	24	..	41.9
	Min ..	46	42	46	40	33	26	29	39	35	27	34	34	26	21	26	22	8	8	9	23	27	20	20	12	14	4	16	25	24	8	..	24.8
M'nticello	Max..	66	65	66	65	63	64	62	52	49	47	50	48	52	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
	Min ..	33	37	36	27	25	23	21	20	27	24	20	18	18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Mt. Ayr..	Max..	67	59	64	57	53	49	59	65	59	57	54	53	46	50	52	49	25	25	40	42	46	51	43	31	30	28	38	40	35	28	..	46.5
	Min	50	53	45	48	37	26	31	43	36	27	32	33	29	29	33	23	9	7	10	22	25	28	27	21	20	6	14	26	23	18	..	27.7
Mt. Pl'snt	Max..	70	62	65	63	53	41	50	62	58	51	53	53	46	43	52	50	29	23	32	39	42	49	45	29	31	26	32	36	33	32	..	43.1
	Min ..	46	51	54	49	36	22	24	38	40	22	37	29	25	27	30	28	13	9	8	22	23	25	29	16	20	6	11	21	22	12	..	26.5
Mt. Ver'n	Max	67	62	67	60	52	45	50	65	50	54	45	51	40	42	44	35	18	22	35	34	38	39	36	28	28	24	25	31	28	31	..	41.6
	Min	46	48	55	47	36	21	25	35	34	22	33	28	25	23	23	18	8	6	7	21	21	21	21	13	8	2	11	20	17	9	..	23.5
New H. ..	Max	69	70	63	63	59	42	50	64	57	49	44	..	44	29	35	30	14	19	26	35	43	39	35	28	26	22	31	36	34	25	..	40.9
	Min	45	43	46	40	29	19	25	34	33	21	33	..	16	16	22	..	4	5	4	13	13	17	17	9	9	-2	10	19	17	4	..	20.0
Newton ..	Max..	67	61	63	62	57	43	52	64	60	50	50	51	43	41	43	43	25	23	30	39	45	45	45	30	30	26	35	34	35	27	..	44.0
	Min ..	47	47	54	49	35	23	27	37	33	24	34	29	23	24	28	22	7	7	6	24	22	23	25	13	17	2	13	23	22	10	..	25.3
Northw'd	Max..	68	69	59	64	50	41	51	63	55	49	44	43	40	32	46	39	16	22	28	39	50	40	36	29	25	23	33	38	35	26	..	41.8
	Min ..	45	43	41	42	29	22	23	34	33	23	31	26	25	18	24	15	5	5	8	16	25	17	16	9	12	2	17	21	19	6	..	21.9
Odebolt ..	Max..	70	68	64	64	50	46	59	63	59	51	48	45	39	40	35	36	19	26	35	41	51	49	37	26	26	25	35	37	34	26	..	43.5
	Min ..	49	45	54	41	31	18	30	36	33	31	27	27	20	22	25	19	5	6	3	23	21	22	20	12	19	0	15	27	22	10	..	23.9
Ogden....	Max	68	63	69	68	49	48	60	68	49	56	49	52	50	40	41	31	20	29	39	45	50	50	36	26	32	27	35	35	29	28	..	44.7
	Min ..	41	47	47	43	32	19	25	31	40	22	25	36	20	20	24	21	4	5	4	20	22	24	20	10	13	-1	2	15	21	5	..	21.9
Olin	Max..	66	64	65	58	55	41	48	63	55	49	48	52	43	40	44	44	29	19	29	35	40	41	43	29	29	24	28	33	33	29	..	42.5
	Min .	49	48	48	47	38	24	26	33	40	22	37	28	25	25	29	29	10	9	7	20	22	19	25	14	14	4	10	21	20	9	..	25.1
Omaha, N	Max..	62	58	61	61	46	48	61	65	60	56	49	49	48	48	43	32	17	27	36	43	52	52	44	28	27	27	45	46	38	27	..	45.2
	Min	52	53	52	46	37	33	37	48	37	35	32	37	33	32	32	17	8	10	15	31	30	31	28	23	23	22	25	34	24	18	..	31.2
Onawa....	Max..	69	62	67	59	53	48	60	65	60	51	49	44	45	43	43	35	20	29	34	44	49	46	41	29	32	27	40	40	36	26	..	44.9
	Min ..	51	48	52	45	33	27	36	44	38	31	29	36	27	29	31	19	7	8	10	28	26	25	23	21	22	19	20	26	24	16	..	28.4
Osage.....	Max..	66	66	58	63	53	40	49	62	57	47	44	42	40	33	41	36	21	19	25	36	45	40	34	27	23	19	31	36	33	23	..	40.3
	Min ..	45	42	43	41	29	21	28	33	35	23	33	26	23	18	24	21	5	5	7	14	25	17	18	10	11	0	12	20	22	6	..	22 0
Osceola...	Max..	69	58	63	64	47	66	67	66	50	53	50	54	57	43	40	48	50	40	41	46	51	47	45	30	25	33	38	36	27	..	..	48.6
	Min ..	48	38	50	48	39	23	26	47	44	27	33	38	28	30	32	32	40	8	8	30	23	26	40	..	10	5	13	25	23	15	..	29.3
Oskaloosa	Max..	70	60	67	58	50	46	58	66	57	62	48	54	41	38	47	44	22	23	34	41	45	49	42	25	31	24	37	35	33	26	..	44.4
	Min	48	52	53	48	37	22	28	38	34	26	37	33	24	26	30	23	10	8	8	25	23	23	24	14	20	4	12	22	25	10	..	26.2
Pacific J'n	Max..	76	60	63	61	53	47	59	64	59	57	47	49	48	47	49	35	21	25	38	41	50	50	43	28	31	28	42	40	35	28	..	45.8
	Min ..	52	54	49	45	35	26	34	45	35	29	31	35	26	29	34	21	8	9	9	30	24	27	25	25	23	23	23	28	25	15	..	29.1
Perry.....	Max..	69	62	65	65	55	45	57	65	58	53	44	50	46	42	41	40	22	24	34	40	49	48	44	46	30	25	34	38	35	28	..	44.8
	Min ..	49	50	55	46	36	23	31	44	34	28	32	32	26	27	29	21	8	9	9	28	26	23	24	16	13	4	12	23	23	10	..	26.4
Plover....	Max..	68	69	64	68	52	45	59	61	51	49	46	43	41	31	40	28	20	16	31	41	53	41	28	29	27	22	36	39	30	26	..	41.7
	Min ..	39	43	50	50	30	20	38	42	30	19	29	25	20	18	26	13	4	6	4	25	30	18	20	8	10	3	10	19	20	8	.	22.6
Primghar	Max..	65	66	60	53	41	45	57	61	55	55	46	39	41	32	38	32	17	20	28	40	51	41	35	22	24	32	32	37	..	..	..	41 8
	Min ..	43	42	43	39	23	42	33	44	25	30	44	36	21	20	26	15	1	5	5	25	24	20	14	11	15	12	15	23	..	..	..	25.2
Red Oak..	Max .	65	62	62	62	55	54	59	61	59	56	49	49	47	47	49	44	24	24	36	40	46	50	44	30	30	31	27	39	37	29	..	45 6
	Min ..	54	55	53	50	39	31	37	49	40	34	33	37	32	33	38	23	10	11	14	30	30	32	27	26	24	24	23	32	27	22	..	32.3
Ridgeway	Max .	71	73	61	70	59	49	54	70	62	51	52	54	47	35	44	40	25	25	32	38	49	43	37	36	36	29	33	39	35	35	..	46.2
	Min ..	47	45	46	44	30	21	27	36	35	24	36	26	24	16	22	25	7	6	10	12	25	18	20	13	13	1	13	24	18	10	..	23.1
Rockw'l C	Max .	60	60	65	66	58	45	60	63	58	50	50	50	47	42	40	38	20	19	40	53	55	56	45	26	27	25	35	38	35	33	..	45.3
	Min ..	43	42	43	45	30	23	35	38	30	26	28	30	28	23	26	19	6	8	9	10	11	21	19	14	9	2	1	2	23	11	..	21.8
Ruthven .	Max..	68	67	63	62	47	45	57	70	58	50	47	40	40	32	40	36	25	22	28	39	40	52	36	24	30	28	33	40	39	30	..	42 9
	Min ..	40	44	43	37	27	20	31	40	34	34	30	28	24	20	20	14	-4	7	10	24	20	18	15	9	11	2	16	25	20	9	..	22.3
Sac City..	Max..	67	68	63	63	54	46	59	63	57	49	49	45	45	42	39	35	21	23	32	40	50	45	49	29	27	24	33	40	35	25	..	43.9
	Min ..	47	40	53	44	31	21	30	45	35	27	28	31	24	24	25	18	5	7	8	27	26	22	19	14	17	3	15	25	21	9	..	24.7
St. Cha'les	Max..	68	60	65	64	60	49	60	68	58	56	51	54	46	39	46	45	22	28	40	44	49	54	49	26	33	32	35	37	28	30	..	46.5
	Min ..	49	51	53	48	35	23	30	42	35	29	33	33	28	30	30	22	9	8	10	26	26	26	25	17	20	4	14	28	24	12	..	27 3
Sigourn'y	Max	67	68	69	66	68	48	53	66	59	55	48	55	41	38	47	46	27	24	32	..	..	..	.	..	..	..	..	..	..	..	..	....
	Min ..	47	48	49	47	44	22	25	37	39	24	37	32	25	25	29	26	11	8	8	..	..	..	..	..	..	..	..	..	..	..	..	....
Sioux C'r.	Max..	67	67	58	57	42	45	57	62	57	48	42	39	42	36	38	32	14	20	30	40	51	41	38	23	23	22	36	38	35	25	..	40 8
	Min ..	44	42	43	41	28	22	34	42	31	26	25	29	22	20	26	14	2	6	6	15	21	21	14	12	18	8	15	26	19	8	..	22.7
Sioux C'y.	Max..	66	68	60	56	45	46	60	64	58	50	46	42	41	39	41	30	14	23	32	42	52	45	41	24	25	24	37	40	36	25	..	42.4
	Min ..	48	45	51	42	32	28	37	47	32	31	30	30	25	25	30	14	5	10	8	29	29	24	18	19	22	18	19	33	19	12	..	27.1
Storm L..	Max..	67	53	68	50	50	58	62	58	49	45	42	43	37	37	34	18	22	32	40	51	45	41	23	23	23	32	38	35	25	24	..	40.8
	Min ..	46	35	48	36	26	24	32	45	34	26	25	34	25	20	22	15	3	6	9	25	26	20	15	12	11	0	15	25	20	5	..	22.8
Stuart. ..	Max .	..	65	62	63	57	46	56	62	51	49	49	49	45	42	40	41	25	29	33	40	47	49	41	31	37	23	32	37	36	32	..	43.8
	Min ..	..	35	42	33	25	24	29	37	28	31	31	32	28	30	27	23	7	8	11	27	27	26	28	19	20	6	16	15	24	13	..	24.2
Thurman	Max..	62	60	62	59	55	47	58	63	60	58	49	49	47	45	50	36	23	25	35	40	49	50	46	29	29	28	41	42	36	38	..	45.7
	Min ..	53	53	46	44	34	28	35	47	35	27	31	37	25	26	34	22	8	7	7	30	27	24	25	24	24	22	22	28	26	15	..	28.9
Tipton....	Max..	70	61	67	58	54	47	50	64	56	55	49	54	42	38	46	46	18	25	34	36	41	43	43	30	34	28	27	32	34	32	..	43.8
	Min ..	48	50	55	50	30	27	27	36	38	25	36	36	28	28	28	28	12	10	11	22	24	24	23	15	17	8	12	23	20	12	..	27.1
Toledo....	Max..	70	69	66	57	53	46	52	67	57	51	47	52	46	39	42	41	20	23	33	39	45	44	43	26	30	24	35	34	36	28	..	43.8
	Min	45	45	51	43	32	22	27	39	34	22	36	30	24	22	27	21	9	7	7	23	24	20	19	14	12	1	10	22	21	8	..	23.9
Villisca...	Max..	62	56	53	60	48	51	48	50	50	52	40	42	42	46	32	12	18	28	36	48	55	60	55	26	32	36	38	36	35	38	..	43.0
	Min ..	50	52	50	43	24	24	26	31	32	25	30	27	28	24	25	8	7	13	18	22	24	25	22	21	10	10	28	24	24	32	..	26.0
Wapello..	Max..	68	61	64	61	53	46	49	63	59	50	53	52	41	39	49	48	29	29	38	38	41	47	44	28	27	29	29	37	32	36	..	44.7
	Min ..	50	55	55	51	39	29	28	38	39	28	37	34	28	31	32	29	15	13	13	25	27	26	26	19	21	9	15	25	24	16	..	20.2
Washi'ton	Max..	70	59	69	65	50	45	53	66	57	53	48	55	40	38	48	37	22	25	35	39	42	47	35	27	33	24	33	36	30	31	..	43.8
	Min ..	46	48	48	45	29	22	24	35	31	23	29	28	24	24	28	19	9	7	6	22	21	21	17	12	12	3	11	19	16	8	..	24.6
Waterloo	Max..	70	70	63	66	46	44	51	67	55	51	49	51	46	36	44	40	29	23	33	38	45	41	40	28	30	24	35	35	36	30	..	43.9
	Min ..	48	42	44	43	33	23	26	37	34	23	37	33	25	23	27	22	8	9	8	20	23	20	20	15	10	2	15	21	21	9	..	24,0
Waverly..	Max..	69	68	59	63	50	43	50	65	53	49	45	47	46	35	41	36	20	20	29	37	44	39	35	27	22	..	33	35	35	26	..	40.9
	Min ..	49	41	47	41	33	23	28	36	33	23	34	28	23	21	26	20	7	7	7	20	25	20	19	11	2	..	11	20	19	8	..	22 7
W.Bend..	Max..	69	68	66	65	48	44	58	64	58	50	46	44	45	34	40	37	17	23	29	39	53	41	38	24	24	23	34	39	39	25	..	44.1
	Min ..	47	41	48	47	28	20	30	43	34	24	33	29	21	19	24	17	4	6	6	24	30	18	17	17	13	1	16	28	22	4	..	23.7
Whitten..	Max.	67	66	63	..	38	42	51	64	60	..	49	49	47	41	41	41	23	20	30	38	42	43	39	27	27	21	34	36	35	25	..	42 3
	Min .	47	45	51	..	31	22	25	37	35		23	27	22	20	26	20	6	7	4	22	22	19	20	10	11	..	11	22	22	5	..	22,0
Wilton J.	Max..	69	60	65	62	53	47	50	62	58	52	50	52	42	39	49	40	30	23	31	38	42	47	43	30	32	25	35	30	32	30	..	43.9
	Min ..	48	50	51	50	37	28	29	35	40	24	38	29	30	25	28	23	13	9	8	24	22	22	23	13	14	5	15	10	22	12	..	25.4
Wintres't	Max..	..	..	..	..	..	52	58	66	60	56	50	53	50	50	47	40	40	35	41	42	52	56	51	48	42	35	38	46	35	..	..	47.6
	Min ..	..	..	..	..	..	20	32	40	36	27	32	30	22	20	27	22	7	6	30	31	36	22	20	15	21	1	15	23	22	..	..	23 2
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DAILY AND MONTHLY PRECIPITATION FOR NOVEMBER, 1903.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	.27	....	.21	....	....	....	....	....	....	.40	....	T	..	....	T	....	....	....	....	..	....	....	.30	.10	....	..	....	....	....	....	.88
Albia	....	T	.20	.01	....	..	....	....	....	....	....	....	T	..	....	.03		..		....	....	..	..	....	T	....	....	....	....	....	....	.64
Algona	....	....	....	....	....	..	....		T	....	....	....	T	..	T	....	..	....	....	....	....	....	....	....	....	....	....	....	T	....	....	T
Allerton	T	.10	.45	.67	..	.	....		....	....	.33		T		....	....	....	....	....	....	..	....		.17	.02	....	..	....	T	T	..	1.74
Alta	.01	....	.50	....	..	..	..	....	.02	....	....	T	....	....		....		..	..		....	....	....	.09	....	....	..	..	T	....	....	.62
Alta (near)	....	..	.62	....	....	..	....	.02	..	....	....	....	..	..	....	..	....	....	....	....	..	..	....	.15	....	....	....	....	T	....	....	.70
Amana	....	.15	.10	....	..		....	....	....	..	.35	.	...	T	T	T		....	..	..	..	..	....	....	....	....	..	....	T	..	....	.60
Ames	....	.10	.04	..	....	....	..	..	....	..	....	....	....	....	....	....	..	....	....	..	....	....	....	....	....	..	....	....	....	....	....	.14
Atlantic	.04	.40	.20	..	....	....	....	....	T	....	....	....	T	..	....	T	....	....	..	....	....	..	..	.60	....	..	....		....	..	....	1.24
Audubon	.10	.60	.03	....	.	....	....		..	....	....		T	....	.10	....	....	....	....	....	....	....	....	.10	.01	....	..	....	....	..	....	.94
Baxter	...	.20	....	....	....	....	....	....	..	....	..	....	....	....				..	....	....	....	....	....	....	.	....		....	....	..	..	.20
Bedford	.06	.11	.04	57	....	....	....	....	....	....	....	T	....	....	....	T	....	....	....	..	....	.....	....	.08	....	....	..	..	....	.01	....	.87
Belknap	.25	.10	.16	....	....	....	....	....	..	....	1.00	....	....	..	....	T	....	....	....	....	....	....	....	T	....	..	....	....		....	..	1.51
Bonaparte	....	.09		..	....	.	....	....	.	..	.80	....	.05		....		....	....	....	....	..	....	....	....	....	....	..	....		....	..	.04
Britt	...	....	T	....	....	....	....	..	....	....	..	T	.03	T	.02	T	T	....		....	..	....	T	....	T	....	....	T	T	T	....	.05
Buckingham	....	28	....	.01	....	....	....		T	..	....	....	....	....	..	..	....	..	....	....	....	....	....	.	..	....	....	....	T			.29
Burlington	....	.27	....	.03	T	..	....	...		....	.50	....	.04	...	....	..	....	....	....	....	.		....	.	.	..	.	....	T	..	....	.84
Carroll	T	.12	....	....	..	....	....	..	.02	....	....	....	T	....	....	..	....	....	..	....	....	....	..	.30	....	..	..	....	....	T	..	....	.44
Cedar Rapids	....	....	.10	T	....		....	....	....	....	.36		....	....	....	.02	..	..	....	....	....	..	....	....	....	..	....	....	T	T	..	.48
Chariton	T	T	.10	T	...	...	..	...	..	....	....	....	....	....	....	....	....	..	..	....	..	....	....	.01	..	....	....	....	T	T	....	.11
Charles City			....	....	....	..	....	....	....	....	....	....	..	T	T	T	....	....	..	..	....	....	....	....	.05	....	..	....	....	.02	..	T
Clarinda	.71	....	.18	.17	....	....	..	....	....	..	.71	....	.02	....	.02	T	....	....	....	....	....	..	....	....	....	....	....	.01	.02	....	....	1.13
Clinton	...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.	....	....	....	....	.03	..	.78
College Springs	.23	.08	..	....		..	..	..	....	....	.65	....	.06	...	....	....	....	....	....	....	....	....	....	T	..	....	....	....	T	....	....	.34
Columbus Junct'n	....	.03	....	....	....	....	..	..	....	....	....	....	....	....	....	.05	T	....	....	....	....	....	..	.25	.05	....	....	..	T	T	....	.74
Corning	.16	.09	....	.25	...	....	...	..	T	....	....	....	T	....	....			....	....	....	....	....	..	.05	....	....	....	....	T	T	....	.85
Council Bluffs	.25	.57	.05	T	..	..	..	T	....	....	....	....	..		....	T	..	....	....	....	....	....	..	.05	....	....	....	....	T	T	...	.92
Corydon	.01	.04	.72	.22	..	..		..		...	.14	T	....	....	T	T	....	....	....	..	.	..		....	.13	....	..	..	T	T	....	1.26
Cumberland	.08	...	....	....	....	....	...	....	....	..	..	...	T	....	....	T	....	..		....	....	..	.70		....	....	.	T	T	T	....	.78
Davenport	T	.12	.05	T	....		...	..	..	.	.53	..	T		T	T	....	....	....	....	....		T	....	....	....	....	T	T	....	....	.70
Decorah	..	....	....	....	..	..	....	....		....		....	T	T	.18	....	..	....	....	....	....	....	....	....	..	..	..	....	..	....	....	.18
Delaware	....	....	..	....	...	..	....		....	..	.29	....	....	....	.04	.03	....	....	....	....	....	....	..	..	..	....	....	....	....	..	....	.36
Denison	T	....	.36	....	...	..	....	..		..	....	..	T	....	T	T	..	....	..	..	....	....	..	T	T	..	....	....	....	....	....	.40
Des Moines	T	.25	....	.06	....	.		..	T	....	T	.	T	....	T	T	..	....	..	....	..	....	....	T	T	..	..	..	T	T	....	.31
De Soto	.20	.60	.02	.12	....	....		....	..	....		....	T	....	T	....	....	....	....	....	..	....	....	.10	....	....	....	....	T	....	..	1.04
Dows	...	....	.10	...			..	..	....	....	....		..	....	T	.01	....	....	....	....	....	....	....	.	....	....	....	....	T	....	....	.10
Dubuque	T	....	T	T	....	.	..		T	....	.69	T		....	.01	.01	..		..	....	....	....	....	....	....	....	....	T	.04	....	....	.75
Earlham	.11	.40	..	.09	....	....	....	....	..	....	....	..	T	....	T	T	....	..	....	....	....	..	....	.10	T	....	..	....	T	....	....	.76
Elkader	....	....	....	....	....	..		..	..	.	.16	..	....	T	.05	T	..	....	....	..	....	..	....	....	....	....	....	....	....	....	....	.21
Estherville	....	....	....	.02	...		..	.	..	.02		....	....	....	....	....	T	....	....	....	....	....	....	....	T	..	..	.	T	.02	..	.06
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Fort Dodge	....	....	.39	..		..	..	....	....	....	....	....	T	T	.02	....	....	....	..	..	....	....	..	....	T	....	....	....	....	....	....	.41
Fort Madison	T	.20	....	..	T	....	....	..	....	....	.51	..	.13	....	..	T	..	....	..	..	..	..	..	....	.50	..	....	....	....	T	..	....	1.34
Galva	....	....	....	..	....	..	..	..	T	..	....		T	....		..	....	....	..	..	.	....	....	....	.05	....		....	....	....	....	.05
Gilman	.	T	T				..	..		....	.18		....	....	T	....	....		....	..	..	....	....	T	....		....	T	T	T	....	.18
Glenwood	.25	T	T	T	....	..	..	..	T			T	....	..	....	T	....	....	....	....	..	....	..	.10	..	T	....	....	.	....	T	.35
Grand Meadow	...	....				..	..	..	T	....	.14	..	.03	...	.04	.06	..		....	....	....	....	....	....	....		....	....	.01	....	....	.28
Greenfield	.06	.32	.01	....	....	..	..	..	..		....	....	T	....	T	T	....	....	..	....	....	....	....	.15	.11	....	..	....	T	....	....	.65
Grinnell	....	.23		....	....		..		..	....	.01	..	T	...	....	T	....	....	..	....	....	..	....	T	....	....	..	....	T	....	....	.24
Grinnell (near)	....	.15	.10	....	....	....	..	..	..	..	....	..	....		..	T	....	....	....	....	....	....	..	..	....	..		....	T	....	....	.25
Grundy Center	....	....	.15	....	..		..	.	....			..	....	...	.06	T	..	..	..	..	....	....	..	....	....	....	....	....	....	....	..	.21
Guthrie Center	.29	.65	.00	.10	...	....	..		..	....		..	.02	....	.02	T	....	....	....	....	....	..	....	.12	.06	....	....	....		....	..	1.32
Hampton	..	.14	....	....	..		..	....		....	....	....	.02	....	.03	..	..	..	....	....	..	....	....	....	..	....	....	T	....		....	.19
Hanlontown	....	....	....	....	....	..	..	..	.04	....	....	....	.04	....	T	..	..		....	....	....	....	....	....	..	....	....	....	T	....	..	.08
Harlan	.09	.34	.04	.12		..	..	..	.05	....	....	....	.10	....	T	T	....	....	....	....	..	....	....	.27	.01	..	....	....	T	T	..	1.02
Hopeville	.01	.10	.16	.3	....	..	.	..	T	..	..		T	..	..				....	..	..	..	..	.20	....	....	..	....	T	T	....	.78
Humboldt	....	....	.06	-		..	..	..		T		..	.02	..				....	..	....	..	..	....	....	....	..	....	....	T	....	....	.08
Independence	..	....	.01	...	..	..	..			...	.15		T	..	T	T	....	..	..	....	..	..		....	....	....	.	T	T	..	..	.16
Indianola	.04	.48	....	.09	....		....	....	T	T	T	..	....	....	T	T	T	....	..		..	..	..	.10	.02	..	....	....	T		..	.73
Iowa City	T	....	.25	T	....	..	..	..	..	..	.72		....	T		T	T	....	..	....		..	..	....	..	....	....	....		T	..	.97
Iowa Falls	T	....	.09	....	....	....	....	....	....	T	T	....	....	T	T	T	....	....	.	....	....	..	....	....	....	....	....	....	....	T	..	.09
Jefferson			.15	....	....	....	..	..	....	..	....	....	....	....	.01	....	..	....	....	....	....	....	....	.07	....	....	....	....	....	T	..	.23
Keokuk	T	.01	....	....	T	..	..		....	....	.44	....	.2	..	T	.14	....	..	.	....	....	..	....	.02	T	..	....	....	....	T	....	.87
Keosauqua	....	T	.10	T	T	..		....	....	..	.62	T	....	T		....	....	..	..	....	....	....	....	....	....	.02	....	....	....	T	....	.74
Lacona	.26	.08	....	.37	....	....	..	..	....	.05	.10	..	....	....	....	....	....	..	..	....	....	....	.10	....	....	....	....	....	....	T	....	.94
Larchwood	....	....	T	T	..	....	....	T	07	....		T	T	....	....	....	....	....	..	....	..	....	..	.10	T	.	....	....	....	T	....	.17
Larrabee	..	....	.12	..	....	....	....	....	T	....		T	....	..	....	T	..	..	....	....	....	....	....	.14	....	....	....	....	....	T	....	.26
Le Claire	....	....	.19	....	....	..	..	....	..		.47	.04	....	..	..	T	....	.	..	..	....	....	..	....	....	....	..	T	T	T	....	.70
Lenox	.16	.03	....	.07	....			..	..	....	....	....	T	..	....	.02	....	.	....	....	....	....	....	.15	....	....	....	....	..	....	....	.43
Leon	...	.05	....	.27	....	..	....	....	..	..	.		....	..	....	....	....	....	....	....	....	....	....	.54	..	....	....	....	....	....	....	.84
Logan	....	.36	.30	.50	....			..	..	..	....	....						..	....	....	..	....	....	.40		....	....	.06	....	.06	....	1.54
Maquoketa	....	..	.08	.02	..	....	....	..		..	.87	.15	....	....	....	.04	....	..	....		....	..	....	....	T	..	..	..	T	....	..	1.13
Marshalltown	T	....	.33	.02	....	....	....	..		.	.02		....	..	....	.03	....	..	....	..	....	..	....	....	T	....	....	....	T	....	....	.40
Mason City		....			....	..	..	..	T	....	....	..	T	....	T	T	....	....	....	....	....	....	....	.18	....	....	....	....	....	T	....	.63
Mount Ayr	.06	.12	.02	.25	...	..	....	..	T	....	....	..	T			T	....	..	..	....	....	....	....	T	....	....	..	T	....	....	....	.99
Mt. Pleasant	....	.26	.02	.01	T	....	..	..		....	.70		T	..	....		....	....	..	....	....	....	....	..	....	....	....	....	....	02	....	.93
Mt. Vernon	T	.12	.02	.02	.01	..	..	..	....	....	.7.	....	T	....	.01	.01	....	....	..	....	....	....	....	....	....	.	....	....	....	.05	....	....	.05
New Hampton	..	....	....	....	..	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.8
Newton	...	16	....	.	....	..		....		..	..	..	T	....	T	....	....	..	..	....	....	....	.	....	..	..	..	....	T	....	....	T
Northwood	....	....	....	....	....	..	..	....	T	..	..	T	T	..	T	....	....	....	..	..	....	....	....	....	....	.	....	....	T	....	....	....
Odebolt	.10	....	.08	....	....	....	....	....		..	....	....	.03	....	T	..	....	....	....	....	....	....	....	.15	....	....	....	....	T	....	....	.25
Ogden	T	....	.15	T		....	....	....	....	....	..	....	....	..	....	....	..	....	....	....	....	....	....	.10	..	..	....	....	....	....	....	....	1.01
Olin	....	....	.01	T	...	....	....		....	1.00	....	....	....	....	T	..	....	....	....	....	....	....	....	....	....	....	....	....	T	.03	....	1.01
Omaha, Neb	.27	.46	....	.10	..	....	..	....	.02	....	....	....	.01	....	T	.01	....	....	....	..	....	....	....	.50	.02	T	....	....	....	.02	....	1.34
Onawa	.26	.10	.25	.16	....	....	....	T	....	T	....	....	.05	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	..	....	.06
Osage	....	....	....	....	....	....	..	..	T	..			.06	....	T	....	..	....	....	....	....	....	..	.20	T	..	T	....	....	....	....	.56
Osceola	....	.35	....	T	....	....	....	....	T	....	.01	....	T	....	....	....	....	....	....	....	....	....	....	T	....	....	....	..	T	....	....	.57
Oskaloosa	T	.22	....	....	....	....	....	....	....	.35	....	....	T	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.19
Pacific Junction	.05	T	..	.05	.	....	....	....	.01	T	..	....	....	....	T	T	....	....	....	....	....	....	....	.03	.	T	....	....	....	.05	..	.35
Perry	..	.24		.01	....	..	....	....		....	....	....	..	.	.01	....	....	....	....	....	....	....	....	....	10	....	....	....	....	.	....	.04
Plover		....	.04	....	....		....	..	....	.	....	....	....		....	....	....	....	....	....	....	....	....	T	T	....	.	....	....	....	....	.30
Red Oak	.08	.03	.03	.02	...	....	....	....	T	..	....	....	T	....	T	T	....	....	....	....	....	....	....	T	.05	....	....	....	T	T	....	..	.11
Ridgeway	....	....	....	....	....	....	....	....	.01	.02	....	T	.05	T	.03	T	T		.	....	....	....	....	T	..	..	....	....	T	T	....	..	.50
Rockwell City	....	....	.45	....	....		....	....	T	T	....	....		....	....	T	....	....	....	....	....	....	.05	T	....	....	....	....	T	.	....	T
Ruthven	....	....	T	....	....	....	..	....	T	..	....	....	T	T	T		....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.26
Sac City	T	....	.14	....	....	....	....	....	T	....	....	....	....	....	.02	.	....	..	....	....	....	....	....	....	..	....	....	....	....	....	....	.63
St. Charles	.08	.12	.03	.21	..	....	....	....	T	..	T	....	.01	T	T	T	....	..	....	....	....	....	....	T	.02	..	....	....	T	T	....	.02
Sibley	....		T	....	..	....	....	....		....	....	T	....	T	....	....	T	....	....	....	....	....	....	T	....	..	....	....	T	T	....	....
Sigourney	...	T	....	T	...	....	....	....	....	....	1.26	....	.09	....	T	T	.....	....	..	....	..	....	....	.	....		....	....	T	..	....	.10
Sioux Center	....	....	T	..	...		....	....	T	....	....	T	T	..			....	....	....	....	....	....	..	.10	....	....	....	....	T	..	....	.90
Sioux City	.30	T	.45	..		....	....	T	T	....	....	T	.01	.	....		....	....	....	....	....	....	....	.20	T	..	....	....	T	....	....	.85
Stockport	....	.05	.	....	....	....		....	....	....	.75		.05	T	T	T	....	....	....	....	....	....	....	T		....	....	....	T	..	....	.62
Storm Lake		..	.51	....	..	....	....		T		....	T	T	....	....	....	.	..	..	....	....	....	....	.01	T	....	....	....	....	....	....	.84
Stuart	....	.69	..		....	..	....	....	....	....	..	....	..	..	....	....	....	....	..	....	..	..	....	.10	.05	....	....	....	....	....	....	1.05
Thurman	.30	.28	.15	.30	..	....	....	....	T	....	....	....	....	....	....	T	..	....	....	....	....	..	....	T	T	T	....	....	....	.02	....	

DAILY AND MONTHLY PRECIPITATION FOR NOVEMBER, 1903—CONTINUED.

STATIONS	DAY OF MONTH.																														TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Tipton	.16	.16	.04								1.17																					1 53
Toledo			.20	T						.07			T		T	T												T			.27
Villisca	.32	.05	.10	.22									T			T								.10	.20				T		.99
Vinton		.20									T				T	T															.20
Wapello		.11									60		.08		T													T			.79
Washington		.04									1.38		.04																		1.46
Washta	T		.55						T			T	T											.15		T					.70
Waterloo	T		.0						T		.03		T		.08	T												T			.19
Waukee	.05	.72	T	.15					T				.01		T									.05					T		.98
Waverly			T	T					T				.05	T	.03	T												T			.08
West Bend			T						T			T	02		T	.01		T						T	T				T		.03
Whitten		T	T						T					T	T	T													T		T
Wilton Junction		.71									.96				T													T	T		1.67
Woodburn		.50	.40						T							T								.14						T	1.04

Precipitation Chart November 1903



DECEMBER, 1903. No. 12.

U. S. Department of Agriculture

Weather Bureau



MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

STAR ENG. CO

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ANNUAL SUMMARY, 1903

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GEO. M. CHAPPEL,
LOCAL FORECASTER,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

DES MOINES:
BERNARD MURPHY, STATE PRINTER
1903.

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STATE BOARD OF AGRICULTURE,

CONSTITUTED AS FOLLOWS:

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Clinton	Luke Roberts
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Cumberland	Agent C., B. & Q. R'y
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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XIV. DECEMBER 1903. No. 12.

WEATHER AND CROPS—DECEMBER, 1903.

December, 1903, was extremely dry, the average precipitation for the state being .88 of an inch below normal, and in some localities the precipitation was little more than a trace. The mean temperature for the state, 19.6 degrees, was 3.9 degrees below the normal, but the month as a whole was very favorable for farm operations usual to the season, and for stock feeding. The dry weather was especially favorable for finishing husking and cribbing corn and also for drying the portion of the crop which contained more than the usual amount of moisture. The fields afforded good forage for grazing cattle, horses and sheep. The bare ground and freezing weather, however, caused some detriment to fall wheat and rye; but the acreage of these crops is very small. The month was generally favorable for the health of the people and all kinds of live stock.

THE CORN CROP.

The Bureau of Statistics of the Department of Agriculture, in its final report for 1903, estimates the total yield of the corn crop for the United States at 2,244,176,925 bushels. Iowa is credited with a total yield of 229,218,220 bushels, which amount is very close to the estimate made by the state crop service. In the state report, however, the area harvested was materially less than the estimate of the government bureau. This accounts for the difference in the average yield per acre as shown by the two reports.

The total value of the corn crop of the United States is estimated at $952,868,000. If the value of the corn fodder is included, the whole crop is worth more than a billion dollars.

AS TO WEATHER PREDICTIONS.

Cedar Rapids Republican, December 25, 1903: The weather predictions for Thursday were rain or snow, with colder in the northwestern portions of the state.

But yesterday morning there was hardly a cloud in the sky, the sun shone with the genial warmth that has characterized so many of the December days this year. This may lead some people to believe that the weather predictions do not amount to much after all.

Many people still believe that the weather predictions sent out by the government service partake of the mysterious and the uncanny work of so-called prophets. But such is not the case. The governmment observers simply take note of the trend of lows and highs, of storm areas and clearings. When a storm is formed in the northwest and sweeps onward toward the southeast, the government observers wire the information to Washington and the Washington scientists send warnings to the sections which are likely to be covered by the storm area, and estimate the time in which the storm may be expected. If a runaway engine starts from Belle Plaine it is possible to wire to Cedar Rapids to be on the lookout for it and to have the tracks cleared for the monster. That is what the weather service does. Nothing more. Of course before the engine gets to Cedar Rapids the steam may be exhausted and the fire in the firebox burned out. So it often happens with storms that are scheduled to arrive. They may be rained out or snowed out before they reach all the people in the territory in their track. Or a contrary current of air may swerve them out of the usual course. There are many things which may interfere. Or, when clear weather is predicted a local storm may be made out of local atmospheric conditions. But this does not invalidate the predictions as a whole.

IOWA WEATHER IS ALL RIGHT.

One rarely picks up a paper but what he notes the departure of citizens to some distant point to spend the winter. Like birds of passage many seek winter resorts to avoid the approach of severe weather. To find a dwelling place where blizzards come not and the flowers forever bloom has attractions for human beings as well as for birds. But then the most of us have to remain behind to keep our corner of the world moving, and keep it in some semblance of shape for ourselves and to welcome the return of the weary wanderers. What matters it though our faces are bronzed and the sand creeps into our bodies, we have the pleasure of conquering the elements and witnessing the most beautiful of contrasts. Human nature tires of the evenness of things be it ever so mild or enticing. We have in Iowa pleasant weather, fair weather, disagreeable weather, but weather that is generally moderate. It's the kind of weather that spices life. It helps to cool the over-arduous, tempers the fitful, cheers the despondent, moves the laggard along, and buries those who will not move with the greatest of all coverings that of oblivion. Iowa weather is as we want it; we wouldn't change it if we could.—*Estherville Enterprise.*

WORK OF A HAILSTORM.

Nature gets on an ugly fit once in awhile, and we have lately had an experience which showed her at about her worst. It was September and harvest time, when most of her cranky fits are supposed to be over, when, having given us all the summer programme of excessive heat, spiteful winds, a deluge of water and lightning wreck, we have come to regard her as satiated

and tired and rid of her beligerent moods, but just when the apples were hanging all ready for the pickers, when the corn was just right to cut up, when the beans were ready to pull and onions pulled and drying prior to sacking, along came a hailstorm one afternoon, not an ordinary sprinkle of hail, say the size of marbles, but a regular cleaning out of the weather clerk's ice box upstairs, great ragged, three cornered chunks of ice big and hard enough to make a dent a quarter of an inch deep in a pine board, and then, sure enough, it was all day with the nice crops—corn stripped clean all save the ears, making the field look like an army of Shanghai roosters plucked clean all save their tail feathers; apples smashed into cider pulp, and beans thrashed clean, and onions left as though they had been struck with a baseball bat. Five minutes did the business, and the writer of these notes knows just how a fellow feels who is dead sure that he has a good thing and finds after all that he has not got it. We expect hail in June, July and rarely in August, but the September hailstorm is the clipper when it comes. Being an optimist, however, we look on the bright side and have been figuring up how much we have saved by not having the corn to cut up and the other crops to harvest, and then we feel thankful that the hail did not shell the corn and leave us nothing but cobs and that it could not reach the potatoes. The prize acre of onions, yielding over 600 bushels, was the sorriest sight of the wreckr· Practicing what we preach, we are not going to fret, but just try it again.—*J. S. Trigg in Rockford Register.*

RECENT SOLAR RESEARCHES.

Two papers by French meteorologists, dealing with the suspected parallel between the eleven-year sunspot period and fluctuations in terrestrial temperatures, have recently been made accessible to American readers by "The United States Monthly Weather Review." In one of them M. Nordmann follows up a comparison made many years ago by Koeppen. He confines his inquiry to the interval between 1870 and 1900, and to stations lying within about twenty degrees of the equator. Taking the average of the annual temperatures for thirteen points, he finds a slight excess at the minimum stage of solar activity, and a deficit at the time of greatest sunspot abundance. Although the fluctuation is slight, it seems to be systematic, and it corresponds to that which Koeppen thought he had detected. The other paper translated for *The Monthly Weather Review* is a review of M. Nordmann's work by Professor Alfred Angot. Although objection is made to some of his compatriot's methods, the second writer reaches substantially the same conclusions as the first.

Much work has been done in the last thirty years by other meteorologists which points to a similar periodicity. Chambers found it in the drouths which afflict India. Some of his associates believed that they detected long range variations in the prevailing atmospheric pressure, which were related to temperature and rainfall. Meldrum showed that tropical cyclones in the Indian Ocean were more numerous at and near sunspot maxima, and Bigelow did the same for West India hurricanes. The latter investigator, who is attached to the Washington bureau, has presented a good deal of evidence to indicate that other features of the weather, outside of the tropics as well as inside, undergo a fairly regular alternation. These various statements have their vulnerable points. The more recent ones have not yet been thoroughly threshed by critics, nor fully verified. The mechanism by which terrestrial weather is influenced, if at all, is not made altogether clear. Yet as the matter stands to day there is increased reason for thinking that fluctuations occur in solar radiation, and that such changes are influential on the earth. The practical importance of further research, therefore, may be said to grow more apparent daily.

A line of inquiry has been pursued by Professor Langley for more than ten years which is exceedingly promising, He seeks to discover the variations in question by direct observation of the sun. Having obtained a telescopic image of that body, he examines it with a spectroscope and an instrument of his own invention whereby differences of temperature as small as a hundred-millionth of a degree can be detected. Various difficulties have beset this work. The apparatus is so delicate that a number of local influences interfere with its operation. Its testimony is also obscured by variable conditions in the earth's atmosphere, notably the presence of water vapor. Most of these sources of error and uncertainty have been slowly eliminated, however. In the latest report of the Smithsonian Institution Professor Langley intimates that it may be necessary to transfer the work to a mountain top, but he takes an encouraging view of the possibility of getting accurate results at the astro-physical observatory in Washington. After he is fully satisfied with the working of his instruments, which, by the way make records automatically, he should soon be in a position to say whether they give him clear indications of substantial changes in the sun's thermal output.

When once it has been proved that the bolometer will give unmistakable evidence of variations in heat emission, the next step will be to find out whether it can be utilized practically in weather forecasting. An investigation of colossal proportions will be necessary to determine whether perceptible consequences ensue at the earth's surface, and how much time intervenes between the observed cause and effect. These questions cannot be settled in a day. Possibly it may be found that the behavior of the magnets in well regulated observatories, or even that of simpler instruments of an allied nature which can be used at ordinary meteorological stations, will be more significant. At any rate, it is not incredible that better means of gaining an insight into coming weather changes will be available before the first quarter of the twentieth century has elapsed.—*New York Tribune.*

CLIMATOLOGY OF THE MONTH, DECEMBER, 1903.

BAROMETER.—Mean pressure, 30.12 inches; highest observed, 30 68 inches, at Des Moines, on the 14th; lowest observed, 29.60 inches, at Davenport on the 25th; range for state, 1.08 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 103 stations, was 19.6°, which is 3.9° below normal. By sections the mean temperatures were as follows: Northern section 16.0°; central section 19.7°; southern section 23.0°. The highest monthly mean was 26.2° at Glenwood; lowest monthly mean, 12.5° at Sibley. The highest temperature reported was 58°, at Hopeville, Mt. Ayr, Osceola and St Charles on the 31st; lowest temperature reported, 27° at Sibley on the 13th. The average monthly maximum was 48.8°; average monthly minimum, 15.3°. Greatest daily range 56° at Whitten; average of greatest daily ranges 40.5.°

PRECIPITATION.—Average precipitation for the state as shown by records of 118 stations, was 0.41 of an inch, which is 0.88 of an inch below normal. The averages by sections were as follows: Northern section, .49 of an inch; central section, .37 of an inch; southern section. 38 inches. The largest amount reported was 1.96 inches at Ridgeway; least amount reported, trace, at Storm Lake. The greatest daily rainfall reported was .68 of an inch at Ridgeway on the 25th. Average number of days on which .01 of an inch or more was reported, 4.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, fifty miles per hour, from the northwest, at Sioux City, on the 28th. Average number of clear days, 11; partly cloudy, 9; cloudy, 11.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	30.09	30.60	14	29.60	25
Des Moines	30 14	30 68	14	29.69	9
Dubuque	30.09	30.58	14	29.63	21
Omaha, Neb	30 14	30.70	14	29.67	18
Keokuk	30.12	30.64	14	29.62	12
Sioux City	30.11	30.66	14	29 75	9
Means	30.12	30.68	14	29.60	25

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	6.461	29	N	25
Des Moines	7.223	36	NW	25
Dubuque	5.803	26	NW	29
Keokuk	6.630	42	NW	25
La Crosse, Wis	5.811	27	NW	21
Omaha, Neb	7.912	43	N	25
Sioux City	10.573	50	NW	28

OBSERVERS' NOTES.

ALLERTON.—*Rex Shriver.* Generally pleasant and dry; blizzard on 12th; good sleighing from 12th to 17th.

ALTA.—*David E. Hadden.* Very cold during the middle decade of the month; only two inches of snow, which soon disappeared; roads excellent.

ATLANTIC.—*J. W. Love.* A remarkably mild December, with no rain and very little snow; roads fine.

BONAPARTE.—*B. R. Vale.* A dry, cool month; roads good; fields in good condition and husking done. For 1903 the precipitation was 39.34 inches, as against 47.61 inches in 1902, and 16.34 inches in 1901.

BRITT.—*Geo. P. Hardwick.* Temperature below normal; no severe storms; live stock healthy and feeding in the fields; excess of surface water disappeared; corn all gathered, and about half a crop.

CARROLL.—*Moses Simon.* Cold wave 13th to 15th; balance of month fine; roads good.

CHARITON.—*C. C. Burr.* Month more like October than December; roads dry and smooth.

CLINTON.—*Dr. Luke Roberts.* A cold December and erratic in its high and low temperatures; mean, 5.5° below normal; maximum, 9.6° below normal; minimum, 9.9° below normal; rainfall also below normal.

ELKADOR.—*Charles Reinecke.* Mean temperature for 1903 was 46.3°; total precipitation for 1903 was 40.70 inches; total snowfall for 1903 was 32.5 inches; highest temperature for 1903 was 93° July 9th; lowest temperature, 19° December 13th.

GRAND MEADOW.—*F. L. Williams.* A drop of 40° in temperature occurred between 11 A. M. on the 12th and 4 A. M. on the 13th; month cold and dry; stock doing well.

GREENFIELD.—*J. G. Culver.* Temperature fell 45° in the 24 hours following 6 A. M. of the 25th.

GRINNELL.—*A. O. Price.* Month cool and dry; fine for stock; ground bare of snow except in patches; snow fall, 1.5 inches; or .15 of an inch melted.

HANLONTOWN.—*Miss G. M. Paschen.* Snow of first part of the month melted about the 20th; later snow nearly all melted on 31st; month colder than last year.

HOPEVILLE.—*M. L. Ashley.* A beautiful month; roads dry and dusty; stock wintering finely to date.

HUMBOLDT.—*H. S. Wells.* Weather very fine, and roads never better; stock healthy.

IDA GROVE.—*J. E. Conn.* Month very fine; clear with continued cold weather.

JEFFERSON.—*Isaac Young.* Snow all gone and ground freezing deep. This will remedy the soggy condition the fields were in during the past season.

MT. AYR.—*A. L. Beard.* An ideal month; very fine winter weather.

OLIN.—*Nathan Potter.* A good month for feeding stock; roads fine.

OSKALOOSA.—*Jos Boyd.* Month all that could be desired for feeding stock.

PACIFIC JUNCTION.—*H. H. McCartney.* Latter part of month characterized by N. N. W. winds; extremely warm for time of year; were they estray chinook winds?

RIDGEWAY.—*Arthur Betts.*—Coldest December on record at this station; good wheeling all the month; bright lightning on the 19th; 151 hours of sunshine, or 54 per cent; most of the warm waves culminated at night.

WASHTA.—*H. L. Felter.* Corn husking about completed by December 10th.

WAUKEE.—*E. J. Leonard.* An excellent month; tempera ture reached zero on only five days; fine roads.

BELATED REPORTS.

CLEAR LAKE—November—Mean temperature 30.5° on the 1st; lowest—2 on the 26th; greatest daily range 29; total precipitation, Trace; greatest in 24 hours, Trace; prevailing direction, northwest; total snowfall, Trace; number of clear days 14, partly cloudy 11, cloudy 5, rainy 0.

OTTUMWA—November—Mean temperature 37.7°; highest 74° on the 1st; lowest 10° on the 26th; greatest daily range 30°; total precipitation .65 inch; greatest in 24 hours .61 inch on the 10th; total snowfall, Trace; prevailing direction, southeast. Number of clear days 5, partly cloudy 16, cloudy 9, rainy 3.

BELLE PLAINE—November—Mean temperature 31.9; highest 54° on the 12th; lowest 2° on the 26th; greatest daily range 27°; total precipitation .39 inch; greatest in 24 hours .18 inch on the 2nd; total snowfall 0.2 inch; prevailing direction, northwest. Number of clear days 12, partly cloudy 12, cloudy 6, rainy 5.

ERRATA IN OCTOBER REVIEW.

BELKNAP—Mean temperature recorded 57.0° on page 8 should have been 57.8°.

CLEAR LAKE—Mean maximum temperature recorded 62.0° on page 9, should have been 61.9°.

LENOX—Mean temperature recorded 51.8° on page 8, should have been 53.2°. Mean maximum temperature recorded 64.9° on page 10, should have been 64.5°.

OGDEN—Total precipitation recorded 1.80 inches on pages 7 and 11, should have been 2.00 inches.

ONAWA—Mean temperature recorded 50.2° on page 7, should have been 55.2°.

ERRATA IN NOVEMBER REVIEW.

AMANA—Mean temperature recorded 33.5° on page 8, should have been 34 5°.

ATLANTIC—Mean temperature recorded 36.2° on page 9, should have been 36.4°.

Mean minimum temperature recorded 27.0° on page 10, should have been 27.3°.

DELAWARE—Mean temperature recorded 31.4° on page 8, should have been 31.5°.

MT. PLEASANT—Mean temperature recorded 34.8° on page 9, should have been 35.8°.

Mean maximum temperature recorded 43.1° on page 11, should have been 45.1°.

WAVERLY—Mean temperature recorded 31.8° on page 8, should have been 32.8°.

Mean maximum temperature recorded 40.9° on page 11, should have been 42 3°.

Mean minimum temperature recorded 31.8° on page 11, should have been 32.8°.

CLIMATOLOGICAL DATA FOR DECEMBER, 1903.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	18.2	-1.6	47	6	-18	13	40	.20	- .81	.05	1.5	3	4	17	10	NW	
Alta	Buena Vista	1,513	11	17.9	-3.4	47	6	-20	13	48	.19	- .75	.05	2.0	6	11	12	8	NW	
Alta (near)	Buena Vista										.20		.05	2.0	4					
Britt	Hancock	1,236	5	15.3	-1.8	48	6	-25	13	43	.36	- .20	.12	3.4	8	5	16	10	NW	
Charles City	Floyd	1,012	11	13.3	-7.1	44	7	-20	13	44	.21	- .98	.11	4 0	3	12	4	15	W	
Clear Lake	Cerro Gordo	1,241		14.4		42	6	-21	13	39	.60		.20	6.0	7	6	12	13	NW	
Cresco	Howard							-19	26							14	0	17	NW	
Decorah	Winneshiek	857	8	13 7	-6 9	40	23	-22	13	34	.80	- .38	.30	9.5	6					
Dows	Wright	1,142		16.6		48	6	-17	13	38	.42		.20	4.2	4	18	0	13	NW	
Elkader	Clayton	727	21	14.8	-6.9	48	23	-19	13	37	.51	-1.40	.23	9.5	5	11	7	13	NW	
Estherville	Emmet	1,298	7	14 5	-3.9	47	6	-22	13	52	.43	† .04	.10		6	11	5	15	NW	
Forest City	Winnebago	1,226	8	13.8	-5.5	49	7	-26	13	32	.65	† .05	.30	6.5	5	9	1	21	NW	
Grand Meadow	Clayton	1,180	11	14.8	-7.1	41	23	-21	13	32	.75	- .73	.25	7.5	5	6	14	11	NW	
Hampton	Franklin	1,155	12	16.6	-4.5	50	6	-17	13	41	.34	- .88	.18	3.0	4	5	21	5	NW	
Hanlontown	Worth			14.5		48	6	-26	13	43	1.08		.50	3.2	7	14	1	16	NW	
Humboldt	Humboldt	1,095	10	19.3	-3.9	51	6	-16	13	40	.22	- .48	.12	2 2	2	21	4	6	NW	
Larrabee	Cherokee	1,366	11	18.4	-3 9	49	6	-21	13	51	.18	- .80	.09	1 9	4	6	20	5	NW	
LeMars	Plymouth	1,224	6	19.8	-2.3	46	6	-15	13	45	.25	- .49	.25	3.0	1	15	9	7	S	
Mason City	Cerro Gordo	1,132		16.4		45	6	-19	13	34	.53		.20	5.3	4	7	10	14	NW	
New Hampton(b)	Chickasaw	1,169		13.4		41	6,23	-24	13	39	.85		.50	8.5	4	10	6	15	NW	
Northwood	Worth	1,223	6	16.0	-3.4	45	6	-21	13	41	.75	† .00	.30	7.5	5	15	3	13	NW	
Osage	Mitchell	1,184	11	14.3	-5.0	40	6	-21	13	36	.90	- .31	.50	9.0	8	8	10	13	NW	
Plover	Pocahontas	1,190	5	16.6	-3.8	51	6	-21	13	43	.17	- .52	.10	1.8	3	14	9	8	NW	
Primghar (d)	O'Brien			16.7		47	7	-23	13	48										
Ridgeway	Winneshiek	1,215		16.3		44	23	-24	13	43	1.96		.68	12 7	14	11	1 2	8	NW	
Sibley (c)	Osceola	1,512	8	12.5	-7.1	39	23	-27	13	43	.35	- .40	.20	3.5	4				NW	
Sioux Center	Sioux			17 8		46	6	-21	13	49	.35		.10	3.5	5	14	5	12	S	
Spirit Lake	Dickinson	1,458	8	16.2	-4.0	45	3	-23	13	52	.50		.25	5.0	4	13	5	13	NW	
Storm Lake	Buena Vista	1,440	7	19.2	-1.7	48	5	-19	13	47	T	- .86	T	0.1	0	19	5	7	NW	
Washta	Cherokee	1,157									.20		.05	2.0	4	16	8	7	NW	
Waverly	Bremer	942	6	15.4	-5.6	43	23	-17	13,30	41	.55	- .37	.22	5.5	5	3	13	15	NW	
West Bend	Palo Alto	1,197	8	18.1	-2.1	50	6	-22	13	41	.34	- .49	.10	3.2	7	8	12	11	NW	
West Union	Fayette										.30		.20	3.0	2	13	0	18	NW	
Average				16.0	-4.4	45.8		-20.9		41.9	.49	- .54		4.7	5	11	8	12	NW	

CENTRAL SECTION.

Amana	Iowa	721	25	19.2	-2.8	48	6	-15	13	38	.50	- .58	.25	4 4	5	7	17	7	NW	
Ames	Story	926	20	20.2	-1.8	49	6	-13	13	40	.18	- .86	.10	.5	3	25	2	4	N w	
Audubon	Audubon	1,30	8	20.7	-2.7	49	31	-13	13	39	.12	-1.07	.07	1.5	2	10	15	6	NW	
Baxter	Jasper	998		21.0		50	6,31	-13	13	48	.10		.10	1.0	1	20	3	8	NW	
Belle Plaine	Benton	828	12	16 4	-7 9	40	31	-15	13,26	40	.59	- .82	.16	4.9	6	8	16	7	NW	
Buckingham	Iowa										.20		.08	2.8	4	1	26	4		
Carroll	Carroll	1,265	12	20.4	-3.0	53	23	-15	13	48	.10	- .85	.10	1.0	1	13	6	12		
Cedar Rapids	Linn	733	19	17.9	-7.5	49	6	-15	13,14	45	.68	- .91	.14	3.5	5	8	11	12	NNW	
Clinton	Clinton	609	34	19.0	-3 3	43	6,23	-20	13	41	1.00	- .82	.40	19 0	5	8	9	14	W	
Davenport	Scott	606	31	20.4	-7.4	44	6	-15	13	34	.78	- .95	.43	6 9	5	7	9	15	W	
Delaware	Delaware	1,083	11	15.8	-5.6	43	6	-21	13	35	.39	-1.06	.15	4.2	7	11	13	7	NW	
Denison	Crawford	1,180	8	21.7	-0.7	48	31	-13	13	39	.17	- .33	.10	1.8	3	22	1	8	N	
Des Moines	Polk	861	24	22.6	-4.2	55	31	- 9	13	42	.09	-1.35	.04	1.6	3	5	9	17	NW	
Dubuque	Dubuque	655	29	18.4	-7.5	46	23	-17	26	33	.85	- .96	.26	9 2	11	12	9	10	NW	
Fort Dodge	Webster	1,126		20.6		50	6	-15	13	41	.02		.02	0.2	1	14	14	3		
Galva (a)	Ida	1,290	8	19.0	-3.4	49	6	-17	13	41	.09	- .59	.05	0.9	3				NW	
Gilman	Marshall	1,052									.10		.10	1.1	1	11	12	8	NW	
Grinnell	Poweshiek	1,023	9	19.8	-5.0	47	31	-10	13,26	37	.17	- .83	.08	1.5	5	7	15	9	W	
Grinnell (near)	Poweshiek			19.6		47	31	-12	13,26	39	.15		.10	1.5	2	8	8	15	NW	
Grundy Center	Grundy	976	11	17.6	-4.9	50	23	-21	13	40	.24	- .97	.11	1.7	4	6	12	13	NW	
Guthrie Center	Guthrie	1,077	6	25.5	-6.0	55	31	-12	13	47	.13	- .98	.08		2	13	7	11	NW	
Harlan	Shelby	1,192		22.0		47	31	-12	13	38	.14		.08	4.0	3	3	22	6	S	
Independence	Buchanan	921	38	16.6	-4.9	47	23	-18	13	43	.63	- .71	.26	6.3	5	12	10	9	W	
Iowa City	Johnson	685	43	18.2	-6.0	49	7	-18	13	48	1 27	- .41	.60		6	7	11	13	W	
Iowa Falls (a)	Hardin	1,170	9	15.7	-5.1	47	7	-17	13	48	.45	- .60	.25	4.5	3				NW	
Jefferson	Greene	1,052									.18		.10	2.0	5	2	13	16	NW	
LeClaire	Scott	576									.76		.22	8.5	6				NW	
Logan	Harrison	928	35			48	31			35	.30	-1.02	.20	3.0	2	13	11	7	NW	
Maquoketa	Jackson	688	9	15.6	-10.1	46	6	-22	13	50	.62	- .91	.18		6	14	3	14	SW	
Marshalltown	Marshall	947	9	20.0	-3.6	49	6	-13	13,26	49	.12	-1.40	.08	1.4	2	7	7	17	NW	
Monticello	Jones	925	48	16.4	-5.9	48	7	-20	13	38	.32	-1.88	.20	8.5	4	5	11	15	SW	
Mt. Vernon	Linn	847	35	17.2	-5.6	47	6	-20	13	40	.85	- .66	.27	9.7	5	11	6	14	SW, NW	
Newton	Jasper	944	14	20.3	-1.7	48	6,31	-13	13,26	39	.22	-1.11	.15	2.5	2	11	12	8	NW	
Odebolt	Sac	1,356	5	20.9	-1.0	50	6	-15	13	38	.10	- .72	.05	1.2	2	19	9	3		
Olin	Jones	760		18.3		44	6	-22	13	33	.99		.50	4.5	5	9	9	13		
Onawa	Monona	1,053		26.4		53	6	- 7	13	44	.42		.25	4.2	4	20	5	6	NW	
Perry	Dallas	975		21.4		49	6	-11	13	38	.30		.15	3.0	3					
Rockwell City	Calhoun			21.3		50	6	-14	13	41	.10		.10	1.0	1	9	8	14		
Sac City	Sac	1,278	22	20.8	-2.3	49	6	-16	13	39	.15	-1.05	.08	1.5	3	16	5	10	NW	
Sioux City	Woodbury	1,165	13	21.4	-6.4	48	6	-13	12	55	.21	- .67	.10		5	8	11	12	NW	
Stuart	Guthrie	1,216	5	23.0	-2.2	48	31	-10	13	32	.20	- .53	.10	2.0	3	13	0	18	NW	
Tipton	Cedar	807		19.6		45	6	-16	13	30	.95		.40	8.5	5	8	15	8	W	
Toledo	Tama	856	8	18.6	-5 0	48	6	-14	13	41	.15	- .94	.10	1.5	2	7	14	10	NW	
Vinton	Benton	810	12								.40	- .79	.20	4.0	3	18	2	11	NW	
Waterloo	Black Hawk	862	15	18.7	-2.5	48	7,24	-16	13	41	.37	- .90	.15	2.5	4	8	11	12	NW	
Waukee	Dallas	1,039		22.5		54	31	-11	13	40	.32		.15	3.0	4	11	9	11	NW	
Wilton Junction	Muscatine	683	7	19.7	-6.4	45	6	-19	13	38	.43	- .95	.15	9.5	4	16	0	15	NW	
Whitten (b)	Hardin	1,036		17.4		46	6	-20	13	56	.25		.20	2.5	2				NW	
Average				19.7	-4.5	48.1		-15.2		41.0	0.37	- .88		3.7	4.4	.11	.10	.11	NW	

CLIMATOLOGICAL DATA FOR DECEMBER, 1903—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted)		Number clear days.	Number partly cloudy days.	Number cloudy days.		
fton	Union	1,212	7	23.4	-1.8	54	31	-10	13	38	.20	-95	.10	2.0	3	14	9	8	NW	
lbia	Monroe	957	..	21.3		53	31	-13	13	48	.40		.40	4.0	1	21	9	1	SW	
llerton	Wayne		....	23.0	.....	55	31	-12	13	39	.63	.....	.33	5.0	5	16	8	7	NW	
tlantic	Cass	1,164	11	23.0	-1.6	51	31	-10	13	35	.25	-1.01	.15	2.5	2	8	11	12	NW	
edford	Taylor	.....	....	24.1	.....	56	31	-11	13	41	.13	.....	.13		1	16	1	14	NW	
elknap	Davis	877	7	.....		50	31	..	.....	.....	1.16	- .77	.60	6.8	5	14	14	3	NW	
onaparte	Van Buren	.....	10	22.1	-6.0	53	31	- 9	13	42	.81	- .60	.65		2	...	...	...	.....	
urlington	Des Moines	544	....	22.7		50	31	- 9	13	36	.70	.....	.48	....	4	10	9	12	NW	
hariton	Lucas	1,042	7	22.4	-3.6	55	31	-12	13	42	.26	-1.20	.25	T	2	15	0	16	NW	
larinda	Page	1,069	12	28.1	-3.8	48	18,23	-10	13	38	.17	- .96	.12	1.6	2	15	8	8	NW	
ollege Springs	Page	.....	10	25 0	-2.4	56	31	- 9	13	34	.22	-1.11	.20	....	2	17	8	6	NW	
olumbus Jct	Louisa	596	....	21.5	.....	47	6,31	-15	13	37	.95		.61	7.0	5	12	11	8	SW, NW	
orning	Adams	1,127	10	23.2	-4.7	54	31	-11	13	39	.17	- .89	.10	1 8	2	13	13	5	NW	
orydon	Wayne	992	9	22.2	-4.0	56	31	-13	13	45	.26	-1.27	.15	6.6	4	13	10	8	NW	
ouncil Bluffs	Pottawattamie	990	5	.....	.....	.....	.....	.....	.....		.....		.....	.....	...	...	...	...	.....	
umberland	Cass	.....	....	.....	.....	..	.....	..	.....	.....	.20	.....	.20	2.0	1	19	6	6	NW	
arlham	Madison	.....	...	21.5	.....	55	31	-13	13	47	.05		.03	1.2	2	....	....	....	.....	
ort Madison	Lee	516	51		.....		.....	.....	.....	.....	.64	-1.34	.42	....	3	10	8	13	W	
lenwood	Mills	.....	15	26.2	-2.9	54	31	-10	13	35	.20	- .61	.20	2.0	1	3	23	5	NW	
reenfield	Adair	.....	11	21.6	-3.3	50	31	-13	13,14	40	.12	-1.08	.06	1.3	3	17	7	7	SW	
opeville	Clarke	.....	11	22.6	-2.9	58	31	-11	13	39	.07	- .98	.03	7	3	7	18	6	NW	
ndianola	Warren	969	11	22.4	-3.1	55	31	-10	13	41	.12	-1.29	.05	1.5	3	12	6	13	NW	
eokuk	Lee	619	31	24.6	-5.2	53	31	- 7	13	35	.86	-1.10	.52	2.2	8	12	11	8	NW	
eosauqua	Van Buren	664	10	.....	.....	.....	....	- 7	13,14	.....	.66	- .80	.66	1.0	2	9	6	16	.....	
noxville‡	Marion	920	6	22.8	-2.5	56	31	-10	13	41	35	-1.01	.10	3.5	5	11	3	17	NW	
acona	Warren	.....	...	.....	.....	...	.....	.....	.....	.....	.80	.....	.20	8.0	7	9	17	5	.....	
enox	Taylor	1,250	7	22.8	-1.9	54	31	-13	13	37	.08	-1.14	.06	.8	3	17	8	6	NW	
t. Ayr	Ringgold	1,236	8	23.8	†0.8	58	31	-10	13	40	.62	- .56	.20	6.0	5	13	7	11	NW	
t. Pleasant	Henry	729	20	21.8	-5.0	50	31	-14	13	32	.19	-1.03	.17	0.2	2	12	12	7	SW	
maha, Neb.	Douglass	1,113	32	26.0	-0.7	51	31	- 7	13	49	.15	- .86	.12	1.5	4	8	12	11	NW	
sceola	Clarke	1,130	6	23.0	-1.7	58	31	-11	13	39	.10	- .99	.10	1.0	1	6	16	9	SW	
skaloosa	Mahaska	843	18	20.2	-5 7	52	31	-15	13	42	.32	- .96	.18	2 5	4	14	1	16	NW	
ttumwa‡	Wapello	649	8	25.0	-2.6	57	31	.....	.....	36	.81	- .65	.46	4.6	2	6	14	11	W	
acific Junction	Mills	960	..	23.8	.....	49	31	- 8	13	38	.17		.13	1.7	3	17	10	4	NW	
ed Oak	Montgomery	1,033		26.0	.....	48	19,31	- 6	13	28	.13		.11	1.8	2	3	25	3	N	
t. Charles	Madison	1,070	....	23.6		58	31	-10	13	43	.53	.....	.50	1 0	2	14	10	7	NW	
tockport	Van Buren	.....	..	.....	.....	.....	..	.....	.....	...	.46	....	.35	1.5	2	12	7	12	N W	
hurman	Fremont	.....	....	26.4		51	31	- 9	13	41	.52	.....	.27	5.2	2	14	4	13	NW	
illisca	Montgomery	1,058	8	24.2	-0 6	45	7,27	-10	13	30	.23	- .96	.15	1.5	2	19	9	3	NW	
apello	Louisa	588		22.4	.....	45	3,6	-12	13	28	.70	.....	.51	6.5	3	13	10	8	W	
ashington	Washington	769	20	18.4	-6.3	51	31	-19	13	41	.60	- .75	.28	3.5	5	..		...	SW	
interset	Madison	1,129	11	....	...	.....	.....	-12	13,36	.....	.....		.....	....	....	...	....	..	.....	
oodburn	Clarke	961		.....	.....	....	.....	.....	...	.....	.15	.....	.08	2.0	2	12	3	16	NW	
Average		.....	....	23.0	-3.4	52 5	.....	-10.9	.....	38.7	0.38	- .97	....	2.8	3	12	9	9	NW	
Average for state		.....	....	19.6	-4 1	48.8	.....	-15.3	.....	40.5	0.41	- .80		3 7	4	11	9	11	NW	

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Means determined from 7 A. M., and 7 P. M. observations. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR DECEMBER, 1903.

STATIONS.		DATE.																														MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	7	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton. ...	Max..	30	33	36	28	25	46	40	34	31	22	34	26	15	17	27	26	29	41	43	37	40	36	46	40	36	25	43	40	34	33	54	33.9
	Min ..	10	10	25	14	14	13	24	17	15	2	12	3	-10	-2	3	10	11	20	28	21	30	12	26	20	5	-4	24	17	15	2	16	12.9
Albia.	Max..	20	37	25	24	25	40	37	28	28	27	32	19	8	19	26	25	27	45	29	35	39	37	45	43	38	38	42	39	26	42	53	32.2
	Min ..	10	10	28	10	15	15	15	17	15	2	2	19	-13	-8	-5	3	6	7	22	23	22	11	17	22	12	-8	13	15	22	-2	5	10.4
Algona. ..	Max..	20	30	37	27	27	47	40	22	26	23	23	20	8	10	23	22	25	36	40	35	35	30	40	31	29	25	36	30	29	27	32	28.5
	Min ..	8	10	29	11	8	12	18	11	10	1	0	-10	-18	-7	1	9	5	17	32	20	17	6	20	12	-7	-15	17	15	-3	4	12	7.9
Allerton .	Max..	27	31	39	31	30	49	41	30	29	24	30	29	12	19	25	26	28	41	43	33	43	38	46	42	34	21	45	43	35	36	55	34.0
	Min ..	10	10	25	15	16	13	22	19	16	2	10	2	-12	-5	-2	8	8	19	22	22	28	11	24	22	6	-3	20	16	13	0	16	12.1
Alta. . ..	Max..	26	30	28	15	22	47	33	23	25	17	24	19	8	12	26	22	28	39	33	30	35	37	42	35	10	37	38	32	25	32	43	28.4
	Min ..	8	12	15	9	10	12	19	12	7	-4	15	-16	-20	-10	-1	8	7	8	15	25	10	6	22	8	-8	-11	24	18	-2	-2	15	7.4
Amana...	Max..	27	32	38	29	22	48	38	27	27	21	29	24	8	15	21	24	23	37	38	32	38	30	42	40	31	15	37	32	30	27	42	29.8
	Min ..	7	5	29	16	14	9	20	19	16	4	7	-1	-15	-7	-9	10	-4	16	26	26	25	8	22	21	-4	-12	15	6	0	-8	9	8.7
Ames	Max..	22	30	37	30	26	49	40	22	28	20	31	16	10	14	26	26	29	40	45	37	37	34	46	38	36	24	39	33	32	32	45	31.4
	Min ..	7	6	10	14	12	12	19	16	15	10	14	-10	-13	11	-3	10	4	12	21	21	21	5	25	12	-1	-10	19	12	5	-8	10	9.0
Atlantic..	Max..	29	36	36	27	23	49	41	33	32	19	32	25	6	20	30	27	32	47	47	42	38	40	47	42	35	32	45	39	35	41	51	34.8
	Min ..	6	12	25	15	16	8	22	16	16	-1	5	-3	-10	-2	-1	7	14	21	24	22	25	9	15	18	3	-3	23	16	11	5	15	11.2
Audubon.	Max..	28	34	36	27	24	46	39	30	29	19	30	23	10	15	27	23	30	44	45	40	33	38	46	39	32	29	41	36	32	35	49	32.5
	Min ..	7	8	25	12	13	9	19	13	14	-3	8	-5	-13	-5	-6	5	9	21	20	21	22	6	13	11	0	-6	25	13	9	0	10	8.9
Baxter. ..	Max..	24	28	37	29	26	50	43	27	28	20	33	25	10	20	25	25	28	38	45	34	38	33	44	43	32	20	40	34	32	33	50	32.1
	Min ..	6	7	27	12	11	10	18	17	14	-2	11	-2	-13	-8	-3	8	3	17	21	21	24	4	19	14	-3	12	18	8	0	-10	8	10.0
Bedford ..	Max..	28	34	39	32	27	49	43	35	32	25	34	29	20	19	28	29	31	45	49	40	33	39	44	41	36	29	45	43	36	39	56	35.8
	Min ..	7	13	23	15	15	8	25	17	14	-5	9	3	-11	-5	-1	14	13	23	25	20	31	8	22	20	5	3	24	15	18	5	16	12.4
Belknap..	Max..	32	55	35	30	30	36	35	30	25	23	30	23	15	25	30	29	30	30	34	35	50	42	52	45	25	20	35	35	30	40	50	33.6
	Min ..																																
Belle P...	Max..	25	33	38	21	23	47	27	21	29	19	30	22	12	15	22	25	24	32	29	25	26	22	37	20	-3	25	33	30	15	22	40	25.4
	Min ..	5	4	5	13	12	18	17	18	14	-2	10	15	-15	-7	-5	10	0	14	23	20	23	5	20	12	-5	-15	12	4	13	-12	7	7.5
Bonapar'e	Max..	23	33	43	31	26	48	36	24	27	22	33	31	9	16	26	25	25	39	43	37	40	35	42	39	35	17	42	33	32	32	53	32.5
	Min ..	17	9	24	17	16	13	23	15	12	6	10	5	-9	0	1	11	4	18	26	22	25	10	21	28	2	-6	17	11	6	-2	11	11.7
Britt. ..	Max..	23	30	34	23	19	48	32	21	25	19	25	18	7	11	24	21	23	38	41	36	34	23	40	33	18	24	35	30	28	27	35	27.4
	Min ..	6	6	23	7	6	5	16	10	8	-3	3	-13	-25	-12	-11	4	1	11	22	20	13	2	13	7	-10	-16	12	14	-9	-15	6	3.2
Burling'n	Max..	33	34	45	33	28	46	37	27	27	21	32	31	9	18	24	27	29	40	42	40	41	33	43	40	34	17	17	35	31	30	50	32.1
	Min ..	15	15	28	19	15	14	25	17	15	10	12	6	-9	0	2	14	7	20	27	24	27	13	25	31	2	-6	14	11	6	0	14	13 3
Carroll...	Max..	32	34	32	21	23	50	40	28	27	24	30	5	11	15	26	24	32	40	35	42	36	39	53	41	15	39	21	32	20	39	50	31.3
	Min ..	5	10	22	12	13	10	18	15	12	-3	6	5	-15	-7	-3	12	6	14	18	20	25	5	20	13	7	-9	24	15	18	-2	13	9.6
Cedar R..	Max..	26	35	40	22	22	49	28	27	27	17	21	23	6	13	18	22	24	42	44	34	37	31	44	41	17	38	38	31	21	26	40	29.3
	Min ..	12	9	10	18	15	12	12	20	17	7	4	13	-15	-15	-7	-7	-3	-3	24	22	28	9	8	21	9	-13	-12	5	12	-8	-5	6.5
Chariton .	Max..	22	32	39	30	28	50	47	30	29	25	30	27	10	19	25	20	26	40	29	34	31	40	37	45	43	21	44	40	31	37	55	32.9
	Min ..	12	9	19	14	16	12	24	16	15	2	9	10	-12	-5	0	8	6	19	22	21	20	27	9	24	20	-5	10	14	14	-1	13	11.7
Charles C.	Max..	22	33	31	17	18	44	20	22	24	20	19	16	-3	-3	19	20	23	40	23	34	33	29	41	32	5	31	43	31	7	25	30	24.2
	Min ..	5	4	10	12	9	9	13	10	10	-2	-3	7	-20	-16	-10	-1	-5	-4	22	20	23	3	5	14	3	-18	-12	-3	6	-18	2	2.4
Clarinda..	Max..	30	37	39	33	29	34	45	25	34	21	34	20	16	22	28	31	32	43	33	43	44	42	48	44	15	36	46	44	30	42	58	34.9
	Min ..	10	11	18	16	14	16	20	24	13	1	0	11	-10	-3	2	6	14	14	24	21	22	10	12	18	15	-2	0	18	19	7	11	11.3
Clear L. ..	Max..	21	27	33	23	16	42	37	20	24	12	25	17	4	8	28	20	27	34	40	33	34	25	40	30	15	19	34	27	28	25	32	25.8
	Min ..	3	4	20	7	5	5	14	8	9	-5	5	-14	-21	-10	-7	8	-3	10	19	19	14	4	16	11	-11	-20	14	3	-6	-11	7	3.1
Clinton...	Max..	31	33	42	32	26	43	35	27	27	22	24	40	4	12	19	22	22	37	38	35	38	27	43	38	26	20	37	24	28	23	37	23.4
	Min ..	22	13	31	18	14	11	25	23	16	6	5	-1	20	-9	-11	3	-6	11	30	22	22	9	17	25	-5	-14	10	1	-2	-8	10	8.6
Col. Sp'gs.	Max..	28	36	38	28	28	50	51	35	34	24	34	23	15	20	29	29	32	42	49	44	44	40	47	42	37	32	47	43	34	42	56	35.2
	Min ..	13	15	25	17	14	15	26	18	15	2	10	1	-9	-1	6	15	15	25	24	20	30	12	27	20	6	-2	27	20	18	11	22	14.7
Colum. J.	Max..	29	34	43	33	23	47	37	26	29	29	32	28	9	15	25	25	27	39	40	33	39	31	43	39	36	16	39	34	31	26	47	32.1
	Min ..	13	15	30	16	16	12	23	18	15	7	10	3	-15	-6	-4	10	-1	17	28	22	26	10	24	27	-1	-9	12	10	4	-3	13	11.0
Corning..	Max..	29	34	38	27	28	48	41	33	32	21	31	27	13	17	27	27	30	44	46	40	42	38	41	42	35	29	45	42	35	39	54	34.7
	Min ..	8	13	25	13	13	12	23	15	13	-2	5	-3	-11	-5	8	12	13	23	23	21	26	9	27	19	3	-4	25	18	15	4	15	11.7
Corydon..	Max..	29	31	38	32	31	50	44	35	29	25	31	23	11	19	24	29	27	40	44	34	44	44	44	37	17	22	47	49	35	38	56	34.4
	Min ..	9	8	24	14	14	11	21	16	14	0	9	5	-13	-7	-1	6	5	15	21	20	27	24	20	5	5	-4	15	11	7	-4	11	9.9
Davenpo't	Max..	29	32	40	28	24	44	36	29	26	18	25	25	3	10	18	24	22	39	41	33	40	29	42	39	23	22	36	32	30	24	43	29.2
	Min ..	21	19	28	17	17	15	26	22	17	10	12	-2	-15	-2	-1	12	4	18	27	22	22	10	25	22	-5	-12	11	8	-1	-4	16	11.6
Decorah. .	Max..	22	23	32	23	17	38	28	26	23	15	20	18	0	5	18	18	22	32	38	33	32	25	40	32	17	17	33	18	24	22	31	23.9
	Min ..	5	4	22	12	5	4	17	19	14	6	2	-12	-22	-8	-10	-2	-10	8	23	20	12	3	17	13	-9	-17	0	-5	-3	-12	12	8.5
Delaware.	Max..	27	28	32	27	19	43	33	24	25	19	23	19	7	9	20	20	21	32	37	31	33	26	42	36	22	10	33	19	27	22	34	25 8
	Min ..	12	5	24	11	11	11	20	15	13	5	3	0	-21	-9	8	5	-1	10	24	16	20	3	16	15	-7	-19	3	-3	-3	-13	9	5.9
Denison..	Max..	28	35	37	26	23	47	38	32	29	17	24	24	10	14	27	25	32	42	43	42	38	41	49	39	35	33	40	35	33	38	48	33.0
	Min ..	13	15	26	13	13	12	21	14	12	-2	10	-6	-13	-6	-7	4	12	23	20	21	25	7	17	16	0	-6	25	15	11	2	15	10.4
Des M....	Max..	27	31	37	24	29	50	37	26	29	19	31	25	13	18	25	28	29	48	47	37	39	37	44	44	34	39	41	37	32	36	55	33.8
	Min ..	13	11	24	15	14	15	21	15	11	5	15	-6	-9	0	3	14	10	21	22	22	20	10	25	18	-3	-8	18	16	3	-1	16	11.4
Dows. ...	Max..	18	28	35	22	18	48	39	21	25	18	22	20	8	10	22	24	25	36	42	36	32	28	44	37	30	20	35	29	29	22	38	27.8
	Min ..	3	7	24	12	7	8	19	11	10	-4	8	-7	-17	-7	-4	8	3	15	22	18	20	2	15	10	-8	-16	14	8	-3	-12	4	5.5
Dubuque.	Max..	32	31	37	28	22	46	38	25	24	19	21	20	8	10	16	20	20	36	40	34	37	28	46	39	17	14	36	22	29	25	37	27.6
	Min ..	20	13	28	16	15	17	23	21	17	10	9	-4	-16	-6	-3	10	-3	13	27	22	18	8	25	17	-6	-17	7	4	0	-8	9	9.2
Earlham .	Max..	26	33	36	26	30	50	40	29	27	22	30	22	15	20	27	25	30	43	40	42	38	40	45	42	....	35	43	40	33	34	55	33 9
	Min ..	4	11	17	12	13	10	15	12	14	-3	10	0	-13	-6	-5	5	4	20	19	20	25	4	21	11		-7	22	10	13	-5	8	8.7
Elkader ..	Max..	31	30	32	28	18	44	26	22	23	18	20	14	8	10	19	19	25	32	30	35	30	26	48	35	6	13	32	17	13	20	37	24.5
	Min ..	8	3	26	15	14	12	20	17	17	4	0	-5	-19	-8	-10	5	-6	13	27	19	20	3	12	14	-7	-18	5	-9	-5	-17	6	5.0
Esthervil	Max..	25	36	25	12	24	47	20	25	24	22	21	-1	4	10	23	19	25	38	30	37	23	36	38	30	4	38	33	30	15	28	37	25.1
	Min ..	2	6	17	9	6	9	16	10	10	-2	2	-4	-22	-10	-8	1	-2	3	13	18	22	4	9	12	0	-14	0	16	-3	-9	10	3.9
Forest C'y	Max..	18	34	28	13	25	49	21	18	24	22	18	6	4	14	20	23	24	41	25	35	25	27	40	31	5	30	31	28	8	25	34	24.2
	Min ..	6	7	6	10	6	5	15	10	10	-6	-2	5	-26	-10	-10	11	1	12	19	20	21	8	7	10	1	-17	-6	5	4	-14	6	3.5
Ft. Dodge	Max..	23	35	36	28	22	50	43	28	25	18	29	28	10	12	26	25	28	41	44	39	37	33	47	40	32	30	39	33	31	31	44	31.9
	Min ..	9	12	27	12	11	12	18	14	13	0	15	-3	-15	2	-2	10	6	20	20	21	15	7	20	15	-2	-11	14	16	2	-5	11	9.2
Galva.....	Max..	27	33	36	25	23	49	35	27	20	28	23	....	10	11	28	23	30	39	40	39	36	36	43	36	31	31	39	35	31	34	33	30.0
	Min ..	4	13	23	10	11	9	12	12	4	13	10	....	-17	-11	-6	4	8	18	18	20	18	5	15	11	-4	-10	24	16	5	-1	11	7 9
Glenw'd .	Max..	29	35	37	30	35	52	47	36	32	20	30	29	19	24	28	32	32	47	42	45	42	42	44	47	42	37	47	42	39	45	54	37.5
	Min ..	15	17	27	9	8	16	27	11	11	-4	10	0	-10	0	8	15	14	22	25	17	29	17	34	17	25	4	30	21	18	10	22	15 0
Grand M.	Max..	24	28	32	24	17	38	34	23	23	19	20	19	4	7	18	27	21	30	38	34	33	24	41	34	22	8	32	16	15	21	31	24 7
	Min ..	9	7	22	12	10	7	18	9	10	6	3	-5	-21	-9	-8	5	-2	9	25	18	19	2	20	13	-8	-20	8	-5	-5	-11	11	1.8
Greenfi'ld	Max..	30	33	36	23	34	45	40	32	33	20	33	21	12	16	27	26	30	44	44	38	37	33	46	46	34	26	44	45	34	38	50	33.9
	Min ..	9	13	17	11	14	10	20	14	13	13	6	-3	-13	-13	0	9	10	19	20	21	25	7	19	16	-2	-11	11	13	7	-2	16	9.3
Grinnell.	Max..	23	28	37	28	23	46	39	25	26	20	30	24	9	13	21	25	24	37	43	31	36	31	40	40	29	18	37	33	30	29	47	29.7
	Min ..	9	10	27	13	12	12	20	18	16	2	12	-2	-10	-3	1	9	6	16	25	21	24	7	24	18	-3	-10	18	11	0	-4	10	10.0
Grinnell (near)..	Max..	22	28	37	28	23	41	40	24	22	20	32	26	10	13	24	25	26	37	44	31	36	31	41	40	30	17	38	34	30	30	47	29.9
	Min ..	8	7	28	11	11	10	18	17	10	-1	10	2	-12	-5	-2	9	5	16	22	16	25	4	20	16	-3	-12	16	9	2	-9	10	8.3
Grundy C	Max..	21	28	34	28	20	48	40	28	26	20	26	25	9	10	22	24	23	35	41	32	35	31	50	41	31	17	36	31	28	27	41	29.3
	Min ..	24	4	37	14	18	8	7	16	15	-3	6	0	-21	-10	-7	8	0	14	24	20	24	2	18	13	-5	-16	15	3	0	-13	4	5.9
Guthrie C	Max..	32	38	45	36	33	53	49	38	37	39	35	35	13	18	30	33	32	50	45	45	45	37	53	45	48	32	54	43	46	42	55	39.9
	Min ..	8	10	28	14	15	12	22	17	15	0	10	0	-12	-5	-3	8	8	20	21	22	28	8	23	17	1	-7	26	16	12	-2	13	11.1
Hampton	Max..	19	27	30	22	18	50	36	21	25	18	20	19	8	10	24	27	27	36	42	37	34	32	42	36	15	22	35	30	27	27	38	27 5
	Min ..	7	6	22	11	6	9	18	13	12	-2	10	-10	-17	-7	-3	10	0	13	22	21	16	4	22	13	-10	-16	10	7	-6	-11	9	5 8
Hanlont'n	Max..	18	30	34	23	11	48	34	20	24	18	20	17	0	10	20	20	23	34	40	34	34	27	41	32	15	22	34	29	29	25	36	25.9
	Min ..	4	12	21	9	6	5	14	7	10	12	1	-12	-26	-10	-18	0	-5	14	20	20	15	2	16	10	-9	-18	8	1	-2	-16	6	3.1
Harlan....	Max..	28	35	36	26	23	45	38	31	30	21	33	24	13	16	29	26	31	43	43	39	35	39	43	40	34	33	42	37	33	39	47	33.3
	Min ..	11	13	25	13	13	8	23	15	15	-1	6	-8	-12	-5	-1	9	13	21	22	22	24	8	16	15	0	-5	26	17	11	5	14	10.7
Hopeville.	Max..	24	29	37	26	26	49	40	32	30	17	31	20	14	18	26	23	29	42	45	39	41	39	44	43	34	25	45	40	29	37	58	33.4
	Min ..	9	10	25	14	15	12	24	16	15	1	16	-1	-11	-3	2	10	10	21	23	21	26	10	24	20	0	-5	24	17	8	0	17	11.9
Humboldt	Max..	23	30	36	26	22	51	42	22	28	21	27	26	10	11	25	24	28	40	46	40	36	34	43	40	32	26	24	30	20	44	25	30.4
	Min ..	5	10	26	12	10	11	20	12	14	17	13	6	-16	-9	-6	6	2	18	24	20	18	4	15	20	-4	-12	16	0	-9	10	0	8.2
Ida Grove	Max..	..	..	..	..	..	..	..	..	..	....	..	....	10	15	23	20	30	38	40	40	38	40	40	48	30	30	36	36	30	30	40	....
	Min ..	..	..	..	..	..	..	..	..	..	....	....	....	-14	-8	-6	-4	10	10	10	24	24	5	10	8	0	5	32	28	12	5	3	....
Indep'nce	Max.	24	28	33	25	16	45	36	25	22	21	20	17	6	7	17	20	21	31	39	30	33	28	47	37	37	11	33	20	20	23	38	26.1
	Min ..	10	5	25	13	10	9	18	15	12	0	7	-2	-18	-8	13	7	17	12	25	18	20	4	16	15	-6	-17	7	-2	-2	-13	7	7.0
Indianola.	Max..	27	32	37	29	29	51	39	28	29	18	32	24	12	18	26	29	29	44	47	36	39	38	45	44	..	25	42	38	33	37	35	33.7
	Min ..	10	10	28	14	11	[illegible]	[illegible]	[illegible]	15	2	11	0	-10	-2	2	9	9	9	21	22	28	8	24	18	0	-6	21	15	4	-2	14	11.1
Iowa City	Max..	29	38	39	21	25	[illegible]	[illegible]	[illegible]	27	22	28	23	7	13	20	23	25	40	40	35	39	32	44	40	31	37	37	33	30	26	46	30.5
	Min ..	12	6	8	17	15	[illegible]	[illegible]	19	16	6	5	15	-18	-15	-12	-10	-7	-6	23	23	27	13	8	22	9	-13	-11	6	13	- 9	0	6.0

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR DECEMBER, 1903—CONTINUED.

STATIONS.		DATE.																														MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Larrabee.	Max..	28	37	37	18	23	49	33	26	28	23	27	23	10	12	28	23	29	39	37	40	36	39	42	34	13	38	35	33	28	32	41	30.4
	Min ..	3	12	18	9	10	11	18	12	10	-4	13	-15	-21	-12	-5	-5	7	16	17	20	15	4	18	13	-10	-13	25	22	2	-3	12	6.4
LeMars ..	Max..	27	28	27	25	23	46	39	34	31	21	26	24	9	12	27	25	30	37	37	38	36	39	37	35	32	38	40	35	28	32	40	30.9
	Min ..	5	15	-5	12	8	15	22	12	11	-3	14	-10	-15	-7	-6	5	12	22	17	17	17	9	17	15	-7	-7	27	25	15	5	17	8.8
Lenox....	Max..	26	35	38	29	27	47	40	33	30	22	30	26	14	17	26	26	30	44	46	40	41	38	46	41	35	28	44	41	35	38	54	34.4
	Min ..	11	12	25	13	14	11	22	15	14	-3	8	0	-13	-5	2	12	11	21	23	20	21	19	20	17	3	-6	10	17	14	2	17	11.2
Leon.....	Max..	25	32	38	32	26	47	40	35	20	26	31	28	11		25	26	27	41	44	35	42	36	44	41	38	23	45	42	35	37	53	34.2
	Min ..	12	11	25	15	16	13	26	19	12	3	11	5	-9	-1	3	11	10	21	24	22	31	14	26	23	7	-3	22	18	17	3	18	13.7
Logan....	Max..	29	35	36	30	23	46	39	34	35	25	32	25	13	19	35	23	32	42	41	41	37	41	44	41	34	36	41	37	34	41	48	34.8
	Min ..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Maquo'ta.	Max..	34	32	40	22	25	46	30	25	24	18	23	21	4	10	16	25	22	33	37	36	39	27	45	38	12	34	37	28	21	22	39	28.1
	Min ..	11	4	5	18	15	11	17	20	14	9	1	9	-22	-20	-18	-15	-12	-12	18	20	24	6	5	20	7	-17	-6	-3	0	-11	-6	3.0
Marshlt'n	Max..	21	34	35	19	22	49	30	26	27	21	30	20	10	13	24	26	27	43	27	35	36	33	47	41	30	36	37	33	19	29	45	29.8
	Min ..	6	5	28	15	11	11	20	19	16	0	12	17	-13	-5	-5	10	1	16	23	22	27	6	21	16	7	-13	18	10	17	-8	7	10.2
Mason C..	Max..	12	27	34	22	17	45	35	22	23	18	20	17	4	8	19	21	23	32	39	33	30	26	40	32	16	17	33	27	24	24	32	25.2
	Min ..	10	11	22	12	9	11	17	12	15	-2	10	-5	-19	-7	-5	11	3	16	23	21	20	6	22	14	-6	-15	13	9	0	-8	12	7.5
M'nticello	Max..	33	30	35	37	42	45	48	40	27	28	33	18	8	10	27	28	37	33	30	31	38	39	37	39	25	13	18	20	10	15	11	28.5
	Min ..	6	4	6	8	10	13	18	20	14	8	2	0	-20	-8	-11	-2	-7	0	4	10	13	20	23	20	-2	-17	-8	1	-1	-11	10	4.2
Mt. Ayr..	Max..	27	34	39	29	30	51	43	33	22	22	25	25	14	20	27	26	30	44	43	42	44	40	48	43	35	27	45	42	36	40	58	35.0
	Min ..	13	13	23	15	14	11	19	18	15	1	11	1	-10	-2	5	13	12	20	23	20	28	11	27	21	4	-4	23	17	12	3	18	12.7
Mt. Pl'snt	Max..	29	32	44	34	25	45	38	29	28	26	33	32	11	16	25	24	27	47	40	34	39	33	44	38	35	17	42	35	34	29	50	32.7
	Min ..	11	11	25	16	16	10	24	16	13	6	8	10	-14	-7	-7	8	-1	15	25	27	26	11	20	28	3	-8	19	10	11	-2	11	11.0
Mt. Ver'n	Max..	27	33	36	28	25	47	34	27	24	17	23	18	4	10	16	23	25	32	35	33	35	29	41	39	33	10	33	27	22	22	44	27.5
	Min ..	17	9	20	13	12	10	21	17	12	3	6	-5	-20	-9	-7	8	0	13	24	19	20	4	19	20	-7	-17	10	2	0	-11	10	6.9
New H. ..	Max..	22	26	33	25	13	41	37	23	23	18	18	18	3	6	17	20	22	31	38	32	32	26	41	36	22	....	34	20	27	23	30	25.2
	Min ..	11	3	..	10	5	7	15	10	13	-3	-4	-7	-24	-10	-12	-7	-1	12	21	17	....	0	14	11	-7	-21	....	-5	-3	-16	5	1.7
Newton ..	Max..	25	30	37	32	25	48	45	30	27	23	32	32	10	20	25	26	27	37	44	33	37	32	40	41	37	20	38	35	31	31	48	32.2
	Min ..	7	7	27	12	11	10	20	18	15	-1	11	2	-13	-5	-3	9	4	16	16	19	21	5	20	16	-2	-13	16	10	3	-9	10	8.4
Northw'd	Max..	29	27	33	22	18	45	36	22	24	18	22	17	2	8	18	23	23	34	38	34	35	37	31	19	12	24	35	28	18	25	34	25.5
	Min ..	9	7	20	8	6	6	14	10	11	-4	8	-12	-21	-8	-8	8	-1	14	21	19	8	3	11	10	-9	-17	7	5	-4	-10	10	6.5
Odebolt ..	Max..	27	34	37	25	25	50	41	30	27	20	30	24	10	12	27	25	30	40	42	40	37	40	47	36	32	32	40	35	32	35	45	32.5
	Min ..	5	11	19	12	13	12	20	13	12	-1	13	-7	-15	-7	-3	7	7	21	19	21	23	6	18	13	0	-8	24	18	9	0	13	9.3
Olin	Max..	28	32	38	32	22	44	38	27	26		25	23	8	11	18	22	22	35	39	32	37	33	43	38	34	13	36	25	29	23	37	29.0
	Min ..	14	5	28	17	15	9	22	20	18	6	3	8	-22	-11	-12	3	-7	12	23	21	23	15	17	22	-2	-16	6	-1	2	-10	7	7.6
Omaha, N	Max..	27	33	40	26	27	50	40	33	35	26	33	25	14	22	34	28	33	48	36	46	39	46	42	44	37	47	44	40	32	44	51	36.2
	Min ..	15	18	26	16	14	21	29	16	14	8	17	-6	-7	2	11	15	17	26	26	20	22	18	28	20	-1	-2	30	27	17	13	24	15.9
Onawa....	Max..	31	32	38	28	29	53	40	34	30	21	30	21	17	22	30	26	32	41	41	42	36	46	45	37	31	42	41	36	35	38	47	34.6
	Min ..	11	17	26	14	12	16	24	16	16	5	10	-6	-7	-3	3	9	14	21	23	20	24	14	21	15	1	-2	31	20	17	10	19	18.2
Osage.....	Max..	20	26	32	24	14	40	27	21	22	17	19	16	1	6	17	19	22	32	38	30	32	26	37	30	18	13	34	24	26	24	30	23 8
	Min ..	6	6	24	12	6	6	16	8	12	-4	7	-6	-21	-8	-10	8	-2	15	22	20	19	2	17	12	-7	-18	10	1	-2	-12	9	4.8
Osceola...	Max..	33	41	38	45	50	48	35	29	20	18	30	18	5	18	26	26	28	45	33	38	40	30	46	42		34	45	43	36	38	58	34.7
	Min ..	14	15	16	19	20	14	24	18	0	-1	0	-2	-11	5	1	9	12	19	21	22	21	11	26	20	24	5	10	16	6	-1	20	11.4
Oskaloosa	Max..	28	30	39	19	27	50	37	28	28	20	34	18	10	16	27	23	25	38	27	33	39	35	43	42	82	20	42	36	10	32	52	30.3
	Min ..	12	5	28	14	14	11	32	16	15	2	11	0	-15	-11	-8	10	0	15	22	21	27	8	26	20	0	-9	19	10	3	-4	10	10.0
Pacific J'n	Max..	29	34	35	26	24	48	40	33	33	22	33	24	13	22	33	28	32	45	41	43	40	42	45	44	35	35	45	40	33	44	49	35 2
	Min ..	14	15	21	15	15	11	21	15	12	2	6	-3	-8	-1	4	12	15	23	25	15	27	20	19	15	3	-3	23	13	15	10	18	12.5
Perry.....	Max..	25	32	35	27	28	49	37	27	29	19	33	24	12	14	27	26	29	45	45	39	36	33	44	40	32	27	39	36	32	35	48	32.4
	Min ..	11	11	21	13	15	11	22	16	15	2	10	-4	-11	-6	-1	8	8	19	20	22	23	9	23	16	-2	-6	20	17	5	-1	13	10.3
Plover....	Max..	26	36	32	18	22	51	36	20	26	21	20	20	8	11	23	22	24	41	33	40	34	31	43	31	33	28	37	35	28	30	40	28.1
	Min ..	20	10	16	11	10	10	12	10	10	-5	12	-20	-21	-8	-10	-5	0	19	22	20	17	4	12	13	-10	-15	16	16	-6	-9	5	5.0
Primghar	Max..	..	..	..	..	37	41	47	25	24	20	35	22	-2	7	24	21	25	35	36	37	35	35	37	30	30	36	36	36	27	32	36	29.1
	Min ..	..	..	..	..	11	11	13	12	10	-4	12	-14	-23	-9	-4	-2	6	18	14	16	6	5	15	12	-8	-12	8	18	4	-2	4	4.3
Red Oak..	Max .	28	36	36	31	26	43	40	37	32	21	31	28	14	19	30	30	33	47	48	39	39	38	45	42	36	31	43	43	35	41	48	35.2
	Min ..	15	20	29	16	16	16	26	19	18	16	14	1	-6	4	7	15	17	27	26	24	27	16	22	21	8	3	28	23	17	13	22	16.8
Ridgeway	Max .	33	30	33	22	19	38	35	31	30	22	20	25	3	8	21	26	27	37	43	34	40	29	44	35	12	20	32	30	33	25	34	28.1
	Min ..	16	8	22	14	10	6	19	10	16	2	6	-11	-24	-9	-10	4	0	12	22	19	12	1	20	12	-10	-18	0	-2	-10	-13	12	4.4
Rockw'l C	Max..	23	35	36	26	26	50	40	30	28	21	30	25	11	15	30	25	30	40	41	40	38	38	48	40	16	31	38	36	32	34	40	*32.1
	Min ..	11	11	25	13	13	20	20	14	15	1	13	-3	-14	-6	1	8	5	19	19	21	21	8	23	23	-5	-10	24	16	5	-2	16	10.5
Sac City..	Max..	25	33	36	26	25	49	39	30	27	19	28	25	9	12	27	25	29	38	43	40	38	38	46	43	30	30	38	35	30	34	33	31.6
	Min ..	8	11	24	11	12	11	20	12	12	-1	12	6	-16	-7	-3	8	6	15	19	21	25	7	22	16	-1	-9	26	17	10	-2	14	9 9
St. Cha'les	Max..	30	33	37	29	33	53	45	31	31	21	33	21	16	18	29	27	31	44	32	41	42	41	50	46	33	26	46	39	33	41	58	35.2
	Min ..	10	10	27	14	16	15	25	17	15	3	12	0	-10	-1	-1	9	8	20	22	21	26	10	28	19	0	-5	23	15	6	-2	16	11.9
Sibley	Max..	18	24	..	18	16	16	12	23	..	20	24	-2	-5	8	22	20	25	35	34	34	....	20	39	36	10	37	....	32	12	29	....	21.4
	Min ..	4	4	18	8	8	7	7	11	11	-5	2	-5	-27	-14	-12	7	5	11	17	19	19	2	13	10	-7	-14	0	....	4	-5	10	3.6
Sigourn'y	Max	..	..	..	..	..	..	..	..	..	..	....	...	20	11	26	28	2	37	44	31	39	33	42	40	35	22	42	35	32	32	51	....
	Min ..	..	..	..	..	..	..	..	..	..	....	...	....	-16	-7	-6	8	1	15	25	19	25	17	7	21	3	9	18	10	7	-6	11	....
Sioux C'r.	Max..	25	28	38	18	21	46	37	29	28	20	25	22	4	10	24	21	27	34	34	36	35	35	35	31	32	38	38	34	29	29	36	29 0
	Min ..	5	14	18	8	6	12	18	10	10	-4	12	-15	-21	-14	-4	5	8	18	15	14	12	6	20	11	-8	-11	25	20	5	1	12	6.7
Sioux C'y.	Max..	26	33	40	18	22	48	35	30	34	20	28	24	10	13	27	24	31	39	33	41	41	42	39	35	37	48	40	38	28	33	42	32.2
	Min ..	9	19	18	13	6	19	26	11	10	3	17	-13	-13	-8	-1	4	15	23	23	14	14	13	20	13	-7	-7	24	24	10	9	21	10.6
Spirit L..	Max..	30	29	45	20	29	34	32	32	22	20	22	17	7	9	25	21	20	35	36	36	36	36	25	27	29	37	35	30	28	27	25	27.6
	Min ..	2	25	18	9	7	10	9	10	9	-2	9	-15	-23	-12	-8	6	9	17	13	12	14	1	12	10	-10	-15	17	17	-4	-9	8	4.7
Storm L..	Max..	30	34	24	22	48	37	29	25	16	25	24	9	10	25	23	27	38	40	40	37	36	45	85	32	31	38	33	30	33	44	25	30.5
	Min ..	4	2	22	10	10	12	19	12	11	-3	13	-2	-19	-10	0	5	5	15	16	20	20	1	23	18	-5	-12	20	19	5	-3	15	7.8
Stuart....	Max	23	32	35	29	25	44	40	33	29	21	31	27	12	18	30	25	30	42	44	37	37	34	43	40	35	26	41	37	34	36	41	33.1
	Min ..	11	11	27	14	14	15	23	17	14	2	12	2	-10	-4	4	9	14	20	22	21	32	11	26	19	4	-5	24	18	13	0	16	12.8
Thurman	Max..	28	33	37	29	25	49	41	34	33	23	33	25	12	20	33	28	32	49	47	42	38	44	44	44	38	35	45	41	35	45	51	35 9
	Min ..	12	12	25	17	15	8	24	15	12	4	4	-3	-9	-4	-1	11	15	18	27	17	29	21	22	18	3	-2	27	15	17	12	16	12.8
Tipton....	Max..	30	32	39	30	22	45	37	27	25	22	24	23	5	10	17	24	24	35	39	34	38	28	40	38	33	16	34	25	28	22	40	28.6
	Min ..	12	13	28	15	15	15	22	20	12	7	9	2	-16	-5	-5	11	4	14	28	20	24	8	20	25	-2	..	13	4	0	-8	12	10.6
Toledo..	Max..	24	31	36	28	21	48	40	28	26	19	28	23	9	12	22	25	25	37	43	32	37	32	47	41	29	18	39	32	30	29	45	30.2
	Min ..	3	1	26	15	11	8	19	18	16	0	10	-3	-14	-5	-6	9	-3	16	23	21	22	5	21	17	-6	-13	13	6	-3	-12	5	7.1
Villisca...	Max..	34	33	28	34	30	42	45	35	38	32	27	18	20	24	26	30	26	28	30	35	38	40	41	42	28	26	45	37	38	29	26	32 7
	Min ..	26	22	14	18	22	30	20	15	17	19	17	-2	-10	-3	3	26	17	20	18	20	22	27	24	17	2	-3	23	17	29	5	12	15.6
Wapello..	Max..	30	23	45	33	29	45	38	26	27	25	30	29	12	15	20	27	23	37	40	32	44	35	41	43	34	18	39	33	30	23	24	31.2
	Min ..	13	15	31	19	17	13	25	21	16	11	12	6	-12	-7	-6	12	-2	15	29	24	28	13	28	31	12	7	16	12	8	1	13	13.6
Washi'ton	Max..	29	33	42	22	24	49	34	29	27	29	31	24	7	15	25	28	25	42	38	35	40	33	41	39	32	20	40	34	23	29	51	31.0
	Min ..	6	9	22	12	9	7	15	11	11	2	7	-8	-19	-12	-9	5	-2	11	21	20	20	6	19	20	-9	-12	6	8	-3	-7	8	5.9
Waterloo.	Max..	24	30	35	24	20	48	40	26	27	16	23	21	12	13	21	24	25	34	41	43	35	32	43	40	17	15	38	25	31	27	40	28.9
	Min ..	5	5	24	15	12	12	20	16	13	0	9	7	-16	-6	-5	11	-1	15	20	19	22	5	18	18	5	-5	14	1	12	-10	10	8.5
Waukee..	Max .	27	32	38	29	29	50	41	29	29	19	32	24	14	19	28	26	29	44	45	39	38	36	36	43	37	25	41	36	33	37	54	33.5
	Min ..	12	10	29	13	15	12	21	19	15	1	10	1	-11	-3	0	18	2	20	22	22	29	8	25	17	0	-6	0	15	6	-3	14	11.5
Waverly..	Max..	22	27	35	25	17	33	33	23	24	17	20	20	8	10	20	20	23	33	39	31	33	28	43	35	23	15	33	24	27	24	34	25.8
	Min ..	7	4	25	12	10	9	17	14	14	-1	7	-7	-17	-6	-8	10	-2	15	21	19	17	4	15	14	-8	-16	7	-2	-5	-17	6	5.1
W.Bend..	Max..	25	28	35	24	22	50	38	20	25	22	24	23	8	10	23	23	26	37	42	39	36	39	43	33	30	27	38	32	28	29	40	29 6
	Min ..	5	9	23	11	8	10	17	13	11	-6	8	-2	-22	-10	-7	7	2	15	22	20	20	3	17	12	-7	-14	15	15	-2	-8	9	6.6
Whitten..	Max.	20	28	34	28	20	46	40	38	25	20	29	26	9	10	24	24	25	37	41	32	34	30	45	....	39	....	35	33	30	27	39	28.0
	Min .	2	5	26	12	7	6	16	14	13	-3	18	-4	-20	-9	-6	9	0	14	23	20	13	3	16	....	19	....	16	8	-1	-13	5	6.8
Wilton J.	Max..	30	33	41	32	25	45	36	27	27	20	28	24	10	13	18	23	25	35	48	34	39	28	42	38	35	15	37	32	32	24	42	30.3
	Min ..	13	7	29	15	15	9	24	20	15	8	6	7	-19	-8	-8	10	-5	13	28	20	25	8	19	27	-8	-13	12	5	2	-9	10	9.1
Wintres't	Max..	..	..	..	..	..	..	..	..	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
	Min ..	8	16	15	8	9	20	22	16	15	6	12	0	-12	-4	5	7	10	22	22	20	27	2	22	16	1	-12	21	21	8	-3	17	10.9

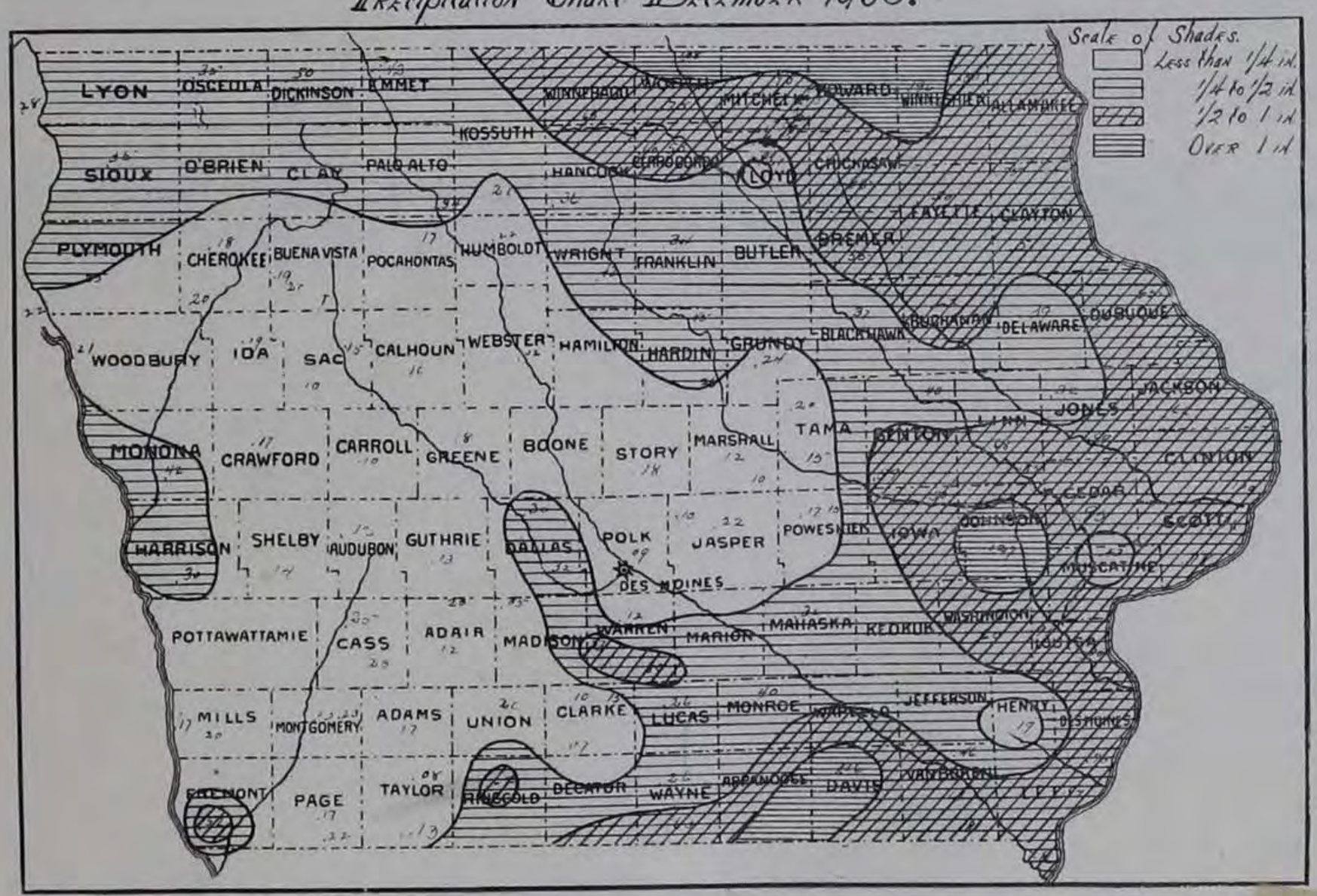
DAILY AND MONTHLY PRECIPITATION FOR DECEMBER, 1903.

STATIONS.	DAY OF MONTH.																														TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	..	....		....	..	....	.05	.05	.10	..	T	---	..	....	....	....	T	....	...	....	....		....		....		....	....	....	....	.20
Albia	....		....	..	...		....	....	T	....	T	.40	....	....	....	....			...	....	....	..	..		..	....	....	....	...	....	....	.40
Algona	....	...	05	T	...		....	....	.05	....	T		....	....	....	....	...	....		....	....	....	....	....	.05	....	....	.05	....	....	....	.20
Allerton	....		....		...	....	....	.03	.06	.08	T	.33	....	....		....	....	....	T	....	....	....	..	.13	....	....	....	T	T	....	....	.63
Alta	....	.03	....	.01	....	....	....	.03	.05	.03	...		....	....	....	....	..	..	..		....	..	....	....	T	....		.04	....	....	....	.19
Alta (near)	....	.05	..	T	..	..	.05	.05		..	....	....	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	.85	....	....	....	.20
Amana		....		T	..	..		....	.02		....	.25		....	....	....		....	...	....	...			.06	.09		..	.08	....	...	....	.50
Ames		..	....		....		..	.03	....	.05	....		....	....			...	....	....		....	....	....	....		....	...	.10	...			.18
Atlantic	....	....	....		....	....	....		.15	.10			....	....	....	....	....	....		....	....	..	....				...	....	....		...	.25
Aububon	....	....	T	T	....	....		.05	....	.07	..	...	T	....	....	....	....	T	....	....	....	....	....	....	T		....	....	....		....	.12
Baxter	....	....	....	....	....	....	....	..	....		....		....	....	....	....	....	T	....	....	....	....	....	....			....	.10	....		....	.10
Bedford	....	....	....		....	..	....	....	T	.13	...	....		..			....	T	....		....	.....	T	....					....	..	....	.13
Belknap		....	....	....	....	....	....	.02	.02	.02		.60	...	..	....		....	....	....	....	....	....	....	.50	T	...			....	....	....	1.16
Belle Plaine	....		....	.01		....	....	..	.15	....	...	.02		....	....	....	....	.10	....	....	....	....		....	.15	....	.	.16	....	....	....	.59
Bonaparte		....			..	..	....	....	T	....	....	.65	....	....	....	....	....	....		....	..	....	...	16	T	....	..		....	..	....	.81
Britt	T		.01	.02	....	....		T	.03	...	.06	.02	..	....	....		....	.02	....	....	....	....	....	....	.08	....	....	.12		....	....	.36
Buckingham	....	...	T	T				....	.03		.06			....	....	....	....	T	....	....			....	....	.03	...	....	.08	....	....	...	.20
Burlington	..	....		..	....	.	....		.07	....	....	.48	.03	....	...			....	T	....	...	....	....	.12	T		....		..		...	.70
Carroll	....			....	....	....	....	....	.10				T	....	....	....		..	....	....	....	.	....		T		....	T	....	....	....	.10
Cedar Rapids	....		T	....	T	..	....	....		.05		.08	.30	....	....	....	....	....	T	....	..	....	....	T	....	.14		..	.11	T	....	.08
Chariton	....	....	....	....	....	....	.01	....	..	....	.25	T	....	..	....	....	....	....		....	....	....	....	....	....	....	..		....	....	....	.26
Charles City	..	....	T	....	T	....	....	T	T	02		T	....	....	....	....	....	....		....	....	..		....	.08	..	....	.11	....	....	..	.21
Clarinda			..	..	....	....	....	.12	.05	....			....	....	....	....	....	....	T	....	....		....	....	T	....	....	..	....	....	....	.17
Clear Lake	.02	....	T	.03	T	....		T	08		.10	.02	....		....	....		T	....	....	....	....	....	....	.15	....	....	20	....	....	....	.60
Clinton		T	..	...	...	....	....	....	.09			.40	....	....	....	....	....	....	....	....	....	....	.16	..	.20	..	....	.15	....	....	....	1.00
College Springs	....				....	....		.02		.20			....	....	....	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	.22
Columbus Junct'n	..		..	T	...		..	T	.03	....		.61	..	..			....	....	....	....	....	....	....	.12	.10	....	..	.09	....		...	.95
Corning	....	.	....	T		....		.07	T	.10	...	T	....	....	....	....	....	....	....	..	....	.	T	....	T	....	..	T	....	..	...	.17
Corydon	...	....	....	....	....	....		.05			.03	.15	....	....	....	....		....		....	....	..	.03	....	....	....	...	T	T	..	...	.26
Cumberland	....	....	..	....	....	..		.20	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.20
Davenport	T	T	T	T	T	....	..	T	02	T	..	.43	....	....	....	....	....	....	T	....	....	....	....	.18	.11	..	T	04	T	....	....	.78
Decorah	T	T	T	.04	....		....	.04	30	....	....			....	....	.04		....	....	....	....	....	....	....	.14	....	....	.24	....	....	....	.80
Delaware	....	....	.05	.02		...	...		.03			.05	....	....	....	....	....		.03	....	....	..	....	....	.06	....	....	.15	....	....	....	.39
Denison	....	....	....		..		.05	.02	10				....	....	....	....	....	....		---		....	..	....		....	....		....	....		.17
Des Moines	...	....	T	T	T		T	.04	.02	T	T	T	...			....	T	T		..	....	....	....	T		....	.03	T			.09
Dows	T		....	.02	T	...		....	.10		T	....	....	....		....	T	....	....	....	....		....	.10			.20	....	....		.42
Dubuque	...	.01	T	04	T	T	.02	.12	.03	01	.14		....	T	T		T	01		....	....	..	....	..	.26	....	.01	.20	T	T	....	.85
Earlham	..	....	T	T	....	..	.02	.03	T	T		T	....	....	....	....		T	....	....	....	....	....	....				T	T	....	..	.05
Elkader		....	.01	T	....		....	T	.10	....	....	T	....	....	.	....	....	....	02		..	....	....	....	.15	..		.23	....	....	....	.51
Estherville			.06	.02		T		T	.10		T	.10	....			....	..	....	....	....	....	....	....	....	.05	....	....	...	.10		....	.43
Forest City	....	T	T	.05	T	....	....	....	.10	T		.10	....	...	..	....	....		....	....	....	....	....	....	.10	....		....	30	....	....	.65
Fort Dodge	....	....	T	T	....	....		T	T	..	..	...	T	....	....	....	....	....		....	....	....	....	....	T	....	..	.02	....	....		.02
Fort Madison	T		....	....	....		....	T	T	....		.42	..	....	....	....	....	....	.05	....	....	....	.17	....	T	..	....	T	....	....	....	.64
Galva	....	T	....	..	....	..	05	.02	.02				....	....	....	....	....	....	....	....	....	..	....	..	....	..	....	....	....	....	....	.09
Gilman	....	....	....	T	T	..		T	.10	....	....		....	....	....	....	....	T	T	....		....	....	....	T	....	..	T	....	....	....	.10
Glenwood	...	....	T	T	....	....		T	.20	T			....	....	....		....		....	....		....	....	....	....	....	....	....	....	....	....	.20
Grand Meadow	...	....	.05	.05	....	....	T	....	.25		....	T		....	T	....	....	T	....	....	..	....	....	....	.20	....	....	.20		....	....	.75
Greenfield	....	....	T	T	....	....	....	.06	04	.02	..	....	....		..	....	....	T	T	....	....	....	....	....	....	....	....	T	T	....	....	.12
Grinnell	....	....	....	.05		....	....	....	.04		....	....	.01	....		...	....	....	.02	....		....			T	....	....	.25	....	....	....	.37
Grinnell (near)	..	....	....	..	....	....			.05	....	....	....	....	....		..	....	....	....	....	....		....	....	....		....	.10	...	....	....	.15
Grundy Center	T	....	....	T	....	....	..	T	.05		....	...	....	....	....	....	....	.02	T	....	....	....	....	....	.06	....	....	.11	....	....	....	.24
Guthrie Center	....	....	T	T	....	....		.08	T	.05			T	....	....	....		T	....		..	....	..	..	T	..	....	T	T	....	....	.13
Hampton	....	....	.03	....	....	....		.02	....		....	....	....	....	....	....		....	....	....	....	..	....	.11	....	..	....	.18		....	....	.34
Hanlontown	T	....	.02	.02	.12	...	....	T	.12		.50	...		....	....	....	....	T	....		..	....	....	....	.10	....	....	.20	....		....	1.08
Harlan	T	T	T	T	T	....	....	.01	.08	.05		T	T	....	....	....	....	T	T	....	....	..	....	....	T	....	....	T	T	....	....	.14
Hopeville	....	....		T	....	....	....	.02	.02	.03	T	T	...	....		....	....	....	....	....	..	....	....		T	....	....	....	T	....	....	.07
Humboldt	....	T	...	T	....	..	....	....	.12	....	....	....		....	....	....	....	....	....	....	..	....	....	....	....	....	.10	....	....	....	....	.22
Independence	....	.03	....	04	....	..			.10	....	T	....	....	....	....	....	....	....	....	....	..	....	....	....	.20	....	....	.26	....	..	....	.63
Indianola	....		....	T	....	....	....	T	.05	.05	....	T	T	....		....	..	....		....	....	....	....	....	T	....	....	.02	T	....	....	.12
Iowa City	....	....	T	..	T	....	....	..	T	.02	..	.15	.60	T	....	....	....		T		....	....	....	.11	T	.20	....	....	.19	T	....	1.27
Iowa Falls	....	T	....	T	T	T	....	....	T	.10	....	T	T	T	....	....	....	T	T	....	..	....	....	....	....	.10	....	....	.25	....	....	.45
Jefferson	....	....	..	.02			....	T	.03	.02	....	....	.01	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.10				.18
Keokuk	T	....	...	T	....		..	T	.01	..	....	.52	....			...	....	...	.19	....	....	T	.13	T	....	....	.01	T	....	....	.86
Keosauqua		...		....	....	....	....	....	T	T	T	.61	.05	....	....	.	..	....	T	T	....		..		T	....	....	T	T	T		.66
Lacona	T			T	....		....	.10	10	.10	....	.20	....	....	....	....	....	....	....	....	....	....	....	....	.10	....	....	.10	.10	....	....	.80
Larrabee	..	.01	T	T	T	....	..	T	.09	.07	T		....	..	....	....	....	....	....	....	....	....	....	....	T	....	....	.01	....	....	....	.18
Le Claire	....	....	T	T	T	T		T	.07	T	.18	.22	....	..	..	....	..	....	T	..	....	....	.08		.10	....	....	.11	....	....		.76
Le Mars	...	T	....	T	....	....	....	T	.	.25	....	....	....	....	....	....	..	....	....	....	....	....	....	....		....	..	....	....	....	....	.25
Lenox	..	....	....	..	..		....	.03	.03	.02	....	....	....	....	..	....	....	T	....	....	....	....	....	....	..	....	....	....	....	....	....	.08
Logan		....	....	..	..		....	.20	.10	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	.30
Maquoketa	...	....	T		...	....		....	....	.06	....	.10	.15	....		....	....	....	.04	....	....	....	..	...	T	.18	....	....	.09	....		.62
Marshalltown		....	....	..	T	....	....	....	T	.04	..	T	....	..	....	....	....	..	T	....	....	....	....	....	....	T	....	....	.08	....	....	.12
Monticello	T	T		T	..	T	T	T	.20	T	T	.05	....	....	....	....	....	....	T	....	....	....	....	....	.02		.05	T	T	...	..	.32
Mason City	....	...	T	T	..	....	..	....	.08	...	.07	....	....	....	....		T	....	....	....	....	....	..	..	.18	....	..	.20	....	....	....	.53
Mount Ayr	....	....		....	....	....		.20	.20	.10	....	.10	....	....	....	....	....	T	....	..	....	..		.02	T		....	....	....	....	..	.62
Mt. Pleasant	....	....		T	....	....	....	T	.02	....	....		..		....	..	....	..	....	....	....	....		.17	T		....	T	....	....	..	.19
Mt. Vernon	T	T	T	T	....	..	....	T	.20	...	T	.27	....	....	....	....	....	.01	....	....	....	....	T		.20	T	....	.17	....	...	....	.85
New Hampton	T	....	T	T	.05	...	.	....	....	.10	....	T	....	....	..	....	....	T	..	....	....	..	....	....	..	.50		.20	....	..	.	.85
Newton	....			T		....	....	....	.07	....		....	T	....	....	....	....	....		....	....	....	....	....	.	..	....	.15	....	....	....	.22
Northwood	T	T	.05	T	T	..	T	T	.10	...	.10	....	....	....	....	....	....	T	....	....	....	....	....	....	.30	....	....	.20	....	....	....	.75
Odebolt	....	....	....		....	....	....	05	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....		...	.05	....	....	....	....	.10
Olin	....	....	....	....	....	....	....	.50	...	....	....	.20	....	..	....	....	....	T	....	....	....	....	....	.02	.15	..	....	.12	....	....	....	.99
Omaha, Neb	.01	....	T	T	....	....	....	.01	.11	.02	....	T	....	....	....	....	....	....	....	....	....	....	....	....	T	....	....	....	....	....	....	.15
Onawa	....	....	T	.02	T	....	....	.05	.25	.10		....	T	....	....	....	....	....	....	....	....	....	..	....	....	..	....	T	....	....	....	.42
Osage	..	.01	....	.06	.02	T		....	T	.15	..	.01	.05	....		....	....	....	....	....	....	....	....	....	.50	....	....	.10	....	....	....	.90
Osceola	...	.	....			....	....	T	....	....	..	..	10	...	...	....	....	....	....	....	....	....	....	..	T	....		T	T	....	....	.10
Oskaloosa		....		T	....	....	....	....	.02	T	.18	T		..		....	....	....	....	....	....	....	.10	....	T	..	....	.02	....	....	....	.32
Pacific Junction	...	..	T	T	....	....	....	.02	13	.02	....	....	..	..	..	....	....	....	....	....	....	....	....	....	T	....	....	....	....	..	....	.17
Perry	....		T		....	....	T	T	.10	.15	....	....		....	....	....	....	....	....	....	....	....	....	....	T	....	.05	....	....	....	....	.30
Plover	...	....	T	T	T	....		.02	10	T	..	....	....	....	....	....	....	....	....	....	....	....	....	....	T	....		.05	..	.	....	.17
Red Oak	T	....				....	....	T	.11	.02	....	....	..		...	....	....	T	....	....	....	....	....	....	T	....	....	T	..	....	..	.13
Ridgeway	.01	T	.05	.03	.01	....	.03	T	.44	...	.20	.01	....	....	.03		..	.22	T	....	T	...	....	T	.68	....	.01	.23	....	.01	....	1.96
Rockwell City	..				....	....	....	....	....	..	....	....	....	....		....	....	....	..	....	....	....	....	....	....	....	....	.10	....	....	...	.10
Sac City	....	T	T	T		....	....	.08	.05	T	....	T	T	....	....	....	.....	....	..	....	....	....	....	....	....	....	....	.02	....	....	....	.15
St. Charles	....	....	T	T	T	....	....	.50	T	.03	....	....	....	....	....	....	....	T	....		....	....	....	....	T	....	....		T	..		.53
Sibley	....	...	.05	T	T	....	....	.05	05	..	T	.20	..		....	....	..		....	....		....	....		TT	....	....	....	....	..	..	.35
Sioux Center	....	.05	T		...	....	....	.10	.05	.10	.05	....	....	....	....	....	....	....	....	....	....	....	....		TT	....	....	....	....	.	.	.35
Sioux City	....	T	T	T	....		....	.05	.10	03	....	.01	.02	....	....	....		....		....		..	....	....	T	T	..	T	....	..	..	.21
Spirit Lake	....	05	....		....	....	....		.10	T	.25			....	....	....	....		....	....	....	....	....	....	....	....	....	.10		....	....	.50
Stockport	....	....	....	....	....	....	....	....	T	....	..	35	T	....	....	....		T	....	....	....	....	T	.11	T	....	..	T	T	....	....	.46
Storm Lake		T	T	T	....	....	....	T	T	T	....	....		....	..	....	....	..	....	....	....	....	..	...	T	..	....	T	..	....	....	T
Stuart	....		....		....	....	....	.05	.05	.10	....	...	....	....	....	....	....		....	....	....	....	....	....	..	..	....	....	....	....	....	.20
Thurman	....	....	T	T	T	..	....	T	.25	27	....	T	....	....		....	....	....	....	....	..	....	....	....	T	....	....	....	....	....	....	.52
Tipton	....	....	T	T		....	....	....	.10	...	....	.40	....	....	....	....	....	....	....	....	....	....	....	.10	.20	....	....	.15	....	....	....	.95
Toledo		....	T	T	T	....		....	.05	. ..	....	....	T	....	....	....	....	T	....	....	....	....	....	.10	....	....	T	T	T	....	....	.15
Villisca	....	T	T	....	....	....	.08	.15	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.23

DAILY AND MONTHLY PRECIPITATION FOR DECEMBER, 1903--CONTINUED.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Vinton	...	....	....	T	....	....	....	....	.10		....	....	..		....	....	....	....	....	....	....	....	....		.10	....	....	.20	....	....	...	.40
Napello	....	..	...	..		....	....	....	.05	....	....	.57	....	....	....	..	....	....	....	....	....	....	....	.08	....	....	..	T	T	....	....	.70
Washington	....	....		...	....	....	....	....	.03	.02	....	.28	....	....	....	....	....	...		....	....	....	.. .	.16	.11	....	....	....	....	....	....	.60
Washta	....	.05	....	...		...	....	.05	.05	.05	....	....	....	....	....	....	..	....	....	....	....	....		..	T	....	...	T	....	..		.20
Waterloo	T	....	T	.06	....	....	....	..	.03		....		....	..	....	....	....	T	...	....		....	....	....	.15	..	...	.13	...	..	....	.37
Waukee	....	...	T	T	....	...	....	.05	.15	.10		T	T	....	....	....	...	T	....	....	..	...	..	....	T	....	....	.02	T	....	....	32
Waverly	....	....	.01	.02	....		....	....	.10		....	....		....	....	....		.02	....	..	....	..	....	..	.20	....		.22		....	..	.55
West Bend	....	....	.03	T		....	....	.02	.05	....	.07	....	....	....		....	....	.02	..	....	....	....	....	....	.05	T	....	.10	....	....		.34
West Union	T	....	....	T		....	....		....	..	....	T		....	....		....	....	....	....	....	....		...	....	.10		.20	....	....	....	.30
Whitten	T	....	T	T	T	....	....	T	.05	..	....	T	T	....	....	....	....	T	....	....	..	....	....	....	....	....	....	.20		..	....	.25
Wilton Junction	....	....	....		...	....		...	.05	...	....	.15	....	..	....	....	....	T	T	....	....	....	....	....	.10		....	.13	T	....	....	.43
Woodburn			....	...	....	..		T	.08	T	T	.07		....	....	....		.	...	....	....	....		....	T	....	....	T	T		....	.15

Precipitation Chart December 1903.



APPENDIX--ANNUAL SUMMARY, 1903.

CLIMATOLOGY OF THE YEAR 1903.

BAROMETER—The mean pressure for the year was 30.04 inches. The highest observed pressure was 30.68 inches on February 18th and December 14th at Des Moines; lowest pressure, 29.19 inches, on October 6th at Sioux City. Range for the state 1.49 inches.

TEMPERATURE—The mean temperature for the state was 47.3°, which is 0.3° below normal. The highest temperature reported was 101° on Aug. 24th at Logan. The lowest temperature reported was 27° below zero on December 13th at Sibley. Range for the year 128°.

PRECIPITATION—The average amount of rain and melted snow for the year, as shown by complete records of 95 stations, was 35.66 inches, which is 4.75 inches above the normal, and 8.65 inches below the average amount for 1902. The greatest amount recorded at any station for the year was 50.53 inches at Onawa. Least amount recorded 26.41 inches at Ames. The greatest monthly rainfall was 17.74 inches at Woodburn in August; least monthly amount, a trace at Afton and thirteen other stations in January, November and December; the greatest amount in any consecutive twenty-four hours was 11.22 inches at Cherokee, August 27th. The average number of days on which .01 inch or more of rain fell was 92.

WIND AND WEATHER—The prevailing direction of wind was northwest. Highest velocity reported, seventy-two miles an hour, in Sioux City, from the northwest and southeast on January 6th and May 21st. Average daily wind movement 210 miles. There were 156 clear days, 100 partly cloudy, and 109 cloudy days; as against 145 clear days, 111 cloudy and 109 partly cloudy in 1902.

CLIMATE AND CROP REVIEW.

COMPARATIVE DATA OF THREE ABNORMAL SEASONS, AND SUMMARY OF 1903.

The first three crop seasons of the new century—1901-1902-1903—may be classed as radically abnormal in respect to seasonal rainfall and temperatures, their records serving as striking illustrations of possible climatic extremes of this section. The season of 1901 was notable for extreme heat and aridity of air and earth, breaking all records of daily averages and maximum temperatures in the midsummer period. The droughty conditions continued until about May 1, 1902; then came heavy downpours, with streams bankfull and overflowing, and continued excess of precipitation for a period of about seventeen consecutive months, or until September 15, 1903. For reference and comparison the following table is appended, showing the average precipitation and mean temperatures for the state, for the six crop months—April 1st to September 30th—in the last three years; also the monthly normals for the same period.

PRECIPITATION, INCHES.

Years.	1903	1902	1901	Normal
April	2.98	1.71	1.79	2.89
May	8.55	5.39	2.35	4.13
June	2.86	7.16	3 17	4.50
July	4.83	8.67	2 34	4.23
August	6.64	6.58	1.29	3.43
September	3.81	4.35	4.77	3.30
Total for six months	29.67	33.86	16.25	22.48
Total for the year	35.39	43.82	24.41	31.42

MEAN TEMPERATURES—DEGREES.

April	49.8	48.2	49.9	49.3
May	61.6	63.8	60.7	60.4
June	64.6	65 2	72.3	69.6
July	72.9	73.1	82.4	74.2
August	69.1	69.1	73.8	71.8
September	60.8	59.1	63.3	63.6
Means	63.1	63.0	67.0	64.8

The records of the four critical crop months—May 1st to September 1st—show the marked difference in the rainfall and temperature of 1901 in comparison with the two following seasons. The total amounts for the four months were as follows: In 1901, 9.69 inches; in 1902, 27.80 inches; in 1903, 22.88 inches. The normal for the four months is 16.29 inches. The most favorable showing in these records is the fact that the rainfall in the crop season of 1903 was nearly 5.00 inches less than in the same period in 1902, indicating a return towards normal conditions.

The winter of 1903 was generally about normal and favorable for live stock and the usual farm operations of the season. The soil was very wet, and the ponds and streams were more than usually filled with water and ice. Fall wheat and rye wintered fairly well, though the covering of snow was generally light. March was warmer than usual, with somewhat less than the normal precipitation; but the excessive cloudiness and humidity retarded farm work except in dry, sandy soil. While the spring opened earlier than usual, the fields were too wet to allow an early start in farm work.

April was about normal in temperature and rainfall, but the prevalence of cloudy, misty and humid weather during the larger part of the month retarded the necessary drying of the surface. The usual farm operations were pursued under these adverse conditions, causing material reduction of the acreage of spring wheat, oats and barley. Pastures and meadows made an early start and the grain crops germinated readily, making a fairly good stand. A snowstorm with freezing temperature, at the close of the month, checked crop growth and injured the earlier varieties of apples, cherries and plums.

May was the wettest and most unfavorable month of the season. The soil at the outset was supersaturated, and the average rainfall for the state for the month was 8.55 inches. The distribution of this excessive amount of rainfall was variable, ranging at local stations from 2.88 to 15.45 inches; but the averages of each section was above 8 inches. The best conditions as to dryness of soil were in the Mississippi river districts. The great interior basins of the Des Moines, Iowa and Cedar rivers were subjected to very heavy floods about the close of the month, causing much delay in farming operations and damage to all crops. From about the 3d to the 18th conditions were at their best, and during that part of the month the plowing, planting and other farm operations were in progress on the drier lands, with only occasional interruption by showers. Most of the corn that was planted was put in during that period. The protracted and very heavy storms during the last decade rendered field work impracticable in more than four-fifths of the state. At the close of the month not more than two-thirds of the usual corn area had been planted. The germination was generally quick and satisfactory in the stand, but the fields soon became very foul from the lack of cultivation, and much more than the usual amount of replanting was necessitated as a result of washing and flooding the fields. The general condition of wheat, oats, rye, barley and meadows was better than seemed to be possible during prevalence of the storms.

June was unseasonably cool, but generally dry and more favorable for field work and crops than the preceding month. The mean temperature was about 5° below normal, and the rainfall was 1.52 inches below the average. The surface dried off slowly, and the cool weather was more favorable for small grain than for the rapid germination and growth of the belated corn. Good progress was made in replanting the washed out corn fields and in cultivating the early planted corn on the dry upland. Seasonable temperature about the close of the month caused a marked improvement in the appearance and prospects of this important staple, and in size and color it was much nearer the normal condition than was deemed possible at the outset. Clover-cutting was begun near the middle of the month, and haymaking was quite general at the close, the output being above the average.

July was characterized by frequent and sudden alternations from high to low temperatures. The daily mean for the month was about 2° below normal, the first decade being unusually warm, the second decade unseasonably cool, and the third decade bringing the two extremes of temperature. The average rainfall for the state, 4.83 inches, was .91 of an inch above the July normal. The distribution was very unequal, the average of the northern section being 6.49, the central section 5.28, and the southern section 2.73 inches. The heaviest amounts of rainfall were reported at stations in the N. E. district. The most destructive storm of the month occurred on the afternoon of the 20th, sweeping across the state on a direct line from Lyon and Osceola southward to Adams, Taylor and Ringgold, its pathway varying in width from one to eight miles. At numerous points along this line the storm was accompanied by high winds and very heavy hail, causing almost total loss of growing crops within an area of more than three hundred square miles. In portions of the southern section drouthy conditions prevailed for many days, causing some detriment to growing crops; but the closing week brought generous showers. On the whole the month was favorable to haymaking and harvesting of wheat, oats, barley and rye. The hay crop proved to be one of the best ever produced in the state, and the greater part of it was secured in excellent condition. Wheat and oats were generally harvested in good condition, but on account of the rust and blight the yield has been disappointing, though the quality of the grain will be greatly superior to the output of last year. The corn crop made fairly good progress during the month, though the temperature was somewhat unfavorable about half of the time. The early planted portion of the crop reached the earing stage while the late planted corn was generally small and unpromising. The outlook for the crop as a whole was not encouraging at the close of July.

August was cooler than usual with a large excess of rainfall, humidity and cloudiness. The mean temperature was 3.1° below normal, and the average rainfall, 6.64 inches, was 3.43 inches above normal. The southern section received the larger amount, an average of 8.74 inches, the bulk of it falling in the last week of the month (State Fair week). It was the wettest August of which we have records for the state. There were nineteen cloudy or partly cloudy days. During the fair weather periods considerable progress was made in threshing and other farm operations. Haymaking was continued throughout the month, when the weather permitted, securing a large amount of aftermath, wild hay, and second crop of clover for seed and fodder. More than the usual amount of plowing was done, with generally favorable conditions of soil for this work. Threshing returns indicated generally light and unsatisfactory yield of wheat, oats and barley; the yield of timothy seed has been unusually heavy. The development of the corn crop was all that could be expected under the prevalent weather conditions. At the close of the month the early planted corn, about forty per cent of the whole area, had reached the roasting ear stage, or a little beyond, giving promise of reaching maturity within twenty days, under favorable conditions. The balance of the crop was in various stages of growth, indicating need of very good ripening weather for a full month or more to place the bulk of it beyond danger of harm or frost. The outlook for the crop as a whole was at that time unsatisfactory. The late potato crop made fair growth in dry and sandy soil, but there were reports of damage by rot in many localities. The crop of early and fall apples gave good returns, especially in the northern half of the state; but winter apples were unpromising. Pasturage made a heavy growth, giving assurance of abundant fall feed for stock.

September was cooler than usual, the mean temperature being 3.4° below normal. Frosts occurred at numerous stations on the 16th, 17th, 18th, 24th and 27th, but little damage resulted to corn and other crops, except in limited areas on low ground. The main detriment caused by the cold and frosty period was the delay in bringing belated corn to full maturity. The period of most unfavorable weather and heaviest rainfall was from the 4th to the 10th. In the last half of the month there were about twelve days of ideal weather for maturing crops, harvesting, threshing and plowing. During this time corn made very good progress, and at the close of the month fully eighty per cent of the crop was well matured, the balance requiring two weeks of frostless weather and generally favorable conditions to make it safe. There was but little expectation of bringing all of the belated portion of the crop to maturity, as some of it was green and soft at the close of September. A considerable amount of the early corn was cut and put into shocks after the first appearance of frost. Fall pasturage was never better, and seldom as good at this time of year. Fair progress was made in harvesting the minor crops, and a good deal of second crop hay was secured. Fall plowing was well advanced, much more than the usual acreage having been done with the soil in excellent condition. The potato harvest showed a very light yield, and much damaged by rotting. The fall apple crop was fair, but winter apples were inferior in size and quality. On the whole September was a fairly satisfactory month, though below normal in temperature and sunshine. The adverse features of the month were the natural sequence of the preceeding abnormal spring and summer.

October was an ideal autumn month. The mean temperature was slightly above and the rainfall below the normal, and the percentage of sunshine was higher than usual. The bulk of the rainfall came in the first seven days, and generally with but little disturbance of the elements. No trace of snow was reported during the month. The first general killing frost occurred on the 18th, at which time there was practically very little of value exposed to damage by freezing temperature. The greater portion of the late planted corn was fairly well matured before the middle of the month. Reports were received of very many fields planted as late as June 15th which were well ripened by October 10th. The amount of fall plowing in the state at large was much greater than in recent years. A limited acreage of fall wheat and rye was sown, and the conditions were favorable for germination and growth, insuring a good stand. The fall pasturage was never better, being very green and succulent at the close of October. The dry weather was favorable to harvesting potatoes, apples, and all the late maturing crops. The potato crop was generally light, with considerable damage by rot, though some localities report a fair yield. The yield of winter apples was much below the average. Forage crops and garden truck made excellent yields. As a whole October was a remarkably fine month, making an exceptional record in view of the adverse weather conditions of the preceding months.

November was unusually dry and seasonably warm, with less than the average amount of atmospheric disturbance. Conditions were favorable for farm operations, and excellent prog-

ress was made in cribbing the corn crop. The cobs contained more than the usual amount of moisture, but the dry weather and freezing temperature prevented damage by heating in the cribs. The small acreage of fall wheat and rye suffered no material injury from dry weather and freezing. The weather was highly favorable for stock feeding and pastures afforded good feed throughout the month. The supply of water for stock was ample for the winter.

On the whole the crop season of 1903 was materially better than the preceding season, the quality of the output of the soil being much superior. The forage crops have been exceptionally heavy, and the fall months were favorable for securing the full benefit of the abundant yield of pasturage and fodder. There is much cause for congratulation and thankfulness that, under such unusual conditions, the yield of all staple crops has been sufficient to afford a liberal reward for the labor of the tillers of the soil of this most fertile state.

ERRATA IN 1902 ANNUAL.

CHARLES CITY.—Monthly mean temperature for June recorded 56.8° on page 19, should have been 64.0°. Mean annual temperature recorded 46.6° on pages 15 and 19, should have been 46.4°.

DE SOTO.—Monthly mean temperature for December recorded 22.2° on page 19, should have been 22.5°. Mean annual temperature recorded 22 2° on pages 15 and 19, should have been 22.5°.

GALVA.—Monthly mean temperature for December recorded 15.8° on page 19, should have been omitted.

GUTHRIE CENTER.—Monthly mean temperature for July recorded 73.0° on page 19, should have been 72.4°. Mean annual temperature recorded 48.9° on pages 15 and 19, should have been 46.8°.

MT. AYR.—Monthly mean temperature for December recorded 19.4° on page 19, should have been 21.1°. Mean annual temperature recorded 48.7° on pages 15 and 19, should have been 48.8°.

MT. VERNON.—Monthly mean temperature for July recorded 74.0° on page 10, should have been 73.9°.

SHELDON.—Monthly mean temperature for November recorded 36.8° on page 19, should have been 37.°0. Mean annual temperature recorded 45.4° on pages 15 and 19, should have been 45.5°.

GILMAN.—Monthly precipitation for February recorded .87 inches, on page 21, should have been .89 inches. Annual precipitation recorded 42.00 inches on pages 15 and 21, should have been 42.02 inches.

LACONA.—Annual precipitation recorded 54.17 inches on pages 15 and 21, should have been 53.97 inches.

LE CLAIRE.—Annual precipitation recorded 46.86 inches on pages 15 and 21, should have been 45.86 inches.

RED OAK.—Monthly precip'tation for December recorded 2.32 inches on page 21, should have been 2 52 inches. Annual precipitation recorded 47.36 inches on pages 15 and 21, should have been 47.56 inches

SAC CITY.—Monthly precipitation for October recorded 1.56 inches on page 21, should have been 1.16 inches. Annual precipitation recorded 42 77 inches on pages 15 and 21, should have been 42.37 inches.

CLIMATOLOGICAL DATA FOR THE YEAR 1903.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record years.	TEMPERATURE, IN DEGREES FAHRENHEIT.						PRECIPITATION, IN INCHES.				MONTH.	SKY.				
				Annual mean.	Highest.	Date.	Lowest.	Date.	Length of record years.	Total for the year.	Greatest monthly.	Month.	Least monthly.		Total snowfall, unmelted.	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.
Afton	Union	1,212	9	49.1	97	July 10	-14	Feb. 18	10	39.58	12.34	Aug...	T	Jan.....	18.0	....	....	....	....	
Albia	Monroe	957	....	49 0	96	July *11	-14	Feb. 17	6	37.34	9.13	May...	.40	Jan. Dec.	....	....	....	....	....	
Algona	Kossuth	1,213	28	46.3	92	July *7	-20	Feb. 20	31	29 24	8.05	May...	T	Nov.	12.2	71	109	166	90	SE
Allerton	Wayne	.....	....	49.2	95	Aug. 23	-16	Feb. 17	....	44.39	11.58	May ..	.48	Jan.....	17.8	107	185	105	75	NW
Alta	Buena Vista	1,513	11	44.9	89	July *7	-20	Dec. 13	13	38.42	7.05	Sept ..	.16	Jan.....	12.0	115	141	150	74	S
Alta (near)	Buena Vista	.....	....	...	94	.....	...	.....	..	39 31	7.83	Sept...	.20	Jan. Dec.	12.0	....	....	....	....	
Amana	Iowa	721	25	47.9	....	July 9; Aug. 23	-15	Dec. 13	28	31.67	7.31	Aug...	.28	Jan ..	19.1	108	240	134	91	NW
Ames	Story	926	20	47.4	93	July *9	-14	Feb. *16	26	26.41	9.46	May...	.14	Jan. Nov.	...	....	....	....	...	SE
Atlantic	Cass	1,164	11	48.3	97	July 9	-15	Feb. 5	13	39.58	12.37	May...	T	Jan	27.0	83	94	103	168	S, NW
Baxter	Jasper	998	....	....	94	July 9	-15	Feb. 18	4	29.55	11.70	May...	.10	Jan. Dec	16.2	71	162	84	119	SW
Bedford	Taylor		....		94	July *10	-17	Feb. 17	....	33.59	9.83	May...	.05	Jan.....	....	....	157	70	138	SE
Belknap	Davis	877	7		96	July 8	....	.....	....	.....	.....	.....	....	.....	...	....	....	..	....	
Belle Plaine	Benton	828	12	46.3	93	July 9; Aug. 23	-15	Dec. *13; Feb. *17	14	34.33	.....	.....	....	.....	..	....	...	..	....	
Bonaparte	Van Buren	.....	10	49 6	98	Aug. 23	....	.....	12	37.08	7.53	Aug..	.43	Jan.....	....	67	....	....	....	
Britt	Hancock	1,236	5	44.8	93	July 9	-25	Dec. 13	7	28 46	6 89	May...	.05	Nov. ...	9.7	119	66	204	95	SW, NW
Buckingham	Iowa	.....	....	...	....	.....	....	.....	4		7.57	May...	.08	Jan ...	12.1		....		....	
Burlington	Des Moines	544	6	51.0	95	Aug. *23	-18	Feb. 17	8	34.97	7.63	Aug...	.58	Jan	....	91	183	73	109	SW
Carroll	Carroll	1,265	12	47.0	95	July 9	-18	Feb. *16	14	34 48	9.54	May...	T	Jan.....	14.5	85	180	74	111	
Cedar Rapids	Linn	733	19	48.3	97	Aug. 24	-15	Dec. *13	21	28 48	6.12	Aug. .	.11	Jan.....	15.8	91	119	116	130	NW
Centerville	Appanoose	1,013	7	..	....	.....	....	.....	....	.....	...	....	....	.....	....	....	...	....	...	
Chariton	Lucas	1,042	7	..	93	July 10; Aug. 23	-14	Feb. 17	9	.....	14.05	Aug...	.11	Nov.	8 7	...	....	....		
Charles City	Floyd	1,012	11	44.8	93	July 10	-20	Dec. 13	13	32.63	9.15	May...	T	Jan.Nov.	11.4	99	158	72	135	NW
Chester	Howard	....	....	..	90	July *25	....	....	....	.....	.....	.....	....	.....	....	....	....	....	....	
Clarinda	Page	1,069	12	49.7	98	July 9	-14	Feb. 18	14	33.94	9.97	May...	.14	Jan.....	18.1	98	155	119	91	S
Clear Lake	Cerro Gordo	1,241		45.4	98	July 8	21	Feb. *16; Dec. 13	5	.....	9.59	Aug...	T	Nov.	14 6	77	160	123	82	NW
Clinton	Clinton	609	34	48.2	96	July *8	-20	Dec. 13	36	36.33	5.45	May...	.78	Nov. ...	27.8	102	127	88	150	NW
College Springs	Page	.....	10	50.0	96	July *10	-14	Feb. 18	12	31.24	9.10	May...	.20	Jan	....	83	....	....	....	NW
Columbus Junction	Louisa	595	2	49.1	96	Aug. 23	-15	Feb. 17; Dec. 13	3	38.79	9.10	Aug...	.28	Jan.....	25 9	94	175	117	73	NW
Corning	Adams	1,127	10	48.2	93	July *9	-15	Feb. 18	11	40.04	13.80	Aug...	.07	Jan.....	22 6	85	....	....	....	SW
Council Bluffs	Pottawattamie	990	5	....	....	.....	-13	Feb. 18	23	.....	15.09	Aug. .	.03	Jan	....	....	....	....	....	
Corydon	Wayne	992	9	48.6	95	Aug. 23	-15	Feb. 17	11	39.79	10.14	Aug...	.26	Dec.	....	104	163	91	111	SW. NW
Cumberland	Cass	....	....	....	....	.....	....	.....	....	35.82	9.32	Aug.	T	Jan	25.0	64	...	....	....	S
Davenport	Scott	606	31	49.4	95	July 9	-15	Dec. 13	32	35.73	5.52	May...	.70	Nov. ..	12.7	102	128	113	124	W
Decorah	Winneshiek	875	8	44.7	90	July 7	-22	Dec. 13	10	38.94	8.14	July...	.18	Nov. ...	28.2	93	....	....	..	
Delaware	Delaware	1,083	11	45.2	90	July 7	-21	Dec. 13	13	34.68	10.52	July...	.07	Jan	10.4	93	145	148	72	NW
Denison	Crawford	1,180	8	...	88	Aug. 23	-13	Dec. 13	9	34 55	9.92	May...	.10	Jan.....	13.8	76	....	....	....	N
Des Moines	Polk	861	24	48.9	94	July 9	-13	Feb. 18	26	31.43	10.64	May...	.09	Dec	21.0	109	90	150	125	SW
De Soto	Dallas	886	....	...	92	July 9	.....	.....	4	.....	.....	.....	....	.....	...	....	....	....	....	
Dows	Wright	1,142	....	45.5	91	July 9	-20	Feb. 17	4	37.18	9.50	July...	.10	Nov	20.2	85	201	51	113	NW
Dubuque	Dubuque	655	29	47 4	91	July 9	-17	Dec. 26	31	31.79	7.10	July...	.17	Jan	19.9	126	129	102	134	NW
Earlham	Madison	.....	.	46.7	91	July *9	-15	Feb. 18	....	35.62	11.60	May...	.03	Jan.....	21.9	87	....	....	....	S
Eldon	Wapello	630	....	....	....	.....	-20	Feb. 16	6	.....	.....	.....	....	.....	....	....	....	....	....	
Elkader	Clayton	727	21	46.2	93	July 9	-19	Dec. 13	24	40.76	12.72	July...	.16	Jan.....	32.5	93	154	127	84	NW
Estherville	Emmet	1,298	7	43.3	90	July *8	-22	Dec. 13	....	.....	10.69	May ...	...	....	....	110	....	....		NW
Fayette	Fayette	.....	....		91	July *9	-17	Feb. 18	14	.....	10.71	July...	....	.....	....	....	....	....	....	
Forest City	Winnebago	1,220	8	43 6	91	July *8	-26	Dec. 13	10	31.68	10.17	May...	T	Nov	11.5	76	179	33	153	W
Fort Dodge	Webster	1,126	....	....	89	July 9; Aug. 4	-21	Feb. 5	....	....	.....	.....	....	.....	....	....	....	....	....	
Fort Madison	Lee	516	51	....	....	.....	....	.....	54	33.81	6.37	Sept...	.64	Dec		77	101	117	147	SW
Galva	Ida	1,290	8	45.2	94	July 9	-20	Feb. 16	10	34.30	10.07	May....	.05	Nov	8.4	60	...	....	....	
Gilman	Marshall	1,052	....	...	....	.....	..	.....	5	30.31	8.24	May...	.10	Dec. Jan.	11.1	77	144	121	100	S
Grand Meadow	Clayton	1,080	11	44.7	87	June 8; July 7	-21	Dec. 13	13	47.64	10.85	July...	.28	Nov .	27.0	97	119	128	118	NW
Greene	Butler	924	5	....	92	July 27	-16	Feb. 18	7	.....	8.90	July...	.....	.....	....	....	....	....	....	.....
Greenfield	Adair	...	11	47.8	92	July 9	-16	Feb. 18	13	38.59	13.50	May...	.09	Jan	19.4	108	182	89	94	S, SW
Grinnell	Poweshiek	1,023	9	....		.....	-13	Feb. 18	...	.....	.....	.....	.34	Jan.....	18.7	....	....	....	....	
Grinnell (near)	Poweshiek	..	..	....	94	July 9; Aug. 23	-15	Feb. *17	....	.....	.....	.....	.15	Dec.....	....	....	....	....	....	
Grundy Center	Grundy	976	11	47.3	92	July 9	-21	Dec. 13	13	34.75	11.04	May ...	.12	Jan.....	18.8	108	149	95	121	S, NW
Guthrie Center	Guthrie	1,077	6	..	95	July 9	-17	Feb. 18	8	40,42	14.16	May ...	T	Jan	....	84	128	150	87	NW
Hampton	Franklin	1,155	12	46.5	93	Aug. 23	-17	Feb. *17; Dec. 13	14	36.51	9.70	July ...	.18	Jan	22.6	100	109	175	81	NW
Hanlontown	Worth		....	44.0	89	July 7	-26	Dec. 13	....	.....	.....	.....	.....	.....	....	....	199	70	96	NW
Harlan	Shelby	1,192	....	47.2	95	July 9	-18	Feb. *17	5	39.73	10.43	May ..	.05	Jan.....	23.0	103	88	183	94	S
Hopeville	Clarke	.....	11	....	95	July *8; Aug. 23	....	.....	13	36.12	12.24	Aug ..	.07	Dec.....	....	....	....	....	....	
Humboldt	Humboldt	1,095	10	46.9	92	July *9	-17	Feb. 18	15	34.92	7.50	May...	.07	Jan.....	..	87	219	63	83	NW
Ida Grove	Ida	1,220	....		92	July 9	-20	Feb. 17	....	.....	...	.....	.....	.....	....	....	....	....	....	
Independence	Buchanan	921	38	45.4	90	July 9	-18	Dec. 13	36	.....	.....	.....	.16	Nov.	21 5	....	....	....	....	
Indianola	Warren	969	11	49 2	94	July 9	-13	Feb. 18	....	.....	.....	.....	.09	Jan	18.9	....	....	....	....	
Iowa City	Johnson	685	43	48.2	97	Aug. 23	-18	Dec. 13	41	34.95	6.90	May ..	.07	Jan	....	97	81	137	137	S, W, NW
Iowa Falls	Hardin	1,170	9	44 6	92	July 10	-17	Dec. 13	11	28.43	7.17	May ..	.09	Nov	22.2	100	..	....	....	NW
Jefferson	Greene	1,052	....	....	...	.....		.....	5	42.88	14.29	May . .	.18	Dec	15.4	102	....	....	....	NW
Keokuk	Lee	619	31	51.4	96	July 10; Aug. 28	-13	Feb. 13	32	33.28	7.16	Sept...	.77	Jan.....	25.4	103	148	132	85	SW
Keosauqua	Van Buren	664	10	....	98	Aug. 24	-15	Feb. 17	12	37.89	6.50	Sept...	.66	Dec.....	....	96	..	....	..	
Lacona	Warren	....	....	....	...	.....	....	.....	5	42.35	11.35	May...	.80	Dec	27.4	115	..	..	....	
Larchwood	Lyon	.	....		94	July 25	....	....		.....	8.33	May..	....	.....	....	....	....	....	....	
Larrabee	Cherokee	1,366	....	45.5	94	July 9	-21	Dec. 13	14	44.07	10.52	May ..	.11	Jan.	16 2	84	....	....	....	
Le Claire	Scott	576	....	..	....	....	.	....	....	36.81	8.23	Sept...	.70	Nov.	19.1	109	....	....	....	
LeMars	Plymouth	1,224	6	45.7	92	June 30; July *25	-19	Feb. 18	8	.....	9.89	May...	.01	Jan.....	....	....	....	....	....	S
Lenox	Taylor	1,250	7	48.5	92	July *8; Aug. 4	-17	Feb. 18	9	37.11	10.60	Aug. ..	.03	Jan.....	13.3	90	213	68	84	S
Leon	Decatur	1,120	....	49.7	96	July 10	-12	Feb. *17	....	.....	10 48	Aug. ..	.31	Jan.....	....	101	224	63	78	S
Logan	Harrison	928	35	.	101	Aug. 24	-17	Feb. 17	4	34.45	11.6	Aug. ..	.30	Dec	28.8	82	195	57	113	NW
Maquoketa	Jackson	688	9	46 5	95	Aug. 24	-22	Dec. 13	11	36 71	7.68	July...	.30	Jan.....	....	109	176	71	118	NE
Marshalltown	Marshall	947	9	47.7	96	July 10	-14	Feb. 18	11	30.90	8 46	May..	.12	Dec.	....	129	....	....	....	NW
Monticello	Jones	925	48	....	95	Aug. 23	-20	Dec. 13	.		8.40	July...	....	.....	....	....	....	....	....	SW
Mason City	Cerro Gordo	1,132	....		93	July 7	-19	Dec. 13	...	.....	7.57	May...	T	Nov.	....	....	....	....	....	
Mt. Ayr	Ringgold	1,236	8	49.4	94	July *8	-16	Feb. 17	10	36.43	8.90	May...	.24	Jan.....	28.3	117	122	109	134	NW

CLIMATOLOGICAL DATA FOR YEAR 1903—CONTINUED.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.						PRECIPITATION, IN INCHES.				MONTH.	SKY.					Prevailing direction of wind.
				Annual mean.	Highest.	Date.	Lowest.	Date.	Length of record, years.	Total for the year.	Greatest monthly.	Month.	Least monthly.		Total snowfall, unmelted.	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	
Mt. Pleasant	Henry	729	20	....	....	....	--16	Feb. 17	10	.....	.....	.....	.15	Jan.....	9.2	....	....	....	....	
Mt. Vernon	Linn	847	35	47.4	96	July 8	--20	Dec. 13	8	30.59	7.05	May...	.29	Jan.....	24.2	122	168	64	133	
New Hampton	Chickasaw	1,169	....	....	91	July 9	--24	Dec. 13	7	31.23	8.08	July...	.05	Nov.....	25 0	81	160	89	116	NW
Newton	Jasper	944	14	47.3	93	July 9	--17	Feb. 18	....	39.63	13.07	May...	.16	Nov.....	35.3	87	172	103	90	S
Northwood	Worth	1,222	6	44.6	87	July 7	--21	Dec. 13	8	34.19	6.95	May...	T	Nov.....	21.0	102	165	104	96	NW
Odebolt	Sac	1,356	5	47.3	97	July 9	--16	Feb. *16	6	31.84	7 93	May...	.10	Dec.....	10 3	83	214	68	83	
Ogden	Boone	1,088	8	....	95	July 10	--17	Feb. *16	9	.....	10.95	May...		.....	....	....	....	....	....	SE
Olin	Jones	760		47.2	93	July 28	--22	Dec. 13	5	35.53	7 50	July ..	.31	Jan.....	16.6	87	....	....	....	NW
Omaha, Neb	Douglas	1,113	32	50.2	98	July 9	--15	Feb. 18	33	33.43	12.50	Aug...	.07	Jan.....	15.0	117	117	132	116	S
Onawa	Monona	1,053	...	49.3	96	July 9	--15	Feb. *17	4	50.53	11.62	Aug...	.06	Jan.....	25 1	....	....	....	....	SE
Osage	Mitchell	1,184	11	44.0	90	July 7	--21	Dec. 13	16	36 27	8.23	May...	.06	Nov.....	26.8	114	124	99	142	
Osceola	Clarke	1,130	6	49.4	95	July 11	--15	Feb. 18		35.19	11.30	Aug...	.10	Dec.....	....	88	....	....	....	SE
Oskaloosa	Mahaska	843	18	48.5	94	July *9 / Aug. 23	--15	Dec. 13	26	28 01	9.68	May...	.22	Jan.....	16 5	....	....	....	....	
Ottumwa	Wapello	649	8	....	99	Aug. 4	-- 9	Feb. 17	10	.....	.....	.....		.....	....	....	....	....	....	
Pacific Junction	Mills	960	....	49.5	97	July 9	--15	Feb. 18	5	31.61	12.43	May...	.05	Jan.....	13.2	85	123	164	78	S
Pella	Marion	877	....	....	....	.....	--14	Feb. *17	....	.....	.....	.....		.....	....	....	....	....	....	
Perry	Dallas	975	....	48.1	94	July 28	--14	Feb. *16	....	36.43	11 41	May...	.30	Dec.....	16.8	84	....	....	....	
Plover	Pocahontas	1,190	5	45.2	93	July 9	--21	Dec. 13	7	31.97	8.01	May...	.04	Nov.....	7.8	83	198	52	115	S, NW
Primghar	O'Brien	.....	....	....	89	June 30	--23	Dec. 13	..		7.62	May...		.....	....	..	....	....	....	
Red Oak	Montgomery	1,033	....	50.2	94	July 9	--10	Feb. 18	7	37 67	11.74	May.	.05	Jan.....	23.5	89	87	216	62	SE
Ridgeway	Winneshiek	1,215	...	46.9	98	July 7	--24	Dec. 13	6	40.81	8.70	May...	.11	Nov.....	38.1	158	158	120	87	S
Rockwell City	Calhoun		....	47.2	95	July 9	-18	Feb. 16	8	40.99	11.09	May...	.10	Dec.....	7.5	85	183	72	110	
Sac City	Sac	1,278	22	46.8	95	July 9	--17	Feb. *16	23	36.24	8.85	May...	.15	Dec.....	....	....	....	....	....	
St. Charles	Madison	1,070	....	49.4	95	July 10	--13	Feb. 18	3	37.64	10.28	May...	.17	Jan.....	19.4	115	179	104	82	NW
Scranton	Greene	1,172	....	....	96	July 6	--15	Feb. 16	....	.....	12.06	May...	....	.....	....	....	....	....	....	
Sheldon	O'Brien	1,422	..	....	90	July 25	--20	Feb. 17	5	.....	9.00	May...	....	.....	....	....	....	....	....	
Sibley	Osceola	1,512	8	....	89	July 8	--27	Dec. 13	10	35.38	9 00	May...	.02	Nov.....	....	96	....	....	....	
Sigourney	Keokuk	787	....	....	100	July 27	--14	Feb. 17 / Dec. 13	8	....	8.69	May...	.56	Jan.....	....	....	....	....	....	
Sioux Center	Sioux	.....	....	44.5	90	July 25 / Aug. 4	--21	Feb. 17	5	28.81	7.73	May...	.05	Jan.....	15.0	83	150	99	116	S
Sioux City	Woodbury	1,165	13	47.0	93	June 30 / July 7	--18	Feb 18	15	41.10	11.78	May...	.06	Jan.....	....	102	113	115	137	NW
Spirit Lake	Dickinson	1,458	8	....	....	.....	--23	Dec. 13	...	....	.....	.....	....	.....	....	....	....	....	....	
Stockport	Van Buren	.....	...	....	....	.....	...	.....	2	34.81	7.34	Sept...	.39	Jan.....	14.5	98	166	82	137	NW
Storm Lake	Buena Vista	1,440	7	45.1	....	.....	--20	Feb. 16	15	36.80	7.65	Aug...	T	Dec.....	5.2	91	....	....	....	SE
Stuart	Guthrie	1,216	5	....	96	July 27 / Aug. 25	..	.....	....	.....	10.54	May...	...	.....	....	....	....	....	....	
Thurman	Fremont	.....	....	49.2	100	July 9	--15	Feb. 18	7	40.89	15.45	May...	T	Jan.....	....	79	182	63	120	SW
Tipton	Cedar	807	....	49.5	97	July 9	--16	Dec. 13	6	31.47	6.36	July...	.35	Jan.....	....	85	....	....	....	SW
Toledo	Tama	856	8	47.2	92	July 9 / Aug. 23	--14	Feb. 18 / Dec. 13	....	27.49	8.78	May...	.15	Dec.....	16.3	88	147	111	107	NW
Villisca	Montgomery	1,058	8	...	....	.....	--15	Feb. 18	....	...	13.66	May...	.05	Jan.....	27.5	....	....	....	....	
Vinton	Benton	810	12	...		.....		.....	14	.....	5.30	May...	.12	Jan.....	16.2	84	....	....	....	NW
Wapello	Louisa	588	...	49.6	96	Aug. 23	--12	Dec. 13	6	33.30	5.60	Aug...	.65	Jan.....	23.8	75	...	....	....	
Washington	Washington	769	20	47.1	98	Aug. 23	--19	Dec. 13	13	30.75	5.12	May...	.38	Jan.....	....	84	....	....	....	NW
Washta	Cherokee	1,157		...	...	.....	....	.....	6	39.86	10.80	May...	.05	Jan.....	....	65	191	112	62	S
Waterloo	Black Hawk	862	15	46.7	95	July 10	--16	Dec. 13	23	35.20	9.08	July...	.17	Jan.....	26.0	105	158	93	114	NW
Waukee	Dallas	1,039	....		....	.....	...	.....	...	36.09	10.78	May...	.32	Dec.....	24.0	102	137	108	120	NW
Waverly	Bremer	942	6	45.7	91	July 9	--17	Dec. *13	8	29 90	7.50	July...	.08	Nov.....	27.2	114	....	....	....	
West Bend	Palo Alto	1,197	8	45 8	92	July 9	--22	Dec. 13	10	.....	8.69	May...	.03	Nov.....	7.0	93	....	....	....	S
West Union	Fayette	.....	..	....	....	.....	....	.....	.....	....	....	8.28	May...		.....	....	....	....	....	
Whitten	Hardin	1,036	..	46.4	93	July *7 / Aug. 23	--20	Dec. 13	6	30.60	10.44	May...	T	Nov.....	28.5	74	....	....	....	NW
Wilton Junction	Muscatine	683	7	48.9	97	July *8	--19	Dec. 13	9	38.29	6.35	July...	.43	Dec.....	27.0	71	....	....	....	NW
Winterset	Madison	1,129	11	....	96	July 28	--14	Feb. 18	13	....	9.20	May...	....	.....	....	....	....	....	....	
Woodburn	Clarke	961	...	....		....	..	.....	5	44.95	17.74	Aug...	.05	Jan.....	18.7	85	166	85	114	NW
Average		.....	..	47.3	...	..... .	..	.....	....	35.66	.....	.....	....	.....	....	92	156	100	109	NW
Extremes and date		.....	..	....	101	Aug. 24	--27	Dec. 13	....	.....	17.74	Aug...	T	Jan. / Nov. / Dec.						

* And other dates.

MONTHLY MAXIMUM AND MINIMUM TEMPERATURES FOR 1903, WITH DATES.

STATIONS.		Jan		Feb.		March.		April.		May		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
		Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.
Afton	Max	47	*15	50	1	74	*17	81	11	84	22	94	30	97	10	94	23	84	3	82	* 2	67	1	54	31
	Min	- 4	12	-14	18	12	1	26	4	27	1	38	12	48	31	48	31	34	18	26	27	4	26	-10	13
Albia	Max	51	1	53	1	76	18	80	* 1	85	*17	89	29	96	*11	95	4	87	* 7	80	3	70	9	53	31
	Min	- 5	12	-14	17	13	1	27	4	30	*1	38	12	49	*30	50	11	31	24	23	26	8	26	-13	13
Algona	Max	42	31	40	*23	67	18	74	11	83	*16	91	29	92	* 7	91	4	85	2	76	* 3	70	2	47	6
	Min	- 8	11	-20	17	11	1	24	4	31	1	41	12	49	31	47	*30	36	24	26	26	4	26	-18	13
Allerton	Max	52	15	55	1	75	*17	78	* 1	83	22	90	30	94	10	95	23	85	7	81	2	70	1	55	31
	Min	- 8	12	16	17	13	1	26	4	28	* 1	36	12	50	31	49	*10	35	17	28	*24	3	26	-12	13
Alta	Max	45	6	40	*10	65	31	72	11	79	*16	87	30	89	* 7	88	4	81	25	79	19	68	2	47	6
	Min	- 9	11	-19	16	9	1	22	30	31	* 1	38	11	45	31	47	8	32	16	28	26	2	26	-20	13
Amana	Max	46	26	49	1	73	18	78	* 1	85	20	93	30	94	9	94	23	84	* 7	81	3	66	1	48	6
	Min	- 3	*11	-13	*17	11	1	27	4	29	1	36	12	51	*14	50	* 7	33	18	23	27	5	26	-15	13
Ames	Max	48	31	47	22	73	19	80	11	83	22	90	30	93	* 9	92	23	82	* 2	80	19	68	1	49	6
	Min	- 4	12	-14	* 6	13	25	24	13	29	1	37	12	50	31	49	31	34	18	23	27	5	26	-13	13
Atlantic	Max	49	15	45	22	73	17	83	11	83	22	93	30	97	9	92	* 4	87	8	83	2	67	1	51	31
	Min	- 3	12	-15	5	13	23	21	4	25	3	36	11	44	31	44	31	30	27	21	27	....	....	-10	13
Audubon	Max	....	....	43	22	71	18	....	....	83	21	90	30	....	....	....	....	86	8	83	2	66	1	49	31
	Min	....	....	17	18	11	1	....	....	....	....	38	11	....	....	....	....	30	*16	18	27	- 5	26	-13	13
Baxter	Max	47	31	45	* 1	78	18	80	1	83	22	89	30	94	9	93	23	83	8	80	3	70	1	50	* 6
	Min	- 6	*11	-15	18	6	1	24	4	27	1	36	12	50	*30	46	30	33	24	25	*18	2	26	-13	13
Bedford	Max	50	31	52	1	74	17	79	11	81	22	90	*29	94	*10	90	25	83	25	81	* 2	67	1	56	31
	Min	- 5	11	-17	17	10	23	23	4	24	* 1	38	12	48	13	45	31	32	27	25	18	5	19	-11	13
Belknap	Max	60	1	....	....	....	....	....	....	....	....	....	....	96	8	95	24	87	19	83	3	75	* 3	50	31
	Min	- 6	12	....	....	....	....	....	....	....	....	....	....	55	30	53	20	40	17	34	*18	9	26	....	....
Belle Plaine	Max	45	31	48	1	76	18	81	1	83	*16	90	30	93	9	93	23	84	3	75	3	54	12	40	31
	Min	- 6	12	-15	*17	11	1	26	4	30	* 1	38	12	50	31	50	* 7	36	24	22	27	2	26	-15	*13
Bonaparte	Max	50	1	49	1	78	18	80	* 1	84	*16	93	30	96	8	98	23	84	3	85	3	68	1	53	31
	Min	- 7	12	-17	17	13	1	28	4	28	1	38	12	53	14	48	7	36	18	26	*24	8	26	- 9	13
Britt	Max	42	6	43	26	71	18	76	11	82	22	90	30	93	9	90	4	85	2	77	3	68	1	48	6
	Min	-10	11	-19	*16	13	1	22	4	27	1	36	12	46	31	43	31	32	24	25	*18	0	26	-25	13
Burlington	Max	56	28	50	27	79	18	80	*11	85	16	91	30	94	* 9	95	*23	88	7	83	3	72	1	50	31
	Min	- 5	12	-18	17	13	1	28	4	31	1	40	12	55	14	51	11	40	*18	29	27	9	26	- 9	13
Carroll	Max	48	6	44	*22	71	18	83	11	85	22	90	*29	95	9	92	23	86	25	84	18	73	4	53	23
	Min	- 9	11	-18	*16	11	1	23	4	29	3	36	*11	44	31	42	9	30	24	26	26	- 5	18	-15	13
Cedar Rapids	Max	45	*26	48	1	78	18	80	11	87	16	96	30	96	* 7	97	24	86	* 8	80	3	67	1	49	6
	Min	- 2	*11	-12	18	15	1	30	30	33	* 1	41	11	52	30	51	*30	37	18	26	27	7	27	-15	*13
Chariton	Max	51	15	53	1	75	17	....	....	83	*22	90	30	93	10	93	23	87	2	90	3	69	1	55	31
	Min	- 5	12	-14	17	13	1	....	....	28	1	37	12	50	31	43	31	35	17	26	24	4	26	-12	13
Charles City	Max	49	31	44	* 1	71	18	72	* 8	83	22	86	*16	93	10	89	25	83	2	79	3	69	* 1	44	6
	Min	- 5	12	-17	18	11	* 1	28	* 4	31	3	34	12	44	31	46	7	32	*18	22	27	0	*26	-20	13
Clarinda	Max	51	*15	52	1	76	17	84	11	84	*16	93	*29	98	9	95	23	88	* 3	88	2	70	1	48	*18
	Min	- 4	12	-14	18	13	1	26	4	27	1	41	*12	48	31	47	31	35	*16	26	27	7	*18	-10	13
Clear Lake	Max	40	31	42	26	68	18	77	11	91	22	95	26	98	8	91	2	87	2	75	3	68	1	42	6
	Min	-12	11	21	*16	6	1	24	30	29	3	37	12	45	31	46	30	33	24	26	26	- 2	26	-21	13
Clinton	Max	46	31	52	27	78	18	82	29	91	20	94	34	96	* 8	93	23	86	7	83	3	67	* 1	43	* 6
	Min	- 6	12	-16	17	14	1	28	26	28	1	37	12	51	14	48	* 7	32	18	21	27	8	26	-20	13
College Springs	Max	50	31	51	1	75	17	81	11	82	22	91	*15	96	*10	95	2	84	* 3	81	3	64	* 1	56	31
	Min	- 6	12	-14	18	14	1	28	30	28	1	42	12	50	31	52	*12	35	16	31	*18	8	18	- 9	13
Columbus Junction	Max	9	* 2	47	27	78	18	80	11	87	*15	91	30	85	9	96	23	84	* 7	81	3	70	1	47	* 6
	Min	- 4	12	-15	17	10	1	28	* 4	31	1	40	12	53	*13	50	*11	37	*18	26	27	7	26	-15	13
Corning	Max	48	15	48	1	71	17	78	8	81	22	89	30	93	* 9	90	23	81	* 3	80	* 2	65	1	54	31
	Min	- 5	*12	-15	18	7	23	24	4	30	1	40	*11	47	31	45	31	34	24	28	18	- 1	26	-11	13
Corydon	Max	53	15	54	1	75	17	78	* 1	82	22	88	30	93	10	95	33	84	7	81	* 3	68	1	56	31
	Min	- 9	12	-15	17	12	1	24	4	27	* 1	37	12	50	31	49	31	36	*17	26	*24	2	26	-13	13
Davenport	Max	49	1	50	27	76	18	78	11	85	20	91	30	95	9	94	23	86	7	82	3	68	1	44	6
	Min	- 2	12	-13	17	13	1	31	30	35	3	41	12	55	13	53	31	40	18	32	26	9	26	-15	13
Decorah	Max	41	31	43	*10	70	18	73	27	87	23	83	*15	90	7	84	4	81	22	77	3	68	* 1	40	23
	Min	- 8	13	-18	18	7	1	27	30	32	3	39	12	47	31	48	* 7	32	18	23	27	3	26	-22	13
Delaware	Max	41	*26	46	26	71	18	73	11	83	22	87	31	90	7	88	23	82	7	79	3	67	* 1	43	6
	Min	- 8	12	-16	18	7	1	26	* 4	28	1	38	12	46	31	47	* 7	33	18	25	27	1	26	-21	13
Denison	Max	50	*15	50	1	71	17	72	1	81	22	86	30	86	* 9	88	23	84	25	80	4	67	1	48	31
	Min	- 6	*11	....	....	13	* 1	21	4	29	3	30	4	49	13	43	31	32	24	25	*18	0	26	-25	13
Des Moines	Max	49	31	46	22	74	18	78	11	83	22	92	30	94	9	92	23	84	25	82	3	72	1	50	31
	Min	- 3	11	-13	18	15	1	29	30	31	3	43	12	55	31	50	31	39	18	29	24	10	17	- 9	13
De Soto	Max	....	....	....	....	74	18	77	* 8	82	22	89	30	92	9	91	23	84	25	86	19	67	1	....	....
	Min	....	....	....	....	15	1	28	4	31	1	42	12	50	31	48	31	36	*16	20	27	3	26	....	....
Dows	Max	44	31	42	1	72	18	75	11	80	*16	88	30	91	9	89	4	83	2	84	17	68	2	48	6
	Min	- 9	11	-20	17	10	1	22	4	29	* 1	37	12	47	31	44	31	33	18	25	*26	- 1	26	-17	13
Dubuque	Max	45	31	49	26	75	18	75	29	83	16	87	30	91	9	90	24	84	7	81	3	70	2	46	23
	Min	- 5	12	-14	18	11	1	28	30	33	1	40	12	53	31	51	7	35	18	28	27	7	26	-17	26
Earlham	Max	49	*15	46	* 1	74	17	79	1	81	22	88	30	91	* 9	90	* 4	83	8	82	3	68	1	55	31
	Min	- 5	*11	-15	18	12	23	20	4	24	3	34	12	42	31	43	31	31	18	16	27	- 3	26	-13	13
Elkader	Max	47	31	52	26	76	18	76	1	88	16	90	7	93	9	91	24	86	* 2	78	3	72	* 1	48	23
	Min	- 6	12	-15	17	10	1	25	4	30	1	34	12	46	31	47	*12	31	18	20	27	2	26	-19	13
Estherville	Max	42	31	40	26	66	12	74	1	86	23	86	30	90	* 8	89	* 5	84	2	79	20	69	2	47	6
	Min	-10	11	-21	17	9	1	23	* 4	29	3	38	*11	43	31	43	31	32	24	24	27	0	26	-22	13
Fayette	Max	43	*29	47	26	72	18	....	....	88	22	88	30	91	* 9	89	24	....	....	79	3	69	* 1	....	....
	Min	- 9	12	-17	18	7	1	....	....	28	3	30	* 1	42	31	44	*12	....	....	18	27	- 1	26	....	....
Forest City	Max	40	* 1	40	26	69	18	73	11	82	21	85	*29	91	* 8	90	4	84	26	80	* 3	73	2	49	6
	Min	-10	11	-20	16	7	1	23	4	30	1	38	12	45	31	48	* 9	31	28	27	27	0	25	-26	13
Fort Dodge	Max	....	....	47	* 1	....	....	....	....	82	22	87	30	89	9	89	4	84	22	80	20	68	3	50	6
	Min	....	....	-21	5	....	....	....	....	31	1	37	12	45	31	46	30	31	24	31	* 5	5	26	-15	13
Galva	Max	45	6	43	1	64	18	74	11	80	21	89	30	94	9	89	23	84	3	79	19	69	2	49	6
	Min	- 9	11	-20	16	13	2	21	4	27	2	34	12	44	31	44	30	31	*16	24	26	- 3	26	-17	13
Grand Meadow	Max	41	31	44	10	75	18	72	1	82	*16	87	8	87	7	86	4	79	2	77	3	68	2	41	23
	Min	-10	12	-18	18	7	1	25	* 4	30	3	38	12	48	31	48	*30	35	*17	28	26	2	26	-21	13
Greene	Max	44	31	44	26	70	18	75	11	84	*16	90	30	92	27	90	4	84	2	78	3	....	....	....	....
	Min	- 7	11	-16	18	9	1	25	4	30	* 1	36	12	45	31	45	30	33	18	23	27	....	....	....	....
Greenfield	Max	46	31	47	1	72	17	78	* 1	80	22	89	30	92	9	89	23	82	* 2	82	3	68	1	50	31
	Min	- 6	11	-16	18	10	1	24	4	28	3	40	12	48	* 5	48	*11	33	16	29	*26	1	26	-13	*13
Grinnell	Max	45	* 2	45	1	74	18	78	1	81	22	....	....	....	....	....	....	....	....	73	3	64	* 1	47	31
	Min	- 4	*11	-13	18	12	1	26	4	30	1	....	....	....	....	....	....	....	....	28	26	3	26	-10	*13
Grinnell (near)	Max	45	2	46	1	....	....	....	....	....	....	92	30	94	9	94	23	83	* 3	79	3	66	1	47	31
	Min	- 5	*11	-15	*17	....	....	....	....	....	....	37	12	49	5	49	30	34	18	28	*18	2	26	-12	*13
Grundy Center	Max	45	31	45	10	72	18	78	11	82	*22	88	30	92	9	91	23	82	* 2	80	3	68	* 1	50	23
	Min	-10	12	-15	*17	9	1	23	4	29	3	38	12	46	31	46	30	31	*18	25	24	0	26	-21	13
Guthrie Center	Max	47	6	44	22	73	18	81	11	84	22	91	30	95	9	93	4	87	7	83	22	81	3	55	31
	Min	- 6	11	-17	18	13	1	22	4	29	3	38	*11	47	31	44	31	32	16	22	27	0	26	-12	13
Hampton	Max	48	31	46	1	72	18	80	11	83	*16	88	30	92	7	93	23	86	* 2	80	* 3	72	2	50	6
	Min	- 9	11	-17	*17	10	1	25	4	31	* 1	39	12	46	31	48	30	36	*18	28	26	2	26	-17	13
Hanlontown	Max	41	31	45	28	70	18	70	* 1	80	* 4	88	30	89	7	88	21	82	* 1	77	19	68	* 1	48	6
	Min	-10	11	-20	16	9	1	23	4	30	1	35	12	43	31	45	31	32	24	24	27	- 1	26	-26	13

MONTHLY MAXIMUM AND MINIMUM TEMPERATURES FOR 1903, WITH DATES—CONTINUED.

STATIONS.		Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
		Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.
Harlan	Max	47	31	43	10	73	17	83	11	83	*22	91	30	95	9	92	23	84	* 3	81	2	66	1	47	31
	Min.	- 6	12	-18	*17	10	1	24	4	26	1	37	11	46	31	44	31	31	16	25	26	1	26	-12	13
Hopeville	Max	....	....	....	....	78	18	78	* 1	83	22	93	30	95	* 8	95	23	83	* 6	81	* 2	69	1	58	31
	Min.	....	....	....	....	16	25	26	4	29	* 1	39	12	49	31	49	31	36	*16	30	*18	1	26	-11	13
Humboldt	Max	44	31	58	11	72	18	77	11	89	23	89	30	92	* 9	91	4	90	21	79	19	69	* 1	51	6
	Min	- 7	11	-17	18	10	1	22	4	30	3	40	*11	48	31	45	31	35	24	24	*26	2	26	-16	13
Ida Grove	Max	47	7	48	2	67	*17	76	11	81	*16	91	30	92	9	....	....	....	....	....	....	....	....	....	....
	Min	- 8	*11	-20	17	10	1	23	4	31	* 1	38	11	46	31	....	....	....	....	....	....	....	....	....	....
Independence	Max	43	31	45	26	72	18	75	11	81	22	87	30	90	9	....	....	81	* 3	80	3	69	2	47	23
	Min	- 5	*11	-15	18	10	1	26	4	28	1	35	12	47	31	46	30	32	18	23	27	1	26	-18	13
Indianola	Max	48	*16	49	1	75	17	79	11	83	22	90	30	94	9	93	23	84	* 3	81	3	69	1	55	31
	Min	- 4	12	-13	18	19	1	27	4	30	1	41	12	52	31	51	*13	36	*18	27	*24	3	26	-10	13
Iowa City	Max	47	31	49	1	79	18	80	* 1	90	22	89	29	96	10	97	23	87	7	81	3	72	1	49	6
	Min.	- 3	12	-13	*17	11	1	28	4	29	1	39	12	53	13	51	* 7	34	18	21	28	6	26	-18	13
Iowa Falls	Max	45	31	42	*22	72	18	75	11	82	23	86	30	92	10	89	4	83	8	78	3	68	1	47	6
	Min.	- 8	11	-16	18	10	1	24	4	28	3	34	12	45	31	45	31	31	*18	21	27	0	*26	-17	13
Keokuk	Max	51	26	51	27	77	17	79	11	85	22	91	30	96	10	96	28	89	7	84	3	67	3	53	31
	Min	- 5	12	-13	17	15	1	31	3	32	1	44	12	57	13	52	31	41	24	32	27	11	26	- 7	13
Keosauqua	Max	50	* 1	50	1	79	18	80	11	87	23	89	30	97	* 9	98	24	86	8	82	3	68	1	....	....
	Min.	- 5	12	-15	17	14	1	27	4	29	1	36	12	53	31	49	* 7	37	18	22	27	9	*26	- 7	*13
Larchwood	Max	....	....	....	....	70	12	75	27	86	4	91	29	94	25	89	* 2	85	22	79	19	70	2	....	....
	Min.	....	....	....	....	8	1	17	30	28	3	35	11	45	31	45	30	28	16	28	*16	1	17	....	....
Larrabee	Max	47	* 6	45	22	64	*12	72	11	84	*20	93	28	94	* 9	92	4	86	2	78	2	69	1	49	6
	Min.	-10	11	-20	*16	9	1	20	* 4	30	* 1	34	11	44	31	46	*30	29	16	26	27	- 1	26	-21	13
LeMars	Max	45	15	44	27	65	12	73	23	80	*16	92	30	92	*25	89	4	84	* 1	79	* 2	68	2	46	6
	Min.	- 8	*11	*19	18	9	1	21	30	31	* 1	36	11	45	31	45	*11	32	16	25	26	3	17	-15	13
Lenox	Max	47	15	44	*10	73	17	80	11	80	22	89	30	92	* 8	92	4	83	25	81	3	66	1	54	31
	Min.	- 7	12	-17	18	10	1	27	* 4	30	1	40	12	49	31	49	31	35	16	29	18	2	26	-13	13
Leon	Max	48	15	52	1	74	17	79	11	84	22	91	30	96	10	93	* 5	82	* 6	80	* 2	68	1	53	31
	Min.	- 5	12	-12	*17	14	1	29	* 4	29	1	39	12	49	31	50	12	37	18	29	27	6	26	- 9	13
Logan	Max	48	31	45	10	74	17	82	10	84	23	93	29	....	....	101	24	94	1	81	2	65	* 1	48	31
	Min.	- 4	12	-17	17	13	1	25	30	29	1	38	11	47	31	48	*11	34	16	23	*19	6	19	....	....
Maquoketa	Max	45	31	49	1	76	18	78	11	86	17	87	8	93	10	95	24	86	7	81	3	68	1	46	6
	Min.	- 5	12	-15	17	11	1	26	26	27	1	33	12	48	31	46	12	30	18	18	*27	4	27	-22	13
Marshalltown	Max	47	31	49	10	74	18	80	11	85	23	90	30	96	10	94	* 5	87	21	83	3	70	1	49	6
	Min.	- 5	*11	-14	18	12	1	27	4	29	* 1	36	12	46	31	47	30	33	18	21	27	3	26	-13	*13
Mason City	Max	....	....	44	26	74	19	78	1	82	*16	87	30	93	7	90	4	82	* 2	74	3	68	* 1	45	6
	Min.	....	....	-15	*16	12	1	26	30	32	3	42	12	49	31	47	30	38	18	31	26	4	26	-19	13
Monticello	Max	45	26	47	9	75	18	78	9	85	*22	89	30	93	* 9	95	23	....	....	85	2	....	....	48	7
	Min.	- 6	13	-15	18	15	21	25	*17	29	3	36	12	46	30	46	12	....	....	20	27	....	....	-20	13
Mount Ayr	Max	50	15	53	1	74	17	79	11	83	22	85	*18	94	* 8	98	23	85	25	83	2	67	1	58	31
	Min.	-10	12	-16	17	12	1	27	* 4	27	1	38	12	50	*12	50	31	36	16	29	18	6	26	-10	13
Mount Pleasant	Max	52	16	55	11	82	17	....	....	....	....	94	30	....	....	98	4	87	14	82	3	70	1	50	31
	Min.	- 5	12	-16	17	10	9	....	....	35	* 3	40	1	....	....	48	31	33	*17	23	27	6	28	-14	13
Mount Vernon	Max	45	15	52	1	73	*17	86	11	87	16	91	30	96	8	93	* 4	84	7	79	3	67	* 1	47	6
	Min.	- 5	*11	-15	*17	8	1	26	4	27	1	38	12	49	31	47	30	33	*18	25	24	2	26	-20	13
New Hampton	Max	40	31	43	26	70	18	71	11	79	*16	....	....	91	9	85	24	80	* 2	77	3	70	2	41	* 6
	Min.	-10	*11	-19	18	7	1	24	30	29	3	37	12	45	31	45	30	31	18	24	24	- 2	26	-24	13
Newton	Max	45	31	45	1	70	*18	75	* 9	82	22	90	30	93	9	92	23	81	2	79	3	67	1	48	* 6
	Min.	- 8	12	-17	18	12	1	21	4	28	1	38	13	51	31	50	*30	37	*18	23	27	2	26	-13	*13
Northwood	Max	41	* 6	42	26	66	18	71	27	80	22	81	*15	87	7	84	* 4	80	22	75	* 3	69	2	45	6
	Min.	-10	11	-19	16	9	1	24	4	31	* 1	35	12	46	31	47	30	34	18	26	*24	2	26	-21	13
Odebolt	Max	45	31	44	1	77	31	79	*11	83	20	94	29	97	9	92	4	85	* 1	78	* 2	70	1	50	6
	Min.	- 7	11	-16	*16	11	1	29	4	29	3	37	11	44	31	43	31	32	24	25	27	0	26	-15	13
Ogden	Max	50	31	46	* 1	73	18	80	1	84	29	88	30	95	10	91	23	90	* 4	84	3	69	3	....	....
	Min.	-12	13	-17	*16	9	1	22	4	26	3	36	11	45	31	41	31	30	27	25	*18	- 1	26	....	....
Olin	Max	48	27	48	1	73	18	77	11	87	22	90	30	93	28	92	23	85	8	81	3	66	1	44	6
	Min.	- 3	*11	-15	18	10	1	28	*23	27	1	35	12	51	31	49	*11	32	18	21	*24	4	26	-22	13
Omaha, Nebraska	Max	51	15	47	22	74	17	82	10	84	20	95	30	98	9	92	23	87	25	85	19	65	8	51	31
	Min.	- 3	12	-15	18	14	1	27	30	35	1	48	1	56	31	54	31	36	16	36	27	8	17	- 7	13
Onawa	Max	49	31	48	22	69	31	79	10	83	*20	93	30	96	9	91	4	86	25	84	19	69	1	53	6
	Min.	- 4	12	-15	*17	13	1	23	30	31	* 1	43	11	52	31	51	31	35	16	30	27	7	17	- 7	13
Osage	Max	40	31	43	26	67	18	71	*11	81	*16	85	30	90	7	85	* 2	81	2	75	3	66	* 1	40	6
	Min.	-10	11	-18	18	8	1	24	30	30	3	38	12	45	31	45	30	32	18	25	26	0	26	-21	13
Osceola	Max	50	*15	52	1	75	17	79	1	83	23	88	30	95	11	94	24	86	* 8	84	2	69	1	58	31
	Min.	- 5	12	-15	18	18	20	27	4	28	1	37	12	49	31	50	*12	35	16	29	27	5	26	-11	13
Oskaloosa	Max	49	1	49	1	73	17	81	11	80	22	91	30	94	* 9	94	23	84	7	80	3	70	1	52	31
	Min.	- 5	13	-14	17	12	1	24	4	30	1	38	12	53	*22	52	31	36	*17	23	27	4	26	-15	13
Ottumwa	Max	50	*26	50	1	76	18	....	....	87	17	91	30	98	27	99	4	....	....	83	3	....	....	....	....
	Min	- 1	12	- 9	*17	17	1	....	....	36	1	45	12	51	21	42	30	....	....	26	27	....	....	....	....
Pacific Junction	Max	48	30	44	22	73	17	81	10	83	*22	93	30	97	9	91	*24	84	* 6	85	2	76	1	49	31
	Min.	- 4	12	-15	18	13	1	25	4	28	3	41	11	50	31	48	31	33	16	27	26	8	21	- 8	13
Perry	Max	48	31	45	*22	72	*17	80	1	85	22	87	30	94	28	93	23	84	* 6	82	3	69	1	49	6
	Min.	- 6	11	-14	*16	14	1	25	4	30	* 1	40	12	50	31	48	31	33	18	25	27	4	26	-11	13
Plover	Max	43	6	41	*22	68	18	75	11	85	16	90	30	93	9	90	4	86	2	78	3	69	2	51	6
	Min	-10	11	-20	*16	8	1	24	4	30	* 2	38	*11	44	31	44	31	33	24	24	28	3	26	-21	13
Primghar	Max	....	....	....	....	62	18	72	11	78	*16	89	30	88	* 5	88	* 3	83	1	77	3	66	2	47	7
	Min	....	....	....	....	12	20	24	3	32	3	37	11	41	31	43	11	35	*24	28	*25	1	17	-23	13
Red Oak	Max	45	25	44	1	70	17	72	* 1	79	*16	91	30	94	9	88	4	82	7	80	2	65	1	48	*19
	Min.	1	12	-10	18	17	1	29	30	33	* 1	46	11	55	31	52	31	39	16	29	27	10	17	- 6	13
Ridgeway	Max	46	31	48	26	70	18	73	8	86	16	89	30	98	7	90	* 4	85	25	82	3	73	2	44	23
	Min.	- 9	12	-18	*17	7	1	25	4	30	* 1	41	*11	50	31	48	30	32	18	28	*18	1	26	-24	13
Rockwell City	Max	45	31	45	1	72	18	82	11	83	*16	90	30	95	9	94	5	85	2	80	19	66	4	50	6
	Min.	- 6	11	-18	16	12	1	25	4	32	1	41	*11	48	31	48	30	34	16	27	26	1	27	14	13
Sac City	Max	44	* 6	41	* 1	69	18	78	11	85	16	91	30	95	9	90	* 4	84	3	80	19	68	2	49	6
	Min.	- 8	11	-17	*16	10	1	25	30	30	3	39	*11	46	31	47	31	32	16	25	27	3	26	-16	13
St. Charles	Max	52	* 1	51	1	74	17	80	* 1	87	20	91	30	95	10	93	23	84	3	83	19	68	* 1	58	31
	Min.	- 4	11	-13	18	14	1	27	4	31	1	41	12	50	31	50	31	36	16	28	27	4	26	-10	13
Scranton	Max	44	6	42	22	71	18	80	11	83	16	94	29	96	6	94	3	....	....	....	....	....	....	....	....
	Min.	- 6	11	-15	16	14	21	25	4	31	3	....	....	47	31	50	*11	....	....	....	....	....	....	....	....
Sheldon	Max	47	6	42	26	65	12	....	....	79	*16	86	* 7	90	25	89	4	84	* 2	79	19	....	....	....	....
	Min.	-10	*11	-20	17	9	1	....	....	30	1	37	11	43	31	45	*11	30	16	27	27	....	....	....	....
Sibley	Max	43	6	42	*22	63	12	72	27	82	21	87	30	89	8	88	* 4	84	22	73	2	66	1	39	23
	Min.	-10	11	-18	*16	10	* 1	19	30	9	3	36	11	45	31	44	*29	30	16	27	27	1	26	-27	13
Sigourney	Max	48	*26	51	1	78	18	82	1	88	*15	96	30	100	27	98	*22	88	* 3	82	4	....	....	51	31
	Min.	- 5	12	-14	*17	11	1	26	3	29	1	35	12	50	31	49	* 7	34	18	24	27	....	....	-16	13
Sioux Center	Max	45	6	40	*22	63	12	73	*23	80	17	89	30	90	25	90	4	83	* 1	78	19	67	* 1	46	6
	Min.	-10	12	-21	17	8	1	20	30	30	1	38	11	45	31	45	30	30	16	27	27	2	17	-21	13
Sioux City	Max	51	6	45	22	67	12	76	23	81	17	93	30	93	7	90	4	86	25	84	19	68	2	48	6
	Min.	- 6	12	-18	18	11	20	22	30	34	1	40	11	51	31	47	31	33	16	31	26	7	17	-13	12
Storm Lake	Max	47	6	40	22	61	*12	73	11	78	22	87	29	89	9	86	* 4	82	4	78	18	68	3	48	5
	Min.	-10	11	-20	16	9	1	23	30	34	1	38	11	46	31	46	30	32	16	20	26	0	26	-19	13

MONTHLY MAXIMUM AND MINIMUM TEMPERATURES FOR 1903, WITH DATES—CONTINUED.

STATIONS.		Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
		Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date.	Deg.	Date	Deg.	Date.	Deg.	Date.
Stuart	Max	....	....	....	....	72	18	79	11	88	* 9	90	30	96	27	96	25	85	* 3	80	* 2	65	2	48	31
	Min.	....	....	....	....	....	....	20	28	20	3	40	1	50	31	48	31	34	16	18	27	6	26	-10	13
Thurman	Max	47	* 6	44	*22	70	18	81	11	83	22	94	30	100	9	90	* 4	85	25	84	2	62	* 1	51	31
	Min.	- 4	12	-15	18	12	1	23	29	29	3	41	11	47	31	46	31	32	27	25	27	7	*18	- 9	13
Tipton	Max	45	31	48	26	75	18	77	*11	87	16	92	30	97	9	96	23	87	7	81	3	70	1	45	6
	Min.	- 3	12	-12	18	11	1	30	30	32	1	40	12	52	30	52	*30	35	18	28	24	8	26	-16	13
Toledo	Max	46	31	45	* 1	74	18	81	1	82	16	89	30	92	9	92	23	83	21	81	3	70	1	48	6
	Min.	- 5	12	-14	18	12	1	25	4	29	* 1	34	12	46	31	48	* 7	31	18	20	27	1	26	-14	13
Villisca	Max	50	*15	48	11	75	18	84	11	82	19	91	30	....	....	90	23	....	....	82	2	62	1	45	* 7
	Min.	- 5	12	-15	18	12	1	23	* 4	27	* 1	42	10	....	....	48	31	....	....	25	25	7	17	-10	13
Wapello	Max	45	*15	47	27	75	18	79	11	85	20	89	30	94	9	96	23	82	7	79	3	68	1	45	* 3
	Min.	- 1	*11	-11	17	17	1	31	4	33	3	42	12	56	13	52	11	38	18	27	26	9	26	-12	13
Washington	Max	49	1	47	1	77	18	80	1	86	16	92	30	96	9	98	23	87	7	83	3	70	1	51	31
	Min.	- 7	12	-17	17	9	1	23	4	27	1	35	12	50	*13	48	31	34	*18	25	*24	3	26	-19	13
Waterloo	Max	44	31	47	1	75	18	78	11	84	17	85	* 8	95	10	90	25	85	2	82	3	70	* 1	48	6
	Min	- 5	11	-15	18	11	1	26	4	30	1	37	12	46	31	46	30	33	18	23	27	2	26	-16	13
Waverly	Max	45	31	45	10	73	18	73	11	82	22	87	30	91	9	88	24	82	*21	79	3	69	1	43	23
	Min.	- 6	11	-16	18	9	1	21	30	30	* 1	37	12	47	31	49	* 7	34	24	23	27	2	25	-17	*13
West Bend	Max	43	6	43	10	69	18	77	13	84	22	88	30	92	9	90	4	84	2	79	3	69	1	50	6
	Min.	- 8	11	-19	16	10	15	24	4	31	3	39	11	48	30	45	30	30	27	23	26	1	26	-22	13
Whitten	Max	45	31	44	22	72	18	77	11	82	25	90	29	93	* 7	93	23	82	* 2	80	3	67	1	46	6
	Min.	- 8	11	-18	18	9	1	24	4	27	1	35	12	47	31	45	30	33	*18	24	*24	0	26	-20	13
Wilton Junction	Max	48	25	47	1	77	18	78	* 1	88	22	94	30	97	* 8	96	23	85	* 7	82	3	69	1	45	6
	Min.	- 4	12	-16	17	10	1	28	4	29	1	36	12	53	*14	48	7	34	18	22	27	5	26	-13	13
Winterset	Max	50	31	52	1	74	19	....	....	85	7	92	30	96	28	95	23	....	....	....	....	66	8	....	....
	Min.	- 6	12	-14	18	20	* 2	....	....	27	3	39	12	45	31	47	*11	....	....	....	....	1	26	-12	*13

* Other dates.

MONTHLY AND ANNUAL MEAN TEMPERATURES FOR 1903, WITH DEPARTURES.

Stations.	Jan.		Feb.		March.		April.		May.		June.		July.		August.		Sept.		Oct.		Nov.		Dec.		Annual.	
	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem	Dept.	Tem.	Dept.
Afton	26.0	* 2.7	21.6	- 0.7	40.0	* 5.5	52 2	* 0.7	63.6	* 0.9	66.1	- 6.1	74.8	- 1.5	71.0	- 8.3	61.0	- 4.9	53.2	- 0.6	36.3	* 1.3	23.4	- 1.8	49.1	- 0.7
Albia	25.8	.....	23.4	.....	42.6	.....	52.6	.....	61.2	.....	64.4	.....	75.0	.....	70.8	.....	62.0	.....	52.8	.....	36 2	.....	21.3	.....	49.0	.....
Algona	20.8	* 8.2	17 0	- 0.2	36.6	* 9.1	50.0	* 3.7	61.4	* 1.6	65 4	- 4.6	72.2	- 1.7	68.1	- 3.1	60.2	- 1.7	52.0	* 3.6	33 8	* 1.7	18.2	- 1.6	46.3	* 1.2
Allerton	26 0	.....	23.0	.....	41.9	.....	51.6	.....	62.6	.....	64.8	.....	74.0	.....	71.0	.....	62 4	.....	54.2	.....	36.1	.....	23.0	.....	49.2	.....
Alta	21.6	* 5.1	15.9	- 0 7	35.4	* 6.7	47 2	- 0.6	59 4	* 1 1	63.3	- 5.7	69.6	- 3.3	66.5	- 4.6	57.9	- 5.7	51.6	* 0 9	32.2	* 1.3	17.9	- 3.4	44.9	- 0.7
Amana	23 5	* 8.0	21.7	* 1 6	40.7	* 9.5	50.8	* 2.1	62.8	* 3 0	64 9	- 5.0	73 5	- 0 5	69.4	- 1.4	61 8	- 0.4	51.6	* 1.7	34.5	* 1.7	19 2	- 2.8	47.9	* 1.5
Ames	24.0	* 7 1	19.6	- 2 3	38 4	* 6.5	49.8	* 0 5	62.3	* 2.9	64.8	- 5.3	78.4	- 1.8	69.4	- 3.0	60.5	- 3.1	51 6	* 0.7	35 2	* 2 4	20.2	- 1.8	47.4	* 0.2
Atlantic	25.3	* 5.2	20 3	- 0.7	38.8	* 5.9	50.8	* 1.5	62.0	* 2.8	64.4	- 5 6	74 2	* 0.4	70.1	- 1.8	61.5	* 2.4	52.6	0.7	36.4	* 2.2	23 0	- 1.6	48.3	* 1.0
Audubon	...	.....	17.4	- 1.8	37.6	* 5.0	....	.....	64.2	* 4 3	64.6	- 4.7	....	.....	...	.....	60 2	- 3.7	51.8	* 0.9	34.5	* 0 5	20 7	- 2.7	....	.....
Baxter	23.2	....	20.8	.....	39.4	.....	51.4	.....	62.2	.....	64.4	.....	73 1	.....	69.2	.....	60 6	.....	51 8	.....	34.2	† 1.8	21.0	.....	...	.....
Bedford	26.5	.....	20 8	....	40.1	.....	51.6	.....	61.8	.....	64.6	.....	74.0	.....	70 4	....	81.9	.....	53.4	.....	36.9	.....	24.1	.....	.....	.....
Belknap	25 7	* 1.8	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	76.0	- 0.2	73.2	- 1.4	66.2	- 1.6	57 8	* 2.1	.....	.....	.....	.....	.....	.....
Belle Plaine	21.9	* 3.6	20.0	- 0.8	39.2	* 7.2	50 8	* 5.2	62.8	* 3.8	64.1	- 6.2	72.6	- 1.0	69.8	- 1.0	58.8	- 5.3	47 2	- 3.2	31.9	- 1.8	16.4	- 7.9	46.3	- 0.6
Bonaparte	24.9	* 1.4	23.1	- 0.2	43.2	* 6.3	52.6	* 0.7	63.6	* 1.1	65 8	- 7.1	75.4	- 1.2	71 5	- 3 8	63.7	- 4.6	53.3	- 2.4	35.6	- 2.0	22.1	- 6.0	49.6	- 2.5
Britt	18.7	* 1.2	16.6	- 0.6	33.0	* 8.7	46.6	- 0.4	61.6	* 3.1	64.9	- 3.6	71.0	- 2.0	67.2	- 3.2	58.7	- 3.8	50.1	- 1.9	31.4	- 0.9	15 3	- 1.8	44.8	- 0.4
Burlington	26.5	.....	25 0	.....	44.8	.....	53.8	.....	65.2	.....	66.2	.....	75.6	.....	72 8	.....	66 1	.....	55.6	.....	37 2	.....	22.7	.....	51.0	.....
Carroll	23 4	* 4.0	19.0	† 0.0	34.5	* 7.8	49.0	† 0.0	59.8	* 0.7	64.0	- 5.9	72..	- 1 8	68.7	- 2.6	60.2	- 3.2	53.8	* 2 7	34 4	* 1.6	20.4	- 3.0	47.0	0.0
Cedar Rapids	23.9	* 5.8	22.4	* 1.6	42.6	*10.2	52.1	* 2.0	64.1	* 4.4	65.4	- 5.5	73.8	- 1 3	69.7	- 3.2	61.8	- 2.0	52.0	* 0.7	33.8	- 1.5	17.9	- 7.5	48.3	* 0.3
Chariton	25 4	- 0.2	22.5	- 0.2	41.3	* 6 3	.....	.....	61.4	* 0.3	64.0	- 7.1	72.9	- 2.4	69.9	- 4.3	62.0	- 4.5	53.4	- 1.9	36.0	- 1.8	22.4	- 3.6	.....	.....
Charles City	20.8	* 5 3	18.8	* 3.9	38.2	* 8.9	48 2	* 0.8	60.5	* 2.2	62.6	- 6.1	71.0	- 2.8	65 9	- 5.5	57.3	- 5 8	49.0	- 1.5	30.5	- 0.2	13.3	- 7.1	44.8	- 0.7
Clarinda	27.2	* 4.7	22.4	- 6.9	40.7	* 6.1	52.4	* 0.4	63.0	* 1.7	66.3	- 5.9	75.6	- 0 8	71.6	- 3.0	61.4	- 5.8	54.8	* 0.4	37.5	* 0.5	23.1	- 3.8	49.7	- 0.5
Clear Lake	17.8	.....	16.0	.....	36.2	.....	47 8	.....	62.6	.....	67.4	.....	73.1	.....	68.6	.....	59.9	.....	50 2	.....	30.4	.....	14 4	.....	45.4	.....
Clinton	22.6	* 3.2	23.4	* 1.3	41.1	* 8.5	51 0	* 2.3	64.2	* 4.2	65.6	- 4.3	73 6	- 0 2	69.4	- 1.9	62.2	- 1.1	51.4	* 1.0	35.0	- 0.1	19.0	- 3.3	48.2	* 0.8
College Springs	27.2	† 3.2	22.0	- 1.8	40.5	* 4.4	53.0	* 2.1	62.8	* 1.4	67.0	- 4.5	76.4	* 1 0	72 2	- 2.2	62.1	- 6.0	54.0	- 2.7	37 6	- 0.3	25 0	- 2.4	50.0	- 0.6
Columbus Junction	24.5	.....	22 5	.....	41.6	.....	51.8	.....	64.2	.....	65.7	.....	74.2	.....	70.4	.....	63.2	.....	53.3	.....	36.1	.....	21.5	.....	49.1	.....
Corning	25 7	* 3.4	20.9	- 1.9	38.8	* 3.4	51.6	* 0 6	61.5	* 0.9	64.2	- 6.7	73.6	- 1.0	69.4	- 3.6	60.7	- 5.1	53.2	- 0.9	35.9	- 0.9	23.2	- 4.7	48 2	- 1.4
Council Bluffs	25.8	- 0.4	23.1	* 0.5	36.3	* 1.5	52 5	* 0.5	58.2	- 4.5	66.4	- 7.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Corydon	26 2	* 2.4	23.5	* 1 4	41.9	* 6 3	51.9	* 0.1	61.8	* 0.3	64 4	- 7.0	73.3	- 2.8	65.9	- 8.8	62.4	- 4.8	54.0	- 1.0	36 2	- 1.2	22.2	- 4.0	48.6	- 1 6
Davenport	24.9	* 4.9	20.6	- 1.7	42 6	* 7.7	51 7	* 2.0	64 2	* 3.5	66.1	- 4 8	74.4	- 0.6	70.7	- 2 1	63 8	- 0.9	54.2	* 2.1	36.2	- 0.6	20 4	- 7.4	49.4	* 0.2
Decorah	17.8	* 3.4	18.1	* 3 1	37.1	* 7.6	49.1	* 0.1	61.4	* 1.5	63.2	- 5.5	71.5	- 1.9	65.8	- 5.2	59.4	- 3.0	50.0	- 0.6	32.2	* 0.7	13.7	- 6.9	44.7	- 0.5
Delaware	19.4	* 4 0	19.2	* 2.8	38.8	* 9.1	48.0	* 2 0	60.6	* 2 2	63 2	- 6.8	70 8	- 1.9	66.7	- 3.4	59.0	- 2.8	49 8	* 1.0	31.5	* 0.3	15.8	- 5.6	45.2	* 0.2
Denison	23.8	* 2.7	.....	.....	38.5	* 6.6	48.4	- 0 9	58.8	- 1.8	61.4	- 7.5	70.8	- 3.0	67.8	- 4.3	60.6	- 2.8	51.0	* [illegible]	35 1	* 1.3	21.7	- 0.7	.....	.....
Des Moines	25.4	* 7.9	22.0	- 1.1	40.6	* 5.9	51.2	* 0.7	62 8	* 2.4	65.8	- 4.8	74.3	- 0.2	70.2	- 1.8	61.9	- 2.2	53.8	* [illegible]	[illegible]	- 0.2	22.6	- 4.2	48.9	* 0.4
De Soto	...	.....	...	.....	38.6	.....	51.6	.....	62.5	.....	64.9	.....	73 0	.....	69 0	.....	62.4	.....	54 0	.....	35.4	.....	...	.....	...	.....
Dows	20.0	.....	18.0	.....	37.8	.....	48.0	.....	60.4	.....	63 4	.....	70.2	.....	67 0	.....	59.6	.....	52.6	.....	32.4	.....	16.6	.....	45.5	.....
Dubuque	22.4	* 5.1	22.4	- 0.2	39.6	* 6.7	49.6	* 1.0	62.8	* 2.9	64.6	- 4.9	72 4	- 1.9	68.4	- 3.2	61.8	- 1.4	52.4	* 1.8	34.4	- 0.6	18.4	- 7.5	47.4	- 0.2
Earlham	24.6	.....	18.1	.....	39.6	.....	49.4	.....	60.6	.....	62 6	.....	71.4	.....	68.0	.....	59.8	.....	51.2	.....	33.6	.....	21.5	.....	46.7	.....
Elkader	20 4	* 6.3	20.6	* 2.3	39.4	* 8.8	48.1	- 0.2	62 1	* 1.3	64.0	- 5.7	72.4	- 1.6	68 7	- 2.3	61 6	- 0 6	50.2	* 0.8	32.4	* 0.3	14.8	- 6.9	46.2	* 0.2
Estherville	18 2	* 2.4	14.2	- 1.5	34 2	* 8.4	46.4	- 2.6	55.2	- 3 0	62 9	- 5.7	70.9	- 2.3	66.2	- 4.8	57.2	- 4.4	50.2	* 1.1	30.0	* 0 9	14.5	- 8.9	42.3	- 1.3
Fayette	19.3	* 2.1	18.1	* 0.3	36.5	* 6.8	.....	.....	60 0	* 2.5	61.8	- 6.8	70.6	...	65.4	- 4.4	.....	.....	49.4	- 0.5	31.0	- 0.9	.....	.....	.....	.....
Forest City	17.9	- 0.3	15.7	* 0.7	33.6	* 5 2	44.9	- 4.9	59.6	† 0.0	63.6	- 4.5	71.2	- 1.6	66.8	- 4.7	56.9	- 5.7	48.6	- 0.6	31.0	* 0.1	13.8	- 5.5	43.6	- 1.8
Ft. Dodge	.....	.....	16 8	.....	.....	.....	.....	.....	60.0	.	61.8	.....	70.0	.....	67 2	.....	61.4	.....	53.0	.....	33.0	.....	20.6	.....	.....	.....
Galva	21.0	* 2.8	16.9	- 1.0	35.9	* 4.2	47.6	- 1.9	60.2	- 0.2	63.6	- 5.8	70.6	- 3.8	67.1	- 4.7	58.6	- 6.7	50.8	- 0 5	31.6	- 0.6	19.0	- 3.4	45.2	- 1.9
Grand Meadow	18.4	* 2.8	18.8	* 1.5	36 8	* 7.1	47.8	* 0.2	61.0	* 3 0	63.8	- 3.8	68.8	- 2.2	65.2	- 4.0	59.0	- 2.1	50 3	* 0.3	31.2	- 0.3	14.8	- 7.1	44.7	- 0.4
Greene	20.0	- 0.3	19.1	* 2.5	37.2	* 7.5	48.4	- 0.2	61.8	* 1.7	64.4	- 5.8	71.9	- 3.6	67 8	- 5.5	60.4	- 4.8	50.4	- 3.7	.....	.....	.....	.....	.....	.....
Greenfield	24.8	* 3.4	20.6	- 0.7	38.6	* 5 2	50.8	‡ 0.0	60.7	* 0.5	64.1	- 7.0	73.0	- 1.7	69.0	- 4.0	61.4	- 4.1	53 3	- 0.3	35.8	* 0 5	21.6	- 3.3	47.8	- 1.0
Grinnell	22.9	* 3.1	20.8	- 0.3	40.0	* 7.3	50.4	† 0.0	61.7	* 1.8	.....	.....	.....	.....	.....	.....	.....	.....	52.2	* 5.0	33.9	- 0 6	19.8	- 5.0	.....	.....
Grinnell (near)	22.6	.....	20 4	.....	.....	.....	.....	.....	.....	.....	65.3	.....	73.3	.....	68.8	.....	60.6	.....	52 0	.....	33.4	.....	19 6	.....	.....	.....
Grundy Center	21.4	* 4.9	19.8	* 2.0	38 5	* 7.6	49 3	* 1.6	61 0	* 2.7	60.6	- 5.9	71.4	- 1.0	68 7	- 2.3	60 4	- 2 9	51.6	* 0.3	33.3	* 1.2	17.6	- 4.9	47.3	* 1.2
Guthrie Center	24.9	* 0.4	20.0	- 0.2	38.8	* 6.1	51.1	- 0.2	62.4	* 1.2	65 6	- 4.7	72.8	- 1 4	68 2	- 4 9	60.6	- 3.7	55.8	* 3.4	.....	.....	25.5	- 6.0	.....	.....
Hampton	20.6	* 5.7	19.0	* 2.3	37.6	* 9.8	49.0	* 1.4	62.0	* 3.9	65.0	- 3.5	72.3	- 0.5	69.0	- 1.4	61.0	- 1.2	52.5	* 2.2	33.3	* 1.9	16.6	- 4.5	46.5	* 1.3
Hamlontown	17.8	.....	16.4	.....	36.0	.....	46.0	.....	60.4	.....	61.0	.....	69 6	.....	66.3	.....	58.4	.....	49.8	.....	31.2	.....	14.5	.....	44 0	.....
Harlan	23.6	....	18.1	.....	37 8	.....	49.8	.....	61.3	.....	65.0	.	73.3	....	69.2	.....	59.7	.....	52.1	.....	35.0	.....	22 0	....	47.2	.....
Hopeville	....	.....	....	.....	42.3	* 8.0	51.7	* 1.5	62.2	* 1.8	64.3	- 6 2	74 1	- 0.3	71.1	- 2.0	61.6	- 5.0	54.3	- 0 3	35.2	- 0 3	22 6	- 2.9	.....	.....
Humboldt	21.6	* 5.4	18.2	* 1 2	37.4	* 8.8	49 2	- 0.1	61.8	* 1.7	64 8	- 5.6	72 6	- 1.5	70.6	* 1 3	61.0	- 1.6	51.8	† 2.3	34.6	* 1.7	19.3	- 3.9	46.9	* 0.8
Ida Grove	23.4	....	17 9	.....	38.4	.....	49.8	.....	61.2	.....	65.6	.....	72.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Independence	20.2	* 5.1	19.0	- 1.0	37.6	* 6.3	47.6	- 0.3	60.8	* 1.5	62 8	- 6.1	70 5	- 2.8	76 6	- 2.7	59.4	- 2.3	50.6	* 1.7	32.1	- 0.8	16.6	- 4 9	45.4	- 0.4
Indianola	25 8	* 6.3	22.5	- 0.3	41.3	* 6.7	52.2	* 0.6	63.1	* 2.5	65.2	- 5.6	75 0	- 0.8	71 8	- 1.2	62.1	- 3.9	53.6	- 0.5	35.9	- 1.6	22.4	- 3.1	49.2	- 0.1
Iowa City	23.8	* 4.7	22.2	- 0.9	41.9	* 8.4	51 6	* 3.0	63 8	* 3.6	64.8	- 4.6	74.8	* 0.5	70 0	- 1 7	61 8	- 1.7	51 9	* 0.9	34.2	- 1.1	18 2	- 6.0	48 2	* 0.4
Iowa Falls	19.7	* 4.6	17.0	* 1.7	36 8	* 6.7	47.6	‡ 0.0	60.6	* 1.1	62.2	- 6.8	71.2	- 2 0	66.6	- 3.9	57.8	- 4.3	48 4	- 1.8	31.0	- 0.4	15.7	- 5.1	44.6	- 0.8
Keokuk	26 5	* 3.3	26.4	- 1.9	44.4	† 6 8	53.5	* 1.5	64.9	* 2.3	67.0	- 5.5	77.4	* 0.5	73.6	- 0.9	65 6	- 0.8	55.6	* 1.5	37.5	- 1.3	24.6	- 5.2	51.4	0.0
Keosauqua	25.4	* 1.7	23.0	- 1.6	43.8	* 6.2	53.2	* 0.3	64 2	* 1.4	65.0	- 8.5	75.6	- 1 3	73 0	- 2 3	63.1	- 4.9	52.1	- 4.1	34.5	- 4.1	....	.....	.....	.....
Larchwood	...	.....	.....	.....	34.6	.....	47.4	.....	59.6	.	64.6	.....	71.0	.....	68.0	.....	60.0	.....	51 6	.....	31.1	.....	.....	.....	.....	.....
Larrabee	21.4	* 8.8	16.4	- 1.8	34.8	* 6.2	47.2	- 1.2	59.6	* 1.5	65.4	- 3.9	72.1	- 0.9	68 2	- 3.2	58.8	- 4.8	51 3	* 0.8	32.4	* 0.9	18.4	- 3.9	45.5	- 0.5
LeMars	22 1	* 1.2	15.8	- 1.3	35 5	* 4.6	48.6	- 1.6	59.2	- 1.1	64.8	- 4.8	71.4	- 2.8	67.5	- 5 1	57.8	- 5.8	51.0	- 1.6	33.4	* 0 5	18.8	- 2.3	45.7	- 1.7
Lenox	25.8	* 0.2	20.4	- 2.4	39.4	* 5.4	52.2	* 0.7	61.9	* 0.2	64.5	- 6.3	73.8	- 1.2	70.6	- 3.1	61.8	4.3	53.2	- 1.1	35.9	- 0.9	22.8	- 1.9	48.5	- 1.2
Leon	26 6	.....	23.2	.....	41 8	.....	53 1	.....	63.3	.....	64.2	.....	75 5	.....	71.6	.....	62.4	.....	53.9	.....	37 1	.....	24.0	.....	49.7	.....
Logan	24.1	† 5.1	20.2	- 3.5	38.2	* 4.3	51 4	* 1.4	62.0	* 1.0	65.4	- 4.8	.....	.....	75.0	- 2 2	61.8	- 2.4	51.8	- 0.5	35.5	‡ 0.0	.....	.....	.....	.....
Maquoketa	21.6	* 1 7	22.2	* .0	41.0	* 7.6	49.7	* 0 7	61.2	* 0.6	62.7	- 8.0	72.2	- 3.1	68.6	- 3.7	60.5	- 3.7	50.2	- 4.3	32.8	- 3.6	15.6	-10.1	46.5	- 2.2
Marshalltown	23.6	* 3.1	22.0	* 1 7	40.4	* 8.9	51.2	* 1.5	62.5	* 2.9	64.1	- 5.6	73.8	* 0.1	69.4	- 2.8	60.6	- 4.1	51 8	- 1.1	33.1	- 1.7	20.0	- 3.6	47.7	- 0.1
Mason City	.....	.....	20.4	* 5 5	39.4	*11.5	48.9	- 0.5	61.6	* 2.6	65 6	- 2.0	72.4	* 1.0	67.8	- 1.8	60.4	- 2.6	51.6	* 2.2	33 4	* 4.0	16.4	- 4.0	.....	.....
Monticello	18.8	* 2.9	21.4	* 0.4	41.3	* 9.5	48.4	* 0.4	62.2	* 2.8	65.6	- 3.0	74 1	* 1 2	72.0	- 1.8	.....	.....	50.4	* 1.0	.....	.....	16.4	- 5.9	.....	.....
Mt. Ayr	25.6	* 1 8	22 8	* 0 3	40.1	* 5.1	51.6	- 0.2	61.7	- 0.4	64 6	- 6.7	74 8	- 1.1	72 2	- 1.9	62.9	- 4.5	55.0	- 0.3	37.1	- 0.2	23 8	* 0.8	49.4	- 0.6
Mt. Pleasant	24.2	* 3.5	24.3	* 0.7	44 1	* 8.5	....	.....	.....	.....	66.3	- 5.9	.....	.....	73 2	- 0.1	62.6	- 2 3	52.4	‡ 0.0	35 8	- 1.1	21.8	- 5.0	.....	.....
Mt. Vernon	21.9	* 4.4	21.6	* 0.3	40.5	* 8.6	51.4	* 2.1	62.3	* 1.6	66.1	- 4.7	73.8	- 1.0	69.1	- 2.4	61 5	- 1.2	51.5	* 1.2	32 6	- 1.6	17.2	- 5.6	47.4	* 0.1
New Hampton	17.6	.....	17.2	.....	35.8	....	47.0	.....	59.8	.....	.....	.....	63.5	.....	63.8	.....	57.0	.....	49.4	.....	30.4	.....	13.4	.....	.....	.....
Newton	22.6	* 5.3	20.6	† 0.0	39 4	* 5 8	50.0	* 1.0	61.4	* 0.5	63.6	- 7.1	72.9	- 2.3	69.0	- 3.4	61.1	- 2.1	52.0	* 0.3	34.6	* 0.7	20.3	- 1.7	47.3	- 0.2
Northwood	18.8	* 2 2	17.8	* 2.8	36.3	* 8 4	47.2	* 0 8	60 2	* 1.6	63.4	- 4.1	69.6	- 2 8	66.0	- 4.3	58.0	- 2 8	49.8	- 1.2	31.8	* 0.8	16.0	- 3.4	44.6	- 0.3
Odebolt	22.9	* 0.3	18.2	* 0.6	38 9	* 5.9	49.6	- 0.1	61.5	- 0.4	65.2	- 5.6	73.4	- 2.7	70 8	- 3.8	60.6	- 2.5	51.9	- 4.5	33.7	- 2.1	20.9	- 1.0	47.3	- 1.3
Ogden	23.7	* 2.4	20.0	* 0.3	38.2	* 5.9	50.0	- 0.9	60 0	- 1.1	59.4	-10.4	71.5	- 3 5	68.0	- 5.0	60.2	- 5.0	51 8	- 1.3	33.3	- 0.9	.....	.....	.....	.....
Olin	22.2	.....	21.5	.....	39 8	.....	50 0	.....	62 0	.....	63.8	.....	72 8	.....	68.7	.....	62.0	.....	51 4	.....	33.8	.....	18.3	.....	47.2	.....
Omaha, Nebraska	27.1	* 7.9	21.1	- 3.9	39.6	* 4.1	52.8	* 1 8	62.9	* 1.2	67.6	- 3.9	76.4	* 0.2	71.6	- 2.1	63.0	- 1.8	56.4	* 3.5	38.2	* 1.6	26.0	- 0.7	50.2	* 0.6
Onawa	24.8	.....	20.0	.....	38 4	.....	51.6	.....	62.2	.....	67.2	.....	75.0	.....	70.9	.....	63.5	.....	55.2	.....	36.6	.....	26.4	.....	49 3	.....
Osage	18.0	* 4.4	17.6	* 3.2	36.0	* 9.4	46.8	* 1.2	60 2	* 3.4	63 1	- 3.7	69.9	- 0.9	64.1	- 3.6	58.0	- 1.5	48.8	* 2.1	31 2	* 2.8	14.3	- 5.0	44.0	* 1.0
Osceola	25.0	* 2.9	21.6	* 1.1	41.6	* 7.8	52.8	* 1.8	61 6	- 0.4	64.2	- 7.3	74.4	- 1.9	70.6	- 4.1	63.8	- 2.1	55.0	* 0.4	39 0	* 2 4	23.0	- 1 7	49.4	- 0 1
Oskaloosa	24.3	* 5.6	21.4	‡ 0.0	41.2	* 7.3	51.4	* 1.0	62.8	* 2 5	64.7	- 5.4	74.8	- 0.3	70.6	- 1.3	61.9	- 2.6	53.0	* 1.2	35.3	- 0.9	20 2	- 1.7	48.5	* 0.1
Ottumwa	27.0	* 2.3	25.0	* 1.9	43.4	* 6.3	.....	.....	63.2	- 0.9	66.6	- 6.5	75 2	- 1 8	71.8	- 3.6	.....	.....	55.4	- 0.1	.....	.....	25.0	- 2.6	.....	.....
Pacific Junction	25.6	.....	20.8	.....	39.4	.....	52.4	.....	62.8	.....	66.6	.....	75.2	.....	70.6	.....	61.3	.....	53 5	.....	37.4	.....	23.8	.....	49.5	.....
Pella	24.4	....	21 8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Perry	24 2	....	20.2	.....	39.3	.....	50.4	.....	63.0	.....	65 2	.....	73.8	.....	70.0	.....	61.4	.....	52.8	.....	35.6	.....	21.4	.....	48 1	.....
Plover	18.9	- 2.1	16.0	- 0.7	35.9	* 6.8	46.6	- 2.2	61.3	* 1.2	64.8	- 5.0	71 0	- 4.3	67.9	- 4.0	59.6	- 5.3	51.0	- 1.9	32.2	- 1.3	16.6	- 3.8	45.2	- 1.9
Primghar	.....	.....	.....	.....	34.4	* 6.8	47.4	- 2.8	59.0	- 1.4	63.9	- 5.5	70.0	- 4.7	66.8	- 6.3	58.5	- 4.3	50 6	† 0.0	33.5	- 1.8	16.7	.....	.....	.....
Red Oak	27.8	.....	23.2	.....	40.6	.....	51.8	.....	62.8	....	66.3	....	76.2	.....	71 3	.....	63.0	.....	54.4	.....	39 0	.....	26 0	.....	50 2	....
Ridgeway	20.6	.....	19.8	....	38.1	.....	48.2	.....	62.8	.....	66.3	.....	73.5	.....	68.5	.	61.0	.....	53.2	.....	34.6	.....	16.3		46.9	.....
Rockford	...	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockwell City	23.6	* 4.7	19.2	* 2.6	37.7	* 7.3	49.3	* 0.8	61.4	* 1.1	65.8	- 4.0	72.2	- 2.9	69.2	- 3.0	60 6	- 3.6	53 0	* 0 3	33.6	* 0.2	21.3	* 0.1	47.2	* 0.3
Ruthven	...	.....	.....	.....	37.0	.....	47.8	....	61.0	.	.....	.....	.....	.....	.....	.....	60.6	.....	53 8	.....	32.6	.....	.....	.....	.....	.....
Sac City	22.1	* 6.9	18.0	- 1.0	36.8

MONTHLY AND ANNUAL MEAN TEMPERATURES FOR 1903, WITH DEPARTURES—Continued.

Stations.	Jan.		Feb.		March.		April.		May.		June.		July.		August.		Sept.		Oct.		Nov.		Dec.		Annual.	
	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.	Tem.	Dept.
Sigourney	24.4	* 0.3	23.3	* 1.5	42.6	* 8.7	52 2	- 0.5	64 1	* 0.3	66.2	- 7.3	76.0	- 2.1	71.8	- 3.0	63.0	- 3.0	52.8	- 2.7	....	....	....	....	....	....
Sioux Center	20.5	....	15.0	....	33.2	....	46.6	....	57.8	....	64.0	....	70.4	....	67.5	....	59.0	....	50.7	....	31.8	....	17.8	....	44.5	....
Sioux City	22 8	* 2.5	16.1	- 2.9	36.0	* 4.4	49 3	- 1.3	60 8	* 2.4	66.0	- 4.3	72.5	- 1.8	69.3	- 2.3	60 8	- 4.4	53 6	* 2 6	34.8	* 0 5	21.4	- 6.4	47.0	- 0.6
Spirit Lake	19.2	- 3.6	14.6	- 1.3	....	....	....	....	60.7	* 1.6	64.2	- 4.6	....	....	....	....	....	....	....	....	....	....	16.2	- 4.0	....	....
Storm Lake	21 2	* 2.0	16.5	* 1.5	36 0	* 7.9	48.2	* 1.8	59.4	* 1.4	63.8	- 4.2	70 2	- 2.9	67.0	- 4.5	57.6	- 5.9	50.0	- 4.2	31.8	- 1.7	19 2	- 1.7	45.1	- 0.9
Stuart	....	....	....	....	40.6	* 8.9	50.3	* 1.1	62.5	* 1.0	64.4	- 7.0	75.4	- 1.2	70.5	- 4.1	60.8	- 6.6	49.2	- 7.2	34.0	- 0.8	23.0	* 2.2	....	....
Thurman	26.4	....	20.0	....	39.6	....	51.6	....	62 7	....	66.2	....	76.0	....	70 5	....	62.2	....	54.1	....	37.3	....	24.4	....	49.2	....
Tipton	24.2	....	23.3	....	41.6	....	52.5	....	64.6	....	67 8	....	75.8	....	71.8	....	64 1	....	53.8	....	35.4	....	19.6	....	49.5	....
Toledo	22.6	* 2.9	20.9	* 1.3	40.0	* 6.8	50.4	* 0.5	61.1	- 0.7	64.0	- 6.7	72.4	- 2.5	69.2	- 3.7	61.0	- 3.6	52.5	* 0.1	33 8	- 1.4	18 6	- 5.0	47.2	- 1.1
Villisca	26.4	* 3.6	21.0	- 1.5	40.6	* 5.2	51.4	- 0.4	59.5	- 2.6	67 0	- 4.8	....	....	69.6	- 3.1	....	....	50 6	- 2.2	34.5	- 1.7	24.2	- 0.6	....	....
Wapello	25 6	....	23 6	....	42.6	....	53 2	....	64.0	....	64.8	....	74.8	....	71.4	....	62.9	....	53.0	....	37.0	....	22.4	....	49.6	....
Washington	22 3	* 4.0	20 7	- 2.3	40.6	* 7 1	50 3	- 0.7	62.0	* 1.0	63.8	- 8.7	72.9	- 4.2	67.8	- 5.6	61.0	- 3.7	51.7	- 0.4	34 2	- 1.4	18.4	- 6.5	47.1	- 1.8
Waterloo	21.5	* 3 7	20.2	* 2.0	38.2	* 8.0	49.2	* 2.0	61.4	* 1 4	63.2	- 5.5	72.7	- 1.3	68.0	- 2.8	60 2	- 2.2	51.6	* 2.1	34.0	- 0.7	18.7	- 2.5	46.7	* 0.4
Waverly	20.6	* 1.0	18.9	* 0.4	37.3	* 7.0	48.4	* 0.7	61.0	* 0.1	63.6	- 6.0	71.3	- 2.9	67.6	- 4.6	60.7	- 2.5	50.8	- 2.8	32.8	- 0 7	15.4	- 5.6	45.7	- 1.4
West Bend	20.4	* 3.2	16.4	* 0.1	36.6	* 8.4	48.0	* 1.2	61.0	* 2.0	65.7	- 2.5	72.2	- 0.9	67.0	- 2.9	59 1	- 2.1	50 8	* 2.1	33 9	* 3 8	18.1	- 2.1	45.8	* 0.9
Whitten	21.4	....	19.3	....	38.2	....	49 2	....	62.0	....	65.0	....	72.8	....	68.8	....	59.4	....	51.0	....	32.2	....	17.4	....	46.4	....
Wilton Junction	23.9	* 1.1	22 3	* 2.0	42 6	* 9.0	52.8	* 1.6	63.8	* 1.7	66.0	- 5.6	74.1	- 1.4	70.4	- 2.8	63.6	- 1.2	53.0	* 0.4	34.6	- 1.8	19.7	- 6.4	48.9	- 0.3
Winterset	26.0	* 4.8	21.6	- 0.3	42.9	* 9 4	....	....	64.0	* 3.0	65.4	- 5.4	74.4	‡ 0.0	71.2	- 1.5	....	....	....	....	35.4	‡ 0 0	....	....	....	....

MONTHLY AND ANNUAL PRECIPITATION FOR 1903, WITH DEPARTURES FROM NORMAL.

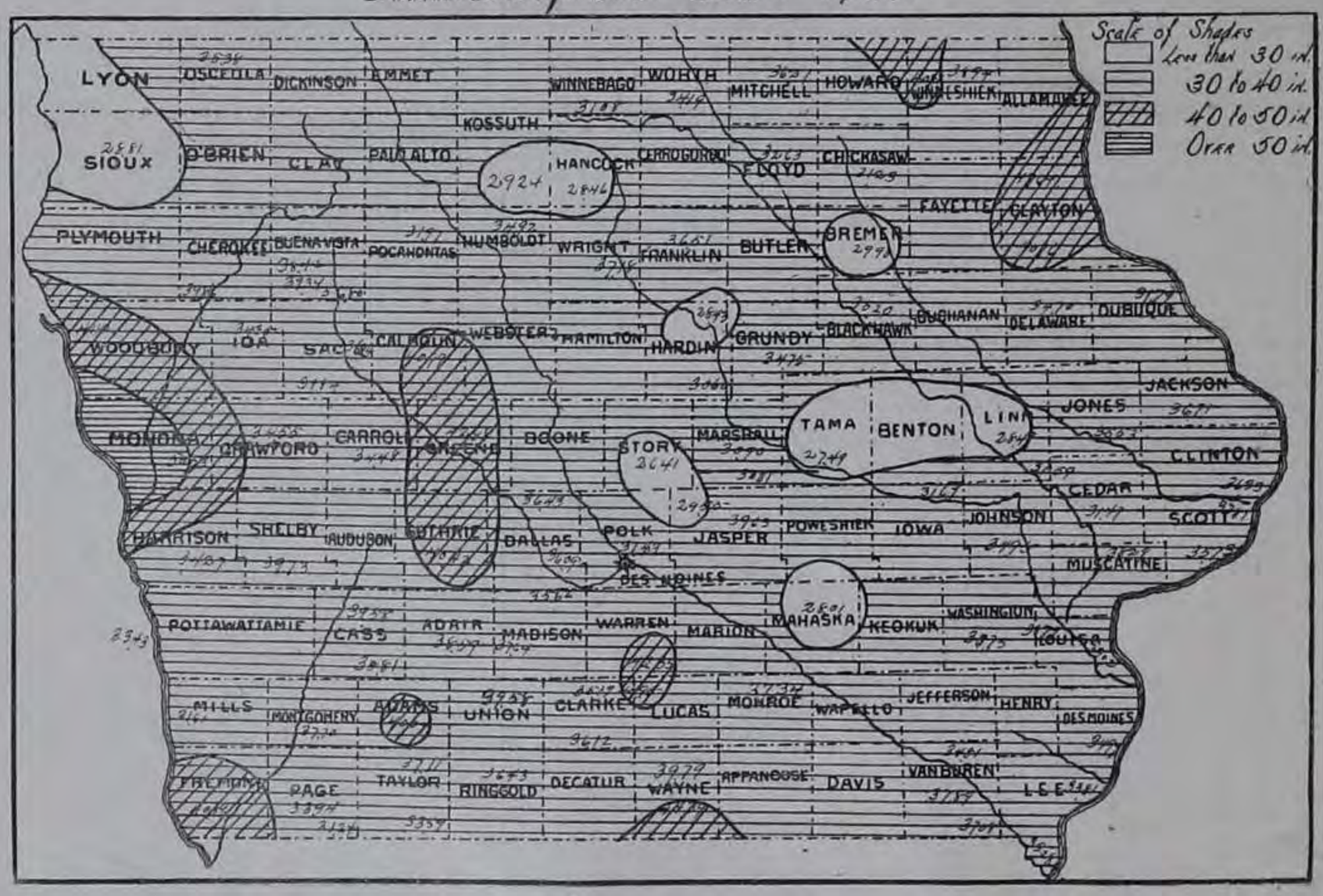
STATIONS.	Jan.		Feb.		March.		April.		May.		June.		July.		August.		Sept.		Oct.		Nov.		Dec.		Annual.	
	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.
Afton	T	- .74	.96	- .17	.71	- 1.82	1.45	- 1.48	11.90	†7.56	2.97	- 1.26	2.83	- 1.49	12.34	† 9.11	3.38	- .06	1.96	- .84	.88	- .13	.20	- .95	39.58	† 7.73
Albia	.40	.....	1.46	.	1.87	... .	2.53	.	9.13	.	3.93	.....	2.21	.....	7.49	.....	5.02	.....	2.26	.....	.64	.	.40	.....	37.34	.....
Algona	.30	- .49	.95	- .38	.60	- 1 01	2 91	† .29	8.05	†4.67	4.26	- .14	2.77	- .20	3.90	† .32	3.90	† .81	1 40	- .73	T	- 1.22	.20	- .81	29 24	† 1.11
Allerton	.48	.....	1.17	.....	1.85	.....	1.80	.....	8.20	.	3.90	....	3.92	..	11 58		6.90	.....	2.22	.....	1.74		.63	.....	44.39	
Alta	.16	- .46	.93	† .14	.80	- 1.11	2.65	- .74	6.96	†2.75	4.85	- .68	6.81	†2.78	6.28	† 2.66	7.05	†4.49	1.12	- 1.14	.62	- .41	.19	- .75	38.42	† 7.52
Alta (near)	.20	.	.90	.....	.98	.....	2 49	.. .	7.27	.....	5.25	.	6 23	.	6.04	....	7.83	.....	1.16	.....	.79	.	.20	.....	39.34	.....
Amana	.28	- 1.18	1.47	† .19	1.44	- .58	2.39	- .53	7.30	†3.05	1.33	- 3.07	2.47	- 1.66	7.31	† 3.96	4.43	†1 19	2.15	- .55	.60	- 1.15	.50	- .58	31.67	- .91
Ames	.14	- .82	94	† .07	.61	- .82	1.97	- .80	9.46	†5.32	1.97	- 2.58	4.77	† .33	3.70	† .31	1 46	- 2 15	1.07	- 1.45	.14	- 1.03	.18	- 86	26.41	- 4 48
Atlantic	T	- .67	2 10	†1.11	1.11	- .81	2.26	- .93	12.37	†8 23	3.34	- 2.23	3.68	- .22	9.10	† 6 20	2.01	- .49	2.12	- .53	1.24	† .54	.25	- 1.01	39.58	† 9.19
Audubon	....	.	.49	- .31	.47	- 1 32	.....	.....	...	.....	3 33	- .18	..	.	.....	..	2 79	† .01	2.72	† .43	.94	- 50	.12	- 1.07	.	....
Baxter	.10	.....	1.05	.....	.90	.....	2.12	....	11.70	.	1.42	.....	3.61	.....	5.35	... .	1 77	...	1.23	.....	.20	.....	.10	.....	29.55	.....
Bedford	.05	.....	1.13	.....	.83	.....	1.53	.....	9.83	...	1.50	.....	2.48	....	9.46	....	4.00	.	1.78	....	.87	.....	.13	....	33.59	.....
Belknap	1 00	- 1.10	.....	.....	.	.	.....	....	.	.	.....	....	.94	- 3.43	6.72	† 2.87	5.08	†1.65	2.32	† .45	1.51	- .21	1.16	- .77	.	.....
Belle Plaine	.70	- .85	2.32	†1.11	2.00	- .52	2.75	- .95	7.53	†3.31	2.81	- 1.18	4.47	†1.05	5.46	† 1.97	3.97	†1.30	1 34	- .89	.39	-1.33	.59	- .82	34.33	† 2.20
Bonaparte	.43	- 1.24	1.92	† .61	2.23	- .53	4.15	† .90	4.30	† .14	2.30	- 1.42	2.74	- .45	7.53	† 4.13	5.95	†1.89	3.78	†2.15	.94	- .95	.81	- .64	37.08	† 4.59
Britt	.39	- .21	.63	- 24	.73	- .78	2.69	† .40	6.89	†3.73	2.58	- 2.02	3.45	- .16	4 50	† 1.54	4.43	† .75	1.76	- .62	.05	.67	.36	- .20	28.46	† 1.02
Buckingham	.08	.....	.61	.....	1.08	...	....	.	7.57	.	2.40	.	2.41	....	7.11		2.19	.	1.45	....	.29	.....	20	.....	....	
Burlington	58	- 1 04	1.98	- .15	2.32	- .59	3.97	† .97	4.83	† 35	1.75	-2.78	1.82	- 0.80	7.63	† 3.67	5.81	†3.44	2.74	† .32	.84	- .78	.70	- 71	34 97	† 1.90
Carroll	T	- .82	1.29	† .14	.70	- 1.65	2.70	1.00	9.54	†4.98	4.99	† .53	5.59	†2.24	6.00	† 2.88	1.74	- 1.19	1.39	- .97	.44	- .59	.10	- .85	34.48	† 3.20
Cedar Rapids	.11	- 1 36	.74	- .85	.65	- 1.56	1 97	- 1.10	6.11	†1.59	1.14	- 2.69	4.94	†1.28	6.12	† 3.24	4.06	†1.28	1.48	- 1.10	.48	- .94	.68	- .91	28.48	- 3.12
Chariton	.25	- .92	1.14	† .11	.86	- .69	..	.....	7 75	†3.67	3.61	- .25	4.43	- 1.26	14.05	†10.77	2.78	- .18	2.10	- .48	.11	- 1.09	.26	- 1.20	.	
Charles City	T	- 1.16	.50	- .81	1.65	- .06	3.55	† .48	9.15	†5.52	1.93	- 2 86	7.36	†4 55	4 38	† 1.80	2.06	- .82	1.84	- .29	T	- 1.34	.21	- .98	32.63	† 4.03
Chester	....	.....	....	.....	.	.	.....	.....	9.44	....	2 28	.....	4.15	....	8 41		4.46	.....	....	.....	.	.	.	.	.	.....
Clarinda	.14	- .81	1.18	† .10	.99	- .99	1.92	- 1.51	9 97	†5.39	3.29	- 1.38	2.02	- 2.40	9.50	† 6.04	2.46	† .08	1.17	- 1.49	1.13	† .18	.17	- .96	33.94	† 2.25
Clear Lake	25	....	.62	.....	.50	.....	2.35	.....	7.54	.....	1.60	..	4 95	.....	9.59	.....	5.10	.	3.08	.....	T	.....	.60	.....	.	.....
Clinton	.83	- 1.06	1.29	- .85	2.36	- .72	4.93	†1.92	5.45	†1.02	1.66	- 2.80	5 27	†1.30	4.79	† 1.44	6.12	†3.02	1.85	- .56	.78	- 1.10	1.00	- .82	36.33	† .79
College Springs	.20	- .30	.96	† .06	1.07	- .77	1.86	- 2.06	9.10	†4 43	1.44	- 2.52	2.34	- 3.01	8 36	† 5.18	2.99	† .64	2 36	- .69	.34	- .54	.22	- 1.11	31.24	- .69
Columbus Junction	.28	.....	1.42	.....	2.40	.....	5.54	....	5.33	....	2.69	....	1.58	.	9.10		5.48	....	3.28	.....	.74	.	.95	.	38.79	.....
Corning	.07	- .61	1 05	† .22	1.34	- .47	1.88	- 1.37	10.68	†6.06	3 38	- .66	2.51	- 1.49	13.80	†10.84	3.47	†1.27	.84	- 1.63	.85	- .01	.17	- .89	40.04	†11.26
Council Bluffs	.03	- .64	3.23	....	.50	- 1.08	2.72	† 16	10.01	†5.51	1 83	- 3.34	....	.....	15 09	†11.63	1 71	- 1.64	.....	.	.92	- .15	....	.....	....	.....
Corydon	.32	- 1.26	1.55	† .09	1.97	- .22	2.44	- 0 88	7.70	†3.83	4.31	† .17	2.94	- .66	10.14	† 6.64	5.16	†1.72	1.74	- .94	1.26	- .13	.26	- 1.27	39.79	† 7.09
Cumberland	T	.....	1.00	.....	1.10	.....	1.65	.....	8.27	.	2.96	.....	6.69	....	9.32	.....	1.70	.....	2.15	.....	.78	.	.20	.....	35.82	. . ..
Danville	1.20	.	3.35	....	1.55	.....	3.80	....	.	...	3.64	.....	1.75	.....	5.97	.....	.	.	.	.....	.....	.....	.....	.....	.	.....
Davenport	.71	- .88	1.67	† .10	2.06	- .10	3.42	† .64	5.52	†1.20	2.28	- 2.11	4.47	† .81	4.68	† 1.10	7.09	†3.91	2.27	- .35	.70	- 1.36	.78	- .95	35.73	† 2.01
Decorah	.31	- .77	1.09	† .16	1.58	- .41	5.38	†2.48	6 75	†3 42	1.57	- 2 55	8.14	†5.51	8.07	- 6.39	2.94	- .45	2.13	- .37	.18	- 1.36	.80	- .38	38 94	†11.67
Delaware	.07	- .98	.77	- .09	1.74	- .09	4.35	†1.13	4 77	† .96	2.12	- 1.94	10 50	†7.03	4.14	† 1.36	3.78	† .56	1.69	- .60	.36	- 1 23	.39	- 1.06	34.68	† 5 09
Denison	.10	- .46	1.45	† .81	.15	- 1.48	4.51	† .55	9.92	†6.32	3.17	- 41	5 28	† .96	6.58	† 3.20	1.87	- 1.34	.89	- 1.75	.46	- .37	.17	- 33	34.55	† 5.70
Des Moines	.20	- 1.14	1.12	- .16	1.09	- .37	1.64	- 1.15	10.64	†5.94	3.06	- 2.30	3.62	† .09	6.72	† 3.46	1.62	- 1.58	1.32	- 1.72	.31	- 1.40	.09	- 1.35	31.43	- 1.68
De Soto	....	.....	....	.....	74	.....	2.39	.....	8.38	.. .	3.82	..	4.44	.....	6.40	.....	1.81	.....	.55	....	1.04	. .	.....	.....	.....	.....
Dows	.20	.	1.45	.	.95	....	4.04	.....	9 33	.	3.07	.....	9 50	.....	4.47		2 02	... .	1.63	.....	.10	.	.42	.....	37.18	.....
Dubuque	.17	- 1.51	1.19	- .27	1.84	- .43	3.29	† .50	4 25	† .26	2.16	- 3.04	7.10	†2.82	5.27	† 2.12	3 20	- .89	1.72	- .99	.75	- 1.35	.85	- 96	31.79	- 3.74
Earlham	.03	.....	1.57	....	1.05	....	1.73	.....	11.60	. .	4.20	.....	3.62	.....	8.20		1.91	.	.90	. . .	.76	.....	.05	.....	35.62	.....
Eldon	....	.....	1.14	....	.71	.	2 03	...	.....	...	....	...	....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.	.....
Elkader	.16	- 1.22	1.46	† .35	2.07	† .25	4 93	†2.07	5.89	†2.16	1.50	- 2 33	12 72	†8.55	7.18	† 4.37	2.67	- 1.12	1.46	- 1.34	.21	- 1 47	.51	- 1.40	40.76	† 8.87
Estherville	.09	- .32	1.01	† .34	....	.....	3.04	† .51	10.69	†7 87	3.36	† .27	8.70	†5.17	3.26	- .04	3.83	† .73	2.49	† .87	.06	- 1.11	.43	† .04	... .	.....
Fayette	.04	- 1.24	1.22	† .08	1.70	- .56	...	.....	6 65	†2.70	1.91	- 3 70	10 71	†6.45	4.75	† 2.01	....	.....	1.73	- 1 20	.06	- 1.55	....	.	.	.....
Forest City	.10	- .62	.80	‡ .00	.73	- .90	3.33	† .89	10.17	†6 86	1.70	- 3.49	3.79	† .03	4.38	† 1.02	3.67	- .61	1.76	- .81	T	- 1 09	.65	† .05	31.08	† 1.33
Fort Dodge	....	....	.83	.	....	.	.....	.....	.....	.	.....	.....	.....	.....	.....	.....	.....	.	2.02	.	.41	.....	.02	.....	.....	.....
Ft. Madison	1 46	- .49	1.03	- .94	2.25	- .53	4.81	†1.61	2.88	- 1.63	3.49	- .76	1.70	- 2.15	5 09	† 1.50	6.37	†2.55	2.75	† .02	1.34	- .81	.64	- 1.34	33.81	- 2 97
Galva	.30	- .03	.30	- .20	.16	- 1.38	3.65	† .73	10 07	†6.67	4.07	† .19	4.32	†1.01	6.11	* 2.97	4.25	†1.35	0.93	- .83	.05	- 1.10	.09	- .59	34.30	† 8.79
Gilman	.10	.....	.83	....	1.37	....	3.66	.....	8.24	.	2.56	.....	4.49	.	4.85	.....	2.21	....	1.72	. .	.18	....	.10	.....	30.31	.....
Grand Meadow	.40	- .82	1.18	† .16	2.05	‡ .00	6.00	†2 71	8.33	†4.35	1.90	- 3 23	10.85	†7.11	9.52	† 6.98	4.27	†6.23	2.11	- .58	.28	- 1 26	.75	- .73	47.64	†15.92
Greene	.12	- .46	.81	- .17	1.59	† .01	3.77	†1.68	6.37	†2.88	2.56	- 1.39	8.90	†5.63	5 16	† 3.02	1.81	- 1.40	1.85	- .44	.....	.....	.....	.....	.....	.....
Greenfield	.09	- .81	1.13	† .03	1.03	- 1.27	2.27	- 1.03	13.50	†9.10	4 83	- .17	2.43	- 1 92	8 87	† 6 34	2.15	- .85	1.52	- .73	.65	- .37	.12	- 1.08	38.59	† 7.24
Grinnell	.31	- .82	1.92	†1.09	1.21	- .68	2.04	- 1.48	12.69	†8.06	.....	...	.	.....	.....	.....	.....	.....	1.45	- .92	.24	- 1.29	.37	- .83	.....	.....
Grinnell (near)	.22	....	1.55	.....	.....	.....	.....	.....	.....	...	1.90	.....	3.97	.	7 13	.....	3.63	.....	1.35	.	.25	....	.15	.....	.....	.....
Grundy Center	.12	- .54	.90	† .19	1.91	† .30	1.69	- 1.84	11.04	†6.32	3.14	- 1.77	6.19	†2.43	4.03	† 1.03	4.23	†1.03	1.05	- 1.72	.21	- .97	24	- .97	34 75	† 3.49
Guthrie Center	T	- .38	1.19	† .44	.95	- .37	3.02	† .28	14.16	†9.38	3.62	- .02	5.35	†1.48	5.05	† 86	2.88	- .29	2 75	† .53	1.32	† 41	.13	- .98	40.42	†11 34
Hampton	.18	- .38	1.52	† .39	1.33	- .88	3.62	- .01	7.95	†4.05	2 49	- 2.48	9.70	†6.12	5.28	† 2.36	2.09	- 1.31	1.82	- .92	.19	- 1.37	.34	- .88	36.51	† 4.19
Hanlontown	....	.....	....	. .	.73	....	2.91	... .	7.67	.....	1.23	.....	3.89	.....	6.15	.....	4.03	.....	2.17	. .	.08	.....	1.08	.....	39.73	.....
Harlan	.05	.....	1.27	.....	.83	.....	2.32	.. .	10.43	.	2.83	.....	5.05	...	9.39	.....	1 90	...	4.50	.....	1.02	...	.14	.....	39.73	.....
Hopeville	.12	- .81	.77	- .11	1.14	- .60	1.72	- 1.88	8 59	†3 82	3.06	- 1.16	2.21	- 2 11	12.24	† 9 41	3.97	† .90	1 45	.78	.78	- .11	.07	- .98	36.12	† 5 59
Humboldt	.07	- 59	.43	- .22	.85	- .65	3.49	† .64	7 50	†3.59	6 04	†1.63	5.39	†1.80	3.21	† .40	5.23	†1.76	2.41	† .63	.08	- 1.31	.22	- .48	34.92	† 7.20
Ida Grove	.10	- .72	1.37	....	1.96	.....	2.73	.....	8.40	....	3.45	.....	4.41	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Independence	.27	- .97	.82	- .20	.80	- .84	2.67	† 20	6.78	†2.83	3.32	- 1.41	....	....	.....	.....	3.05	- 1.07	1.85	- .52	.16	- 1 20	.63	- .71	--	.....
Indianola	.09	- 1.21	2.58	†1.83	1.21	† .01	2.38	- 1.08	8 39	†3 76	4.51	† .58	....	.....	7.54	† 3.52	4.23	†1.19	1.27	- .78	.73	- .45	12	- 1 29	.	.....
Iowa City	.67	- 1.09	1.03	- .50	1.86	- .65	3.11	- .07	6.90	†2.54	1.95	- 2.62	4.76	† .32	3.45	- .65	5.38	†1.55	3.60	† .81	97	- 1.36	1.27	- .41	34.95	- 2.13
Iowa Falls	.20	- .56	1.35	† .39	1.35	- .20	3.15	- .23	7.17	†3.88	2 15	- 2.04	6.58	†3.56	2.77	- .15	1.45	- 1.85	1 72	- .66	.09	- 1.12	.45	- .60	28.43	† 0.42
Jefferson	.27	.	98	.....	1.40	.....	4.13	.....	14 29		4.58	....	3.89	....	6.17	.....	4.24	....	2.52	.....	.23	..	.18	.....	42.88	.....
Keokuk	.77	- .95	1.42	- .29	3.03	† .85	4.91	†1.70	3.56	- .51	1.40	- 3.14	1.27	- 2.83	4.80	† 1.97	7.16	†3.64	3.23	† .47	.87	- 1.25	0.86	- 1.10	33.28	- 1.44
Keosauqua	.84	- .12	2.09	† .60	3.00	† .46	4.49	† .59	4.84	† .28	2.41	- 1.15	2.72	- 1.00	6.18	† 3.06	6.50	†1.99	3.42	†1.70	.74	- .73	.66	- .80	37.89	† 4.48
Lacona	.85	....	1.04	.....	2.49	.	2.85	....	11.35	.....	4.60	.....	1.99	.. .	9.16	.....	4.15	.....	2.13	.....	.94	. .	.80	.....	42.35	.....
Lansing	....	....	.	....	.	.....	4 90	....	7.30	.....	2.08	.....	5.25	....	.....	.....	.....	.....	.	.....	.....	.....	.....	.....	.	.....
Larchwood	....	.....	....	.....	2 11	.....	2.12	.....	8 33	.....	3.34	....	5.83	.....	4.87	.....	1.92	.....	2.16	. .	.17	.....	.	.....	.	.....
Larrabee	.11	- .43	1.13	† .36	1.02	- .71	2.92	- .27	10 52	†6.52	3.02	- 2.97	8.24	†3.79	5.83	† 2.79	8.79	†5 95	2.05	† .04	.26	- .67	.18	- .80	44.07	†13.60
Le Claire	.73	....	1.04	.....	2.61	.....	3.46	.....	4.27	.....	3.04	.....	4.54	.....	4 26	.....	8 23	.....	3.17	.....	0.70	.....	.76	.....	36.81	.....
LeMars	.01	- .62	....	.....	3.90	†1.41	2.48	- 1.30	9 89	†5.95	3.80	- .11	5.46	† .92	5.79	† 3.24	3.80	† .85	....	....	.....	.....	.25	- .49	.	.....
Lenox	.03	- .58	.98	† .28	.79	- 1.23	1.91	- 1.45	10.58	†5.87	2.65	- 1.22	4.23	- .61	10.60	† 7.46	3.70	† .91	1.13	- 1.84	.43	- .64	.08	- 1.14	37.11	† 5.81
Leon	.31	....	1.03	.....	1.86	.....	1.69	.....	7.25	.....	2.64	.	1.88	.....	10.48	.....	4.45	.....	1.27	.....	.....	.....	.....	.....	.....	.....
Logan	.70	- .42	1.46	† .24	.28	- 1.66	.79	- 2.14	5 77	†1 55	3.73	- 1 92	4.96	† .23	11.66	† 7.84	1.66	- 1.44	1.60	- .86	1 54	† .21	.30	- 1.02	34.45	† .79
Maquoketa	.30	- 1.09	82	- .70	1.83	- .47	4.72	†2.10	6.55	†2.17	2.10	- 3.25	7.68	†4.11	5.21	† 2.49	3.48	† .62	2.24	- .59	1.13	- .25	.62	- .91	36.71	† 4.23
Marshalltown	.29	- .63	1.14	† .35	1.55	- .43	2.17	- 1.05	8.46	†4.01	2.74	- 1.46	6.12	†1.99	3 23	† .09	3.07	† .70	1.61	- .92	.40	- .76	.12	- 1.40	30.90	† .49
Monticello	.28	- 1.36	1.50	- .17	2.25	- .15	4.65	†1.96	6.30	†2.43	4.03	....	8.40	†4.32	4.54	- .01	4 57	† .66	2 20	- .54	.....	.	.32	- 1.88	.....	.....
Mason City	...	....	1.11	† .55	1.07	- .27	2 78	- .56	7.57	†3.62	1.42	†5.62	5 94	†3.15	6 23	† 3.57	4 04	†2 19	3.25	†1.24	T	- 1.00	.53	- .13	.....	.....
Mt. Ayr	.24	- .73	1.08	‡ .00	1.38	- .75	2.11	- 1.15	8.90	†3.47	3.38	- .64	4.33	- .52	6.85	† 4.18	5.88	†3.17	1 03	1.37	.63	- .56	.62	- .56	36.43	† 4.54
Mt. Pleasant	.15	- 1.20	.32	- .74	1.15	- 1.23	...	.....	3.82	- .60	1.05	- 2.31	. ...	.....	5.32	† 2 52	6.15	†2.98	2.72	† .96	.99	- .57	.19	- 1.03	.....	.....
Mt. Vernon	.29	- 1.16	1.05	- .11	1.66	- .60	2.97	- .35	7.05	†2 37	1.17	- 2 88	4 10	† .12	4.72	† 2 24	4.64	†1 96	1.16	- 1.12	.93	- .35	.85	- .66	30.59	- .54
New Hampton	.06	.....	.60	.....	1.68	.....	3.47	.....	6 46	.....	2.09	.. .	8.08		4.75	.....	1.66	.	1.48	.	.05	.....	.85	.....	31.23	.....
Newton	.65	- .24	1.65	† .61	1.41	- .18	2.79	- ,63	13 07	†8.61	1 87	- 2.82	5 30	†1.71	9 02	† 5.88	2.41	- .70	1.08	- 1.41	.16	- 1.59	.22	- 1.11	39.63	† 7.63
Northwood	.40	- .22	1.12	- .12	.95	- .86	3.84	†1 35	6.95	†3 37	3 24	- 1 21	3.41	† .17	6 94	† 3.69	4.46	† .80	2.13	- .43	T	- 1.42	.75	‡ .00	34.19	† 5.12
Odebolt	.28	- .04	.79	† .04	.54	- 1.45	2.36	- .35	7.93	†5 16	2 70	- 1.61	4.87	- .25	6.44	† 2.75	4.68	†1.53	0.79	- 1.71	.36	- .63	.10	- .72	31.84	† 2.72
Ogden	.18	- .33	.95	† .30	1.09	- .38	2.58	- .62	10 95	†6.00	5.42	.....	5 09	.. .	5.47	.....	2.10	.....	2.00	....	.25	.....	.....	.....	.....	.....
Olin	.31	.....	1.64	.....	3.52	.....	8.28	.....	5.55	.....	1 42	.....	7.50	.	5.02	.....	3.42	.....	1.87	.....	1.01	.....	.99	.....	35.53	.....
Omaha, Neb	.07	- .63	1.12	† .33	.58	- .92	2.01	- 1 12	8.32	†3.95	1.31	- 4.36	2.67	- 2 08	12.50	† 9 16	2.50	- .41	1 19	- 1.28	1.01	- .05	0.15	- .86	33.43	† 1.74
Onawa	.06	.....	1.62	....	1.08	....	2.56	.....	14.76	.....	3.85	.....	7.21	.....	11 62	.....	4.30	....	1.71	.....	1.34	.	.42	....	50.53	.....
Osage	.31	- .60	1.05	- .15	2.02	† .42	3.93	†1.25	8.25	†4.38	2 10	- 2.20	6.39	†3.06	4.43	† 1.51	3.86	† .26	2.99	† .48	.06	- 1.36	.90	- .31	36.27	† 6.74
Osceola	.57	- .69	.90	- .18	1.41	- .47	2.12	- 1.72	7.16	†2.32	4.13	- .67	2.45	- 1.95	11.30	† 8.01	3.61	- .11	0.88	- 2.09	.56	- .59	.10	- .99	35.19	† 2.18
Oskaloosa	.22	- .69	.79	- .29	.90	- 1.04	1.67	- .66	9.68	†6.12	1 73	- 2.28	1.61	- 2.29	5 72	† 2.76	3.12	† .10	1.68	- .59	.57	- .97	.32	- .96	28.01	- 0.73
Ottumwa	.47	- 1.24	2.51	†1.43	.95	- 1.05	2.36	- .72	7.90	†2.37	2.37	- .84	1.78	- 2.13	7.53	† 4.20	..	.....	2.49	- .15	.65	- .96	....	.....	.....	.....
Pacific Junction	.05	....	1.04	...	.58	.....	2.11	.....	12.43	.....	1.70	.....	2.88	.....	6.28	.....	2.46	....	1.69	.....	.19	.....	.17	.....	31.61	.....
Pella	....	.....	...	....	...	.....	.....	.....	10.16	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Perry	.65	.....	1.10	.....	.80	....	2.34	.....	11.41	.....	3.09	... .	3.64	.....	8.31	.....	2.08	.....	2.35	.....	.36	.....	.30	.....	36.43	.....
Plover	.11	- .38	.57	- .09	.50	- 1.05	2.44	† .59	8.01	†5.03	3.50	‡ .00	5.30	† .98	4.25	† 1.16	5.65	†1.64	1.43	- 1.02	.04	- 1.41	.17	- .52	31.97	† 4.93
Primghar	...	....	....	.....	1.15	- 1.18	2.64	- .42	7.62	†4.43	3.22	- 1.41	4.52	- .57	5.35	† 3.13	3.79	.....	3.22	†1.34	.....	.....	.....	.....	.....	.....
Red Oak	.05	.....	1.70	.....	.88	.....	1.56	.....	11.74	.....	3.25	.....	2.34	.....	11.61	.....	2 44	.. .	1.21	.....	.36	... .	.18	... .	37.67	.....

MONTHLY AND ANNUAL PRECIPITATION FOR 1903, WITH DEPARTURES FROM NORMAL.—CONTINUED

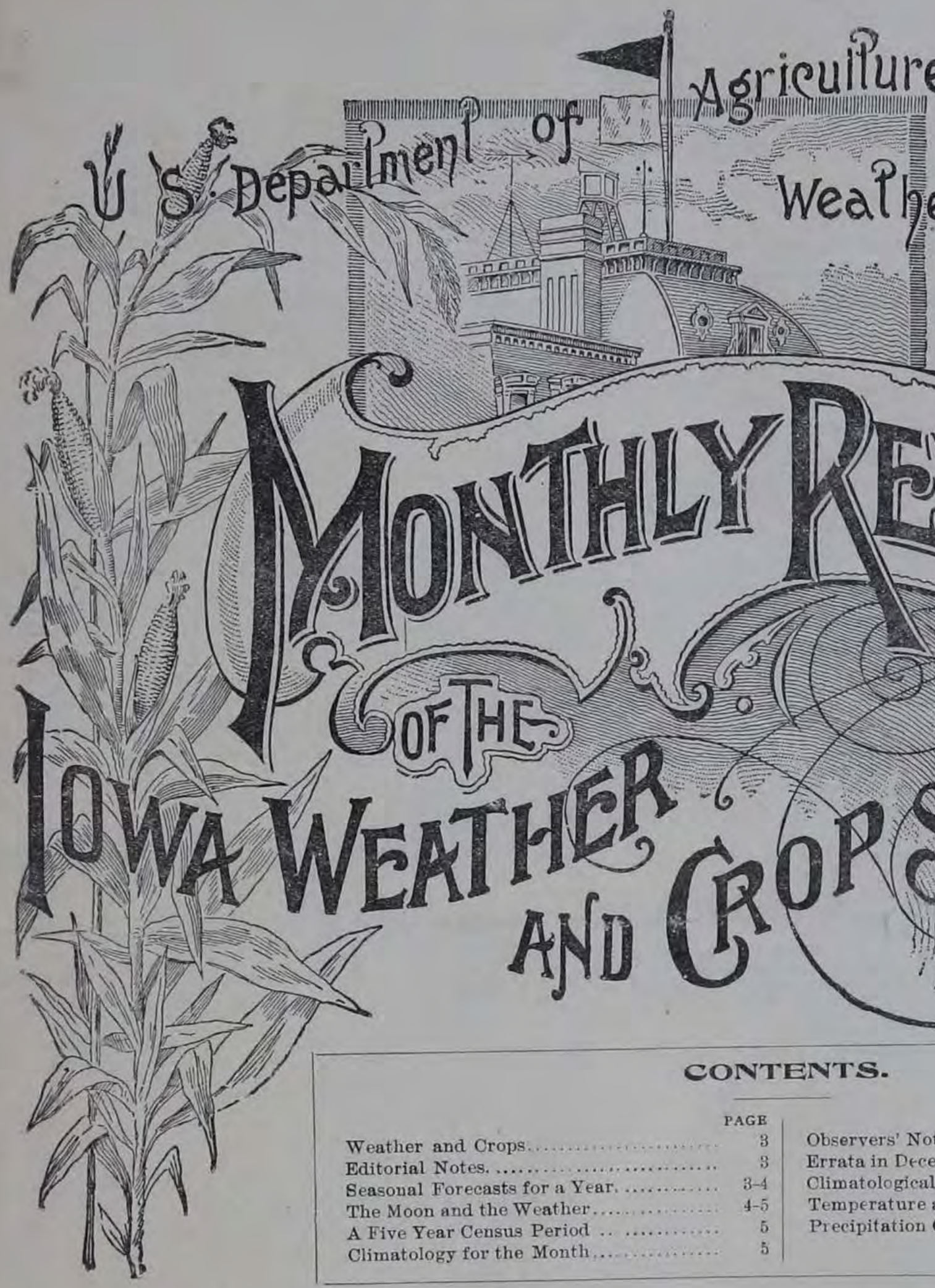
STATIONS.	Jan.		Feb.		r.		April.		May.		June.		July.		August.		Sept.		Oct.		Nov.		Dec.		Annual.	
	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.
Ridgeway	1.14		2.05		2.81		5.68		8.70		1.22		6.12		5.87		3.13		2.02		.11		1.96		40.81	
Rockwell City	.40	-.11	.60	+.04	.40	-2.05	3.44	+.90	11.09	†8.01	5.93	†1.70	6.64	†4.32	4.93	+ 2.10	5.26	†2.33	1.70	-1.07	.50	-.22	.10	-.93	40.99	†15.02
Ruthven					.15		3 25		5.78								4.91		3.80							
Sac City	.20	-.82	1.10	+.13	.57	-1.05	2.55	-.63	8.85	†4.86	4.20	-.85	7.26	†3.32	6.16	+ 2.66	4.22	+ .91	0.82	-1.57	.16	-.99	.15	-1.05	36.24	+ 4.92
St. Charles	.17		1.15		1.92		3.11		10.28		5.21		4.19		7.43		2.70		0.32		.63		.53		37.64	
Scranton	.12		1.37		.55		2.98		12 06		4.24		4.88		7.99											
Sheldon	.05		1.57		2.23				9.00		2.32		6 22		4 87		1.84		3.31							
Sibley	.27	-.30	.50	+.02	2.52	†1.26	2.28	- 55	9.00	†5.58	3.82	-.56	5.93	†2.20	3 91	+ 1.33	2 80	-.26	3.98	†2.18	.02	- 89	.35	-.40	35.38	+ 9.59
Sigourney	.56	-.82	1.40	-.03	1 35	-.68	2.26	-1.30	8.69	†4.75	1.72	-.99	2.71	- .69	6.37	+ 3.26	6.86	†4.02	1.13	-1.63						
Sioux Center	.05		.90		2.68		1.72		7.73		2.99		2 70		4.33		1.51		3.75		.10		.35		28.81	
Sioux City	.06	-.57	.66	+.11	1.85	+.61	2 39	-.63	11.78	†8.11	5.65	†1.85	5.57	†2.20	5.67	+ 2.48	3.06	+ .97	3.24	†1.54	.96	+ .14	0.21	- .67	41.10	†16.14
Spirit Lake	.40		1.00						13 03		3.27												.50			
Stockport	.39		1.56		1.91		3.66		5.31		1 42		2.53		5.91		7.34		3.47		.85		.46		34.81	
Storm Lake	.06	-.64	1.11	+ 46	.64	- 74	3.61	†1.31	4.72	†1 20	4 85	-.03	5.83	†1.55	7 65	+ 4.73	6 49	†3.47	1.32	- 36	.52	-.30	T	-.86	36.80	+ 9.79
Stuart							1.99	-1 22	10 54	†6 09	4 09	+.12	3.18	41 79	5.23	+ 2.67	3.54	†1.68	1.03	-1.95	.84	-.04	.20	-.53		
Thurman	T		2.45		1.23		3.49		15 45		1.62		3.06		6.37		2.87		2 78		1.05		.52		40.89	
Tipton	.35		1.17		1.57		2.76		6.20		.98		6 36		2.57		5 36		1.67		1.53		.95		31.47	
Toledo	.46	-.35	97	+.28	1.07	-.68	2.73	-.44	8.78	†5 07	2 07	-1.53	4.43	†1.20	2.55	- 60	2.64	-.30	1.37	-.59	.27	-1.14	.15	-.94	27.49	-.02
Villisca	.05	-.57	1.62	+.57	1.05	- 65	2.75	- 84	13.66	†9 63	3.82	-.88			12.02	+ 8.20			1 27		.99	+ 06	.23	- 96		
Vinton	.12	-.95	.78	-.22	1.27	- 53			5 30	†1.89	1 91	-1.71	4.71	†6.76	3.94	+ 1.38	4.42	†1.67	1.17	-.80	.20	-.90	.40	- 79		
Wapello	.65		1.56		1.38		3.93		5 59		2.99		2.59		5 60		5.47		2.05		.79		.70		33 30	
Washington	38	-1.22	1.43	+.34	2.25	+.14	3.79	†1.17	5.12	†1.56	1 70	-1.28	1.52	-1.71	4.76	+ 2.40	4.76	†2.38	2.98	†1.46	1.46	+ .13	60	-.75	30.75	+ 4.62
Washta	.05		1.20		.90		1.95		10.80		4.72		7.14		5.08		5.19		1.93		.70		20		39.86	
Waterloo	.17	-.93	1 37	+.23	1.60	-.03	2.67	+.29	7.85	†4.11	1.93	-2.03	9.08	†4 80	5.17	+ 1.50	2 75	-1.39	2.05	-.28	.19	-1.19	.37	-.90	35 20	+ 4.18
Waukee	.35		1.38		.84		2.04		10 78		3.11		4.32		9.33		1.42		1.22		98		32		36 09	
Waverly	.19	-.75	1.49	+.41	1.59	-.35	3 29	-.10	6 66	†2 85	1 86	-2.40	7.50	†4 20	3.06	+ 70	1.76	-1 26	1.87	- 97	.08	-1.26	.55	-.37	29.90	+ .70
West Bend	.38	-.23			.92	-.90	3.47	+ 66	8.69	†5.87	3.03	-.70	4 55	†1 21	3.61	+ .42	5 47	†2.26	1.05	-.79	.03	-1.30	.34	-.49		
Whitten	.15		1.25		1.77		1.18		10.44		3.45		4.63		3.42		2.82		1.24		T		25		30 90	
Wilton Junction	1.02	-.4.	1.90	+ 44	2.91	+.19	4.78	†1.80	5 89	†1.64	2.04	-.53	6.35	†1.53	3.52	-.22	4.93	†1 86	2.85	†1.06	1.67	+ .65	.43	-.95	38 29	+ 6.43
Winterset	T	-.94	95	+.02	.66	-1.48			9.20	†4.68	4.23	-1 52	4.34	-1.13	8.41	+ 5.33										
Woodburn	.05	1	1 72		1.19		2 10		7 23		3 77		3.41		17.74		5.02		1.53		1.04		.15		44 95	

†Signifies plus. All over 10.00 inches above normal. -Minus.

Annual Precipitation Chart 1903.



JANUARY, 1904. No. 1.



MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

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CENTRAL STATION, DES MOINES, IOWA.

J. R. SAGE,
DIRECTOF.

GEO. M. CHAPPEL,
LOCAL FORECASTER,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

THE IOWA WEATHER AND CROP SERVICE

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Inwood	Geo. M. Larsen
Iowa City	Prof. A. A. Veblen
Iowa Falls	J. B. Parmelee
Jefferson	Isaac Young
Keokuk	*Fred Z. Gosewisch
Keosauqua	Prof. J. A. Landes
Knoxville	Casey & Bellville
Lacona	Agent C., B. & Q. R'y
Lansing	J. Ackerman
Larrabee	H B. Strever
Lenox	J. L. Hurley
Le Mars	Dr. T. E Cole
Leon	Millard F. Stookey
Logan	Mrs. M. B. Stern
Maquoketa	Frank W. Keeney
Marshalltown	Branch S. Jones
Mason City	J. S. Mills
Monticello	C. E. Heisey
Mount Vernon	Rev. J. W. Hubbard
Mt. Ayr	A. F. Beard
Mt. Pleasant	Prof. J. W. Edwards
New Hampton	R. H. Gurley
Newton	Hon. J. P. Beatty
Northwood	Dr. J. H. Darey
Odebolt	E. Starner
Ogden	E. Sayre
Olin	Hon. Nathan Potter
Omaha, Neb	*L. A. Welsh
Onawa	C G. Perkins
Osage	G. D. Pattingill
Osceola	Mrs. S. Lewis
Oskaloosa	Jos. Boyd
Ottumwa	Dr W. B. La Force
Pacific Junction	Agent C., B & Q. R'y
Pella	L. L. Davenport
Perry	J. A. Harvey
Plover	J. S Smith
Primghar	Jasper N. Marsh
Red Oak	J. S. Cole
Ridgeway	Arthur Betts
Rockford	J. R. Waller
Rock Rapids	W. C. Wyckoff
Rockwell City	C. M. Randall
Ruthven	F. M. Fitzgerald
Sac City	J. A. Sodestrom
St. Charles	C. W. Minard
Sheldon	J. B. Frisbee
Sibley	H. G. Doolittle
Sigourney	Mrs. R. F. Ashbaugh
Sioux Center	Jacob de Ruyter
Sioux City	*U. G. Purssell
Spencer	S. Gillespie
Spirit Lake	W. C. Drummond
Stockport	C. L. Beswick
Storm Lake	L. E. Burdick
Stuart	Hon John Herriott
Thurman	C. R. Paul
Tipton	F. K. Gregg
Toledo	Herbert Giger
Vinton	T. F. McCune
Villisca	C. E. Matteson
Wapello	Geo. W. Schofield
Washington	Wm. A. Cook
Washta	H L. Felter
Waterloo	M. L. Newton
Waukee	E. J. Leonard
Waverly	H. S Hoover
Whitten	Dr. Frank P. Butler
Wilton Junction	J. M. Rider
Winterset	B. L. Sprinkle
West Bend	Phil Dorweiler
West Union	J M. Lisher
Woodburn	C. B. McDonough

*U. S. Weather Bureau.

WEATHER-CROP OBSERVERS.

Reporting for the Weekly Bulletin.

Agency	J. H. Van Zandt
Albia	Wm. Mercer
Allerton	James Piper
Alta	Jonas Cushman
Blairstown	T. H. Weil
Burt	R. Jain
Cedar Rapids	Hon. A. J. Fuhrmeister
harles City	W. B. Towner
Chariton	C C. Burr
Clarksville	F. M. Russell
Correctionville	Hon. W. B. Chapman
Corwith	Wm. Oxley
Council Bluffs	L. Prouty
Creston	M. V. Ashby
Danville	Sherman Matthews
Dunlap	Hon. B. F. Roberts
Emerson	D. B. Nims
Fort Dodge	R. W. Blaine
Fruitland	R. T. Hummel
Goldfield	D. M. Stephens
Geneva	Wm. H. Thompson
Hartwick	Fred McCulloch
Harlan	H. B. Kees
Hesper	G. E. Dillingham
Humeston	Hon. S. H. Moore
Independence	Geo. H. Wilson
Indianola	H. D. Guthrie
Ireton	J. M. Sherman
Lake City	C. B. Hamilton
Le Mars	Hon. Henry Schrooten
Manson	J. D. Skinner
Marshalltown	Hon. S. B. Packard
Mapleton	A. Lamb
Mt. Pleasant	W S. Wright
Milton	Hon. E. C. Holland
Monroe	J. A. Dibel
Nevada	Geo. C. White
Northwood	T. L. Bolton
Orange City	H. J. Vande Waa
Pella	J. H. Ver Steeg
Pittsburg	G. C. Duffield
Portland (Nora Springs, P. O.)	Arthur Pickford
Red Oak	Hon. C. L. Stratton
Rock Rapids	D. E. F. Merrill
Rossville	T. B. Wiley
Seymour	L. B. Sager
Shenandoah	Reuben Mullison
State Center	E. P. Thompson
Stuart	W. W. Bailey
Toledo	W. G. Malin
Van Horne	Spencer Smith
Weldon	Ed Worden
Winterset	H A. Kinsman
West Branch	Wrigley Smith
West Union	A. B. Blackman
Wilton	Thos. Boot
Wiota	I. S. Coomes
Woodward	Geo. Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

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WEATHER AND CROPS—JANUARY, 1904.

The month was colder than usual, with some excess of precipitation. The mean temperature for the State, 14 degrees, was 4.2 degrees below normal, and the average precipitation, 1.18 inches, was 0.21 of an inch above normal. During the first and second decades the temperature was seasonable, and the general weather conditions were very favorable for feeding stock and the usual farm operations of the winter season. The last decade brought wide-spread storms of snow, rain, sleet and ice, followed by extremely low temperature which continued through the balance of the month. The heavy coating of ice damaged fruit trees, vines, timber, telegraph and telephone wires and poles; also caused much suffering to farm animals, and great inconvenience to stock feeders. It was one of the worst storms of sleet and ice ever experienced in this State. The extent of damage to fruit cannot as yet be determined. Fall grain and the grasses were undoubtedly somewhat damaged by ice and extreme cold, but the covering of snow beneath the ice afforded some measure of protection.

EDITORIAL NOTES.

Farmers are being warned to test their seed oats very carefully before seeding this season. The average oats crop in this State last season was much below the standard in weight, and reports of numerous experiments indicate that the grain is generally very deficient in germinating power. Careful tests should be made at once; and no seed should be sown that is below the standard in weight and fertility.

The Cincinnati *Price Current* recently compiled from reports of the U. S. Department of Agriculture a table showing the production of corn in the United States, by states, for the past seven years. This table shows Iowa in the lead in corn production, with a margin of about 2,000,000 bushels better than the next best corn state, which is Illinois. Returns for the past ten years show a larger excess credited to Iowa.

In Great Britain, 1902 was the wettest twelve months for more than half a century. In London rain fell on 205 days, against an average of 166 days for previous years.

The United States now stands at the head of the list of exporting nations. For the calendar year 1903 the exports of domestic products from this country amounted to $1,457,565,783, exceeding the output from the United Kingdom by about $32,000,000. This foremost rank as an exporting nation has been attained within the last six years, and the products of agriculture have been the means whereby it has been achieved.

Efforts are being made to develop sugar beet production in Woodbury county the coming season. A local company will pay $4.50 per ton for the beets at the factory. The soil and climate of that section are well adapted to the industry.

The palace of agriculture at the St. Louis world's fair is double the size of the agricultural building at the Chicago exposition in 1893 It covers an area of eighteen acres, and it will be none too large for the display of farm products of this country.

A Maine paper mill is making from Illinois cornstalks a quality of paper that sells as high as eight cents a pound. That s heme seems likely to conserve the timber that is being consumed so rapidly in the pulp mills.

SEASONAL FORECASTS FOR A YEAR.

In his annual report for 1903, the Chief of the Weather Bureau, Prof. Willis L. Moore, briefly discusses the difficulties involved in the problem of seasonal forecasts for a year. We copy the following extract from this excellent report: It is a very difficult piece of science that is involved in the attempt to place the forecasts of the seasons for a year in advance upon a reliable basis, because it will be necessary to take account of several interrelated processes in nature, which depend upon the circulation of the atmosphere of the sun and of the earth. The science of meteorology is not to be confined to the atmosphere of the earth; because the changes in the action of the atmosphere of the sun precede the variations in the earth's air, which finally culminate in a certain type of season. Thus, wet and dry seasons, warm and cold summers and winters, and all the other climatic differences first depend upon the persistence of special high and low areas of pressure in one locality or another; these go back to the circulation of the great currents in the atmosphere, which seem to surge back and forth from one side of the earth to the other, or from the oceans to the continents; finally, these currents are probably due to the solar radiation, which itself changes with the output of energy from the interior of the sun. Thus, meteorology is really a very closely allied but difficult branch of solar physics, and it ought to be studied with the aid of a fully equipped observatory devoted especially to such researches. On the sun we count up the number of hydrogen flames or prominences seen on the edge of the disc from day to day, and, from a discussion of the thirty years' record in hand, they are known to vary strongly from year to year. Similarly, the faculæ and spots have their fluctuations in synchronous cycles, and these have been studied for

many years. Furthermore, the sun emits energy in the form of radiant light and invisible heat, and by means of suitable spectrum observations the variable amount of this light, and especially the invisible heat, can be registered from day to day and from year to year. The result of these records is to indicate that the sun is in fact a great, variable star, and that terrestrial weather changes in close synchronism with it. There is yet another register of the energy emitted by the sun to be found in the variations of the earth's electrical and magnetic fields, which is perhaps the most sensitive of all, and certainly the most accessible to our measures. The newly discovered action of ions in the atmospheres of the sun and the earth, respectively, which are now believed to be the basis of the electrical and magnetic manifestations, is affording much information upon this obscure subject, and it is full of promise in practical investigations. Langley has announced that the invisible radiant heat energy, as measured in his bolographs, varies from season to season and from year to year. The passage of an eclipse shadow through the atmosphere changes the atmospheric magnetism and electricity in the same way that day and night modify them—by cutting out the sun's rays. In short, the entire field of cosmical processes forms a complex problem which especially concerns the meteorologist, and by him should be studied out for the benefit of mankind, whose life and happiness depend so largely upon the weather. The Weather Bureau is so far convinced of the importance of finding out the laws of this cosmical physics, by which alone the problem can be conclusively solved, that it has been thought proper to found a research observatory at Mount Weather, on the crest of the Blue Ridge Mountains, about six miles from Bluemont, Va., and equip it suitably for these investigations. Professor Bigelow has recently been placed in charge of supervising the plans for its construction and development upon the best modern principles. It is evident that such an institution, having its beginning in the early years of the twentieth century, will have an increased usefulness as the years go by, if it is organized according to the demands of the best science. It will require fine instruments and able students if it is to command the respect of the scientific world. * * * * *

Specifically, the plan in mind contemplates the development of an observatory as indicated in the following statement:

(1) An observatory building is in process of erection at Mount Weather, which is well adapted as a school of instruction and for making observations of the ordinary kind with the common meteorological instruments, barometers, thermometers, wind and rain gauges, nephoscopes, theodolites, and actinometers. The first floor is for administration, the second for living quarters, the third for laboratories, and the roof for observing.

(2) Plans are being prepared for a plant adapted to generate large quantities of hydrogen, for balloon ascensions, including a shop for the construction of balloons and kites. The ascensions will be limited to about four miles in height, our immediate purpose being to measure the temperatures and thermal gradients, which will e able us to construct daily isothermal charts on the two upper planes already described, so as to provide isotherms as well as isobars on the high levels. It is proposed to make a complete series of ascensions first at Mount Weather, and afterwards in different portions of the United States, in order to observe the temperature conditions in all classes of cyclones and anticyclones. We may attempt some high ascensions, up to ten or twelve miles from the ground, when our experience and other conditions warrant, but, since storm movements are practically limited to the strata within four miles of the ground, the first group of ascensions will be to moderate elevations.

(3) It seems important to install a high-grade bolometer for measuring the invisible solar radiation, which is thought by some students to be largely responsible for the actual temperature of the upper atmosphere. Also, a first-class spectro-heliograph is required for keeping a record of the solar prominences, faculæ, and spots prevailing at the time of making our weather forecasts. These two instruments are the essentials of an efficient solar physics observatory, and would require the services of an able student of physics to bring out the best results and discuss them efficiently in suitable reports.

THE MOON AND THE WEATHER.

Meteorologists in Russia have recently been annoyed by the systematic issue of long range weather forecasts by a civil engineer named Demtschinsky. The man has a periodical of his own for the promulgation of his theories, the most important of which is that the moon exercises a considerable influence upon temperature changes, air pressure and rainfall. His predictions appear in that publication and also in a number of newspapers. Though Demtschinsky may be honest in his beliefs, he does not appear to be averse to notoriety. He has allowed a rumor to go uncontradicted that there is a prospect of his being put in charge of the United States Weather Bureau at Washington! One effect of these predictions and stories is to puzzle volunteer observers for the established meteorological service and to paralyze their enthusiasm. In other ways, also, no doubt, the cause of science is hurt by Demtschinsky's utterances.

Professor Klossovsky, of the University of Odessa, has thus been impelled to undertake an elaborate review of the forecasts in question and the principles on which they are founded. He undermines the system itself at a number of points, and finally shows that only about 50 per cent of the predictions are verified. In other words, there is no more certainty of their fulfillment than about the result of tossing up a coin. Demtschinsky is virtually playing a game of "heads and tails." Of course, when the chances are even that he may be right or wrong, his assurances are valueless. Under the auspices of the American government the rate of verification is fully four out of five, or over 80 per cent. Professor Klossovsky has done valuable service in thus exposing the worthlessness of Demtschinsky's work. Not the least commendable feature of his review is a challenge with which it ends. The pseudo meteorologist is invited to consent to a plan whereby his system and his predictions shall be considered by a commission of experts. If he declines, his hesitation will be a significant confession of lack of confidence in his own divinations.

The truth is, Demtschinsky is far behind the times. In Europe and America the idea that the moon controls the weather has been suggested repeatedly during the last twenty or thirty years. The possibility has been investigated by numerous meteorologists of good reputation, and has been practically discarded. If the Russian engineer who has recently entertained the theory had read the books of Sprung, Van Bebber and Hann, he would have had his eyes open to his mistake. Several excuses for a short-lived faith in the hypothesis can be found, but it will not stand the test of application to all countries alike and for all periods of time. The matter has probably never been summed up more accurately than by Professor William C. Davis, of Harvard University. He says in his "Elementary Meteorology" that whatever slight excess of one weather element or another there may be at certain times of the lunation, it has no sufficient value for prediction. In his judgment, forecasts based upon the influence of the moon or planets "are no better than the forgotten predictions of astrology." Long range forecasts of practical value are likely to come before many years, but the moon does not promise any help in formulating them.

A discussion of this kind raises the question, What constitutes a trustworthy authority in science? Official position and university degrees count for something, but they are not vital. Neither does a fondness for studying natural phenomena—weather, disease, the movements of the stars or the habits of insects—make a man a true scientist. Education is important, careful and prolonged observation is needful, but the one great essential is the right method of testing theories which suggest themselves to fertile minds. The process calls for the exercise of a logical faculty possessed by comparatively few. No matter how distinguished the original discoverer of a new fact or the author of a new theory—be he Faraday, Pasteur, Schiaparelli or Ramsay—science demands independent corroboration before accepting the alleged revelation. It will approve no so-called law of nature that does not yield in the hands of others, properly trained, the same results as its earliest advocates announce. If the doctrine that the moon seriously influences the weather will not stand this test, it may be guesswork or superstition, but it is not science.—*New York Tribune*.

A FIVE-YEAR CENSUS PERIOD.

The decennial census, based as it is in the United States on constitutional requirement, is so firmly established that it will probably seem to many people at first glance like a great innovation to suggest that census statistics be collected, even in a limited way, every five years. Senator Hopkins' bill providing for an agricultural census every five years will therefore be apt to meet with much discussion. The proposal seems, nevertheless, an excellent one, and the work could probably be done under the newly created permanent census bureau with an expenditure small in comparison with that which such work has required in the past.

In some of the European countries, notably Germany and France, a complete enumeration of the population is had every five years. These countries feel, no doubt, greater need of accurate knowledge as to their growth, or possibly decline, in numbers, than we do in this country.

Though several of the European countries are much more accurate in their statistics of many social phenomena than we are, the United States holds a recognized position at the forefront for commercial and industrial statistics. An Englishman who recently published a book on American industry spoke, for example, of the great advantages Americans derive from their statistics "in competition with nations like our own (England), whose commercial statistics are half a century or more out of date." As our best farming lands fill up with settlers, and as closer figuring on our crops with reference to our position in the world's grain markets becomes necessary, the value of full agricultural statistics will increase.—*Chicago Record Herald*.

CLIMATOLOGY OF THE MONTH, JANUARY, 1904.

BAROMETER.—Mean temperature, 30.12 inches; highest observed, 30.66 inches, at Sioux City, on the 25th; lowest observed, 29.59 inches, at Davenport and Dubuque on the 7th and 22nd; range for state, 1.07 inches.

TEMPERATURE.—The monthly mean temperature for the State, as shown by records of 111 stations, was 14.0°, which is 4.2° below the normal. By sections the mean temperatures were as follows: Northern section, 10.1°; Central section, 14.1°; Southern section, 17.8°. The highest monthly mean was 21.6° at Red Oak; lowest monthly mean, 6.6° at Charles City. The highest temperature reported was 57°, at Red Oak, on the 19th; lowest temperature reported, 32° below, at Elkader and Fayette, on the 27th. The average monthly maximum was 45.4°; average monthly minimum, 23.2°. Greatest daily range, 49°, at Atlantic and Villisca; average of greatest daily ranges, 34.2°.

PRECIPITATION.—Average precipitation for the State, as shown by records of 122 stations, was 1.18 inches, which is 0.21 of an inch above the normal. The averages by sections were as follows: Northern section, 0.49 of an inch; Central section, 1.06 inches; Southern section, 2.00 inches. The largest amount reported was 3.68 inches, at Lacona; least amount reported, .02 of an inch, at Storm Lake. The greatest daily rainfall reported was 2.45 inches, at Belle Plaine, on the 20th. Average number of days on which .01 of an inch or more was reported, 6.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 50 miles per hour, from the southeast, at Sioux City, on the 18th. Average number of clear days, 12; partly cloudy, 8; cloudy, 11.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	30.11	30.55	25	29.59	22
Des Moines	30.15	30.62	25	29.73	9
Dubuque	30.14	30.62	25	29.59	7
Omaha, Neb	30.12	30.66	25	29.58	9
Keokuk	30.10	30.49	4	29.65	22
Sioux City	.....	30.66	25	29.69	9
Means	30.12	30.66	25	29.59	7, 22

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	5,979	26	E	20
Des Moines	6,291	28	SE	18
Dubuque	5,239	34	SE	19
Keokuk	5,673	24	N	2
La Crosse, Wis	5,340	25	NW	7
Omaha, Neb	7,618	34	N	1
Sioux City	9,396	50	SE	18

OBSERVERS' NOTES.

AFTON.—*N. W. Rowell*. The 25th and 29th, 18° below zero the coldest in ten years by one degree. Sleet that fell on 20th remained till after Feb. 1. Effect on fruit will be seen later.

ALLERTON.—*Rex Shriver*. Sleet on 20th damaged fruit and shade trees; remained over two weeks.

ALTA.—*David E. Hadden*. Intensely cold last decade of the month. Fine solar halo with brilliant parhelia and upper contact arch all forenoon of the 23rd.

AUDUBON.—*Geo. E. Kellogg*. Coldest day of the season was the 24th; temperature did not rise above 14° during the day.

BEDFORD.—*E. E. Healy*. Heavy sleet on the night of 20th did much damage to trees.

BELKNAP.—*A. W. Rankin*. Sleet storm on 20th caused much damage to trees and shrubbery.

BONAPARTE.—*B. R. Vale*. Cold at each extreme, but mostly a pleasant month. The rain on 20th did not freeze much.

BRITT.—*Geo. P. Hardwick*. Coldest January in eight years; about average snowfall.

CHARITON.—*C. C. Burr*. Sleet did great damage to trees and telegraph lines; some telephone plants destroyed.

CLARINDA.—*A. Van Sandt.* Sleet on 19th and 20th did some damage to trees.

CLINTON.—*Luke Roberts.* Mean temperature 3.8° below normal. Snowfall 7 inches, with 4 inches to commence on: Sleigh could be used every day in the month. There have been nine colder Januaries in the last 26 years. Nine days with temperature below zero.

CORYDON.—*Mrs. Clara Miller.* Ice formed on trees half to three-fourths inch thick, causing damage to fruit and shade trees.

GRAND MEADOW.—*F. L. Williams.* Last nine days of the month were bitter cold; roads good and stock doing well.

HOPEVILLE —*M. L. Ashley.* The sleet storm of the 20th was very bad, and difficult to estimate as to amount of precipitation.

HUMBOLDT.—*H. S. Wells.* Coldest January in ten years.

INDIANOLA.—*John L Silton.* Storm on 20th left a sheet of ice 1.3 inches, coating trees and vines with heavy layer, remaining firmly till end of month.

JEFFERSON.—*Isaac Young.* Grey circle tinged with crimson around the moon on night of 27th.

LEON.—*Millard F. Stookey.* Thunder and lightning on 20th; fruit and shade trees much damaged by sleet.

MT. AYR.—*A. F Beard.* Sleet on 20th caused much injury to trees, telephone wires and poles.

MT. VERNON —*Jos. W. Hubbard.* The ice on 20th caused much damage to trees and great peril to pedestrians.

RIDGWAY.—*Arthur Betts.* Coldest January on record here, but a pleasant month; 61 per cent of sunshine.

VILLISCA.—*C. E. Matteson.* A fair and pleasant month up to 23rd; hail, snow and sleet the last week injured the peach crop.

WAUKEE.—*E. J. Leonard.* Month favorable till 20th; sleet and ice with zero weather balance of month.

WILTON.—*J. M. Rider.* Very heavy sleet on 20th, covering trees and wires with ice and icicles, making a beautiful scene; sleet remained until end of month.

ERRATA IN DECEMBER REVIEW.

ATLANTIC.—Mean temperature recorded 11.2° on page 8, should have been 11.3°.

BELKNAP.—Maximum temperature recorded 50° on the 31st, page 7, should have been 55° on the 2nd.

BELLE PLAINE.—Mean maximum temperature recorded 25.4° on page 8, should have been 25.5°. Mean temperature recorded 16.4° on page 6, should have been 16.5°.

CHARITON.—Mean temperature recorded 22.4° on page 7, should have been 22.3°.

CHARLES CITY.—Maximum temperature reported on the 7th, page 6, should have been the 6th.

COLLEGE SPRINGS.—Mean temperature recorded 25.0° on page 7, should have been 25.6°. Mean maximum temperature recorded 35.2° on page 8, should have been 36.5°.

COLUMBUS JUNCTION.—Mean temperature recorded 21.5° on page 7, should have been 21.6°.

CORNING.—Mean temperature recorded 23.2° on page 7, should have been 23 4°. Mean minimum temperature recorded 11.7° on page 8, should have been 12.1°.

EARLHAM.—Mean temperature recorded 21.5° on page 7, should have been 21.2°.

FOREST CITY.—Mean temperature recorded 13.8° on page 6, should have been 13.9°. Mean maximum temperature recorded 24.2° on page 8, should have been 24 3°. Maximum temperature recorded on the 7th, page 6, should have been the 6th.

GALVA.—Mean temperature recorded 19.0° on page 6, should have been 19.1°. Mean minimum temperature recorded 7.9° on page 8, should have been 8.2°.

GRINNELL [Near].—Mean temperature recorded 19.6° on page 6, should have been 19.1°.

HANLONTOWN.—Total snowfall recorded 3.2 inches on page 6, should have been 3.5 inches.

IOWA CITY.—Maximum temperature recorded on the 7th, page 6, should have been the 6th. Maximum temperature recorded 30° on page 8, on the 29th, should be 20°.

IOWA FALLS.—Maximum temperature recorded on the 7th, page 6, should have been the 6th.

MONTICELLO.—Total snowfall recorded 8 5 inches on page 6, should have been 9.5 inches.

OLIN.—Total precipitation recorded .99 inch on pages 6 and 10, should have been 1 09 inches. Total snowfall recorded 4.5 inches on page 6, should have been 8 0 inches.

ONAWA.—Mean temperature recorded 26.4° on page 6, should have been 24.0°. Mean minimum temperature recorded 18 2° on page 9, should have been 13.3°.

OSKALOOSA.—Mean temperature recorded 20 2° on page 7, should have been 19.0°. Mean minimum temperature recorded 10.0° on page 9, should have been 9 5°. Daily precipitation recorded .18 inch on the 11th, page 10, should have been .20 inch. Total precipitation recorded .32 inch on pages 7 and 10, should have been .34 inch.

PRIMGHAR.—Mean temperature recorded 16.7° on page 6, should have been 17.0°. Mean maximum temperature recorded 29.1° on page 9, should have been 29.8°.

RIDGEWAY.—Mean temperature recorded 16.3° on page 6, should have been 16.2°.

WATERLOO.—Maximum temperature recerded on the 7th and 24th, page 6, should have been 6th and 23d.

WHITTEN.—Mean temperature recorded 17.4° on page 6, should have been 17.8°. Mean minimum temperature recorded 6.8° on page 9, should have been 5.7°. Minimum temperature recorded 19° on the 25th, page 9, should have been 19°.

CLIMATOLOGICAL DATA FOR JANUARY, 1904.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	10.6	- 5 9	41	7	-28	24,25	48	.40	† .10	.20	4.0	4	15	3	13	NE, NW	
Alta	Buena Vista	1,513	11	11.1	- 5.7	41	7	-26	25	26	.37	- .28	.17	4.0	10	8	16	7	NW	
Alta (near)	Buena Vista										.50		.20	5 0	5					
Britt	Hancock	1,236	5	8.9	- 8.8	40	7	-28	24,25	33	.46	- .13	.12	3.6	10	9	15	7	NW	
Charles City	Floyd	1,012	11	6.6	- 9.7	34	15	-31	27	33	.44	- .67	.14	7.2	5	12	4	15	W	
Clear Lake	Cerro Gordo	1,241		9.8	- 5.4	49	1	-30	24,25	45	.62		.20	6.2	6	14	10	7	NW	
Decorah	Winneshiek	857	8	8.4	- 8 1	38	7	-31	27	37	.64	- .45	.41	12.0	5					
Dows	Wright	1,142		10.3	- 9.0	42	7	-27	24,26	31	.70	† .18	.20	7.0	5	15	1	15	NW	
Elkader	Clayton	727	21	10.4	- 4 2	42	19	-32	27	35	.51	- .84	.33	5.8	6	17	8	6	NW	
Estherville	Emmet	1,298	7	7 5	- 8.8	40	7	-31	27	39	.43	† .08	.12		7	13	1	17	NW	
Fayette	Fayette		13	8.4	- 8.5	40	7	-32	27	42	.08	-1.15	.05		3					
Forest City	Winnebago	1,226	8	8.7	- 9.5	40	7	-29	24	37	.40	- .24	.20	4.0	3	13	3	15	W	
Grand Meadow	Clayton	1,180	11	10.0	- 5.9	40	7	-29	25	26	.60	- .58	.25	6.2	5	12	9	10	NW	
Hampton	Franklin	1,155	12	10.5	- 5.0	41	7	-27	24	31	.80	- .30	.48	7.5	5	6	21	4	NW	
Hanlontown	Worth			8.7		41	7	-31	27	43						15	6	10	NW	
Humboldt	Humboldt	1,095	10	11.5	- 6.0	46	7	-28	24	30	.29	- .36	.10	2.9	4	19	4	8	NW	
Inwood	Lyon			11 2		38	7	-26	24	27	.40		.20	4.0	3	7	2	22	NW	
Larrabee	Cherokee	1,366	11	12.2	- 5.7	41	7,8	-27	24	33	.16	- 41	.08	1.8	5	8	14	6	NW	
LeMars	Plymouth	1,242	6	14 3	- 6.7	43	7,8	-23	24,25	31	.35	- .34	.20	3.5	3	10	13	8	NW	
Mason City	Cerro Gordo	1,132	6	11.2	- 4.2	38	7	-26	24	24	.62	- .57	.32	6.2	2	6	12	13	NW	
New Hampton(*d*)	Chickasaw	1,169	6	7.8	-12 5	39	7	-29	24	27	.50	- .33	.20	5.0	5	13	11	7	NW	
Northwood	Worth	1,222	6					-28	27		.80	† .15	.40	8.0	4	15	5	11	NW	
Osage	Mitchell	1,184	11	9.6	- 4.4	39	7	-28	24	27	.53	- .35	.25	5.3	8	9	10	12	NW	
Plover	Pocahontas	1,190	5	9.9	-11.1	42	9	-30	25	36	.60	† .09	.20	6.0	4	15	3	13	NW	
Primghar	O'Brien			10.3	- 9.9	38	7	-25	24	29						15	0	16	NW	
Ridgeway	Winneshiek	1,215		11 3	-11 0	41	7	-28	24,25	32	1.29	- .41	.95	8.1	11	13	12	6	NW	
Rock Rapids	Lyon		6	11.0	- 3.8	40	7,8	-24	24	37	.30	- .33	.20	3.0	2				S	
Rockford	Floyd	1,021																		
Sheldon	O'Brien	1,422	4	10.5	-11.3	39	7	-27	24	41	.21	- .18	.10	2.1	7	10	7	14	NW	
Sibley (*a*)	Osceola	1,512	8	7 5	- 9.1	35	8,9,14	-28	24	38	.37	- .17	.25	2.2	6				NW	
Sioux Center	Sioux		4	12.2	- 9.4	40	7,8	-25	24	29	.50	† .23	.10	5 0	7	11	7	13	NW	
Spirit Lake	Dickinson	1,458	8	10.8	- 5.3	40	9	-28	24,25	37	.55	† .04	.25	5.5	4	18	2	11	NW	
Storm Lake	Buena Vista	1,440	7	11.3	- 7.9	41	7	-30	24,25	38	.02	- .68	.01	.4	2	14	1	16	NW	
Washta	Cherokee	1,157									.35	- 06	.15	3.5	3	15	13	3	N	
Waverly	Bremer	942	6	9.8	- 9.9	39	7	-27	27	34	.78	- .15	.25	7.8	12	9	14	8	SE	
West Bend	Palo Alto	1,197	8	11.0	- 6.6	42	7	-29	24	27	.59	- .03	.20	5.9	8	8	12	11	NW	
West Union	Fayette										.34		.25	3.4	2	18	0	13	NW	
Average				10.1	- 7.3	40.3		-28 1		33.8	0.49	- .32		5.1	5	12	8	11	NW	

CENTRAL SECTION.

Amana	Iowa	721	25	15.4	-0.4	45	7	-18	25,23,29	28	1.73	† .29	1.21	7 4	7	9	15	7	NW	
Ames	Story	926	20	14.0	-3 1	46	7	-24	26	34	.50	- .47	.26	7.0	6	17	10	4	N W	
Audubon	Audubon	1,30	8	14.0	-5.4	48	7	-23	29	38	.33	- .33	.20	3.6	3	10	6	15	NE	
Baxter	Jasper	998		14.7		49	7	-21	24,25	32	1.35		.80	3.5	5	14	8	9	NW	
Bell Plaine	Benton	828	12	14.1	-4.3	44	7	-22	26	30	3.42	†1.90	2 45	11.2	8	7	18	6	NW	
Buckingham	Iowa										.75		.52	7.6	4	7	20	4		
Carroll	Carroll	1,265	12	13 0	-6.6	49	8	-25	25	36	.50	- .36	.30	5.0	3	16	7	8		
Cedar Rapids	Linn	733	19	12 8	-5.5	45	7	-19	25	39	1 01	- .43	.52		5	13	11	7		
Clinton	Clinton	609	34	15.0	-4.2	44	19	-17	3	32	2.25	† .40	1.53	6.8	9	6	9	16	NW	
Davenport	Scott	606	31	16.4	-3.6	46	19	-13	25	24	2.20	† .53	1 83	3.6	7	10	12	9	NW	
Delaware	Delaware	1,083	11	11.2	-4.6	41	19	-25	25	29	.57	- .44	.47	5.0	5	15	9	7	NW	
Denison	Crawford	1,180	8	14.6	-6.5	47	7	-23	26	32	.53	- .03	.22	5.3	7	26	3	2	N	
Des Moines	Polk	861	24	15.6	-1.9	50	7	-18	25	31	1.22	- .12	.97	5.0	8	7	6	18	NW	
Dubuque	Dubuque	655	29	13.4	-3.9	45	19	-23	25	29	.51	-1.17	.30	4.8	8	14	8	9	NW	
Fort Dodge	Webster	1,126		12.4		43	7	-25	24,26	31	.30		.15	3.0	3	16	8	7	S	
Galva (*b*)	Ida	1,290	8	11.8	-6.7	42	8	-27	24	36	.55	† .20	.25	3.2	3				NW	
Gilman	Marshall	1,052									.85		.83		3	14	8	9	N	
Grinnell	Poweshiek	1,023	9	14.9	-2.6	46	7	-20	24	28	1 52	† .36	1.00	5.2	10	9	10	12	N	
Grundy Center	Grundy	976	11	12.6	-4.3	43	7	-26	24,26	31	.78	† .07	.43	5.5	5	12	9	10	NW	
Guthrie Center	Guthrie	1,077	6	18 5	-3.5	59	7	-23	29	42	.91	† .38	.48		10	18	2	11	NW	
Harlan	Ida	1,192		16.5		49	7	-20	25	40	.93		.30	5.8	9	6	14	11	NW	
Ida Grove	Shelby	1,220		14.5		47	7	-26	24,25	36	.46		.26	4.6	2	14	15	2		
Independence	Buchanan	921	38	10 4	-4 8	40	7	-26	27	26	.63	- .74	.30	6.4	7	16	9	6	NW	
Iowa City	Johnson	685	43	13.7	-5.4	47	20	-21	29,30	35	1.74	† .00	.62		6	6	9	16	N	
Iowa Falls	Hardin	1,170	9	9 6	-5.8	38	8	-26	3,24,25	33	.67	- .17	.25	6.2	7	12	5	14	NW	
Jefferson	Greene	1,052									.91		.60	7.4	9	5	7	19	NW	
LeClaire	Scott	578									1.48		.72	3.2					NW	
Logan	Harrison	928	35	17.4	-1.8	50	7	-17	25	39	1.20	† .08	.30	12.0	8	12	5	14	NE	
Maquoketa	Jackson	688	9	11.8	-8.3	45	20	-22	3	40	1.31	- .01	.70	4 0	7	12	5	14	NE	
Marshalltown	Marshall	947	9	13 1	-7.0	45	7	-22	26,29	34	1.04	† .10	.65	5.1	9	7	9	15	NW	
Monticello	Jones	925	48	13.9	-2.1	45	13,19	-22	3,29	36						15	4	12	SW	
Mt. Vernon	Linn	847	35	14.0	-2.7	43	7	-19	25,26,27	29	1.20	- .11	.55	7.5	9	16	6	9	N, S	
Newton	Jasper	944	14	15 0	-2 7	47	7	-23	25	30	1.53	† .61	1.05	6.0	5	14	9	8	N	
Odebolt	Sac	1,356	5	14.8	-8.8	44	7	-25	24	32	.40	† .08	.32	3.2	3	17	4	10		
Ogden	Boone	1,088	8	11.8	-9.7	51	7	-30	26	38	.80	† .21	.30	8.0	7	15	0	16	NW	
Olin	Jones	760	5	13.0	-8.6	41	7	-23	29	32	1.57	† .49	1.00	7.2	11	9	14	8	NW	
Onawa	Monona	1,053		18.3		50	7	-16	25	27	.82	- .32	.25	8.0	10	20	5	6	NE	
Perry (*a*)	Dallas	975		14.4		48	7	-23	24	36	.66		.25	6.6	6					
Rockwell City	Calhoun		7	12 8	-8 4	43	7,8	-28	24	34	.80	† .17	.40	8.0		12	7	12		
Sac City	Sac	1,276	22	13.2	-3.3	43	7	-26	24	34	.67	- .28	.52	6.8	2	15	4	12	NW	
Sioux City	Woodbury	1,165	13	15 1	-1.2	46	7	-21	25	29	.09	- .54	.02		6	7	11	13	NW	
Stuart	Guthrie	1,216	5	16 9	-5.1	54	8	-19	25	31	1.17		.30	11.2	8				NW	
Tipton	Cedar	807		15.7		45	19	-18	3	28	1.89		.94	7.0	8	12	12	7	SW, NW	
Toledo	Tama	856	8	13.8	-5 9	46	7	-23	29	35	.97	† .16	.75	5.5	5	10	12	9	NW	
Vinton	Benton	810	12								1.04	- .11	.32	7.2	7	23	2	6	NW	
Waterloo	Black Hawk	862	15	12.6	-5.2	42	7	-25	29	35	.71	- .24	.41	6 0	7	11	14	6	NW	
Waukee	Dallas	1,039		17.6		49	7	-19	26	32	2.25		1.28	9.5	13	11	4	16	NW	
Wilton Junction	Muscatine	683	7	16.4	-6.4	47	18	-18	3,29	37				5.0		16	1	14	NW	
Whitten	Hardin	1,036		11.6	-8.7	43	7	-28	26	36	.75		.50	2 5	3	14	8	9	NW	
Average				14.1	-4.4	45.9		-22.2		34.0	1.06	† .03		6.1	6	13	8	10	NW	

CLIMATOLOGICAL DATA FOR JANUARY, 1904—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted)		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	7	18.4	-5.0	50	9	-18	25	29	2.02	†1.21	1.42	6.0	6	9	15	7	NW	
Albia	Monroe	957		15.8		50	7	-19	25,26	39	3.01		.42	8.5	8				NW	
Allerton	Wayne			18.8		51	19	-21	29	35	2 60		1.53	6.1	10	14	6	11	NW	
Atlantic	Cass	1,164	11	17.6	-2.6	52	7	-31	29	49	1.36	† .60	.71	3.5	4	6	9	16	N	
Bedford	Taylor			19.0		52	7	-23	29	42	2 87		1.54	6.1	9	10	9	12	SE	
Belknap	Davis	877	7								2 57	† .79	.60	19.0	5	6	8	17	N	
Bonaparte	Van Buren		10	16.6	-7.0	45	19	-21	3,29	38	2.61	†1.04	1.92	6 0	4					
Burlington	Des Moines	541		18.7		46	19	-15	26	28	3.10		2.05		9	13	6	12	NW	
Chariton	Lucas	1,042	7	17.4	-8.0	50	7	-20	26	33	2.15	†1.04	1.90		5	12	10	9	N	
Clarinda	Page	1,069	12	17.8	-4.9	54	7	-17	29	37	2 12	†1.15	1.18	8.0	12				NW	
Columbus Jct	Louisa	596		17.6		49	19	-14	3, 26, 29	29	1 95		1.50	5.2	6	12	12	7	NW	
Corning (*a*)	Adams	1,127	10	17 6	-4.7	52	7	-24	29	41	2.29	†1 54	1.03	9.8	8				NW	
Corydon	Wayne	992	9	17 2	-4.3	51	7	-23	29	40	2.33		1.30	8 2	7	14	4	13	NW	
Council Bluffs	Pottawattamie	910	5								.53	- .16	.25	.5	5	17	13	1	S	
Cumberland	Cass										2.10		1.40	9.0	6	15	2	14	N	
Earlham	Madison			14.0		49	7	-22	26	35	1.31		.89	8 7	5	20	2	9	NW	
Fort Madison	Lee	516	51								3 15	†1.26	2.25	9.0	6	8	8	15	SW	
Glenwood	Mills		15	20.7	-2.0	55	7	-18	25	36	.55	- .30	.20	4.0	5	7	18	6	NW	
Greenfield	Adair		11	16 8	-4.9	47	7	-20	25, 26	30	1 71	† .81	.91	9.8	12	17	4	10	NE, NW	
Hopeville	Clarke		11	18.0	-3.8	51	7	-20	29	35	2.43	†1.53	1.75		10	7	13	11	S	
Indianola	Warren	969	11	16.8	-2.2	51	7	-19	26, 29	34	2.69	†1 54	1.63	9.3	12	6	10	15	NW	
Keokuk	Lee	619	31	18.6	-4 6	47	19	-13	22	25	2.70	† .98	1.86	8.8	11	15	6	10	NW	
Keosauqua (*b*)	Van Buren	664	10	15.9	-8.8	47	9	-24	29, 30	32	2.64	†1.72	2.02	9.3	9	15	3	13		
Lacona	Warren										3.68		1.94	11.0	13	4	21	6		
Lenox	Taylor	1,250	7	17.6	-7.1	51	7	-21	25	37	1.82	†1.19	1.30	4.3	7	18	4	9	NW	
Leon	Decatur	1,120		19.2		50	7	-17	26	34	.72		.30	8.0	9	15	6	10	N	
Mt. Ayr	Ringgold	1,286	8	19.4	-4.5	53	7	-18	26	35	2.91	†1.88	1.80	14 0	8	9	10	12	NW	
Mt. Pleasant	Henry	729	20	17.4		47	19	-20	29	32	1.79	† .56	1.63		3	17	6	8	SE	
Omaha, Neb.	Douglass	1,113	32	19.8	†0.6	54	7	-17	25	26	.62	- .07	.14	4.9	13	6	12	13	N	
Osceola	Clarke	1,130	8	17.0	5.1	42	19	-19	26	39										
Oskaloosa	Mahaska	843	18	15.6	-3.4	49	7	-23	29	37	1.58	† .70	1.30	5 0	7	12	4	15	NW	
Ottumwa	Wapello	649	8								2.40	† .81	2.05	3.6	6	9	11	11		
Pacific Junction	Mills	960		18.7		52	7	-16	25	30	.59		.12	3.7	8	10	15	6	N	
Red Oak	Montgomery	1,033		21 6	-4 5	57	19	-14	25	33	.97	† .25	.56	11.0	8	5	18	8	N	
St. Charles	Madison	1,070		17.7		53	7	-18	25, 26	33	2.31		1.39	8.5	12	12	9	10	NW	
Sigourney	Keokuk	787		16.8	-7.3	48	7	-20	29	31	2.21	† 97	1.68		11					
Stockport	Van Buren										2.52		1.75	6 5	10	10	7	14	NE	
Thurman	Fremont			19.2	-7.0	53	7	-20	29	41	.42	- 29	.22	7.0	9	9	8	14	NW	
Villisca	Montgomery	1,058	8	18.6	-3.5	49	8	-21	29	49	1.75	1.13	1.20	.6	4	12	12	7	NW	
Wapello	Louisa	588		18.3	-8.7	41	7	-12	3, 29	27	1.71	†1.00	1.60		3	17	6	8	W	
Washington	Washington	769	20	14.7	-6.5	50	19	-20	29	35	2.28	† .83	1.98		5				NW	
Winterset	Madison	1,129	11	18.2	-3.3	52	8,9	-19	25	39	.12	- .82	.05	1.2	3	10	3	18	SE. NW	
Woodburn	Clarke	961									2.70		1 56	6.7	13	11	6	14	NW	
Average				17.8	-5.0	50.0		-19.3			34.9	2.00	† .94		7.2	8	11	9	11	NW
Average for state				14.0	-4.2	45.4		-23 2			34.2	1.18	† .21		6.1	6	12	8	11	NW

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Above normal. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. §Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JANUARY, 1904.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Afton.	Max	44	16	15	21	34	36	50	46	41	36	33	31	27	32	40	35	36	33	37	30	27	20	14	7	-8	10	14	10	17	28	23	27.4
	Min	14	-1	-10	-1	11	16	21	24	22	26	25	21	10	21	19	13	17	15	29	21	19	12	-1	-13	-18	-16	-4	-3	-18	8	8	9.3
Albia.	Max	26	5	12	24	35	38	50	46	36	27	31	16	13	19	37	38	28	32	45	32	33	20	9	-6	-8	...	2	..	17	25	23	24.3
	Min	14	-1	-16	-15	3	18	22	24	22	23	22	22	7	7	10	10	12	10	16	28	30	15	0	-8	-19	-19	5	-15	...	-13	7	7.4
Algona.	Max	21	-3	2	18	25	29	41	37	37	30	29	30	24	29	35	27	23	28	28	20	20	16	6	20	12	-4	2	1	11	16	20	19.8
	Min	4	-10	-18	5	5	4	20	17	15	23	21	16	4	17	18	4	11	8	17	9	11	5	-10	-28	-28	-24	-27	-17	-17	-2	-5	1 5
Allerton	Max	43	23	10	21	32	40	50	49	40	35	29	29	23	34	40	35	41	37	51	32	32	24	18	8	-6	7	18	10	14	27	24	28.2
	Min	15	-1	-17	0	9	13	18	23	24	25	24	23	10	19	20	13	18	15	31	27	22	14	0	-9	-15	-20	-3	-3	-21	12	7	9.5
Alta.	Max	18	3	8	19	27	28	41	40	37	30	33	28	28	24	36	23	28	32	27	15	14	13	0	-13	-3	-2	4	4	12	26	21	19.4
	Min	3	-12	-16	2	9	12	22	21	20	22	27	12	5	13	17	6	10	14	15	8	10	0	-15	-25	-26	-21	-17	-17	-14	5	-4	2.8
Amana	Max	30	16	9	17	33	35	45	40	35	30	31	32	25	29	35	32	25	29	42	33	32	23	16	-1	-5	-1	7	5	10	25	19	23.6
	Min	16	-3	-16	-6	8	13	19	25	17	25	21	25	4	11	14	10	14	11	25	27	22	15	-3	-17	-18	-18	-12	-7	-18	8	7	7.1
Ames	Max	31	14	10	21	31	37	46	42	41	34	29	29	24	25	35	26	29	30	30	27	27	20	12	-3	-11	-4	5	2	12	23	22	22.5
	Min	12	-2	-18	0	6	12	22	23	12	25	19	21	13	15	15	8	11	11	23	16	19	10	4	-22	-21	-24	-21	-7	-22	7	6	5.6
Atlantic	Max	30	14	15	23	34	38	52	48	42	34	32	33	30	36	40	35	39	38	39	26	21	19	11	5	-3	13	19	9	18	27	23	27.0
	Min	14	-3	-13	0	14	6	24	24	18	27	27	20	11	18	23	14	20	18	26	17	17	11	0	-12	-19	-14	-4	-8	-31	1	7	8.2
Audubon	Max	23	10	12	22	32	35	48	45	42	32	31	30	28	35	40	35	34	35	37	23	17	15	8	-3	-10	10	9	4	15	28	22	24.0
	Min	10	-8	-16	-8	11	3	22	21	14	24	25	17	7	17	12	9	13	14	22	13	13	7	-5	-19	-22	-19	-10	-18	-23	4	2	3.9
Baxter.	Max	30	13	12	20	33	38	49	43	40	32	27	30	23	24	35	33	27	30	38	32	35	23	14	2	8	0	7	7	10	27	21	24.6
	Min	10	-3	-20	0	8	11	20	20	15	25	18	20	5	9	15	7	10	9	25	18	19	12	-3	-21	-21	-20	-17	-7	-19	5	3	4.8
Bedford	Max	42	23	14	15	34	39	52	50	43	39	32	33	27	34	42	37	41	40	39	34	28	22	13	10	-5	13	20	8	19	34	25	28.9
	Min	15	-1	-13	0	7	10	19	19	22	28	26	23	10	23	21	14	21	20	32	24	19	13	0	-7	-15	-20	-3	-11	-23	6	3	9.0
Belle P.	Max	20	15	10	18	34	35	44	34	34	27	32	33	22	32	38	34	24	29	42	35	28	26	10	4	-15	1	9	7	12	28	15	23.1
	Min	14	-2	-17	-4	0	17	21	20	17	24	16	20	2	10	15	8	11	9	16	23	25	10	-5	-20	-21	-22	-17	-8	-18	8	5	5.1
Bonapar'e	Max	37	19	9	20	33	33	43	40	35	31	30	31	26	28	36	32	23	30	45	35	33	27	20	6	-5	6	11	8	12	28	22	25 5
	Min	16	-5	-21	-5	5	12	13	23	19	24	23	26	6	14	16	12	14	19	26	29	27	19	2	-9	-13	-17	-11	-7	-21	8	-1	7.8
Britt.	Max	15	3	6	17	27	29	40	33	36	33	32	28	21	33	35	22	26	30	28	17	20	13	2	-11	-14	-3	5	-2	12	28	18	18.7
	Min	3	-15	-25	-3	-1	0	14	15	12	22	17	15	2	5	16	4	12	9	13	10	12	0	-17	-23	-28	-27	-26	-19	-21	4	-2	-0 9
Burling'n	Max	42	21	13	21	32	35	43	40	39	33	31	32	28	32	38	33	29	30	46	40	35	29	21	6	1	6	15	8	14	31	26	27.4
	Min	18	0	-4	1	9	15	19	25	22	25	25	26	7	14	17	14	13	15	25	31	22	20	4	-6	-11	-15	-8	0	-14	9	8	10.0
Carroll	Max	20	5	14	23	32	39	47	49	47	34	32	24	33	35	42	30	31	35	31	18	17	16	5	-10	-2	1	5	6	20	30	20	22.8
	Min	12	-5	-20	-2	5	10	22	21	19	17	24	13	5	16	12	6	10	11	19	11	12	9	-6	-24	-25	-22	-20	-16	-16	5	0	3.3
Cedar R.	Max	21	7	7	16	31	34	45	38	35	28	26	30	20	29	34	22	22	28	43	32	28	24	2	-12	-4	-2	7	6	10	21	18	20 8
	Min	15	5	-15	-16	-2	13	20	26	17	28	20	20	6	5	10	13	12	13	15	26	26	19	-1	-16	-19	-18	-18	-14	-18	-18	5	4.8
Chariton	Max	44	14	11	20	34	38	50	48	40	39	29	29	26	30	38	35	34	30	45	32	32	22	17	-5	-6	-7	12	10	14	30	24	26.1
	Min	14	0	-16	0	10	13	20	23	22	25	23	24	8	12	11	10	13	13	28	26	22	15	0	-10	-16	-20	-5	-2	-19	10	14	8.6
Charles C.	Max	12	-3	4	14	26	29	40	32	33	29	26	26	17	26	34	16	19	19	32	25	22	19	3	-17	-10	-5	0	0	-7	23	16	16.1
	Min	8	-3	-25	-26	0	2	4	19	9	10	6	17	2	3	16	6	6	9	12	13	16	15	-10	-30	-30	-27	-31	-30	-27	-21	3	-2.9
Clarinda	Max	32	9	13	23	33	40	54	52	46	30	33	33	33	40	44	33	43	40	38	26	20	21	16	0	-3	20	17	5	20	31	26	27.8
	Min	16	3	-9	-6	0	13	13	22	22	28	27	21	11	11	26	14	13	21	22	25	16	13	0	-8	-16	-16	-16	-4	-17	-10	7	7.8
Clear L.	Max	49	10	5	16	24	30	38	35	33	30	27	28	18	29	34	29	24	30	28	19	26	15	4	-12	-12	0	8	-1	10	24	14	19.7
	Min	4	-11	-22	-7	5	4	20	12	12	19	9	15	0	14	16	4	9	15	15	9	12	1	-12	-30	-30	-26	-26	-17	-22	4	-2	-9.2
Clinton	Max	28	15	6	15	32	33	40	38	34	28	30	31	29	25	34	31	26	27	44	33	35	28	21	-3	-2	5	8	10	13	25	21	23.9
	Min	14	-4	-17	-10	0	13	10	22	13	24	22	24	3	3	7	13	13	13	19	31	27	20	-5	-12	-15	-11	-10	-5	-15	5	0	6.2
Colum. J.	Max	35	19	9	19	32	33	45	40	39	34	33	32	28	31	39	33	29	31	49	33	30	27	24	4	-2	3	12	9	15	27	22	26.5
	Min	15	-1	-14	-2	9	17	18	24	19	25	22	24	4	12	13	11	15	13	25	29	26	19	1	-11	-18	-14	-8	-3	-14	2	6	8.7
Corning	Max	39	17	14	20	34	37	52	44	42	38	32	33	29	34	40	...	38	39	33	53	23	18	12	9	-7	12	12	7	17	27	24	26.9
	Min	13	-1	-12	-2	10	10	23	22	22	26	26	21	10	21	23	...	20	19	23	19	17	10	-2	-2	-18	-15	-3	-15	-24	8	4	8.3
Corydon	Max	50	25	13	21	34	40	51	50	42	36	30	30	23	35	37	30	39	34	49	35	33	24	20	8	-3	8	22	15	13	27	26	29.0
	Min	10	-4	-19	-4	7	11	15	17	20	22	19	20	5	11	10	8	13	10	25	23	17	11	-4	-11	-19	-22	-3	-4	-23	8	2	5.3
Davenpo't	Max	27	15	8	16	30	33	44	37	35	29	31	30	27	26	36	31	24	26	46	34	35	25	16	-1	0	2	10	8	12	23	18	23.6
	Min	15	-5	-12	-3	11	20	20	28	20	24	23	25	7	14	18	14	13	13	23	31	25	18	-1	-13	-13	-12	-8	-3	-10	9	2	9.2
Decorah.	Max	20	2	6	13	23	31	38	32	33	27	22	28	15	24	32	16	20	27	36	26	27	25	-2	-18	-8	-4	3	3	10	22	8	17.3
	Min	2	-11	-23	-17	0	4	17	15	8	17	15	19	2	5	6	8	9	7	20	18	17	2	-13	-27	-28	-26	-31	-12	-27	5	-2	-0.6
Delaware.	Max	23	12	5	14	28	32	39	35	30	26	25	29	26	24	34	29	20	26	41	28	28	24	16	-9	-9	-3	3	3	9	24	16	20.3
	Min	10	-7	-22	-14	-1	13	22	20	12	20	16	21	0	5	9	6	9	6	17	21	20	10	-9	-28	-25	-24	-23	-9	-20	-1	4	2 0
Denison.	Max	33	10	11	21	31	33	47	46	44	28	...	36	31	31	43	35	35	38	38	23	16	15	9	-2	-9	9	7	6	15	28	22	24.3
	Min	10	-5	-19	2	12	15	23	23	21	25	.	16	8	20	21	10	15	2	20	12	11	8	-3	-22	-22	-23	-11	-14	-12	5	3	5.0
Des M.	Max	24	9	12	21	36	37	50	48	39	31	28	30	28	26	39	28	30	32	38	30	30	20	8	0	-7	2	5	5	13	26	20	23.8
	Min	9	-5	-14	5	12	16	22	26	2.	27	24	15	11	15	15	12	13	13	23	20	19	7	-1	-17	-18	-17	-9	-9	-18	11	-1	7.3
Dows.	Max	26	19	7	12	26	33	42	37	34	31	28	28	20	26	31	28	22	27	29	22	23	16	6	-9	-13	-8	0	-3	8	20	18	18.9
	Min	9	-10	-24	-3	9	2	21	18	14	23	12	17	4	15	17	5	10	7	20	11	15	6	-10	-27	-26	-27	-25	-14	-20	6	-2	1.7
Dubuque.	Max	20	11	9	13	29	35	40	39	30	28	29	29	26	26	35	33	18	25	45	30	30	25	14	-3	-5	-2	5	9	10	24	18	21.6
	Min	11	-9	-18	-16	8	14	14	26	14	23	20	24	5	14	10	13	10	13	2.	29	24	14	-6	-19	-23	-20	-19	-5	-15	4	1	5.2
Earlham	Max	28	16	15	15	38	.	49	42	39	34	29	29	33	40	41	31	35	31	35	25	24	19	9	0	-13	10	9	0	10	25	22	24.0
	Min	18	5	-20	-4	8	5	19	11	15	24	22	18	9	8	12	8	9	9	24	15	15	9	-4	-20	-20	-22	-9	-9	-20	-2	5	4.1
Elkader	Max	17	10	10	15	27	34	41	36	30	25	29	26	26	29	33	27	19	26	42	30	28	25	4	-10	-3	-3	3	9	12	24	20	20.7
	Min	7	-7	-25	-20	7	7	8	22	7	19	22	3	3	3	4	9	10	-3	20	23	20	13	- 0	-22	-25	-24	-32	-15	-26	0	-4	-0.2
Esthervil.	Max	7	-3	10	18	28	32	40	38	38	33	33	33	21	27	25	35	17	22	28	23	14	16	11	0	-17	-13	-3	2	4	14	25	13	17.3
	Min	4	-13	-21	-20	5	1	2	19	13	18	23	17	6	1	15	2	4	7	12	4	3	6	-10	-28	-28	-27	-31	-25	-19	-14	3	-2.3
Fayette.	Max	23	7	4	21	26	34	40	34	34	29	24	28	22	22	33	25	20	24	32	32	28	26	19	-18	-7	-4	3	3	9	20	13	19 3
	Min	5	-15	-29	-21	3	4	13	13	5	16	15	18	0	6	7	6	6	6	...	20	18	19	-18	-27	-27	-27	-32	-18	-29	1	-10	-2 4
Forest C'y	Max	18	27	7	16	23	31	40	34	31	29	27	22	21	29	32	15	22	27	27	21	20	13	-3	-21	-14	-5	2	-2	10	22	21	17.4
	Min	3	-10	-3	-12	4	7	8	15	15	20	13	17	2	3	19	5	5	8	13	10	10	10	-10	-29	-28	-27	-24	-16	-19	-10	2	0.0
Ft. Dodge	Max	21	10	8	20	27	32	43	40	36	31	30	31	25	26	34	28	26	30	32	22	20	18	3	-5	-2	-4	5	3	11	20	20	20.5
	Min	9	-3	-23	2	9	9	21	22	20	25	23	19	5	15	18	6	11	10	21	13	14	1	-7	-25	-14	-25	-23	-15	-14	5	5	4.2
Galva	Max	26	10	11	21	...	27	34	42	41	35	36	33	..	23	37	28	30	33	34	18	16	12	9	-7	-8	-1	7	9	16	36	22	21.9
	Min	6	-14	-24	-2	...	8	19	19	21	24	26	13	...	12	15	6	11	11	18	9	8	3	-7	-27	-25	-25	-17	-18	-18	0	1	1.8
Glenw'd	Max	45	24	13	21	36	35	55	51	48	41	34	33	33	41	43	39	42	41	43	27	17	21	20	9	-1	22	18	14	27	29	26	30 5
	Min	16	-1	-10	2	15	10	25	24	27	28	26	20	10	25	25	13	21	21	26	15	12	10	1	-10	-18	-14	-3	-6	12	7	9	10.9
Grand M.	Max	25	8	4	12	25	30	40	35	30	26	23	28	24	24	33	22	19	25	37	28	25	21	14	-12	-6	-3	1	3	8	24	18	19.0
	Min	8	-6	-20	-15	4	11	19	19	10	20	13	18	0	6	6	6	7	5	17	18	18	14	-12	-27	-29	-28	-23	-11	-21	0	0	0.9
Greenfi'ld	Max	37	14	16	19	37	57	45	47	40	35	38	40	28	33	43	35	36	37	37	31	29	20	10	0	-9	9	12	4	19	30	25	26.9
	Min	12	-5	-14	-2	10	9	20	19	20	23	26	17	8	19	17	11	15	12	25	23	15	10	-3	-17	-20	-20	-11	-11	-17	9	5	6.6
Grinnell	Max	29	14	13	17	31	35	45	39	35	31	27	30	23	27	32	32	24	28	38	30	30	22	18	2	-8	-1	4	1	10	23	19	22 6
	Min	14	-3	-15	1	9	13	22	21	19	25	21	23	5	13	17	9	11	10	24	22	24	15	-4	-20	-19	-18	-12	-5	-13	8	8	7.2
Grundy C	Max	31	14	8	19	31	37	43	40	35	31	29	29	23	30	35	31	22	27	36	28	28	22	13	-6	-10	-4	2	3	10	23	18	21.9
	Min	12	-7	-22	-6	8	15	22	20	17	24	12	21	3	13	16	7	12	6	20	18	20	11	-9	-26	-24	-26	-25	-13	-21	5	-1	3.3
Guthrie C	Max	55	41	15	25	36	43	59	56	49	45	39	40	32	40	41	24	37	42	40	35	28	26	20	5	-10	11	9	6	17	30	34	31.2
	Min	18	-4	-17	-1	13	9	22	23	17	21	24	19	9	16	14	11	14	13	27	15	15	12	-4	-21	-22	-19	-10	-12	-23	2	5	5.8
Hampton	Max	20	6	11	19	29	37	41	36	34	30	29	29	22	31	34	23	25	28	30	22	24	17	3	-12	-9	-2	0	2	11	22	15	19.5
	Min	6	-10	-19	-7	9	8	22	20	15	23	12	13	3	17	17	7	12	6	20	13	16	3	-12	-27	-25	-24	-23	-11	-20	6	-2	2.2
Hanlont'n	Max	22	6	10	16	26	32	41	37	34	29	24	27	21	27	33	27	20	26	28	19	23	15	3	-3	-14	-7	-1	1	9	25	12	18.1
	Min	4	-10	-25	-8	4	0	16	17	10	20	8	18	1	17	19	5	9	3	17	9	13	2	-14	-29	-29	-27	-31	-19	-25	5	-2	-9 7
Harlan	Max	30	9	14	22	34	34	49	45	41	35	34	31	30	32	41	37	36	39	37	26	18	16	12	2	-8	12	11	8	21	31	25	25.9
	Min	9	-4	-14	0	8	8	18	20	23	26	27	19	10	20	24	11	17	18	25	15	12	9	-2	-16	-20	-16	-7	-12	-19	10	2	7.1
Hopeville.	Max	30	14	13	20	34	40	51	48	41	34	30	30	28	32	42	33	43	37	41	31	29	21	12	6	-8	14	22	6	15	27	21	27.0
	Min	14	0	-12	0	9	14	22	29	25	25	24	21	10	18	16	13	19	14	27	25	18	12	-1	-11	-17	-19	-4	-9	-20	9	9	8 9
Humboldt	Max	21	8	8	20	19	30	46	39	36	32	30	30	25	28	34	29	26	39	30	20	20	18	9	-8	-12	-5	4	1	12	26	20	20.4
	Min	8	-8	-23	-2	2	4	32	19	17	26	24	18	5	15	18	3	10	9	20	12	14	8	-9	-28	-26	-27	-7	-16	-18	3	-2	2.6
Ida Grove	Max	35	7	12	20	30	30	42	40	40	40	40	35	30	35	40	35	35	33	30	22	15	12	8	0	-6	5	4	15	20	25	25	24 3
	Min	10	-8	-24	0	10	15	25	22	20	26	28	16	8	12	20	10	14	10	8	0	8	3	-7	-26	-28	-16	-16	-15	3	15	0	4.7
Indep'nce	Max	22	10	-2	12	26	32	40	35	32	28	24	27	23	24	32	30	22	26	33	27	27	19	7	-10	-10	-10	0	2	6	19	14	18.5
	Min	8	-8	-23	-12	4	15	16	21	11	22	14	22	2	12	13	8	10	9	20	21	16	8	-10	-24	-24	-23	-26	-10	-25	1	3	2.3
Indianola.	Max	35	15	13	21	38	28	51	43	42	31	28	30	25	25	33	34	29	32	37	30	30	20	13	2	-3	7	7	6	15	26	30	25.1
	Min	13	-5	-14	2	12	15	26	21	23	26	24	22	14	11	13	11	13	12	27	23	19	12	-2	-16	-18	-19	-7	-8	-19	12	21	8.6
Inwood.	Max	25	10	7	18	23	28	38	37	35	31	35	28	30	28	35	22	24	35	33	15	13	12	1	-11	-10	-5	5	6	16	25	22	19.7
	Min	3	-12	-7	7	4	6	25	19	21	21	25	11	4	14	14	4	14	14	13	1	7	-6	-11	-26	-24	-15	-17	-18	-11	10	2	2.6
Iowa City	Max	23	7	10	19	35	37	46	38	38	28	31	31	20	31	35	31	29	30	47	32	30	24	5	-11	-3	0	9	9	14	24	18	23.1
	Min	13	4	-17	-17	-1	8	11	23	17	19	21	22	5	4	13	11	11	13	15	21	30	20	0	-15	-17	-16	-16	-11	-21	-21	4	4.3
Iowa Falls	Max	14	...	7	17	27	34	32	38	37	30	28	29	28	30	33	19	18	29	30	25	23	16	-4	-20	-12	-6	4	0	10	23	17	18.6
	Min	10	-4	-26	-5	6	5	3	10	11	16	11	18	3	15	16	6	6	6	12	13	15	14	-9	-26	-26	-25	-26	-11	-25	3	0	0.7
Keokuk	Max	30	16	9	21	35	33	43	41	35	32	29	31	22	30	38	26	29	30	47	36	33	24	10	5	-2	5	16	8	14	31	23	25.2
	Min	20	2	-12	0	16	16	19	36	24	26	25	27	9	17

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JANUARY, 1904—Continued.

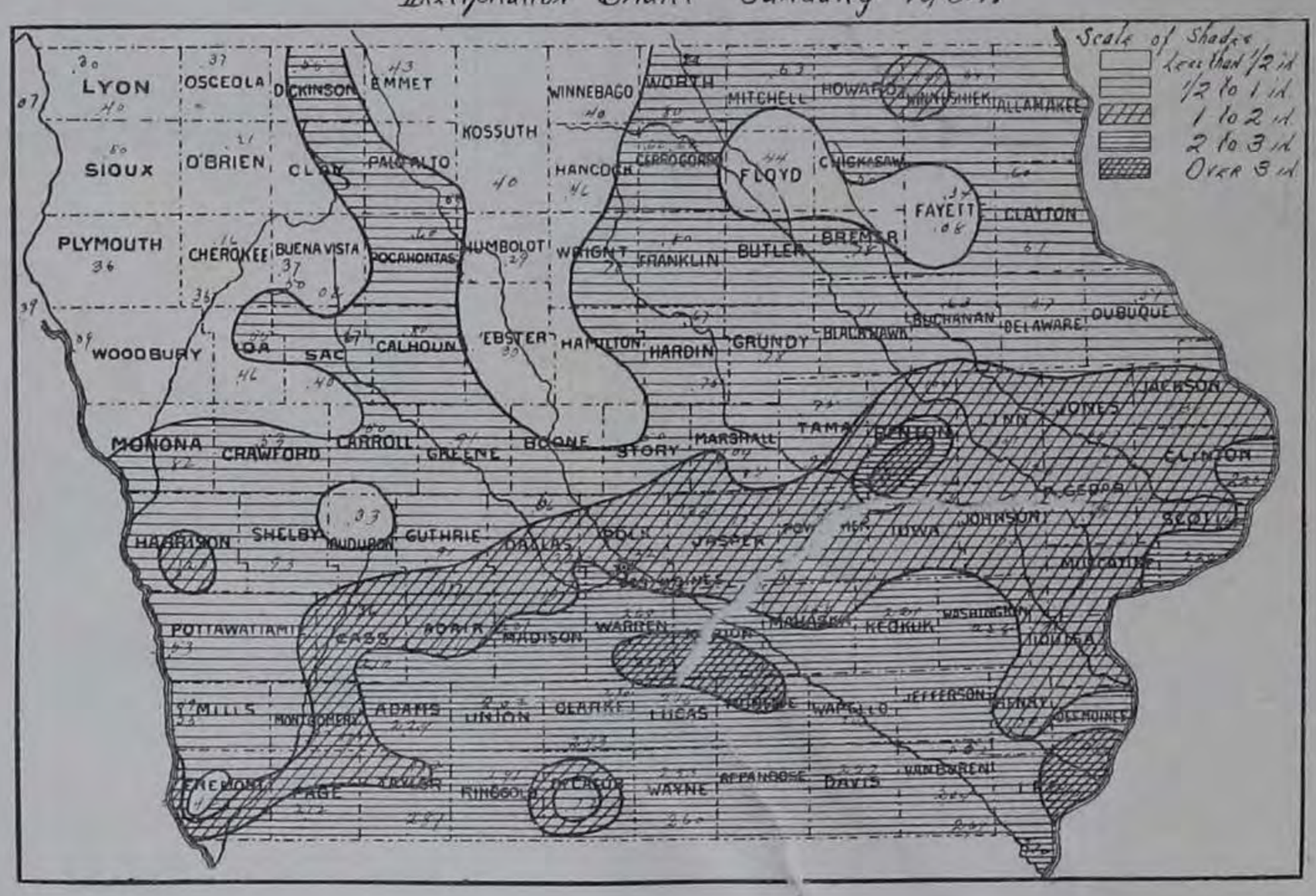
STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
LeMars ..	Max..	27	4	12	22	22	30	43	43	41	41	37	34	31	32	39	29	30	40	35	20	15	13	6	-5	-8	3	9	7	19	32	25	23.6
	Min ..	2	-15	-19	8	5	4	24	21	24	25	27	14	24	17	21	8	12	14	15	5	5	-1	-5	-23	-23	-13	-8	-14	-9	6	5	5.0
Lenox....	Max..	40	20	13	20	35	37	51	48	42	36	31	31	28	33	40	35	38	40	36	32	25	19	14	9	-8	12	12	10	18	25	23	27.3
	Min	13	-2	-12	-2	8	14	20	20	23	25	24	20	10	20	22	13	18	17	28	20	17	11	-3	-14	-21	-18	-8	-8	-19	6	2	7.9
Leon.....	Max..	40	25	8	18	32	34	50	46	40	36	30	30	26	32	39	37	36	39	44	33	32	22	17	9	-6	7	14	9	15	28	24	27.6
	Min ..	15	1	-12	1	11	10	19	25	25	26	24	22	11	22	21	14	21	17	31	27	21	14	1	-9	-16	-17	-3	1	-16	14	12	10.7
Logan....	Max..	30	23	15	21	32	33	50	46	41	38	34	35	37	38	43	35	38	42	38	24	18	19	12	-4	-8	-7	15	11	22	32	25	26.8
	Min ..	12	4	8	3	10	9	22	21	24	28	10	15	10	20	25	11	18	20	23	14	11	7	0	-14	-17	-14	-12	-13	-11	-7	15	8.1
Maquo'ta.	Max..	19	9	8	15	29	38	41	37	32	28	28	30	21	32	18	26	24	25	45	33	31	27	5	-4	5	5	4	12	14	22	20	22.2
	Min ..	13	6	-22	-18	-11	-11	8	21	10	10	20	21	9	3	2	0	11	7	15	22	27	21	-3	-15	-20	-19	-15	-15	-21	-4	-10	1.4
Marshlt'n	Max..	20	5	10	19	31	37	45	40	37	29	29	30	24	28	36	23	26	30	38	29	26	22	3	-12	-8	-2	4	5	12	26	21	21.4
	Min ..	15	-2	-18	-1	9	17	22	21	16	24	19	20	5	13	17	9	11	9	24	20	19	14	-7	-22	-21	-22	-20	-8	-22	-16	5	4.8
Mason C..	Max..	23	11	7	15	22	32	38	34	30	30	26	28	22	27	32	30	22	26	23	22	23	20	8	-3	-9	-7	0	2	9	22	21	18.9
	Min ..	11	-10	-17	-5	10	8	24	20	14	20	14	22	4	15	18	8	12	10	22	12	7	8	-8	-26	-25	-22	-24	-12	-17	2	3	3.5
M'nticello	Max..	10	13	-3	12	30	38	42	45	33	30	28	42	45	38	33	38	40	41	45	40	30	22	18	8	-5	-1	-1	10	12	30	18	25.2
	Min ..	-1	0	-22	-16	-6	5	8	20	25	22	25	18	16	5	3	10	12	18	20	25	18	10	-5	-19	-21	-20	-19	-15	-22	-10	-2	2.6
Mt. Ayr..	Max..	41	18	11	22	45	38	53	51	42	42	30	30	30	38	39	35	42	40	41	33	29	21	14	9	-5	12	16	11	16	22	23	28.7
	Min ..	15	-1	-12	0	11	15	18	22	35	25	25	22	10	23	22	14	20	18	31	26	19	12	-1	-11	-17	-18	-2	-7	-14	9	7	10.2
Mt. Pl'snt	Max..	42	21	7	18	32	32	44	41	40	34	32	33	31	30	37	34	28	31	47	42	34	29	23	2	-1	6	13	10	12	31	24	27.1
	Min	16	3	-17	-3	7	10	18	22	16	25	22	26	5	12	11	12	11	13	24	29	28	20	2	-10	-13	-16	-12	-5	-20	7	3	7.6
Mt. Ver'n	Max.	28	13	11	17	28	36	43	36	30	24	23	27	22	29	30	29	24	26	42	32	31	24	18	-3	-2	0	9	10	13	22	22	22.5
	Min ..	13	-5	-18	-5	4	18	17	25	16	23	16	22	2	10	12	8	10	10	20	27	23	18	-3	-19	-19	-19	-5	-9	-16	5	0	5.5
New H. ..	Max	27	10	3	11	23	31	39	35	32	31	26	26	24	22	31	...	20	23	33	24	..	...	..	-10	-8	-5	1	2	6	18	14	18.1
	Min	7	-8	-24	-10	1	8	13	17	12	12	12	12	-1	7	..	4	6	5	5	14	..	...	-12	-29	-28	-26	-25	-14	-23	...	-2	-2.5
Newton ..	Max	38	17	9	19	33	35	47	43	38	35	29	27	26	24	33	32	26	29	38	30	34	25	20	5	-7	0	5	6	11	23	24	24.3
	Min	12	-4	-19	0	9	14	19	20	17	25	21	23	4	9	15	7	10	10	24	20	23	13	-6	-12	-23	-21	-14	-3	-19	6	4	5.8
Northw'd	Max..	..	...	..	..	...	...	...	..	...	..	...	...	...	..	..	..	...	..	..	...	...	...	...	...	...	..	...	...	...	..	...	....
	Min ..	4	-10	-18	-4	5	5	23	20	14	20	20	13	2	14	19	5	10	-5	-15	-20	-11	-10	-10	-27	-26	-25	-28	-15	-17	15	-2	-1
Odebolt ..	Max..	27	9	11	21	30	32	44	42	42	35	37	32	29	28	38	34	32	31	35	22	16	14	6	-6	-8	3	1	5	17	32	21	23.8
	Min ..	9	-7	-19	-2	12	13	22	21	21	25	26	15	6	15	15	8	12	12	20	11	12	6	-6	-25	-23	-23	-14	-17	-15	4	1	4.4
Ogden. ...	Max..	22	3	15	23	35	40	51	47	46	30	33	28	30	26	43	28	22	36	30	26	21	22	-6	-9	-9	-12	7	3	16	31	21	23.7
	Min ..	5	-3	-18	-13	5	8	9	17	16	16	11	15	-1	1	11	1	6	7	19	11	12	8	-12	-29	-26	-30	-21	-16	-22	3	-3	-0.2
Olin	Max..	32	16	5	14	28	32	41	40	33	30	28	30	30	27	34	30	20	26	42	32	31	27	20	-3	-3	2	6	6	9	25	21	22.2
	Min .	16	1	-20	-13	1	18	14	25	13	24	19	23	4	4	4	11	12	10	20	28	25	20	-3	-16	-20	-17	-15	-10	-23	2	0	5.1
Omaha, N	Max..	28	9	14	24	31	36	54	52	45	35	36	31	34	41	44	32	38	44	44	23	16	20	12	9	-7	16	17	11	18	28	26	27.8
	Min	9	-3	-4	6	16	17	23	28	31	28	29	18	14	27	27	14	24	24	23	15	12	8	2	-12	-17	-10	-2	-7	-4	15	9	11.8
Onawa. ...	Max..	31	14	15	25	29	37	50	49	40	36	40	35	34	37	40	33	34	42	39	23	18	18	12	7	-3	11	13	13	20	32	25	27.3
	Min ..	14	-3	-7	5	11	15	23	23	24	26	28	19	11	23	24	11	20	19	23	12	10	4	0	-15	-16	-14	-3	-9	-7	10	8	9.3
Osage.....	Max..	22	7	3	11	21	29	39	35	35	30	23	25	21	24	32	30	20	25	29	21	23	17	6	-11	-11	-5	0	0	7	21	17	17.6
	Min .	7	-10	-20	-7	6	8	18	19	12	21	10	21	2	10	19	6	9	6	20	12	14	6	-11	-28	-26	-24	-26	-15	-20	5	1	1.5
Osceola ..	Max..	38	8	13	19	33	40	38	40	39	30	30	28	32	34	38	34	36	39	42	32	29	15	-1	-2	-5	20	-5	10	25	18	20	24.7
	Min ..	22	-1	-13	1	7	14	23	20	21	25	24	20	10	21	16	11	11	13	26	27	20	20	9	-13	-17	-19	-4	-3	-13	10	-1	9.3
Oskaloosa	Max..	32	5	9	20	35	35	48	42	37	32	29	29	23	25	35	28	28	29	43	32	31	24	16	2	-7	5	9	4	14	28	22	24.0
	Min	15	-6	-19	0	9	15	20	22	16	24	22	23	5	13	15	7	12	11	25	26	24	15	-2	-15	-17	-16	-9	-5	-23	10	5	7.2
Pacific J'n	Max.	35	15	15	23	38	33	52	48	44	38	36	31	34	38	43	34	38	41	38	25	17	20	15	-2	-3	18	17	11	22	31	29	28.1
	Min ..	15	-2	-8	2	9	12	22	19	25	30	29	19	9	22	24	12	19	21	25	15	14	10	2	-9	-16	-14	-1	-11	-12	6	1	9.3
Perry,....	Max..	28	14	11	21	34	36	48	45	40	31	32	30	28	27	39	32	34	34	...	26	25	20	9	-5	-10	4	8	1	14	30	20	23.5
	Min ..	13	-6	-15	2	10	10	22	20	19	27	23	20	9	11	14	11	12	24	...	16	12	8	-6	-23	-20	-22	-14	-10	-22	6	4	5.2
Plover....	Max..	22	8	11	20	30	29	41	38	42	32	31	30	27	29	36	25	29	24	26	17	20	18	5	-16	-17	-5	4	3	9	18	18	19.5
	Min ..	8	-12	-25	0	5	4	10	18	16	18	24	14	5	15	20	4	7	9	8	8	10	5	-16	-27	-30	-23	-25	-17	-20	0	-3	0.3
Primghar	Max..	20	10	9	6	20	27	38	32	34	32	34	32	28	27	34	25	25	30	30	21	12	11	4	-13	-13	-3	7	4	17	27	21	19.2
	Min ..	4	-19	-16	-4	-4	4	13	18	21	25	26	12	4	9	18	4	11	6	11	12	5	4	-18	-25	-24	-15	-17	-19	-11	6	2	1.4
Red Oak..	Max	37	25	15	24	36	34	48	47	45	41	37	34	32	35	29	40	39	45	57	32	23	22	20	12	-2	13	13	13	21	29	29	30.2
	Min .	18	0	-2	5	16	16	25	25	27	23	30	23	13	26	28	15	24	24	29	21	16	14	3	-5	-14	-8	3	-7	-12	14	11	13.1
Ridgeway	Max .	18	10	13	16	25	35	41	36	36	32	26	31	21	28	33	28	21	25	39	27	30	30	2	-14	2	0	5	9	13	30	18	21.5
	Min .	8	-10	-17	-10	10	12	18	20	11	17	13	21	1	10	10	6	8	4	18	16	17	2	-17	-28	-28	-25	-20	-11	-19	5	-8	1.1
Rock R...	Max	12	-2	10	20	21	32	40	40	38	34	34	25	33	29	38	24	26	34	34	14	16	14	-3	-15	-5	0	10	5	19	27	22	20.2
	Min .	5	-11	-22	8	3	2	20	20	20	24	24	15	5	9	18	4	6	4	18	4	2	0	-7	-24	-23	-11	-20	-16	-10	-10	2	1.9
Rockw'l C	Max..	28	10	11	23	30	30	43	43	40	34	35	32	30	28	38	32	26	30	30	17	20	18	8	-13	-13	0	7	4	15	30	20	22.1
	Min ..	8	-7	-16	1	9	20	20	23	19	23	21	16	7	8	15	6	10	10	16	10	13	6	-7	-28	-25	-20	-19	-18	-19	6	2	3.5
Sac City..	Max..	33	8	10	20	29	29	43	42	40	37	34	34	29	28	34	35	28	33	31	23	18	16	10	-4	-7	-4	4	3	14	28	24	22.4
	Min ..	8	-7	-21	0	11	10	22	23	20	24	26	15	7	15	17	7	10	11	21	10	12	9	-5	-26	-24	-22	-17	-14	-20	3	3	4.1
St. Cha'les	Max	40	18	20	24	38	43	53	51	41	32	31	30	30	33	41	35	31	31	39	30	30	24	12	1	-9	14	12	11	14	27	26	27.6
	Min ..	13	-3	-13	10	11	16	23	23	20	25	24	20	10	13	9	11	14	11	25	22	18	12	-2	-16	-18	-18	-8	-5	-17	11	10	7.8
Sheldon..	Max	20	0	8	16	24	28	39	39	35	31	33	32	28	28	34	28	27	33	31	23	20	14	10	-10	-10	-5	6	4	15	26	14	20.1
	Min ..	4	-14	-22	-10	-17	-2	22	19	19	24	26	12	5	11	18	5	12	12	16	3	8	1	-10	-27	-25	-17	-20	-20	-12	4	2	0.9
Sibley	Max..	6	0	8	16	17	28	30	35	35	31	33	23	29	35	26	24	25	32	20	14	16	11	16	-18	-11	-15	-11	2	17	...	11	17.3
	Min ..	4	-14	-22	-13	0	0	0	17	17	19	19	12	2	1	9	1	1	10	16	0	1	6	-10	-28	-27	-25	-20	-22	-21	3	...	-2.3
Sigourn'y	Max	33	24	12	18	32	34	48	42	37	33	33	33	26	32	38	32	24	32	47	33	33	27	20	4	-2	6	11	8	12	33	25	26.6
	Min ..	14	-2	-17	-1	7	12	19	21	16	16	21	24	2	14	14	7	12	16	24	27	24	17	-1	-14	-16	-17	-11	-7	-20	8	2	6.9
Sioux C'r.	Max..	24	4	9	19	29	29	40	40	36	32	36	30	30	29	37	26	28	35	33	15	13	12	2	-12	-11	-2	8	5	17	28	23	20.8
	Min ..	3	-11	-17	6	5	7	22	22	21	26	26	12	5	13	19	5	14	14	15	3	8	-1	-10	-25	-24	-16	-13	-16	-12	7	2	8.5
Sioux C'y.	Max..	22	5	13	25	28	33	46	42	42	33	33	30	33	33	38	28	32	42	37	17	14	12	4	-4	-7	4	7	6	17	29	20	23.1
	Min	5	-13	-16	7	10	6	31	25	29	25	29	15	10	21	19	10	16	20	16	7	8	1	-4	-21	-21	-10	-5	-14	-6	14	6	22.0
Spirit L..	Max..	24	1	19	14	28	30	30	36	40	32	34	27	27	27	36	22	27	28	27	12	14	12	0	-12	-11	-1	1	7	14	26	20	19.8
	Min ..	-5	-13	-18	4	12	17	17	17	17	23	27	16	16	10	10	0	14	9	9	2	8	0	-10	-28	-28	-20	-25	-20	-15	2	0	1.7
Storm L..	Max..	25	9	7	20	26	26	41	40	36	34	31	33	28	27	36	31	29	32	32	20	15	15	6	-6	-10	-1	3	3	12	20	22	20.7
	Min ..	5	-8	-18	0	10	5	20	20	19	18	20	14	5	10	12	5	10	10	18	8	10	5	-9	-30	-30	-20	-20	-19	-16	3	1	1.9
Stuart. ..	Max	41	16	13	20	36	35	47	54	41	35	33	31	28	32	37	36	38	28	34	29	24	20	13	4	-11	11	7	5	14	28	25	25.7
	Min ..	15	-2	-12	0	15	14	24	23	21	26	24	19	9	15	13	11	10	12	27	21	17	11	-2	-18	-19	-16	-7	-7	-14	14	10	8.1
Thurman.	Max..	38	17	13	22	34	35	53	49	44	39	34	30	33	38	40	35	40	40	44	29	18	19	28	8	-7	15	15	13	21	28	28	28.8
	Min ..	16	0	-9	-1	11	10	23	20	24	30	28	22	11	25	30	15	21	23	28	16	13	11	3	-9	-16	-17	-1	-12	-20	8	-2	9.7
Tipton....	Max..	34	18	10	16	30	34	43	39	35	30	28	30	28	28	33	32	27	28	45	33	33	27	20	0	1	2	7	10	13	21	11	24.1
	Min ..	16	2	-18	-4	1	16	18	25	18	23	20	18	5	10	11	10	12	12	21	28	24	17	0	-15	-15	-15	-12	-4	-13	4	5	7.3
Toledo....	Max..	29	13	11	20	32	33	46	40	37	30	27	31	22	29	37	32	25	30	40	29	30	21	10	-5	-7	-2	5	6	12	28	21	23.1
	Min	13	-7	-19	-4	8	13	22	22	14	24	17	22	4	10	17	9	11	8	24	22	17	10	-3	-21	-20	-22	-20	-9	-23	5	3	4.6
Villisca...	Max..	34	23	10	13	26	37	51	49	48	33	28	27	29	35	45	41	44	47	34	30	26	20	12	4	2	4	9	22	28	31	24	28.0
	Min ..	14	-3	-10	0	8	11	23	22	21	27	25	29	10	20	24	18	34	34	32	18	14	9	-2	-9	-17	-15	-3	-8	-21	7	-1	9.4
Wapello..	Max..	31	20	15	17	29	35	41	40	36	33	32	31	29	29	35	33	26	27	47	36	34	30	24	6	6	9	9	10	11	24	24	26.1
	Min ..	19	2	-12	-2	10	15	20	27	20	26	24	26	8	12	15	14	14	16	25	32	24	22	4	-8	-10	-11	-7	0	-12	8	4	10.5
Washi'ton	Max.	27	11	11	20	32	36	48	40	37	28	30	32	21	30	37	26	28	29	50	34	32	24	18	-8	-1	-1	-8	-1	-10	6	-1	5.4
	Min ..	12	-10	-18	-4	5	9	14	20	18	21	19	19	1	12	9	7	10	9	22	27	19	14	-3	-15	-16	-18	-12	-10	-20	6	-1	21.4
Waterloo	Max..	24	10	9	17	30	33	42	37	34	31	26	30	21	28	35	32	26	30	40	29	31	24	0	-10	-5	-4	2	7	10	25	20	3.7
	Min .	10	-5	-21	-9	9	12	18	22	14	21	15	22	2	15	14	9	12	11	20	20	14	13	-7	-23	-22	-24	-23	-10	-25	6	5	26.5
Waukee..	Max .	41	16	14	23	38	38	49	47	41	34	32	29	20	26	40	35	32	31	34	27	27	21	14	0	-8	6	11	10	15	32	30	8.8
	Min ..	12	-2	-17	2	10	13	23	22	21	21	24	20	18	18	20	10	14	12	27	22	18	14	-2	-11	-18	-19	-12	-5	-17	14	10	18.8
Waverly..	Max..	21	7	2	14	26	28	39	36	32	29	25	26	20	26	33	30	23	28	35	24	26	22	6	-11	-8	-3	1	2	8	23	17	0.9
	Min ..	7	-9	-20	-14	-3	9	16	15	11	22	14	20	2	10	14	7	11	8	21	17	15	6	-11	-25	-25	-25	-27	-11	-26	5	-1	19.9
W.Bend..	Max..	23	8	7	19	29	29	42	39	37	31	30	24	25	26	36	26	24	29	30	18	18	15	7	-9	-11	-3	5	3	10	26	19	2.1
	Min ..	6	-9	-21	1	5	5	23	18	17	24	23	15	4	18	18	2	9	7	17	9	12	6	-9	-29	-27	-23	-24	-19	-17	4	-1	21.9
Whitten..	Max.	31	10	7	18	30	31	43	40	36	33	28	30	23	30	36	33	21	35	36	24	28	19	6	-8	-10	-1	5	2	13	25	19	1.4
	Min .	9	-8	-23	-4	7	11	17	20	15	21	13	21	2	13	14	5	9	7	6	15	16	4	-10	-27	-26	-28	-24	-12	-23	4	0	26.0
Wilton J.	Max..	34	17	8	17	31	34	45	40	37	30	32	33	29	32	37	33	25	47	38	29	27	22	0	-13	-17	-14	-11	-8	-18	2	0	6.7
	Min ..	14	-1	-18	-8	5	12	15	25	15	24	21	24	4	7	9	10	12	10	28	29	25	22	12	11	9	15	19	14	24	25	25	29.0
Wintres't	Max.	37	30	17	27	24	41	39	52	52	45	34	32	31	32	33	12	11	12	12	25	18	16	9	-2	-18	-19	-12	-12	7	7	7	7.8
	Min ..	11	-2	-15	-12	-2	2	9	22	23	18	22	23	22	23	12	11	12	12	25	18	16	9	-2	-18	-19	-12	-12	7	7	7	8	7.8

DAILY AND MONTHLY PRECIPITATION FOR JANUARY, 1904.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
ton	....	T	...	T	....	....	....	....	..	.10	....	..	....	....	....	....	....	....	..	1.42	....	....	....	....	.10	...	.10	.10	....	.20	....	2.02
bia	....	T	....	....	....	...	....	....	....	.42	..	T	...	.09	..	..	....	....	....	1.76	.20	....	..	....	T	.20	.20	..	....	.04	.10	3.01
gona	T	....	....	T	....	....	....	....	....	....	.10	....	....	.05	..	....	....	....	....	.20	T	....	...	....	....	.05	....	T	T	....	....	.40
lerton	T	.10	...	....	....	....	....	....	T	.40	T	....	....	....	....	..	....	....	....	1.53	.06	.02	T	.03	.14	....	....	.05	T	.22	.05	2.60
ta	.04	....	....	.01	....	....	..	..	T	....	...	....	.02	....	....	....	....	....	....	.17	.01	.02	....	....	....	.02	.03	...	.04	..	.01	.37
ta (near)	.15	....	.05	..	....	....	....	..	....	....	....	....	T	..	....	....	..	....	....	.20	....	....	..	....	....	T	.05	....	.05	....	....	.50
nana	....	.06	....	....	....	....	..	..	T	.29	.02	T	....	.02	..	....	....	....	....	1.21	.11	T	....	....	....	T	.02	T	....	T	T	1.73
nes	....	.01	....	..	...	....	....	....	....	....	.05	....	....	.11	..	....	....	....	....	.26	....	..	....	....	....	.04	....	....	....	.03	....	.50
lantic	T	....	T	....	....	....	....	..	..	.71	....	....	....	....	....	..	....	..	T	.30	....	....	....	....	.10	...	.25	....	....	....	....	1.36
ıbubon	....	T		....	..	..	....	....	T	.09	....	....	....	..	..	....	....	....	....	.20	..	....	....	..	....	....	.04	....	T	....	....	.33
xter	...	....	....	....	....	..	....	....	....	.10	.20	....	....	....	....	....	....	....	..	.80	.20	....	....	....	....	....	....	....	.05	....	....	1.35
dford	....	.01	....	.09	....	....	..	....	T	.51	....	.02	....	..	....	....	....	....	..	1.54	..	.	....	.14	.06	..	....	.11	....	.39	....	2.87
dknap	....	.60	....	....	....	....	....	....	....	.50	T	T	..	..	..	..	....	....	..	1.00	..	.17	....	....	....	....	....	T	T	T	.30	T	2.57
dle Plaine	....	..	....	....	....	....	..	...	25	.25	.20	....	....	.05	....	....	....	..	..	2.45	..	....	....	....	..	.10	.07	....	.05	....	T	3.42
onaparte	.21	....	..	....	....	....	....	....	....	.08	....	....	....	....	....	....	..	..	..	1.92	....	....	....	....	..	..	....	....	....	.40	..	2.61
itt	.02	....	....	.03	....	....	....	..	....	....	.12	....	....	.09	....	....	....	....	....	.10	.03	.01	..	.	....	.02	...	....	T	.02	.02	.46
ckingham	....	T	..	....	....	....	....	.	....	.04	.17	....	....	T	....	....	....	....	....	.52	T	T	....	....	..	.02	T	....	....	...	T	.75
rlington	....	.25	....	....	....	....	....	....	T	.18	T	...	.04	....	....	..	....	....	....	2.05	.10	....	....	....	.18	....	T	.10	..	.14	.06	3.10
rroll	....	.10	....	T	....	....	....	....	....	T	T	....	....	....	....	....	....	....	....	....	.30	T	....	....	....	....	.10	....	T	T	T	.50
dar Rapids	....	T	....	....	....	....	..	....	....	....	.11	T	....	.05	T	....	....	....	....	.52	.25	.08	....	..	..	T	T	T	T	T	.20	1.01
ariton	..	.02	...	....	..	....	..	....	.01	.01	...	....	....	....	....	....	....	....	....	1.90	T	....	....	....	....	T	T	T	T	T	.20	2.15
arles City	....	T	....	....	T	....	.	....	....	.09	....	.14	..	....	.03	....	....	....	....	....	.18	T	T	....	....	....	T	....	....	.05	....	.44
arinda	...	T	.05	....	....	....	....	....	....	.40	..	..	....	....	....	....	....	....	....	1.18	.06	T	T	.04	.03	....	....	.08	....	.07	.21	2.12
ear Lake	T	.05	....	....	....	....	....	....	....	T	.20	....	....	.05	....	....	....	....	....	.10	.20	T	....	....	....	T	....	T	T	.02	T	.62
inton	....	.14	..	..	....	....	....	....	....	.10	.10	....	....	.08	....	....	....	....	..	1.53	.07	....	....	....	....	.03	.10	....	....	.10	....	2.25
lumbus Junct'n	....	.11	....	....	....	....	...	....	T	.25	....	.05	..	T	..	....	....	....	....	1.50	T	T	T	....	T	....	..	.03	....	.04	T	1.98
rning	....	T	....	T	....	....	..	....	T	.39	..	....	....	....	....	....	..	....	1.03		.05	T	.02	T	....	T	.20	.20	.25	.15	...	2.29
uncil Bluffs	.25	....	....	....	...	....	..	..	....	.10	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	.15	.01	....	....	.02	.53
rydon	..	.06	....	T	....	..	.	...	T	.62	...	T	..	T	....	....	....	....	....	1.30	T	T	....	.03	.14	....	....	.01	....	..	.17	2.33
mberland	..	....	T	....	....	..	....	....	....	.10	....	....	....	....	....	....	....	....	1.40	.10	....	....	....	....	....	....	.20	....	.20	....	.10	2.10
venport	....	.09	....	....	....	....	....	....	..	.16	....	.04	T	.02	....	....	..	....	T	1.83	.05	T	T	....	T	T	T	.01	....	T	T	2.20
corah	.10	....	....	..	..	....	.02	....	....	....	....	....	....	....	....	....	.41	..	....	.06	.05	..	....	....	....	....	....	....	....	....	....	.64
laware	....	....	..	....	....	....		....	....	T	....	.02	...	.03	....	....	....	....	....	.47	....	..	....	....	....	T	T	.22	.02	.02	.03	.57
nison	.02	....	....	..	..	....	..	....	....	....	....	....	....	....	....	....	....	....	.05	.10	.10	..	....	....	....	T	T	.07	.01	T	T	.53
s Moines	..	.01	..	T	....	....	..	....	T	.04	.05	T	..	.06	....	....	....	....	....	.97	.01	T	....	....	T	T	.07	.01	T	T	T	1.22
ows	....	.10	....	....	....	....	....	T	....	T	.20	....	....	.10	..	....	....	....	....	.20	....	....	....	....	....	....	....	....	.10	T	.70
ubuque	....	.05	..	....	....	T	....	T	....	T	....	.07	T	.02	..	....	.05	T	....	.22	.08	T	....	....	....	T	T	.01	....	.01	T	.51
rlham	T	....	..	T	....	....	....	....	T	.36	T	..	....	..	..	....	..	..	....	.89	T	T	..	....	.03	..	.02	.01	.06	T	T	1.31
lkader	....	....	....	....	....	T	....	....	....	.05	.01	....	....	.02	....	....	.04	....	....	.33	T	..	..	....	..	T	T	....	....	.06	....	.51
stherville	....	.06	....	.01	.01	..	..	....	....	T	T	.06	T	.12	....	....	....	....	T	....	.10	T	T	....	....	T	.07	T	....	T	T	.43
ayette	....	....	....	....	....	..	..	....	....	.02	.05	....	...	.01	..	..	..	..	....	....	T	....	....	....	....	....	....	....	..	....	....	.08
orest City	T	....	....	T	....	....	..		....	....	.	.10	.	.10	..	....	....	....	..	....	.20	T	....	....	....	....	....	....	T	....	T	.40
ort Dodge	.10	....	.	....	....	....	....	....	....	T	.15	....	..	.05	....	....	....	....	....	T	....	..	..	....	....	....	....	....	..	..	T	.30
ort Madison	...	.30	...	....	...	....	....	..	T	T	T	....	....	....	....	....	....	....	....	2 25	....	....	....	T	.20	.10	..	....	.10	.20	T	3.15
alva	....	.10	....	..	.25	....	....	....	....	...	T	....	....	....	....	....	....	....	..	.20	T	....	....	....	..	T	....	....	....	....	....	.55
ilman	..	T	....	....	....	....	....	....	T	.01	.01	T	..	T	..	....	....	....	....	.83	....	....	....	....	....	....	....	T	T	T	T	.85
lenwood	....	....	T	....	....	....	....	....	.20	..	.	T	....		....	....	....	....	....	.10	T	T	....	.05	T	....	T	.10	.10	T	....	.55
rand Meadow	....	....	....	T	..	....	....	....	....	.	.15	..	....	....		....	.10	....	..	.25	.05	T	....	....	....	....	T	....	....	.05	....	.60
reenfield	....	.01	....	.02	...	....	..	...	T	.22	T	T	....	....	....	....	....	..	..	.91	.02	.01	....	T	.02	...	.12	.26	.03	.07	.02	1.71
rinnell	....	.03	....	.	....	....	..	..	.01	.12	.11	....	....	.08	....	....	....	....	....	1.00	....	.01	....	....	....	.02	.10	....	.04	.	....	1.52
rundy Center	....	.05	..	....	...	....	....	..	...	.04	.01	....	....	....	..	....	....	....	..	.43	.25	T	....	....	....	....	....	....	....	....	....	.78
uthrie Center	....	.03	....	.03	....	..	..	..	.04	.18	T	....	....	....	....	....	....	....	....	.48	T	T	..	....	T	.02	.09	.02	.02	.01	.01	.91
ampton	.12	....	..	....	.	....	....	....	..	..	.16	.02	....	....	....	....	....	..	....	.48	..	..	....	....	..	....	....	....	....	....	....	.80
arlan	....	T	....	.03	....	..	....	....	.04	.13	....	....	....	....	....	....	....	....	....	.27	.02	T	....	T	T	....	.30	.10	T	.02	.02	.93
opeville	....	T	....	.01	....	....	....	..	.01	.33	T	....	T	....	....	....	....	....	....	1.75	.03	T	..	T	.06	..	.01	.07	.04	.12	T	2 43
umboldt	....	.10	....	....	....	....	....	....	....	..	.04	....	....	....	....	....	....	....	....	.10	.05	...	....	....	....	....	....	....	....	....	....	.29
da Grove	.20	....	....	....	....	....	....	....	....	....	T	....	....	....	....	....	....	....	....	....	.26	....	....	....	....	....	....	..	....	T	T	.46
ndependence	....	....	....	....	....	....	....	....	....	.02	.09	.01	.11	....	....	....	....	....	....	.30	....	.05	....	..	....	T	T	....	.05	....	....	.63
ndianola	....	.02	....	.02	....	....	....	....	.02	.48	.05	....	....	.10	....	....	....	.	....	1.63	T	.01	....	...	.06	T	.20	.05	.05	T	T	2 69
nwood	.20	....	.10	T	....	....	..	....	....	....	T	....	....	....	....	..	....	....	..	.10	....	....	....	....	....	T	T	....	T	....	..	.40
owa City		T	....	....	....	....	....	....	....	.06	.15	T	T	T	T	....	....	....	....	.60	.62	....	T	T	....	.	T	.27	..	.04	....	1.74
owa Falls	....	.10	....	....	T	....	T	.	....	T	T	.20	T	.05	....	..	....	....	....	....	.25	T	T	....	....	....	.02	.02		.03	....	.67
efferson	T	..	...	.01	....		....	..	..	.10	.05	....	....	.05		....	....	....		.10	.50	....	....	....	....	.02	.05		.03	....	....	.91
eokuk	T	.16	....	....	....	....	....	..	T	.26	T	.02	....	T	....	..	....	....	T	1.76	.10	T	T	.01	.08	.02	....	.03	....	.22	.04	2.70
eosauqua	....	.08	....	....	....	....	....	....	....	.13	T	.04	....	...	....	..	....	....	....	.67	1.35	T	....	T	.12	....	....	.05	T	.04	.16	2.64
acona	....	.10	....	.	.02	..	...	....	.08	.62	.05	....	....	....	....	..	....	..	..	....	1.94	.21	....	.06	.	.14	....	.24	....	.11	.09	.02	3.68
arrabee	.08	...	T	.01	.	...	....		....	....	T	....	T	....	....	...	....	....	....	.04	.02	T	....	....	....	.01	T	..	....	....	T	.16
e Claire		.02	....	....	....	....	....	....	....	....	.08	.09	T	T	.06	..	....	..	....	.41	.72	.08	T	....	....	....	T	T	.01	T	.01	....	....	1.48
eMars	.20	....	T	.05	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	T	....	....	....	....	....	T	T	T	T	.10	....	.35
enox	....	T	....	.05	...	....	....	....	....	.15	....	....	....	....	....	....	....	....	....	1 30	..	....	....	.03	....	....	....	.20	.03	.06		1.82
eon	...	....	....	.02	..	....	....	....	02	.06	T	....	....	....	....	....	....	....	....	....	..	.01	.01	....	.25	...	....	....	.03	.30	.02	.72
ogan	....	.10	....	.10	....	....	..	....	....	.10	....	....	....	.20	....	..	....	....	....	.10	....	....	....	....	....	.20	.30	.10	....	.	....	1.20
aquoketa	....	....	.	....	....	....	....	....	....	....	.09	.06	.	.02	....	....	....	....	....	.70	.36	.03	....	....	....	....	....	.05	....	....	....	1.31
arshalltown	....	.05	....	....	....	....	....	....	....	.01	.03	.09	....	.03	....	....	....	....	....	.12	.65	....	.	....	....	....	T	04	....	.03		1.04
ason City	....	....	....	....	....	....	....	..	....	T	.32	....	....	T	....	....	....	....	....	....	.30	....	....	....	....	....	....	....	....	....	....	.62
ount Ayr	....	.03	....	.03	....	....	..	....	T	.40	....	....	....	....	....	....	....	....	....	1.80	....	....	....	....	.04	....	....	.23	.08	.30	....	2.91
Mt. Pleasant	T	....	....	....	....	....	....	....	....	T	T	T	....	..	....	....	....	....	....	1.63	.14	....	....	....	....	....	....	....	....	.02		1.79
Mt. Vernon	....	.08	....	....	....	....	....	....	.01	.21	.01	.04	....	....	....	....	....	....	....	.50	....	.04	....	....	..	.06	.25	....	....	....	....	1.20
New Hampton	....	..	....	....	....	....	....	....	....	....	.10	T	....	....	.10	....	....	T	....	.05	.20	....	..	....	....	....	....	....	....	.05	....	.50
Newton	..	....	....	....	....	....	....	....	....	.09	.25	....	....	....	....	....	....	....	....	1.05	....	....	..	....	....	....	.08	....	....	.06	....	1.53
Northwood	T	....	..	..	..	....	....	....	.10	....	.20	....	....	.16	....	....	....	....	....	.32	.40	....	....	....	..	....	..	....	....	....	....	.80
Odebolt	....	....	....	.03	....	.05	....		....	....	....	....	....	....	....	..	....	....	....	1.00	.01	.02	....	.	..	T	....	....	T	....	....	.40
Olin	....	.05	....	....	....	....	....	....	....	.30	T	.08	....	.05	....	....	....	....	....	.11	.02	T	...	.08	.02	.01	.02	.01	.02	...	T	1.57
Omaha, Neb	....	.02	.01	.05	....	..	....	....	.01	.09	T	T	....	....	....	....	....	....	....	.20	.05	....	....	....	.05	....	.03	.09	.10	.04	T	.62
Onawa	....	.05	....	.05	T	..	....	....	T	.	.02	..	..	....	....	....	....	....	..	.20	.05	...	....	....	.05	....	.25	.05	.05	05		.82
Osage	...	...	...	T	....	....	....	....	T	.06	.10	..	.05	....	....	..	.01	....	..	.02	25	T	..	....	....	.03	T	.01	.	T	T	.53
Oskaloosa	.08	...	....	....	....	..	....	....	T	.	.06	...	.02	....	..	....	....	....	....	1 30	...	...	...	.04	..		.05	.03	...	...		1.58
Ottumwa		.06	....	....	.	....	....	.		.16	.02	....	....	....	....	....	....	....	....	2.05	....	....	....	....	.	...	....		.06	.05	....	2.40
Pacific Junction	....	T	.02	..	....	T		....	T	.15	....	.04	...	...		..	..	....	..	.12	T	T		....	.			.08	.09	06	.03	.59
Perry	....	.05	....	T	....	....	....	....	T	T	.08	....	..	.12	....	....	....	....	....	.25	....	....	..	....	....	.08	..	....	.08	....		.66
Plover	.15	...	...	....	....	....	....	..	....	....	.10	..	....	.15	....	....	....	....	....	.20	T	T	....	....	....	T	T	....	T	....		.60
Primghar	....	....	.	....	.	...	....	....	....	....			....	....	....	....	....	....		....	....	....	....	....	....	....	..	....		....	....	....
Red Oak	....	T	....	.02	....	....	....	....	....	....	.03	.03	.	..	....	....	....	....	....	....	.56	....	....	....	.10	....	....	.07	....	.14	.02	.97
Ridgeway	....	.06	...	T	....	....	....	....	....	....	.06	.02	...	.01	....	..	.07	....	....	.50	45	.04	....	....	....	....	.01		.06	T	.01	1.29
Rockwell City	....	....	....	....	....		....	....	....	....	....	....	....	.40	....	....		....	....	.40	....	....	....	....	....	....	....	....	....	....	....	.80
Rock Rapids	.20	....	T	T	..	..	....	....	..	..	....		T		....	....	....	....	....	T	.10	....	....	....	....	....	....	....	....	....	....	.30
Sac City	....	.15	....	....	....	T	....	....	T	....	T	....	....	T	....	....	....	....	....	.52	T	T	....		....	T	T	T	T	T	T	.67
St. Charles	.02	....	....	.01	....	....	....	....	.01	.48	.10	....	....		....	....	....	....	....	1.39	01	T	....	....	....	T	.10	.05	.03	.05	.03	2.31
Sheldon	.10	....	.01		....	....	....	....		.01	....	....	...	.01	....	....	....	....	....	T	T		....	....	....	04	T	.01	.03	T	T	.21
Sibley	....	.10	....	.10	....	....	..	..		.05	....	....	.	.05	...	..	....	..		....	.02	T	....	....	....	.05	....	T	....	T	...	.37
Sigourney		.06	....		....	....	....	....	.03	.21	.05	.01	..	.03	....	....	....	....	....	1.68	.07	T	.01	...	.03	T	.03	....	....	....	T	2.21
Sioux Center	.10	....	.05	.10	.	.	....	....	T	....	T	.	....	....	....	....	....	....	..	...	.10	.05	....		....	T	.05	....	.05	...	....	.50
Sioux City	.02	.02	T	T	....	....	....	....	....	....	.02	T	...	....	....	....	....		T	T	.01	T	....	....	....	T	T	.01	T	.01	T	T	.09
Spirit Lake	.10	....	..	....	....	....	....	....	....	....			....	.25	....	...	...	....	....	T	.10	....	....	....	....	.10	....	....	....	....	....		.55
Stockport	....	.18	...	.	....	....	....	....	.02	.04	.03	....	..	.01	....	....	....	....	..	1.75	.05	T	....	T	.16	T	.10	T	T	.18	T	2.52
Storm Lake	T	.01	....	T	....	....	....	....	T	....	....	....	....	T	...		....	..	.	.01	T	T	....	....	....	T	....		T	...		.02

DAILY AND MONTHLY PRECIPITATION FOR JANUARY, 1904—CONTINUED.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Stuart	...		...	.05	....	....	...	..	....	.30	.02	....	...	....	..	..	....	....	....	.20	....	...	....	....	....	....	.30	.10	.10	.10	...	1.17
Thurman	...	T	T	.01	....	....	....	....	T	.05	...	.05	...	...	....	....	..		....	.22	T	T	T	.02	T	T	T	.02	.01	.03	.01	.42
Tipton	.10	....	. .	...	..	....	....	....	...	.20	.15		.10	.15	....	....	...	..	....	.94	.05	....	....	....	....	....	.20	...	....	...	..	1.89
Toledo	...	T	...	....	....	....	...	....	..	.10	.07	T	....	T	....	....	....	....	....	.75	T		..		....	T	.02	....	....	.03	T	.97
Villisca	....	....	....	...	...		....	1.20	....	....	....	...	....	....	....		..	....	....	...	....	T	....	.10	..	....	T	....	.20	.25	..	1.75
Vinton	....	....	....	....	....	...	...	..	.32	.20	.05	....	....	.05	....	....	....	....		.20	.02	....	....	....	....	T	..	....	.20	..	..	1.04
Wapello	..	.02	....	....	....	...	....	..	....	T	....	T	....	....	..	....	..	....	....	1.60	09	..	....	....	....	T	T	T	....	..	...	1.71
Washington	....	.03	..	....	..	...	....	....	....	.21	..	..	.	T	...	..	....	....	.	1.98	....	...	....	....	....	....	...	.03	....	.03	....	2.28
Washta	T	15	....	....	....	..	...	..	..	...	T	..	...	....	..	..	..	....		.10	T	...	....	....	....	.10	..		T	...	T	.35
Waterloo	....	.06	...		...	....	....	....	...	.03	.05	....	...	.03		....	....	....	....	.41	.10	T	T	....	....	....	....	....	T	.03	...	.71
Waukee	....	.05	....	.05	....	...	..	....	.03	.25	.05	...	....	.10	....	....	....	....	....	1.28	T	.02	..	...	.05	T	.20	.05	.10	...	.02	2.25
Waverly	.01	.09	....	...	....	....	T	...	....	.01	.12	....	....	.06	...	...	..	..	....	.25	.13	.01	..	..	....	.02	.01		.01	.01		.78
West Bend	.05	..	....	.05	....	...	...	....		....	.20	...	....		..		...	....	....	.10	.10	T	....	....	....	.05	....	.02	.02	....	T	.59
Whitten	....	...	....	...	....	...	..	..	T	05	.20	..	....	....	....	....	...	....	....	.50	T	T		....	...	T	T	...	T	...	T	.75
Woodburn	....	.09	....	.02	....	..	....	....	.29	.18	T	T	....	..	..	..	....	....	....	1.56	T	.06	....	.03	.10		.02	.20	.02	.11	.02	2.70



FEBRUARY, 1904. No. 2.



MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

STAR ENG. CO

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CENTRAL STATION, DES MOINES, IOWA.

J. R. SAGE,
DIRECTOR.

GEO. M. CHAPPEL,
LOCAL FORECASTER,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XV. FEBRUARY 1904. No. 2.

NOTES AND COMMENTS.

Iowa leads the states in the production of eggs, the yearly product being 100,000,000 dozen. Ohio comes next with 91,000,000 dozen; Illinois is third with 86,000,000 dozen, and Missouri fourth, with 85,000,000 dozen. The value of the combined poultry and egg product would be nearly double that of the precious metals.

It has been suggested that the recent bulge in the price of wheat is likely to cause an increase in the acreage of spring wheat in Iowa and other parts of the northwest. Unquestionably the time is favorable for expansion in the production of that cereal in sections of this state best adapted to its growth, but it is wise to exercise due caution in this matter. The crop should be seeded early as possible and more than the usual amount of care should be taken this season in procuring seed. Spring wheat is an uncertain crop in this section, at the best.

The coming farmer in the corn belt will demand his silo as much as he will his barn. Recent experiments show that silage is a very superior ration for the fattening steer as well as being almost indispensable as a ration for the dairy cow. The fact is that corn put in the silo and fed is worth so much more and will go so much further than corn fed the old way that its use will become almost imperative—*J. S. Trigg.*

The moon and the weather
May change together;
But the change of the moon
Does not change the weather.
If we'd no moon at all,
And that may seem strange,
We still should have weather
That's subject to change.
From "Notes and Queries."

Milton T. Ashley, voluntary observer at Hopeville, Clarke county, writes as follows: "I have made several tests of home-grown seed corn, and find none fit for use. The best samples showed only 67 per cent germination. Some corn shipped into the county and advertised for seed I tested. Two samples showed one good and the other worse than bad. I fear that too many of our farmers will trust to old time methods of selection of seed and be bitterly disappointed. This trouble is probably not local, but quite general, and the farmers need good counsel as to where and how to procure good seed."

From many sources we hear similar complaints as to the germinating quality of seed corn. No time should be lost in making preparations for the planting season, which is close at hand.

In this latitude February 2d—Candlemas Day in the church calendar, and "ground hog day" in old folk lore—is usually about the middle of the period of severest winter weather. This is the basis of the old proverbs

"At Candlemas Day another winter is on its way."
"Candlemas Day! Candlemas Day!
Half our fuel, half our hay."

On an average we have about six weeks of winter temperature after the 2d of February. South of this state, however, the rule would not hold good.

The coldest region on earth inhabited by man is in northeast Siberia, above the Arctic Circle, where the temperature sometimes falls to 90° below zero. The hottest region is in the great Sahara Desert of Africa. The wettest spot on earth, according to Davis, is at Cherrapunji, at an elevation of 4,435 feet on the southern slope of the Himalaya Mountains, north of the Bay of Bengal, India. The average annual rainfall is 474 inches, of which over 400 inches fall in the five months from May 1st to October 1st.

IN MARCH.

To the north the sun returning
Clears the dimness from the blue,
Paints the white out of the landscape,
Gilds the willow boughs anew.

Wintry storms may still blow fiercely,
There are balmy hours between,
When the breezes dance and whisper,
"This will make the wheat fields green."

Longer days and shorter shadows,
Less of gloom and more of cheer,
There's a hint that's half a promise,
That the spring will soon be here.
—Lizzie Ferris, in the Inter-Ocean.

EVAPORATION BY WIND.

It is a well-known physical principle, in use in a number of ways, that evaporation takes place more rapidly from a moist surface when the air above that surface is in more or less rapid motion. This holds good when the moist surface is that of the cultivated field and the wind blows over it. Prof. T. Russell, Jr., obtained the following results from experiments designed to show relative rate of evaporation as affected by rate of wind motion. Compared with the evaporation from a water surface when covered by still air, the evaporation from the same surface when the wind showed different velocities was as follows: Wind 5 miles per hour, evaporation 2.2 times. Wind 10 miles per hour, evaporation 3.8 times. Wind 15 miles per hour, evaporation 4.9 times. Wind 20 miles per hour, evaporation 5.7 times. Wind 25 miles per hour, evaporation 6.1 times. Wind 30 miles per hour, evaporation 6.3 times. These experiments were made when the temperature of the air was 84 degrees F. and the humidity was 50 per cent.—*Murray's Price Current.*

TEST THE SEED CORN.

Seed corn should never be planted until it has been tested to determine what per cent will germinate. While this is always advisable, perhaps it is more necessary this year than common for the reason that corn was slow in drying out last fall and extremely cold weather came unusally early.

Examination of a good many samples of corn in different parts of the State, and of some lots of seed corn purchased in the west, leads the Ohio Experiment Station to believe that there will be considerable more trouble than usual this year in getting a satisfactory stand. The safe thing to do is to test the seed early and have plenty of time to look elsewhere for seed of greater vitality, if occasion demands.

The station has recently tested eight different lots of corn including five varieties. Three of these tests were made with the same variety of corn, the selected seed of which had been carried through the winter in different ways, viz: In a large crib of corn six feet wide; overhead in crib spread out in a thin layer on the floor; in a room where the temperature was from sixty to seventy-two degrees.

Of the crib corn (selected ears) only sixty kernels out of a hundred germinated; of a similar corn kept overhead in crib, eighty-one kernels germinated; of that subjected to artificial heat, ninety-five out of the hundred germinated. This for corn which seemed quite mature at husking time.

Of the other corn tested, choice ears sent to the station in the pink of condition (supposedly so until the kernels were examined) showed as low as eighty per cent germinated.

It is quite probable that the low temperature of the early winter, coming while kernels and cob yet contained much moisture, is responsible for this state of affairs.

A convenient way to test corn is between sheets of moist paper or cloth, placed in a box of suitable size. Several lots may be tested at once and examined much more easily and quickly than when planted in sand. Simply keep the paper moist and where the temperature does not fall below 55 degrees. It should all germinate in from four to eight days, depending upon the sort of corn weather furnished.

Handled in this way it is possible to examine it daily and note the progress of germination.

There are different degrees of vitality in corn that will germinate. Many of the weak, spindling stalks which produce a small nubbin, or nothing at all, spring from seed of barely enough vitality to get the plant above the ground. Seed that will grow fairly well when conditions are favorable at seeding time will rot if cold, damp weather happens to prevail.

If possible use only such seed as has large, bright looking germs. Wrinkled and dull-colored germs have likely been injured by freezing. Plumpness at the tip is an evidence of vitality. Thin, shrunken kernels having sharp pointed tips should be rejected, as well as those having an excess of soft, white starch at either crown or tip.

The Station hopes that its suggestions given last fall have been followed by the corn growers of the state and that all have supplied themselves with the best seed corn obtainable and have taken good care of it. Choice seed corn is worth much more than anyone thinks of asking for it. Poor seed should be classed with the luxuries (?) which no corn farmer can afford.—*Ohio Experiment Station; C. G. Williams, Agriculturist.*

SEASONABLE WEATHER PROVERBS.

The following lines and couplets are copied from "Weather Folk Lore," recently published by the U. S. Weather Bureau. Pick out the proverbs that suit you best. They are all good—when they are verified.

The month that comes in good will go out bad.
A favorable January brings us a good year.
January warm, the Lord have mercy!
If grass grows in January, it grows the worse for it all the year.
Always expect a thaw in January.
If there is no snow before January, there will be the more in March and April.
A warm January, a cold May.
There is always one fine week in February.

If February gives much snow,
A fine summer it doth foreshow.

February rain is only good to fill ditches.
Thunder in February or March, poor sugar (maple) year.
Winds in March and rains in April promise great blessings in May.
As it rains in March, so it rains in June.
A dry and cold March never begs its bread.
March flowers make no summer bowers.
March comes in like a lamb and goes out like a lion.
March comes in like a lion, goes out like a lamb.
March in January, January in March, I fear.
March damp and warm will do the farmer much harm.
When March has April weather, April will have March weather.
March winds and April showers bring forth May flowers.
A cold April the barn will fill.
Moist April, clear June.
'Till April's dead, change not a thread (of clothing),
Dry May brings nothing
May damp and cool fills the barns and wine vats.
A hot May brings a fat churchyard.
A dry May is followed by a wet June.
Wet May, dry June.
Calm weather in June sets corn in tune.
A late spring, a great blessing.
Better late spring and bear, than early blossom and blast.
A late spring never deceives.
If the spring is cold and wet, then the autumn will be cold and dry.
A dry spring, rainy summer.
Early thunder, early spring.
Who doffs his coat on a winter's day will gladly put it on in May.

WEATHER AND CROPS—FEBRUARY, 1904.

February was unseasonably cold and dry. The mean temperature for the State was 14.8°, which is 4.8° below the normal. There has been but one colder February within the past fifteen years, and that was in 1899, when the mean for the State was 12.2°. February, 1900, scored the same temperature record as the past month. The average precipitation was .41 of an inch, which is .63 of an inch below normal. There was less than the usual amount of wintry storms of sufficient force to interfere with farm operations, travel and transportation. The roads were generally in fine order, and conditions were favorable for feeding stock. The temperature at the close of the month was quite moderate and spring-like, and the first appearance of migratory birds and fowls was noted in many localities. The limited area of fall wheat and rye was generally without covering of snow during the period of lowest temperature, and these crops undoubtedly suffered some damage. The damage to fruit is as yet undetermined.

CLIMATOLOGY OF THE MONTH.

BAROMETER—Mean pressure, 30.21 inches; highest observed, 30.85 inches, at Sioux City, on the 10th; lowest observed, 29.37 inches, at Davenport, on the 6th; range for State, 1.48 inches.

TEMPERATURE—The monthly mean temperature for the State, as shown by records of 107 stations, was 14.8 degrees, which is 4.8° below normal. By sections the mean temperatures were as follows: Northern section, 10.7°; central section, 15.0°; southern section, 18.8°. The highest monthly mean was 21.6° at Keokuk; lowest monthly mean, 7.2° at Estherville.

The highest temperature reported was 70°, at Keosauqua, on the 6th; lowest temperature reported, 26° at Fayette, on the 1st. The average monthly maximum was 51.3°; average monthly minimum, 14.4° below zero. Greatest daily range, 60.0° at Denison; average of greatest daily ranges, 41.0°.

PRECIPITATION—Average precipitation for the State, as shown by records of 118 stations, was 0.41 of an inch, which is 0.63 of an inch below normal. The averages by sections were as follows: Northern section, 0 63 inch; central section, 0 35 inch; southern section, 0.25 inch. The largest amount reported was 1.99 inches at Ridgeway; least amount reported, trace at Osceola and Thurman. The greatest daily rainfall reported was 0.84 of an inch at Ridgeway, on the 17th and 18th. Average number of days on which .01 of an inch or more was reported, 4.

WIND AND WEATHER—Prevailing direction of the wind, northwest; highest velocity reported, 61 miles per hour, from the northwest, at Sioux City, on the 2d. Average number of clear days, 10; partly cloudy, 9; cloudy, 10.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	30.19	30.71	11	29.37	6
Des Moines	30 23	30.79	10	29.39	6
Dubuque	30.23	30.75	10	29.43	6
Omaha, Neb	30 20	30.81	10	29.38	6
Keokuk	30.18	30.71	11	29.39	6
Sioux City	30.22	30.85	10	29.43	6
Means	30.21	30.85	10	29.37	6

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	6.525	35	W	2
Des Moines	6.735	31	NW	2
Dubuque	5.719	32	NW	2
Keokuk	6.348	42	NW	2
La Crosse, Wis	5.286	31	N	2
Omaha, Neb	7.477	38	NW	2
Sioux City	10.115	61	NW	2

OBSERVERS' NOTES.

AFTON—*N. W. Rowell.* First robins appeared February 29th.

ALTA—*David E. Hadden.* Month cold and mostly cloudy; mean temperature, 5.2° below normal of past fourteen years.

AMANA—*C. Schadt.* Month cold, northwest wind prevailing. But little snow on ground and frost penetrated the ground, causing freezing in pipes several feet in depth. Ice formed on trees January 19th; did not melt until February 5th. Thunderstorm on 6th.

ATLANTIC—*J. W. Love.* A pleasant winter month and roads in good condition; lightning in southwest on morning of 29th, at 4 o'cloçk.

AUDUBON—*Geo. E. Kellogg.* On 29th observed wild geese flying northward.

BELKNAP—*A. W. Rankin.* Only half an inch of precipitation in February, and ground frozen two to four feet.

BONAPARTE—*B. R. Vale.* Uniformly solid month. Good roads, and conditions good for feeding stock. Thawing at close of month.

BRITT—No severe storms, and but little snow; roads fine and live stock wintering well.

CLINTON—*Luke Roberts.* Mean temperature 16.1°, or 5.9° below normal; rainfall, .95 of an inch, or 1.05 below normal. Wind, 5,000 miles; cloudiness, 60 per cent; first decade cold.

GRAND MEADOW—*F. L. Williams.* Mercury below zero fifteen days; dry and roads good most of month.

HANLONTOWN—*Miss G. M. Paschen.* Only a few drifts of snow remained at close of month.

HOPEVILLE—*M. L. Ashley.* Ducks flying northward on 29th; bluebirds here; but little of the frost thawed.

HUMBOLDT—*H. S. Wells.* No blizzards; month 2 degrees warmer than January.

IDA GROVE—*J. E. Conn.* Month very cold; the mean temperature, 13.7°.

LOGAN—*Mrs. M. B. Stern.* Month cold, with but little snow and no bad storms; fine winter weather.

OLIN—*Nathan Potter.* Good sleighing first half of the month.

RIDGEWAY—*Arthur Betts.* The month gave 170 hours of sunshine; rain on four dates; good month for the farmer; sleighing generally good. December, January and February gave thirty-five days below zero temperature, and twenty-five thawing days. January was the coldest month; mean for the winter, 13.5°.

TOLEDO—*H. P. Giger.* A curious thaw occurred on night of 22d-23d. The temperature at 7 P.M. of 22d was 29° and at 7 A.M. on 23d it was 25°. The maximum thermometer showed a rise of 11° and the minimum a fall of 15° during the night.

VILLISCA—*C. E. Matteson.* A dry and cold winter month; stock doing well; roads fine.

WASHTA—*H. L. Felter.* But little snow in patches at end of the month; zero or below on fourteen mornings; no bad storms.

CLIMATOLOGICAL DATA FOR FEBRUARY, 1904.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	9.2	- 7.8	42	5	-19	1	36	.28	-1.02	.13	6.5	4	11	5	13	SE	
Alta	Buena Vista	1,513	11	11.6	- 7.6	53	5	-15	8	50	.76	† .01	.40	7.5	8	9	13	7	NW	
Alta (near)	Buena Vista										.55		.30	5.0	4					
Britt	Hancock	1,266	5	10.2	- 6.8	43	28	-22	1	38	.55	- .42	.20	4.4	9	2	19	8	NW	
Charles City	Floyd	1,012	11	8.2	- 7.5	41	6	-24	1	45	.57	- .65	.26	3.4	4	11	6	12	W	
Clear Lake	Cerro Gordo	1,241		9.8		40	6	-21	1	35	.60		.30	6.0	4	12	12	5	NW	
†Cresco	Howard		32	11.2	- 3.9	40	28	-22	1	36	.30	- .63	.20	3.0	2	15	0	14	NW	
Decorah	Winneshiek	857	8	10.7	- 4.3	43	28	-23	1	40	.48	- .50	.30	5.0	4					
Dows	Wright	1,142		10.8	- 4.6	42	6	-21	1	40	.75	- .15	.40	7.5	5	14	4	11	NW	
Elkader	Clayton	727	21	12.0	- 6.1	47	28	-22	1	50	.65	- .47	.43	7.2	4	12	11	6	NW	
Estherville	Emmet	1,298	7	7.2	- 8.8	40	5	-20	11	41	.39	- .23	.20		4	13	1	15	NW	
Fayette	Fayette		13	10.8	- 6.6	49	6	-26	1	48	1.02	- .14	.50	5.6	4	5	12	12	NE	
Forest City	Winnebago	1,226	8	7.4	- 7.6	40	5, 28	-19	1	37	.70	- .07	.50	7.0	2	11	7	11	SE	
Grand Meadow	Clayton	1,180	11	11.4	- 5.4	45	6, 28	-20	1	32	.83	- .29	.40	7.5	7	6	13	10	NW	
Hampton	Franklin	1,155	12	11.9	- 5.6	44	28	-19	1	37	.95	- .16	.63	9.1	6	5	16	8	NW	
Hanlontown	Worth			8.4		39	5, 6	-24	1	38	.53		.35	5.2	2	13	5	11	NW	
Humboldt	Humboldt	1,095	10	13.6	- 3.8	45	6	-21	1	36	.50	- .20	.30	5.0	2	18	2	9	NW	
Inwood	Lyon			11.0		48	5	-17	8	39	.30		.20	3.0	2	9	4	16	SE	
Larrabee	Cherokee	1,366	11	11.9	- 6.3	56	5	-17	8	54	.46	- .29	.24	4.6	3	9	14	6	NE, NW	
LeMars	Plymouth	1,244	6	13.6	- 3.7	54	5	-15	19	52	.80	† .19	.35	8.0	3	12	12	5	S	
Mason City	Cerro Gordo	1,132	6	11.5	- 3.4	38	6, 28	-14	1	32	.77	† .21	.60	7.7	3	7	15	7	NW	
New Hampton	Chickasaw	1,169	6	9.9	- 4.0	41	6, 28	-23	1	33	.70	- .37	.20	6.0	5				NW	
Northwood	Worth	1,223	6	11.0	- 4.4	46	28	-19	1	36	.88	- .28	.40	8.0	4	11	8	10	NW	
Osage	Mitchell	1,184	11	10.0	- 4.4	38	6, 28	-20	1	32	.66	- .52	.30	6.2	7	10	8	11	NW	
Plover	Pocahontas	1,190	5	10.0	- 6.7	44	5	-18	1	51	.66	† .01	.30	6.0	3	13	3	13	NW	
Primghar	O'Brien		8	11.3	- 6.1	52	5	-13	11	37						13	0	16	SE	
Ridgeway	Winneshiek	1,215		13.0	- 4.1	46	28	-20	1	37	1.99	- .68	.84	10.6	14	8	11	10	NW	
Rock Rapids	Lyon		6	12.0	- 5.0	49	5	-15	8, 10, 11	34	.65	† .51	.25	4.0	3	13	7	9	N	
Sibley	Osceola	1,512	8	8.2	- 7.2	55	5	-19	8	49	.46	- .01	.20		4	10	2	17	NE	
Sioux Center	Sioux		5	11.7	- 3.9	51	5	-17	8	37	.28	- .50	.20		3	13	6	10	S	
Spirit Lake	Dickinson	1,458	8	11.2	- 4.7	45	5	-20	8	49	.55	† .00	.35	5.5	2	22	1	6	NW	
Storm Lake (a)	Buena Vista	1,440	7	11.9	- 3.1	53	4	-16	8	59	.08	- .57	.04	0.9	2				NW	
Washta	Cherokee	1,157	5								.40	- .22	.30	4.0	3	16	8	5	NE	
Waverly	Bremer	942	6	11.4	- 6.6	43	6	-22	1	37	.78	- .34	.33	5.5	7	4	13	12	NW	
West Bend	Palo Alto	1,197	8	10.7	- 5.8	46	5	-19	1	47	.72	- .09	.40	7.0	6	7	11	11	N NW	
Average				10.7	- 5.8	45.5		-19.2		41.0	0.63	† .06		6.0	4	11	8	10	NW	

CENTRAL SECTION.

Amana	Iowa	721	25	16.4	-3.6	53	6	-11	1	32	.70	- .57	.16	6.2	8	5	17	7	NW	
Ames	Story	926	20	14.9	-6.7	47	23	-13	1	45	.40	- .44	.20	3.5	4	15	9	5	SW	
Audubon	Audubon	1,301	8	14.5	-4.7	47	5	-16	1	50	.15	- .65	.11	1.5	3	12	5	12	E	
Baxter (‡)	Jasper	998		15.4		49	6	-10	16	41	.34		.25	0.9	4	12	6	11	NW	
Belle Plaine	Benton	628	12	14.2	-6.4	46	6	-15	1	40	1.26	- 0.4	.40	12.5	7	4	18	7	NW	
Buckingham	Iowa										.47		.23	4.4	4	9	13	7		
Carroll	Carroll	1,265	12	14.6	-4.4	50	5	-14	1	43	.70	- .38	.25	7.0	4	12	3	14		
Cedar Rapids	Linn	733	19	14.2	-6.3	54	6	-12	2	42	.11	-1.44	.10		2	5	16	8	NW	
Clinton	Clinton	609	34	16.2	-5.8	57	6	-10	1, 16	35	.95	-1.16	.31	7.0	5	4	10	15	NW	
Davenport	Scott	606	31	17.2	-8.1	61	6	- 8	1	34	.72	- .85	.31	6.8	8	4	11	14	NE	
Delaware	Delaware	1,083	11	11.7	-4.5	47	6	-20	1	33	.49	- .39	.20	4.3	7	10	11	8	NW	
Denison (a)	Crawford	1,180	8	16.8	-1.8	57	5	-12	19	60	.30	- .34	.10	3.0	5				N	
Des Moines	Polk	861	24	16.7	-6.4	47	6	- 9	1	41	.22	-1.11	.14	3.5	6	4	13	12	NW	
De Soto	Dallas	866		17.6		47	6	-11	1	38	.25		.10	2.5	3	12	5	12	NW	
Dubuque	Dubuque	655	29	14.4	-8.2	58	6	-11	1	34	.73	- .73	.28	6.2	8	10	13	6	NW	
Galva (a)	Ida	1,290	8	12.6	-5.2	54	5	-18	19	43	.50	† .03	.25		2	18	1	10	NW	
Gilman	Marshall	1,052									.55		.30	5.0	4	14	6	9	N	
Grinnell	Poweshiek			15.3	-5.8	49	6	-10	1	34	.73	- .14	.20	2.3	5	5	12	12	W	
Grundy Center	Grundy	976	11	13.0	-4.6	48	6	-23	1	38	.48	- .24	.20	5.5	5	4	15	10	NW	
Guthrie Center	Guthrie	1,077	6	18.4	-1.5	60	6	-15	1	51	.30	- .37	.16		5	13	6	10	SE	
Harlan	Shelby	1,192		17.0		51	5	- 8	11	47	.17		.10	1.7	3	5	16	8	NW	
Ida Grove	Ida	1,220		13.7		50	5	-12	8	45	.30		.25	3.0	2	16	3	10	E, SE	
Iowa City	Johnson	685	43	13.8	-9.1	63	6	-14	2	44	.84	- .67	.30	8.0	5	3	7	19	NW	
Iowa Falls	Hardin	1,170	9	13.0	-2.3	43	5	-23	1	43	1.03	† .08	.30	9.8	6	11	4	14	NW	
Jefferson	Greene	1,052									.83		.35	5.9	6	4	8	17	N	
LeClaire	Scott	576									.68		.18	6.0	7				NW	
Logan	Harrison	928	35	19.0	-4.6	58	5	- 8	11	49	.50	- .70	.20	5.0	4	15	4	10	NW	
Maquoketa	Jackson	688	9	12.1	-9.5	59	6	-14	1	46	.74	- .76	.24	6.5	5	7	3	19	NE	
Marshalltown	Marshall	947	9	13.1	-6.9	50	6	-17	1	44	.50	- .28	.24		3	7	5	17	NW	
Monticello	Jones	925	48	13.6	-9.3	55	6	-16	1	40	.95	- .65	.20	10.0	5	8	4	17	NW	
Mt. Vernon	Linn	847	35	15.2	-6.4	59	6	-14	1	38	.50	- .27	.20	8.2	7	10	5	14		
Newton	Jasper	944	14	15.4	-1.0	47	6	-15	1	40	.74	- .28	.21	9.5	6	16	7	6	NE	
Odebolt	Sac	1,356	5	15.1	-2.5	53	5	-12	1, 19	39	.56	- .19	.27	5.2	5	20	4	5		
Ogden	Boone	1,088	8	11.5	-7.9	47	5, 13	-22	1	53	.26	- .33	.12	5.8	4					
Olin (a)	Jones	760	5	15.2	-0.9	57	6	-14	1	36	1.18	- .15	.50	5.2	7	5	16	8		
Onawa	Monona	1,053		19.0		58	5	- 7	8	62	.29	- .66	.15	2.5	4	21	2	6	SE	
Perry	Dallas	975		15.4		46	5	-13	1	31	.55		.20	5.5	4	3	6	20		
Rockwell City	Calhoun		7	13.5	-3.3	47	5	-14	8	47	.45	- .06	.30	4.5	2	11	11	7		
Sac City	Sac	1,276	22	13.7	-3.9	49	5	-12	1, 8	34	.57	- .25	.27	5.7	3	12	9	8	NW	
Sioux City	Woodbury	1,165	13	14.6	-4.4	58	5	-13	8	53	.33	- .22	.15	3.9	4	6	9	14	NW	
Tipton	Cedar	807		16.4		59	6	-10	1	35	.89		.19	7.2	7	7	12	10	NE	
Toledo	Tama	856	8	14.4	-5.2	52	6	-18	1	38	.53	- .16	.20	9.5	5	6	13	10	NW	
Vinton	Benton	810	12								.64	- .37	.15	5.6	8	18	4	12	NW	
Waterloo	Black Hawk	862	15	14.0	-4.2	49	29	-18	1	35	.48	- 50	.26	5 0	5	7	12	10	NW	
Waukee	Dallas	1,039		17.6	-2.2	50	5	- 7	19	49	.36		.20	3.5	4	4	10	15	NW	
Wilton Junction	Muscatine	683	7	17.4		60	6	-13	1	41	.50		.20	6.0	4	13	0	16	NW	
Whitten	Hardin	1,036		12.6	-2.5	46	6	-22	1	39	.60		.20	6.0	4	11	6	12	NE, NW	
Average				15.0	-5.3	52.4		-14.0		41.9	0.35	- .99		5.6	5	9	9	11	NW	

CLIMATOLOGICAL DATA FOR FEBRUARY, 1904—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
ton	Union	1,216	7	18.7	-3.1	47		6	-10	1	40	.15	- .89	.10	1.5	2	5	12	12	NE
bia	Monroe	957	..	16.2	.....	63		6	-12	1	46	.26	.....	.18	3.0	2	6	6	17	NW
lerton	Wayne	..	....	19.8	....	62		6	-16	1	40	.26	.....	.10	2.3	6	16	11	2	NW
lantic	Cass	1,164	11	17.9	-2.8	49		5	-12	1	48	.19	- .77	.10	1.5	3	7	6	16	S, NW
dford	Taylor	.....	....	20.2	....	51		5	-11	1	45	.22	.....	.09	.5	3	10	7	12	NW
lknap	Davis	877	7	19.2	-2.3	60		6	-11	1	45	.50	-1.39	.30	4.0	3	....	....	....	N
naparte	Van Buren	.....	10	18.8	-4.1	63		6	-18	1	35	.23	-1.01	.18	2.0	2	....	....	....	.....
rlington	Des Moines	544	....	21.0	....	65		6	-13	1	38	.34	.....	.11	....	4	9	6	14	NW
ariton	Lucas	1,042	7	19.2	-3.0	61		6	- 6	1,4	40	.02	-1.02	.02	.2	1	10	9	10	NW
arinda	Page	1,069	12	19.3	-3.7	67		24	- 6	1	49	.14	- .88	.06	T	3	7	15	7	NE
lumbus Jct	Louisa	596	....	19.0	.....	61		6	-11	1	41	.54	.....	.10	3.4	6	9	13	7	NE, NW
rning	Adams	1,127	10	18.6	-3.6	49		23	-12	1	32	.08	- .72	.04	.5	3	9	8	12	NW
rydon	Wayne	992	9	18.4	-3.4	63		6	-17	1	43	.12	-1.30	.12	.5	1	13	5	11	SW
mberland	Cass	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.10		.10	1.0	1	12	4	13	NW
rlham	Madison	.....	..	15.2	.....	46		28	-14	1	36	.37	.....	.26	2.0	2	16	6	7	NW
rt Madison	Lee	516	51	.....	.....	.....	.....	.....	.....	.....	.....	.35	-1.61	.25	3.5	2	6	8	15	NW
lenwood	Mills	.....	15	20.0	-3.2	57		5	- 4	8,11	47	.02	- .66	.02	.2	1	5	18	6	NW
reenfield	Adair	.....	11	16.8	-4.5	45		22,28	-10	1	48	20	- .84	.13	2.0	4	16	5	8	NE
opeville	Clarke	.....	11	18.3	-3.6	52		6	-12	1	35	.04	- .73	.02	...	3	6	12	11	NE
dianola	Warren	969	11	17.2	-5.3	48		6	-11	1,2	38	.61	- .14	.25	3.5	6	7	8	14	NW
eokuk	Lee	619	31	21.6	-6.7	67		6	-11	1	30	.70	-1.01	.31	3.1	5	8	10	11	N
eosauqua	Van Buren	664	10	17.3	-6.8	70		6	-16	1	45	.52	- .90	.31	3.5	4	10	4	15	.....
acona	Warren	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.63		.20	4.5	6	5	18	6	.....
enox	Taylor	1,250	7	18.4	-4.4	45		6,23	- 7	1	44	.09	- .56	.05	.8	3	18	4	7	S
eon	Decatur	1,120	7	20.0	.....	55		6	- 3	4	30	.05	.....	.05	.5	2	19	8	2	S
t. Ayr	Ringgold	1,236	8	20.2	-1.6	50		23	- 7	1	35	.24	- .92	.09	1.0	3	7	10	12	NE
t. Pleasant	Henry	729	20	19.4	-4.4	61		6	-14	1	35	.37	- .67	.17	2.8	3	7	14	8	NW
maha, Neb	Douglass	1,113	32	19.8	-5.2	60		5	- 5	8	47	.10	- .69	.06	1.0	3	6	11	12	N
sceola	Clarke	1,130	8	20.8	†0.3	55		6	- 9	9	46	T	-1.08	T	....	0	9	17	3	N
skaloosa	Mahaska	843	18	16.8	-4.5	60		6	-15	1	40	.19	- .88	.08	2.3	3	8	4	17	NW
Ottumwa	Wapello	649	8	19.6	-3.3	66		6	- 8	1	36	.25	- .99	.16	2.6	3	3	10	16	NW
acific Junction	Mills	960	...	19.5	.....	58		5	- 5	11	46	.07	.....	.04	....	2	9	12	8	N
ed Oak	Montgomery	1,033	..	21.2	-1.6	47		5,6	- 1	11	34	.05	- .73	.05	.5	1	7	19	3	NE, S, NW
t. Charles	Madison	1,070	....	18.1	.....	49		6	- 8	1	34	.33	.....	.18	4.2	6	12	8	9	SE
ligourney	Keokuk	787	....	18.4	-3.0	57		6	-14	1	38	.29	-1.06	.09	3.0	5	11	5	13	NE, NW
tockport	Van Buren	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.44	.....	.32	3.0	2	5	6	18	.....
hurman	Fremont	.....	....	20.2	†0.0	54		5	- 8	4	38	T	-1.32	T	T	0	12	7	10	SW
illisca	Montgomery	1,058	8	21.3	-1.2	46		13,22,29	- 3	3,8,19	43	.26	- .79	.15	2.0	4	10	17	2	NW
apello (*b*)	Louisa	588	5	18.8	-2.0	59		6	- 5	16	34	.19	-1.27	.19	1.2	1	....	....	....	NW
ashington	Washington	769	20	13.7	-7.7	62		6	-16	1	50	.53	- .63	.20	3.0	6	....	..	..	NW
oodburn	Clarke	961		..	....	.....	.....	.....	.....	.....	.....	.22	.....	.11	2.2	4	12	3	14	NW
Average	.....	.....	....	18.8	-2.7	56.1	.....	.....	-10.1	.....	40.4	0.25	- .89	.....	2.0	3	10	9	10	NW
verage for state	.....	.....	....	14.8	-4.8	51.3	.....	.....	-14.4	.....	41.0	0.41	- .63	.....	4.5	4	10	9	10	NW

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Above normal. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. §Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR FEBRUARY, 1904.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton.....	Max..	16	28	18	25	44	47	31	12	17	17	15	28	43	40	15	15	13	17	27	32	28	43	44	38	27	25	40	42	39	..	..	28
	Min ..	-10	1	1	- 3	16	31	2	- 4	5	- 1	- 4	3	20	3	3	- 1	9	7	- 2	10	20	3	26	16	17	14	18	31	31	..	..	
Albia.	Max..	24	16	16	40	50	63	18	12	16	20	17	25	37	20	6	12	12	17	28	29	43	25	35	27	20	30	39	45	43	..	....	8
	Min .	-12	- 9	- 1	- 6	5	39	8	- 2	- 2	0	- 4	- 4	6	6	0	- 4	- 4	9	- 6	- 5	6	5	0	20	15	15	14	31	32	..	....	27
Algona...	Max..	10	20	9	27	42	20	10	4	10	3	10	17	38	14	0	14	10	15	15	22	24	32	34	12	10	20	35	38	34	....	....	5
	Min ..	-19	- 8	- 5	- 9	14	17	- 7	-16	- 6	- 7	-10	- 3	13	- 3	-10	-14	6	- 3	-12	- 1	1	- 8	5	- 4	5	7	11	27	25	....	....	18
Allerton .	Max..	16	26	17	27	47	62	35	14	16	20	20	27	46	40	17	13	14	17	28	31	29	40	43	35	26	29	43	43	41	....	....	- 0
	Min ..	-16	1	0	- 5	17	35	6	- 1	7	2	- 2	3	20	6	2	- 1	9	9	4	9	20	0	31	20	19	15	21	32	31	....	....	20
Alta.	Max..	26	28	6	27	53	44	8	5	8	10	10	23	41	10	3	11	9	15	23	26	19	42	39	23	11	16	36	39	32	....	....	9
	Min ..	-12	- 4	- 6	- 6	15	8	- 4	-15	- 8	- 7	- 6	0	8	- 3	- 6	- 9	5	- 2	- 2	6	- 1	- 8	10	0	4	7	14	27	23	....	....	21
Amana...	Max..	9	17	12	19	43	53	37	14	18	18	13	19	39	34	11	12	12	18	26	31	30	29	39	25	16	26	37	43	39	..	....	0
	Min ..	-11	2	0	- 6	12	37	10	0	4	2	- 4	- 6	16	5	- 3	- 9	8	10	- 6	0	13	- 2	24	7	7	12	21	33	32	....	....	25
Ames	Max..	12	23	13	27	43	43	25	9	13	15	12	20	41	35	15	16	12	16	24	26	25	41	47	42	15	22	35	42	39	....	....	7
	Min ..	-13	1	- 1	- 2	10	24	4	- 8	- 1	2	- 4	- 4	11	2	- 4	- 8	9	8	-12	1	12	- 4	6	3	7	11	13	23	31	....	....	25
Atlantic..	Max..	20	30	17	26	49	48	20	8	13	17	22	29	45	31	10	15	14	19	30	32	28	47	45	36	27	28	40	46	42	....	....	4
	Min ..	-12	3	3	- 2	16	20	2	- 4	1	- 3	-10	2	22	2	1	0	10	- 2	-11	- 2	13	- 1	27	19	17	13	20	27	31	....	....	28
Audubon.	Max..	18	28	13	24	47	45	20	15	10	13	15	17	45	31	10	12	12	18	27	30	23	45	42	32	22	23	37	45	39	....	....	7
	Min ..	-16	- 2	- 3	- 8	11	20	- 2	- 9	- 2	- 6	-11	- 2	20	- 1	- 3	- 4	8	- 6	-13	- 6	9	- 5	16	9	10	8	15	27	28	....	....	20
Baxter. ..	Max..	16	20	11	21	44	49	26	9	14	19	15	18	42	35	13	15	12	18	24	27	32	37	39	25	16	25	35	43	39	....	....	25
	Min ..	10	0	0	- 5	14	25	5	- 7	- 4	- 4	- 6	- 4	5	2	- 3	- 0	8	8	- 8	5	5	- 4	21	4	7	10	19	28	30	....	....	23
Bedford ..	Max..	21	30	20	31	51	50	29	12	12	18	23	30	47	39	15	16	13	14	23	30	30	46	48	40	34	29	42	43	45	....	....	30
	Min ..	11	3	- 3	9	20	27	3	- 2	6	0	- 4	6	24	3	3	1	11	7	- 3	13	19	1	30	26	22	15	22	28	32	....	....	9
Belknap ..	Max..	15	12	13	27	50	60	20	17	20	19	19	20	40	25	9	15	15	15	35	30	25	35	40	28	25	28	40	41	38	..	....	26
	Min ..	-11	3	5	- 2	15	15	10	3	8	5	4	7	20	7	4	- 1	15	12	- 1	- 1	..	3	37	22	18	17	25	30	33	....	....	11
Belle P...	Max..	16	12	12	21	44	46	17	13	17	19	15	17	40	15	5	11	12	20	24	30	34	35	28	16	15	27	32	41	36	....	....	21
	Min .	-15	0	0	- 8	12	32	6	- 5	1	- 3	- 6	- 5	12	0	- 5	-12	6	7	- 8	4	21	- 5	20	5	5	10	20	32	30	..	....	5
Bonapar'e	Max.	15	20	12	20	46	63	41	18	18	21	20	22	43	36	14	14	14	17	26	30	30	32	43	29	22	26	40	43	35	....	....	28
	Min ..	-18	2	- 5	- 9	11	41	12	3	8	5	1	3	17	8	3	- 6	10	11	- 5	2	17	- 4	29	19	20	16	24	31	32	....	....	9
Britt. ...	Max	11	12	7	24	40	38	17	8	10	10	8	18	34	23	3	5	14	13	20	31	20	29	34	18	12	21	35	43	38	....	....	20
	Min ..	-22	- 3	- 7	-12	14	17	- 6	-17	- 5	- 5	-10	- 3	13	- 3	-10	-17	7	- 3	-13	0	0	- 9	6	- 5	3	7	13	28	25	....	....	0
Burling'n	Max..	16	18	20	20	47	65	53	19	23	19	24	21	42	36	15	21	15	20	30	32	31	32	45	31	24	28	40	46	37	....	....	30
	Min ..	-13	5	0	- 5	13	44	15	7	9	7	3	4	20	10	3	- 4	9	13	- 1	9	23	0	26	20	14	20	25	35	34	....	....	11
Carroll ...	Max..	29	15	9	29	50	30	11	7	17	16	18	28	46	22	7	11	17	21	29	30	28	48	44	28	14	31	38	42	37	....	....	26
	Min ..	-14	- 3	0	- 8	14	30	- 2	- 4	8	- 5	- 6	- 2	9	- 2	- 5	5	3	5	-13	- 2	12	- 6	15	- 3	7	8	15	27	28	....	....	2
Cedar R..	Max.	17	10	13	20	49	54	16	17	17	17	14	22	38	16	3	14	16	20	20	31	29	50	39	17	20	26	39	46	37	....	....	24
	Min .	-11	-12	2	- 4	1	19	14	2	2	4	- 3	- 6	- 2	7	- 2	- 8	- 9	8	- 4	- 5	4	- 2	2	13	13	13	12	24	33	..	....	3
Chariton .	Max.	21	20	16	25	43	61	34	15	15	12	14	25	46	38	15	12	13	17	27	28	28	40	42	45	33	29	43	46	41	....	....	29
	Min ..	- 6	0	- 1	- 6	15	33	6	- 2	5	0	- 3	3	6	6	2	- 2	11	9	- 5	4	20	1	26	28	15	14	19	31	32	....	....	9
Charles C.	Max	21	9	4	20	39	41	10	6	12	14	12	20	31	10	0	12	10	12	20	24	28	32	40	9	10	23	34	38	34	....	....	19
	Min ..	-24	-15	- 5	-18	0	17	6	- 9	-10	- 4	- 5	- 9	0	- 1	-10	-16	-16	5	-16	-13	- 1	- 8	- 3	- 3	- 2	3	10	22	28	..	....	- 8
Clarinda..	Max	31	20	18	36	51	44	16	10	17	19	24	30	49	20	12	17	15	18	33	30	30	48	67	42	32	32	42	44	44	..	....	20
	Min ..	- 6	2	0	- 5	2	35	3	0	- 1	1	- 2	- 2	20	4	3	3	3	5	0	2	14	6	13	18	23	14	15	28	32	....	....	7
Clear L..	Max..	9	12	5	22	30	40	19	8	10	12	10	18	33	29	3	12	10	18	25	28	20	24	34	13	9	27	38	38	36	....	....	2
	Min ..	-21	- 3	- 7	-10	9	18	- 5	-19	- 5	- 7	- 9	- 9	10	- 5	-13	-18	4	5	-10	- 4	1	-10	5	- 6	0	6	15	26	26	..	....	- 1
Clinton ...	Max..	9	11	15	21	45	57	38	12	20	20	20	22	37	32	9	11	15	21	26	31	32	26	39	25	15	28	35	44	37	....	....	26
	Min ..	-10	2	- 2	- 7	10	45	10	2	5	5	- 6	- 8	15	8	- 2	-10	5	9	- 6	- 4	10	- 5	15	12	5	11	7	34	32	....	....	6
Colum. J.	Max..	16	17	16	21	48	61	52	18	18	19	18	24	42	38	15	13	15	19	29	35	32	35	40	29	21	25	39	45	37	....	....	28
	Min ..	-11	0	- 1	- 4	14	41	11	3	6	4	- 1	- 2	18	7	0	- 7	7	13	- 1	12	17	- 2	24	13	9	13	22	32	32	....	-	9
Corning..	Max..	17	29	29	26	47	46	26	10	14	15	16	27	43	32	13	15	15	17	28	29	28	44	49	33	30	25	40	44	44	....	....	28
	Min .	-12	0	- 1	- 5	15	25	2	- 4	5	- 1	- 5	4	22	2	1	- 1	9	3	- 3	7	15	2	20	22	18	13	20	36	32	....	....	8
Corydon..	Max	14	26	17	28	47	63	42	11	18	23	22	28	46	44	17	12	14	18	30	29	30	41	46	39	27	31	44	45	43	..	....	30
	Min ..	-17	- 4	- 5	-12	12	37	2	- 5	24	- 2	- 6	0	15	1	- 2	- 5	5	5	- 9	4	18	- 3	21	21	13	11	16	28	27	..	....	5
Cresco . ..	Max..	10	10	23	18	38	32	32	..	13	13	12	15	20	8	13	15	20	15	26	24	5	28	20	18	20	20	33	40	35	....	....	22
	Min ..	-22	- 6	-11	-13	8	25	0	-12	- 4	- 5	- 7	5	10	5	0	0	4	0	-10	- 3	- 5	6	-12	-10	0	2	10	20	25	....	....	- 0
Davenpo't	Max..	9	14	14	18	47	61	38	14	19	18	16	22	39	34	8	12	12	20	25	29	29	29	40	23	16	26	36	43	36	....	....	25
	Min ..	- 8	4	- 2	- 4	13	38	11	5	7	5	0	- 1	19	8	- 1	- 7	6	10	0	3	10	- 1	23	13	6	14	14	34	34	....	....	8
Decorah. .	Max..	8	6	5	18	40	42	26	16	18	15	10	18	33	10	2	13	11	17	28	28	27	22	29	12	10	29	38	43	37	..	..	20
	Min ..	-23	- 0	- 9	-14	7	24	- 1	- 3	- 2	0	- 3	-10	14	0	-11	-12	3	3	-12	- 2	0	- 7	11	- 3	2	9	12	24	27	....	....	0
Delaware.	Max..	5	9	9	18	41	47	37	10	14	14	11	15	33	28	6	10	9	15	26	26	31	24	33	19	10	23	32	41	37	....	..	21
	Min ..	-20	- 5	- 4	-14	0	27	8	- 4	0	0	0	- 8	11	3	- 9	-14	2	4	- 3	- 1	4	- 9	11	0	0	7	7	28	28	....	....	1
Denison..	Max..	23	32	13	27	57	51	19	5	11	14	16	..	45	30	10	14	13	16	28	31	27	49	44	36	23	25	39	46	39	....	....	28
	Min ..	-10	- 2	1	-10	13	29	- 2	-10	- 4	- 3	- 5	..	0	- 1	- 3	- 3	8	- 6	-12	5	9	-11	17	8	10	9	19	28	28	....	....	3
Des M....	Max..	13	27	17	25	47	47	19	11	15	17	14	22	44	19	8	12	12	19	24	27	28	42	46	30	18	24	40	45	40	....		25
	Min .	- 9	2	0	- 2	16	19	4	- 4	5	3	0	2	19	4	0	- 4	10	7	- 5	6	7	1	21	9	10	14	19	32	32	....	....	7
De Soto ..	Max..	15	28	16	25	46	47	24	8	13	16	16	25	45	35	12	12	12	18	29	29	27	44	45	29	21	22	39	44	38	....	....	28
	Min .	-11	0	0	- 5	16	24	4	- 6	4	- 3	..	..	..	..	..	..	..	6	- 6	5	12	8	21	9	12	13	18	28	33	....	....	8
Dows. ...	Max..	6	9	10	21	41	42	21	7	11	12	8	15	37	33	6	11	10	12	21	25	22	32	35	20	10	19	34	38	35	....	....	20
	Min ..	-21	- 2	- 3	-10	12	20	0	-12	- 2	- 6	- 8	- 2	13	0	- 8	-14	5	0	-13	1	4	- 8	10	- 4	3	8	17	19	28	..	....	0
Dubuque.	Max..	7	12	12	18	44	58	33	10	16	15	13	17	34	31	3	11	12	18	24	28	29	23	36	19	11	23	35	45	37	....	....	23
	Min ..	-11	1	- 3	- 5	10	33	7	- 2	3	3	0	- 5	17	3	- 5	- 8	5	6	- 6	- 6	6	- 4	19	7	5	10	15	34	30	....	....	5
Earlham .	Max.	12	24	16	24	42	45	26	9	12	15	15	24	42	18	12	10	12	15	26	26	51	43	43	36	22	35	38	46	38	....	....	26
	Min .	-14	- 2	1	- 9	9	23	1	- 8	0	- 5	-10	- 4	1	8	- 2	- 4	8	3	-12	12	10	- 7	27	8	11	12	14	26	25	....	....	4
Elkader ..	Max..	4	10	8	22	41	53	11	10	20	19	17	17	33	25	5	14	10	20	30	28	30	23	26	16	10	25	29	47	38	....	....	22
	Min ..	-22	0	- 5	-15	4	36	5	- 5	2	- 1	0	-10	15	5	- 9	-13	5	8	-20	-20	7	- 8	17	2	4	10	6	29	29	....	....	1
Esthervil.	Max..	24	10	6	28	40	19	- 1	0	7	8	9	26	30	10	5	14	10	15	20	26	15	35	22	12	8	30	36	35	34	....	....	19
	Min ..	-17	- 6	- 5	- 6	6	18	- 3	-19	-18	-11	-20	-12	5	- 4	-11	-16	-12	- 5	-18	- 8	2	- 7	- 1	- 4	- 2	- 2	- 1	22	23	....	....	- 4
Fayette...	Max..	5	11	8	18	40	49	28	9	21	17	13	17	33	25	6	15	11	17	27	30	26	30	30	17	12	26	33	46	38	....	....	22
	Min .	-26	- 2	- 8	-18	5	28	0	- 8	0	- 3	- 3	-12	9	0	-10	-16	4	- 8	-21	- 8	0	-10	8	- 2	1	7	19	17	26	....	....	- 1
Forest C'y	Max..	18	7	4	23	40	27	4	5	14	12	12	21	38	8	- 2	12	10	15	21	25	15	33	16	9	9	26	35	40	.	....	....	17
	Min ..	-19	-10	- 4	-11	3	15	1	-16	-15	- 6	-12	-12	4	- 4	-12	-16	- 9	5	-11	- 2	6	- 9	- 1	- 6	- 4	3	8	25	26	..	....	- 2
Ft. Dodge	Max..	23	10	13	25	47	45	20	7	12	13	11	20	51	23	10	15	16	17	23	29	23	39	38	16	11	20	35	41	36	....	....	23
	Min ..	-17	- 4	- 1	- 7	17	19	2	-12	- 2	- 4	- 4	0	16	0	- 6	-10	9	- 2	-11	- 2	9	- 6	12	0	0	9	18	23	31	....	....	2
Galva.....	Max..	..	29	13	26	54	44	15	6	10	11	12	25	44	22	9	12	11	14	23	29	24	43	41	22	16	32	37	40	35	....	....	25
	Min ..	..	-14	- 3	- 8	15	14	- 4	-15	- 8	- 6	- 7	- 7	19	- 3	- 6	- 7	7	-13	-18	3	7	-11	-10	0	6	7	16	25	23	....	....	0
Glenw'd .	Max.	24	32	22	29	57	56	21	12	12	15	18	29	48	30	13	17	14	18	29	25	28	52	46	45	34	28	39	46	48	....	....	30
	Min ..	2	3	5	0	22	20	2	- 4	2	- 2	- 4	7	25	2	0	2	12	3	- 2	10	15	5	18	22	22	12	23	24	29	..	....	9
Grand M.	Max..	5	9	6	18	37	45	37	5	14	9	10	16	32	27	4	10	10	16	24	24	31	22	31	18	9	24	29	45	28	....	....	20
	Min ..	-20	- 1	- 5	-14	6	37	5	- 8	- 1	- 2	- 3	- 8	11	- 1	-11	-14	2	5	- 3	- 7	8	- 9	15	- 3	- 1	7	10	26	26	....	....	1
Greenfi'ld	Max..	16	26	16	27	44	44	26	8	15	16	15	28	42	35	10	13	13	17	27	35	28	45	42	36	24	24	37	45	39	....	....	27
	Min ..	-10	- 1	- 1	- 4	16	26	0	- 7	3	- 4	- 7	0	19	1	- 2	- 2	8	2	- 3	5	13	- 3	22	12	14	10	15	29	30	....	....	6
Grinnell.	Max.	15	11	11	19	44	49	32	14	13	14	11	17	39	33	12	13	11	15	27	16	29	33	39	24	16	21	35	41	38	....	..	23
	Min ..	-10	1	1	- 2	14	31	8	- 4	- 1	- 2	- 4	0	15	3	- 2	- 9	8	7	- 3	4	13	- 1	22	5	- 7	11	20	31	31	....	....	6
Grundy C	Max..	11	17	9	21	41	48	29	13	14	15	13	16	36	32	9	12	11	16	22	26	29	30	37	21	12	22	33	42	37	....	....	23
	Min ..	-23	0	- 5	-13	10	29	5	- 8	- 1	- 5	- 5	- 5	14	1	- 6	-15	6	- 7	- 9	0	11	- 8	17	0	4	10	18	23	30	....	....	2
Guthrie C	Max.	17	47	20	27	56	60	34	16	15	17	17	27	47	30	18	12	15	23	31	34	35	46	52	46	28	23	42	44	51	....	....	32
	Min ..	-15	- 1	3	- 1	17	24	1	- 8	- 1	- 5	- 7	- 1	20	1	- 2	- 3	9	- 1	-12	3	1	- 5	18	8	11	11	12	27	32	....	....	4
Hampton.	Max..	7	8	10	23	40	43	21	10	19	19	14	16	37	30	5	14	10	18	28	26	24	30	25	18	10	23	34	44	36	....	..	22
	Min ..	-19	- 6	- 6	- 8	10	21	- 2	-12	- 1	- 4	- 3	- 5	13	- 1	-10	-12	5	5	- 4	- 2	3	- 2	13	- 3	2	9	17	27	28	..	..	1
Hanlont'n	Max..	6	15	7	23	39	39	20	4	12	11	9	15	35	28	3	11	12	12	20	22	20	26	30	16	9	21	35	36	33	....	....	19
	Min ..	-24	- 5	-10	-15	2	18	- 6	-17	- 6	- 8	-13	-11	12	- 5	-12	-19	4	- 2	-16	- 5	0	- 9	1	- 6	0	7	15	25	25	..	....	- 2
Harlan....	Max.	19	30	15	25	51	43	20	7	12	15	17	28	46	29	11	15	13	17	27	32	27	47	43	39	28	28	39	47	41	..	..	28
	Min ..	- 7	1	2	- 3	17	20	- 1	- 7	- 2	- 4	- 8	4	21	0	- 2	- 1	9	- 3	- 7	5	10	0	21	14	14	10	19	26	29	....	....	6
Hopeville.	Max..	15	27	18	29	44	52	24	9	15	16	16	27	45	36	10	12	14	16	32	29	29	43	45	36	24	27	42	43	40	....	..	28
	Min ..	-12	0	- 1	- 4	17	24	4	- 4	5	0	- 4	3	21	5	1	- 1	9	8	- 3	10	14	2	23	17	17	14	19	31	32	..	..	8
Humboldt	Max..	12	23	12	28	44	45	20	8	10	12	11	20	42	30	8	16	16	22	38	24	40	37	24	11	20	35	39	37	36	....	....	24
	Min ..	-21	0	0	- 8	15	20	0	-13	- 4	- 6	- 6	0	15	0	- 8	-12	12	-14	- 7	6	- 6	9	- 2	5	8	15	22	22	30	....	..	2
Ida Grove	Max.	15	20	15	23	50	50	34	5	12	9	15	25	43	34	12	22	20	12	22	22	30	40	40	42	30	22	35	35	43	....	....	26
	Min .	-11	- 4	0	- 8	20	5	- 3	-12	- 5	- 4	- 6	0	8	- 3	- 7	- 3	5	- 8	-15	5	8	- 8	5	5	3	9	15	16	19	....	....	0
Indianola.	Max.	14	27	17	26	47	48	28	11	15	19	17	24	44	38	14	12	13	16	26	29	28	42	45	30	22	23	39	45	40	....	....	27
	Min .	-11	-11	1	- 4	12	26	5	- 5	2	- 2	- 5	2	19	5	0	- 3	10	2	- 6	8	13	0	23	11	13	13	19	31	32	....	....	6
Inwood..	Max..	33	30	12	31	48	29	7	- 1	3	7	10	26	37	9	2	11	10	14	19	24	19	37	36	25	13	17	41	37	36	....	....	21
	Min ..	- 3	- 5	- 7	- 8	17	7	- 6	-17	-

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR FEBRUARY, 1904—CONTINUED.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
	Max..	24	12	49	28	46	70	21	18	20	21	20	25	42	22	8	14	15	18	25	31	44	39	27	29	23	29	41	43	37	....	....	28.0
	Min ..	-16	-16	- 1	-10	0	28	13	4	4	6	1	0	7	8	4	- 3	- 3	12	- 4	- 5	- 1	1	26	18	20	18	18	29	34	....	....	6.6
	Max..	21	28	13	34	56	40	12	5	8	11	15	26	42	18	6	14	12	17	24	30	22	42	37	22	13	24	40	37	38	..	....	24.4
	Min	-12	- 4	- 6	-10	20	10	- 5	-17	-11	-10	-12	- 3	17	- 4	- 8	-11	8	- 8	-14	2	- 2	-12	8	- 3	4	6	15	26	20	...	.	- 0.6
	Max..	23	33	8	32	54	43	10	4	8	10	15	29	40	18	8	12	14	15	25	31	26	44	40	30	17	24	41	39	37	....	....	25.2
	Min ..	- 1	- 3	- 5	- 4	19	10	- 5	-14	- 9	- 8	- 3	3	18	- 2	- 5	- 4	10	-11	-15	5	4	- 8	10	4	5	5	19	26	22	..	....	1.9
	Max..	17	28	19	27	44	45	29	10	13	14	16	27	43	37	14	14	14	16	28	29	28	44	45	39	30	25	40	42	42	....	..	28.2
	Min ..	- 7	- 1	0	- 5	17	28	0	- 6	4	- 2	- 4	4	21	1	- 1	- 2	8	5	- 2	11	19	0	28	21	18	12	19	31	31	...	....	8.6
	Max..	12	27	18	26	48	55	35	12	12	13	19	24	42	41	15	12	13	15	24	27	27	40	40	38	29	27	42	42	39	....	....	28.1
	Min ..	10	2	2	- 3	18	35	5	- 2	7	2	3	5	21	7	3	0	10	9	0	11	20	5	30	20	20	15	22	32	32	....	....	11.8
	Max..	22	32	17	28	58	47	18	9	14	15	17	31	48	22	12	17	15	20	24	35	40	50	47	39	30	35	40	48	45	....	....	30.3
	Min ..	4	1	2	1	18	15	0	- 5	- 1	- 1	- 8	7	10	1	- 1	2	10	0	1	10	12	1	20	16	15	11	21	25	27	..	....	7.7
	Max..	14	11	15	19	43	59	18	15	19	21	19	21	36	20	5	14	12	12	30	29	30	36	35	24	15	29	36	46	..	....	....	25.1
	Min ..	-14	-12	- 1	-10	0	17	12	1	0	0	- 7	-11	-10	8	- 5	-12	-12	6	-13	-12	-11	- 5	- 5	12	4	4	0	17	32	...	..	- 0.9
	Max..	19	14	9	22	46	50	15	11	16	19	14	23	38	17	6	15	11	20	26	29	31	40	25	19	14	28	35	44	38	..	..	24.0
	Min ..	-17	14	0	- 5	2	20	6	- 7	- 6	- 2	- 5	- 5	0	2	- 4	-11	13	11	15	22	24	20	26	32	12	11	21	33	38	35	....	....	2.2
	Max..	6	15	8	20	33	38	22	7	12	15	11	14	34	30	7	13	11	15	22	24	20	26	32	12	11	21	33	38	35	....	....	20.2
	Min ..	-14	1	- 2	- 8	11	22	2	-13	0	- 3	- 5	- 4	12	0	- 9	- 9	5	7	- 6	- 2	8	- 6	10	- 2	3	9	17	28	29	....	....	2.8
	Max..	10	14	12	20	42	55	40	12	17	19	15	25	33	12	15	20	25	20	22	28	30	32	30	19	12	32	30	38	45	..	....	25.2
	Min	-16	- 2	- 3	- 8	10	35	10	- 2	0	- 2	- 7	-10	- 2	- 6	-10	- 6	6	1	-13	- 9	- 2	- 8	8	6	4	18	17	25	26	...	....	2.1
	Max..	20	28	19	30	46	46	28	8	11	18	21	32	49	41	15	16	17	20	34	31	30	47	50	42	31	30	45	45	45	....	....	30.8
	Min ..	- 7	- 1	- 1	- 5	19	28	3	- 3	5	0	- 3	5	22	3	2	0	9	8	0	11	18	3	29	23	20	14	20	29	31	....	....	9.5
	Max	10	18	19	21	46	61	55	17	20	21	19	22	41	36	15	14	14	22	24	33	33	34	43	30	22	28	41	46	37	....	..	29.0
	Min .	-14	8	- 1	6	11	41	12	3	6	4	- 1	1	17	14	1	- 7	8	12	- 3	4	20	- 2	25	18	13	16	23	32	33	....	....	9.8
	Max	11	9	8	19	43	59	39	15	18	21	14	19	36	20	7	18	14	18	32	29	25	27	35	20	13	26	35	44	35	....	..	24.4
	Min	-14	0	- 2	- 7	11	39	10	- 2	1	0	- 2	- 4	15	3	- 5	-10	4	8	- 6	2	11	- 4	20	6	4	9	13	31	29	....	....	5.9
	Max..	3	11	6	18	36	41	24	7	14	15	11	15	33	30	5	23	9	14	23	24	19	21	31	17	8	20	31	41	36	....	.	19.7
	Min ..	-23	- 3	- 7	-15	..	29	2	8	- 2	4	- 5	- 8	9	- 3	-13	-15	3	4	- 5	- 5	3	-11	10	6	- 2	6	15	23	26	....	....	0.1
	Max.	14	21	12	21	42	47	31	11	14	16	13	19	41	41	16	14	14	17	23	28	29	36	38	28	17	24	36	42	39	....	....	25.8
	Min ..	-15	- 1	- 1	- 6	13	33	5	- 7	- 1	- 3	- 5	- 5	10	1	- 4	-10	7	6	- 7	3	10	- 4	22	3	8	10	19	30	31	....	....	4.9
	Max..	8	15	10	25	35	37	22	8	15	16	13	15	35	31	2	11	12	11	26	25	21	26	28	13	11	27	34	46	40	...	..	21.7
	Min ..	-19	- 1	- 8	-11	10	20	- 4	-15	- 4	- 6	- 8	- 6	12	- 3	-12	-15	5	6	- 5	- 2	1	- 7	6	- 5	2	8	15	28	28	....	..	0.3
	Max..	17	31	15	27	53	49	19	7	12	13	18	25	43	31	7	13	11	16	27	31	27	46	43	30	18	25	38	43	36	....	....	26.7
	Min .	-12	- 1	0	- 9	15	19	- 2	-11	- 5	- 1	- 4	2	20	- 1	- 4	- 4	10	11	16	- 4	-12	2	14	2	8	9	17	24	28	....	..	3.5
	Max..	22	12	8	32	47	41	15	8	8	18	18	36	47	20	5	18	14	19	25	28	28	42	30	21	14	29	35	46	39	....	....	25.0
	Min .	-22	- 8	- 7	- 5	- 3	27	- 2	-13	- 9	- 9	-10	- 5	1	- 3	- 8	-11	- 5	- 1	-15	- 1	4	-11	12	- 2	- 2	4	10	17	28	....	....	- 2.0
	Max..	15	15	13	18	44	57	46	13	16	17	16	18	36	32	12	10	10	29	23	28	32	27	37	14	25	34	..	44	40	....	....	25.8
	Min ..	-14	2	0	- 8	9	37	13	0	3	1	- 7	-10	15	6	- 4	-11	1	7	- 8	- 8	18	- 5	9	5	10	5	..	33	31	..	....	4.6
	Max..	34	35	25	28	60	47	12	7	12	13	18	30	50	16	11	18	15	18	28	28	24	54	54	42	26	29	41	46	50	...	..	30.0
	Min ..	6	3	4	5	25	10	0	- 5	2	- 1	- 3	10	10	2	1	2	13	2	3	15	9	7	28	20	16	12	25	28	29	..	....	9.6
	Max..	26	32	13	32	58	51	14	12	16	16	22	31	41	21	17	18	16	18	33	32	28	52	49	41	28	34	42	49	51	....	....	30.9
	Min ..	4	0	3	0	18	14	- 1	- 7	- 2	- 5	- 2	7	19	0	- 1	2	11	- 2	- 5	10	12	0	21	13	14	10	22	25	27	....	....	7.1
	Max..	3	12	6	20	36	38	23	6	13	15	10	13	32	31	3	13	10	11	20	25	24	21	30	14	9	21	32	38	34	....	....	19.1
	Min .	-20	- 1	- 5	-12	10	23	1	-14	- 3	- 4	- 6	- 5	12	- 2	-12	-15	6	7	- 6	0	4	- 7	7	- 5	1	8	16	24	27	....	....	1.0
	Max..	28	17	27	40	46	55	30	10	10	17	26	40	45	20	8	17	18	27	30	36	46	35	29	26	12	19	35	49	45	..	....	31.1
	Min ..	- 3	- 2	4	0	28	27	9	- 6	- 9	- 7	- 7	5	20	20	- 2	- 1	10	12	20	18	0	15	15	16	12	19	35	20	30	....	....	10.4
	Max..	11	21	15	23	47	60	32	12	16	17	15	22	43	17	12	14	12	16	26	30	31	38	43	28	20	23	39	42	38	....	....	26.3
	Min ..	-15	0	0	- 6	14	32	8	- 3	3	1	- 4	0	16	4	0	- 7	10	8	- 8	4	15	- 2	27	10	12	12	21	31	31	..	....	7.4
	Max..	15	11	18	25	52	66	32	15	18	12	20	24	44	20	8	15	15	19	27	30	32	37	38	25	21	27	41	48	38	..	....	27.3
	Min ..	- 8	5	2	2	19	30	12	2	8	6	2	8	21	1	4	- 3	11	11	0	9	14	4	31	20	16	16	27	34	35	....	....	11.9
	Max..	25	19	11	29	58	47	16	9	13	15	18	30	46	25	12	18	13	20	27	29	24	51	46	39	36	30	40	45	46	...	..	28.9
	Min ..	0	3	2	- 1	21	16	2	- 3	7	- 4	- 5	9	25	3	3	4	13	13	- 3	13	17	5	29	24	20	13	23	24	30	....	....	10.1
	Max	14	26	14	26	46	45	22	8	15	26	15	23	44	33	13	13	12	18	25	30	27	40	40	25	18	25	37	43	36	...	..	26.1
	Min ..	-13	0	- 3	- 7	16	21	3	- 7	1	- 5	- 6	0	19	3	- 2	- 4	9	4	-10	2	9	- 4	13	5	9	11	16	24	32	...	....	4.7
	Max .	20	20	14	20	44	42	16	5	6	7	10	22	42	28	5	10	10	8	14	30	22	38	35	15	10	22	34	36	38	....	..	21.1
	Min ..	-18	- 3	- 4	-10	0	16	- 2	-16	- 7	- 7	-10	- 1	15	- 4	-10	-16	8	- 5	-15	- 8	3	-13	12	- 6	- 1	8	8	26	27	....	....	- 1.1
	Max..	16	28	10	30	52	48	11	- 5	-17	-10	- 7	3	5	- 8	- 7	- 4	8	- 6	- 8	4	4	-10	7	- 3	3	6	21	28	31	....	..	21.7
	Min ..	-11	- 4	- 8	3	17	11	- 5	-17	-10	- 7	3	0	37	19	8	10	10	13	13	21	19	39	40	21	11	18	31	34	34	....	....	0.9
	Max..	22	29	20	28	47	47	22	14	15	16	19	29	42	34	16	19	22	20	30	30	28	45	43	33	34	28	46	45	42	..	..	29.9
	Min ..	3	3	8	6	25	21	4	0	9	1	- 1	12	26	5	4	4	10	5	0	5	18	11	31	23	21	15	25	35	32	....	....	12.4
	Max..	4	8	7	21	40	44	35	23	16	23	20	25	34	32	9	14	13	25	31	31	28	25	31	15	17	31	40	46	41	....	....	25.2
	Min ..	-20	- 2	-13	-16	9	35	- 2	-11	- 2	- 5	- 6	-10	13	0	-12	-14	3	5	- 2	0	0	-13	13	- 5	1	8	15	26	28	....	....	0.9
	Max	15	10	8	36	49	20	4	7	8	9	14	30	42	16	12	14	20	16	12	32	30	38	32	18	10	32	46	47	38	..	....	23.1
	Min ..	- 6	- 4	- 5	- 6	20	17	- 6	-15	-14	-15	-15	2	8	- 2	- 6	- 8	9	8	-12	10	12	- 6	10	0	7	5	16	26	20	....	....	0.8
	Max..	15	28	13	28	47	45	20	8	11	15	13	22	30	25	10	15	14	8	9	23	30	24	40	40	25	15	20	41	38	46	....	....	24.7
	Min ..	-12	- 3	- 1	- 6	15	18	- 2	-14	- 5	- 5	- 5	1	10	- 2	- 6	-10	17	17	25	28	25	44	42	27	15	23	36	39	34	....	..	2.3
	Max..	16	15	14	23	49	45	25	10	11	14	12	23	42	42	10	10	17	17	25	28	25	44	42	27	15	23	36	39	34	....	..	25.4
	Min ..	-12	- 3	- 1	- 6	15	18	2	-12	- 6	- 2	- 4	- 1	3	- 1	- 4	- 7	5	4	- 9	- 1	10	- 6	12	3	6	8	16	26	27	....	....	2.0
	Max..	18	26	11	31	46	49	25	11	17	22	22	26	46	21	12	10	12	19	30	29	31	44	47	32	24	24	39	45	40	....	....	28.0
	Min ..	- 8	0	4	- 3	16	25	5	- 5	3	- 1	- 4	1	19	5	0	- 2	10	8	- 4	7	15	1	25	13	14	13	17	31	32	....	....	8.2
	Max..	20	7	33	55	18	2	10	5	6	13	28	43	48	6	11	13	20	23	28	15	38	23	17	9	27	36	35	..	31	....	....	20.9
	Min ..	-12	- 5	- 7	8	6	18	- 6	-19	-16	- 9	-13	-12	6	- 4	-10	-12	-10	10	-11	- 8	7	-11	2	- 8	0	4	4	26	21	....	....	- 3.6
	Max..	24	16	16	22	44	57	43	15	18	21	20	23	42	35	16	14	12	21	28	33	36	34	43	30	19	28	38	44	38	....	....	28.7
	Min ..	-14	3	- 2	- 7	7	42	10	- 2	2	2	- 5	- 1	15	5	- 1	-13	8	9	7	13	18	- 3	27	-12	10	12	21	32	31	....	....	8.2
	Max..	30	32	17	31	51	32	9	1	4	8	12	27	37	13	3	12	11	14	21	29	20	39	38	27	14	21	39	37	36	....	....	22 9
	Min ..	- 5	- 5	- 6	- 6	17	9	- 5	-17	- 9	- 8	- 9	0	12	- 3	- 7	- 8	8	- 7	- 9	2	0	- 8	8	0	1	5	17	27	20	....	....	0.5
	Max..	37	23	21	34	58	41	3	6	8	9	14	30	40	11	8	14	14	16	26	28	20	50	40	29	16	25	45	41	42	....	..	25.8
	Min ..	2	- 3	- 4	1	23	3	- 8	-13	- 6	- 7	2	7	4	- 2	- 4	- 4	5	- 5	-11	9	- 1	- 3	14	7	11	3	22	29	25	....	..	3.4
	Max	17	35	9	20	45	29	8	0	7	8	18	20	40	16	0	15	10	18	16	32	20	39	39	17	9	35	35	36	40	....	....	21.5
	Min ..	-17	- 5	- 7	9	14	7	-10	-20	-12	-10	-17	0	0	- 4	-13	-15	7	- 6	14	4	- 3	-10	5	- 7	4	4	32	25	35	....	..	0.8
	Max..	28	21	26	53	48	15	5	10	..	11	11	26	42	13	3	6	10	- 5	- 8	-10	-10	8	-10	0	0	- 1	5	6	26	21	....	....	22.4
	Min ..	-12	- 5	- 3	- 6	12	14	- 4	-16	-10	..	- 8	7	3	- 4	- 6	-10	- 5	- 8	-10	-10	8	-10	0	0	- 1	5	6	26	21	....	....	1.4
	Max..	26	34	21	30	54	53	19	12	15	15	18	30	44	26	14	17	15	18	26	28	25	49	47	37	33	28	39	44	44	....	....	29.7
	Min ..	- 3	4	- 3	- 8	20	19	3	- 2	8	- 2	4	9	26	- 3	- 3	4	14	5	- 2	14	12	6	35	34	23	13	24	27	30	....	....	10.8
	Max..	11	13	12	18	45	59	46	17	20	22	18	18	36	33	12	15	10	20	28	29	29	27	36	25	15	26	34	45	38	....	....	26.1
	Min ..	-10	2	- 2	- 7	10	40	12	3	5	3	- 1	- 2	10	7	- 3	- 8	5	8	- 1	3	15	- 3	5	10	6	11	13	31	31	....	....	6.7
	Max..	8	17	13	21	45	52	30	13	16	19	15	18	39	33	10	13	10	18	28	29	30	32	40	22	13	25	35	45	37	....	....	25.0
	Min ..	-18	1	- 2	- 9	10	26	- 8	- 6	1	- 3	- 5	- 8	15	3	- 4	-13	7	6	- 8	- 1	3	10	- 3	21	3	6	11	17	30	31	..	..	3.8
	Max..	30	28	30	34	45	45	29	17	22	18	17	32	46	27	18	17	18	20	28	32	29	46	44	43	32	34	38	45	46	....	....	31.4
	Min ..	- 1	0	- 3	7	12	26	2	- 3	2	0	5	22	18	2	1	1	10	3	- 3	11	16	3	28	22	22	28	32	32	31	....	....	11.2
	Max..	8	8	10	18	47	59	52	17	20	23	23	21	40	34	12	14	14	15	26	..	30	29	41	30	20	..	38	43	38	....	....	27.0
	Min ..	- 9	5	1	- 4	13	37	15	7	9	5	1	2	19	11	3	- 5	9	9	0	..	24	0	25	17	11	..	17	33	34		...	10.7
	Max.	8	11	16	21	48	62	19	16	20	21	19	21	41	20	6	15	13	20	23	32	32	40	39	23	19	25	38	45	36	.	....	26.0
	Min ..	-16	- 1	- 5	- 8	2	23	7	- 1	0	- 1	- 6	- 5	- 2	4	- 4	-10	- 9	5	- 6	- 5	2	- 5	- 2	10	6	7	12	24	30	....	..	1.4
	Max..	9	1	10	20	41	51	27	21	19	19	15	18	35	25	9	15	10	18	25	28	30	26	33	17	12	23	34	44	49	....	....	24.2
	Min ..	-18	[illegible]		-12	9	27	7	- 6	2	- 1	- 1	- 5	15	2	- 7	-11	6	4	-10	- 5	- 9	- 5	18	1	4	10	18	28	29	..	3.7
	Max..	20	1			50	48	27	15	11	16	15	25	46	24	14	14	11	20	35	29	27	47	44	38	19	23	38	44	39	....	....	27.6
	Min ..	- 4	7			16	27	10	- 6	7	- 3	- 5	0	19	3	- 1	- 4	9	5	- 7	5	14	- 2	20	7	10	10	17	29	34	..	....	7.7
	Max..	6	6		19	39	43	25	7	15	15	10	16	34	30	5	13	9	15	22	28	28	25	32	18	10	21	32	40	37	....	....	21.0
	Min ..	-22	0	5	-15	10	25	2	- 8	1	- 2	- 2	- 7	14	0	- 9	-13	5	6	-15	- 4	5	- 9	15	- 1	2	9	19	26	28	...	....	1.9
	Max..	11	24	12	27	46	43	17	4	9	12	12	20	41	25	6	16	11	14	21	29	22	36	30	21	10	20	35	37	37	....	....	21.7
	Min ..	-19	- 2	- 4	10	15	17	- 3	-16	- 7	- 6	- 8	- 8	14	- 2	- 8	-15	7	- 8	-12	- 4	5	-11	7	- 4	4	8	8	26	27	....	..	- 0.3
	Max..	10	11	10	22	41	46	27	11	13	15	10	19	37	12	- 1	- 8	11	15	23	30	28	32	37	22	12	24	34	40	37	....	..	23.3
	Min ..	-22	- 2	- 5	-12	10	26	2	-11	- 2	- 5	- 5	- 4	12	- 1	- 8	-14	5	5	-10	1	8	- 7	15	- 1	3	8	18	24	28	....	...	1.9
	Max.	17	14	16	19	47	60	54	16	20	18	20	23	40	36	13	12	13	19	25	32	32	30	39	31	16	28	38	40	38	....	....	27.8
	Min ..	-13	3	- 2	- 8	11	41	13	1	4	1	- 8	- 8	16	8	- 2	-12	6	10	- 5	0	22	- 7	22	13	6	12	11	33	32	....	....	6.9
		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....	...
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		..	..	..	..	..

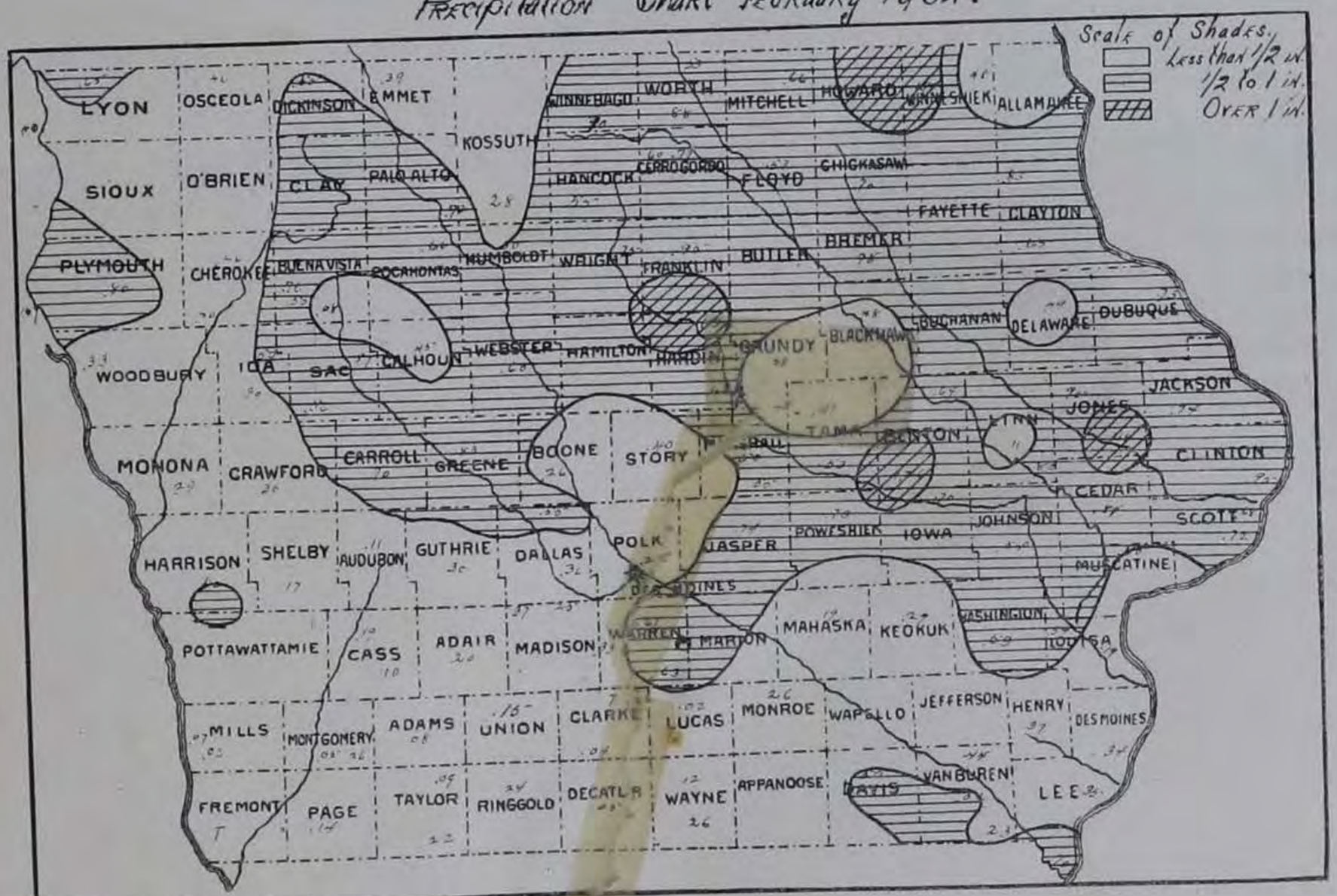
DAILY AND MONTHLY PRECIPITATION FOR FEBRUARY, 1904.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton							T	T		.10								.05			T										
Albia									T									.18			.08										
Algona									T								.10				T		.03		.13				.02		
Allerton	T						T	.05	.03						T		.10	.02			.03							T	.03		
Alta						.03		.03					T				.40				T	.05	.02	.21	.01				.01		
Alta (near)						.05											.80						.10	.10	T						
Amana							.08	T	.10								.16	.08			.05		.02		.15				.06		
Ames						.03		.02									.20								.15						
Atlantic								.05									.10				T							.04	T		
Aububon								.04									.11	T		T						T	T		T		
Baxter									.03								.03								.03				.25		
Bedford								.09	T							T	.08	T		.05	T					T					
Belknap		T	T														.30				.10							.10			
Belle Plaine					T				.25								.10	.30				.10	.01		.40	.10			T		
Bonaparte																	.13				.10								T		
Britt	T	T	T	.03	.04					.02							.20	.03			.02				.06		.02		.13		
Buckingham		T						.11									.23	T					T	T	.10				.03		
Burlington		T	T					T									.08	.08			.11							T	.07		
Carroll	T							.15										.20			T		.10		.25						
Cedar Rapids				T			T		T									.10			T			T	.01	T			T		
Chariton		T					T		T								.02											T	T		
Charles City										T								.26			T	T	T		.15	.05	T		.11		
Clarinda			.02					.06									.06				T										
Clear Lake					T	T	T			T							.30	.10					T		.05	T			.15		
Clinton									.16								.31				.22		T		18				.08		
Columbus Junct'n									.10								.10	.07			.10				.07			.10			
Corning								.02	T								.04				.02					T	T				
Council Bluffs																															
Corydon								T									T	.12			T							T	T		
Cresco																	.20											.10			
Cumberland								.10								T															
Davenport		T	T				T		.09		T						.20	.11			.14		T		.10	.03		.01	.04		
Decorah							T												.30				.04			.03	T		.11		
Delaware						.02		.03									.07				.10	.20			.04				.63		
Denison										.08							.05	.05			.02	T	T	T	.10						
Des Moines			T				T	.01	.05								.12	.02			.01		T		T	T	T		.01		
De Soto								.05	.10								.10				T				T	T			T		
Dows									.10								.40	.10					T		.10				.05		
Dubuque	T	T	T		T	T	.01		.03		T						.12	.16		T	.01		.23		.14	T	T	T	.03		
Earlham			T					T	.11								.26	T									T		T		
Elkader	T					T			.02		T						.43				T		.13		.07	T					
Estherville		T					.05		T								T	.20			T	T	T		.10	.04			T		
Fayette	T							T	T								.50						.30			.02	T		.20		
Forest City	T								T								.50					T			T	T			.20		
Fort Dodge									T								.40						T		.20	T					
Fort Madison			T					T									.25			.10	T				T			T	T		
Galva						T			.25								.25				T										
Gilman		T			T				.10								.10								.30			T	.05		
Glenwood								.02	T							T	T			T						T	T				
Grand Meadow					.02		.02		.02									.40					.15		.10				.12		
Greenfield							T	.03	.05						T		.13	T			.01		T				T	T	T		
Grinnell						.20		.11									.12								.20				.10		
Grundy Center					T	T		T	.10								.10	.15					T		.20		T	T	.03		
Guthrie Center		T	T			.03	T	T	.07								.16	T							T			.01	.03		
Hampton								.04									.63			.01				.20	03	T		.04			
Hanlontown					T	T	T		T		T					.35					T	T	T		T	T		.18			
Harlan						T	T	T	.05	T				T			.10	.02					T		T	T	T		T		
Hopeville			T					.01	.01								.02				T										
Humboldt																.30								.20							
Ida Grove																	.25							.05							
Indianola					.02			.02	12						T		.15	.05			T				T		T	T	.25		
Inwood						T			T				T				.20					T	T	.10	T						
Iowa City	T	T	T			T		.20										30			.10	T	T	T	.19	T		T	.05		
Iowa Falls	T					T	T		.10								T	.30	T		.03		T		.20	.30	T	T	.10		
Jefferson		.03				T		.12									.35				T		.05		.13		.15				
Keokuk		T	T				.04	T	T	T					T		.22	.04		T	.09							T	.31		
Keosauqua							.05		T									.31		.11									.05		
Lacona								.11	.10					.05			.20				.03							.14			
Larrabee						T			.02								.20				T		T		.24						
Le Claire		.04	T	T			T	T	.03	T								.12	T		.10	.10		T	T	.18			.11		
LeMars						T											.35				T		.10	.35							
Lenox								.05									.02				.02										
Leon			T		T			.05	T						T		T				T						T	T	T		
Logan							.10	20								.10	.10														
Maquoketa									.08	T								.24			.14	T				.20			.08		
Marshalltown						T			.11								T	.24			T		T		.15	T	T				
Monticello		T	T	T			T		T								.15	20				T	.20	.20	.20						
Mason City						T											.60						T		.11				.06		
Mount Ayr								.05									.09				T		T				T		.10		
Mt. Pleasant			T				T		T		T						.10	.17			.10				T			T	T		
Mt. Vernon		.01	.01		T			.11									.30			.13				.05		.20	T	T	T		
New Hampton					.10				T								.20	.20							.10	T			.10		
Newton									.11								.21	.08			.04		.10		.20						
Northwood	T				T	.08								T			.10					T	T		.30		T		.40		
Odebolt								.05									.27			T			.10						02		
Ogden									.06									.12						.03	.05						
Olin					.25			.06									.20				.07	.02		.08				.50			
Omaha, Neb	T					T	T	.04	.02	T						T	.04	T			T				T	T	T		T		
Onawa		T							.05								.15				T		.04						.05		
Osage	T		T						.01								.15	.30			T		.04	T					.10		
Osceola																T		T		T						T	T	T			
Oskaloosa									.06								.08				.05							T			
Ottumwa		T						.02									.16				.07										
Pacific Junction						T		.04								T	.03									T	T				
Perry							T	T	.15								.20	.10			T		T		.10	T			T		
Plover																	.30						.06								
Red Oak						T			.05												T					T	T				
Ridgeway	.01	.07	.01		.08	.20	.03		.01								.48	.36			T	T	.03		.07	.07	.01		.56		
Rockwell City																	.30						.15								
Rock Rapids										T							.20						.25		.25						
Sac City																	.27				T		.15		.15	T	T	T			
St. Charles					.03			.03	.06								.18	.01			T								.02		
Sibley							.05		T					T			T	.20			T	T	.01	20	T		T				
Sigourney			T				T	T	.05								.09				.08		T		T			.03	.04		
Sioux Center						.05											.20						.03								
Sioux City		T				T	T	T	.01		T						.15	T			T		.07		.10	T					

DAILY AND MONTHLY PRECIPITATION FOR FEBRUARY, 1904—CONTINUED.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Spirit Lake						T											.35								.20			T	T			.55
Stockport		T	T		T		T		T								.12				.32					T		T				.44
Storm Lake											T							04							.04	T			T			.08
Thurman				T		T		T	T								T				T					T	T					T
Tipton							.12		.12								.12	.11			.18				.19				.05			.89
Toledo								.13										.17			.03				.20			T				.53
Villisca	.15							.05									.04				.02											.26
Vinton		T	T		T			.1									.15	.14			.03		.03		.08		.06	T	.05			.64
Wapello																		.19				T			T							.9
Washington																		.20			.09				.03				.08			.53
Washta							.03		.10														.05		.05							.40
Waterloo						T					T						.30						.05		.05				.03			.48
Waukee							T		.06								.26	T			T		.06		.07	T	T					.36
Waverly			T		T		T	.05	.10								.20				T		T		.01		T		T			.78
West Bend			T			T	T		.07		T			T			.33	.10			T		.09		.01		.01		.17			.72
Whitten		T			T	T		T	.03								.40				.05		.02		.20	T			.02			.60
Wilton Junction							T		.10								.20	.10					T		.20							.50
Woodburn							T		.03								.20				.15				.12			T				.50
								.04	.02						T		.11	T			.03					T		T	.02			.22

Precipitation Chart February 1904.



MARCH, 1904. No. 3.



MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

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Cedar Rapids ..... Hon. A. J. Fuhrmeister
Charles City ..... W. B. Towner
Chariton ..... C. C. Burr
Clarksville ..... F. M. Russell
Correctionville ..... Hon. W. B. Chapman
Corwith ..... Wm. Oxley
Creston ..... M. V. Ashby
Danville ..... Sherman Matthews
Dunlap ..... Hon. B. F. Roberts
Emerson ..... D. B. Nims
Fort Dodge ..... R. W. Blaine
Fruitland ..... R. T. Hummel
Goldfield ..... D. M. Stephens
Geneva ..... Wm. H. Thompson
Hartwick ..... Fred McCulloch
Harlan ..... H. B. Kees
Hesper ..... G. E. Dillingham
Humeston ..... Hon. S. H. Moore
Independence ..... Geo. H. Wilson
Indianola ..... H. D. Guthrie
Ireton ..... J. M. Sherman
Lake City ..... C. B. Hamilton
Le Mars ..... Hon. Henry Schrooten
Long Grove ..... Hon. Chris Marti
Manson ..... J. D. Skinner
Marshalltown ..... Hon. S. B. Packard
Mapleton ..... A. Lamb
Mt. Pleasant ..... W. S. Wright
Milton ..... Hon. E. C. Holland
Monroe ..... J. A. Dibel
Nevada ..... Geo. C. White
Northwood ..... T. L. Bolton
Orange City ..... H. J. Vande Waa
Pella ..... J. H. Ver Steeg
Pittsburg ..... G. C. Duffield
Portland (Nora Springs, P. O.) ..... Arthur Pickford
Platte (Creston R. D.) ..... M. H. Dibel
Red Oak ..... Hon. C. L. Stratton
Rock Rapids ..... D. E. F. Merrill
Rossville ..... T. B. Wiley
Seymour ..... L. B. Sager
Shenandoah ..... Reuben Mullison
State Center ..... E. P. Thompson
Stuart ..... W. W. Bailey
Toledo ..... W. G. Malin
Van Horne ..... Spencer Smith
Weldon ..... Ed Worden
Winterset ..... H. A. Kinsman
West Branch ..... Wrigley Smith
West Union ..... H. B. Blackman
Wilton ..... Thos. Boot
Wiota ..... I. S. Coomes
Woodward ..... Geo. Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XV. MARCH 1904. No. 3.

NOTES AND COMMENTS.

During the eighteen months ended June 30, 1903, the amount of rainfall at the government laboratory in Georgetown, British Guiana, was 98.90 inches. The record includes not only the measurements of rainfall, but also the contents of chlorine and of nitrogen in the form of ammonia and nitric acid. The amount of chlorine was 244 pounds, equal to 402 pounds of common salt per acre, and 4.67 pounds of combined nitrogen.

The severe cold has no terrors for insect life. It has been shown by experiment that insects may be artificially or naturally frozen—subjected, indeed, to very low temperatures—without killing or even injuring them. Eggs, larvæ and pupæ, the stages in which most insects pass the winter, are perfectly immune to cold. One of the commonest evidences of this hibernation is to be seen when firewood is carried into the house and placed near the warm stove. It takes only a short time to bring out a swarm of ants that were sleeping in beetle borings, their common retreat.—*St. Nicholas*.

Many reports of correspondents from Illinois, Iowa and the Northwest indicate that the amount of plowing done last fall was much more than usual. An article in *Orange Judd Farmer*, describing Brookmont Farm, of 7,000 acres, in western Iowa says: Fall plowing is preferred for corn and all the land that can be prepared in the fall is plowed then. Fall-plowed ground becomes sufficiently warm for planting corn a week to ten days earlier than spring-plowed land. This means two weeks earlier maturing in the fall, an important difference in seasons of early frost. It requires a smaller number of teams to raise corn when the land is plowed in the fall, because then the hardest work of preparing the ground is not crowded into a few weeks in the spring. In a wet spring it is difficult to plow a large acre for corn without having to plow some of the land when too wet. In the thirty-one years that corn has been raised on Brookmont Farm it has been found that corn on fall plowed land has suffered less from the drought than that on land plowed in the spring. The past year (1903) corn has been planted in Brookmont Farm as follows: On fall plowing, 1,300 acres; on spring plowing, 2,560; listed, 140 acres; total, 4 000 acres.—*Murray's Price Current*.

Earthquake shocks occurred at various places in New England on the morning of March 21st. Professor Henry Shaler Williams, recently elected head of the department of geology at Cornell University, in discussing the phenomenon, said: "The earthquake undoubtedly was caused by a slip of a stratum on another, deep in the earth. One of the two faces moved, causing the jarring, although the faces moved only a few inches the earth's surface was disturbed for hundreds of miles. The earthquake caused a readjustment of the two faces. The tension was relieved, and probably there is no immediate danger of a recurrence."

The Minneapolis *Journal* says: "It is not unusual for the 'old residenter' to rise on cold winter mornings and speak contemptuously of the lack of severity of modern winters. He declares that the weaklings of this day and age would not be able to withstand the ravages of ancient winters. Now is he come to judgment. Away back in 1822 the weather attracted the attention of the authorities at Fort Snelling Accurate (for that time) records were kept, and have been tabulated by the Pioneer Fuel Company of Minneapolis. The months of December, January and February were grouped as representative winter months and the average mean temperatures were made up. They were classed as 'mild,' 'warm' and 'cold.' Warm winters were those showing an average mean temperature of 18 degrees above or more. Mild winters show an average mean temperature of between 12 and 18 degrees above zero, while the cold winters were those whose average for the three months was 12 degrees or below. Of a group of eighty-one seasons, brought down to date, twenty-five winters were classed as cold, thirty as mild, and twenty-six as warm."

FEEDING VALUE OF SOFT CORN.

Under the auspices of the animal husbandry section of the Iowa Experiment Station at Ames, some very valuable experiments have been made to determine the feeding value of soft corn for beef production. The results, as set forth in Bulletin No. 75, just issued, show a practical agreement between the chemical tests and the experimental tests, as to the composition and value of soft corn compared with the fully matured product. The following conclusions are deducted from the experimental work just completed:

1. That soft corn grown on the college farm in 1902, and containing 36 per cent of moisture at the beginning of the test, pound for pound, on a water free, or dry matter basis, was fully equal in feeding value to mature corn grown in 1900, when used for fattening cattle.

2. That cattle fed on such soft corn made nearly as heavy gains and finished equally as well as those fed on mature corn grown in 1900.

3. That when soft corn, similar to that used in this test, could be purchased for 30 cents per bushel, the prevailing mar-

ket price, gains on fattening cattle could be made at a cost of 3.03 cents per pound less than when mature corn, costing 50 cents per bushel, the prevailing market price, was fed under similar conditions.

4. That a study of the Chicago live stock market conditions, from January 1, 1903, to July 31, 1903, shows conclusively that the comparatively low price of beef cattle was not caused by an oversupply of half finished cattle. On the contrary, there was a larger number of well finished cattle marketed during that period for 1903 than for the corresponding period of any of the past ten years.

5. That the chemical analyses would indicate that the nutritive value of the corn grown in 1902 compares favorably with mature corn grown in other years when water free substance or dry matter serves as a basis of comparison.

6. That the amount of moisture present was the main difference so far as composition is concerned. That the amount of moisture depends mainly on the maturity of the corn when stricken by frost.

CONTROLLING SOIL TEMPERATURE.

With the winter's leave-taking we at once become vitally interested in the rapid warming up of the soil, because all persons that are concerned in crop production know that the growth of vegetation is dependent upon air, moisture and a certain amount of warmth. Early in the spring there is but little apprehension about the two first mentioned, warmth being the factor of first consideration.

It is scarcely necessary to say that the removal of water from the land by drainage is one of the quickest and most effective means of warming it. Unless provision has previously been made for the removal of free water the task of seeding will be an uphill one. However, under average conditions when the soil dries out with reasonable rapidity much may be done by the farmer to hasten a rise of temperature in the surface soil.

In his work on "Soils" King says that the thorough preparation of the seed bed is justified in a large measure by the warming effect which judicious, thorough tillage has. The development of a mulch over the ground lessens the loss of water from the surface by evaporation, and if by this means we can save the loss into the air of a few pounds of water per square foot we have avoided the withdrawal of an enormous amount of heat, owing to the fact that evaporation is a cooling process. Thorough tillage, therefore, not only saves moisture, but at the same time it permits the seed bed to warm up so that plant foods are freely liberated. The same warmth that liberates food also hastens germination, thus getting the plant into a condition to take advantage of the food being prepared.

It is not so important early in the spring that the ground should be warmed deeply, but better only so far as to provide ample available plant food for the start, and room enough for the first roots, and this is what early tillage does; the loose, open soil conducts neither the cold water up to become still colder by evaporation, nor the absorbed sunshine down where it is not yet needed. In effect this method converts the whole field into a hotbed or cold frame, and commences irrigation by saving water at the start. It does even more, for while it develops early a little soluble plant food, it holds in abeyance these processes in the deeper soil, which, by starting too early, would cause a needless loss by developing nitrates which may be leached away before the crop has its roots ready to use them.

In view of the importance of free surface tillage early in the spring as a means of warming up the soil it is impossible to urge with two much zeal the practice of freely discing or harrowing just as soon as the soil will work without puddling. Too many are inclined to let their old corn fields lie until they are inverted with the plow, which process often means a matter of a month or six weeks from the time plowing is started until it is finished. All this time soil moisture is being evaporated at a rapid rate while the soil particles are not being raised to that temperature that brings about the most rapid germination after the crop is planted. Our advice is to start the harrows or discs just as soon as the land will work well, because when this is done time may be taken to plow properly, to cultivate thoroughly and to harrow well in the immediate preparation of the soil before planting. It is the duty of every corn grower to see to it that the first operation in the spring after tillage implements are taken from the sheds is to produce a mulch over the stubble, corn land or fall plowed fields.—*The Homestead*.

MARCH WEATHER AND CROPS.

The past winter was colder than usual, and the soil was very deeply frozen. March was a typical spring month in respect to temperature, though with less than the usual number and severity of wintry storms. There was a general prevalence of cloudiness, however, and the frost yielded very slowly, leaving the soil too wet for seeding operations, except in a few favored localities. Probably much less than the average percentage of March plowing and seeding was done in the State. The greater part of the precipitation came in the last decade of the month, which caused the principal hindrance to general field work. Farm stock wintered well, and there has been a great abundance of forage for cattle feeding.

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 29.98 inches; highest observed, 30.58 inches, at Sioux City, on the 3d; lowest observed, 29.30 inches, at Sioux City, on the 24th; range for State, 1.28 inches.

TEMPERATURE.—The monthly mean temperature for the State, as shown by records of 116 stations, was 34.8 degrees, which is 2.4 degrees above normal. By sections the mean temperatures were as follows: Northern section, 32.4 degrees, which is 2.8 degrees above normal; central section, 34.9 degrees, which is 2.7 degrees above normal; southern section, 37.0 degrees, which is 1.1 degrees above normal. The highest monthly mean was 38.6, at Burlington, Guthrie Center, Glenwood, Keokuk, Osceola and Ottumwa; lowest monthly mean, 27.0 at Cresco. The highest temperature reported was 78.0 degrees at Ottumwa on the 23d; lowest temperature reported 3 degrees at Columbus Junction on the 3d. The average monthly maximum was 62.9 degrees; average monthly minimum, 4 6 degrees. Greatest daily range, 55.0 degrees at Sioux City; average of greatest daily ranges 36.8 degrees.

PRECIPITATION.—Average precipitation for the State as shown by records of 127 stations, was 2.18 inches, which is 0.35 of an inch above normal. The averages by sections were as follows: Northern section, 1.74 inches, which is 0.12 of an inch above normal; central section, 2.05 inches, which is 0.17 inch above normal; southern section, 2.74 inches, which is 0 77 inch above normal. The largest amount reported was 4.57 inches at Bedford; least amount reported, 0 50 inch, at Ida Grove and Sioux City. The greatest daily rainfall reported was 2.35 inches at Bedford on the 30th. Average number of days on which .01 of an inch or more was reported, 7.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 68 miles per hour, from the northwest, at Sioux City, on the 2d. Average number of clear days, 8; partly cloudy, 8; cloudy, 15.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
ıvenport	29.97	30.47	3	29.43	10
s Moines	30 00	30.52	3	29.46	10
ıbuque	30.01	30.48	3	29.44	10
naha, Neb	29.97	30.62	3	29.26	9
okuk	29.98	30.54	3	29.47	10
oux City	29.98	30.58	3	29.30	24
Means	29.98	30.58	3	29.30	24

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
avenport	6.879	38	S	24
es Moines	7.704	41	NW	3
ubuque	6.370	34	NW	3
eokuk	6.882	36	W	24
a Crosse, Wis	6.110	37	N	2
maha, Neb	8.049	46	NW	2
ioux City	11.257	68	NW	2

OBSERVERS' NOTES.

AMANA—*Conrad Schadt.* No farm work done; hardly a vestige of growing vegetation; thunderstorm on 24th and 30th.

ATLANTIC—*J. W. Love.* Robins on the 1st; bluebirds and larks on 5th.

AUDUBON—*Geo. E. Kellogg.* Some wheat sown on 1st; heaviest snowfall of the winter on 13th.

BONAPARTE—*B. R. Vale.* Precipitation, 2.73 inches; muddy fields and bad roads; no farm work done; subsoil not very wet.

BRITT—*Geo. P. Hardwick.* First larks observed on 16th; robins, 18th; bluebirds, 29th; frogs croaking 31st; too cold for seeding; ground frozen deep.

CLINTON—*Luke Roberts.* Mean temperature normal, but was 7.6° colder than March, 1903; precipitation, 1.61 inches, or 2 inches above normal; 1.06 inches came in form of snow on 24th, with strong wind.

ELKADER—*Chas. Reinecke.* Ice went out of the Turkey river March 1st.

FOREST CITY—*J. A. Peters.* No seeding done in March; frost still in the ground.

GRAND MEADOW. *F. L. Williams.* Month very disagreeable and backward; no field work done; roads bad; stock doing well.

GRUNDY CENTER—*E. S. King.* Only five clear days; no farm work done; stock wintered well.

HANLONTOWN—*Miss G. M. Paschen.* Ducks seen on 6th; birds came first of the month.

HUMBOLDT—*H. S. Wells.* Rain, 1.19 inches; March came in warm and went out cold; roads bad last half of month.

JEFFERSON—*Isaac Young.* On 24th lightning struck residence of Thomas Lynch, of Cooper; badly damaged; no oats sown yet.

KOSAUQUA—*J. H. Landes.* Thunderstorm and wind on 24th caused considerable loss in south part of county.

LOGAN—*Mrs. M. B. Stern.* Weather very changeable, but no bad storms; rather dry winter and spring.

OLIN—*N. Potter.* First half of month fine, up to 13th; last half changeable, with mud; spring backward, and no farm work done.

PACIFIC JUNCTION—*H. H. McCartney.* On the 2d, at 2 P.M., temperature was 68°; at 7 P.M. it had fallen to 20°; strong wind from southeast changed to gale from northwest, almost in a moment. Fall in temperature of 62° between 2 P. M. on 2d to 7 A.M. on 3d.

RIDGEWAY—*Arthur Betts.* Only 149 hours of sunshine; big snowstorm on 13th and 14th, but an agreeable month; wild geese and robins came early in the month.

ROCK RAPIDS—*W. C. Wyckoff.* Seeding began on 29th on ridges and up near State line; stopped by rain on 30th.

WAUKEE—*E. J. Leonard.* An inch more snow fell in March than in February; since January 1st have had 17.5 inches of snow; coldest day of winter was January 25th; temperature ranged 8° to 18° below zero.

BELATED REPORTS.

COLLEGE SPRINGS—February. Mean temperature 20.7°; highest 49° on the 5th and 22d; lowest -2° on the 4th; greatest daily range 32°; prevailing direction, northwest. Number of clear days 18, partly cloudy 4, cloudy 7.

INDEPENDENCE—February. Mean temperature 9.8°; highest 50° on the 6th; lowest -20° on the first; total precipitation 40 inches; greatest in 24 hours .35 inch on the 17th. Total snowfall 4.0 inches; prevailing direction, northwest; number of rainy days 2.

KNOXVILLE—February. Mean temperature 18.1°; highest 56° on the 6th; lowest -10° on the first; greatest daily range 38°; total precipitation .45 inch; greatest in twenty-four hours .20 inch on the 27th; total snowfall 3.0 inches. Number of clear days 10, partly cloudy 8, cloudy 11, rainy 4. Prevailing direction, northwest.

SHELDON—February. Mean temperature 12.6°; highest 54° on the 5th; lowest -18° on the 8th; greatest daily range 39° total precipitation .31 inch; greatest in 24 hours .25 inch on the 17th; prevailing direction, south; total snowfall 3.1 inches. Number of clear days 16, partly cloudy 6, cloudy 7, rainy 3.

WINTERSET—February. Mean temperature 18.3°; highest 45° on the 23d; lowest -7 on the 11th; greatest daily range 33°; prevailing direction, east; number of clear days 8, partly cloudy 7, cloudy 14.

ERRATA.

GREENFIELD—August, 1903. Daily precipitation of .53 inch recorded on the 27th, page 11, should have been 2.56 inches.

OTTUMWA—December, 1903. Mean temperature recorded, 25.0° on page 7, should have been 24.5°.

ERRATA IN JANUARY REVIEW.

AFTON—Mean temperature recorded 18.4° on page 8, should have been 18.2°. Mean maximum temperature recorded 27 4° on page 9, should have been 27.1°. Highest temperature recorded on the 9th, page 8, should have been the 7th.

BRITT—Total snowfall recorded 3.6 inches on page 7, should have been 4.6 inches.

CORYDON—Mean minimum temperature recorded 5.3° on page 9, should have been 5 4°.

EARLHAM—Total precipitation recorded 1.31 inches on pages 8 and 11, should have been 1.37 inches.

GILMAN—Total precipitation recorded .85 inch on pages 7 and 11, should have been 1.03 inches. Daily precipitation on 10th and 11th recorded .01 inch on page 11, should have been .10 inch.

GRAND MEADOW—Mean maximum temperature recorded 19.0° on page 9, should have been 19.1°.

GREENFIELD—Highest temperature recorded on the 7th, page 8, should have been on the 8th.

HAMPTON—Mean temperature recorded 10.5° on page 7, should have been 10.8°.

KEOSAUQUA—Mean temperature recorded 15.0° on page 8, should have been 14.8°.

LARRABEE—Mean temperature recorded 12.2° on page 7, should have been 11.9°. Mean maximum temperature recorded 22.5° on page 9, should have been 21.9°.

OLIN—Maximum temperature recorded 41° on the 7th, on page 7, should have been 42° on the 19th.

PRIMGHAR—Mean temperature recorded 10 3° on page 7, should have been 10.4°. Mean maximum temperature recorded 19.2° on page 10, should have been 19.3°.

STUART—Mean temperature recorded 16.9° on page 7, should have been 17.0°. Mean maximum temperature recorded 25.7° on page 10, should have been 25.8°.

WAPELLO—Maximum temperature recorded 41° on the 7th, on page 8, should have been 47° on the 19th.

WATERLOO—Total snowfall recorded 6.0 inches on page 7, should have been 5.0 inches.

ERRATA IN FEBRUARY REVIEW.

BELKNAP—Mean minimum temperature recorded 11.7° on page 8, should have been 11.3°. Mean temperature recorded 19.2° on page 7, should have been 19.0°.

CLARINDA—Maximum temperature recorded on the 24th, page 7, should have been 23rd.

GRUNDY CENTER—Total precipitation recorded .48 inch on page 6, should have been .58 inch.

IDA GROVE—Maximum temperature recorded on the 5th, page 6, should have been on the 5th and 6th. Minimum temperature recorded -12 on the 8th, page 6, should have been -15 on the 19th.

IOWA FALLS—Mean temperature recorded 13.0° on page 6, should have been 10.7°. Mean maximum temperature recorded 25.2° on page 8 should have been 20.5°.

KEOSAUQUA—Minimum temperature recorded on the 1st, page 7, should have been 1st and 2d.

NORTHWOOD—Mean temperature recorded 11.0° on page 6, should have been 10.8°. Mean maximum temperature recorded 21.7° on page 9, should have been 21.3°.

PRIMGHAR—Minimum temperature recorded -13° on the 11th, page 6, should have been -17° on the 8th.

SIBLEY—Mean temperature recorded 8.2° on page 6, should have been 8.6°.

SIOUX CENTER—Total snowfall omitted on page 6, should have been 2.5 inches.

THURMAN—Mean temperature recorded 20.2° on page 7, should have been 20.0°. Mean minimum temperature recorded 10.8° on page 9, should have been 10.3°.

WEST BEND—Mean temperature recorded 10.7° on page 6, should have been 11.0°. Mean maximum temperature recorded 21.7° on page 9, should have been 22.3°.

CLIMATOLOGICAL DATA FOR MARCH, 1904.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	PRECIP., IN INCHES. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days	SKY. Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.	DATES OF THUNDER STORMS.
Algona	Kossuth	1,213	28	31.9	†1.9	59	23	0	3	35	1.34	- .22	.37	1.0	6	4	10	17	NE	21
Alta	Buena Vista	1,513	11	31.9	†2.5	60	23	0	3	48	1.50	- .32	.47	0.6	7	7	13	11	NW	21, 24
Alta (near)	Buena Vista										1.31		.50	1.5	6					
Britt	Hancock	1,236	5	32.4	†3.6	57	23	-1	3	35	1.63	† .26	.71	0.9	8	2	15	14		
Charles City	Floyd	1,012	11	31.2	†1.3	59	23	3	3, 4	32	1.67	- .08	.45	2.5	7	9	4	18	E	25
Clear Lake	Cerro Gordo	1,241		31.8		60	23	-2	3	32	1.20		.50	2.0	5	5	10	16	NW	
Cresco	Howard			27.0	†0.3	52	23	0	3	26						9	0	22	NW	
Decorah	Winneshiek	857	8	31.6	†1.3	57	23	2	3	32	2.22	† .26	1.30	4.5	6					
Dows	Wright	1,142		32.6	†2.7	59	23	1	3	35	1.55	- .44	.53	2.0	9	11	2	18	NW	21
Elkader	Clayton	727	21	33.1	†2.2	57	23	6	3	32	2.75	† .92	1.10	6.5	9	7	9	15	NW	21, 24
Estherville	Emmet	1,298	7	30.0	†2.9	59	23	-2	3	36	1.98	† .57	.65		6	10	3	18	NW	21, 24
Fayette	Fayette			31.6	†1.4	58	23	2	3	31	3.64	†1.38	1.66	6.8	6	4	9	18	NW	21, 24
Forest City	Winnebago	1,226	8	31.3	†2.9	59	23	-1	3	33	1.33	- .15	.48	1.0	6	10	4	17	SE	
Grand Meadow	Clayton	1,180	11	32.2	†2.0	50	23, 24	3	3	34	3.01	† .91	1.70	5.0	9	5	6	20	NW	24
Hampton	Franklin	1,155	12	33.1	†4.5	60	23	1	3	39	2.00	- .26	.60	4.5	8	3	14	14	NW	24
Hanlontown	Worth			30.9		57	23	-1	3	35	1.22		.50	1.2	5	11	1	19	NW	
Humboldt	Humboldt	1,095	10	34.2	†4.5	60	23	3	3	37	1.19	- .26	.42		4	18	4	9	SE	
Inwood	Lyon			32.3		59	23, 24	1	3	36	.76		.53	2.0	4	5	6	20	E	
Larrabee (a)	Cherokee	1,366	11	33.4	†4.2	61	29	-1	3	34	1.18	- .47	.45	0.4	4	7	14	10	NW	21, 24
LeMars	Plymouth	1,224	6	34.2	†2.4	63	9	0	3	43	1.40	† .03	.40	7.0	4	11	10	10	E	
Mason City	Cerro Gordo	1,132		32.8	†4.9	56	23	2	3	26	1.56	† .22	.45	2.1	7	7	17	7	SE	24
New Hampton	Chickasaw	1,169		30.4	-0.2	55	23	1	3	30	2.18	† .53	1.30	4.0	7	6	8	17	NW	
Northwood	Worth	1,222	6	32.0	†2.6	56	23	0	3	32	1.45	- .15	.56	2.0	5	9	8	14	NW	21
Osage	Mitchell	1,184	11	31.6	†4.2	51	23	1	3	24	1.82	† .25	.59	3.3	9	5	6	20	SE	21, 24
Plover	Pocahontas	1,190	5	32.8	†2.4	62	23	0	3	45	.97	- .41	.26	1.0	6	10	3	18	NW	
Ridgeway	Winneshiek	1,215		33.2	†1.8	59	23	0	3	30	2.95	† .55	.82	5.5	12	5	14	12	NW	21, 24
Rock Rapids	Lyon			33.0	†3.2	60	23, 30	0	3	40	.80	- .79	.50	3.0	2	13	11	7	S	
Ruthven	Palo Alto			28.2		55	23	3	3	33	2.25		1.00		3	8	0	23	NW	
Sibley (b)	Osceola	1,512	8	30.4	†0.8	59	23	-2	3	37	2.05	† .88	1.20	1.5	6					
Sioux Center	Sioux			32.4	-0.6	59	9	0	3	40	1.85	† .60	.70	8.0	6	6	9	16	S	21
Spirit Lake	Dickinson	1,458	8	30.2	-0.7	60	23, 24	-2	3	34	1.39	† .59	.86	3.5	3	12	7	12	SE	
Storm Lake	Buena Vista	1,440	7	30.6	†2.5	58	23	0	3, 4	38	1.54	† .16	.80	0.1	5	13	1	17	NW	21, 24
Washta	Cherokee	1,157									.83	- .42	.50	T	4	12	13	6	SE	24
Waverly (a)	Bremer	942	6	32.4	†1.2	58	23	4	3	30	2.05	† .09	.70	5.8	11	6	9	16		21, 24
West Bend	Palo Alto	1,197	8	34.2	†5.0	60	23	0	3	31	1.76	† .12	.56	2.0	6	5	9	17	SE	21
West Union	Fayette										2.73		1.92	5.0	3	7	0	24	NW	
Average				32.4	†2.8	58.1		0.6		34.6	1.74	† .08		3.0	6	8	7	16	NW	

CENTRAL SECTION.

Amana	Iowa	721	25	35.6	†4.2	56	23	10	3	24	2.83	† .83	1.41	7.5	10	5	9	17	NW	24, 30
Ames	Story	926	20	35.0	†2.5	62	2, 23	5	3	34	1.63	† .15	.77	1.5	10	16	3	12	NW	
Audubon	Audubon	1,301	8	34.5	†1.9	67	2	0	15	44	.81	- .97	.30	5.0	7	10	3	18	E, NW	
Baxter	Jasper	998		35.4		62	2	5	3	35	1.91		.86	2.0	7	7	4	20	NW	
Belle Plaine	Benton	826	12	33.2	†0.7	57	23	7	3	28	3.36	† .76	1.70	12.8	10	5	10	16	SE, W, NW	
Buckingham	Iowa										2.46		1.25	2.1	7					
Carroll	Carroll	1,265	12	34.4	†2.9	66	2	2	3	34	.96	-1.39	.35	3.5	6	9	4	18		24
Cedar Rapids	Linn	733	19	34.0	†1.2	59	23	10	3	34	2.07	- .11	1.48	.2	6	4	10	17	NE	
Clinton	Clinton	609	34	36.2	†3.4	60	24, 29	11	3	31	4.01	† .99	.99	11.0	9	4	6	21	NW	30
Davenport	Scott	606	31	36.0	†1.1	62	24	13	3	30	2.70	† .54	.67	7.9	11	4	8	19	NW	21, 22, 24, 30, 31
Delaware	Delaware	1,083	11	32.0	†1.7	55	23	6	3	29	2.82	† .99	1.07	10.0	11	6	16	9	NW	21, 24
Denison	Crawford	1,180	8	35.0	†3.1	68	2, 9	4	3	43	1.95	† .32	.75		7				N	24
Des Moines	Polk	861	24	36.2	†1.5	63	2	8	3	46	1.20	- .26	.32	4.5	10	4	13	14	NW	24, 31
De Soto	Dallas	866		36.8		66	2	7	3	39	1.64		.67	2.0	8	12	6	13	NW	
Dubuque	Dubuque	655	29	33.8	†0.9	56	24	8	3	27	2.86	† .59	.94	8.0	12	11	7	13	NW	2, 21, 24
Fort Dodge	Webster	1,126		34.2		61	23	3	3	43	1.08		.50	1.5	5	13	8	10	NE	
Galva	Ida	1,290	8	30.8	-1.7	60	2	0	3	41									NW	
Gilman	Marshall	1,052									1.74		1.00	0.6	7	10	3	18	N	
Grinnell	Poweshiek	1,023	9	34.8	†2.1	58	23	7	3	28	2.80	†1.01	1.10	4.3	8	5	7	19	N	24
Grundy Center	Grundy	976	11	30.9	-0.6	60	2	5	3	29	2.24	† .58	.88	4.5	10	5	4	22	NW	24, 29, 30
Guthrie Center	Guthrie	1,077	6	38.6	†5.0	77	2	5	3	51	1.54	† .14	.77		9	11	7	13	SE, NW	24
Harlan	Shelby	1,192		35.8		68	2, 9	4	3	46	1.38		.31	3.0	8	4	17	10	NW	24
Ida Grove (a)	Ida	1,220		34.3		62	9	3	3	39	.50		.50		1				SE	
Independence	Buchanan	921	38								2.51	† .72	1.25	8.1	9	8	9	14	NW	21, 24
Iowa City	Johnson	685	43	35.2	†1.6	62	23	10	4	44	2.73	† .25	1.47	8.0	7	3	7	21	NW	
Iowa Falls	Hardin	1,170	9	32.4	†1.6	59	23	1	3	30	2.28	† .67	.63	7.0	9	5	7	19	NW	21, 24
Jefferson	Greene	1,052									1.98		.60	3.0	7	2	12	17	SE, NW	24
LeClaire	Scott	576									2.99		.88	7.7	11				SE, S	
Logan	Harrison	928	35	37.4	†3.3	69	9	5	3	46	1.29	- .91	.45	3.0	4	17	4	10	SW	
Maquoketa	Jackson	688	9	36.3	†2.3	58	24	10	4	32	2.36	† .07	.32	2.8	10	9	4	18	SE, NW	
Marshalltown	Marshall	947	9	34.0	†1.8	61	23	5	3	32	1.75	- .18	.85	4.0	7	5	2	24	NW	21
Monticello	Jones	925	48	35.2	†3.3	55	21, 29	3	4	40	1.44	- .95	.53	10.0	5	1	19	11	NE	
Mt. Vernon	Linn	847	35	34.4	†4.5	61	23	7	3	33	2.34	† .31	1.00	11.6	11	6	4	21	N	24, 30, 31
Newton	Jasper	944	14	34.6	†1.4	58	2	5	3	28	1.95	† .39	1.15	4.0	5	11	9	11	S	
Odebolt	Sac	1,356	5	34.8	†1.8	65	2, 9	2	3	42	1.06	- .93	.40	1.8	5	15	5	11		
Ogden	Boone	1,088	8	33.3	†0.1	72	2	1	3	43	1.61	† .09	.50		6	10	0	21	NE, NW	
Olin	Jones	760	5	34.9	†1.9	58	3	9	3	36	3.22	† .77	2.00	8.2	8	4	10	17		21, 24, 31
Onawa	Monona	1,053		37.1		63	2	4	3	48	.87	- .70	.22	2.0	7	14	7	10	SE	24
Perry	Dallas	975		35.4		64	2	6	3	40	2.10		1.08		5	2	12	17		24
Rockwell City	Calhoun		7	34.0	†2.6	60	2, 23	2	3	37	1.75	- .55	.65	1.0	4	13	11	7		
Sac City	Sac	1,278	22	33.4	†3.6	60	23	3	3	31	.89	- .76	.36	2.0	3	13	6	12	NW	
Sioux City	Woodbury	1,165	13	35.0	†3.4	67	9	2	3	55	.50	- .74	.32	1.4	6	4	10	17	NW	24
Stuart (f)	Guthrie	1,316	5	38.4	†6.7						1.65		.82							
Tipton	Cedar	807		35.2		60	23	11	3, 4, 26	32	2.83		1.04	8.6	8	4	10	17	NW	24
Toledo	Tama	856	8	34.8	†2.6	60	2, 23	7	3	31	2.85	†1.10	1.35	7.0	8	7	8	16	NW	
Vinton	Benton	810	12	34.6	†2.5	58	23	8	3	34	2.86	†1.08	1.32	7.8	13	8	6	17	SE	24
Waterloo	Black Hawk	862	15	34.2	†4.0	58	23	6	3	31	2.84	†1.01	1.33	6.5	9	8	5	18	SE	21
Waukee	Dallas	1,039		36.8		67	2	6	3	38	2.23		.83	4.5	11	6	14	11	N, S, NW	24
Wilton Junction	Muscatine	683	7	36.3	†2.0	60	24	11	3	39	2.77	† .66	.78	6.0	5	10	3	18	SE	21
Whitten	Hardin	1,036		33.6	†2.6	61	2	2	3	36	2.64		1.00	6.0	7	7	8	16	SE	
West Branch	Cedar	718																		
Average				34.9	†2.7	61.8		5.7		36.6	2.05	† .17		5.1	8	8	8	15	NW	

CLIMATOLOGICAL DATA FOR MARCH, 1904—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Albia	Monroe	957	..	35.5	.....	68	21	8	3,4	35	2.55	.....	.90	7.0	7	9	0	22	NW	.....
Allerton	Wayne	.....	....	37.6	.....	72	21	8	3	37	3.13	.....	1.35	3.2	11	12	8	11	NW	24
Atlantic	Cass	1,164	11	36.4	†2.9	69	9	2	15	36	2 23	+ .27	.62	4.5	7	4	8	19	N	24
Bedford	Taylor	.....	....	38.0	...	68	9	8	3	36	4.57	.....	2.35	5.0	6	9	2	20	SE, NW	.....
Belknap	Davis	877	7	36.8	†0.5	65	21, 23	10	3	32	3.72	†2.16	1.25	10.0	10	....	....	....	NW	.....
Bonaparte	Van Buren	.....	10	36.9	-0.3	69	21	10	3	40	2.73	+ .05	.89	4.0	9	....	....	....	.....	.....
Burlington	Des Moines	544	....	38.6		67	21	13	5	31	3.05	.....	.98	....	12	8	5	18	NW	23, 24, 31
Chariton	Page	1,042	7	36.4	†0.7	71	21	7	3, 4	36	3.23	†1.83	1.80	....	6	8	14	9	SE	24
College Springs	Page	.....	10	37.8	†1.7	66	2	8	3	34	2.16	+ .31	.75	6.5	5	19	2	10	SE, NW	.....
Columbus Jct	Louisa	596	....	36.0	.....	66	21	- 3	3	44	2.68	.....	.90	5.0	8	8	15	8	SE	21, 24
Corning	Adams	1,127	10	36.4	†0.7	68	9	1	15	34	2 91	†1.16	1.10	5.5	8	10	9	12	NW	24, 31
Corydon	Wayne	992	9	35.8	-0.3	71	21	3	3	39	3.24	†1.17	1.53	3.0	11	9	10	12	NW	.....
Clarinda	Page	1,069	12	36.0	†0.8	70	9	5	15	46	2.83	+ .93	1.08	8.0	7	7	10	14	NW	30
Cumberland	Cass	.....	....	.....	.....	.....	.....	.....	.....	.....	3.20	.....	1.20	3.0	5	16	4	11	SW	.....
Earlham	Madison	.....	....	34.2	.....	63	2	5	3	35	1.69	.....	.84	3.0	7	12	4	15	NW	24, 31
Fort Madison	Lee	516	51	.....	.....	.....	.....	.....	.....	.....	3.73	+ .75	1.10	2.0	9	3	9	19	N, NE	.....
Glenwood	Mills	....	15	38.6	†2.6	71	2,9	5	3	50	.75	- .51	.40	4.0	3	3	18	10	SE, NW	.....
Greenfield	Adair	.....	11	35.6	†1.7	68	9	5	3	46	1.96	- .28	.99	3.2	10	16	2	13	.....	24, 31
Hopeville	Clarke	....	11	36.6	†2.3	68	21	8	3	36	2.74	†1.06	1.35	...	8	3	13	15	NW	24
Indianola	Warren	969	11	36.0	-2.0	63	23	12	3	33	2.55	†1.36	1.08	6.1	11	8	4	19	SE	2, 24
Keokuk	Lee	619	31	38.6	†1.0	74	21	14	3	36	3.46	†1.28	1.10	4.7	13	7	10	14	NW	13, 21, 24, 30
Keosauqua	Van Buren	664	10	36.7	-1.3	70	21	11	3, 4	46	3.59	†1.11	.97	5.5	9	10	3	18	.....	24
Knoxville	Marion	920	6	37.4	†0.4	70	21	8	3	34	2.68	†1.18	1.50	....	8	5	8	18	SE	.....
Lacona	Warren	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.37	.....	1.84	1.5	13	....	....	....	.....	.....
Lenox	Taylor	1,250	7	36.6	†1.7	67	9	6	3	35	2.49	+ .64	1.10	3.0	8	13	7	11	NW	24
Leon	Decatur	1,120	....	36.6	.....	63	9, 10	8	3	32	3.58	.....	1.50	5.5	7	18	11	2	N	.....
Mount Ayr	Ringgold	1,236	6	38.0	†1.5	72	21	7	3	44	3.20	†1.27	1.50	6.8	12	6	10	15	NW	.....
Mount Pleasant	Henry	729	20	37.4	†2.9	68	21	10	3	42	3.57	†1.24	1.00	4.3	11	7	11	13	NW	21, 24, 31
Omaha, Neb.	Douglass	1,113	32	38.2	†2.7	74	2	6	3	62	1.32	- .18	.39	4.8	9	6	10	15	N	24
Osceola	Clarke	1,130	6	38.6	†4.8	70	20	10	27	45	2.63	+ .74	1.05	7.0	4	12	4	15	N	.....
Oskaloosa	Mahaska	843	18	36.1	†1.9	61	23	7	3	29	1.76	- .13	1.09	6.4	10	11	1	19	NW	24
Ottumwa	Wapello	649	8	38.6	†1.0	78	23	10	3	46	3.93	†2.02	2.00	7.8	7	4	9	18	NW	.....
Pacific Junction	Mills	960	..	37.6	.....	71	9	6	3	48	1.46	.....	.50	5.1	6	9	12	10	N	.....
Red Oak	Montgomery	1,033	....	38.1	†1.3	66	9	10	3	35	1.88	- .38	.66	4.0	6	2	21	8	S	24, 31
St. Charles	Madison	1,070	....	36.8	.....	64	2,9	7	3	34	1.00	.....	.31	5.7	8	10	10	11	SE	.....
Sigourney (a)	Keokuk	787	....	37.8	†1.9	65	21	8	3	45	3.42	†1.53	1.92	7.0	10	12	7	12	E	24, 31
Stockport	Van Buren	.....	...	.....	.....	.....	.....	.....	.....	.....	3.61	.....	1.16	4.0	9	11	4	16	NW	21, 24, 30, 31
Thurman	Fremont	.....	....	36.0	-0.9	66	2	2	14	46	1.85	+ .07	1.05	....	6	11	4	16	SE	24
Wapello	Louisa	588	....	37.2	†2.2	64	21	15	3	36	3.68	†1.16	1.00	6.5	9	6	11	14	W	21, 23, 29, 31
Washington	Washington	769	20	35.6	†1.0	60	23	7	3	29	2.70	+ .57	.90	4.5	11	....	..	....	NW	.....
Winterset	Madison	1,129	11	37.1	†3.0	68	9	7	3	42	1.99	- .05	.90	2.0	5	17	2	12	SE	24
Woodburn	Clarke	961	....	.....		.....	.....	.....	.....	....	2.24	.....	.70	6.5	7	14	6	11	NW	.....
Average	.....	.....	....	37.0	†1.1	67.9	.....	7.4	.....	39.1	2.74	+ .77	.....	5.1	8	9	8	14	NW	.....
Average for state	.....	.....	....	34.8	†2.4	62.9	.....	4 6	.....	36.8	2.18	+ .35	.....	4.4	7	8	8	15	NW	.....

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Above normal. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. § Not supplied wth self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MARCH, 1904.

STATIONS.		DATE.																														MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Albia.....	Max..	50	54	30	43	45	42	53	49	58	41	36	41	25	30	37	37	43	50	54	53	68	55	63	57	32	27	36	52	48	45	50	45.3
	Min ..	30	32	8	8	20	30	27	23	23	33	26	26	23	21	23	23	26	32	38	26	26	34	31	36	27	12	13	18	23	40	40	25.7
Algona....	Max..	40	50	30	33	40	44	38	39	47	44	27	33	31	25	37	40	37	45	47	40	44	47	59	52	35	25	53	40	55	43	49	40.3
	Min .	28	15	0	12	31	21	28	21	30	26	19	23	24	20	14	22	30	27	27	19	32	31	31	42	16	6	6	24	31	32	36	23.5
Allerton..	Max..	53	59	45	39	42	45	55	50	63	57	41	39	34	32	38	35	37	55	53	43	72	56	61	57	56	29	36	51	47	47	49	47.6
	Min ..	28	36	8	16	30	32	24	22	30	27	25	26	22	16	20	27	32	33	36	26	36	33	33	45	26	13	13	25	36	40	40	27.6
Alta.....	Max..	46	58	31	38	38	46	42	43	56	41	31	32	30	30	37	40	37	43	46	43	44	48	60	55	23	25	35	46	57	40	48	41.6
	Min ..	28	10	0	13	28	20	29	23	30	26	13	25	21	10	14	14	29	29	24	21	32	30	30	23	14	6	9	26	30	37	36	22.2
Amana....	Max..	46	53	34	39	40	41	49	43	46	47	35	39	30	31	37	36	39	42	50	41	53	52	53	55	54	29	31	50	49	46	50	43 3
	Min ..	30	33	10	17	31	34	26	26	31	31	29	28	22	20	23	21	32	32	36	26	33	34	30	43	28	11	13	24	34	40	39	28.0
Ames.....	Max..	48	62	31	41	46	47	44	49	50	53	30	40	32	29	36	35	38	45	50	42	45	54	62	55	40	23	35	49	49	45	50	43.9
	Min ..	28	28	5	10	31	31	22	20	30	28	25	26	24	23	23	25	31	33	32	24	35	34	31	38	22	10	14	14	34	39	38	26.1
Atlantic..	Max..	53	65	32	40	47	53	57	53	69	60	39	36	34	34	38	37	41	62	52	40	47	57	62	61	37	22	13	13	26	32	40	39	25.3
	Min ..	29	24	7	18	31	28	21	18	32	29	16	27	27	10	2	26	31	30	33	25	35	31	31	37	22	13	13	26	32	40	39	41.3
Audubon..	Max..	52	67	34	39	46	49	52	51	66	58	38	34	32	30	40	34	38	59	59	44	46	57	61	60	36	19	5	9	25	29	38	37	22.7
	Min ..	24	23	3	12	28	23	18	17	30	24	17	25	22	6	0	25	29	29	31	23	33	30	35	36	19	5	9	25	29	38	37	22.7
Baxter....	Max..	49	62	34	40	42	44	49	47	52	49	35	40	35	30	35	34	39	43	54	42	49	54	61	54	53	29	35	49	47	45	50	44.5
	Min ..	27	27	5	14	30	30	22	21	29	26	25	30	30	22	23	24	30	32	34	23	34	32	31	43	24	9	9	23	32	38	38	26.4
Bedford..	Max..	56	65	23	40	46	51	58	55	63	64	43	40	36	31	40	34	40	63	56	48	65	60	63	58	44	30	35	49	52	48	49	49.0
	Min ..	28	30	8	16	30	31	21	20	35	28	21	27	24	10	..	29	32	32	36	25	35	30	35	42	25	14	11	20	39	40	39	27.1
Belknap..	Max..	40	40	29	35	..	40	45	45	45	40	35	35	..	28	38	40	40	40	50	45	65	60	65	55	35	30	35	45	55	60	60	44.0
	Min ..	30	32	10	20	30	32	50	27	27	30	27	30	26	22	25	30	32	35	38	28	38	35	33	45	30	13	17	28	36	41	41	29.6
Belle P...	Max..	35	50	19	42	34	39	42	37	45	45	35	35	30	35	40	23	22	28	29	34	24	29	34	34	37	27	9	12	19	32	38	38	26.3
	Min ..	28	32	7	14	30	30	24	22	30	33	27	27	23	20	23	30	34	37	45	51	43	63	60	60	60	51	29	35	52	52	47	48	46.1
Bonapar'e	Max..	50	62	50	40	43	39	53	46	53	51	35	41	30	30	34	34	37	45	47	40	44	47	59	52	35	25	53	40	55	43	49	40.3
	Min .	27	33	10	15	28	31	27	24	29	29	28	29	23	17	23	25	32	32	36	26	36	34	29	43	29	13	16	23	33	40	40	27.7
Britt.....	Max.	46	50	29	37	42	46	38	40	47	43	29	34	31	30	41	40	40	48	44	41	44	47	57	54	38	23	34	47	55	45	48	41.5
	Min ..	28	15	-1	12	30	23	27	0	30	26	23	25	23	19	20	22	30	26	25	18	32	31	30	36	16	6	5	24	32	36	35	23.4
Burling'n	Max..	50	57	53	40	44	39	51	50	53	54	37	39	29	37	38	35	37	46	53	45	67	63	63	63	58	30	36	53	51	48	57	47.6
	Min ..	30	35	13	20	31	33	27	26	31	30	30	29	25	20	25	25	33	35	37	28	37	37	32	42	30	15	17	23	35	42	43	29.5
Carroll...	Max..	58	66	34	40	50	55	51	52	60	29	37	29	30	31	38	40	39	59	51	40	49	58	63	60	30	32	40	44	54	43	50	45.5
	Min ..	25	32	2	15	29	23	24	21	30	26	17	20	24	20	10	15	25	29	31	21	30	30	28	39	15	8	9	22	30	36	35	23.3
Cedar R..	Max.	47	56	27	40	41	42	43	42	43	49	35	38	32	30	32	37	40	43	49	42	51	52	59	57	32	28	31	48	50	47	49	42.5
	Min ..	30	31	10	11	17	31	14	14	22	47	29	30	24	21	20	23	25	34	34	26	27	35	29	29	30	12	12	15	29	37	39	25 4
Chariton..	Max.	52	58	30	39	43	46	52	50	60	52	39	41	35	30	35	35	37	53	53	45	71	16	61	56	50	28	35	49	41	47	46	46.0
	Min ..	27	34	7	7	30	30	25	22	29	28	25	26	24	19	20	26	31	32	38	25	35	33	33	44	25	13	13	23	35	39	39	26.9
Charles C.	Max.	42	50	26	37	42	41	38	38	45	45	32	34	28	29	32	35	37	41	41	43	37	47	59	55	33	22	32	39	44	45	47	39.2
	Min ..	27	29	3	3	19	29	22	22	23	26	25	26	23	20	21	19	23	29	33	20	25	32	27	36	21	8	9	16	31	37	36	23 2
Clarinda..	Max..	56	69	34	55	44	51	58	50	70	30	36	43	28	33	41	33	41	65	56	45	56	62	58	60	34	30	40	50	55	45	45	47.7
	Min ..	29	31	8	9	18	28	23	21	28	30	22	28	25	11	5	6	25	30	32	26	29	32	34	36	24	13	13	25	30	40	41	24.3
Clear L...	Max.	40	45	30	32	40	47	37	41	42	41	35	35	32	30	40	39	40	43	39	40	41	48	60	50	45	22	33	48	54	45	49	40.7
	Min ..	27	13	-2	10	28	20	26	20	28	30	22	25	21	17	20	19	28	25	27	17	30	30	27	38	16	4	6	23	30	38	34	22 8
Clinton...	Max..	46	50	18	41	47	42	50	45	43	53	37	32	32	35	37	40	40	45	50	42	57	56	53	60	55	39	32	49	60	47	55	45.6
	Min ..	31	3	11	15	34	34	30	23	26	30	29	24	21	22	17	19	32	32	30	24	31	33	27	41	28	13	16	22	30	40	40	26.9
Col. Sprgs	Max..	52	66	31	41	48	54	56	62	70	60	42	42	36	31	35	34	40	63	54	43	53	58	63	61	40	31	40	5	56	47	48	48.6
	Min ..	28	24	8	16	30	28	29	23	36	29	23	26	25	12	9	29	32	31	36	26	36	32	32	40	25	14	15	16	40	40	40	27.1
Colum. J.	Max.	29	56	51	41	41	42	51	45	50	5	37	40	30	33	37	38	38	43	51	45	66	60	59	60	55	31	33	49	52	45	49	45 4
	Min .	13	21	-3	17	29	32	28	26	29	30	29	28	23	27	21	24	34	33	35	26	35	35	32	45	28	12	15	24	34	41	40	26.6
Corning..	Max..	52	65	33	59	43	48	56	50	63	59	37	40	36	31	35	33	40	60	53	43	56	56	60	58	40	29	37	48	50	45	48	46.7
	Min ..	29	32	7	16	30	29	22	20	32	26	14	25	24	11	1	28	31	32	32	25	35	33	34	39	24	12	14	23	38	40	39	26.0
Corydon..	Max.	53	56	41	41	43	47	59	51	62	56	45	40	35	31	38	35	37	54	53	47	71	60	62	53	55	32	38	50	47	46	51	48.1
	Min ..	24	32	3	13	26	28	20	17	25	23	21	22	19	13	16	23	28	28	32	21	32	28	30	41	22	9	9	21	32	36	36	23.5
Cresco....	Max..	26	30	22	33	34	35	36	3	37	39	40	40	30	31	33	37	38	31	36	38	44	52	50	41	36	33	33	43	30	31	35.8
	Min ..	14	15	0	10	12	14	17	9	18	20	19	20	19	19	19	10	18	22	22	20	21	24	31	29	29	27	13	7	21	22	23	18.2
Davenpo't	Max..	45	53	27	38	42	43	35	30	28	31	31	31	25	23	21	17	21	34	34	33	28	31	36	32	44	27	13	16	26	34	40	41	28.6
	Min ..	32	27	13	20	32	35	44	38	37	39	43	32	35	28	28	36	38	39	40	42	41	37	42	57	52	47	20	29	45	41	44	43	38.8
Decorah..	Max..	43	44	22	37	39	44	38	37	39	43	32	35	28	28	36	38	39	40	42	41	37	42	57	52	47	20	29	45	41	44	43	38.8
	Min ..	29	12	2	11	22	29	23	21	28	32	27	26	20	21	20	19	29	31	28	22	30	33	27	41	18	9	10	29	33	58	37	24.4
Delaware.	Max..	43	47	35	37	41	39	44	41	40	45	33	30	27	21	35	35	37	46	45	39	41	48	55	51	53	26	30	45	50	45	45	40.3
	Min ..	26	30	6	11	26	29	25	21	26	28	27	23	20	17	11	16	26	30	30	21	26	30	30	39	26	9	10	20	30	35	35	23 8
Denison..	Max..	55	68	35	40	47	52	42	50	68	..	64	35	32	29	37	37	39	59	51	47	48	57	63	54	34	23	37	..	45	45	46	46.2
	Min ..	29	25	4	8	30	35	23	17	28		14	26	25	18	8	25	30	29	31	22	31	25	31	34	18	10	13	..	23	38	37	23.7
Des M....	Max	51	63	32	40	42	48	50	47	58	52	32	39	30	30	35	34	42	48	53	41	50	37	35	36	32	23	12	15	29	36	40	40	27.8
	Min ..	30	17	8	20	33	32	26	25	32	28	23	28	24	24	24	27	32	35	53	44	47	58	64	56	40	28	38	53	52	43	51	46.3
De Soto..	Max..	52	66	32	40	46	49	51	48	64	57	35	39	34	30	40	34	38	55	53	44	47	58	64	56	40	28	38	53	52	43	51	46.3
	Min .	28	27	7	19	32	31	23	23	32	25	25	28	24	20	19	27	32	33	35	25	35	34	33	40	24	12	13	24	35	40	39	27 3
Dows.....	Max.	43	51	28	37	45	45	40	41	47	45	28	33	31	26	35	34	37	42	45	40	40	48	59	53	53	27	32	44	48	44	49	41.0
	Min ..	30	22	1	13	30	26	23	21	28	27	23	26	22	18	21	22	29	29	28	21	31	31	30	41	18	7	7	25	31	37	35	24.3
Dubuque..	Max..	44	49	25	37	41	42	48	42	40	51	34	29	25	22	21	21	17	31	35	30	26	30	35	28	38	25	12	15	25	33	38	38	26.9
	Min ..	32	22	8	15	31	33	31	27	30	31	29	25	22	21	21	17	31	35	30	26	30	35	28	38	25	12	15	25	33	38	38	26.9
Earlham..	Max.	52	63	30	39	43	49	52	49	58	56	41	39	34	28	38	30	36	55	53	45	42	57	61	55	44	28	37	50	47	42	47	45.3
	Min .	25	28	5	15	24	28	13	16	29	25	19	22	22	16	15	16	24	28	28	24	32	30	31	42	21	9	8	22	34	37	36	23.2
Elkader..	Max..	46	42	36	37	40	40	40	43	41	41	33	32	26	33	34	37	45	43	47	40	37	53	57	48	45	26	31	41	47	46	50	40.5
	Min ..	29	32	6	11	30	31	24	22	26	32	..	25	22	20	17	17	30	33	30	20	30	34	25	43	26	11	12	24	28	38	37	25.7
Esthervil	Max..	38	44	32	37	33	45	37	38	48	33	29	32	30	27	37	45	35	45	35	42	46	48	59	53	26	24	35	45	54	42	48	39.5
	Min ..	25	25	-2	1	11	12	12	20	23	32	18	20	22	20	10	17	25	29	30	18	26	29	28	35	14	5	7	22	31	33	35	20.4
Fayette...	Max..	47	48	20	37	44	40	42	40	42	46	36	38	33	30	32	39	35	47	37	40	38	49	58	48	42	28	29	41	47	46	45	40 1
	Min ..	29	20	2	9	27	28	20	19	25	32	25	24	18	18	18	14	29	28	28	17	27	30	27	35	25	8	9	21	28	38	34	23 0
Forest C'y	Max..	41	51	29	35	39	47	38	39	43	35	28	33	28	26	34	40	39	41	41	30	31	28	32	30	35	16	6	6	22	31	35	35	23 2
	Min ..	28	29	-1	2	19	24	27	21	25	31	23	22	22	18	20	20	26	37	37	45	47	46	43	51	61	58	29	35	47	55	46	48	42.9
Ft. Dodge	Max.	45	60	30	40	45	47	40	42	52	47	33	39	32	27	38	37	39	40	42	41	46	40	41	49	59	54	29	33	39	38	38	25.6
	Min ..	30	17	3	16	32	27	28	24	26	27	23	27	25	22	17	37	40	39	46	47	48	45	..	..	..	28	28	36	48		..	49	40.7
Galva.....	Max..	50	60	31	39	41	48	38	..	53	..	31	32	32	31	38	23	30	29	29	21	33	..	..	..	15	12	9	25	29		35	20.8
	Min .	25	19	0	12	29	15	24	21	25	..	10	23	24	34	33	29	34	39	70	62	53	50	61	63	63	41	30	42	48	59	51	49	50.2
Glenw'd.	Max	58	71	45	41	47	52	56	53	71	69	41	42	34	33	29	34	39	70	62	53	50	61	63	63	41	30	42	48	59	51	49	50.2
	Min ..	29	21	5	21	29	26	28	27	39	26	21	25	25	23	12	27	31	30	33	36	34	31	38	40	22	12	15	23	37	39	33	27.0
Grand M.	Max..	44	40	37	37	40	39	41	38	39	45	32	34	26	34	38	40	42	42	45	38	35	48	50	50	49	26	24	48	46	40	45	39 7
	Min .	29	31	3	10	28	28	25	19	26	32	29	26	18	18	16	28	31	28	28	21	28	31	28	40	24	9	9	28	29	26	35	24 7
Greenfi'ld	Max..	55	63	30	40	44	47	55	50	68	57	35	36	33	33	38	35	38	58	53	42	50	57	62	57	42	28	37	52	52	43	48	46.4
	Min ..	32	29	5	15	29	28	28	21	22	25	22	25	24	9	7	27	30	32	32	22	32	33	32	38	20	10	10	22	33	38	34	24.7
Grinnell.	Max.	46	56	31	38	41	41	48	44	49	46	32	38	29	30	33	33	37	40	49	40	52	50	58	52	53	29	31	47	47	45	49	42.4
	Min ..	30	31	7	16	30	30	28	29	29	29	27	28	22	19	23	24	30	33	33	25	34	33	33	44	25	10	12	25	33	39	38	27.2
Grundy C	Max..	46	60	32	39	43	42	47	44	46	48	32	39	33	31	34	33	38	40	50	40	41	51	58	54	57	28	32	46	45	44	48	39.2
	Min ..	31	31	5	14	30	29	23	22	29	26	26	27	22	18	22	21	30	31	33	22	31	22	31	42	23	9	9	26	31	38	36	22.6
Guthrie C	Max..	58	77	52	42	50	55	56	52	72	61	35	39	40	33	42	27	31	32	34	24	24	24	33	40	22	11	12	27	33	39	38	25.3
	Min ..	28	26	5	20	32	28	21	21	31	26	22	22	25	11	14	27	31	32	34	24	24	24	33	40	22	11	12	27	33	39	38	25.3
Hampton	Max..	43	55	27	37	47	49	39	45	49	44	30	36	28	22	18	23	21	29	29	20	21	30	32	30	41	20	7	9	24	31	36	36	24 8
	Min ..	30	19	1	12	30	28	27	23	29	30	25	28	24	20	19	27	32	33	35	25	35	34	33	40	24	12	13	24	35	40	39	27 3
Hanlont'n	Max..	38	48	29	35	40	45	42	36	43	41	30	31	26	20	26	33	38	37	41	41	38	57	61	53	37	21	33	41	50	44	47	33.8
	Min ..	27	13	-1	3	30	24	27	21	30	29	28	26	22	18	22	22	29	29	28	25	19	30	31	27	35	15	6	7	22	29	36	34	23.0
Harlan....	Max.	54	68	32	40	49	50	54	51	68	60	36	37	33	32	38	36	39	60	.3	45	49	58	61	62	36	27	38	52	55	46	48	47.3
	Min ..	25	22	4	14	28	24	23	18	32	24	16	27	25	13	8	25	31	28	32	24	34	29	30	36	20	10	13	22	35	40	38	24.2
Hopeville.	Max.	53	61	30	39	44	48	56	54	64	58	39	38	31	28	40	34	33	57	54	44	68	60	60	56	35	25	13	14	25	36	39	39	26.8
	Min .	29	27	8	17	31	30	27	23	28	27	22	26	23	12	18	28	31	33	36	25	35	32	38	60	55	33	26	25	46	54	46	50	42.5
Humboldt	Max..	43	57	30	40	43	46	40	42	50	47	30	34	34	28	38	38	38	46	46	42	44	50	60	32	38	18	8	7	20	32	38	38	25.9
	Min ..	30	20	3	14	32	26	26	23	30	28	22	26	26	24	24	24	30	30	30	24	34	42	44	54	53	44	46	50	60	59	49	28	48	56	49	49	..	45.1
Ida Grove	Max.	50	55	42	38	43	40	43	44	62	50	30	30	30	30	30	34	42	44	54	53	44	46	50	60	59	49	28	48	56	49	49	..	22.6
	Min ..	28	20	3	18	..	..	22	20	32	22	9	24	18	20	9	25	32	28	32	18	24	22	31	31	17	9	11	31	39	38			45.6
Indianola.	Max..	52	61	31	40	43	48	52	48	58	52	32	40	34	24	21	22	26	23	33	35	25	36	33	61	41	35	12	12	27	37	37	39	26.4
	Min ..	28	28	12	18	31	29	25	23	31	..	25	19	47	33	31	36	36	44	41	44	43	48	47	59	59	24	36	48	53	47	46	41.9
Inwood..	Max..	40	45	34	39	34	42	45	41	56	47	32	15	26	21	19	13	25	30	29	26	23	34	30	31	24	6	8	26	31	36

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MARCH, 1904—Continued.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Keosa'qua	Max..	50	63	27	45	43	43	54	47	55	51	35	42	28	31	38	37	36	47	53	46	70	55	62	61	35	30	36	53	53	48	48	45.9
	Min ..	28	31	11	11	17	32	30	25	27	34	30	29	25	18	23	25	33	33	34	28	34	36	28	35	30	14	15	24	34	41	41	27.6
Knoxville	Max..	51	59	31	41	45	46	51	49	57	50	33	40	32	32	37	39	39	48	53	44	70	58	63	55	53	28	36	51	48	46	52	46.4
	Min ..	29	37	8	18	31	31	27	25	31	28	26	29	23	22	24	24	32	32	35	24	36	33	35	45	26	12	15	25	35	39	39	28.8
Larrabee	Max..	47	56	33	41	37	48	43	43	56	48	34	36	32	33	41	45	39	48	47	47	47	52	60	58	..	28	38	50	61	42	52	44.7
	Min ..	26	13	-1	13	28	11	25	26	30	25	8	25	24	19	12	22	28	25	25	20	33	26	38	26	..	6	6	27	30	37	36	22.2
LeMars	Max..	45	58	35	42	37	42	46	46	63	58	37	36	33	33	40	47	39	47	46	47	47	50	61	60	34	27	39	46	60	50	50	45.2
	Min ..	29	15	0	18	30	12	28	22	33	26	15	28	23	15	12	25	27	27	29	23	33	26	34	32	14	7	9	26	32	36	37	23.8
Lenox	Max..	53	62	32	39	45	47	56	51	67	60	37	38	36	28	36	33	39	61	53	45	62	58	62	57	40	28	37	50	51	46	47	47.0
	Min ..	28	31	6	15	28	30	26	25	33	25	17	25	22	10	..	27	30	32	34	24	34	33	32	39	23	11	11	22	37	39	37	26.2
Leon	Max..	50	54	54	35	40	43	49	46	63	63	34	34	34	28	31	34	37	52	52	47	53	53	55	55	55	29	34	46	46	47	49	45.2
	Min ..	28	37	8	17	30	31	28	24	31	27	23	26	23	15	21	28	32	33	37	25	35	33	34	45	26	14	11	25	37	40	40	27.9
Logan	Max..	56	64	35	43	46	51	55	53	69	66	39	40	38	35	38	35	40	40	64	61	50	59	62	62	36	35	42	52	58	49	58	49.4
	Min ..	27	18	5	17	30	32	27	19	35	25	18	26	12	20	12	16	26	31	28	31	35	27	42	30	30	11	14	32	32	42	40	25.5
Maquo'ta	Max..	44	49	28	38	39	41	51	48	46	52	35	33	29	32	37	35	37	43	51	40	52	54	57	58	34	27	32	47	53	44	54	42.6
	Min ..	29	29	11	10	14	30	26	25	24	29	28	25	20	21	18	15	19	31	31	21	21	33	25	26	28	12	12	19	27	33	38	30.0
Marshlt'n	Max..	49	60	29	40	42	44	49	48	50	41	33	40	31	33	35	34	39	43	51	42	45	55	61	54	33	25	34	48	47	45	49	42.9
	Min ..	30	31	5	6	19	31	24	22	25	33	26	29	21	19	20	23	25	31	34	27	28	33	29	34	25	9	11	20	32	36	38	25.1
Mason C..	Max..	39	47	28	34	40	43	40	38	43	41	32	33	30	30	35	38	37	40	41	38	38	46	56	51	45	25	31	39	47	49	49	39.5
	Min ..	29	25	2	16	30	29	30	24	33	33	26	27	24	20	23	24	29	30	31	24	30	32	30	41	19	9	11	25	31	37	35	26.1
M'nticello	Max..	47	50	42	40	50	48	45	42	45	40	46	45	38	37	40	45	42	45	49	54	55	52	50	52	49	39	45	52	55	53	50	46.5
	Min	18	19	8	3	10	15	18	27	24	26	25	27	29	20	16	21	25	33	34	23	37	35	33	36	27	10	7	29	33	35	37	23.9
Mt. Ayr..	Max..	59	65	35	41	46	52	60	56	71	60	44	39	37	31	41	36	42	63	58	45	72	63	62	59	45	30	40	50	50	49	50	50.0
	Min ..	29	31	7	15	29	30	27	24	32	16	19	25	23	13	12	28	31	32	36	25	34	32	32	41	25	12	15	24	37	39	30	26.0
Mt. Pl'snt	Max .	49	59	52	40	43	40	52	45	52	50	37	40	30	35	40	39	38	44	52	45	68	62	60	60	56	31	34	52	54	46	52	47.0
	Min ..	28	33	10	15	27	31	27	23	31	28	27	29	23	18	23	24	32	33	36	25	37	36	30	44	29	13	14	23	35	39	40	27.8
Mt. Ver'n	Max	46	51	40	37	38	43	48	47	45	45	33	35	26	28	35	34	43	42	50	41	54	59	61	54	50	22	36	52	48	44	52	43.2
	Min	27	31	7	14	28	32	26	22	27	25	26	26	20	19	16	20	29	32	34	26	30	32	32	42	20	8	10	21	33	35	38	25.5
New H. ..	Max..	41	47	29	35	41	41	38	32	42	32	32	36	29	28	31	35	38	40	42	39	36	47	55	50	49	26	30	38	44	45	44.6	38.5
	Min ..	26	25	1	10	27	28	23	20	26	26	24	25	19	17	18	17	27	29	27	19	27	30	28	37	19	6	7	21	29	29	29	22.2
Newton ..	Max..	47	58	31	39	42	44	48	45	51	50	32	39	35	30	34	35	38	41	51	44	52	50	56	53	52	31	33	48	47	46	50	43.6
	Min ..	28	30	5	14	29	30	24	21	28	27	25	26	22	20	23	24	30	31	34	23	24	32	31	43	24	8	11	23	33	38	36	25.7
Northw'd	Max..	43	45	31	34	41	45	40	38	41	41	33	33	31	31	40	40	40	58	39	38	38	48	56	50	43	22	31	42	49	47	48	39.9
	Min ..	25	13	0	11	28	25	27	27	22	31	23	26	23	19	21	22	30	29	26	22	30	32	30	39	17	7	9	28	31	36	35	24.0
Odebolt ..	Max..	52	65	32	42	44	45	47	48	65	53	34	34	31	30	39	39	39	51	49	43	43	53	62	58	36	27	28	50	58	45	50	44.9
	Min .	26	23	2	15	31	21	26	41	32	27	15	26	25	17	9	24	30	27	31	33	34	27	28	35	17	9	9	24	30	37	37	24.8
Ogden. ...	Max..	47	72	32	45	49	50	47	62	40	36	34	37	29	30	38	34	39	47	52	46	47	56	63	36	35	29	37	50	56	44	..	44.0
	Min	25	29	1	10	37	24	20	18	17	27	20	23	21	18	10	18	25	27	29	20	24	30	41	41	18	6	6	18	29	34	34	22.6
Olin	Max..	49	48	45	40	41	37	48	48	50	36	36	30	36	36	35	39	42	47	39	48	50	55	56	54	30	30	45	52	44	58	43.3	
	Min ..	28	30	9	13	27	22	32	25	30	29	24	20	22	16	20	30	32	32	34	24	35	35	27	40	29	11	13	22	30	38	48	26.5
Omaha, N	Max..	61	74	36	41	44	50	54	53	71	60	40	40	32	31	37	35	38	68	57	42	48	61	62	61	31	29	42	49	57	46	48	48.3
	Min ..	33	12	6	21	32	26	33	26	40	27	23	28	26	18	21	30	32	33	34	28	38	36	38	30	22	13	18	29	40	40	41	28.2
Onawa. ...	Max..	61	63	44	43	40	59	53	53	66	63	45	42	37	37	43	45	40	58	54	46	46	61	62	57	34	31	45	53	56	51	48	49.5
	Min ..	27	15	4	17	30	19	25	21	34	24	19	26	27	19	17	26	30	28	30	25	34	27	30	34	19	11	15	25	32	39	38	24.7
Osage.....	Max..	39	43	25	35	40	42	37	35	4	42	32	34	30	28	36	37	38	38	39	38	36	45	51	48	48	22	31	37	46	45	46	38.5
	Min ..	29	24	1	11	30	28	27	22	29	32	25	26	23	19	21	20	29	31	28	21	29	32	29	40	20	7	9	23	31	37	35	24.8
Osceola ...	Max..	58	63	60	34	47	56	58	65	63	42	32	40	25	46	48	50	55	57	56	70	58	64	58	56	57	40	46	56	60	56	50	52.4
	Min ..	36	37	33	16	23	29	23	26	31	27	24	26	26	16	16	17	18	20	23	25	36	32	35	46	15	12	10	13	17	32	32	24.8
Oskaloosa	Max..	52	55	32	41	42	42	52	47	53	46	33	40	29	30	39	37	37	44	54	43	60	52	61	56	52	28	33	50	47	45	50	44.6
	Min ..	28	32	7	16	29	33	23	22	32	30	27	29	22	19	23	25	31	33	36	26	36	34	32	43	28	10	13	24	34	39	39	27.6
Ottumwa	Max..	51	61	29	42	43	42	55	51	56	53	36	44	27	30	36	42	38	44	55	48	67	58	78	60	31	25	35	53	49	48	50	46.4
	Min ..	34	28	10	23	32	34	30	26	36	31	32	30	24	24	24	30	36	35	38	31	42	35	32	41	28	13	16	28	43	43	43	30.7
Pacific J'n	Max..	56	68	32	41	47	51	57	54	71	67	42	44	35	34	36	36	41	68	53	43	52	59	62	63	40	29	40	52	60	48	49	49.4
	Min ..	25	20	6	18	30	23	24	25	36	27	20	25	23	10	11	28	33	28	33	26	35	27	32	40	23	13	23	20	39	40	40	25.9
Perry, ...	Max .	50	64	31	40	47	47	46	42	57	53	32	47	33	31	39	34	38	50	51	42	47	51	62	55	39	28	38	47	54	44	49	44.1
	Min ..	30	24	6	19	32	29	25	23	31	28	24	23	24	22	16	27	31	33	34	25	36	35	31	38	23	11	13	22	34	40	39	29.7
Plover ...	Max .	44	54	30	40	43	45	42	45	52	35	35	32	31	32	41	43	37	47	40	45	43	50	52	57	30	22	35	48	58	44	45	42.2
	Min ..	27	9	0	17	30	20	25	20	24	20	24	24	25	20	22	25	28	31	30	25	32	31	33	30	15	6	7	29	33	35	33	23.5
Primghar	Max..	43	51	30	38	34	42	39	46	52	45	32	32	29	27	30	42	37	43	43	43	41	49	60	57	38	23	..	35	50	45	46	41.0
	Min ..	24	24	..	14	25	12	26	24	25	21	13	21	22	16	12	23	27	26	28	14	31	35	31	26	-7	5	..	7	30	36	36	20.6
Red Oak..	Max..	51	60	32	43	42	46	53	50	66	63	39	41	37	33	35	36	39	61	59	44	50	55	60	60	43	30	37	48	53	49	48	47.2
	Min ..	31	25	10	22	33	30	28	25	38	28	22	29	27	17	14	30	33	33	36	29	38	34	35	42	24	14	20	28	42	42	41	29.0
Ridgeway	Max..	42	45	30	37	43	46	42	45	40	46	36	36	31	34	39	39	48	44	45	40	40	50	59	54	45	26	31	41	47	47	46	41.7
	Min ..	29	18	0	10	30	30	27	20	28	34	28	26	21	20	20	19	30	33	30	20	28	32	29	41	21	9	9	22	30	36	35	24.7
Rock R	Max	47	50	40	32	40	56	47	44	40	46	26	28	36	32	38	44	42	40	42	44	48	48	60	58	26	25	29	54	56	60	52	42.9
	Min ..	25	27	0	16	20	15	22	28	33	32	12	7	26	22	10	12	34	28	25	32	32	30	32	42	15	7	7	20	32	34	36	23.0
Rockw'l C	Max..	48	60	30	40	40	46	43	43	55	52	35	34	32	37	38	42	40	45	42	43	45	50	60	57	38	30	36	47	58	47	50	44.9
	Min ..	28	23	2	14	13	25	23	23	30	25	21	24	19	16	15	25	29	29	32	23	33	30	35	33	19	9	13	27	31	38	36	24.0
Ruthven.	Max..	45	40	32	35	35	45	35	42	52	41	30	42	30	27	32	28	32	42	35	30	28	50	55	30	30	30	42	40	47	45	43	37.7
	Min ..	10	15	3	15	20	25	10	20	30	24	24	12	23	22	11	20	12	20	15	20	22	20	30	25	5	25	9	30	35	35	14	18.7
Sac City..	Max..	48	..	31	40	44	48	43	45	57	50	31	32	31	31	38	38	39	45	49	42	43	48	60	56	34	34	37	49	57	42	50	43.1
	Min ..	27	24	3	10	30	22	28	23	30	27	19	26	24	17	14	24	29	27	32	22	32	28	29	32	16	8	11	26	32	30	36	23.8
St. Cha'les	Max	44	64	33	41	42	50	56	49	64	54	39	39	34	33	40	34	38	55	55	44	55	60	63	55	40	31	36	52	46	44	51	46.5
	Min ..	31	22	7	18	31	30	28	24	30	27	25	28	24	19	22	26	31	31	35	25	35	33	36	39	24	12	13	27	27	29	39	27.0
Sibley	Max..	48	44	35	59	35	44	42	40	53	33	36	32	32	29	..	45	35	41	40	43	42	..	59	55	24	24	36	47	55	40	49	40.5
	Min ..	21	23	-2	1	21	10	26	22	25	32	13	16	24	19	8	..	24	29	28	21	25	29	.	35	12	5	7	11	30	35	35	20.2
Sigourn'y	Max..	49	57	53	41	43	42	52	..	57	50	39	40	33	36	45	39	41	43	53	44	65	61	61	57	58	31	34	51	48	45	56	47.4
	Min ..	29	29	8	15	30	35	25	..	29	27	28	30	22	27	23	24	32	33	36	26	36	35	36	43	26	12	13	24	34	40	36	28.1
Sioux C'y.	Max..	50	64	38	42	36	45	48	49	67	56	36	36	33	34	38	45	37	48	47	45	47	55	61	57	29	25	39	47	57	45	49	45.3
	Min ..	33	9	2	18	27	13	32	25	36	24	20	29	25	19	17	27	29	29	29	24	36	29	35	23	15	8	13	27	33	40	39	24.7
Sioux C'r.	Max..	40	52	34	39	35	43	42	44	59	48	34	36	35	39	32	41	37	42	43	44	44	49	56	58	27	25	37	46	57	44	48	42.3
	Min ..	25	12	0	14	30	18	29	24	32	25	14	21	22	10	13	24	28	28	29	22	34	30	26	24	12	7	8	28	32	37	37	22.4
Spirit L..	Max	42	35	32	37	35	51	42	39	49	34	26	34	35	26	40	49	35	43	35	44	41	46	60	60	35	19	35	39	58	40	40	39.9
	Min ..	24	9	-2	13	25	10	10	20	31	24	15	24	20	18	8	20	30	29	24	20	32	24	32	28	11	5	6	26	31	36	35	20.6
Storm L..	Max..	49	57	31	38	39	47	42	44	55	32	31	32	30	28	38	39	36	43	46	43	43	48	58	54	28	27	36	47	56	40	49	41.5
	Min ..	21	25	0	0	15	18	19	22	22	29	15	15	24	18	12	12	23	24	29	20	25	27	30	31	14	6	7	14	30	30	35	19.7
Stuart ...	Max..	.	..	..	..	..	..	50	47	62	63	59	57	58	63	58	46	38	57	41	45	46	54	60	56	55	30	36	49	57	45	48	51.2
	Min .	..	..	..	..	..	..	14	24	11	12	21	16	18	13	14	12	19	21	22	23	35	34	51	44	24	11	28	36	39	42	44	23.5
Thurman.	Max..	54	66	33	38	34	40	48	50	68	65	43	43	35	31	33	34	39	61	60	45	45	47	54	53	42	30	41	42	48	48	48	45.9
	Min ..	30	21	8	22	30	25	24	22	38	29	24	27	25	2	11	28	18	28	35	28	35	28	32	42	24	13	14	22	40	42	42	26.1
Tipton....	Max..	43	50	43	43	38	40	51	48	46	50	33	36	31	33	33	34	38	42	51	44	55	54	60	58	54	30	34	47	50	48	53	44.2
	Min	28	31	11	11	28	32	27	20	29	30	28	27	22	20	18	21	30	33	33	26	30	33	33	41	27	11	13	22	32	32	38	26.3
Toledo....	Max..	49	60	29	41	41	43	51	47	49	47	33	41	33	32	35	35	39	40	51	42	47	54	60	52	53	28	33	48	47	45	48	44.6
	Min ..	29	29	7	12	30	30	22	22	29	29	27	28	22	19	23	21	30	25	34	23	32	33	29	43	25	9	11	25	32	39	38	26.0
Vinton. ..	Max..	46	55	42	38	36	37	48	46	46	47	34	39	31	31	33	34	38	40	50	40	45	53	58	52	54	29	32	46	49	48	47	42.6
	Min ..	30	33	8	16	30	32	20	24	30	30	28	29	22	20	20	20	30	32	35	12	30	34	29	42	26	10	12	24	33	39	38	26.6
Wapello..	Max..	45	58	51	38	39	38	48	39	49	50	50	38	31	31	33	28	36	39	51	42	64	62	60	55	32	36	51	51	45	45	58	44.9
	Min ..	..	38	15	20	31	34	30	28	30	30	32	30	25	22	22	20	23	33	35	28	35	34	45	30	16	17	26	33	41	40	39	29.4
Washi'ton	Max..	48	55	28	39	39	40	52	47	50	50	36	40	29	32	36	36	35	41	53	43	65	55	60	58	45	28	34	50	49	45	48	44.1
	Min ..	26	26	7	14	28	30	32	25	31	30	30	26	20	20	22	24	31	32	33	26	34	34	31	34	28	12	15	25	34	40	40	27.0
Waterloo	Max .	48	55	26	38	42	42	47	46	45	46	37	39	33	33	32	35	38	41	49	39	41	53	58	53	55	29	39	45	45	47	47	42.7
	Min ..	30	31	6	13	30	30	24	23	29	29	26	28	22	19	23	20	20	53	54	44	47	61	64	56	42	28	38	56	49	43	50	46.5
Waukee..	Max..	56	67	36	39	38	51	52	54	60	52	33	41	33	31	40	34	38	33	34	25	35	33	33	42	23	11	12	27	35	39	38	27.1
	Min ..	29	29	6	19	32	30	26	22	32	28	24	27	23	20	18	25	31	33	34	25	35	33	33	42	23	11	12	27	35	39	38	27.1
Waverly..	Max..	45	54	25	38	40	40	40	39	..	43	32	36	28	31	33	35	38	42	44	38	38	49	58	51	50	24	30	40	42	45	45	39.8
	Min ..	39	25	4	13	30	29	23	22	..	20	26	28	21	20	22	20	20	..	29	22	30	32	28	41	23	8	13	25	31	37	37	25.1
W.Bend..	Max..	43	54	31	40	41	46	39	40	50	44	26	33	31	28	40	42	38	46	44	42	48	51	60	56	32	26	35	47	55	43	50	45.0
	Min .	27	16	0	13	31	20	27	21	32	26	20	25	24	22	12	22	30	27	27	21	33	32	31	32	11	7	7	25	31	37	37	23.1
Whitten..	Max..	46	61	28	40	45	43	45	42	49	45	32	38	32	31	38	38	39	43	48	40	41	50	58	53	53	28	32	45	47	38	38	42.6
	Min ..	23	25	2	12	24	21	21	20	27	28	25	28	20	17	21	29	31	32	22	32	31	31	42	20	6	7	23	32	34	38	36	24.5
Wilton J.	Max..	45	52	50	38	42	43	50	45	47	51	37	37	31	37	39	38	40	33	34	26	32	35	28	36	28	12	13	22	34	40	39	27.1
	Min	27	32	11	15	27	33	28	25	29	33	29	28	22	21	17	18	33	33	34	26	32	35	28

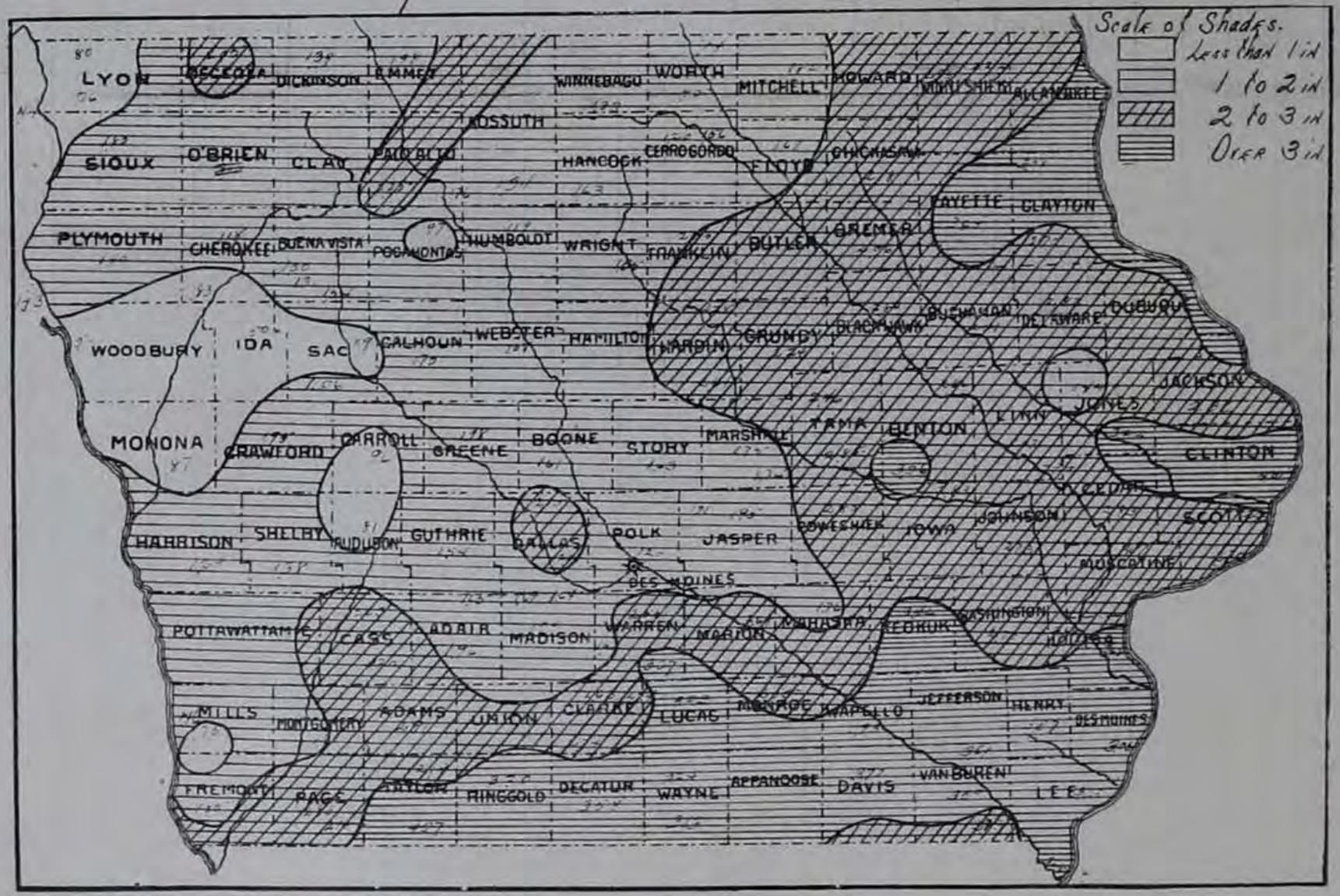
DAILY AND MONTHLY PRECIPITATION FOR MARCH, 1904.

STATIONS.	DAY OF MONTH. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL.
bia	.	....	T	....	....	....	....	....	....		.	.	....	.40	..	....	.29	....	....	....	.09	....	...	.46	.90	.	....	...	....	.25	.16	2.55
gona	....	....	....	....	....	....	....	....	....	...	....	....	.11	....	....	....	....	.	.23	....	.37	....	...	.35	....	....	..	....	....	.11	.17	1.34
lerton	...	....	.30	....	....	....	....	...	....	T	T	....	2.30	.60	....	....	....	...	....	....	....	..	....	....	....	....	....	....	....	....	....	3.20
lta	....		..	....	....	..	...	....	....	.12	....	....	.13	....	....	....		.03	....	....	.40	....	....	.35	....	....	....	....	....	.46	.01	1.50
lta (near)	....		..	....	....	..	...	....	....	.12	....	....	.13	....	....	....	....	.03	....	.28	....	....	....	.15	....	....	..	..	....	.50	....	1.31
mana	....	....	....	....	....	....	....	....	.20	....	....	....	.15	....	....	....	....	.03	....	.28	....	....	....	1.41	...	....	....	....	.16	.04	.22	2.83
mes	....	....	T	....	..	.02	....	....	....	T	....	.	.36	.22	..	.07	.19	..	....	T	.14	....	....	.77	....	....	....	....	.02	.24	.06	1.63
tlantic	....	....	....	..	....	....	....	..	....	.11	....	....	.08	....	....	.16	.05	....	....	.01	.13	....	....	.35	....	....	....	....	....	.59	...	2.23
ububon	....	....	T	....	....		....	....	....	.15	..	....	.30	....	....	.29	....	....	....	.25	.03	....	....	.62	....	....	....	....	....	.01	T	0.81
xter	....	....		....	....	....	....	....	....	04	..	....	.30		..	.04	....	....	....	.09	.12	....	....	.21	....	....	....	....	....	.15	.05	1.91
edford	.	....	.	....	....	....	....	....	....	.10	..	..	.20	....	....	....	.25	....	....	.22	.18	....	..	.86	..	....	....	....	T	2.35	T	4.57
elknap	....	T	....	....	....	....	....	....	....		..	..	.89	....	.	.20	....	....	....	.13	.	...	....	.90	....	....	....	....	T	.83	T	3.72
elle Plaine	....	....	.10	..	..	.24	..	..	....	T	....	...	.80	.10	..	.10	.10	...		.10	.10	..	..	1.25	..	....	....	....	.15	T	.14	3.36
onaparte	....	....	....	..	....	02	T	....	....	.10	....	....	.70	.05	....	.10	.30	..	T	T	.10	....	....	1.70	....	...	....	....	.06	.54	.15	2.73
ritt	....	....	....	..	..	.15	....	..	....	....	....	...	.35	..		....	.21	....	...	....	.35	....	....	.89	....	....	....	....	T	.04	.18	1.63
uckingham	....	....	.05	....	..	....	....	....	....	.02	....	...	.07	.03	....	....	..	....	....	.04	.71	....	....	.46	....	....	....	....	.27	.23	T	2.46
urlington	08	T	....	....	T	T	....	....	....	.01	.	....	.15	....	....	..	..	....	.05	....	.50	....	....	1.25	....	T	....	....	T	.48	.21	3.05
arroll	..	T	.07	..	....	.05	.03	....	..	T	02	.	.50	.12	....	T	.21	....	....	....	.18	.20	..	.98	....	....	....	....	....	....	.28	0.96
edar Rapids	....	....	T	....	..	.	....	....	..	T	....	....	.35	....	....	..	..	....	....	....	.08	..	....	.25	....	..	....	....	....	....	....	....
hariton	....	T	T	....	..	T	..	....	....	....	T	....	....	.22	T	....	.08	..	T	....	.08	..	..	1.48	....	....	....	....	....	.18	.08	2.07
harles City	....	....	T	....	....	T	..	....	....	T	T	....	.30	T	..	.33	T	....	....	T	.10	....	....	1.80	....	T	....	....	T	.60	.10	3,23
larinda	....	T	T	..	..	....	.	....	..	....	....	....	.	.23	..	....	.05	....	....	.20	.14	.45	..	....	T	T	....	....	....	.36	.24	1.67
lear Lake	....	....	....	...	....	....	....	....	....	....	....	....	.62	....	....	.22	....	....	....	...	.21	....	.36	.72	....	....	....	..	.05	.60	.05	2.83
linton	T	..	..	..	....	....	....	....	....	....	....	....	.10	.10	..	....	T	..	....	....	.50	..	..	.40	..	....	....	....	T	T	.10	1.20
ollege Springs	....	....	....	....	.16	....	....	....	....	.06	....	....	....	.67	....	....	.26	....	...	.	.99	....	.	.86	....	....	....	....	.08	.52	.41	4.01
olumbus Junct'n	....	....	....	....	....	....	....	....	....	T	..	....	.65	.	..	....	....	....	....	....	....	....	....	.75	....	....	....	....	.30	.40	.06	2.16
orning	....	....	T	....	....	.27	....	..	....	T	....	....	.16	.26	..	T	.33	....	...	T	.13	....	....	.90	....	..	....	....	T	.48	.15	2.68
orydon	....	....	T	....	....	....	....	..	....	.03	..	..	.50	....	....	.30	....	....	....	.14	.03	....	....	1.10	....	....	....	....	T	.65	.16	2.91
umberland	..	....	.01	....	....	T	....	....	....	T	....	....	.25	.31	....	.06	.25	....	...	.03	.17	....	....	1.53	....	....	....	....	.02	.58	.03	3.24
avenport	....	....	....	...	....	....	....	....	....	....	....	....	.30	....	....	.40	....	....	....	.20	..	....	....	1.10	....	....	....	....	....	1.20	....	3.20
ecorah	...	....	....	....	T	.06	....	....	.	T	T	T	.24	.31	..	.04	.20	....	T	T	.26	.03	....	.65	...	T	....	T	T	.41	.44	2.70
elaware	..	....	.06	....	T	.06	....	....	....	....	..	..	.12	.20	...	.04	....	....	....	....	.26	....	....	1.30	T	T	....	T	....	....	.3	2.22
enison	....	....	....	..	..	.14	..	....	..	.05	..	...	.30	.15	....	.25	....	.07	.	....	.48		..	1.07	.03	....	....	....	....	.16	.12	2.82
es Moines	....	....	....	....	..	....	....	....	....	.50	....	....	.75	....	....	.10	.10	.	....	.08	....	..	....	.12	....	....	....	....	....	.30	....	1.95
e Soto	....	....	T	..	T	....	....	..	....	.01	T	....	.30	T	....	.16	.04	....	...	.06	.04	....	....	.32	....	....	....	....	.05	.20	.02	1.20
ows	T	....	....	....	....	....	....	..		.10	....	....	.05	.	....	.03	.13	....	.10	..	.32	....	....	.67	....	....	....	....	T	.24	.03	1.64
ubuque	T	.12	.02	....	T	T	....	....	....	.01	..	..	.16	.38	....	.04	.14	T.	.15	....	.94	T	....	.53	....	T	....	....	T	.19	.10	1.55
arlham	..	....	T	....	..	....	....	....	....	T	....	....	.09	T	...	.13	.06	....	....	.03	.15	....	....	.76	....	....	....	....	T	.08	.06	2.86
lkader	.10	....	....	..	....	.08	....	....	....	.03	....	....	.	.42	....	....	.11	....	.15	....	.48	....	....	.34	.	....	....	....	....	.39	T	1.69
stherville	....	....	T	..	....	T	..	....	....	....	T	....	.12	T	....	....	....	T	.10	....	.65	....	....	1.10	....	....	....	....	....	.28	....	2.75
ayette	T	....	..	....	....	T	....	....	....	T	....	....	..	.70	....	....	.08	....	.15	....	.70	....	....	.23	.27	....	....	....	....	T	.61	1.98
orest City	....	....	....	....	....	....	....	....	....	....	T	....	....	.10	....	....	....	....	.19	....	.40	.10	..	1.66	....	....	....	....	T	...	.35	3.64
ort Dodge	....	....	..	....	....	....	....	....	....	T	....	....	....	.10	....	....	....	....	....	....	.50	..	..	.15	T	....	..	....	....	....	.48	1.33
ort Madison	....	.20	..	....	....	.10	....	..	....	....	.25	...	.70	T	..	....	....	....	....	.27	...	.25	....	T	....	..	....	....	T	.30	.13	1.08
ilman	....	....	T	..	....	T	....	....	....	T	....	T	.06	..	....	T	.33	....	....	T	.09	....	....	1.00	....	..	....	T	.12	.77	.09	3.73
lenwood	....	....	....	....	....	....	....	....	....	....	T	....	.40	....	....	....	....	....	....	....	....	....	....	.10	....	....	....	....	....	.05	.09	1.74
rand Meadow	.08	T	....	..	....	....	....	....	....	.10	....	....	....	.40	....	.10	.01	....	..	....	.37	..	....	1.70	....	....	....	T	.20	....	....	0.75
reenfield	..	T	T	....	....	....	....	....	....	.01	.06	...	.25	T	....	.20	.02	....	....	.06	.17	....	....	.99	....	....	....	....	T	.18	.02	3.01
rinnell	....	....	....	....	....	....	....	..	T	.10	....	....	.58	....	....	.23	..	..	....	....	50	.	..	1.10	....	....	....	....	.33	.10	.04	1.96
rundy Center	....	....	....	....	....	....	....	....	....	....	....	..	.30	.03	....	.10	.05	....	.04	T	.35	....	....	.88	..	....	....	....	.11	.24	.14	2.80
uthrie Center	....	....	T	....	....	....	....	....	....	.02	T	..	.15	T	..	.10	.05	....	....	.10	.20	....	....	.77	..	....	....	....	.01	.14	T	2.24
ampton	....	....	....	....	....	....	....	....	....	.15	....	....	.23	....	....	.18	...	.12	....	.28	.18	....	....	.60	..	....	....	....	....	.26	....	1.54
anlontown	T	....	....	....	..	....	..	....	..	T	....	....	.12	....	....	....	..	T	T	...	.55	....	....	.44	....	T	....	....	T	....	.23	2.00
arlan	....	T	T	....	....	....	....	..	....	.08	T	....	.30	T	...	.08	.03	....	T	.10	.07	T	....	.41	.	....	....	..	T	.31	.	1.34
opeville	....	T	....	....	..	....	....	....	....	.02	....	....	.19	....	....	10	....	..	....	.21	.17	....	....	1.35	....	....	..	....	.05	.65	T	1.38
umboldt	..	....	....	....	..	....	....	....	....	....	....	..	....	..	..	..	....	....	.16	..	.42	....	....	.41	....	....	..	....	....	.20	....	2.74
da Grove	....	....	....	....	....	....	....	....	....	....	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.50	....	....	1.19
ndependence	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.01	....	.20	0.50
ndianola	....	....	T	....	....	.05	..	....	....	.07	....	..	.52	.05	....	.11	..	....	.10	...	.15	....	....	1.25	....	....	....	....	.08	.16	.01	2.51
nwood	..	....	....	....	....	..	...	....	....	.03	..	....	.60	.01	....	.13	.05	....	....	.13	.27	..	....	1.08	....	T	....	....	....	.02	....	2.55
owa City	....	....	T	....	....	....	....	....	....	.01	....	.20	....	T	....	....	....	....	....	....	.53	..	..	....	....	..	....	....	....	.26	.14	0.76
owa Falls	....	....	....	....	....	T	T	....	....	....	.03	....	T	.73	T	..	T	..	T	..	.03	.07	....	....	1.47	....	....	....	....	.06	.25	2.73
efferson	T	T	....	..	....	....	....	....	....	....	.15	....	T	.30	T	...	.35	.	.15	....	.33	.06	....	T	.63	..	T	T	..	.23	....	2.28
eokuk	....	....	....	....	....	....	....	....	....	.05	....	....	.20	....	....	.35	....	....	....	....	.55	....	....	.60	....	....	....	....	....	....	....	1.98
eosauqua	..	....	.02	T	.17	.02	....	....	....	.05	....	..	25	.07	..	T	.46	....	T	T	.19	.22	.	1.10	...	....	....	..	.01	.84	.08	3.46
noxville	....	..	.11	....	....	28	..	...	..	....	T	...	....	.44	..	....	.18	....	...	....	.15	.60	....	....	.97	....	....	....	....	.62	.14	3.59
acona	....	..	.05	....	....	....	....	....	....	03	....	....	.30	T	....	.10	T	....	...	T	.20	....	....	1.50	....	....	....	....	.40	.10	T	2.68
arrabee	....	.03	....	....	....	..	..	....	....	.14	.01	.30	....	.06	..	.14	....	..	....	.06	.24	.08	....	1.84	..	....	....	..	.25	.20	.04	3.37
e Claire	....	..	....	..	...	....	....	...	.	.10	....	....	....	....	....	....	....	T	....	....	.45	....	....	.43	....	....	....	....	....	.20		1.18
eMars	T	..	.03		.	.03	....	..	....	....	T	....	....	.54	.03	..	.23	.04	....	....	.11	.23	....	....	.88	T	T	....	..	.03	.84	2.99
enox	....	..	....	....	.40	....	....	....	..	.05	....	....	.30	....	....	....	....	....	....	....	....	....	....	.40	....	....	....	....	....	.30	....	1.40
eon	....	..	T	..	....	....	....	....	....	T	....	....	.25	....	....	.10	..	....	...	.10	.05	....		1.10	....	....	....	....	T	.78	.06	2.49
ogan	....	....	T	....	.	....	....	....	....	.30	....	....	.55	....	..	T	....	....	....	.70	.25		....	1.50	....	....	....	....	.15	.35	.08	3.58
aquoketa	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	....	....	.10	.44	..	....	....	....	....	....	.45	....	....	1.29
arshalltown	....	....	..	....	....	....	....	....	....	.	.07	...	....	.32	.05	..	.15		.03	....	.20	.26	....	....	.95	....	....	....	....	.06	.27	2.36
onticello	....	....	T	....	....	....	....	....	....	....	.04	..	....	.35	....	....	.15	....	....	....	....	....	....	02	.85	....	....	....	....	.15	.19	1.75
ason City	...	T	....	...	T	T	....	....	T	T	...	....	....	.53	.08	..	..	....	.15	....	T	....	..	.50	T	...	..	T	....	.18	....	1.44
ount Ayr	.05	....	....	....	....	....	....	....	..	....	....	....	.16	....	..	....	.05	....	.20	....	.45	....	....	35	.	....	..	....	T	30		1.56
ount Pleasant	....	....	.03	....	....	....	....	....	....	.04	.02	....	.34	....	....	.22	.07	....	....	.25	.14	....	....	1.50	..	....	....	....	.04	.50	.05	3.20
t. Pleasant	....	....	T	....	....	.42	....	....	....	.02	....	....	.28	.15	....	T	.27	..	....	T	.87	.06	....	1.00	..	....	..	....	.10	.25	.15	3.57
t. Vernon	....	....		....	....	.02	....	....	....	.03	..	....	.32	.40	....	....	....	.20	....	....	.01	.02	..	1.00	....	....	....	....	.14	.03	.17	2.34
ew Hampton	.02	....	....			....	....	..	....	....	..	....	.30	.10	..	..	.	T	.21	....	..	..	..	1.30	....	....	....	....	.05		.20	2 18
ewton	....	....	....	....	..		....	....	....	....	....	....	.27	....	....	.23	....	....	.	..	.23		..	1.15	....	....	..	....		.07	....	1.95
orthwood	T	T	T	....	..	....	....	T	....	....	....	....	.12	.08	....	....		T	....	....	50	....	....	56	T	T	....	.	T	T	.19	1.45
debolt	....	....	....	..	..	....	....	....	....	.12	....	...	.10	....	....	T	....	....	....	.04	....	....	....	.40	....	....	....	....	..	.40	....	1.06
gden	..	...	....	..	..	....	....	....	....	....	....	..	.15	....	.	....	.22	....		..	....	.22	....	.22	.50	...	.	....	....	....	.30	1.61
lin	....	..	....	....	....	....	..	..	....	.01	....	....	.70	..	....	.10	....	.	....	....	.10	....	.10	2.00	....	....	....	....	..	.20	.01	3.22
maha, Neb	....	....	T	..	....	..	....	....	....	.07	....	..	.37		....	.02	.03	....	....	.06	.05	....	....	.31	....	....	....	....	....	.39	.02	1.32
nawa	....	....	....	....	.02		....	....	....	.10	....	..	.10	....	....	T	T	....	....	.03	.18	....	....	.22	....	T	....	....	....	.22	....	0.87
sage	....	....	....	....	....	..	....	....	....	..	....	....	.10	.17	....	....	.02	.04	.14	..	.34	....	....	.59	....	....	....	....	T	....	.34	1.82
sceola	.08	....	....	....	....	..	....	....	....	....	....	....	.70	....	....	....	....	....	....	T	....	....	....	1.05	....	....	....	.50	....	....	.38	2.63
skaloosa	..	T	T	..	....	....	....	....	....	....	....	....	.70	....	....	....	....	....	....	T	.03	..	....	1.00	....	....	....	....	.09	.09	.05	1.76
ttumwa	.02	....	....	....	....	T	..	....	....	.04	....	....	.26	.09	....	.09	....	..	....	....	.04	....	....	2.00	....	....	....	..	....	.43	.10	3 93
cific Junction	....	....	..	....	..	T	....	....	....	.13	....		....	.78	..	.45	....	....	....	....	....	....	....	.46	....	....	....	....	T	.41	.03	1.46
erry	....	T	....	.	....	....	....	....	....	T	....	....	.59	....	..	.01	....	....	....	.05	T	....	..	1.08	....	....	....	....	T	.20	....	2.10
over	....		....	..	....	..	..	....	....	T	....	....	.30	....	....	.25	....	....	....	T	.27	....	....	.22	....	....	....	....	....	.24	....	0.97
ed Oak	....	..	T	..	..	..	..	....	..	.09	....	....	.10	....	....	....	....	....	.09	.06	.26	..	....	.66	....	....	....	....	T	.58	T	1.88
idgeway	.20	....	....	....	....	....	....	....	....	.02	....	....	.32	....	....	.05	....	....	....	.18	T	....	....	.82	T	T	....	T	.11	.37		2.95
ock Rapids	..	..	....	....	....	....	....	....	....	....	....	.30	.19	.57	....	.03	....	.13	.12	.03	.36	....	....	....	....	....	....	....	....	T	T	0.80
ockwell	....	....	....	....	....	....	....	....	....	....	....	...	....	....	....	....	....	....	....	....	.50	....	....	..	....	....	....	....	....	....	....	1.75
uthven	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.10	....	....	..	....	.50	....	....	.50	....	....	....	....	....	.65	....	2.25
ac City	....	....	....	....	....	....	....	....	.50	..	....	..	....	....	....	....	....	..	..	....	....	....	1.00	....	....	....	.75	....	....	....	..	0.89
t. Charles	....	....	.02	....	....	....	....	....	....	....	T	....	.20	....	....	T	T	....	T	T	.36	....	..	....	....	T	....	....	....	.33	....	1.00
bley	....	....	T	....	T	.10	....	....	....	.02	....	....	.28	....	....	.23	.04	....	T	....	....	....	....	....	....	....	....	....	.05	.31	.05	2.05
gourney	....	....	T	....	....	T	....	....	....	....	.05	....	.40	T	....	....	....	....	....	T	.05	....	....	1.20	....	T	T	.15	....	....	....	.15	2.05
oux Center	....	T	....	....	.05	....	....	....	....	.09	....	....	.51	.12	....	.03	.40	....	....	T	.05	....	....	1.92	....	....	....	....	....	.06	.17	.07	3 42
oux City	....	T	T	...	.02	....	....	....	....	.09	....	....	.51	....	....	....	....	....	....	....	.96	....	....	.06	....	....	....	....	....	.03	....	1.85
										.05	....	....	.70	....	....	....	....	....	....	....	....	....	....	.06	....	....	....	....	....	.02	T	0.50
										.05	....	....	.01	....	....	....	....	....	....	T	T	.32	....	....	.06	....	....	....	....	....	.02	T	0.50

DAILY AND MONTHLY PRECIPITATION FOR MARCH, 1904--CONTINUED.

STATIONS.	DAY OF MONTH.																													TOTALS.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Spirit Lake	....	....	....	....	T	....	....	....	....	T	....	....	.35	....	..	....	....	....	....	..	T	....	..	.18	T	....	....	....	....	.86	....	1.39
Stockport	....	....	.09	....	..	.43	....	....	....	T	....	....	.12	.08	....	....	....	....	....	..	1.16	....	..	.95	....	....	....	....	.08	.51	.19	3.61
Storm Lake	....	....	T	....	....	....	....	....	....	....	T	....	T	.01	....	..	....	....	..	..	.80	.	...	.20	.05	....	..	..	..	T	.48	1.54
Stuart	....	..	..	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.20	.18	....		.82	....	....	....	....	....	.35	.10	1.65
Thurman	....	....	....	....	....	....	....	....	....	T	....	....	.20	....	....	.02	..	....	....	.08	T	..	..	1.05	....	..	..	....	T	.30	.20	1.85
Tipton	....	....	....	..	....	.10	....	....	....	....	....	....	.48	.38	....	....	....	....	.05	....	.27	....	..	1.01	..	..	....	....	....	.31	.20	2.83
Toledo	....	....	....	....	T	....	....	....	....	T	....	....	.37	....	....	.25	....	..	....	.25	....	....	..	1.35	....	....	....	....	.30	.15	.18	2.85
Vinton	....	....	....	.	..	.02	....	....	....	.03	...	....	.06	.49	.	.05	.20	....	.04	.07	.18	....	....	1.32	....	T	...	....	.02	.20	.18	2.80
Wapello	..	....	.11	....	....	.37	....	....	....	....	..	....	.21	.25	....	..	.23	....	..	...	1.00	....	.95	....	....	....	....	T	.54	....	.02	3.66
Washington	....	....	.03	....		.09	....	....	....	.01	....	....	....	.45	....	...	.24	....	....	.05	....	....	....	.05	.90	....	....	....	....	.35	.53	2.70
Washta	T	T	....	....	T	....	....	..	...	.10	....	...	T	....	....	....	...	T	....	.13	.	....	....	.50	....	..	....	..	....	.10	...	0.83
Waterloo	..	....	....	....	...	....	....	..	...	.04	..	..	.43	....	....	.13	....	....	.08	T	.43	....	....	1.33	....	....	....	....	.14	.13	.13	2.84
Waukee	....	....	T	....	T	....	....	....	....	.02	...	....	.40	.05	..	.23	.07		..	.13	.19	....	....	.83	....	....	....	....	.06	.23	.02	2.23
Waverly	T	.	T	....	..	....	....	....	....	.03	....	...	.30	.12	....	.08	.05	....	.14	..	.34	....	....	.70	....	...	....	....	.05	.22	.03	2.06
West Bend	..	....	..	..	....	....	....	....	....	T	..	...	.20	....	....	....	....	....	.20	....	.56	...	....	.37	....	....	....	...	.20	.23	..	1.76
West Union	T	....	....	....	....	....	....	....	....	....	....	.50	....	....	....	....	....	T	....	....	....	....	....	1.92	....	....	....	....	..	.31	....	2.78
Whitten	....	....	..	..	....	....	....	..	....	T	....	T	.40	.10	....	T	.10	....	....	T	1.00	....	....	.86	....	T	....	T	.03	.15		2.64
Wilton Junction	....	....	....	..	....	....	....	....	....	T	....	....	....	.60	....	....	....	..	..	....	.47	....	....	.78	..	....	....	....	....	.67	.25	2.77
Winterset	....	.	....	....	....	....	....	....	....	....	....	....	20	....	....	T	....	....	..	....	.40	....	....	.90	....	....	....	....	.20	.29	....	1.99
Woodburn	..	.07	....	....	....	....	....	....	....	T	....	....	.39	T	....	..	....	....	....	..	.30	.20	....	.70	....	....	....	....	T	.39	.19	2.24

Precipitation Chart March 1904.



APRIL, 1904. No. 4.



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GEO. M. CHAPPEL,
LOCAL FORECASTER,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XV. APRIL 1904. No. 4.

APRIL WEATHER AND CROPS.

This has been an abnormally cold month, the records of 115 stations indicating a monthly mean temperature of 44.1°, which is 5.2° below the normal. It was the coldest April for the State at large, of which we have records covering all districts. At Des Moines the coldest April in any previous year of record was in 1881. The temperature of the past month, however, was notably equable from first to last, the rise being moderate, and barely sufficient in the last week to start fruit buds and foliage. This retarded germination and possibly lessened danger of serious damage by sudden change from warm to excessively cold weather. The rainfall was 0.74 of an inch above normal, the larger part of which came about the 7th and 8th, and between the 22nd and 25th. There were some dry periods, and sufficient amount of sunshine to afford ample opportunity for seeding and preparing the ground for planting corn. Seeding of spring wheat, oats and barley begun generally from the 1st to the 4th, and that work was practically completed in the larger part of the State about the 20th to 23rd. Germination of seed was unusually slow, but at the close of April there were indications of a good stand, except on low, wet fields. Fruit buds appeared healthy and promising, but there were but a few blossoms visible prior to the first of May. The pastures and meadows were unusually late in starting, and there was but little grass for stock at the end of the month. On the whole, though the growth of vegetation was much belated, the month was more favorable for the farmer than the corresponding month in 1903.

NOTES AND COMMENTS.

Under the new drainage law, the citizens of Wright county propose to open several big ditches that will have an aggregate length of twenty-five miles, which will make tillable several thousand acres of land now under water.

Experiments with various feed stuffs, made in Oklahoma last winter, proved that the greatest gains were made by cattle fed on alfalfa hay and corn meal.

More than ever this year the country needs a bumper crop. It is the one thing necessary to put an end to all pessimism and bring prosperity greater than we have known before.—*Minneapolis Journal*.

Professor Carleton, cerealist of the U. S. Department of Agriculture, who has recently made a report on oat culture in Kansas, says that the farmers have shown an increasing disposition to disregard all spring sown grains, because of the danger to them from hot weather.

WIND—VELOCITY AND PRESSURE.

Haswell's Hand-Book for Engineers, a standard and reliable authority, gives the following as to velocity and force or pressure of wind per square foot of surface, in pounds.

Miles per Hour.	Feet per Minute.	Pounds Pressure per Square Foot.
10	880	.500
15	1320	1.125
20	1760	2.000
25	2200	3.125
30	2640	4.500
35	3080	6.125
40	3520	8.000
45	3960	10.125
50	4400	12.500
60	5280	18.000
80	7040	32.000
100	8800	50.000

DRAINAGE AND DROUGHTS.

An Omaha reader takes exception to our statement that the drainage of marshes and lakes in no perceptible degree diminishes the rainfall of the territory where located and that the cultivation of a semiarid region in no way increases the rainfall, and he presents some plausible arguments to show that our contention is wrong. Here are a few facts for our friends to consider: Lower California is an arid desert. Still it has the Pacific ocean on one side and the gulf on the other. Why should it be dry when such an enormous evaporation under a tropical sun is always in operation? The records show conclusively that n all the territory west of the one hundredth degree of west longitude the settlement of the country and the cultivation of the soil have in no manner increased the average rainfall. Take the Mississippi Valley, the territory which this statement is tended to cover, and where does the water come from which makes up the average of thirty to thirty-five inches per annum which the states of Minnesota, Iowa, Illinois and Missouri receive? Take the State of Iowa, to illustrate. To give this State one inch of rain would require the evaporation of the water of a lake twenty by twenty-seven and one-half miles in area and eight feet in depth, or a river a mile wide, eight

feet deep and 550 miles in length. The yearly rainfall of thirty-one inches in this State, would make a lake 110 miles long, fifty miles wide and twenty-six feet deep; and if all the water in all the rivers, creeks, lakes, ponds and sloughs in the State was vaporized and returned to the earth in the form of rain it would give less than one inch of rainfall. Now, whence comes the rainfall we get? From the Gulf of Mexico. The Mississippi Valley, if one could see it pictured out in relief, would be seen to be a vast trough reaching from northern Minnesota to the Gulf of Mexico, up which the moisture laden clouds are driven by the south winds, assuring a permanent and reliable rainfall and making the valley the garden spot of America. Had there been a range of mountains like the Rockies flung across the lower part of this valley, all that part of it which lay at the north would have been an arid desert. For the past two years all the northern part of this valley, better drained than it has ever been before—millions of acres of swamp lands reclaimed by drainage and put under cultivation, and lake beds converted into cornfields—has been deluged with such an excess of rainfall that all the drainage done was utterly insufficient to dispose of surplus water. It is now well settled that timber grows in any given territory because it rains there and that it does not rain because the timber grows. The facts justify a repetition of the phrase, "While drainage will dry up the earth it will not dry up the heavens," for the reasons above stated.—*J. S. Trigg's Farm Notes.*

OUR GOOD SOIL AND CLIMATE.

We who live in America and in the corn belt little realize how much we have to make us thankful. First there is the soil, which is richer than England has or Scotland, except in favored spots. Next there is the climate. Granted that our climate has in it violent extremes and is trying to live in if we do not fit it right, yet it means well and really blesses us. I never knew how much we have to make us glad until I shivered in England, France and Scotland for nearly two months of their summer.

It was a constant wonderment to me that things grew so well as they did with so little heat. Coming home, the maize standing rank and green, twice as high as the fences, looks mighty good to me. And this sets me thinking. Corn grows mostly from the sun. True, there must be soil and water in that soil, but sun power makes the golden grains and sunbeams coiled up within those grains are ready to give out again their stores of energy or warmth in winter time. That sun that pours down its fervent rays is not to be lightly spoken of. It comes to bless. It is our own fault if he overcomes us. To eat simply, drink properly, hot water at meal times and little at other times, to dress comfortably and to take exercise regularly out of doors will be to insure robust health during the hottest weather.

And those heated nights when the corn blades whisper to each other and the katydids cry warnings from out the thickness of the trees, they are a blessing, too. It is your own fault if you swelter in stuffy chambers. There is the Great Outdoors calling to you. Provide each of you a cot that you can take out beneath the trees, sleep there or under canvass, see if you do not find your sins forgiven in the morning and new store of li e and energy in you.

This is the glorious good land here and the sun shines!

Thank God for the heat that fills the cribs with gold!—*Joseph E. Wing, in Breeders Gazette.*

FARMING WITH ELECTRICITY.

In the application of electricity to every day work Germany has, perhaps, gone farther, than any other nation. Electrically heated and operated cooking and laundry apparatus is in common use there, but the most striking single development is the electrical farm.

Take for example, the Quendnau farm, which covers 450 acres and its dairy handles 1,000 gallons of milk daily. Every part of the farm is lighted by electricity, and is in telephonic communication with every other part. The dairy has an electrical churn; the barn contains electrically operated feed and carrot cutting machines, and even the grindstone is turned by a small belt from the shaft connected with the barn motor.

The water pumping apparatus is run by electricity, all the buildings are lighted by incandescent lamps and there is an electrical indicator at the doors of all the houses. The farm has also its own threshing and grist mill, the machinery of which is turned by a current from the miniature central station and finally there is a small sawmill, which gets its power from the same station. On the farm are all kinds of electrical agricultural machines.

The power of all these various operations—lighting, heating, telephones, churning, cutting, grinding, pumping, threshing and sawing—comes from a 50-horsepower stationary engine working two dynamos. From this station the power is distributed to all parts of the farm, and the switchboard is so plainly marked that the ordinary farm hand can regulate the supply to fit the need.—*London Answers.*

CLIMATOLOGY OF THE MONTH, APRIL, 1904.

BAROMETER.—Mean pressure, 30.05 inches; highest observed, 30.61 inches, at Des Moines and Dubuque, on the 3d; lowest observed, 29.13 inches, at Des Moines on the 8th; range for State, 1.48 inches.

TEMPERATURE.—The monthly mean temperature for the State, as shown by records of 115 stations, was 44.1°, which is 5.2° below normal. By sections the mean temperatures were as follows: Northern section 42 4°, which is 4.9° below normal; Central section 44.4°, which is 4 4° below normal; Southern section 45.5°, which is 6.7° below normal. The highest monthly mean was 47.8° at Ottumwa; lowest monthly mean, 40.2° at Sibley. The highest temperature reported was 86°, at Sigourney and Forest City on the 22d and 23d; lowest temperature reported 13°, at Primghar on the 11th. The average monthly maximum was 77.1°; average monthly minimum 20 9°. Greatest daily range, 48° at Forest City; average of greatest daily ranges 37.2°.

PRECIPITATION.—Average precipitation for the State, as shown by records of 126 stations, was 3 63 inches, which is 0.74 of an inch above normal. The averages by sections were as follows: Northern section 2.73 inches, which is .11 of an inch above normal; Central section 3 48 inches, which is .58 of an inch above normal; Southern section 4.68 inches, which is 1.57 inches above normal. The largest amount reported was 8.97 inches at St. Charles; least amount reported, 1.52 inches at Elkader. The greatest daily rainfall reported was 3.11 inches at Sigourney on the 25th. Average number of days on which .01 of an inch or more was reported, 7.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 56 miles per hour, from the northwest, at Sioux City, on the 11th. Average number of clear days, 15; partly cloudy, 6; cloudy, 9.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	30.01	30.54	3	29.17	8
Des Moines	30 07	30 61	3	29.13	8
Dubuque	30.05	30.61	3	29.24	8
Omaha, Neb	30.05	30.61	15	29.38	8
Keokuk	30.02	30.53	16	29.16	8
Sioux City	30.08	30.60	16	29.43	8
Means	30.05	30.61	3	29.13	8

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	6.819	35	NE	25
Des Moines	7.394	36	S	23
Dubuque	6.561	34	NW	15
Keokuk	7.373	38	NW	15
La Crosse, Wis	6.735	36	NE	8
Omaha, Neb	9.177	46	NW	8
Sioux City	12.705	56	NW	11

OBSERVERS' NOTES.

ALLERTON.—*Rex Shriver.* Latter part of April, warm enough to start grass and foliage.

ALTA.—*David E. Hadden.* April was unusually cool, and the season is fully two weeks late.

AMANA.—*Conrad Schadt.* Cold, unseasonable weather, with frequent frosts; field work much delayed.

ATLANTIC.—*J. W. Love.* Farm work much hindered by cold and wet weather.

BAXTER.—*W. S. Thorp.* At close of April, plowing for corn was two thirds completed; small grain was coming up and grass was short.

BONAPARTE.—*B. R. Vale.* Cold month; vegetation two weeks later than normal; rains not excessive, but cold and mixed with snow; much cloudy weather.

BRITT.—*Geo. P. Hardwick.* Frost in ground at end of month; Spring ten days late; no bloom yet.

CHARITON.—*C. C. Burr.* Continued wet and cold, with frequent frosts.

CLINTON.—*Luke Roberts.* Month abnormally cold; no cherry trees in bloom at close of the month. There were 13 mornings, from 2nd to 21st, when water froze. The mean temperature was 44 1°, being 7.9° below normal. This breaks all April records during the past 26 years. The rainfall was 3.40 inches, which is half an inch in excess of normal.

CORYDON.—*Mrs. Clara Miller.* Snow fell on the night of the 19th and was not quite all gone on evening of 21st.

FLORENCE.—*J. H. DuBois* Seeding was mostly done by the 23d, except the last week it was unusually cold for April.

FOREST CITY.—*J. A. Peters.* Seeding begun April 4th, much delayed by rains and cold weather; oats about all in by the 23d; last ten days fine for work.

GREENFIELD.—*J. G. Culver.*—On the 23d lightning struck a tree 20 feet south of J. C. Mason's house and broke nearly every window on the south side of the house; the glass was broken to bits and fell outward; 100 feet south a window was broken and another 150 feet northeast, in these cases the glass fell inside. No one hurt.

GRUNDY CENTER.—*E. S. King.* The daily mean was 5.5° colder than in April, 1903. Small grain seeding commenced on the 6th and finished about the 23d.

HANLONTOWN.—*Miss G. M. Paschen.* Some seeding done April 6th; then delayed by rain till the 14th. Some potatoes planted on the 19th. Early gardens were up by the 30th.

INWOOD.—*G. M. Larsen.* Heaviest snow of the season fell on night of the 19th, the amount being 3.5 inches. Last week of the month was fine.

MOUNT VERNON.—*Jos. W. Hubbard.* Temperature below normal; season late, but favorable at the close.

RIDGEWAY.—*Arthur Betts.* Coldest April on record; last ten days delightful; 262 hours of sunshine; anemones on 16th, and buttercups, 25th; 8 days totally devoid of clouds.

VINTON.—*T. F. McCune.* Season a little late; small grain up and doing well; may be light; leafing backward. Garden stuff up in most places.

WHITTEN.—*F. P. Butler.* Very cold until last few days; seeding all finished, and plowing for corn well along.

ERRATA.

INDEPENDENCE—February—Total precipitations recorded .40 of an inch, on page 5, in March Review under belated reports, should have been .45 of an inch.

MARSHALLTOWN—February—Total snowfall omitted on page 6, should have been 5.0 inches.

CLIMATOLOGICAL DATA FOR APRIL, 1904.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	PRECIP., IN INCHES. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days	SKY. Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.	DATES OF THUNDER STORMS.
Algona	Kossuth	1,213	28	42.9	-5.4	77	30	18	3	35	2.14	-.42	.77	T	7	19	8	3	NW	21,23
Alta	Buena Vista	1,513	11	41.6	-6.0	75	30	20	16	33	4.44	†1.20	2.07	T	7	14	8	8		21
Alta (near)	Buena Vista										4.06		1.97		6					
Britt	Hancock	1,236	5	42.2	-4.6	73	23,29	21	16,19	39	3.05	†.98	1.43	2.0	7	8	17	5	NW	21
Charles City	Floyd	1,012	11	42.0	-5.3	75	23	20	3,16	38	1.95	-.95	.80	2.0	5	16	3	11	W	22,24
Clear Lake	Cerro Gordo	1,241		43.4		76	30	18	3	39	2.15		.75	2.0	5	13	16	1	N	
Cresco (a)	Howard			40.6	-4.1	73	30	18	1	39	2.95	†.52	1.00		4	23	0	7	NW	
Decorah	Winneshiek	857		43.4	-5.3	77	29	21	3,16	30	2.16	-.53	1.10	.5	5					
Dows	Wright	1,142		42.6	-5.8	74	30	18	16	37	2.30	-.75	.90	.5	7	18	3	9	NW	22,23
Elkader	Clayton	727	21	43.8	-4.4	79	30	19	16	45	1.52	-1.33	.85	1.0	5	16	7	7	NW	23
Estherville	Emmet	1,298	7	40.9	-7.4	76	30	20	3,16	39	3.34	†.88	1.60		8	17	0	13	NW	22
Fayette	Fayette			41.6	-5.6	76	30	18	16,17	44	2.33	-.87	.85	1.5	6	15	7	8	NW	23
Florence	Wright										2.51		1.25	.3	7				NE	24
Forest City	Winnebago	1,226	8	42.4	-5.6	86	23	21	3,16	48	2.35	-.25	1.19	1.0	4	18	1	11	N	
Grand Meadow	Clayton	1,180	11	42.2	-5.3	73	30	19	16	32	2.78	-.35	1.35	0.8	6	12	10	8	NE, NW	
Hampton	Franklin	1,155	12	44.2	-3.4	80	30	21	3,16	40	2.59	-.85	.98	0.8	5	9	18	3	NW	
Hanlontown	Worth			41.6		72	29	21	3	39	4.48		1.75	2.8	8	17	4	9	NW	22,23
Humboldt	Humboldt	1,095	10	43.7	-5.4	76	30	20	16	40	3.45	+.71	1.36		5	17	2	11	SE	8,21
Inwood (b)	Lyon			42.3		75	30			37	2.40		1.00	3.5	5	14	2	14	NW	
Larrabee	Cherokee	1,366	11	42.6	-5.5	79	30	17	16	40	3.12	†.13	1.25	0.2	8	12	11	7		13,15
LeMars	Plymouth	1,224	6	42.7	-7.0	76	30	17	16	42	3.50	-.12	1.99	2.0	5	13	7	10	NW	21
Mason City	Cerro Gordo	1,132		43.2	-6.2	75	30	23	3	32	2.32	-1.02	.70	1.0	7	10	10	10	NW	
New Hampton	Chickasaw	1,169		41.5	-7.1	74	30	18	3	36	1.90	-.03	.73	0.5	6	14	4	12	NW	
Northwood	Worth	1,222	6	43.4	-4.3	77	27	22	3,16	45	2.15	-.16	.80	4.6	8	16	7	7	SE, NW	22,23
Osage	Mitchell	1,184	11	42.3	-3.2	76	30	21	3,16	35	1.87	-.70	.76	2.9	7	12	6	12	S, NW	21,23
Plover	Pocahontas	1,190	5	41.6	-6.6	77	30	20	16,19	39	3.79	†2.01	1.69		5	18	3	9	N	7,21,24
Primghar	O'Brien	1,215		41.2	-8.6	75	30	13	11	37	2.98	†.16	1.10	T	4	18	0	12	E	20
Ridgeway	Winneshiek			44.8	-3.8	83	30	19	3	43	1.77	-.34	.66	.7	10	14	11	5	NW	23
Sibley	Osceola	1,512		40.2	-7.8	78	30	20	3,16	40	2.04	-.65	1.06	T	6	17	1	12	NE, NW	12
Sioux Center	Sioux		4	42.4	-5.9	76	30	18	16	41	2.32	-.81	1.00	2.0	5	14	4	12	N	4
Spirit Lake (c)	Dickinson	1,458	8	44.8	-4.8	80	30	21	13,16	40	2.07	†.35	1.40		3					
Storm Lake	Buena Vista	1,440	7	41.2	-5.2	74	30	19	16	33	3.26	†.96	1.20		5	17	1	12	NW	20,22
Washta	Cherokee	1,157									3.45	†1.72	1.10	2.0	4	17	9	4	NE	
Waverly	Bremer	942	6	43.6	-3.9	73	23,29,30	21	3,14,6	36	2.33	-.71	.68	.9	8	11	9	10		23
West Bend	Palo Alto	1,197	8	43.2	-3.6	76	30	20	16	35	3.64	†.83	1.72	1.0	6	13	10	7	N	21,24
West Union	Fayette																			
Average				42.4	-4.9	76.4		19.0		38.4	2.73	†.11		1.4	6	15	6	9	NW	

CENTRAL SECTION.

Amana	Iowa	721	25	45.0	-3.7	79	23	23	16,17	36	4.22	†1.34	2.02	0.1	8	14	11	5	NW	23
Ames	Story	926	20	45.0	-4.1	77	30	22	17	42	4.19	†1.44	2.21	T	7	19	4	7		23
Audubon	Audubon	1,301	8	43.7	-6.2	76	30	21	3	46	3.44	†1.52	1.00	1.5	9	14	3	13	NW	22,23
Baxter	Jasper	998		44.4		78	30	20	3,16	36	5.03		2.50		5	10	9	11	NW	
Belle Plaine	Benton	828	12	42.9	-2.8	78	23	21	16	37	3.14	-.47	1.60	1.4	7	12	11	7	NW	
Buckingham	Iowa										3.28		1.15	T	4	7	21	3		
Carroll	Carroll	1,265	12	43.0	-3.0	78	30	19	16	44	3.43	-.09	.85	1.0	6	15	5	10		7,22,23
Cedar Rapids	Linn	733	19	44.5	-3.9	80	23	23	16	39	1.85	-1.13	.60		8	13	10	7		
Clinton	Clinton	609	34	44.8	-3.8	83	23	21	4	42	3.40	†.47	.99	T	8	11	11	8	NE, NW	23
Davenport	Scott	606	31	45.6	-4.1	80	23	24	16	31	2.05	-.73	.82	T	6	13	9	8	NE	23
Delaware	Delaware	1,083	11	42.4	-3.6	79	23	19	16	37	1.93	-1.11	.75	1.0	7	15	9	6	NE	
Denison	Crawford	1,180	8	42.6	-6.7	74	30	17	3	38	2.20	-1.76	.85	1.0	7	17	5	8	N	
Des Moines	Polk	861	24	45.4	-5.1	74	30	26	3	31	5.48	†2.69	1.79	0.2	9	8	13	9	NW	22,23,24,25
De Soto	Dallas	866		45.4		77	30	22	21	36	5.56		1.78	T	8	17	5	8	SE	
Dubuque	Dubuque	655	29	44.4	-4.2	79	23	24	16	33	2.05	-.74	.69	1.5	8	17	5	8	NW	23
Fort Dodge	Webster	1,126		42.4		76	30	21	3	38	4.66		2.00	T	6	16	3	11	NW	
Galva	Ida	1,290	8	41.4	-7.9	75	28,30	15	9	44	3.63	†.87	1.66	1.5	6	18	4	8		21
Gilman	Marshall	1,052									3.93		1.46		5	17	5	8	N	
Grinnell	Poweshiek	1,023	9	44.6	-5.8	73	23	21	16	31	5.93	†2.41	3.00	T	8	11	10	9	N	8,23,25
Grundy Center	Grundy	976	11	43.8	-3.9	75	30	18	16	37	2.28	-1.10	.86		6	14	7	9	N, S	23,24
Guthrie Center	Guthrie	1,077	6	47.3	-2.8	81	30	20	3	45	3.72	†1.25	1.09		10	15	6	9	NW	23
Harlan	Shelby	1,192		43.6		74	30	20	16	37	3.20		.90		8	12	9	9	N	21,22,23
Ida Grove	Ida	1,220		43.2		74	29,30	19	4	37	4.35		1.92		4	22	0	8	S	21
Independence	Buchanan	921	38	42.7	-4.5	75	23	19	16	33	2.15	-.06	.90	2.0	6	18	6	6	NW	23
Iowa City	Johnson	685	43	44.3	-2.0	82	23	23	16,17	41	5.49	†2.35	1.79	T	9	10	12	8	NW	
Iowa Falls	Hardin	1,196	7	42.6	-4.9	74	30	22	3,16	39	2.40	-.75	.88	1.3	6	14	7	9	NW	22,23
Jefferson	Greene	1,052									3.45		1.70	.5	7	6	13	11	SE, NW	23,25
LeClaire	Scott	576									2.43		.71	T	7				SE	
Logan	Harrison	928	35	46.0	-4.0	78	30	22	3,14,16	40	2.95	†.08	.88		6	18	1	11	NW	20
Maquoketa	Jackson	688	9	43.3	-5.6	80	23	20	16,17	42	2.99	†.46	.85		9	18	2	10	NE	
Marshalltown	Marshall	947	9	43.7	-5.9	77	23,30	20	4	39	3.60	†.49	2.05		9	17	2	11	NW	24
Mt. Vernon	Linn	847	35	46.6	-3.9	84	30	19	16	46	2.97	-.06	.84	.5	8	13	8	9	NW	23
Newton	Jasper	944	14	44.2	-4.7	76	30	21	3,4,16,21	37	4.87	†1.49	2.50		6	14	8	8		
Odebolt	Sac	1,356	5	43.5	-6.2	79	30	18	16	42	3.71	†1.00	1.13		6	20	5	5		
Olin (a)	Jones	760		44.0	-2.7	79	23	22	16	34	2.16	-.02	1.00		5	12	12	6	NE	
Onawa	Monona	1,053		45.8		81	30	19	16	40	1.82	†1.17	.75		7	21	0	9	SE, NW	21
Perry	Dallas	975		45.0		78	30	23	3,16	36	5.44		2.15		4	7	15	8		23
Rockwell City	Calhoun			43.8	-1.4	78	29,30	23	3,16	40	4.35	†1.94	1.25		5	16	4	10		
Sac City	Sac	1,278	22	43.2	-5.0	75	29,30	21	16	39	3.00	†.01	1.08	T	5	12	8	10	S	
Sioux City	Woodbury	1,165	13	43.9	-6.7	75	30	20	16	40	2.32	-.70	1.03	2.5	6	11	7	12	NW	21
Stuart	Guthrie	1,316	5	46.6	-2.6	75	23,30	25	16	45	5.89		1.52		7				S,SE,SW	
Tipton	Cedar	807		46.1		78	23	23	16	33	4.22		1.12	T	5	18	7	5	SE	
Toledo	Tama	856	8	45.2	-5.4	78	23,30	20	16,17	39	3.14	†.11	1.60	T	6	14	8	8	NW	
Vinton (a)	Benton	810	12	45.1	-4.1	78	23	21	17	36	1.57	-1.35	.75	T	7	17	6	7		23
Waterloo	Black Hawk	862	15	43.2	-4.0	74	30	19	16	36	2.74	-.25	1.51	.5	8	15	8	7	NW	
Waukee	Dallas	1,039		46.2		80	30	21	14,16	41	4.71		1.37	.5	8	12	8	10	NW	23
Wilton Junction	Muscatine	683	7	45.6	-5.3	75	29	21	16	34	3.11	†.24	1.55	.5	4	15	6	9	NE	
Whitten	Hardin	1,036		43.4		75	30	19	16	34	2.71		.94	T	5	14	8	8	NW	23,24
Zearing	Story			43.3		79	30	20	16	36	3.46		1.90	T	7	15	8	7	NW	
Average				44.4	-4.4	77.4		20.8		38.2	3.48	†.58		0.6	7	14	7	9	NW	

CLIMATOLOGICAL DATA FOR APRIL, 1904—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1212	7	45.4	-5.9	75	30	23	16	33	5.61	†1.94	1.44	5.5	8	13	7	10	NE	.....
Albia	Monroe	957	...	43 3	.....	81	23	22	13	35	5.26	.....	1.83	....	10	18	1	11	NW	.....
Allerton	Wayne	.....	...	45.6	....	77	23	24	3, 16	32	4.74	.....	1.50	6.0	8	16	4	10	NW	22, 25
Atlantic	Cass	1,164	11	44.4	-4.9	77	30	20	3, 14, 16	44	4 35	†1.31	1.38	1.8	6	....	....	....	S	21, 23
Bedford	Taylor	.....	....	45.0	.....	76	23	21	3	36	5.62	.....	1.45	.8	9	14	2	14	NW	.....
Belknap	Davis	877	7	45.6	-7.0	80	23	27	3, 16	32	4.51	†2.47	2.25	....	6	19	5	6	NW	.....
Bonaparte	Van Buren	.....	10	46.0	-5.8	83	23	24	14	33	3.36	† .03	2.00	1.5	5	....	....	....	.....	.....
Burlington	Des Moines	541	....	47.2	.....	83	23	26	14, 16	32	3.28	.....	1.13	....	8	15	7	8	NE	.....
Chariton	Page	1,042	7	45.0	-6.7	78	23	23	3	33	4.66	†1.17	2.10	1.0	6	12	10	8	N, SE	.....
College Springs	Page	.....	10	46.8	-3.9	77	23	22	16	32	4.74	†1.07	1.00	1.0	10	17	5	8	.....	.....
Columbus Jct	Louisa	596	....	45.2	.....	82	23	23	16, 18	38	2.91	.....	1.55	0.2	4	21	7	2	NE	22, 23
Corning	Adams	1,127	10	44 2	-6.5	75	23	23	3, 16	32	5 15	†2.06	1.48	3.0	9	15	6	9	NW	25
Corydon	Wayne	992	9	45.8	-6.0	78	23	18	3	34	4.68	†1.56	1.60	2.0	6	16	5	9	NW	.....
Clarinda	Page	1,069	....	44.8	-7.2	75	23	23	3, 16	36	4.89	†1.58	2.50	1.0	9	14	4	12	NW	.....
Cumberland	Cass	.....	....	.....	.....	.....	.....	.....	.....	.....	4.10	.	1.11	4.0	5	17	2	11	SW	.....
Earlham	Madison	.....	....	41.4	.....	73	30	18	3	39	7.64	.....	2.82	2.0	7	15	4	11	NE, S‡	23
Fort Madison	Lee	516	51	.....	.....	.....	.....	.....	.....	.....	4.29	†1.00	2.27	1.7	6	8	12	10	S	22, 23, 25
Glenwood	Mills	....	15	46.5	-7.0	76	28	22	16	40	3.50	† .95	2.00	T	6	12	10	8	NW	.....
Greenfield	Adair	.....	11	44.6	-6.0	75	30	21	3, 16	37	5.28	†2.15	1.32	4.6	10	14	5	11	NW	22, 23, 24
Hopeville	Clarke	....	11	45.0	-5.2	75	23, 30	23	16	34	3.90	† .48	1.03	...	10	11	11	8	.....	22
Indianola	Warren	969	11	45.4	-10.2	74	30	21	16	33	7.98	†4.70	2.83	.5	9	16	8	6	NW	22
Keokuk	Lee	619	31	47.0	-5.0	81	23	28	16	28	5.11	†1.90	2.80	5.5	9	14	10	6	N	22, 23, 25
Keosauqua	Van Buren	664	10	45.4	-7.4	83	23	22	14	42	3.86	†. 02	1.85	...	8	14	6	10	.....	.....
Lacona	Warren	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.12	.	1.57	....	8	10	11	9	.....	.....
Lenox	Taylor	1,250	7	44.8	-6.4	78	23	22	16	35	4.94	†1.92	1.69	3.0	10	17	5	8	SE	23
Leon	Decatur	1,120	....	45.6	.....	78	23	24	3, 16	30	5.01	.....	2.00	6.5	10	20	1	9	S	.....
Mount Ayr	Ringgold	1,236	6	46.2	-5.3	78	30	23	16	37	4.52	†1.37	1.15	5.0	10	12	5	13	NW	.....
Mount Pleasant	Henry	729	20	46.0	-6.5	76	30	23	16	34	4.14	†1.09	2.26	T	6	11	14	5	NW	23, 25
Omaha, Neb	Douglas	1,113	32	45.8	-5.2	73	30	24	16	32	3.20	† .07	1.10	0.5	9	15	4	11	N	19, 20, 21, 22 23, 24
Osceola	Clarke	1,130	6	45.4	-5.4	74	30	20	4	41	4.11	† .59	1.60	3.5	7	17	5	8	NE	.....
Oskaloosa	Mahaska	843	18	45.8	-4.5	75	23, 30	22	16	35	4.11	†1.33	2.78	.5	8	17	2	11	NW	.....
Ottumwa	Wapello	649	8	47.8	-5.0	84	23	25	16	34	4.42	†1.34	3.09	1.0	6	15	7	8	NW	.....
Pacific Junction	Mills	960	..	44.7	.....	74	23, 30	22	16	38	5.36	.....	2.00	.5	8	13	7	10	N	.....
Red Oak	Montgomery	1,033	...	45.4	-6.4	73	23	27	16	28	4.67	†1.83	1.24	1.0	8	12	12	6	SE	21, 22, 23
St. Charles	Madison	1,070	....	45.6	.....	75	30	22	16	33	8.97	.....	2.84	....	11	14	10	6	NW	.....
Sigourney	Keokuk	787	....	46.6	-5.6	86	24	22	16	37	3.92	† .32	3.11	.5	5	17	9	4	NW	.....
Stockport	Van Buren	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.10	.	1.75	2.0	6	17	5	8	NW	.....
Thurman	Fremont	.....	....	44.8	-7.0	76	23	25	14	36	6.10	†2.66	2.35	....	10	18	3	9	SW	20, 21, 22, 23, 24
Wapello (*b*)	Louisa	588	....	47.7	-4.2	79	23	26	16	36	2.82	† .58	1.20	....	4	....	....	..	.....	8, 22, 23, 25
Washington	Washington	769	20	46.3	-4.6	81	23	22	16	31	2.74	† .12	1.53	.	5	....	....	....	NW	.....
Winterset	Madison	1,129	11	45.7	-10.5	79	29	21	4	41	6 41	†2.75	2.55	.8	8	17	3	10	N	.....
Woodburn	Clarke	961	....	.....	....	.....	.....	.....	.....	.....	4.64	.....	1.23	T	9	16	6	8	NE. NW	.....
Average	.....	.....	....	45.5	-6.7	77.6	.....	22.8	.....	34.9	4.68	†1.57	.....	2.1	8	15	6	9	NW	.....
Average for state	.....	.....	.....	44.1	-5.2	77.1	.....	20 9	.....	37.2	3.63	† .74	.....	1.4	7	15	6	9	NW	.....

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Above normal. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. §Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR APRIL, 1904.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max.	52	48	44	57	58	66	55	44	42	56	53	46	51	59		45	56	57	57	41	45	71	74	62	59	59	63	68	72	75	..	56.4
	Min	33	38	27	24	40	34	43	29	31	33	38	31	31	25	32	23	28	37	26	32	27	40	50	52	39	35	35	37	39	44	..	34.4
Albia	Max.	52	48	49	57	58	64	58	46	36	50	40	45	48	56	43	44	54	58	51	46	58	66	81	69	45	59	59	58	60	66	..	54.1
	Min	35	29	23	24	26	38	32	36	32	31	35	28	30	22	28	24	23	36	26	28	27	28	46	57	44	32	36	36	41	43	..	32.5
Algona	Max.	47	42	41	53	60	57	57	47	38	51	45	45	45	57	52	42	54	51	46	42	52	70	70	61	52	61	61	67	72	77	..	53.8
	Min	32	27	18	35	38	31	40	32	30	31	33	30	37	34	29	20	24	33	22	33	27	33	37	43	38	30	29	35	38	42	..	32.0
Allerton	Max.	52	49	48	55	57	66	56	51	35	56	53	45	53	55	51	45	54	58	54	45	50	71	77	68	63	60	63	67	72	75	..	56.8
	Min	34	28	24	26	39	36	45	30	32	28	39	29	30	27	34	24	26	35	25	31	27	41	52	55	39	35	33	35	40	50	..	34.3
Alta	Max.	47	45	46	54	62	60	50	38	42	53	43	42	44	58	47	42	54	47	45	44	46	66	64	50	47	59	64	69	73	75	..	52.5
	Min	30	24	22	27	40	30	34	30	26	30	29	28	31	25	26	20	26	30	23	32	26	33	37	41	37	30	34	36	40	45	..	30.7
Amana	Max.	47	43	44	52	57	57	62	54	38	51	47	45	45	55	46	44	53	58	49	47	57	65	79	70	65	61	63	67	73	73	..	55.6
	Min	38	31	24	25	38	38	36	34	32	33	39	29	34	25	34	28	23	35	26	32	26	42	52	54	39	37	34	36	37	43	..	34.3
Ames	Max.	50	45	49	56	51	64	55	50	37	53	48	45	49	58	50	46	55	54	52	52	58	73	67	65	60	62	66	69	70	77	..	56.2
	Min	35	29	33	24	41	33	38	35	32	33	33	30	33	24	31	24	22	36	26	35	28	43	46	49	40	35	34	36	36	35	..	33.8
Atlantic	Max.	55	50	49	57	60	68	55	41	47	60	51	49	51	60	52	48	57	60	46	39	46	72	76	58	52	62	68	70	73	77	..	57.6
	Min	32	28	20	26	41	26	37	29	31	31	36	30	28	20	33	20	29	29	25	32	30	41	52	47	40	35	27	29	34	33	..	31.7
Audubon	Max.	53	49	66	57	62	68	56	40	45	56	49	46	46	50	53	46	57	56	46	45	49	71	72	59	49	60	67	71	75	76	..	56.8
	Min	33	24	21	22	39	26	32	29	30	32	35	31	28	23	31	22	22	33	27	34	30	46	49	47	36	26	22	28	29	32	..	30.6
Baxter	Max.	50	47	47	55	58	62	56	52	37	55	50	45	48	56	42	46	53	56	52	50	58	73	74	56	63	62	65	70	72	78	..	56.3
	Min	34	27	20	24	38	29	40	34	32	30	37	27	30	24	24	20	24	34	22	34	25	42	49	52	39	34	32	35	40	42	..	32.5
Bedford	Max.	55	50	47	57	55	64	57	41	44	60	55	55	47	57	50	45	56	60	49	43	47	71	78	61	61	60	66	67	67	74	..	56.6
	Min	33	29	21	26	40	35	39	28	31	32	38	28	30	24	34	23	26	34	29	33	29	40	53	53	39	37	32	34	36	38	..	33.5
Belknap	Max.	50	45	46	60	60	60	60	40	36	50	47	45	50	55	38	50	50	52	50	48	48	70	80	73	44	65	60	70	70	70	..	54.7
	Min	38	31	27	28	45	41	43	36	33	32	35	30	33	32	32	32	32	38	30	32	29	45	50	57	40	39	38	38	45	43	..	36.6
Belle P.	Max.	47	42	42	52	60	57	62	40	37	50	47	45	45	54	39	42	50	57	50	45	51	67	78	67	47	59	61	65	72	60	..	53.0
	Min	38	29	22	25	33	32	38	32	32	33	37	28	32	24	33	21	22	35	24	31	25	36	41	53	40	37	32	37	38	44	..	32.8
Bonapar'e	Max.	52	49	45	53	56	63	63	53	38	55	53	45	46	52	44	45	53	62	51	46	59	72	83	72	60	59	63	67	73	77	..	57.0
	Min	37	30	25	25	38	46	37	30	32	31	39	39	30	24	33	25	25	37	25	36	26	42	54	56	38	37	34	37	39	46	..	31.9
Britt	Max.	46	38	45	53	59	64	58	48	36	49	44	45	45	55	47	42	52	50	44	50	54	68	73	60	53	60	65	69	73	70	..	53.8
	Min	31	27	20	26	37	29	40	32	29	29	32	29	30	24	28	21	23	31	21	32	26	38	35	43	38	30	31	32	34	39	..	30.6
Burling'n	Max.	51	50	48	57	58	65	65	55	39	55	54	47	43	53	47	45	53	61	53	48	59	69	83	73	66	59	64	69	75	76	..	58.0
	Min	40	31	27	29	40	42	41	31	32	32	40	31	34	26	35	26	29	35	30	33	27	43	57	57	40	41	35	40	43	49	..	36.5
Carroll	Max.	52	49	48	56	68	64	55	41	52	57	40	48	51	59	35	46	54	56	51	44	52	68	60	54	47	63	71	73	74	78	..	55.5
	Min	30	23	20	24	36	32	41	30	29	29	33	30	31	22	30	19	23	30	23	23	26	34	37	44	36	31	33	29	47	40	..	30.6
Cedar R.	Max.	46	40	46	52	59	61	64	49	38	52	47	44	44	55	42	46	53	58	59	47	57	65	80	71	49	61	64	71	75	75	..	55.4
	Min	39	31	25	25	29	39	39	40	33	33	33	30	34	30	31	23	25	28	28	29	25	27	41	55	43	40	35	37	40	43	..	33.7
Chariton	Max.	52	48	48	55	58	64	55	50	36	55	49	45	50	55	50	45	53	58	50	45	52	71	78	68	62	59	62	67	72	75	..	56.2
	Min	34	28	23	25	38	35	43	32	32	28	39	28	29	25	34	24	27	36	26	31	28	42	52	53	38	35	34	35	40	42	..	33.9
Charles C.	Max.	43	34	43	51	50	57	61	43	37	47	45	44	44	54	54	42	51	52	45	47	57	61	75	65	56	64	63	68	72	73	..	53.9
	Min	35	39	20	25	26	32	34	35	30	30	33	29	30	28	30	20	22	28	24	27	25	28	39	46	40	33	32	31	34	38	..	30.8
Clarinda	Max.	56	53	51	58	57	68	53	39	44	63	52	49	58	60	43	48	58	62	50	40	50	74	75	60	44	62	68	71	73	73	..	57.1
	Min	34	29	23	27	28	35	35	27	28	31	3	30	30	24	27	23	25	30	30	34	33	38	49	53	42	36	32	35	37	39	..	32.6
Clear L.	Max.	44	38	57	57	55	60	55	48	38	48	44	45	50	58	54	45	53	2	46	51	52	69	60	60	52	62	68	72	73	76	..	55.0
	Min	32	26	18	23	37	31	37	35	27	25	32	27	30	30	27	20	31	30	24	30	26	38	43	44	37	32	33	47	45	47	..	31.9
Clinton	Max.	50	45	44	53	54	62	65	53	44	53	52	49	45	54	46	45	53	63	49	49	59	61	83	73	58	59	63	70	76	76	..	58.8
	Min	37	32	23	21	33	39	32	33	33	32	31	28	29	26	31	22	23	34	25	27	24	39	43	57	37	40	36	39	34	42	..	32.7
Col. Sprgs	Max.	54	51	49	59	57	66	55	37	45	59	52	50	..	60	48	47	57	59	..	..	47	72	77	60	56	60	65	68	70	75	..	57.6
	Min	40	29	25	30	42	40	..	28	30	32	38	29	..	32	34	22	27	35	..	..	32	40	53	52	40	37	37	41	41	47	..	35.9
Colum. J.	Max.	50	45	42	53	59	60	67	57	39	52	50	49	44	54	45	43	54	61	51	48	59	68	82	74	65	60	63	67	74	73	..	56.9
	Min	38	25	25	25	37	40	39	33	26	32	30	28	32	28	30	23	28	23	27	32	26	41	55	56	26	38	34	38	43	46	..	33.5
Corning	Max.	54	45	45	55	55	63	52	40	44	57	51	48	51	56	50	44	55	58	45	56	45	70	75	59	58	58	61	69	68	71	..	55.3
	Min	53	28	23	24	41	32	37	28	31	33	39	80	29	24	33	23	27	35	27	31	28	40	50	52	38	36	32	34	37	38	..	33.1
Corydon	Max.	54	44	49	56	57	67	59	51	36	58	58	47	54	57	50	50	55	61	54	45	51	72	78	67	62	62	67	70	73	77	..	58.0
	Min	29	22	18	22	35	33	45	31	32	28	41	28	30	26	35	24	27	35	25	31	28	42	55	55	40	35	35	37	42	44	..	33.7
Cresco	Max.	39	40	42	48	50	55	60	53	35	45	46	43	44	48	40	44	47	51	44	46	54	55	60	64	67	..	70	71	72	73	..	52.1
	Min	18	19	20	25	30	32	35	34	30	35	32	27	28	38	28	20	20	25	31	19	27	35	36	25	31	..	35	35	36	37	..	29.0
Davenpo't	Max.	48	43	42	52	56	60	61	51	42	50	50	46	42	50	45	45	49	60	49	45	56	64	80	72	53	59	62	69	74	73	..	54.9
	Min	37	32	26	29	38	42	40	32	33	34	37	31	33	31	32	24	30	38	31	30	27	42	57	53	37	40	35	41	43	50	..	36.2
Decorah	Max.	42	34	48	52	52	57	60	50	37	48	44	46	57	50	47	43	49	53	47	52	57	53	70	70	57	65	68	73	77	74	..	54.4
	Min	32	28	21	26	47	43	31	32	30	30	37	28	38	39	28	21	23	32	23	28	27	39	47	48	40	33	31	32	35	33	..	32.4
Delaware	Max.	42	39	42	49	55	55	61	52	37	49	45	45	43	52	48	45	49	57	46	44	57	58	79	69	59	61	63	67	73	72	..	53.6
	Min	34	26	20	20	32	37	32	32	28	30	33	25	28	24	31	19	23	31	24	26	21	37	48	52	45	36	32	35	36	43	..	31.3
Denison	Max.	45	44	43	52	60	61	..	..	42	52	52	41	45	56	56	45	58	57	45	41	46	70	66	59	46	62	66	69	73	74	..	54.5
	Min	34	26	17	26	39	27	34	29	29	31	35	31	28	22	30	19	27	27	21	32	26	33	37	44	38	31	44	31	41	36	..	30.8
Des M.	Max.	52	48	45	55	55	64	54	46	38	55	47	45	47	45	47	44	53	56	49	46	56	73	69	64	52	61	63	65	71	74	..	55.0
	Min	36	31	26	27	42	33	37	35	33	34	37	32	34	27	33	26	29	39	30	33	29	45	57	52	41	38	37	40	42	44	..	35.9
De Soto	Max.	54	49	49	61	59	67	55	49	40	55	50	46	48	58	50	46	55	57	49	46	56	72	71	62	60	91	63	68	72	77	..	56.8
	Min	35	29	23	25	46	33	45	33	33	33	37	32	32	24	32	23	25	37	26	33	22	38	52	52	40	36	34	34	38	41	..	34.1
Dows	Max.	46	42	44	53	54	57	55	49	36	50	45	43	43	55	51	42	51	52	46	47	54	70	71	63	56	61	62	67	72	74	..	53.8
	Min	33	27	21	25	39	27	41	34	29	30	34	27	31	24	28	18	23	33	21	32	25	38	38	45	38	33	32	35	35	42	..	31.3
Dubuque	Max.	44	39	44	50	53	56	60	49	39	50	47	44	45	50	43	44	49	57	46	45	53	55	79	68	56	60	63	70	74	74	..	53 5
	Min	39	34	25	28	37	41	34	34	34	33	37	32	29	30	29	24	27	39	29	27	26	38	51	55	39	40	39	39	41	45	..	35.2
Earlham	Max.	52	47	46	45	56	64	53	42	41	56	50	47	57	47	46	47	54	50	47	40	47	54	71	69	58	60	62	65	70	73	..	53.9
	Min	31	22	18	20	32	30	42	32	30	30	36	29	19	30	26	19	21	22	29	21	26	28	38	47	35	33	28	29	31	37	..	29.0
Elkader	Max.	45	39	49	54	58	61	65	56	38	53	45	45	48	50	35	47	51	59	49	49	56	57	74	72	54	67	68	75	78	79	..	55.9
	Min	37	31	20	22	31	38	28	36	32	31	35	28	30	25	31	19	21	35	22	29	26	39	50	52	40	37	28	30	34	38	..	31.8
Esthervil.	Max.	45	40	45	52	63	59	51	39	41	53	43	45	44	55	38	42	54	49	49	48	48	68	65	48	51	60	63	68	72	76	..	52.5
	Min	32	27	20	25	28	27	28	38	31	29	33	29	30	24	37	20	22	33	22	24	28	30	34	37	38	29	30	31	36	37	..	29 3
Fayette	Max.	45	38	45	52	53	57	63	54	36	49	48	45	48	51	51	43	49	46	45	48	56	58	72	69	55	64	65	69	..	76	..	53 4
	Min	34	27	19	28	30	35	27	36	30	29	31	26	27	22	27	18	18	20	22	27	27	37	49	48	45	37	29	28	32	32	..	29.7
Florence	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.....
	.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.....
Forest C'y	Max.	43	38	46	52	57	60	55	42	40	49	43	43	44	54	34	43	51	51	46	49	53	71	86	60	52	63	65	69	74	78	..	53.7
	Min	33	27	21	26	29	30	32	39	29	29	32	29	30	24	28	21	24	31	23	26	26	29	38	44	38	33	32	39	40	47	..	31.0
Ft. Dodge	Max.	47	42	46	54	59	62	56	44	40	51	43	43	45	57	40	46	53	52	48	49	54	73	66	59	54	60	64	70	72	76	..	54.2
	Min	33	28	21	22	29	28	33	36	31	31	32	30	31	25	28	22	22	32	25	27	28	29	39	42	39	33	31	32	39	40	..	30 0
Galva	Max.	48	47	50	55	64	60	55	40	44	55	49	45	46	59	55	42	56	58	48	40	48	68	61	56	48	58	66	75	74	75	..	54.8
	Min	31	24	20	17	39	26	35	28	15	27	28	28	30	20	27	36	20	28	19	31	28	39	31	31	34	28	26	31	32	35	..	28.1
Glenw'd	Max.	57	50	49	59	64	69	61	48	43	60	54	49	54	61	55	54	59	58	53	38	45	72	76	58	51	60	75	67	71	73	..	58.1
	Min	33	28	24	31	46	34	37	27	30	33	39	28	32	29	34	22	31	39	32	32	34	38	50	46	40	35	35	41	42	45	..	34.9
Grand M.	Max.	43	37	42	49	53	55	61	49	34	48	44	45	46	50	42	42	48	52	45	45	53	54	70	66	55	61	64	68	72	73	..	52.2
	Min	35	..	21	25	35	36	33	34	31	29	35	37	27	27	28	19	24	28	23	26	24	37	47	49	37	35	32	38	40	43	..	32.2
Greenfi'ld	Max.	54	48	48	57	61	66	58	44	42	57	52	51	50	60	50	42	57	58	50	42	49	70	74	61	58	58	64	69	72	75	..	53.6
	Min	32	25	21	23	40	33	40	28	31	32	33	29	30	23	32	21	24	32	23	32	32	40	50	48	38	33	35	35	37	43	..	32.5
Grinnell	Max.	48	45	43	52	56	56	59	59	37	51	47	43	44	53	48	42	50	54	48	45	56	70	73	67	60	60	60	64	79	72	..	54.2
	Min	35	29	28	27	28	35	40	34	32	32	39	28	33	29	32	21	27	36	25	33	25	42	50	53	39	36	36	39	46	48	..	34.9
Grundy C	Max.	45	42	44	52	55	58	60	50	40	52	47	44	47	54	48	45	52	59	50	49	57	71	73	67	61	64	64	68	74	75	..	55.6
	Min	34	28	20	25	37	29	37	34	31	31	32	26	31	24	32	18	24	31	21	32	24	39	46	49	40	34	34	34	37	42	..	31.9
Guthrie C	Max.	60	55	51	60	64	67	74	52	50	52	65	58	51	61	61	55	60	61	56	50	59	78	82	66	64	63	65	70	75	81	..	62.2
	Min	33	27	20	24	42	29	41	32	32	32	36	32	31	23	32	22	25	34	25	32	29	44	50	48	39	33	30	29	34	36	..	32.4
Hampton	Max.	44	39	49	55	52	63	52	48	37	50	44	42	51	56	47	47	53	53	52	51	54	71	75	68	56	66	70	72	77	80	..	55.8
	Min	34	39	21	27	38	32	39	34	30	31	34	29	32	27	30	21	25	34	24	32	25	39	43	46	40	33	30	35	41	45	..	32.7
Hanlont'n	Max.	43	38	44	51	53	57	54	48	37	48	43	43	42	51	49	40	50	48	42	46	51	68	65	60	52	60	61	67	72	71	..	51.8
	Min	33	27	21	28	38	32	37	32	29	30	33	39	28	26	28	21	25	31	33	29	26	37	37	44	37	32	39	32	33	38	..	31.5
Harlan	Max.	52	47	47	58	67	67	57	40	45	57	53	46	48	59	51	48	56	55	46	39	45	70	66	58	50	60	66	68	71	74	..	55.5
	Min	33	26	20	25	37	31	35	29	30	31	36	32	31	22	53	20	25	33	26	32	30	39	42	45	38	32	31	32	34	37	..	31.6
Hopeville	Max.	53	49	48	56	56	68	50	40	40	57	49	45	50	56	45	45	55	58	47	35	47	70	75	64	60	59	61	68	72	75	..	55.3
	Min	34	29	24	27	39	34	39	29	31	31	39	30	32	27	29	28	28	34	27	30	27	42	51	54	40	37	37	40	42	45	..	34.6
Humboldt	Max.	48	43	46	54	62	60	57	48	40	52	50	45	45	58	53	43	55	52	48	50	56	70	66	62	54	60	64	70	74	76	..	55.4
	Min	32	28	18	26	40	30	42	35	31	32	35	30	32	24	30	20	25	34	22	35	29	42	56	46	40	30	30	32	34	40	..	32.0
Ida Grove	Max.	40	49	60	56	64	65	61	41	45	54	53	45	45	60	57	42	45	58	48	44	47	69	65	60	51	59	65	61	74	74	..	55.2
	Min	33	27	24	19	41	28	38	31	29	31	35	30	34	23	29	21	22	28	24	33	30	41	36	44	39	32	28	32	37	41	..	31.3
Independ.	Max.	43	37	44	51	57	57	62	55	36	48	44	45	44	51	47	42	48	57	46	47	54	60	75	69	62	62	64	67	72	72	..	53.9
	Min	36	28	20	23	24	32	35	34	31	31	35	28	29	24	31	19	21	30	22	29	23	38	48	51	39	35	32	37	39	42	..	31.5
Indianola	Max.	53	50	47	57	57	65	55	50	49

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR APRIL, 1904—CONTINUED.

STATIONS.		DATE.																														MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Iowa City	Max..	48	45	48	55	59	60	65	38	38	53	49	46	48	55	42	46	53	59	59	51	61	68	82	73	46	62	61	71	75	77	..	56.4
	Min .	40	32	24	25	28	37	35	38	33	33	34	28	25	2	28	23	28	29	26	26	26	27	42	55	41	31	34	36	38	45	..	32 2
Iowa Falls	Max..	45	39	45	53	53	59	55	43	36	49	45	43	44	55	33	43	52	51	48	50	57	70	73	64	54	62	65	70	73	74	..	53 4
	Min ..	34	28	22	23	39	28	38	41	31	31	34	28	31	24	31	22	24	33	23	30	25	38	43	46	41	33	30	32	34	38	.	31 8
Keokuk ..	Max..	51	49	44	55	55	62	61	50	40	54	52	44	45	52	47	42	52	60	50	44	57	70	81	69	60	58	62	66	72	75	..	56.0
	Min ..	41	33	29	29	40	42	43	31	31	33	39	33	35	30	36	28	30	42	32	35	29	45	59	59	42	41	33	41	44	51	..	38.0
Keosa'qua	Max..	53	50	47	55	57	65	62	36	39	57	55	48	48	55	45	45	55	62	53	47	59	74	83	71	43	61	63	67	75	78	..	56.9
	Min ..	38	31	28	24	30	38	41	34	30	33	37	32	29	22	40	26	23	38	27	32	28	32	41	57	43	40	33	35	37	40	..	34.0
Larrabee.	Max..	48	46	47	58	67	63	52	41	45	57	46	47	48	62	51	46	58	53	48	48	47	68	65	54	49	60	68	71	77	79	..	55.7
	Min ..	30	22	19	25	36	26	34	31	28	29	32	26	30	23	28	17	25	29	20	30	28	39	32	41	38	29	31	33	37	40	..	29.6
LeMars ..	Max..	50	48	50	52	65	66	57	50	45	55	50	45	47	65	63	45	60	53	44	41	41	66	62	55	48	60	67	70	73	76	..	55.6
	Min ..	31	24	18	28	37	26	35	30	27	29	33	27	31	23	27	17	27	31	20	31	32	39	32	39	38	28	26	36	35	36	..	29.8
Lenox	Max..	53	49	45	58	57	67	56	42	44	57	52	46	51	58	57	43	56	58	48	39	46	72	78	60	59	58	62	67	71	73	..	56.1
	Min ..	32	27	23	26	40	32	40	27	30	32	38	29	29	27	33	22	26	33	28	32	28	40	50	52	38	35	37	37	41	45	..	33.6
Leon	Max..	52	48	46	56	57	64	67	51	37	54	53	46	52	55	56	44	54	57	55	40	45	70	78	65	62	59	61	66	70	72	..	56.4
	Min ..	34	29	24	26	37	35	46	28	32	30	38	30	31	27	34	24	26	37	28	32	27	41	53	54	40	37	37	40	41	45	..	34.8
Logan	Max..	57	54	52	60	70	71	60	40	50	71	60	58	56	68	56	68	56	42	60	58	48	40	65	56	47	65	70	73	75	78	..	59.5
	Min ..	32	28	22	27	31	40	35	27	30	40	28	43	31	22	31	22	31	32	35	35	28	33	37	43	40	32	27	36	37	38	..	32.4
Maquo'ta.	Max..	48	45	47	52	58	62	61	47	43	53	50	50	45	52	43	47	49	61	50	47	56	60	80	73	41	62	65	71	76	76	..	55.7
	Min ..	39	32	22	22	24	35	28	37	32	32	35	28	31	25	31	20	20	31	24	27	23	29	38	55	37	37	31	33	32	38	..	30.9
Marshlt'n	Max..	47	46	47	56	59	60	60	45	39	53	48	45	48	56	39	46	53	57	50	50	59	69	77	68	51	64	65	69	75	77	..	55.9
	Min ..	36	28	21	20	29	32	32	43	32	32	37	28	32	25	28	21	21	31	25	25	26	29	42	50	43	35	31	33	36	41	..	31.5
Mason C..	Max..	44	38	45	52	50	58	52	48	36	48	43	43	44	52	48	46	52	51	45	51	52	62	63	60	56	61	62	68	73	75	..	52.6
	Min ..	36	30	23	28	38	34	40	36	30	30	35	29	30	28	30	28	28	35	27	33	32	40	43	46	38	35	34	36	41	43	..	33.9
Mt. Ayr..	Max..	57	52	53	60	58	71	54	43	46	60	54	48	53	60	50	49	52	61	51	41	47	71	76	60	62	60	67	71	74	78	..	57.9
	Min ..	33	29	24	26	40	34	39	27	31	52	38	30	31	28	33	23	27	36	29	31	27	40	51	52	39	36	38	41	42	49	..	34.5
Mt. Pl'snt	Max ..	51	48	43	53	59	60	65	55	38	54	54	49	52	54	48	47	52	60	52	47	59	70	85	74	65	59	63	66	72	76	..	57.7
	Min ..	37	30	25	26	37	40	37	30	30	31	37	29	27	25	33	23	25	36	26	31	25	42	55	56	39	38	33	36	40	47	..	34.2
Mt. Ver'n	Max..	44	40	55	56	63	65	63	54	38	55	42	49	52	52	47	42	52	60	50	44	57	70	81	69	60	58	62	66	72	75	..	59.4
	Min ..	36	28	22	24	36	38	37	31	30	31	35	27	31	24	33	19	24	34	24	28	28	39	53	64	43	36	34	36	48	48	..	33.9
New H. ..	Max..	46	39	44	50	51	55	51	51	36	47	46	44	45	50	46	42	48	52	46	48	54	57	53	66	58	64	66	68	71	74	..	52.3
	Min ..	33	27	18	23	32	32	35	33	29	28	32	26	26	26	27	29	23	28	23	26	22	35	43	44	38	33	30	36	45	40	..	30.7
Newton ..	Max..	49	46	45	55	57	55	60	55	39	53	49	43	47	52	49	45	55	54	52	48	58	71	73	65	63	61	64	65	73	76	..	55.9
	Min ..	34	28	21	21	38	34	32	33	31	30	37	27	33	25	33	21	23	34	24	33	21	43	49	51	38	33	33	37	38	43	..	32.6
Northw'd	Max..	42	37	50	52	55	59	58	48	39	46	44	45	46	51	46	49	57	50	45	50	52	60	68	60	56	64	77	71	72	76	..	54.2
	Min ..	34	27	22	25	38	34	37	32	28	30	33	28	27	26	28	22	25	31	27	29	25	45	47	45	37	32	32	55	33	41	..	32.5
Odebolt ..	Max..	52	46	49	51	64	66	60	40	45	55	58	45	48	60	57	46	57	55	49	45	50	71	65	60	58	62	70	72	75	79	..	57.0
	Min .	35	25	21	25	26	26	35	30	29	30	34	30	31	23	29	18	25	30	23	32	29	40	35	34	38	30	31	30	35	40	..	30.0
Olin	Max..	..	41	42	48	55	57	62	65	45	50	52	41	42	52	46	42	48	57	47	44	54	62	79	71	63	58	61	66	70	71	..	54.9
	Min ..	..	31	23	24	35	40	35	35	32	33	37	24	30	25	33	22	23	33	25	28	24	39	50	55	37	38	33	36	36	44	..	33.1
Omaha, N	Max..	56	49	50	57	66	68	51	37	44	58	50	47	51	61	53	45	60	56	46	39	45	72	68	53	44	61	67	66	72	73	..	55.4
	Min ..	34	32	29	34	45	38	32	28	28	36	37	32	36	33	33	24	32	40	34	34	34	40	44	43	39	37	38	45	47	50	..	36.3
Onawa.	Max..	57	53	55	56	68	68	61	38	47	59	56	53	55	65	60	53	64	60	56	43	42	73	69	58	46	68	71	73	78	81	..	59.5
	Min ..	31	26	23	28	40	30	35	28	27	31	34	29	35	26	32	19	29	32	27	32	32	39	37	44	40	30	31	36	38	41	..	32.1
Osage.....	Max..	43	38	46	52	50	57	59	48	36	46	43	41	29	29	29	28	21	23	30	24	29	25	37	39	45	37	33	31	35	38	43	..	52.9
	Min ..	35	28	21	25	38	33	35	35	30	31	34	29	29	29	28	21	23	30	24	29	25	37	39	45	37	33	31	35	38	43	..	31.7
Osceola ...	Max..	52	60	50	57	57	69	54	51	52	52	52	46	54	58	51	50	57	59	50	40	50	71	80	64	47	60	61	67	72	74	..	57.2
	Min ..	33	27	30	20	30	36	36	36	31	30	42	30	32	25	31	22	30	37	26	30	29	30	46	54	44	36	35	39	41	44	..	33.6
Oskaloosa	Max..	52	49	47	55	67	62	60	54	38	54	50	44	47	56	46	43	54	59	53	48	59	74	75	70	64	59	61	66	73	75	..	57.1
	Min ..	36	29	24	26	39	36	40	34	33	32	41	28	31	26	33	22	23	36	26	34	27	44	53	54	39	33	35	36	38	43	..	34.4
Ottumwa	Max..	53	45	50	56	57	66	59	42	39	56	51	44	50	56	43	48	56	60	56	51	60	68	84	73	46	64	70	70	78	79	..	57.7
	Min ..	38	32	28	29	33	42	50	36	33	36	41	30	32	30	38	25	33	44	29	35	28	44	53	58	42	38	43	44	46	45	..	37.8
Pacific J'n	Max..	55	50	50	58	63	68	58	35	47	58	52	48	55	62	53	45	58	58	49	41	45	71	74	58	47	60	65	68	72	74	..	56.6
	Min ..	32	26	23	28	43	31	35	29	29	30	36	24	34	24	34	22	26	32	32	33	33	39	46	47	37	33	31	36	36	42	..	35.8
Perry.....	Max ..	52	45	46	56	59	63	55	47	40	54	48	40	48	61	56	45	57	55	50	43	48	47	67	69	55	50	58	63	70	74	..	56.2
	Min ..	33	28	23	26	41	30	44	34	33	33	37	31	33	26	32	23	26	34	25	34	29	44	44	50	40	34	32	35	39	42	..	33.8
Plover....	Max ..	47	41	47	48	65	58	55	40	40	50	40	29	28	31	24	26	20	25	31	20	31	25	40	35	44	38	31	31	35	35	42	..	52.8
	Min ..	31	24	23	22	37	33	36	31	29	29	29	28	31	24	26	20	25	31	20	31	25	40	35	44	38	31	31	35	35	42	..	30.5
Primghar	Max..	46	42	45	55	63	62	52	40	53	53	50	45	44	60	56	43	57	49	45	44	48	61	62	50	43	48	64	68	74	75	..	58.2
	Min ..	..	24	20	25	35	26	37	30	34	23	13	26	31	25	21	19	24	30	32	27	24	34	34	44	37	30	31	33	36	44	.	29.3
Red Oak..	Max..	51	48	46	49	58	62	34	37	39	48	54	53	45	52	45	45	44	53	56	54	42	47	68	73	59	56	57	63	65	68	71	..	54.3
	Min ..	34	32	29	33	45	34	37	30	31	35	38	32	37	30	36	27	32	38	32	35	34	43	53	52	40	37	36	38	43	44	..	36.6
Ridgeway	Max..	43	39	49	55	55	62	65	50	39	51	46	48	53	50	44	50	51	60	52	52	56	58	76	70	57	76	73	79	80	83	..	57.4
	Min ..	35	28	19	25	37	36	33	36	32	29	34	27	28	28	28	21	25	33	23	27	24	37	45	46	38	33	32	37	45	43	..	32.1
Rockw'l C	Max..	47	47	45	55	64	60	55	45	41	54	48	45	45	56	50	45	45	53	50	48	55	70	65	58	48	60	65	68	78	78	..	54.8
	Min ..	37	34	23	25	36	29	40	32	31	32	34	31	34	28	25	23	24	33	24	24	29	43	41	44	38	33	33	38	38	45	..	32.7
Sac City..	Max..	49	46	47	55	65	61	54	40	44	53	47	45	45	60	52	44	57	52	47	47	50	70	65	57	47	61	59	69	75	75	..	54.6
	Min ..	32	26	22	24	37	30	36	31	30	31	34	31	33	25	29	21	26	32	25	31	27	41	38	44	38	31	33	34	36	43	..	31.7
St. Cha'les	Max..	54	54	47	58	55	66	54	47	36	58	49	47	49	59	48	46	54	59	59	41	54	72	70	63	58	61	61	67	73	75	..	56.3
	Min ..	34	29	23	25	40	36	44	32	32	32	40	30	33	27	31	22	29	36	26	32	28	42	53	53	40	35	36	38	45	47	..	35.0
Sibley	Max..	47	43	47	36	63	61	50	39	42	52	41	43	44	61	37	43	57	49	45	44	45	62	62	44	48	59	65	68	73	78	..	51.6
	Min ..	32	26	20	27	32	25	25	34	27	26	32	27	27	24	25	20	21	31	23	25	28	30	34	35	37	32	32	31	34	38	..	28.7
Sigourn'y	Max..	50	51	46	54	60	61	62	53	39	55	50	47	49	54	49	49	56	59	56	51	61	72	82	86	60	61	66	70	78	80	..	58.9
	Min ..	36	26	23	25	38	37	38	33	32	33	40	28	32	24	32	22	23	35	25	33	25	48	52	54	39	36	33	37	41	48	..	34.3
Sioux C'y.	Max..	51	49	49	56	65	66	51	39	44	55	47	47	48	65	55	45	63	54	43	40	44	69	60	53	47	59	67	68	72	75	..	54.9
	Min ..	33	27	23	33	40	31	30	29	27	34	36	29	35	25	29	20	32	32	24	33	32	40	36	41	41	31	34	44	44	40	..	32.8
Sioux C'r.	Max..	45	45	48	54	64	64	55	39	44	53	47	45	45	64	59	44	60	53	46	41	40	63	60	56	47	57	66	70	73	76	..	54.2
	Min ..	31	24	21	26	37	25	36	27	27	30	22	26	32	23	27	18	22	28	22	32	29	39	33	39	38	31	35	35	35	42	..	29.6
Spirit L..	Max	..	..	..	53	62	58	50	45	40	52	55	48	51	60	61	46	55	40	42	49	56	75	75	50	48	59	69	74	76	80	..	58.4
	Min ..	..	..	..	42	35	39	38	34	28	30	35	29	21	25	26	21	26	32	33	32	38	45	35	41	32	32	33	34	39	40	..	33.1
Storm L..	Max..	47	44	45	53	63	59	50	40	43	52	43	43	45	57	37	42	54	51	45	45	47	66	65	51	47	60	63	67	71	74	..	52.3
	Min ..	33	25	21	24	30	30	32	30	29	29	33	29	29	24	29	19	26	32	22	27	28	28	35	41	38	29	29	34	41	44	..	30.0
Stuart ...	Max..	49	49	44	55	58	63	63	49	48	53	54	42	46	57	56	44	53	54	51	45	52	70	75	61	61	60	62	65	72	75	..	56.2
	Min .	46	43	42	41	42	34	37	29	32	34	35	32	34	39	35	25	29	37	29	38	31	43	30	50	41	..	53	36	34	45	..	37.1
Thurman.	Max..	55	50	42	56	52	58	59	36	42	58	55	47	54	59	53	35	24	24	37	33	34	33	38	52	50	40	36	32	36	39	39	..	55.2
	Min ..	34	27	26	33	44	32	36	28	29	31	38	31	34	23	35	24	24	37	33	34	33	38	52	50	40	36	32	36	39	39	..	34.3
Tipton	Max..	46	44	48	51	58	63	62	55	40	55	50	32	29	32	28	34	23	26	35	27	29	25	38	57	55	38	37	36	39	44	49	..	34.4
	Min	37	29	24	26	36	40	37	32	31	31	39	54	48	46	57	59	48	48	53	59	51	50	59	72	78	70	62	63	64	68	74	78	..	57.7
Toledo....	Max..	47	45	46	54	60	60	62	51	39	54	48	46	57	59	48	48	53	59	51	50	59	72	78	70	62	63	64	68	74	78	..	57.5
	Min ..	37	29	22	25	38	30	39	34	32	32	38	28	33	22	32	20	20	35	23	33	25	41	49	53	39	36	31	33	35	40	..	32.8
Vinton. ..	Max..	46	42	47	52	57	60	62	57	38	52	47	45	46	54	47	45	54	..	57	48	57	64	78	71	68	64	65	70	74	76	..	56.7
	Min ..	37	29	22	26	37	34	34	35	33	32	38	28	32	27	33	22	21	..	28	31	25	40	52	52	40	38	32	34	38	42	..	33.5
Wapello..	Max.	57	49	47	52	56	65	63	55	39	55	52	49	45	56	45	49	63	54	..	..	58	65	79	71	64	62	66	71	77	77	..	58.6
	Min ..	42	31	27	28	38	43	38	32	32	33	31	31	34	29	54	26	38	30	..	..	28	41	56	59	40	39	36	46	41	48	..	36.8
Washi'ton	Max..	48	47	45	54	57	62	68	52	39	54	58	47	47	54	45	45	53	61	51	48	59	69	81	73	63	62	64	68	74	77	..	57.5
	Min ..	37	30	25	27	39	40	39	34	31	32	39	29	30	26	33	22	26	36	25	33	26	42	56	56	41	38	33	37	43	47	..	35.1
Waterloo.	Max .	45	39	45	52	55	58	61	45	40	52	47	45	45	53	36	45	50	57	48	48	56	63	70	68	53	64	65	68	73	74	..	54 0
	Min ..	36	29	21	24	29	31	36	42	31	31	38	27	31	26	34	19	23	34	24	31	25	35	42	50	42	36	36	37	42	42	..	32 4
Waukee..	Max..	54	50	53	59	58	70	59	50	37	55	48	48	52	61	49	53	58	58	50	49	57	75	71	64	60	66	67	70	79	80	..	58.7
	Min ..	33	28	22	22	41	24	44	33	32	32	32	30	33	21	50	21	28	36	26	33	27	44	54	51	39	35	34	39	41	44	.	33.8
Waverly..	Max..	43	34	45	54	54	57	62	52	38	49	46	45	45	55	48	44	51	54	47	49	55	62	73	68	60	63	64	67	73	73	..	54.3
	Min ..	35	28	21	36	39	32	38	36	32	28	36	29	32	21	30	21	28	38	25	31	26	39	44	49	41	35	31	35	37	43	..	32.9
W.Bend..	Max.	48	42	45	53	61	58	56	48	40	52	46	46	44	57	42	43	53	51	48	49	51	69	69	58	50	58	63	68	72	76	..	53.9
	Min .	34	27	21	26	38	31	40	32	31	32	36	31	32	25	33	20	28	33	22	34	28	40	39	44	38	31	32	33	40	45	..	32.5
Whitten..	Max..	48	44	43	53	58	58	60	51	36	50	48	43	45	55	47	43	53	54	49	48	57	71	71	66	64	62	63	69	73	75	..	55.2
	Min .	34	27	20	22	38	29	39	33	30	30	34	25	32	24	30	19	21	32	22	32	24	41	41	48	39	33	33	35	39	43	..	31.6
Wilton J.	Max..	49	44	44	59	51	61	65	52	42	52	50	49	44	54	45	45	51	62	53	47	58	66	81	74	66	65	68	68	75	74	..	57.0
	Min .	39	30	24	24	35	40	44	34	31	32	40	29	32	26	34	21	23	34	25	29	24	42	53	57	38	37	31	36	37	44	..	34.2
W int'rset	Max..	55	49	48	57	60	68	60	49	40	58	53	48	49	60	52	43	57	60	50	45	53	72	70	64	60	61	65	69	79	76	..	57.8
	Min ..	33	26	20	21	38	34	45	32	31	30	38	30	30	25	33	22	28	38	22	32	28	45	53	51	38	35	32	35	38	45	..	33.6
Zearing...	Max..	44	43	45	52	53	58	55	50	35	50	47	43	45	54	51	43	51	53	48	48	57	71	67	64	58	60	63	67	71	79	..	54.2
	Min ..	34	28	21	26	38	30	37	34	31	31	35	29	31	25	31	20	25	32	24	33	24	41	45	48

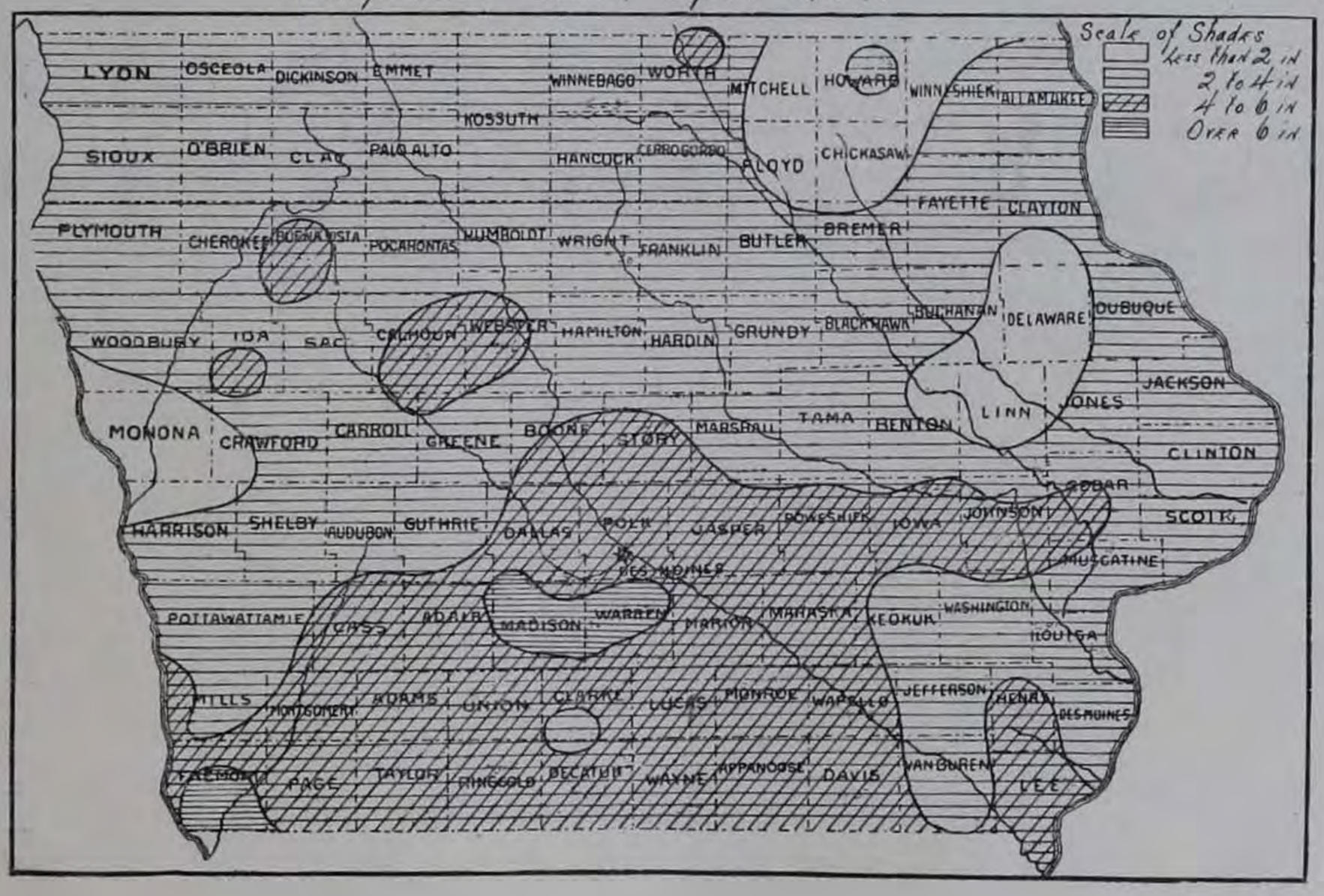
DAILY AND MONTHLY PRECIPITATION FOR APRIL, 1904.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton					.05		.61	.88											.16	1.01			1.44	.10	1.36							5.61
Albia	.05				.27	.06		1.55	.30				T							.15		.23		.15	1.83	.67						5.26
Algona							.23	.77	.08				T								.12	.29	.15	.50								2.14
Allerton					.28	T	.42	1.50	.03		T	T							T	1.12		.15	T	.14	1.10	T						4.74
Alta							1.17	1.15					.01						.01			2.07	.03									4.44
Alta (near)							1.08	.92				.01							.03		1.97		.05									4.06
Amana					.07		T	.79	T		.03		.01									.30	.86	.14	2.02							4.22
Ames				T			.37	1.35	.10		.01						T					.07	2.21	.08								4.19
Atlantic							.42	.66												.60	.38		.91		1.38							4.35
Aububon							.63	1.00	.09										.08	.20	T	.41	.25	.17	.61							3.44
Baxter							.28	.95															2.50	.15	1.15							5.03
Bedford	.01			.20	T		.35	1.16	T											.92	.25		1.45	.03	1.25							5.62
Belknap					.10		.10	1.44					T							T		.45		.17	2.25							4.51
Belle Plaine					.15		.12	.11	.05													.26	.85		1.60							3.14
Bonaparte	.04							.64	T				T									.41		.27	2.00							3.86
Britt							.81	1.45	.27				.05								T	.40	.08	.49								3.05
Buckingham							1.13	.73	T		T											.27	1.15		T							3.28
Burlington	05						1.13	.06		T		T		T								.32	.12	.45	1.12	.03						3.28
Carroll					T		.64	.51	.68										.10			.65	.85									3.43
Cedar Rapids	.02				.02			.60	.16	T		T	T									.18	T	.21	.20	.46						1.85
Chariton					.10	T	.70	2.10	T		T									.55		.16	T	T	1.05							4.66
Charles City					T			.35	.50				.10									.20		.80								1.05
Clarinda					08		10	.23	.40											.77		.50		1.25	1.25	.31						4.39
Clear Lake							.3	.75	.25		T											.25		.60								2.15
Clinton									1.05		.09		.06									.42	.99	.34	.45							3.40
College Springs				3			.20	.5	.05											1.00	.02	.76	1.00	.20	.70							4.74
Columbus Junct'n								.77	T		T		T		T							.45	T	.14	1.55							2.91
Corning				T	.02		.40	62	.05			T							T	1.06		.11	1.48	.09	1 32							5.15
Corydon					.25		.56	1.60	T		T	T								.93			T	.27	1 07							4.68
Cresco							.70		1.00				.75											.50								2.95
Cumberland							.86	.54											.67				.92		1.11							4.10
Davenport						T		.49	.10		T	T	T									.44	.03	.17	.82	T						2.05
Decorah								1.10					.04									51	.48	.03								2.16
Delaware					.19			.75			.02		.08									.26	.50	.13								1.93
Denison							.65	.85	.01										T	.36	.10	.21	.02									2.20
Des Moines					T		.60	1.17	.08		T		.01							.02		.12	1.50	.19	1.79							5.48
De Soto							.41	1.78	.18										T	.14		.23	1.07	.30	1.45							5.56
Dows							.26	.90	.12		T		.03									23	.05	.7								2.80
Dubuque	T				.06			.69	T		.01	.01	.18		T							.49	.0	60								2.05
Earlham	T						.40	1.39	.18	T	T									.62		.03	2.82		2.20							7.64
Elkader								.85					.03									.26	.07	.31								1.52
Estherville					T		.28	.45	1.60		T	.03	.04		.06							.86	.02									3.34
Fayette					T			.85	.02		T	T	.08									.40	.85	.13								2.33
Florence							.25	1.25	.10				.01									.17	.01	.72								2.51
Forest City								.51	.68				T									.60		.56								2.85
Fort Dodge							.04	1.00	1.40		.02											.20		2.00								4.66
Fort Madison								1.06							T							.48	.48		2.27							4.29
Galva							.75	1.00							T					.19	1.23	.43		.03								3.63
Gilman					T		.07	.92			T											T	1.05	.48	1.46							3.93
Glenwood							.25	.20												.60	T		.30	.15	2.00							3.50
Grand Meadow								1.00	.03		.05		.07									.28	1.35									2.78
Greenfield					.03	.04	.50	1.08	.10	T	T		T		T				.03	.63		14	1.3	.16	1 25							5 28
Grinnell					.12		.06	1.00			.03		.02									.20	1.50		3 00							5 98
Grundy Center						T	.18	.78	.04		T		T									.15	.27	.86								2.28
Guthrie Center					.02	.02	.43	1.09	.15											.40		.15	.46	.18	.82							3.72
Hampton							.85	.45				.06									.25		.98									2.59
Hanlontown							.20	.80	1.00				1.75									.40	.10	.23								4.48
Harlan				T	T		.90	.75	.08		T	T							.07	37	T	.42	.19	T	.42							3.20
Hopeville					.18		.71	1.03	04	T									.14	.52		.17	.49	.01	.61							3.90
Humboldt							.35	1.05	.18													.51		1.36								3.45
Ida Grove								1.92	T										T	.35	1.70			.38								4.35
Independence					.10			.90	T		.05		20									.25	.20	.45								2.15
Indianola					.12		.6	.10	.05			T								.20		1.20	2.83	.19	2.68							7.98
Inwood							1.00	39											.85		.55	.11									2.40
Iowa City	.04				T	T		.74	.05	T		.01	.02									.46	T	1.74	1.79	.62						5.49
Iowa Falls	T						T	.88	.46	T		.01	.02			T		T				22	T	.81								2.40
Jefferson								1.70	.05				.03									.20	1.40		.07							3.45
Keokuk	.02						T	.87	.01				.04		T							.36	.03	.93	2.80	.05							5.11
Keosauqua	.13							.64	.24				T	.08								.10		.27	1.85	.55							3.86
Knoxville					.10		.35	1.50	T		T											.14	1.41	.14	1.90							5.54
Lacona					.22		60	.98												18		.25	.25	07	1.57							4.12
Larrabee							.15	.1			T		.75		.70					.10	1.25											3.12
Le Claire	.39							.71	.18			T	T	T								T	.41	.29	.38	.07							2.43
LeMars							.70	.50											.15	.25	1.90											3.50
Lenox				.07	.07		.32	50											.03	1.05		.14	1.69	.10	.97							4.94
Leon					.33		.58	2.09			.06								.06	1.08		.04	.08		.74	.04							5.01
Logan							.82											.08	.47	.32			.88		.38							2.95
Maquoketa	.05						.80	.20			.06	.04										T	.85	.65	.12	.22							2.99
Marshalltown	.02				.03			.88	.15				05									.08		2.05	.37							3.60
Mason City							.20	.70	.20				.10									.45	.07	.60								2.32
Mount Ayr				T	.25		.65	.75	.10		T								.05	.90		.12	.50	.05	1.15							4.52
Mt. Pleasant								.92	T	T												.59	.08	.26	2.26	.03						4.14
Mt. Vernon	.04							80			.04		.04									.35	.73	.13	.84							2.97
New Hampton								.73	.05		.04	T										.31	.05	.72								1.90
Newton					.08		.21	.95					.06										1.07		2 50							4.87
Northwood							.26	.80	.30		T		.10		.05							.43	.10	05								2.15
Odebolt							.97	1.13											.27	.62	.42	.30									3.71
Olin								1.00			.01											.45	.50	.20								2.16
Omaha, Neb				.04	T		.75	30	.0		T	T			T				T	.50	T	.30	.20	.10	1.00							3.20
Onawa				T			.40	.75	T										.03	.18	.25	.17	.04								1.82
Osage							.05	.78	.14		.02		.12									.45		.33								1.87
Osceola					T	T	T	1.60	.60											.35		.07		.36	.58	.55						4.11
Oskaloosa					.15		.05	.59			T		.07									.25	.22		2 78							4.11
Ottumwa					.12			.71					.10										.40		3.09							4.42
Pacific Junction				.10			.72	.45											T	1.00	T	.64	.16	.29	2.00							5.36
Perry					T		.60	1.45											T		T	2.15		1.24								5.44
Plover							.45	1.10													.21	.34		1.69								3.79
Primghar				T			.80	.68			T									.40	1.10											2.98
Red Oak	T			T	.12		.30	.54	.05										T	1.24	T	.50	.90		1.02							4.07
Ridgeway	T				.02			.66	.10		.04	T	.03	.05	T							.30	.25	.31	.01							1.77
Rockwell City							.90	1.25														.70	1.25	.25								4 35
Ruthven																																
Sac City				T			.78	1.08		T										T	.95			.12	.07							3.00
Sibley							.45	.34	.11		T	T										1.06	.06	.02								2.04
St. Charles					.05		.71	2.25	.15		.01								.03	.40	T	.14	2.84	.16	2.23							8.97
Sigourney					T		T	.52	T		T		.05								.23		.01		3.11							3.92

DAILY AND MONTHLY PRECIPITATION FOR APRIL, 1904--CONTINUED.

STATIONS.	DAY OF MONTH																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sioux Center	....	....	....	....	....	....	.85	.05	...	....	T	....	....	....	....	....	....	....	T	.20	1.00	.22	..	....	....	....	....	....	....	....	....	2.32
Sioux City	....	....	....	T	....	....	.65	.34	....	....	T		....	....	T	....	....	....	.05	.25	.78	.25	..	....	....	....	....	....	....	....	....	2.32
Spirit Lake	....	....	....	....		....	.50	1.40	....	....	....	....	....	....	....	....	....	....	....	....	.17	....	T	....	....	....	....	....	....	....	....	2.07
Stockport	....	....	....	..	....	..	T	.75	....	....	....	....	.08	....	....	....	....	....	....	....	....	.22	.24	.06	1.75	....	....	....	....	....	....	3.10
Storm Lake	....	..	....	....	....	..	.60	.55	.84	....	..	....	....	....	....	....	..	....	....	T	....	1.20	..	.07	....	....	..	....	....	....	....	3.26
Stuart	....	....	....			..	.42	1.35	.20	....	....	....	....	....	....	....	....	....	....	.52	....	....	1.20	.68	1.52	....	....	....	....	....	....	5.89
Thurman	..	....	....	.10	....	..	.21	.72	.02	.	..	....		....	....	....	....	....	T	.71	.08	.64	.74	.53	2.35	....		....	....	....	..	6.10
Tipton	....	....	....		....	....	....	.90	..	..	....	..	T	....	....			....	....	..	....	.66	.91	.63	1.12	....	....	..	....	....	..	4.22
Toledo		....	....	....	T	....	.23	.60	T	....	T	....	03	....	....	....	....	....	....	..	....	.18	1.60	...	.50	....	....	....	....	....	....	3.14
Vinton	....	....	....	....	.07	....	T	75	.03	....	04	....	T	....	.	..	....	....	....	....	..	.15	.39	...	.14	..	....	....	....	....	....	1.57
Wapello	..	...	..	....	....		....	.85	....	....	T	....	....	....	....	....	....	..	....	....	....	.61	.16	..	1.20	..	....	....	....	....	....	2.82
Washington	....	....	..	....	....	....	....	.74	....	..	....	....	.02	....	....	....	....	....	....	....	....	.22	.23	..	1.53	....	....		..	....	..	2.74
Washta	.	....	....	T		....	.75	.80	...		...	T	....	....	....	..	.	....	.80		1.10	....	....	....	....	....	....	....	....	....	....	3.45
Waterloo	....	....		....	.01	....	.11	72	.04	....	.02	T	.06	....	....	..	....	....	....	....	.	.27	1.29	.22	.	....	....	....	....	....	....	2.74
Waukee	....	....	....	....	T	....	.52	1.08	.10	....	T	.	....	....		....	....		....	.15	....	.1	1.37	.30	1.08	..	....		....	....	..	4.71
Waverly	.	...	....			....	.12	.63	.07	...	.02		.08	....	....	....	....	....	.	....	....	26	.47	.68	....	....	....	....	....	....	....	2.53
West Bend	....		...	T	....	....	.30	1.60	.12	..	...	T	T	....	....	.	....	....	....	.	.20	.40	....	1.02	....	..	....	....	....	....	....	3.64
Whitten	..	....	....	....	..	....	.35	94	.25	....	T	....	....	....	....	....	....	....	....	..	....	T	.31	.86	T		....	....	....	....	....	2.71
Wilton Junction	....	....	....		..	....		81	....	....	T	....	..	..	....	....	....	....	....	....	....	.58	T	.17	1.55	....	....	..	....	..	..	3.11
Winterset	....	....	....	.	..	....	.55	1.07	.08	....	..	....	....	....	....	....	....	....	....	.08	....	.34	2.55	.15	1.57	.	....	....	....	....	....	6.41
Woodburn	...	....	....	....	.34	..	1.23	1.00	.07		T	....	....	....	....	....	....	....	.25	.65	..	.17	.C2	T	.91	....	....	....	....	....	....	4.64
Zearing			..	....	.01	..	.19	.95	.03	....	T	....	T	....	....		T	....	....	.	...	.12	1.90	.28		....	....	....	....	....	....	3.46

Precipitation Chart April 1904.



MAY, 1904 No. 5.



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Ruthven ..... F. M. Fitzgerald
Sac City ..... J. A. Sodestrom
St. Charles ..... C. W. Minard
Sheldon ..... J. B. Frisbee
Sibley ..... H. G. Doolittle
Sigourney ..... Mrs. R. F. Ashbaugh
Sioux Center ..... Jacob de Ruyter
Sioux City ..... *U. G. Purssell
Spencer ..... S. Gillespie
Spirit Lake ..... W. C. Drummond
Stockport ..... C. L. Beswick
Storm Lake ..... L. E. Burdick
Stuart ..... Hon John Herriott
Thurman ..... C. R. Paul
Tipton ..... F. K. Gregg
Toledo ..... Herbert Giger
Vinton ..... T. F. McCune
Villisca ..... C. E. Matteson
Wapello ..... Geo. W. Schofield
Washington ..... Wm. A. Cook
Washta ..... H L. Felter
Waterloo ..... M. L. Newton
Waukee ..... E. J. Leonard
Waverly ..... H. S Hoover
Whitten ..... Dr. Frank P. Butler
Wilton Junction ..... J. M. Rider
Winterset ..... B. L. Sprinkle
West Bend ..... Phil Dorweiler
West Union ..... J. M. Lisher
Woodburn ..... C. B. McDonough
Zearing ..... H. E. Burkhart

*U. S. Weather Bureau.

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Blairstown ..... T. H. Well
Burt ..... R. Jain
Cedar Rapids ..... Hon. A. J. Fuhrmeister
Centerville ..... Jacob Harter
Charles City ..... W. B. Towner
Clarksville ..... F. M. Russell
Correctionville ..... Hon. W. B. Chapman
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Creston ..... M. V. Ashby
Danville ..... Sherman Matthews
Dunlap ..... Hon. B. F. Roberts
Emerson ..... D. B. Nims
Fort Dodge ..... R. W. Blaine
Fruitland ..... R. T. Hummel
Goldfield ..... D. M. Stephens
Geneva ..... Wm. H. Thompson
Hartford ..... H. E. Slack
Hartwick ..... Fred McCulloch
Harlan ..... H. B. Kees
Hesper ..... G. E. Dillingham
Humeston ..... Hon. S. H. Moore
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Mapleton ..... A. Lamb
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Milton ..... Hon. E. C. Holland
Monroe ..... J. A. Dibel
Nevada ..... Geo. C. White
Northwood ..... T. L. Bolton
Orange City ..... H. J. Vande Waa
Pella ..... J. H. Ver Steeg
Pittsburg ..... G. C. Duffield
Portland (Nora Springs, P. O.) ..... Arthur Pickford
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West Union ..... H. B. Blackman
Wilton ..... Thos. Boot
Wiota ..... I. S. Coomes
Woodward ..... George Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

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IOWA CROP REPORT, JUNE 1, 1904.

ACREAGE OF STAPLE CROPS, AND AVERAGE CONDITION OF CROPS, FRUIT AND LIVE STOCK.

Reports received June 1st from county and township correspondents of the State Weather and Crop Service show the following results as to the number of acres and average condition of staple farm crops; also the condition of fruit and live stock.

CORN.—Total number of acres, 9,052,450;—an increase of about 7 per cent as compared with the average of the past six years, and 1,500,000 acres in excess of the area actually harvested in 1903. The average condition of corn about June 1st was 90 per cent, or about fifteen points above the estimated condition at corresponding date last year.

WHEAT.—The area of spring wheat sown this season appears to be only 775,040 acres, a decrease of about 377,000 acres as compared with the acreage in 1902. The winter wheat acreage is about 71,030 acres, Condition of spring wheat, 94 per cent; winter wheat, 85 per cent.

OATS.—Area seeded, 4,018,980 acres; a decrease of about 190,000 acres compared with the acreage of 1901, or about 5 per cent below the normal area. The condition is placed at 92 per cent.

BARLEY.—Area seeded, 493,370 acres; decrease since 1901, about 38,300 acres. Condition June 1st, 93 per cent.

RYE.—Area seeded, 99,590 acres; decrease since 1901, about 25,000 acres. Condition June 1st, 91 per cent.

FLAX —Area seeded, 51,370 acres; decrease since 1901, 23,130 acres. Condition of crops, 85 per cent.

POTATOES.—Area planted, 113,250 acres; condition 95 per cent. Acreage about normal.

MEADOWS.—Area 2,797,640 acres; an average of recent years. Condition 96 per cent. Condition of pastures 97 per cent.

CONDITION OF FRUIT.—Apples, 91; plums, 89; peaches, 48; grapes, 87; cherries, 83; strawberries, 94; raspberries, 88; blackberries, 77 per cent.

CONDITION OF LIVE STOCK.—Cattle, 94; swine, 93; sheep, 97; horses, 95; foals, 93; spring pig crop, 85 per cent.

CONDITION OF CROPS JUNE 1, 1903.—Corn, 75; wheat, 93; oats, 93; barley, 96; rye, 94; potatoes, 91; flax, 84; meadows, 109; pastures, 107; apples, 70; cherries and plums, 35 per cent.

MAY WEATHER AND CROPS.

Though the month of May was generally regarded as unseasonably cold, the records for the state show that the average daily temperature (59.6°) was about normal, the daily deficiency being only 0.8°. The average rainfall, 3.78 inches, was .35 of an inch below normal, the northern section receiving the larger average amount. In portions of the west central district, and in some of the southern counties, there were some heavy downpours, which caused much delay in planting, the great excess of moisture being due in large part to the saturated condition of the subsoil, resulting from abnormal rainfall in the preceding season. On the whole it was a favorable month, with sufficient warmth and moisture for grass and small grain, and general conditions favorable for farm work and the germination of the better qualities of seed. Except in quite limited areas, the corn crop was planted about as early as usual, and the soil was in very good condition. The month was especially favorable for the growth of grass in meadows and pastures, and for the small grain crops on well drained lands. The hay crop is well assured; oats and spring wheat stooled out fairly well; potatoes made a fine start; garden truck was well advanced at close of the month, and the fruits promised a better yield than has been produced in recent years.

NOTES AND COMMENTS.

In his farm notes J. S. Trigg says: "The predictions of any man thirty days ahead on the weather are absolutely valueless." And so say all men of sense who have given due thought to the subject.

The *Evening Wisconsin* says: "The grass crop never looked more promising in the northern states, and as that crop amounts to much more in value than the cotton crop thoughtful observers should not forget this prominent blessing."

The *Rockford Register* says: "The state can well afford to have Professor Holden make some more corn trips next September and tell the farmers how to save seed corn. There are enough of them having to replant their fields this spring so that they will listen to him."

In "Notes on Science," by Prof. John L. Tilton, published in the *Indianola Herald* of May 12, 1904, we find the following interesting paragraph: Those who were at the track meet last Saturday were treated to a miniature tornado. The whirlwind was first noticed on the tennis court, then west of the fence and trees it reformed and pas ed slowly across the ball park in a northwesterly direction beyond the grounds. There was a cloud of dust probably twenty feet in diameter whirling violently around in a direction opposite to the hands of a watch as one looks down; but through the center was a vertical clearer space with distinct boundaries in which the streaks of dust indicated an upward movement. This center reached upward into the air to perhaps twice the height of ladies' hall, where it looked as if it terminated in a point. It occupied perhaps ten minutes in traversing a distance of four hundred yards. It is to be regretted that no cameras were at hand to photograph it.

IOWA CROPS, 1904—NUMBER OF ACRES BY COUNTIES.

Counties.	Winter wheat, acres.	Spring wheat, acres.	Corn, acres.	Oats, acres.	Rye, acres.	Barley, acres.	Flax, acres.	Potatoes, acres.	Meadows, acres.
Adair	270	9,490	104,290	30,980	170	360	.....	1,170	45,610
Adams	1,060	3,220	72,750	15,350	470	1,210	.....	580	27,920
Allamakee	620	3,190	40,320	50,610	1,250	6,250	410	1,090	39,270
Appanoose	1,220		55,250	10,250	1,810	.....	.....	1,080	42,110
Audubon	....	19,160	94,570	31,150	210	2,280	.....	980	25,860
Benton	.....	2,030	126,480	63,960	710	16,140	.....	1,780	39,110
Black Hawk	.....	420	97,200	52,510	1,650	3,690	....	1,380	40,150
Boone	....	3,290	103,640	49,860	340	310	.....	1,170	21,470
Bremer	.....	420	61,070	54,780	1,270	1,680	740	1,340	17,260
Buchanan	.....	410	87,450	49,360	510	1,570	80	1,060	35,850
Buena Vista	.....	7,280	109,340	61,240	320	6,260	520	1,310	18,570
Butler	.....	360	112,250	72,850	1,310	820	450	1,270	18,590
Calhoun	.....	4,190	110,710	62,820	230	4,260	860	1,060	16,450
Carroll	.....	16,360	112,180	48,620	240	3,070	190	1,720	21,210
Cass	510	21,750	116,250	27,410	380	960	.....	1,590	34,520
Cedar	670	1,420	110,830	35,250	1,480	10,410	.....	1,210	39,150
Cerro Gordo	.....	1,170	94,270	71,810	490	2,050	810	1,340	23,150
Cherokee	.....	19,320	112,550	50,180	90	4,370	120	1,250	22,890
Chickasaw	.....	1,080	64,830	60,370	630	2,511	4,180	1,260	24,510
Clarke	320	.....	57,720	15,850	470	120	.....	540	45,720
Clay	...	5,250	94,510	54,260	910	14,800	460	970	19,110
Clayton	1,250	5,730	76,910	62,810	4,040	5,910	.....	1,890	45,210
Clinton	420	3,360	103,720	37,950	2,310	4,750	.....	1,190	44,280
Crawford	.....	40,420	140,780	42,010	590	2,180	.....	1,970	32,8 0
Dallas	1,430	4,320	112,780	39,120	480	820	.....	960	24,660
Davis	1,540	.....	58,390	15,250	3,040	.....	.....	540	46,640
Decatur	620	.....	70,180	16,110	640	.....	.....	670	54,380
Delaware	1,210	.....	89,430	45,870	1,880	4,150	.....	1,160	37,490
Des Moines	3,040	460	50 720	24,180	780	18,060	.....	8 0	19,120
Dickinson	.....	8,310	43,510	26,970	320	.....	2,120	520	7,920
Dubuque	110	3,920	68,110	51,250	1,890	2,440	.....	1,930	45,120
Emmet	.....	2,930	53,720	36,260	220	8,210	1,370	490	11,450
Fayette	130	3,010	92,120	72,130	960	5,860	1,860	1,640	47,910
Floyd	.....	580	84,790	68,140	1,170	4,710	1,930	1,980	17,160
Franklin	.....	1,690	99,790	74,510	540	1,060	920	1,060	20,130
Fremont	4,530	2,510	115,460	11,120	610	.....	.....	690	14,110
Greene	.....	2,450	90,620	42,370	120	2,050	.....	670	18,220
Grundy	.....	2,270	97,920	63,930	110	3,130	.....	1,5 0	21,210
Guthrie	320	8,610	82,160	37,230	140	1,050	.....	570	28,700
Hamilton	.....	4,020	94,870	50,910	60	980	650	1,440	18,610
Hancock	.....	4,810	88,120	73,480	260	2,510	1,060	950	17,360
Hardin	.....	3,060	98,110	55,620	210	730	110	1,390	20,320
Harrison	210	31,210	130,420	15,350	910	1,060	.....	1,540	12,2 0
Henry	2,060	.....	65,250	28,110	3,540	1,5 0	.....	5 0	21,040
Howard	90	1, 80	51,260	60,170	120	3,520	4,080	950	29,700
Humboldt	.....	7,090	68,120	36,520	140	1,910	920	460	15,110
Ida	.....	19,010	92,640	32,150	260	4,130	.....	950	20,210
Iowa	210	1,680	86,120	33,120	520	3,950	.....	1,230	44,080
Jackson	260	3,220	71,120	34,180	2,080	3,610	.....	1,170	44,020
Jasper	820	6,910	116,320	41,310	1,030	650	.....	2,010	34,110
Jefferson	1,960	50	53,110	22,710	4,070	2,060	.....	5 0	30,350
Johnson	720	1,030	105,920	42,510	2,870	5,810	.....	1,310	41,510
Jones	.....	980	91,630	35,050	1,750	5,140	.....	950	45,210
Keokuk	1,410	920	96,590	35,150	3,070	4,560	.....	8 0	39,690
Kossuth	.....	16,180	148,620	125,250	210	6,350	3,220	1,590	23,100
Lee	6,410	....	53,4 0	22,450	4,810	.....	.....	1,180	38,210
Linn	....	1,810	111,920	50,360	1,080	920	.....	1,850	40,280
Louisa	2,240	80	60,180	20,210	3,040	1,560	.....	5 0	17,100
Lucas	620	40	50,710	13,810	.....	1,300	...	480	42,100
Lyon	.....	36,950	87,270	43,450	160	45,270	220	1,240	9,110
Madison	750	4,120	79,450	19,150	490	1,510	.....	690	38,420
Mahaska	1,520	1,810	102,190	32,140	1,810	3,020	.....	910	3 ,120
Marion	2,160	3,090	93,410	28,160	1,440	810	.....	850	28,100
Marshall	.....	5,010	110,270	51,740	430	2,510	.....	1,150	28,160
Mills	1,860	6,120	75,010	11,480	320	420	.....	840	16,140
Mitchell	....	2,470	61,4 0	65,160	510	11,960	.....	1,749	24,120
Monona	710	28,710	125,650	18,060	910	5,080	410	1,220	4,380
Monroe	250	120	5 ,280	11,230	820	180	.....	620	30,210
Montgomery	2,810	14,710	96,110	13,400	510	320	.....	710	32,410
Muscatine	1,590	1,610	76,2 0	21,820	5,010	6,120	....	2,120	24,020
O'Brien	....	14,710	110,250	53,270	220	26,030	280	1,240	17,910
Osceola	... .	9,220	61,350	32,850	110	27,110	670	650	11,190
Page	8,570	4,590	115,190	16,270	1,200	1,020	.....	910	34,210
Palo Alto	.....	3,810	81,910	55,090	310	5,210	2,010	890	10,110
Plymouth	.....	90,120	163,890	51,030	390	9,570	210	1,930	17,960
Pocahontas	.....	2,8 0	108,410	68,540	410	3,110	1,620	1,080	12,210
Polk	930	5,110	110,820	38,720	920	.....	.....	1,920	2 ,310
Pottawattamie	870	38,190	201,280	30,120	510	830	.....	2,610	33,490
Poweshiek	70	2,260	103,820	40,110	390	3,450	.....	1,070	42,110
Ringgold	720	.....	79,280	20,820	620	.....	.....	510	52,190
Sac	.....	7,840	120,420	50,180	140	4,770	.....	1,070	25,110
Scott	2,060	6,120	77,910	21,390	1,810	23,580	.....	4,810	26,210
Shelby	.....	30,120	120,210	27,280	90	28,520	310	1,380	11,210

IOWA CROPS, 1904—NUMBER OF ACRES BY COUNTIES—CONTINUED.

Counties.	Winter wheat, acres.	Spring wheat, acres.	Corn, acres.	Oats, acres.	Rye, acres.	Barley, acres.	Flax, acres.	Potatoes, acres.	Meadows, acres.
Sioux	.....	60,180	149,120	50,120	.....	23,810	410	1,410	10,410
Story	90	1,740	112,410	51,410	490	510	.....	820	22,520
Tama	40	6,310	120,190	52,110	410	16,680	.....	1,750	40,180
Taylor	3,160	80	73,120	16,820	990	670	.....	650	34,110
Union	180	90	65,980	18,120	170	510	.....	810	48,680
Van Buren	2,220	.....	50,120	17,240	3,830	.....	.....	420	36,120
Wapello	2,070	110	62,820	16,180	4,100	1,580	.....	920	32,280
Warren	610	3,080	91,120	23,220	1,260	1,330	.....	810	41,020
Washington	920	280	73,890	32,610	2,810	4,000	.....	690	26,280
Wayne	90	.....	66,350	15,290	820	.....	.....	460	59,400
Webster	.....	5,850	121,180	75,530	180	960	810	1,130	19,220
Winnebago	.....	8,250	50,120	40,210	.....	1,240	1,890	610	12,100
Winneshiek	90	6,120	67,380	68,990	260	10,260	7,310	1,180	45,280
Woodbury	410	42,180	170,220	28,470	660	6,590	210	1,480	11,090
Worth	.....	3,020	43,280	57,190	110	5,510	6,290	740	16,110
Wright	.....	4,870	99,820	68,910	120	1,530	1,660	840	18,990
Totals for State	71,030	775,040	9,052,450	4,018,980	99,590	493,370	51,370	113,250	2,797,640

RELATION OF RAINFALL AND AGRICULTURE.

When the annual rainfall is under eighteen inches, agriculture can seldom be safely practiced without irrigation. Grazing then becomes the chief occupation, as is now the case over a large extent of our western plains, between the 98° meridian and the Rocky Mountains; and the people return in a measure to the roving life characteristic of the aboriginal inhabitants of semi-arid regions. When the rainfall is less than twelve inches a year, the region is reduced to a desert, and the water supply is too small to be of service in irrigation, unless in small areas, or on the banks of large rivers. On the other hand, the tropical regions where the rainfall rises above a hundred inches in a year are so luxuriantly overgrown as to make their occupation a difficult matter. The general rainfall of the eastern part of our country or of western Europe, with annual total varying from forty to eighty inches equably distributed through the year, is an amount under which human occupations are best developed.

The distribution of rainfall through the year is a matter of great moment. The northwestern part of the United States is favored in having the average value of the precipitation in successive months comparatively equable; droughts are exceptional, but when occurring are found in one season about as frequently as another. In Florida, the summers are wet and the winters are comparatively dry. In eastern Nebraska, there is a similar distribution of rainfall from dry winters to wet summers. In California, the reverse is true; the summers have a continuous drought, making the ground dry and dusty; the winters are cloudy and wet. These variations will be found to depend chiefly on the system of the general winds.

The irregularity in the monthly rainfall is an important matter, especially in regions where the annual supply is moderate. Even in the well-watered States east of the Mississippi, a deficiency in the summer rainfall sometimes causes droughts; for example, the southern Atlantic States had in September, 1888, 1.84 inches; while the same month of the preceding year had 9.47, or over five times as much; this variation appears to result chiefly from the variation in number, paths, and activity of cyclones in different years. On the margin of the western plains, where the total rainfall is hardly enough for agriculture, the departures from the normal monthly fall are of more serious import: a succession of rainy seasons tempts settlers further and further west, and when a series of dry years follows, the distress occasioned by the failure of crops becomes a calamity.

In India, where the year is divided into three seasons, the cold, the hot, and the wet seasons, the crops are preserved in the dry season by irrigating canals fed from rivers rising in the mountains, or in a smaller way by water pumped up from the rivers; if the waters in the rivers is insufficient, or if the rains arrive too late or are deficient, famine results, and the people of that great country die by the thousands. In more recent years, with the improvement of the irrigating canals, and with the better means of transportation of the plenty of one province to supply the need of another, the danger from this source is lessened.—*Davis' Meteorology*.

MIDWINTER IN WESTERN ONTARIO.

Mr. A. G. Seyfert, of Stratford, Ontario, writes to the U. S. Monthly Weather Review, under date of January 26, 1904, giving account of the rigors of the past winter in that portion of Canada. He says:

Not within the memory of the oldest inhabitant has western Ontario experienced such an unprecedentedly severe winter as this. Instead of the usual autumn rainfall, fine weather prevailed up to the middle of November, when it turned cold and commenced to snow, and has continued almost incessantly to the present time. Four feet of snow on the level and drifts in many places four times that depth result. Country roads are blockaded, and communication almost entirely cut off. Railroads are in but little better condition. The main lines are kept open, but many of the branches are cempletely snowed under and abandoned for the present. Every effort is being put forth in fighting the elements to keep the roads open, but never did such conditions prevail since railroads were first built in this province. The high winds, the intense cold, and the enormous quantity of snow are more than human agencies can overcome. The local papers are full of details of all sorts of accidents and fatalities attributable to the weather conditions. Roofs breaking down from the weight of the snow, people frozen to death within sight of their homes, freight trains loaded with live stock in snow drifts until the strongest animals only survived; is the tale that could be prolonged indefinitely.

During the two and a half months of this remorseless climate he mercury has been but once or twice above the freezing point, and for days many degrees below zero all day. One of the most serious features of this condition of affairs is the water famine with which most of the farmers have to contend. The

rainfall had been below the average when the winter set in, and since then none has fallen and the water supply of most of the farmers is exhausted, causing great inconvenience and in many cases much suffering.

February is usually the worst winter month in this latitude, and if this is the case this year untold privations will have to be endured before the end is in sight.

A QUICKENED GULF STREAM.

If the stories told by mariners about the heightened velocity of the Gulf Stream in the last few days be correct, an explanation of the phenomenon ought not to be hard to find. Surface currents in the ocean result from the action of the wind. The water which issues from the Gulf of Mexico and flows northeastwardly from the southern extrem ty of Florida comes originally from that portion of the Atlantic lying near the equator. The trade winds of one hemisphere, blowing from the northeast, and those of the other hemisphere, blowing from the sontheast, co-operate in forcing the upper layers of the sea into the belt of calms, where the water acquires a westward montion. By the intervention of the continent the current is split, and the direction which is then taken is materially altered, but the impetus imparted by Nature's great marine pumping engine is not lost. In all probability the freer discharge which has just been reported means that this piece of invisible mechanism has, temporarily at least, been working a little harder than usual.

The trade winds, like all other winds, result from differences in atmospheric pressure. Near the equator the barometer usually reads much lower than it does twenty or twenty-five degrees away. These high and low pressure systems oscillate northward and southward with the seasons, but their organization is maintained the year round. Variations in the amount of difference — in what the meteorologists call the "gradient" — are also observed, and it may be asssumed that one has recently occurred which has tended to increase the velocity of the winds. Such an effect might be produced in either one of two ways. There might have been a diminution of pressure near the equator, or there might have been an unusual banking up of the air along the tropics. Owing to the lack of observatories at sea, it will probably be impossible to say which of these two influences has operated. International barometric charts show, however, that over the continents and islands departures of this sort from average conditions are not at all uncommon.

A deficiency or an excess of atmospheric pressure in one part of the globe must be compensated for somehow elsewhere. The volume of the air remains the same. It is the distribution only that changes. In time it will doubtless be possible to correlate eccentricities observed simultaneously in widely separated regions. The discovery of one would thus serve to explain the other to some extent, and possibly come to have a prophetic value. Interpretation and forecasting would also be facilitated, perhaps, if a part of this strange behavior of the atmosphere could be connected with the changes in the amount of solar radiation, or with marked differences in the ease with which the sun's heat is able to penetrate the earth's gaseous envelope. Researches having that object in view are in progress in this country and in Europe. It is not yet possible to say what will be the result, but it is excusable to hope that the researches will prove fruitful.—*N. Y. Tribune.*

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 29.93 inches; highest observed, 30.26 inches at Dubuque, on the the 3d; lowest observed, 29.53 inches, at Davenport, on the 8th; range for state, .73 of an inch.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 114 stations, was 59.6 degrees, which is 0.8° below normal. By sections the mean temperatures were as follows: Northern section, 58.2°, which is 1.1° below normal; Central section, 59.9°, which is 0.3° below normal; Southern section, 60.6°, which is 1.4° below normal. The highest monthly mean was 62 4°, at Burlington, Onawa, Keokuk and R dgeway; lowest monthly mean, 56.4° at Sibley. The highest temperature reported was 93°, at Ridgeway, on the 22d; lowest temperature reported, 27°, at Charles City on the 15th. The average monthly maximum was 85.8°: average monthly minimum, 34.3°. Greatest daily range, 47°, at Monticello and Northwood; average of greatest daily ranges, 37.3°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 126 stations, was 3.78 inches, which is 2.35 of an inch below normal. The averages by sections were as follows: Northern section, 4.01 inches, which is .19 of an inch above normal; Central section, 3.41 inches, which is .68 of an inch below normal; Southern section, 3.92 inches, which is .43 of an inch below normal. The largest amount reported was 8.15 inches at Onawa; least amount reported, 1.50 inches at Clear Lake. The greatest daily rainfall reported was 3.33 inches at Florence, on the 24th and 25th. Average number of days on which .01 of an inch or more was reported, 8.

WIND AND WEATHER.—Prevailing direction of the wind, southeast; highest velocity reported, 41 miles per hour, from the south, at Sioux City, on the 4th. Average number of clear days, 13; partly cloudy, 10; cloudy, 8.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	29.91	30.18	3	29.53	8
Des Moines	29.96	30.21	3, 27	29.63	22, 24
Dubuque	29.92	30.26	3	29.60	22
Omaha, Neb	29.92	30.22	27	29.53	24
Keokuk	29.92	30.15	3	29.54	8
Sioux City	29.96	30.20	27	29.64	7
Means	29.93	30.26	3	29.53	8

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	5.582	27	S	11
Des Moines	6.240	40	SW	11
Dubuque	5.092	34	NW	22
Keokuk	5.692	32	W	9
La Crosse, Wis	5.354	26	NW	8
Omaha, Neb	6.419	32	N	8
Sioux City	9.844	41	S	4

OBSERVERS' NOTES.

ALLERTON.—*Rex Shriver.* Corn was nearly all planted at close of month.

AUDUBON.—*Geo. E. Kellogg.* Nearly six inches less rainfall this month than in May, 1903.

BAXTER.—*W. T. Thorp.* Small grain looking fine; prospects good for fruits.

BONAPARTE.—*B. R. Vale.* Rain, 4.17. Corn planting was very tardy. Corn culture was hardly begun at end of month.

BRITT.—*Geo. P. Hardwick.* Corn was planted in favorable conditions from 9th to 24th; grain thin from poor seed; fruit prospects mostly poor.

CLINTON.—*Luke Roberts*. May mean temperature slightly above normal; rainfall about two inches below normal. A month of ideal weather for farm work; but one frost (on 15th) that was harmless; though late vegetation was in good condition, except where poor seed was planted.

DOWS.—*A. C. Fuller*. A severe wind squall and electrical storm occurred on the 24th, at 9 P. M., causing considerable damage in some localities.

FOREST CITY.—*J. A. Peters*. Though dry, the crops look fine at close of the month. Some corn replanted on account of wire worms.

HANLONTOWN.—*Miss G. M. Paschen*. Corn planting begun on 4th; on 5th the ground white with hail; planting finished about 21st. Oats in good condition but thinner than usual.

HOPEVILLE.—*M. T. Ashby*. Close of the month finds fields wet and clammy, with considerable plowing to do and much planting to be done.

HUMBOLDT.—*H. S. Wells*. More corn planted than last year, but not so much wheat.

IDA GROVE.—*J. E. Conn*. An exceptionally fine month; crop prospects good.

INWOOD.—*G. M. Larsen*. A fair month; promise of a large crop of grain and fruit.

LARRABEE.—*H. B. Strever*. Wind caused some damage to outbuildings at Meriden on afternoon of the 5th. Several barns were damaged.

OLIN.—*N. Potter*. May has been an ideal month for farm work. Conditions are normal.

PACIFIC JUNCTION —*H. H. McCantney*. Ground has been saturated to extent of retarding planting, but crops are starting well.

RIDGEWAY.—*Arthur Betts*. A perfect May; entirely frostless; 312 hours of sunshine; thirteen days calm; no gales nor windstorms.

WAUKEE.—*E. J. Leonard*. Rainfall 3.46, or less than one-third the amount in May, 1903; too cool and cloudy for normal growth of crops.

ERRATA IN MARCH REVIEW.

COLLEGE SPRINGS.—Maximum temperature recorded 66° on the 2d, page 8, should have been 70° on the 9th.

DENISON.—Total precipitation recorded 1.95 inches on pages 7 and 11, should have been .83 inch.

INDIANOLA.—Mean temperature recorded 36.0° on page 8, should have been 36.4°. Mean minimum temperature recorded 26.4° on page 9, should have been 27.0°. Minimum temperature recorded 12° on the 3d, page 8, should have been 3d and 26th.

EARLHAM.—Mean maximum temperature recorded 45.3° on page 9, should have been 45.2°.

GALVA.—Letter indicating number of days missing, page 7, omitted should have been [F].

KEOSAUQUA.—Mean temperature recorded 36.7° on page 8, should have been 36 8°.

ONAWA.—Maximum temperature recorded 63° on the 2d, page 7, should have been 66° on the 9th.

THURMAN.—Maximum temperature recorded 66° on the 2d, page 8, should have been 68° on the 9th. Total snowfall omitted, on page 8, should have been 3.0 inches

WASHINGTON.—Maximum temperature recorded 60° on the 23d, page 8, should have been 65° on the 21st.

WILTON JUNCTION.—Maximum temperature recorded 60°, on the 24th, page 7, should have been 61° on the 21st.

ERRATA IN APRIL REVIEW.

ALBIA.—Minimum temperature recorded on the 13th, page 7, should have been 14th.

COLLEGE SPRINGS.—Letter indicating number of days missing, page 7, omitted, should have been [D].

CORNING.—Total snowfall recorded 3.0 inches, page 7, should have been 2.0 inches.

HUMBOLT.—Minimum temperature recorded 20° on the 16th, page 6, should have been 18° on the 3d.

INWOOD.—Minimum temperature on page 6, omitted, should have been 22° on the 3d.

ZEARING.—Mean temperature recorded 43.3° on page 6, should have been 43.4°.

BELATED REPORTS.

KNOXVILLE.—April.—Mean temperature 46.2°; highest 76° on the 30th; lowest 23° on the 16th; greatest daily range 34°; total precipitation 5.54 inches; greatest in 24 hours 1.90 inches on the 25th; prevailing direction, northeast; number of clear days 13, partly cloudy 5, cloudy 12, rainy 7.

ROCK RAPIDS.—April.—Mean temperature 43.2°; mean maximum temperature 55.5°; mean minimum temperature 31.0°: highest 75° on the 30th; lowest 18° on the 17th; greatest daily range 41°; total precipitation 1.11 inches; greatest in 24 hours .55 inch on the 22d; number of clear days 19, partly cloudy 9, cloudy 2, rainy 3.

CLIMATOLOGICAL DATA FOR MAY, 1904.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	PRECIP., IN INCHES. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days	SKY. Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.	DATES OF THUNDER STORMS.
Algona	Kossuth	1,213	28	58.7	-0.8	88	22	33	10	35	3.06	- .39	2.25	...	6	17	9	5	SE	23, 24, 25
Alta	Buena Vista	1,513	11	58.1	-0.5	85	22	34	14	33	6.39	†2.17	1 98	....	11	11	14	6	S	5, 22, 24
Alta (near)	Buena Vista	.....	....	.....	.....	.....	.....	.....	.....	.....	6.34	.....	1.86	....	8	...	...	....	.....	.....
Britt	Hancock	1,236	5	57.6	-1.5	87	22	30	15	43	3 62	- .07	1.87	...	10	6	19	6	SE	7, 25
Charles City	Floyd	1,012	11	57.6	-2.0	88	22	27	15	40	3.58	† 55	1.50	....	5	20	1	10	E	8, 22, 25
Clear Lake (a)	Cerro Gordo	1,241	....	60.8	.....	85	20, 22	35	14	41	1 50	.....	.75	....	4	...	....	....	.....	.....
Cresco	Howard	.....	....	59.6	†2.9	90	23	32	15	32	5.35	†1.59	1.25	....	8	16	14	1	SE, SW, NW	.....
Decorah	Winneshiek	857	..	59.1	-1.1	86	22	32	15	38	5.19	† .82	1.65	....	7	...	....	....	.....	.....
Dows	Wright	1,142	....	57.8	-1.9	86	22	32	15	38	4 60	- .47	1.92	....	9	18	4	9	SE, NW	24
Elkader	Clayton	727	21	60.2	-0.7	90	22	30	15	41	3.50	- .55	1.32	....	5	12	15	4	NW	22, 24, 25
Estherville	Emmet	1,298	7	56.8	-1.9	82	20	32	15	36	3.57	† .44	1.50	....	6	16	4	11	SE	6, 2 , 26
Florence	Wright	.....	..	.....	.....	.....	.....	.....	.....	.....	4.68	.....	3.33	....	9	8	18	5	SE	5, 24
Forest City	Winnebago	1,226	8	58.2	-1.4	89	22	32	10	39	2.44	-1.36	1.50	....	5	16	5	10	S 6	....
Grand Meadow	Clayton	1,180	11	58.0	-0 2	86	22	32	15	32	6.51	†1.36	2 74	....	9	8	16	7	SE, SW	24
Greene	Butler	924	5	59.2	-1.4	88	22	30	15	38	4.70	† .56	1.84	....	8	12	10	9	-E	5, 24, 25
Hampton	Franklin	1,155	12	59.6	†1.2	89	22	34	15	37	4.55	† .38	1.80		9	8	17	6	NW	5, 10, 14, 15
Hanlontown	Worth	.....	....	56.8	.....	88	22	29	15	34	2.95	.....	1.66	...	10	19	7	5	SE	5, 7, 25
Humboldt	Humboldt	1,095	10	59.6	-0.7	88	22	34	15	38	3.60	- .28	1.31		5	20	9	2	SE	5, 24
Inwood	Lyon	.....	....	57.4	.....	81	22	33	14	33	2.27	.....	.96	....	6	11	9	11	SE	24
Larrabee	Cherokee	1,366	11	58 9	†0.4	90	22	32	14	39	4.74	† .79	1.70		8	13	16	2	SE	5, 16, 24, 25
LeMars	Plymouth	1,224	6	58.7	-1.9	87	22	33	14	39	3.25	- .34	1.70	....	4	....	....	....	.....	24, 25
Mason City	Cerro Gordo	1,132		59.3	†0 3	88	22	35	15	34	3.55	- .40	2 08	....	5	9	17	5	NW	5, 24, 25
New Hampton	Chickasaw	1,169	...	56.9	-2.4	85	22	31	15	39	3 31	-1.16	1.28	....	8	...	...	...	NW	.....
Northwood	Worth	1,222	...	57.6	-1.3	85	22	34	15	47	3.11	-1.31	1.46	....	7	18	6	7	NW	5, 7, 24, 25
Osage	Mitchell	1,184	11	58.0	†0.9	87	22	31	15	35	3 03	-1 20	1.26	..	7	12	11	8	NW	5, 22, 24
Pocahontas	Pocahontas	.....		59.7		89	22	34	14	39	4.61	.....	3.16	..	6	20	8	3	SE	24
Plover	Pocahontas	1,190	5	59.1	-1.3	90	22	33	14	39	4.74	†1.46	1.90	....	5	16	7	8	SE	5, 12
Primghar	O'Brien	1,215	....	57.3	-3.6	88	22	31	14	33	3.60	† .53	1.2	....	6	19	....	12	SE	31
Ridgeway	Winneshiek	.....	....	62.4	†1.8	93	22	35	15	41	4.3	- .76	1.37	....	14	14	12	5	NE	5, 7, 11, 12, 22, 24, 25
Sibley	Osceola	1,512	....	56.4	-2.2	86	22	33	10, 14	36	2.97	- .38	.86	..	13	19	2	10	W	25
Sioux Center	Sioux	.....	....	58.4	-1.6	86	22	32	14	37	2.21	-1.61	.90	....	9	14	8	9	S	22, 24, 31
Storm Lake	Buena Vista	1,440	7	57.0	-1.0	84	22	34	13	33	3.74	† .22	1.85	....	7	15	5	11	NW	6
Washta	Cherokee	1,157	....	.....	.....	.....	.....	.....	.....	.....	6.08	.....	2.17	....	6	16	7	8	S	.....
Waverly	Bremer	942	6	59.6	-1.8	87	22	32	15	33	4 69	† 07	1.06	....	11	10	15	6	.....	5, 7, 8, 12, 22, 25
West Bend	Palo Alto	1,197	8	58.8	-0.5	86	22	33	14	36	3.55	† .71	2.47	...	8	8	16	7	.....	12, 16 17, 24, 25
West Union	Fayette	....	...	.....	.....		.....	.....	.....	.....	4,51	.....	1.80	....	5		....	13	NW	.....
Average	.....	.....	..	58.2	-1.1	87.6	.....	32.3	.....	37.1	4.01	† .19	.....		7	14	10	7	SE	.....

CLIMATOLOGICAL DATA FOR MAY, 1904—CONTINUED.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted)		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Amana	Iowa	721	25	60.2	†0.2	86	22	36	15	38	3.88	- .58	1.37	....	9	14	8	9	SE, NW	12
Ames	Story	926	20	60.0	†0.4	85	22	35	15	43	3.69	- .54	1.65	...	11	19	7	5	SE	12
Audubon	Audubon	1,301	8	59.2	-1.1	88	24	31	15	45	3.42	- .50	.97	....	11	13	7	11	S	.....
Baxter	Jasper	998	....	59.8	.....	85	22, 24	35	15	41	3.37	.....	1.10	....	7	9	7	15	SE	.....
Belle Plaine	Benton	828	12	58.4	-0.9	87	22	37	10, 15	36	3.41	-1.13	1.05	..	12	10	11	10	SE	.....
Buckingham	Tama	.....	....	.....	.....	..	.....	.....	.....	.....	2.74	.....	.61	.	9	8	21	2	.....	.....
Carroll	Carroll	1,265	12	58.7	-0.8	86	22	31	14	42	3.27	-1.14	1.10	....	9	18	5	8		7, 22, 25, 27
Cedar Rapids	Linn	733	19	60.9	†0.9	89	22	35	15	38	3.36	-1.16	1.16	....	6	13	12	6	NE, NW	.....
Clinton	Clinton	609	34	61.0	†0.1	90	22	33	15	38	2.50	-2.10	1.27	....	8	10	8	13	.....	.....
Davenport	Scott	606	31	61.4	†0.7	84	22	40	15	31	2.04	-1.65	1.33	....	12	11	12	8	NW	6, 12, 24
Delaware	Delaware	1,083	11	58.6	-0.1	86	22	32	15	33	3.42	- .70	1.02	....	9	11	15	5	NE, S, NW	.....
Denison	Crawford	1,180	8	59.4	-1.2	86	22	34	14	42	3.41	- .19	1.54	....	10	18	7	6	S	22, 24, 25
Des Moines	Polk	861	24	60.6	†0.2	85	24	38	14	35	3.16	-1.54	1.45	...	9	8	16	7	SE	7, 12, 24, 25
De Soto	Dallas	866	...	60.8	.....	86	24	37	14	41	3.09	.....	1.17	....	10	20	2	9	SE	.....
Dubuque	Dubuque	655	29	60.2	†0.3	86	22	39	16	31	3.86	- .13	1.29	...	8	12	15	4	NW	12, 22, 23
Fort Dodge	Webster	1,126	....	59.0	.....	86	22	35	14, 15	39	5.16	.....	2.60	....	8	19	3	9	.....	8, 25
Galva (*a*)	Ida	1,290	8	58.3	-2.4	88	22	32	14	43	7.8	†4.51	3.05	....	9	....	....	....	.....	.....
Gilman	Marshall	1,052	..	.....	.....	.....	.....	.....	.....	.....	2.05	.....	.57	...	7	14	9	8	N, SE	.....
Grinnell	Poweshiek	1,023	9	59.8	-0.4	84	22	37	14	32	2.61	-2.04	.80	...	8	7	12	12	N, E, S	.....
Grundy Center	Grundy	976	11	58.9	†0.2	88	22	34	15	38	3.55	-1.40	.69	....	8	15	8	8	E	29
Guthrie Center	Guthrie	1,077	6	60.7	-0.3	88	24	33	14	45	3.20	-1.37	1.33	....	11	19	3	9	NW	7, 12, 25
Harlan	Shelby	1,192	....	59.9	.....	87	24	34	14	40	3.07	.....	1.03	....	11	10	10	11	SW	6, 7, 25, 28
Ida Grove	Ida	1,220	....	60.9	.....	86	22	34	14	39	5.42	.....	2.00	...	6	22	6	3	S	.....
Independence	Buchanan	921	38	57.8	-1.9	85	22	30	15	36	2.45	-1.72	1.00	...	7	21	5	5	SE	12, 22, 24, 25
Iowa City	Johnson	685	43	61.0	†0.7	89	22	36	15	39	2.68	-1.66	.76	...	9	9	10	12	.....	.....
Iowa Falls	Hardin	1,196	7	57.5	-2.2	87	22	30	15	40	5.29	†1.74	2.05	....	7	13	10	8	NE, E	6, 8, 18, 25, 26
Jefferson	Greene	1,052	....	.....	.....	.....	.....	.....	.....		2.76	.....	1.35	..	8	6	14	11	SE	7, 25
LeClaire	Scott	576	....	.....	.....	.....	.....	.....	.....	...	2.71	.....	1.01	...	10	....	....	....	N	.....
Logan	Harrison	928	35	60.8	-0.4	90	25	32	10	46	3.02	-1.17	1.00	....	7	13	5	13	S	.....
Maquoketa	Jackson	688	9	58.8	-2.3	86	22	32	15	42	2.42	-2.10	.86	..	7	20	3	8	.....	.....
Marshalltown	Marshall	947	9	59.6	-0.5	90	22	34	15	43	3.45	-1.29	1.20	..	10	14	2	15	SE, NW	24
Monticello	Jones	925	40	59.0	-0.5	88	22	34	14	47	2.99	- .92	.90	....	4	12	14	5	SW	.....
Mt. Vernon	Linn	847	35	61.1	-0.3	91	20	35	15	43	2.93	-1.16	.87	....	11	14	6	11	S	.....
Odebolt	Sac	1,356	5	60.4	-1.5	89	24	32	14	45	3.41	† .64	1.50	....	7	22	7	2	.....	.....
Ogden	Boone	1,088	8	59.2	-2.2	85	22, 24	30	14	34	2.63	-2.53	.73	....	9	13	7	11	SE	.....
Olin	Jones	760	....	59.4	-0.6	85	22	33	15	33	2.46	-2.07	1.00	....	7	12	11	8	NW	6, 12
Onawa	Monona	1,053	....	62.4	.....	88	24	35	14	40	8.15	†3.77	2.80	....	12	20	3	8	SE	5, 13, 23, 24 25, 26, 28
Perry	Dallas	975	...	61.1	.....	89	24	36	14	42	2.28	.....	1.22	....	6	16	8	7	....	.....
Rockwell City	Calhoun	.....	....	59.8	-0.8	88	22	33	14	37	3.65	† .31	1.50	...	6	19	7	5	.....	.....
Sac City	Sac	1,278	22	59.8	†2.1	86	22	34	14	40	4.06	† 43	1.72	....	7	16	8	7	.....	.....
Sioux City	Woodbury	1,165	13	60.2	†1.8	88	22	37	14	34	3.09	- .58	1.03	....	12	5	10	16	NW	5, 22, 24, 31
Stuart	Guthrie	1,216	5	60.4	-1.7	88	24	36	13	44	2.56	-1.89	1.05	....	7	....	....	....	W	.....
Tipton (*b*)	Cedar	807	....	61.4	.....	88	22	38	15	33	2.37	.....	.67	....	8	14	15	2	E SE	.....
Toledo	Tama	856	8	59.7	-2.1	86	22	34	15	40	2.88	- .83	.95	....	5	10	12	9	SE, NW	.....
Vinton	Benton	810	12	60.4	†0.5	87	22	33	15	39	2.31	-1.56	.92	....	9	15	8	8	NW	12
Waterloo	Black Hawk	862	15	58.8	-1.2	89	22	33	15	37	4.62	†1.22	2.31	....	8	14	12	5	NW	24, 25, 29
Waukee	Dallas	1,039	....	62.0	.....	90	24	35	14	42	3.46	.....	1.14	....	10	7	10	14	S	25
Wilton Junction	Muscatine	683	7	61.1	-1.3	87	22	33	15	40	2.79	-1.53	.80	....	7	12	9	10	SE, NW	.....
Whitten	Hardin	1,036	..	59.8	‡0.0	89	22	34	10, 14, 15	37	3.49	- .35	.85	....	7	10	14	7	SE	5
Zearing	Story	.....	..	59.0	.....	85	22	34	10	41	3.09	.....	1.16	....	7	19	7	5	....	.....
Average	.....	.....	....	59.9	-0.3	84.8	.....	34.2	.....	39.3	3.41	- .68	.....	....	8	14	9	8	SE	.....

SOUTHERN SECTION.

Afton	Union	1212	7	61.2	-1.9	87	24	36	14	37	4.20	- .51	1.07	....	10	10	11	10	SW	.....
Albia	Monroe	957	..	59.1	.....	84	22, 24	33	14	35	2.61	.....	.50	..	10	15	5	11	SE	.....
Allerton	Wayne	.....	....	60.0	.....	84	24	37	14	35	3.51	.....	.63	...	12	17	6	8	NW	6, 12, 24
Atlantic	Cass	1,164	11	59.7	†0.1	87	24	33	15	43	4.20	† .03	1.30	....	9	3	13	15	N	5, 7, 24, 25
Bedford	Taylor	.....	....	59.6	.....	84	24	35	14	34	4.50	.....	1.75	..	10	16	3	12	SE	.....
Belknap	Davis	877	7	61.9	-1.0	83	24	40	14	29	3.59	- .37	1.34	....	13	17	7	7	.....	.....
Bonaparte	Van Buren	.....	10	60.6	-2.3	84	22	37	15	33	4.17	† .14	.76	....	10	.	....	....	.....	.....
Burlington	Des Moines	544	....	62.4	.....	83	21, 22	41	10	29	3.70	.....	1.10	..	15	16	4	11	NW	.....
Chariton	Page	1,042	7	59.1	-3.6	83	24	36	14	33	2.80	-1.47	.65	....	8	9	14	8	S	.....
College Springs(*c*)	Page	.....	10	62.0	†0.6	85	24	35	14	34	3.00	-1.94	.75	....	9	....	....	...	SW	.....
Columbus Jct.	Louisa	596	....	60.6	.....	85	22	35	10	36	3.16	.....	.63	....	13	17	9	5	NE, SE	.....
Corning	Adams	1,127	10	59.2	-1.8	83	24	36	14	34	5.55	† .82	1.09	...	11	11	11	9	SE, SW, NW	24, 25, 26
Corydon	Wayne	992	9	60.3	-1.5	84	24	35	14	33	3.06	-1.91	.50	....	12	10	13	8	E	24
Clarinda	Page	1,069	....	59.6	-2.1	90	24	36	11, 13, 14, 15	39	4.11	- .68	.88	..	13	19	1	11	NW	7, 8, 12, 25, 26, 29
Cumberland	Cass	.....	....	.....	....	.....	.....	.....	.....	.....	3.42	.....	1.20	...	5	22	2	7	SW	.....
Earlham	Madison	.....	...	56.8	.....	84	24	31	15	42	2.78	.....	.95	....	6	17	7	7	SE	25
Fort Madison	Lee	516	51	.....	.....	.....	.....	.....	.....	.....	3.58	-1.28	1.34	....	6	4	17	10	S	6, 9, 12, 24
Glenwood	Mills	....	15	61.0	-0.9	86	24	35	14	38	5.35	† 86	2.65	....	4	3	22	6	SW	.....
Greenfield	Adair	.....	11	60.0	-0.5	86	24	33	14	43	4.16	- .44	1.07	...	8	17	6	8	S	5, 7, 12, 25
Hopeville	Clarke	.....	11	59.8	-0.6	84	24	37	14	36	5.04	† .28	1.35	....	12	6	18	7	NW	.....
Indianola	Warren	969	11	60.6	-0.3	85	24	37	14	34	3.08	-1.62	1.22	....	9	3	16	12	SW	.....
Keokuk	Lee	619	31	62.4	-0.2	85	24	43	14	32	3.94	- .13	1.27	....	14	14	8	9	SW	5, 6, 9, 12, 22, 24
Keosauqua	Van Buren	664	10	61.2	-2.0	87	22	35	15	35	4.39	† .05	1.00	..	11	12	7	12	.....	.....
Lacona	Warren	.....		.....	.....	.....	.....	.....	.....	.....	4.32	.....	1.00	....	12	7	17	7	.....	.....
Lenox	Taylor	1,250	7	59.5	-2.6	88	24	35	14	38	4.28	- .43	.70	....	10	15	10	6	S	24, 25, 26
Leon	Decatur	1,120	....	61.0	.....	83	24	37	14	31	4.47	.....	.99	....	12	9	1	11	S	.....
Mount Ayr	Ringgold	1,236	6	61.2	-1.2	88	24	36	14	40	6.51	†1.12	1.61	....	12	10	10	11	E	.....
Mount Pleasant	Henry	729	20	61.8	†0.4	88	21	40	10, 14, 15	34	4.37	† .03	1.21	..	15	10	12	9	SW	6, 23, 24
Omaha, Neb.	Douglas	1,113	32	62.0	†0.3	88	24	38	14	34	4.86	† .49	2.35	....	11	10	8	13	N	5, 7, 16, 24, 25 28, 29, 31
Osceola	Clarke	1,130	6	60.0	-2.3	87	24, 26	31	14	39	5.66	† .59	2.00	....	13	....	....	....	.....	24
Oskaloosa	Mahaska	843	18	60.2	-0.2	84	22	36	15	35	1.96	-1.61	.62	....	11	14	2	15	E	.....
Ottumwa	Wapello	649	8	62.0	-1.8	87	22, 24	38	15	37	3.09	-1.73	.98	....	9	12	10	9	NW	.....
Pacific Junction	Mills	960	...	60.9	.....	88	24	32	14	38	4.68	.....	1.54	....	13	11	16	4	S	.....
Red Oak	Montgomery	1,033	....	61.3	-1.8	84	24	40	13, 14	31	3.68	- .06	.75	....	13	8	15	8	.....	6, 12, 21, 24, 25
St. Charles	Madison	1,070	....	60.4	.....	85	24	37	14	32	3.80	.....	1.51	....	11	14	9	8	SE	.....
Sigourney	Keokuk	787	....	61.6	-2.6	86	28	36	15	40	3.09	- .89	1.03		7	15	12	4	SE	24, 25
Stockport	Van Buren	.....	...	61.8	.....	92	7	38	15	34	4.32	.....	.90	....	15	12	5	14	NW	12, 22, 24
Thurman	Fremont	.....	....	61.8	-1.5	89	24	35	14	35	4.14	- .57	.78	....	13	14	10	7	SW	.....
Washington	Washington	769	20	60.5	-0.9	85	22	39	10	34	3.01	- .42	.90	....	8	....	....	.	SE	.....
Winterset (*b*)	Madison	1,129	11	60.7	-0.6	90	20	38	14	40	2.32	-2.25	.70	...	5	....	....		.....	.....
Woodburn	Clarke	961	....	.....	.....	.....	.....	.....	.....	..	4.55	.....	1.09	....	11	16	8	7	SW	.....
Average	.....	.....	....	60.6	-1.4	85.7	.....	36.4	.....	35.6	3.92	- .43	...	....	10	12	10	9	SW	....
Average for state	.....	.....	....	59.6	-0.8	85.8	.....	34.3	.....	37.3	3.78	- .35	...	....	8	13	10	8	SE	.....

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Above normal. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. §Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MAY, 1904.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
	Max..	74	73	77	80	76	72	79	67	67	76	79	68	51	65	73	66	61	68	75	82	83	82	79	87	77	66	75	73	67	79	79	73.4
on . ..	Min ..	46	45	47	49	55	53	52	47	46	39	52	44	38	36	40	50	49	46	45	48	51	60	60	49	62	46	46	42	59	60	54	48.9
	Max..	72	66	75	71	80	72	75	60	65	72	78	56	52	61	71	56	60	66	70	80	80	84	68	84	76	65	71	72	67	72	77	70.1
bia.	Min ..	46	44	47	48	54	57	58	51	44	38	43	55	41	33	37	48	45	47	44	48	51	55	60	49	53	50	44	47	54	53	49	48.1
	Max..	75	72	75	78	76	72	79	62	60	66	78	65	54	65	69	60	65	67	72	80	83	88	79	68	66	66	73	71	80	75	76	71.5
gona. ..	Min .	40	44	47	49	55	52	49	48	40	33	50	42	37	34	34	46	44	46	44	48	52	61	51	42	47	42	42	47	57	46	53	45.9
	Max..	74	70	76	76	76	70	74	67	64	73	77	69	53	61	71	62	58	65	71	79	81	83	75	84	75	67	72	70	65	77	75	71.3
lerton .	Min ..	47	45	46	51	56	51	58	49	42	38	52	45	39	37	38	50	48	43	46	46	51	58	60	51	61	49	45	48	57	53	51	48 7
	Max..	76	72	74	78	72	69	68	66	65	70	76	52	48	63	72	53	61	60	70	78	78	85	70	78	62	63	70	68	77	78	72	69.1
ta.	Min ..	47	47	47	48	53	49	55	48	38	38	51	42	35	34	40	47	45	45	51	49	53	60	49	45	45	43	42	50	57	51	58	47.1
	Max..	72	71	76	78	79	76	75	68	63	64	78	71	53	57	64	58	63	69	71	81	82	86	75	43	62	52	43	45	57	54	45	48.8
mana. ..	Min ..	44	45	46	52	57	59	60	52	44	38	49	46	41	40	36	46	47	48	44	49	52	62	56	56	78	66	75	70	69	75	76	72.8
	Max..	76	74	76	78	80	72	81	63	65	70	74	71	50	63	71	64	67	67	74	83	81	85	79	85	78	66	75	70	69	75	76	72.8
mes	Min ..	46	45	46	50	46	54	52	50	44	39	57	44	40	36	35	47	42	49	47	46	52	62	51	42	57	46	45	43	47	52	51	47.2
	Max..	76	72	76	77	74	76	81	66	67	77	77	70	53	66	72	61	62	72	76	83	81	83	79	87	77	67	73	69	75	80	78	73.6
lantic..	Min ..	38	42	48	48	55	49	46	48	41	35	55	45	38	35	33	50	48	36	37	39	43	61	57	44	58	45	57	47	58	47	58	45.8
	Max..	76	73	76	77	76	75	82	65	66	77	79	63	50	65	73	60	62	70	74	83	82	88	78	88	75	67	77	70	73	80	79	73.5
udubon.	Min ..	38	41	46	44	51	50	44	48	40	35	54	44	38	33	31	50	47	41	40	38	45	60	53	44	53	44	57	43	58	49	58	45.0
	Max..	74	73	76	78	78	72	77	70	67	68	82	73	52	62	69	61	63	69	74	80	80	85	75	85	72	66	73	70	71	72	75	72.3
xter. ..	Min ..	44	42	44	50	56	53	57	49	44	36	47	44	39	36	35	45	46	46	43	45	54	60	53	44	55	48	44	48	56	52	48	47.2
	Max..	74	76	73	73	71	72	75	67	65	66	79	68	52	69	68	62	59	70	75	78	79	81	74	84	75	68	72	65	67	76	76	71.3
edford ..	Min ..	45	47	50	55	55	50	45	48	40	36	53	44	39	35	40	50	46	38	42	45	46	59	61	51	62	48	41	47	58	51	58	47.9
	Max..	73	71	75	75	75	80	75	55	65	70	75	70	55	55	70	65	70	65	69	75	77	82	.	83	80	60	75	70	70	70	73	70.8
elknap..	Min ..	48	54	46	55	60	60	62	54	46	44	50	60	43	40	44	50	50	49	50	51	57	62	63	55	68	51	48	60	55	58	51	53.0
	Max..	72	72	75	78	80	75	65	55	62	63	77	51	50	57	65	53	61	67	69	73	80	87	62	80	78	65	71	63	73	70	74	68.6
elle P. ..	Min ..	46	45	47	53	57	55	55	50	48	37	48	47	40	38	37	45	45	46	46	45	53	61	56	44	53	50	45	48	53	54	47	48.2
	Max..	72	71	75	75	72	74	72	65	68	68	78	79	58	60	68	58	58	68	72	80	80	84	73	83	77	67	73	75	68	69	78	71.4
onapar'e	Min .	46	45	45	50	57	53	59	50	44	58	49	47	42	40	37	45	47	47	44	48	52	59	61	50	66	51	43	46	56	58	47	49.7
	Max.	74	73	76	78	80	71	79	63	61	69	78	62	52	59	68	56	66	66	76	84	82	87	73	68	66	65	74	79	79	76	78	71.4
ritt.	Min ..	41	40	44	50	53	50	46	43	39	31	50	41	35	31	30	46	44	46	40	41	49	60	50	40	47	42	38	49	45	47	53	43.9
	Max .	75	73	79	77	81	75	70	67	67	66	79	80	70	57	68	60	60	73	71	79	83	83	75	82	82	72	72	75	70	66	75	73.0
urling'n	Min ..	48	49	57	54	59	59	60	52	45	41	51	54	48	42	42	46	47	46	47	50	54	62	56	53	70	55	46	46	61	59	48	51.8
	Max..	76	71	74	78	77	73	81	66	68	76	82	53	50	68	72	60	69	71	76	83	79	86	67	81	62	67	75	59	76	78	78	72.3
arroll ..	Min ..	40	42	44	45	52	48	46	47	37	34	54	43	36	31	35	46	46	41	40	31	50	60	50	45	57	41	38	44	58	50	56	45.1
	Max.	75	73	78	80	81	77	75	55	63	66	81	58	52	58	66	55	65	73	75	84	85	89	64	84	77	67	74	75	72	78	78	71.9
edar R..	Min ..	48	47	50	53	55	60	60	54	46	40	43	52	43	40	35	44	47	48	47	51	54	62	62	46	52	54	48	48	50	46	47	49.9
	Max.	73	70	73	73	76	68	74	69	64	70	77	62	50	61	70	64	57	62	71	78	79	82	76	83	78	67	72	68	67	74	74	70.4
hariton.	Min ..	46	44	45	48	55	52	57	48	43	37	50	43	39	36	39	49	47	44	44	45	50	58	59	48	60	48	44	46	58	52	49	47.8
	Max.	74	73	76	78	78	71	79	58	60	67	77	53	52	58	63	54	67	67	71	81	84	88	69	67	65	66	73	74	78	73	75	70.0
harles C.	Min ..	41	39	46	50	54	53	55	48	44	34	37	44	38	35	27	39	42	44	42	46	47	63	58	41	47	46	40	46	54	52	48	45.2
	Max..	79	75	77	75	71	70	83	68	67	62	78	49	57	67	70	60	60	71	76	80	84	83	72	90	71	68	74	70	79	81	75	72.3
larinda..	Min ..	48	48	49	53	54	50	46	46	43	38	36	43	36	36	36	50	48	42	43	43	48	57	59	51	58	46	42	48	58	51	56	47.0
	Max..	73	75	73	77	78	71	77	63	61	66	71	67	52	60	69	64	65	61	74	85	80	85	80	69	67	67	79	70	..	80	78	71.2
lear L. ..	Min ..	68	70	65	70	63	54	52	47	41	37	49	42	39	35	36	45	44	47	44	50	57	62	53	46	49	43	47	53	..	57	51	50.5
	Max..	75	74	80	81	80	56	57	63	50	43	46	47	53	47	38	33	37	41	42	46	46	49	59	48	46	61	52	53	50	55	51	48.4
linton...	Min ..	41	48	48	48	56	57	63	50	43	46	47	53	47	38	33	37	41	42	46	46	49	59	48	46	61	52	53	73	..	79	75	73.3
	Max..	74	72	75	74	70	74	78	76	68	76	77	65	54	67	67	62	..	68	78	78	80	84	82	85	74	67	..	53	58	52	54	50.6
t. Sprgs	Min ..	48	47	50	55	55	60	48	47	42	42	54	44	37	35	44	50	..	48	46	53	60	67	60	52	59	47	..	70	69	67	77	72 0
	Max..	74	73	79	79	80	79	73	66	65	67	78	76	58	57	60	58	64	69	71	81	82	85	72	84	80	67	73	70	69	67	77	72 0
olum. J.	Min ..	43	46	48	52	57	57	60	40	39	35	48	50	40	40	38	46	45	47	50	51	56	62	57	49	65	53	44	50	58	57	46	49.3
	Max..	72	69	73	75	71	69	76	64	65	74	77	65	57	64	67	61	60	69	73	77	79	81	70	83	70	83	70	69	68	75	73	70.5
orning ..	Min ..	43	46	44	53	54	51	47	47	41	37	52	44	38	36	48	49	48	41	43	44	51	61	54	49	62	45	41	49	59	53	58	48.0
	Max..	74	70	73	75	76	67	74	68	67	72	72	71	51	65	70	63	60	67	74	80	80	82	77	84	77	67	73	72	66	74	74	71.5
orydon..	Min ..	47	45	47	51	56	53	59	49	42	39	53	45	40	35	38	50	47	45	45	48	53	60	60	51	61	48	44	50	59	51	51	49.1
	Max..	75	73	76	80	77	70	75	76	59	60	75	70	50	55	60	64	65	65	72	80	81	89	90	85	85	60	70	73	79	80	75	72.4
resco ...	Min ..	47	41	44	50	64	63	48	50	45	32	48	40	38	34	32	39	42	41	41	47	50	60	67	50	45	40	45	50	55	54	48	46.8
	Max..	73	70	76	77	77	64	76	73	66	64	64	78	77	56	55	63	52	64	69	73	83	82	84	72	82	80	69	73	76	69	66	71.4
Davenpo't	Min ..	49	49	48	51	59	60	60	50	46	41	50	53	46	42	40	45	46	50	51	52	57	64	54	51	69	52	46	53	76	61	53	51.4
	Max..	72	78	81	83	81	73	84	76	60	63	78	67	50	52	63	68	60	67	73	82	83	86	77	63	62	63	72	73	78	73	76	71.5
Decorah. .	Min ..	34	39	43	50	57	58	57	50	41	36	49	45	40	41	32	35	40	42	44	49	52	63	57	42	53	52	44	46	52	54	50	46.7
	Max..	73	71	76	77	78	76	74	66	60	63	76	68	52	52	60	60	64	69	70	80	82	86	74	78	74	65	72	76	74	68	77	70.7
Delaware.	Min ..	46	44	44	46	54	57	57	46	40	35	46	45	39	37	32	37	42	46	43	49	54	62	51	42	55	48	42	47	56	55	44	46.5
	Max..	76	72	75	74	74	71	79	68	66	76	79	71	50	66	71	58	62	69	72	79	80	86	82	86	80	65	71	69	75	77	76	72.7
Denison..	Min ..	39	42	46	50	49	51	55	52	41	35	50	44	37	34	37	48	48	40	39	38	52	62	49	44	50	43	40	49	59	45	60	46.1
	Max..	71	70	73	76	77	70	78	64	64	70	78	68	50	62	69	57	62	67	72	80	79	83	73	85	74	66	72	68	71	71	74	70.8
Des M....	Min ..	50	49	51	53	57	56	56	50	46	41	58	46	41	38	42	49	48	50	46	47	53	62	55	10	56	48	46	52	60	56	53	50.3
	Max..	72	71	74	77	78	74	79	64	66	76	79	69	51	64	73	63	63	67	74	83	78	82	73	86	78	67	73	70	71	73	75	72.4
De Soto ..	Min ..	46	48	49	51	56	54	50	49	45	38	56	46	40	37	38	50	48	48	46	44	50	62	58	45	63	47	46	49	60	51	55	49.2
	Max..	72	71	75	76	78	69	79	64	60	64	76	69	70	58	64	60	61	64	70	79	80	86	81	80	66	65	73	69	75	73	74	70.4
Dows. ...	Min ..	44	43	43	51	55	52	47	43	41	33	48	39	36	33	32	44	45	47	40	45	50	60	50	42	52	44	42	47	56	51	50	45 3
	Max..	74	70	76	77	75	77	71	65	62	63	77	70	55	52	58	58	64	68	72	81	82	86	70	77	76	67	72	73	73	68	76	70.5
Dubuque.	Min ..	48	47	49	51	58	60	59	48	45	42	50	48	45	41	39	39	44	48	46	53	57	63	54	48	55	51	48	52	67	68	75	69.5
	Max.	72	62	73	75	75	70	76	63	61	72	77	65	49	62	68	58	59	64	72	78	76	79	72	84	74	65	71	67	73	74	74	69.5
Earlham .	Min .	40	42	44	43	52	40	44	45	40	32	52	42	39	33	31	47	43	41	40	39	43	59	54	42	60	44	39	43	67	46	.1	44.1
	Max..	78	75	81	81	80	78	79	70	64	67	80	71	50	54	64	65	67	72	77	87	85	90	74	74	74	69	76	76	76	75	81	73.8
Elkader ..	Min ..	44	40	40	47	56	59	59	50	42	34	49	45	40	38	30	37	40	45	43	47	47	65	56	43	55	50	41	44	54	55	45	46.6
	Max..	75	72	75	78	73	69	75	66	61	66	76	53	48	58	67	50	65	66	71	82	80	81	69	64	50	65	74	71	79	78	77	68.8
Esthervil.	Min ..	38	40	40	42	50	52	56	47	41	33	42	42	36	35	32	48	44	46	45	47	51	59	52	42	46	42	43	51	55	45	48	44.8
	Max..	75	76	77	80	81	72	77	65	61	65	77	52	50	59	66	53	65	69	74	87	85	89	73	64	57	66	75	71	81	75	77	70.8
Forest C'y	Min ..	44	46	45	51	54	51	49	47	40	32	40	42	36	33	34	46	43	47	43	48	51	59	52	41	49	43	42	47	54	51	51	45.5
	Max..	75	74	76	79	78	72	80	65	64	70	77	51	45	39	35	35	45	46	46	45	48	57	62	51	45	52	44	45	47	59	51	54	47.3
Ft. Dodge	Min ..	44	46	47	49	52	53	52	49	42	37	43	76	63	50	66	78	58	65	65	73	82	80	88	79	81	66	64	75	74	78	80	81	72.9
	Max..	75	73	75	80	76	76	75	65	66	38	33	38	42	34	32	39	48	46	41	40	39	45	60	49	43	47	42	41	47	54	45	58	43 7
Galva.....	Min ..	38	38	44	44		49	50	46	38	33	38	42	34	32	39	48	46	41	40	39	45	60	49	43	47	42	41	47	54	45	58	43 7
	Max..	79	76	75	67	69	72	79	62	67	75	78	73	55	67	65	66	58	70	73	76	79	84	79	86	76	63	69	68	72	77	73	71.9
Glenw'd .	Min ..	45	48	48	55	54	52	52	47	42	43	59	45	38	35	48	49	47	46	47	51	55	62	57	48	57	46	45	54	59	55	60	50.0
	Max..	74	74	76	79	77	75	77	68	56	60	70	69	51	54	59	63	64	69	72	82	82	86	72	66	66	66	72	74	76	77	75	70.4
Grand M.	Min ..	45	44	44	47	56	55	57	45	41	36	47	43	38	35	32	37	42	45	43	51	55	62	54	49	54	40	43	49	34	55	45	45.7
	Max..	77	75	79	81	81	73	82	70	59	62	78	68	52	58	68	57	67	68	74	84	84	88	78	70	65	66	74	73	78	76	79	72 4
Greene . .	Min ..	44	40	42	49	54	53	54	48	42	35	48	42	38	35	30	44	43	47	42	46	49	63	53	43	55	46	41	46	55	50	49	46 0
	Max..	75	74	77	80	77	76	78	62	70	75	79	72	53	63	73	65	55	65	72	77	79	84	76	86	76	68	78	72	70	75	77	72.9
Greenfi'ld	Min ..	48	43	45	46	51	52	48	48	42	38	54	43	37	33	42	49	42	44	45	49	50	55	57	43	61	45	43	50	59	47	55	47.2
	Max..	70	69	73	75	76	70	74	63	62	61	69	49	57	41	37	39	46	46	48	47	52	57	63	55	49	56	49	47	52	55	54	49.9
Grinnell .	Min ..	48	45	47	52	58	56	60	50	43	39	49	57	41	37	39	46	46	48	47	52	57	63	55	49	56	49	47	52	55	54	50	49.9
	Max..	74	72	76	77	77	77	72	77	62	63	65	79	68	50	59	65	60	61	67	72	80	81	88	75	82	76	67	72	71	72	71	71.2
Grundy C	Min ..	42	44	43	49	55	52	58	49	42	35	48	42	38	36	34	44	45	45	42	48	52	61	51	44	60	45	42	47	56	50	46	46.6
	Max..	75	70	75	80	78	75	82	66	66	78	78	73	51	66	73	64	64	70	74	85	82	84	81	88	83	66	76	74	73	78	76	74.3
Guthrie C	Min ..	41	45	45	46	55	52	46	48	41	35	56	45	39	33	34	50	48	48	42	42	49	63	55	43	59	46	41	47	59	51	56	47.1
	Max..	78	76	78	80	80	72	81	62	60	69	78	70	49	60	69	55	64	69	76	85	84	89	77	81	63	65	74	72	77	74	76	72.4
Hampton.	Min ..	42	43	42	46	55	54	52	48	42	36	48	43	38	35	34	45	44	48	44	50	55	62	53	44	53	45	43	48	56	51	50	46.7
	Max..	72	71	74	77	72	67	77	62	58	62	77	67	50	56	62	55	64	65	69	78	82	88	75	63	63	63	74	69	77	72	74	68.9
Hanlont'n	Min ..	40	38	42	45	52	52	47	58	40	32	48	41	88	33	29	44	40	45	39	46	48	61	53	39	48	48	40	46	56	50	49	44 6
	Max..	76	72	75	78	75	75	81	67	66	75	80	73	52	66	73	63	64	69	73	80	82	85	82	87	78	66	73	72	78	80	83	74.1
Harlan....	Min ..	41	46	49	45	49	49	48	48	41	35	53	46	37	34	35	50	47	37	41	43	46	56	53	47	52	44	39	39	59	49	59	45.7
	Max..	74	70	75	76	75	69	78	68	64	75	78	64	50	62	70	60	57	67	71	80	80	80	70	84	75	65	73	68	65	77	73	70 7
Hopeville.	Min ..	48	46	48	50	56	52	55	47	44	39	56	43	40	37	42	50	48	45	44	47	53	61	54	48	62	47	45	49	58	51	53	49.0
	Max..	75	75	77	80	80	72	82	67	65	70	80	66	52	62	72	63	65	67	70	80	82	88	80	66	66	62	62	67	78	75	78	71.7
Humboldt	Min ..	41	44	46	47	58	64	50	50	41	35	52	44	40	36	34	50	46	46	44	46	50	64	50	44	50	44	45	49	58	48	55	47.5
	Max..	73	72	75	76	73	71	75	65	67	78	77	69	59	68	72	57	63	67	72	81	80	86	82	82	73	67	75	74	77	80	80	73.1
Ida Grove	Min ..	42	45	45	49	54	50	50	50	42	39	56	46	37	34	38	49	48	43	43	43	52	63	59	54	48	45	44	51	69	75	47	48.7
	Max..	74	72	77	73	77	72	74	66	62	63	78	70	79	54	61	53	61	68	69	80	80	85	69	77	68	65	71	70	72	72	73	69.5
Independ.	Min	48	42	43	47	53	51	57	47	43	36	47	45	38	36	30	42

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MAY, 1904—Continued.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN
Iowa Falls	Max.	75	75	78	79	79	73	80	62	62	68	78	49	51	59	67	57	63	66	72	83	82	87	64	82	63	65	73	71	76	75	77	70.7
	Min.	39	41	41	44	50	52	52	48	41	33	40	42	36	34	30	45	45	47	41	45	47	52	55	42	48	46	42	45	50	51	50	44.8
Keokuk	Max.	71	70	75	75	77	72	71	63	65	67	79	79	57	59	67	54	58	65	71	79	81	85	74	85	83	71	72	76	71	67	74	71.4
	Min.	49	50	60	55	58	59	59	54	47	43	51	56	56	43	44	48	49	48	48	52	57	67	65	63	71	56	49	53	61	61	50	53.6
Keosa'qua	Max.	73	72	78	76	80	77	74	55	67	71	80	82	60	62	70	56	60	68	74	82	83	87	73	85	78	64	76	76	63	71	77	72.9
	Min.	43	47	45	51	55	56	58	53	44	39	48	57	43	40	35	48	48	48	46	48	49	61	62	51	53	53	44	45	57	59	58	49.6
Larrabee	Max.	74	74	76	78	72	71	76	70	68	72	77	62	53	67	73	55	67	70	75	84	81	90	72	82	60	71	76	74	78	81	82	72.9
	Min.	45	44	46	46	50	49	51	48	37	36	49	39	33	32	38	47	44	42	43	45	50	60	48	44	45	40	41	48	54	44	55	44.8
LeMars	Max.	75	73	75	77	67	71	74	67	68	75	76	66	50	66	70	56	66	69	72	79	83	87	71	82	65	64	72	71	80	82	78	71.9
	Min.	40	43	46	49	52	48	53	46	38	37	54	40	35	33	40	48	46	41	42	40	50	58	49	48	46	43	42	51	54	44	58	45.6
Lenox	Max.	72	71	74	76	72	68	77	64	65	74	78	70	51	63	67	62	59	68	72	76	80	80	78	83	74	66	70	68	66	75	71	70.9
	Min.	49	46	48	51	54	52	47	47	41	39	52	43	38	35	42	50	46	42	44	49	52	60	59	45	61	47	43	50	58	52	57	48.4
Leon	Max.	72	71	74	76	75	67	75	75	64	74	77	75	51	62	70	65	59	66	72	78	80	82	82	83	76	68	72	69	70	78	77	72.7
	Min.	49	45	49	51	56	52	58	48	44	40	53	44	40	37	41	50	48	46	47	52	53	60	60	51	63	48	47	48	58	52	53	49.8
Logan	Max.	74	74	78	75	71	76	82	68	69	78	77	70	60	78	62	62	79	79	75	82	85	78	76	76	90	80	80	67	75	70	71	74.7
	Min.	42	47	56	53	56	48	50	48	44	32	36	48	37	34	37	41	42	42	44	40	61	61	52	50	47	57	51	45	41	57	54	46.9
Maquo'ta	Max.	75	72	77	78	77	76	72	58	65	65	77	65	57	58	64	56	66	72	74	83	83	86	69	82	80	67	75	75	70	70	78	71.7
	Min.	40	40	41	45	53	57	58	56	42	36	46	50	44	39	32	35	40	45	43	49	46	60	59	40	49	56	40	41	53	51	38	45.9
Marshlt'n	Max.	76	75	78	80	80	74	80	61	64	69	80	52	51	61	68	55	62	70	74	82	85	90	62	86	73	69	75	74	74	75	78	72.1
	Min.	45	48	44	50	54	55	59	50	43	36	41	45	39	37	34	45	45	46	44	48	51	61	57	43	50	47	43	46	56	52	48	47.0
Mason C.	Max.	75	75	77	77	78	70	80	67	57	65	76	68	50	58	65	58	65	67	72	83	82	88	78	67	64	65	73	70	78	76	76	71.0
	Min.	45	45	45	51	56	54	52	49	43	37	50	44	38	36	35	44	43	49	42	49	56	62	54	45	52	45	45	50	58	50	52	47.6
M'nticello	Max.	78	75	77	78	78	75	77	62	70	80	75	69	52	60	55	68	70	75	80	83	82	88	75	78	80	76	70	72	75	68	70	73.8
	Min.	49	52	53	48	48	48	47	42	43	42	40	37	35	34	38	39	40	45	43	40	42	41	50	68	69	40	42	45	43	41	39	44.6
Mt. Ayr.	Max.	76	76	79	78	74	69	80	67	68	78	80	65	52	64	71	66	60	73	76	82	84	82	77	88	76	67	75	70	67	81	76	73.5
	Min.	49	45	47	51	55	52	52	47	42	44	52	43	39	36	42	49	47	44	45	52	55	58	59	48	59	47	45	49	53	52	55	49.0
Mt. Pl'snt	Max.	73	73	79	80	80	79	78	68	66	66	79	81	61	58	68	60	60	69	72	80	88	85	77	82	82	67	75	79	69	69	72	73.4
	Min.	43	43	62	57	57	57	59	51	43	40	48	48	42	40	40	46	46	46	45	49	54	60	60	49	66	52	45	46	57	59	46	50.2
Mt. Ver'n	Max.	83	74	80	80	79	75	69	66	61	73	85	78	50	56	73	55	67	73	75	91	83	86	72	82	74	67	80	68	71	81	85	73.0
	Min.	46	44	42	49	55	56	57	47	43	38	47	46	41	39	35	44	44	47	46	51	55	62	54	45	61	51	47	49	58	56	42	48.3
New H.	Max.	75	73	..	..	.	70	77	68	60	71	75	69	50	55	62	67	63	67	71	80	80	85	80	68	64	65	71	..	76	71	73	69.8
	Min.	43	42	..	..	..	51	55	46	41	32	..	41	38	32	31	40	45	42	40	46	49	61	52	41	53	44	39	..	45	49	46	44.0
Northw'd	Max.	74	73	74	76	76	74	77	67	58	69	76	67	50	57	64	60	65	68	71	80	81	85	80	67	62	64	72	70	78	83	80	70.9
	Min.	44	42	43	48	52	52	60	49	42	36	48	42	39	35	34	36	42	45	40	40	40	38	37	41	48	44	44	45	55	60	49	44.2
Odebolt	Max.	80	75	77	79	75	75	78	68	68	79	80	73	54	67	75	60	63	70	75	85	82	87	85	89	75	62	77	75	80	85	82	75.0
	Min.	41	42	45	41	52	49	47	48	38	34	55	43	..	32	36	47	47	42	43	42	49	62	49	44	50	43	40	48	52	46	59	45.5
Ogden	Max.	74	72	74	77	78	74	80	65	66	69	76	71	50	62	70	63	62	68	73	80	81	85	76	85	69	70	75	74	76	74	75	72.4
	Min.	43	42	44	46	53	48	48	45	36	33	48	39	35	30	39	46	45	46	49	44	52	61	44	59	57	49	41	52	52	48	52	46.0
Olin	Max.	72	70	74	76	78	78	73	68	62	60	78	69	55	55	60	56	64	78	70	78	80	85	75	80	79	67	70	76	75	64	66	70.7
	Min.	47	44	45	50	58	58	59	50	42	38	46	49	42	40	33	42	47	46	47	47	48	60	53	42	63	52	52	43	55	54	42	48.2
Omaha, N	Max	75	72	74	67	68	71	78	66	66	76	80	64	52	68	65	57	60	69	74	78	79	86	76	88	64	65	71	70	74	80	74	71.2
	Min.	49	52	52	57	57	55	54	52	46	41	61	46	40	38	51	51	49	51	51	54	61	65	57	54	50	48	49	55	62	59	63	52.8
Onawa	Max.	77	75	77	73	68	78	78	70	70	82	80	73	55	75	70	60	66	76	80	84	79	87	86	88	78	69	77	75	80	82	80	75.7
	Min.	43	45	47	55	54	48	54	50	48	42	56	47	36	35	44	50	48	44	46	48	54	63	52	50	50	45	44	53	62	50	62	49.2
Osage	Max	76	75	76	78	79	69	78	63	57	65	76	67	50	56	65	55	65	65	71	81	83	87	74	60	65	66	75	72	79	77	78	70.4
	Min.	42	40	42	47	54	54	51	47	42	35	47	42	38	35	31	44	42	46	40	48	52	63	54	42	51	45	42	45	54	49	49	45.6
Osceola	Max.	72	70	74	76	76	69	76	62	65	73	79	53	51	68	67	60	58	68	73	79	80	81	74	87	75	87	74	70	65	72	75	71.8
	Min.	48	46	47	49	55	54	56	49	44	40	45	52	40	31	37	50	49	46	46	49	55	60	61	48	54	48	46	45	52	56	48.6
Oskaloosa	Max.	72	72	76	77	80	72	75	68	64	67	79	70	53	60	68	60	59	66	69	78	83	84	73	83	78	67	71	70	68	69	74	71.1
	Min.	45	46	48	53	57	57	60	51	44	39	51	53	41	38	36	47	48	46	45	47	49	61	59	48	64	49	45	45	59	53	48	49.4
Ottumwa	Max.	80	78	81	80	84	75	75	68	66	71	80	69	57	62	73	58	64	69	74	84	84	87	69	87	76	68	80	72	70	75	80	74.1
	Min.	54	52	48	53	58	57	60	51	45	41	50	51	42	39	38	42	46	42	47	49	51	61	61	50	64	52	42	48	50	55	48	49.9
Pacific J'n	Max.	77	73	77	70	71	73	80	66	67	77	80	70	54	67	62	60	60	70	75	78	82	34	78	88	82	68	72	73	75	73	76	72.9
	Min.	42	49	50	53	54	49	50	47	41	41	56	45	39	32	44	50	47	44	47	48	54	60	57	50	60	46	43	52	59	51	60	49.0
Perry	Max.	73	72	76	79	80	75	83	65	66	74	81	70	52	64	73	62	64	69	74	82	83	87	74	89	78	67	76	70	74	76	79	73.8
	Min.	47	45	49	50	57	53	49	50	43	38	52	45	40	36	38	49	48	47	44	45	50	62	52	47	58	47	43	51	59	50	55	48.4
Plover	Max.	75	73	77	80	78	72	73	65	65	70	80	64	55	64	74	63	65	64	70	76	84	90	77	78	62	65	74	73	79	76	80	72.6
	Min.	44	42	43	46	48	49	46	50	88	35	50	48	35	33	35	47	45	46	56	45	50	58	48	44	44	42	39	50	55	47	55	45.6
Pocah'tus	Max.	77	73	77	80	78	72	80	65	65	71	80	76	51	62	75	60	65	68	70	81	80	89	77	83	65	65	75	70	77	77	78	73.0
	Min.	43	44	45	48	56	53	50	49	39	36	51	43	37	34	38	49	46	46	44	46	53	58	50	44	51	44	44	50	46	46	56	46.4
Primghar	Max.	75	70	72	77	68	68	74	60	62	68	63	57	47	62	70	56	62	83	70	77	79	86	66	78	59	62	73	71	77	78	78	69.8
	Min.	44	44	46	46	61	48	55	44	34	35	39	36	33	31	39	47	43	41	44	47	53	57	50	45	45	42	43	46	53	56	58	45.8
Red Oak	Max.	73	69	73	72	70	72	76	63	65	73	74	70	53	62	68	62	58	67	71	75	77	79	75	84	77	65	70	69	71	78	75	70.5
	Min.	47	51	53	57	58	55	53	50	47	43	53	47	40	40	47	52	56	45	47	51	53	63	60	53	61	49	47	55	61	54	62	52.1
Ridgeway	Max.	80	80	84	88	82	78	86	70	62	74	82	71	60	62	71	71	73	81	85	92	87	93	73	69	70	67	80	75	84	77	86	77.2
	Min.	46	44	44	48	58	56	55	50	41	37	49	44	40	37	35	38	43	45	44	53	57	62	54	46	54	47	44	49	57	51	50	47.7
Rockw'l C	Max.	73	73	74	80	78	75	83	79	60	65	70	68	51	68	76	66	65	70	72	82	85	88	75	70	68	68	75	73	78	85	82	75.4
	Min.	47	44	49	47	55	51	50	48	39	45	50	43	37	33	38	40	46	43	51	45	50	53	48	45	45	43	43	49	56	50	48	46.1
Sac City	Max.	75	72	75	78	77	72	80	67	66	72	79	73	52	63	72	57	62	67	74	80	80	86	79	84	74	66	74	72	78	79	80	73.1
	Min.	44	44	45	46	54	50	49	49	39	38	52	43	36	34	37	47	46	45	45	47	50	61	49	44	50	45	44	49	57	49	58	46.6
St. Cha'les	Max.	71	69	74	77	77	71	78	66	65	72	78	69	50	71	71	62	58	66	72	80	78	82	74	85	82	64	71	67	68	73	72	71.1
	Min.	49	47	49	52	56	56	55	48	44	41	55	45	40	37	43	43	49	48	47	48	54	62	55	50	62	47	46	51	60	52	53	49.8
Sibley	Max.	77	72	75	77	67	72	74	67	64	65	76	56	47	63	71	50	64	67	72	81	78	86	69	66	48	65	74	68	77	79	77	69.2
	Min.	42	42	44	47	5	51	50	45	38	33	37	39	35	33	36	45	44	40	42	43	47	53	50	45	44	41	38	46	53	44	51	43.5
Sigourn'y	Max.	78	80	82	80	82	76	75	65	66	71	77	64	53	82	74	55	66	68	72	84	85	82	70	85	79	83	82	86	68	75	81	75.0
	Min.	44	44	46	49	50	58	60	47	44	39	51	46	41	37	36	45	46	46	45	48	53	51	58	45	64	42	43	46	58	54	45	48.1
Sioux C'y.	Max.	74	71	75	73	66	71	72	67	67	76	76	57	51	67	67	57	65	70	73	79	79	88	67	82	58	64	72	70	79	79	79	70.7
	Min.	45	48	51	57	54	51	56	50	43	45	54	42	38	37	47	52	46	48	45	45	57	62	50	53	48	46	46	54	60	49	63	49.7
Sioux C'r.	Max.	79	73	76	77	67	71	72	68	66	72	74	65	50	65	73	56	63	67	72	80	79	86	70	79	62	62	72	71	79	80	79	71.1
	Min.	45	44	39	47	54	48	53	44	38	37	53	40	35	32	38	49	45	43	45	48	49	58	51	46	46	42	42	44	54	48	58	45.6
Stockport	Max.	72	71	77	75	78	79	92	64	61	71	79	76	56	61	72	60	60	69	69	76	80	82	73	81	76	68	71	74	72	68	75	72.2
	Min.	46	48	46	53	58	58	61	51	44	42	49	50	44	42	38	48	49	49	48	51	56	64	61	52	66	55	48	50	60	60	49	51.4
Storm L.	Max.	74	70	73	75	71	70	74	66	65	68	76	58	50	63	69	52	51	65	71	78	75	84	60	77	53	64	70	68	77	75	75	68.8
	Min.	40	43	46	48	52	49	50	48	39	37	43	42	34	35	40	46	45	45	43	45	54	59	49	44	50	43	45	50	55	45	50	45.6
Stuart	Max.	74	70	75	77	77	75	80	71	69	74	78	75	52	66	66	64	62	69	72	81	82	82	83	88	87	68	75	75	74	78	77	74.1
	Min.	45	42	45	47	52	49	48	45	40	37	52	41	36	39	37	47	45	45	44	45	53	39	70	44	57	42	41	45	55	48	51	46.6
Thurman	Max.	75	72	74	68	71	68	77	68	68	78	79	74	55	69	63	63	63	73	77	79	82	86	79	89	79	67	75	75	72	82	75	73.4
	Min.	43	49	65	56	56	50	47	48	44	41	58	46	39	35	48	51	47	42	44	48	52	61	59	54	59	48	42	54	59	50	61	50.2
Tipton	Max.	64	65	72	70	72	72	67	67	56	60	71	70	..	..	..	..	65	73	76	84	85	88	75	82	78	68	76	75	68	73	79	72.3
	Min.	48	49	48	51	52	58	60	51	44	40	49	50	43	40	38	39	45	49	51	52	57	62	58	49	65	54	46	51	59	57	46	50.4
Toledo	Max.	75	74	78	79	79	72	79	69	63	65	75	72	50	58	65	67	62	68	71	80	81	86	75	84	78	66	71	73	72	72	75	71.9
	Min.	43	43	45	50	55	55	59	50	44	35	49	45	40	38	34	45	46	45	45	46	50	61	53	44	62	49	43	45	56	52	46	47.5
Vinton	Max.	75	73	76	78	78	76	75	72	64	65	79	74	51	56	64	60	63	71	73	81	81	87	80	81	79	67	73	71	71	71	75	72.3
	Min.	49	44	45	52	56	57	59	51	44	37	49	46	41	38	33	45	46	48	44	51	51	63	53	42	62	50	44	48	56	54	46	48.5
Washi'ton	Max.	74	72	79	78	80	77	73	63	65	66	80	69	55	59	66	53	62	69	72	81	83	85	70	83	77	66	72	74	66	70	75	71.4
	Min.	47	45	46	51	57	57	60	48	44	39	49	48	43	40	41	46	46	48	45	49	53	61	53	49	65	53	49	49	58	54	46	49.6
Waterloo	Max.	75	74	78	77	79	74	77	56	63	66	82	55	53	57	63	52	65	71	74	81	84	89	62	80	71	66	73	72	72	73	77	70.1
	Min.	47	43	45	49	55	54	59	50	44	38	38	45	39	36	33	42	46	46	43	48	49	63	57	43	51	48	44	46	52	55	48	46.9
Waukee	Max	85	72	76	79	80	74	83	67	68	80	80	68	53	67	74	64	67	70	80	87	82	84	74	90	78	68	80	72	70	75	78	75.0
	Min.	52	45	48	55	56	54	52	49	44	38	52	45	39	35	41	41	47	47	45	47	54	62	56	49	62	48	44	48	59	52	55	49.1
Waverly	Max.	74	73	70	79	80	73	78	65	61	63	77	69	52	57	62	57	61	68	72	80	82	87	78	76	66	65	72	72	72	71	74	70.5
	Min.	46	46	47	56	56	56	60	50	46	37	54	49	39	36	32	42	45	48	45	48	49	64	55	45	60	48	43	46	56	54	50	48.6
W. Bend	Max.	74	72	75	79	78	74	78	68	64	69	77	61	52	62	70	61	65	67	70	82	80	86	72	72	67	66	72	71	78	76	80	71.5
	Min.	45	44	45	48	55	53	48	48	40	34	51	42	37	33	34	46	44	47	42	45	52	61	48	43	47	43	41	50	53	50	54	46.0
Whitten	Max.	74	74	77	89	80	77	78	68	62	70	66	5.	50	60	68	67	62	67	73	83	83	89	80	83	77	66	75	74	75	75	79	72.9
	Min.	44	44	45	49	56	52	58	47	41	34	42	47	37	34	34	44	45	47	43	46	52	60	49	53	60	45	42	45	52	52	49	46.7
Wilton J.	Max.	74	72	79	76	83	77	75	67	67	65	78	71	60	58	65	60	66	74	72	82	84	87	71	84	82	66	74	79	72	68	77	73.1
	Min.	43	46	47	50	51	57	61	49	43	38	43	42	44	39	33	44	44	46	49	51	50	61	61	44	64	54	42	48	52	57	43	49.1
W'int'rset	Max.	75	71	74	77	77	72	71	80	68	70	70	58	65	72	70	64	66	75	84	90	85	78	85	77	..	67	75	74	70	77	..	73.6
	Min.	46	44	42	50	55	51	54	48	49	50	39	43	45	38	39	47	42	41	41	50	10	55	45	59	..	45	41	48	58	47	..	47.8
Zearing	Max.	76	71	73	76	77	75	78	68	65	65	77	73	48	58	66	50	62	69	70	79	80	85	72	83	79	64	72	69	72	71	74	71.2
	Min.	43	44	45	49	56	54	53	48	43	34	49	43	38	35	35	44	44	47	45	45	53	60	50	42	59	46	42	50	56	52	49	46.9

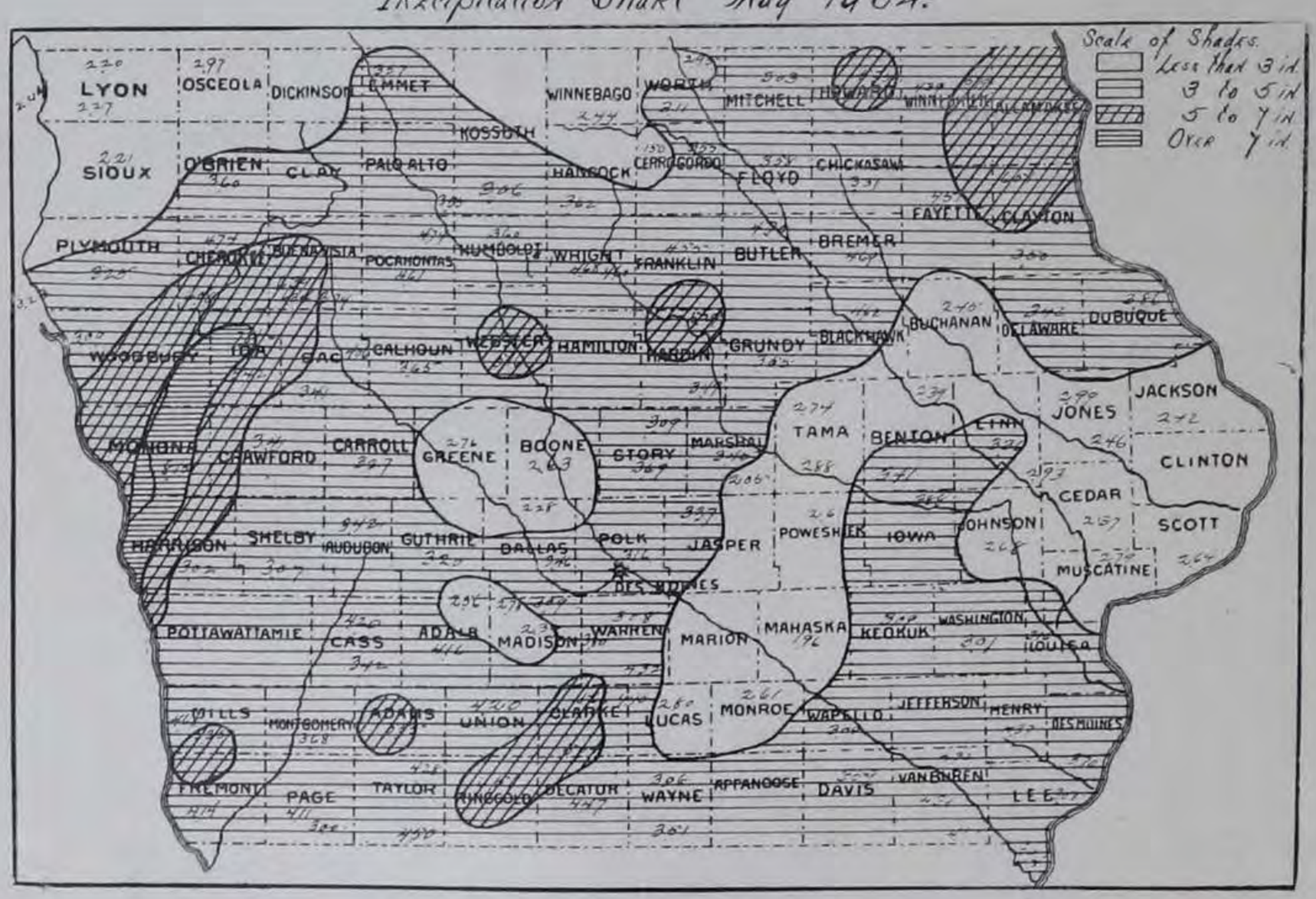
DAILY AND MONTHLY PRECIPITATION FOR MAY, 1904.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
...m		....	...	.17		....	..	.73	...	...	....	.64	T	....	....	.17	.52		..	..	....	...	....	.25	1.07	.52	....	.11	.22	...	.	4.20
...da	....	....	....	....	.09	..	.30	.04	.28	T		T	.38	....	....	T	.17	....	....	....	....	....	.03	.40	....	.50	....	...	....	.42	....	2.61
...gona	..	....	....	....	T	....	....	....	....	....	....	..	....	....	....	.20	.28	..	....	....	....	....	.02	.10	2.25	.21	....	...	....	....	....	3.06
...erton	....		..	T	.07	.10	.34	.42	T	..	....	.31	.08	....	....	.32	.11		....	....	....	T	..	T	.52	.63	....	.05	.56	....	....	3.51
...a.	..	....	....	....	1.98	....	01	....	....	..	....	.01	.03	....	....	1.00	.31		....	....	....	.02	.18	1.15	1.70	....	....	....	....	....	....	6.39
...a [near]	..	....	....	....	1.68	....	....	....	....	....	....	.03	....		....	1.20	.31	....	....	..	....	.02	.18	1.86	1.05		....		....	..	6.84
...ana	....	....	....	....	T	....	1.37	1.07	T		....	.69	.03	....	..	.10	.04	....	....	..	....	..	T	T	.20	.34	....	T	.04	..	....	3.88
...ies	...	....	.	....	.22	....	.18	.55	T	T	....	.41	T	....	...	.12	.25	....		....	...	....	.05	....	1.65	.19	....	.01	.06	..	....	3.69
...es	....	....			.29		....	1.28	....	....	....	.31	....	...	.20	.27	.15	....	....	..	.	..	....	.10	1.30	..	....	.30	...	....	....	4.20
...antic	....	....	....	T	.02	.07	.82	.35	T	....	....	.03	....	...	.02	.45	.42	....	....	.	...	....	....		.97	.06	....	.21	....	....	..	3.42
...bubon		....	....	....	.02	.07	.82	.35	T	....	....	.03	....	...	.02	.45	.42	....	....	.	...	....	....		.97	.06	....	.21	....	....	..	3.42
...ter	....	....	...	...	..	...	.52	.05	...	....	70		....		.15	.25	..	...	...	..	....	....	....	....	1.10	.60	....	....	....	....	....	3.37
...lford	..		....	.25	T	....		.40	....	....	...	1.00	T		T	.30	.08	....	....	....	T	....	....	.01	1.75	....	....	.07	.52	....	.12	4.50
...knap	....	...	....	..		.24	.18	1.34	....	....	....	.20	.20	....	..	.19	.08	....	....		..	.40	....	....	.16	.16	.10	....	....	.37	.03	....	3.59
...le Plaine	...	....		....	.01	T	.30	.65	....	..	..	1.05	..	....	....	.15	.20	....	..	....	....	....	.03	.05	.47	.35	...	T	.05	.10	....	3.41
...naparte	..	....	....	...		.52	.65	.62	..	....	....	.58	.	..	....	.17	.19	....	....	...		.08		....	.13	.47	...	....	.76	....	...	4.17
...tt	..	..	....	..	.34	.01	.80	T		....	....	T	.04	..	..	.10	.17	..	....	....	....	....	.05	.03	1.87	.21	....		..	..	T	3.62
...ckingham		...	..	....	.04	T	....	.58	T	....	....	.61	...	...	....	.40	.10	....	....	....	....	.10	.06		.30	.55	....	T	....	...	....	2.74
...rlington	....	.	..	....	....	.40	1.10	.54	.04	....	....	.17	.08	....	....	.16	.14	.04	....	....	....	.19	.15	.03	....	.07	....	...	.49	.10	....	3.70
...rroll	....	....	....	T	....		.58		...	....	....	....		T	....	.36	.40	....	....	..		.31	.11	....	.22	1.10	....	.10	.09	...	....	3.27
...dar Rapids	....	....	...	....	T	....	1.16	.34	.52	T	..	....	T	....	....	.20	.35	T	....	....	....	....	T	.40	.65	.30	....	T	....		....	3.36
...ariton	....	....	....	....	.10	T	.32	.48	T	....	..	....	T	....	....	.20	.35	T	....	....	....	....	T	.40	.65	.30	....	T	....		....	2.80
...arles City	..	..	....	.	..	....	T	.91	.10	T	T	...	.10	T	....	...	...	..	..	..	....	....	T	T	1.50	.97	....	....	....	....	....	3.58
...arinda	..	..	....	.22	.18	....	...	.81	...	....	..	.75		..	....	.31	.20	....	....	....	....	T	....	....	.05	.36	.88	....	T	.24	.11	....	4.11
...ar Lake	..	....	....	....	.75		T	.25	T	....	....	T	T	....	..	T		....	....	....	..	....	....	T	.30	.20	T	....	....	....	....	....	1.50
...nton	....	....	....	....	....	.09	1.27	.18	.04	....	....	.54	.09	....	...	....	T	....	....	....	..	....	....	....	....	.01	....	....	.28	....	....	2.10
...llege Springs	....	...	....	.36	.10		...	.38	....	....	...	.75	....	...	.01		T	....	....	....	....	....	....	....	51	.45	....	.14	.30	....	T	3.00
...lumbus Junct'n	....	..	....	..	T	.60	.45	.63	....	..	....	.35	.15	....		.07	.08	.07	.03	....	..	T	T	08	T	.15	....	..	.46	.03	....	3.16
...rning	....		.	.27	.04	....	....	.87	....	....	....	.95	T	...	T	.25	.13	....	....	....	T	....	....	.41	1.09	1.09	....	.19	.26	..	....	5.55
...rydon	....	...	....	.01	....	.03	.38	.41	....	....	....	.35	.13	...	....	.19	.50	....	....	....	....	....	....	.06	.31	.37	....	....	.32	....	....	3.06
...sco	....	...	....		....	.60	.50	1.00	....	...	....	.15	....	....	....	....	....	....	....	....	....	.25	1.00	1.25	.60	....	....	....	....	....	....	5.35
...mberland	..	....	....	T	....	....	.40	.70	..	....	....	.71	....	....	T	T							T	.02	1.20	....	....	.41	....	....	....	3.42
...venport	..	....	....	....	.01	.46	.87	.28	.06	....	....	.38	.12	....	....	T	T	T	..	..	....	....	....	.54	.02	.01	.12	....	T	.28	.08	....	2.64
...corah	....	....	....	..	T	.20	T	.66	..	....	T	.54	....	..	..	....	..	....	....	....	....	....	....	1.65	1.26	.34	....	....	....	....	..	5.19
...laware	..	....		....	T	....	.57	.82	....	....	.05	1.02	.02			....	..	....	....	....	....	.03	.13	....	.45	.33	....	....	....	....	....	3.42
...nison	...	....	....	....	.09	....	....	.08	....			T	T	..	.05	.78	.38	....	....	....	T	....	.12	....	1.54	.18	....	.08	.11	....	..	3.41
...s Moines	.	....	....	....	.03	T	...	.53	T	..	....	.75	T	....	...	.02	.18	T	..	....	T	....	T	T	1.26	.19	....	.05	.12	T	...	3.16
...Soto	....	....	...	....	T	....		.64	....	....	....	.64	.02	....	.	03	.15	.05	....	....	..	....	T		1.17	.11	....	.11	.17	....	....	3.09
...ws	....		....	....	.13	....	.22	.75	....	....	....	.04	....	....		T	.51	....	....	....	....	T	.14	.22	1.92	.67	....	....	....	....	..	4.60
...buque	....	....	...	...	T	T	.58	.58	T	T	....	.61	.12	....	....	....	T	T	....	..	....	1.13	.16	T	.53	.15	....	T	T	....	....	3.86
...rlham	....	....	...	T	T				..	....		.95	T	..	T	T	.23	T	....	....	....		....	....	.88	.24	....	.11	.37	....	....	2.78
...kader	..	....	....	....	T		.25	1.25	....	....	....	.61	....	..	....	....	....	....	....	....	....	T	T	.07	1.32	....	....	..	....	....	....	3.50
...therville		..	....		T	1.50	T	T	T	T	....	....	.20	T	....		.74	....	....	....	....	T	T	.05	.60	.48	....	....	T	....	....	3.57
...orence	.	..		..	.27	..	....	.31	....	....	....	....	.01	....	.15	.24	....	..	....	....	....	.04	.88	2.45	.35	..	....	....	..	....	4.68
...rest City	....	....	....	....	T	.05	...	.06	....	.	....	...	T	T	....	....	.12	....	....	....	.	....	....	1.00	1.21	....	....	....	T	....	....	2.44
...rt Dodge	..			....			....	.59	....	....	....	....	.04	T	....	....	.36	.02	....	....	....	....	.02	.18	2.60	1.35	....	....	....	....	....	5.16
...rt Madison	....	....	..	....	T	.96	1.34	...	T	....	....	T	..	....	...	.43	T	....	....	..	....	....	....	.14	...	T	....	T	....	.58	.13	....	3.58
...alva	....	.	....	....	3.05	.02	....	....	....	..	..	T	.01	..	...	1.22	.11	...	....	....	....	..	.22	.70	2.11	37	....	T	....	....	....	7.81
...lman		....	....	....	T	T	T	.24	T	....	...	.37	T	....	....	.06	.25	T	....	....	....	....	T	.03	.53	.57	....	T	T	T	....	2.05
...enwood	..	....	....	T	T	..	2.65	T	....	..	....	....	T	....	T	1.25	T	..	..	....	....	....	T	....	1.15	....	....	.30	T	....	....	5.35
...rand Meadow	....	....	....	....	T	....	.05	.90	.05	....	.07	.77	....	.03	....	..	....	....	....	....	....	....	....	.13	2.74	1.90	....	....	....	..	....	6.51
...reene	...	....	....	....	.13		....	1.13	.03	....	..	.07	....	....	....	....	....	....	....	....	....	....	....	1.00	1.84	.37	....	....	....	....	....	4.70
...reenfield		....	....	T	.15		T	.77	....	....	....	1.07	T	T	T	.15	.20	T	....	T	T	....	....	.02	1.00	.42	..	.16	.21	..	....	4.16
...rinnell	....	....		....	.05	....	.07	.40	.20	....	..	.70	....	....	....	.37	....	....	....	....	....	....	....	.02	.80	....	..	T	....	....	....	2.61
...rundy Center	....	....		...	T	....	....	.67		....	....	.64	....	....	....	.11	.63	....	....	....	....	....	.12	T	.69	.55	....	....	.14	....	....	3.55
...uthrie Center	..	....	..	....	.08	....	.11	.80	....	....	..	.38	..	..	....	.04	.11	.02	....	....	....	....	....	.06	1.35	.10	....	.12	....	..	....	3.20
...ampton	....	....	....	....	.04	....	.85	..	.04	..	....	.06	..	..	....	.50		.03	....	....	....	....	.20	1.80	1.03	...	....	....	....	....	....	4.55
...anlontown	....	....	....	....	.34	.01	.29	.07	.06	....	....	T	T	....	...	....	....	....	....	....	.01	.03	....	.23	1.66	.25	....	....	....	....	....	2.95
...arlan	.	....		....	.15	.02	.12	....	.17			.01	T	...	,05	93	.23	..	....	....	T	....	T	....	1.03	.15	....	.21	T	....	....	3.07
...opeville	..	.		.11	T		..	.55	....	....	....	1.37	....	....	....	.22	.31	.04	....	....	.01	....	..	.42	1.35	.25	....	.08	.33	....	....	5.14
...umboldt	....	....	....	....	....	....	....	T	....	....	....	....	..	....	....	.20	.66	....	..	..	....	....	....	.96	1.31	.47	..	....	....	....	..	3.60
...la Grove	....	....	....	....	1.70	..	..	..	....	....	....	....	....	....	T	1.10	.45	....	....	....	....	....	.12	.05	2.00		....	..	....	..	....	5.42
...dependence		....	....	..	T		.10	.60	....	...		.65	....	....	..	...		....	....		....	.05	.05		.80	.20	....	....	....	....	....	2.45
...dianola	....		..	T	.01			.56	T	..		.57	T	....	....	.05	.22	T	....	....	T		T	....	1.22	.20	....	.12	.13	..	....	3.08
...wood		....	..	....	....	.11	....	....		....	....	.25	....	....	....	98	....	..	..	....		35	....	.30	.35	....	..	..		..	..	2.27
...wa City	....	....	....	....	T	.05	.62	.08	.52	....	..	....	.76	T	....	..	.16	....	T	....	....	....	....	T	.02	.35	....	....	T	.12	....	2.68
...wa Falls	....	....		..	T	T	....	.74	.02	T	..	..	.18	T	..	....	.62	T	T	....	....	....	....	.16	2.05	1.52	....	....	T	T	....	5.29
...fferson	....	....	..	....	..	....	1.35	.	...	..	....	.05	....	....	....	....	.20	....	....	....	..	....	.15	.03	.95	....	....	.03	....	....	....	2.76
...eokuk	....	....		..	.01	.90	.85	.74	.13	....	....	.02	.07	....	....	.20	.13	....	....	....	..	.08	T	.08	T	.12	.	T	.41	.20	....	3.94
...eosauqua		....	....		...	T	.53	.15	.48	T	....	....	1.00	....	..	....	.35	.08	.01	..	..	....	.09	.11	T	.60	....	....	T	.99	..	4.39
...acona	....	....	....	..	.05	....	..	.75	.	....	....	1.00	....	....	..	.15	.17	.08	....	..	....	....	.07	.10	.82	.78	..	.08	.27	....	....	4.32
...arrabee	....	....	....	....	1.16	....	..	....	....	....	....	.12	.07	T	....	1.12	.58	....	....	..	....	.02	....	.81	.86	....	....	....	....	....	....	4.74
...e Claire	....	....	....	..	..	..	....	1.01	.41	.14	.09	....	.40	....	..	....	.02	T	....	....	....	....	....	T	.02	.09	.11	....	..	.42	....	2.71
...eMars	....	....		.	..	..	....	....	....	....	....	.25	T	....	....	1.10	....	....	....	....	....	T	T		1.70	.20	....	....	....	....	....	3.25
...enox		...	....	.37	..	....	T	.48	..	....	....	.70	....	..	....	.22	.09	....	....	..	.	....	....	.70	.51	.64	....	.10	.46	....	....	4.28
...eon	.	..		..	.16	.05	....	.99	....	..	..	.88	.06	..	....	.29	.27	....	....	....	....	..	....	....	.95	30	....	.10	.40	.02	....	4.47
...ogan	1.00	.03	.32	....	....	....	....	....	....	....	....	....	....	..	.43	.82	.11	....	....	..	....	....	....	....	....	....	....	....	....	.31	...	3.02
...aquoketa	....		....	...	..	....	.86	.07	.58	....	....	....	53	....	....			....	....	..	..	....	....	....	T	.27	.05	..	....	.06	..	2.42
...arshalltown	....	....	....	....	T	..	....	.32	.12	....	....	....	.72	T	..	..	.58	.05	....	....	.	....	....	.05	.33	1.20	....	....	.02	.03	....	3.45
...ason City	....		....	....	.04	..	..	.46	....	....	....	T	..	....	....	....		T	....	....	..	....	T	.56	2.08	.41	....	....	....	....	....	3.55
...onticello	T	...	....	T	T	.90	....	..	.61	..	....	....	.75	..	..			....	....	....	..	T	..	....	T	.73	..	....	T	....	....	2.99
...ount Ayr	....	....	....	.40	.02	T	.03	.72	....	....	..	1.21	T	....	..	.25	.25	T	..	....	....	....	....	.20	1.30	1.61	....	05	.47	..	..	6.51
...t. Pleasant	..	....		.04	1.21	.58	.63	.03	....	....	.	.50	.07	T	..	.11	.17	....	....	....	....	....	.05	.20	.05	.22	....	T	.48	.05	...	4.37
...t. Vernon	..	....	....	....	.02	.02	.87	.58	T	....	....	.22	.48	....	..	.05	..	T	....	....	....	....	T	T	.20	46	....	T	.01	.02	....	2.93
...ew Hampton	..	....	...		....	..	.05	.70	....	....	.02	.12	.	....	....	T	....		....	....	....	....	T	.54	1.28	.58	..	.02	....	..	..	3.31
...orthwood	....	....	...	....	.75	....	T	.13	.07	..	T	T	.12	....		T	....		....	..	.	..	..	.27	1.48	.31	..	....	....	....	....	3.11
...debolt	....	....		....	.05	....	....	....	....	....	..	....	....	..	..	1.00	.23	....	....	....		....	.15	.08	1.50	.40	...		....	....	....	3.41
...gden	....	...	....		T		.28	.60		..	..	28	....	....	....	.08	.28	....	....	....	....	....	.06	.04	.73	28	....	....	..	..	..	2.63
...lin	....	....	...	....	T	33	....	.70	.01	T	....	1.00	....	..	....	.40	.81	.06	....	..	....	T	....	.01	.40	....	..	T	T	.01	....	2.46
...maha, Neb		....	....	.10	.36	T	T	.22	....	....	....	.05	T	....	.40	.81	.06	....	....	..	....	....	.03	T	2.35	....	....	.45	.03		T	4.86
...nawa	....	....	....	.01	1.92	....	....	.10	....	....	....	T	.10	....	.75	1.69	.20	....	....	....	....	....	15	.15	2.80	.25	....	.03	....	....	....	8.15
...sage	...	....	..	....	....	.10	.03	....	.52	T	..	....	T	T	T	....	....	....	....	....	....	.36	T	.51	1.26	.25	....	....	....	....	....	3.03
...sceola	....	....		....	....	.05	....	.15	.81	.04	....	..	.06	2.00	T		.05	.10	.05	T	....	....	....	....	.25	.20	1.60	....		....	.30	....	5.66
...skaloosa	..	....	....	....	.03	.02	T	.24	T	....		.45	.05	....	....	.03	.12	..	..	....	T	..	T	.03	.62	.07	T	T	.30	..	..	1.96
...ttumwa	....	....	....		....	.40	....	.98	..	....		.32	....	....	....	....	.24	....	..	....	....	.14	.13	....	.20	.08	....	....	.60	....	..	3.09
...acific Junction		....	...	.15	.12	.07	.91	.45	....	..	....	.20	T	..	.12	.59	.02	....			....	..	..	.07	1 51	....	....	.44	....	....	02	4.68
...erry	....		..	...	T	....	T	.67	....	..	T	.14	....	....	....	.05	.15	.	....	....	....	....	T	....	1 22	...	..	.05	....	....	....	2.28
...lover	....	.	....		....	....	....		....	....	....	....	....	....	....	.20	.80	..	....	....	....	....	....	1.60	1.90	.24	....	..	....	....	....	4.74
...ocahontas	...	....	....		.01	....	.	T	....	....	..	....	....	....	..	.12	....	....	....	....	....	....	....	.03	.87	3.16	.42	....	..	....	....	4.61
...rimghar				1.25	..	....	....	....	....	....	....	....	.10	....	....	1.00	....	....	....	..	....	....	....	....	.35	.80	..	.10	....	....	....	....	3.60
...ed Oak	....	....	..	.20	T	.04	.06	.75	....	....	....	.70	T	....	.04	.32	.07	....	....	....	T	....	....	.09	.72	.36		.27	.06	....	T	3.68
...idgeway	.	....	....	....	.08	..	.83	.71	.02	..	.05	.14	.01	.06	..	....	T	.01	....		.	.36	....	36	1.37	.40	....	....	.01	....	....	4.39
...ockwell City	....	...	....	....	....	....	.30	....	....	....	....	T	T	...	....	.35	.15	....	....	....	....	....	.2	....	1.50	1.20	....	T	....	....	....	3.65
...uthven	....	..	....		1.10	....	....	....	....	....	....	....	....	....	....	.90	....	....	..	....	....	....	....	.90	.60	....	....	....	....	....	....	3.50
...ac City	....	....	....		....	T	.44	T	....	....	....	....	T	....	..	.78	.14	..	....	....	....	....	20	.02	1 72	.76	....	T	....	..	..	4.06
...ibley	...	....	....	....	.28	.62	.01		....	....	..	.02	.35	.05	....	.04	.86	....	....	....	....	.02	....	.01	.29	.38	..	...	....		.04	2.97
...t. Charles	....	..	...	.	01	T	....	.66	...	....	....	.67	.02	...	....	.07	.25	.02	....	....		....	T	T	1.51	.25	....	....	.32	.02	....	3.80

DAILY AND MONTHLY PRECIPITATION FOR MAY, 1904—CONTINUED.

STATIONS.	DAY OF MONTH																														TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sigourney	....	....	...	.		T	1.03	.96	.02	....	....	.39	....	....	....	T	.22			....	..	....	T	..	.21	....	....	T	.26	....	....	
Sioux Center	....	....	..		.12	.03	T	....	....	....	....	.27	.02	....	T	.90	.28	....	....	....	..	.10	....	....	.47	....	..	....	....	....	.02	
Sioux City	....	....	..	.01	.70	....	.01	....	....		.	.04	T	....	.14	.87	.01	....	....		...	T	.15	.05	1.01	.04	....	.04	.	....	T	
Stockport	....	....	..	....	....	.50	.33	.63	.09	....	....	.90	.07	...	...	.15	.17	T	...	....	....	.09	.03	.05	.45	.26	....	T	.6	.02	....	
Storm Lake	....	..	...	....	....	.54	...	....	....	....		..	....	....	....	.40	.23	....	....	....	....	....	.13	.09	1.85	.50	..	....	....	..	....	
Stuart	....	....	....	....	....	....	....	....	....	....	....	.71	...	..	....	.06	.11	...	....	....	....	....	....	....	1.05	.27	....	.13	.23	....	....	
Thurman	..	....	....	.15	.20	T	.38	.06	....	...	....	.62	....		.15	.40	.10	.	....	..	T	...	....	T	.78	.30		.48	.25	....	.27	
Tipton	....	....	....	....	.	....	.67	62	....			.64	.08	....	....		...	..		....	....	....	....		.12	.04	....	...	.15	05	..	
Toledo		....	....	.	T	....	....	.63	....	....	..	.80		....	....	.10	.40	....	....	..	....		T	....	95		....	..	....	..	..	
Vinton	....	....	....	..	T	.18	.05	.70	T		...	.92	.14	....	....	.04	.02	....	....	....	..	....	.03	T	.29	....	..	....	T	....	....	
Washington	..	....	..	....	.05	.50	..	53	....	..	....	.90		...	....	....	.15		....	....	....	....	....	.06		.42		...	.40	....	....	
Washta	....	....	..		1.55					....	....	T	T	....	T	1.43	.25	....	....	....	T	....	.28	.40	2.17	....	....	....	..	....	
Waterloo	.	....	....	....	T	T	...	.72	T	....	.	.50	.16	.01	....	T		T	....	....	....	....	.14	.07	2.31	.71	....	.	T	....	..	
Waukee	..	....		...	.01	....	T	.65		....	...	.60	T	....	....	.07	.14	....	...	....	....	....	T	T	1.14	.36	..	.10	.34	.05	....	
Waverly	....	....	....	.	.01		.14	.85	T	....	..	.46	05	....	..	..	....	..		....	.	.25	.08	.81	1.06	.80	....		.18	....	....	
West Bend	...	..	....	..	T	....	T	...	T		....	.01	.02	....		.16	.50	....	...	...	....	..	03	1.00	1.47	36	..	T	....	..	..	
West Union	....			...	...	....	12	41	T	....	...	59	..	....	....		...	....		....		....	...	1.80	1.59		....	....	....	....	....	
Whitten	....	....	....	....	T	T	.26	.65	T	..	.47	....	T	....	..	....	.74	..	....	....	....		.15	...	.85	.37	....	T	T	....	....	
Wilton Junction	....	....	...	....	....	....	.80	.75	...	....	....	.42	....	....	....	....	....	.28	....	...		..	...		....	22	..	...	.10	.22	...	
Winterset	....	....	...	....	....	....		.52	....	.	....	...	...	....	....	....	....		...	....	....		....	.70		.68	....	16	.26	....	...	
Woodburn	....	....	..	T	.04	T	.18	74		....	....	1.09	T	....		.15	.38	T	....	.	T	T	..	.23	1.03	.40	....	.06	.25	....	....	
Zearing	...		..		....		....	71	...	....	..	.42	...	...	....	.38	.17	..	....	....	....	....	.09		1.16	.16	....		....	....	....	

Precipitation Chart May 1904.



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Orange City ..... H. J. Vande Wan
Pella ..... J. H. Ver Steeg
Pittsburg ..... G. C. Duffield
Portland (Nora Springs, P. O.) ..... Arthur Pickford
Platte (Creston R. D.) ..... M. H. Dibel
Red Oak ..... Hon. C. L. Stratton
Rock Rapids ..... D. E. F. Merrill
Seymour ..... L. B. Sager
Shenandoah ..... Reuben Mullison
State Center ..... E. P. Thompson
Stuart ..... W. W. Bailey
Toledo ..... W. G. Malin
Van Horne ..... Spencer Smith
Waukon R. D ..... T. B. Wiley
Weldon ..... Ed Worden
Winterset ..... H. A. Kinsman
West Branch ..... Wrigley Smith
West Union ..... H. B. Blackman
Wilton ..... Thos. Boot
Wiota ..... I. S. Coomes
Woodward ..... George Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

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IOWA CROP CONDITION, JULY, 1904.

Following is a summary of reports received from correspondents of the State Weather and Crop Service, estimating the condition of the staple farm crops July 1, 1904. The reports generally show that the stand of corn and oats is materially lighter than the average, owing to defective seed; and all crops are several days later than usual, as a result of the late advent of spring. The general condition, however, is several points better than at the corresponding date last year, as will be seen by the figures below:

CONDITION JULY 1, 1904: Corn, 90 per cent; spring wheat, 91; winter wheat, 87; oats, 91; barley, 93; rye, 94; flax, 89; meadows, 90; pastures, 94; potatoes, 101; apples, 85; plums, ? ; grapes, 89.

CONDITION LAST YEAR: Corn, 77 per cent; spring wheat, 88; oats, 87; barley, 89; rye, 98; flax, 85; meadows, 104; pastures, 107; potatoes, 96; apples, 70; plums, 49; grapes, 78.

JUNE WEATHER AND CROPS.

The month of June was cooler than usual, with less than the normal amount of rainfall, and a large percentage of cloudiness in portions of the state. The daily average temperature was 2.5 degrees below normal. The precipitation was quite unequally distributed; the northern section receiving an average of 4.53 inches, the central section 2.74, and the southern section 3.08 inches. The week ending June 6th brought excessive rains in all parts of the state, except portions of the east central district. The wet and cloudy weather of that week caused much delay in the cultivation of corn, and in large portions of the state the fields became weedy and the growth of corn was considerably retarded by cold nights and wet, cloudy weather. The second week was generally very favorable for field work and the growth of crops, the days being bright and warm with ideal conditions for cleaning out the corn fields. The week ending the 20th was also favorable, though the temperature was below normal. There was but little interruption of work, and fair progress was noted in the growth of all crops. From the 20th to the close of the month the average temperature was abnormally low, and there was more than usual cloudiness in the larger part of the state. Despite all drawbacks, however, the corn crop advanced steadily, and at the close of the month the fields were generally clean and the stand was but little below the average of the past fifteen years. The month as a whole was favorable especially for small grain, which headed out about the usual time, though short in straw, giving promise of a much better crop than was harvested in 1902 or 1903. The hay crop was well advanced and fairly good, especially in quality. Potatoes and garden vegetables were usually promising.

NOTES AND COMMENTS.

In a large part of Iowa the crop of cherries has been much larger than usual. The strawberry crop also has been very good, but not up to the standard in flavor. Plums, peaches and blackberries are much below the average in condition. Raspberries and gooseberries, quite fair crops

Under the new drainage law, petitions are being filed in the offices of various county auditors asking for the authorization of drainage ditches to be dug through lands subject to overflow and too wet for cultivation, to promote the public health and welfare of the people. A timely bulletin has been issued by the Iowa Experiment Station at Ames, entitled "Drainage Conditions in Iowa," which will serve as a valuable handbook for farmers, drainage engineers and students. A copy may be secured by addressing a note to Director C. F. Curtiss, Ames, Iowa.

About everything grown in the way of green forage has been tried for filling the silo, and the result of all the experiments is that no crop so well fills the bill, taking ease and economy of handling and value as ensilage, as our common field corn cut when the ears are well glazed. This makes the silo fit into the ordinary farm economy all through the corn belt.—*J. S. Trigg.*

The application of the dynamo to water power gives every waterfall, no matter where located, a money value. Wise men recognizing this fact are picking up all available water powers, for they will all be used in the near future.—*J. S. Trigg.*

FORECASTING THE WEATHER.

The American people like to be humbugged. Next to the gold brick and green goods artist, the long range weather forecaster is the biggest fake on the market. There is not a man living today who can give the slightest clue as to whether next July will be wet or dry, abnormally hot, or unusually cold, and whoever attempts to do so is simply playing on the credulity of the public. The average fakir's long range forecasts consist of a series of violent storms, tornadoes, hot waves, cold spells and hailstorms, which, if one-fourth of them arrived, would make all Iowa a howling wilderness in a short quarter of an hour. Even the milder tempered gentry have the happy faculty of

making such an indefinite forecast that it can not be applied to any locality or any date. There is not a farmer in Iowa who would not be absolutely ruined if he planned his work for one season in accordance with the predictions of these false prophets. He would have to contend with frosts up to the first of June and beginning again in August, floods during the entire season, weather that would scorch vegetation like a blast from a furnace and a sharp cold spell every third day.

To be sure these forecasts hit it once in a while. One who is guessing all the time can not fail occasionally to hit it. His guess is worse than useless if he does not succeed at least every other time and a great many of them do not do this good. Neither of the long range prophets will explain to the scientific world the basis upon which he makes his forecasts, and this refusal of itself would justify the charge of fraud and chicanery if there were no other thing against them.

The officials of the United States Weather Bureau, on the other hand, take the public into their confidence. They openly admit that there is much about the science of forecasting that they do not know and may never learn. They do not claim absolute accuracy for their forecasts but over 80 per cent of them are verified. Predictions are usually made for only thirty-six hours in advance and any one conversant with the facts knows that at present that is as far ahead as our knowledge will warrant any one in predicting. The day may come when scientists may be able to tell something about the coming seasons by reference to the peculiar action of sun spots, but this problem is just being taken up and several years must elapse before anything of moment can be announced. The most these scientists hope to do is to foretell whether a season will be unusually hot, or abnormally cold, whether the rains will be abundant, or drouth prevail. Detailed forecasts for each day, months in advance, will probably never be attempted, as that feature is at present believed to be quite infeasible. In the meantime don't be running after false gods—*Afton, Iowa, Star-Enterprise.*

CULTURE OF FORESTS.

The Pennsylvania Railroad company is engaged in planting locust trees with a view of supplying crossties in the future. Last fall 50,000 trees were planted at Conewago, Pennsylvania, and now as many more are being planted. Next fall, it is said, the company will plant 200,000, and in the following spring 650,000. The forest will cover three square miles, and, it is estimated, will furnish 5,000,000 ties within twenty-five years. This is an excellent work, and is evidence of a wise and farsighted policy. Tree planting is neglected by individuals because forest trees are of slow growth and the benefit or profit is too remote to tempt one to set out forests. But in the case of such a corporation as the Pennsylvania Railroad company the case is different. Such a corporation is supposed to be immortal, and the management, if it is prudent, is always looking to the future. Iron and steel have been tested as substitutes for wooden crossties, but without success. Wood is manifestly the best material for this use, and there is scarcely any use which has caused a more general and deplorable devastation of the forests of the United States as the demand of the railroads. The time is rapidly approaching when the natural supply must fail or become too expensive. Some of the western railroad companies have for some years back been planting trees along their right of way. On the fertile lands of the prairies trees make rapid growth, and, while a sufficient supply can not be produced this way, enough can be grown to make it worth while.

The Pennsylvania company is going about the work in the right way. Large areas of rough land, suitable for the purposes of a forest, can be obtained at a slight cost, and a forest once grown will continue, under proper management, to yield ties and perpetuate itself indefinitely. Careful trimming from the time the young trees begin to grow will train them into proper shape, and thus a single tree will yield more ties than those which have had no pruning. The Pennsylvania company has also selected the very best tree for the purpose. The locust is one of the most rapid-growing of the hardwood trees, and one locust tie will probably outlast a half dozen of oak or chestnut. In fact the locust is regarded as the most durable of all our native woods, and a railroad track laid upon locust ties would be almost as permanent as if the ties were of iron.—*Baltimore Sun.*

CLIMATIC FACTORS IN RAILROAD ENGINEERING.

A thesis on the above subject has been prepared by R. M. Brown as a part of his course in general climatology at Harvard University and has been published in the Journal of Geography for April, 1903. The struggle of railroads against climatic conditions has been recorded so fully during the past century as to become exceedingly instructive, and the influence of the various climatic factors is presented one by one in Mr. Brown's memoir.

As to heavy precipitation he notes that the rainy seasons are often followed by droughts, and this alternation destroys all woodwork either by shrinkage and splintering or by the growth of fungi. Railroad ties decay when there is a good supply of moisture and when the temperature is between 32 degrees and 150 degrees. Data on these points are given for India, South Africa, Central Africa and Central America.

The diseases that are considered peculiar to climate, such as cholera, malarial fevers and yellow fever, offer difficulties that must be overcome. The experiences of numerous large railroad undertakings are mentioned. The droughts that occur in some locations require the building of huge tanks, while in other cases one must go a long distance to obtain pure water. Outdoor work can not well be done in the rainy weather and laborers accustomed to hot dry weather lose many days in the rainy season.

The floods and damages by heavy rains are matters of great importance and "are registered on the books of the construction companies with unceasing regularity. * * * The history of every road that traverses the belt of heavy precipitation is a story of continual struggle against floods." In regions of heavy rainfall land slips are frequent and a long list of these is given by the author

The ballast on the roadbed appropriate to the long, dry season is not appropriate to the heavy rain season. In general, the ballast produces dust haze sufficient to obscure the approaching train; the dust also penetrates the machinery, causing hot axles and other damage. In America and England, under most conditions, stone ballast is the more expensive, but in India the climate reverses this rule.

In regions of moderate precipitation, whether of rain or snow, the length and weight of the freight trains is determined by the weather; thus, on the Pennsylvania railroad west of Pittsburg, the load assigned to an engine is 1750 tons in good weather and 1225 in bad weather. On the Union Pacific road the snow offers great obstacles; about 2 per cent of the entire expense of the road is credited to the removal of snow and repairs of snow sheds. The Iquique railroad of Chili reports increased cost of working during fogs which produce slippery rails.

In regions of light precipitation, or drought, railroad ties decompose; the danger of fire is increased, and burning bridges cause wrecks of trains. In the Arabian deserts the railroad operators suffer comparatively little from disease. On the Transcaspian road the lack of good water brought about

ence. On the Iquique road it is necessary to convey water tanks and in some cases distilled water was carried forty miles mules.

In regions of high altitude the rarefaction of the air causes ich trouble to the operators, but on the other hand the absence germs prevents the decay of organic matter. In the report work on the railroad up the Jungfrau, Doctor Kronecker ted that mountain sickness sets in at altitudes varying with ferent persons, but that it a tacks all persons as soon as they dulge in the least muscular effort above 10,000 feet. Persons good health can stand being passively transported up to 12,- feet without inconvenience; a prolonged sojourn may, how- er, be disastrous. On the Callao, Lima and Oroya railroad any thousands of laborers lost their lives. "So difficult was to work in the rarefied air at high altitudes that riveters did t average a week's work each and many returned on the next ain." On the other hand, in building the Sierra Leone rail- ad the number of deaths and invalids was wonderfully low, t the climate had an enervating effect and there were frequent sences on leave. In the upper portions of the railroads, such the Jungfrau, snow avalanches are a serious obstacle, but ay be avoided by burrowing under or by underground tunnels. any railroads are abandoned during the snow season. Not nly in Switzerland but also in the Rocky Mountain region snow metimes overpowers all human efforts.

In regions of severe winter cold another class of obstacles is iet with, namely, the formation of ice. Although deep and rozen rivers and lakes may be traversed by railroads, yet when ne breakup comes in springtime there is a period when such ransportation must cease and when boats are also impossible. The experiences of the Transsiberian road and the Canadian Pacific are given with some detail. The average number of days during which work is possible on account of the snow and ice and the frozen ground is very limited. At Lake Baikal the soil s unworkable from October to April; at Vladivostock, the num- ber of days when the temperature is below freezing is 150, and, n general, on the Transsiberian railroad the total number of working days in a year is about 100. A general tabulation of he number of working days in each month of the year, for vari- ous portions of the United States, would perhaps elucidate many of the problems relating to the labor question.—*Monthly Weather Review, April, 1903.*

CLIMATOLOGY OF THE MONTH OF JUNE, 1904.

BAROMETER—Mean pressure, 29.96 inches; highest observed, 30 26 inches, at Des Moines and Dubuque on the 26th and 27th; lowest observed. 29.44 inches, at Sioux City on the 3d; range for state, 0.82 inch.

TEMPERATURE—The monthly mean temperature for the state, as shown by records of 114 stations, was 67.1°, which is 2.5° below normal. By sections the mean temperatures were as follows: Northern section, 65.7°, which is 2.6° below normal; central section, 67.5°, which is 2.0° below normal; southern section, 68.2°, which is 3.1° below normal. The highest monthly mean was 70.6° at Monticello; lowest monthly mean, 63.7° at Sibley. The highest temperature reported was 94° at Clinton, Larrabee, Ridgway and Ruthven on the 23d and 24th; lowest temperature reported, 35° at Charles City on the 2d. The average monthly maximum was 88.1°; average monthly minimum, 45.9°. Greatest daily range, 45 at Pocahontas; average of greatest daily ranges, 33.4.

PRECIPITATION—Average precipitation for the state, as shown by records of 126 stations, was 3.45 inches, which is 1.05 inches below normal. The averages by sections were as follows: Northern section, 4 53 inches, which is .15 inch below normal; central section, 2.74 inches, which is 1.56 inches below normal; southern section, 3.08 inches, which is 1.23 inches below normal. The largest amount reported was 8.35 inches at Humboldt; least amount reported, .44 inch, at Gilman. The greatest daily rainfall reported was 3.67 inches at Charles City on the 19th. Average number of days on which .01 of an inch or more was reported, 7.

WIND AND WEATHER—Prevailing direction of the wind, southeast; highest velocity reported, 58 miles per hour, from the northwest, at Sioux City, on the 28th. Average number of clear days, 13; partly cloudy, 10; cloudy, 7.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	29.94	30.23	27	29.56	3
Des Moines	29.98	30.26	26	29.55	3
Dubuque	29.97	30.26	27	29.60	3
Omaha, Neb	29.94	30.26	26	29.46	3
Keokuk	29.95	30.20	26	29.55	3
Sioux City	29.95	30.25	26	29 44	3
Means	29.96	30.26	26-27	29.44	3

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	5.224	25	W	3
Des Moines	5.546	30	SW	23
Dubuque	4.485	34	NW	24
Keokuk	5.033	32	W	5
La Crosse, Wis	4.469	25	W	23
Omaha, Neb	5.264	32	N	29
Sioux City	8.684	58	NW	28

OBSERVERS' NOTES.

ALLERTON—*Rex. Shriver.* An ideal month for all crops; fruit generally good.

ALTA—*David E. Hadden.* June cool, with rainfall about 2 inches below normal of preceding 14 years.

AMANA—*Conrad Schadt.* Month was cool and dry, favorable for small grain, but not so good for corn and grass.

ATLANTIC—*J. W. Love.* Did not have one clear day in June, and nights were cool; severe storm and some hail on the 20th, but not much damage resulted. Crops are doing well.

BONAPARTE—*B. R. Vale.* Rain 4.41 inches, against 2.30 in June, 1903. Up to date we have 1.48 inches in excess of last year, but crops are much better. Month too cool for corn.

BRITT—*Geo. P. Hardwick.* But three clear days in June; corn acreage large, but stand thin. Oats short and thin; meadows and pastures below average; potatoes good.

CARROLL—*Moses Simon.* Lightning struck and burned dwelling of M. Yegge on night of 28th, causing $1,000 damage. No one hurt.

CHARITON—*C. C. Burr.* No floods or severe storms in June; nights abnormally cool.

CLARION—*J. H. DuBois.* Clover in blossom June 11th, strawberries ripe 13th; new potatoes on 18th; oats heading 20th.

FOREST CITY—*J. A. Peters.* Corn varies from four to twenty-four inches high; too cool and cloudy for corn; hay crop good.

GRAND MEADOW—*F. L. Williams.* June dry and cool; all crops except corn look well; potatoes extra good.

GREENFIELD—*J. D. Culver.* Rainfall much less than usual but was well distributed, and none of the crops suffered.

GRINNELL—*A. O. Price.* Rainfall in June 1.22 inches. The least amount in a long period.

GRUNDY CENTER—*E. S King.* All crops were ten days late June 1st, but were up to date on 30th; corn knee high on average and three-fourths laid by; grass short.

HANLONTOWN—*Miss G. M. Pashen.* Corn crop not making good progress; small grain looks well; early potatoes, peas and beens fit for use.

HUMBOLDT—*H. S. Wells.* Rainfall for June 8.35 inches; corn plowing hindered, but the crop is all right where it has been worked; hay crop made.

IDA GROVE—*J. E. Conn.* A fine growing month; small grain looks well; hay crop heavy; good rains, but no bad storms.

INWOOD—*G. M Larsen.* Fair conditions the entire month; nights rather too cool for corn; prospect good for large crop of grain.

JEFFERSON—*Isaac Young.* Hail did some damage on the 19th near Churdan; some windmills damaged; lightning killed some cattle in south part of county.

MONTICELLO—*C. E. Heisey.* June was very dry; only .90 of an inch of rain; showers went around us; grass brown, early potatoes short; corn better than ever before.

MOUNT VERNON—*Rev. J. W. Hubbard.* Temperature and rainfall below normal; hay crop light; small grains promise well; frui's abundant.

OLIN—*Nathan Potter.* Rain only 1.42 inches; cold June weather; a fine month for cultivating corn; all crops normal.

ONAWA—*C. G. Perkins.* Hailstorm on 29th did considerable damage.

OSAGE—*G. D. Pattengill.* On the 18th, from 1:30 to 2:30 P. M , the rainfall was 2.90 inches.

OSKALOOSA—*Jos. Boyd.* June was cool and free from severe storms.

POCAHONTAS—*F. E. Hronek.* On night of 28th a hailstorm caused much damage in a strip 3 to 5 miles wide and 8 to 10 long. Damage to corn 10 to 40 per cent.

RIDGEWAY—*Arthur Betts.* A very pretty June; 315 hours of sunshine; terperature normal; vegetation has made rapid growth and is of good color; 16 days calm.

WAUKEE—*E. J. Leonard.* June remarkably free from severe storms; small fruit abundant; crops doing well.

ERRATA IN MAY REVIEW.

CRESCO—Minimum temperature recorded on the 15th, page 7, should have been 10th and 15th.

DENISON—Maximum temperature recorded on the 22d, page 8, should have been 22d and 24th.

NEW HAMPTON—Mean temperature recorded 56.9 on page 7, should have been 57.0. Mean maximum temperature recorded 69 8 on page 10, should have been 69.9. Number of days missing omitted on page 7, should have been (c).

OSCEOLA—Mean temperature recorded 60.0 on page 8, should have been 59.9. Mean minimum temperature recorded 48.6 on page 10, should have been 48.5.

ROCKWELL CITY—Total precipitation recorded 3.65 inches on pages 8 and 11, should have been 3.70 inches.

CLIMATOLOGICAL DATA FOR JUNE, 1904.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (melted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	65.6	-1.1	85	19	43	7	29	3.71	-.68	1.58	....	11	15	9	6	SE	1, 19, 24, 25
Alta	Buena Vista	1,513	11	64.8	-3.7	86	23	43	6	26	3.63	-2.03	1.04	....	10	12	.4	4	S	2, 13, 18, 20, 24, 25, 28, 29
Alta (near)	Buena Vista	.....	....	....	.....	.....	.....	.....	.....		3.20	.....	.92	....	9	....	....	....	.....	
Britt	Hancock	1,236	5	66.4	-1.4	87	18, 23	42	7	34	4.69	† .21	1.35		14	3	21	6	S	2, 20, 24, 25
Charles City	Floyd	1,012	11	65.2	-3.1	86	18, 23	35	2	31	5.96	† .85	3.67	....	10	18	0	12	S	2, 19, 24, 29
Clear Lake	Cerro Gordo	1,241	....	68.4		88	16	46	7	35	5 30		2.00	..	6	3	26	1	SE	
Cresco	Howard	.....	....	65 4	†3.9	90	20	46	25	35	2.45	-2.51	.85	....	6	15	9	6	SE	
Decorah	Winneshiek	857	...	65 7	-2.1	87	23	44	8	34	2.34	-1.92	1. 0		4	..	....	....		
Dows	Wright	1,142	....	65.0	-2.7	86	23	42	7	31	5.52	† .44	1.45	....	10	20	4	6	SE	2, 20, 24
Elkader	Clayton	727	21	67.2	-2 3	89	23	45	8	39	2.75	-1.4	1.35	....	6	15	14	1	SE	3, 18, 23, 29
Estherville	Emmet	1,298	7	63.8	-4.8	87	23	42	7	33	5.27	†2.18	1.00	....	14	15	3	12	SE	20, 30
Florence	Wright	1,220	8	....	.....	.....	.....	.....	.....	.....	7.59	.....	2.25	..	11	10	20	0	W	1, 20, 23, 29
Forest City	Winnebago	1,226	8	65.4	-2.7	85	3	43	7	32	4.09	- .97	1.77	....	10	14	3	13	S	
Grand Meadow	Clayton	1,180	11	65.2	-1.8	84	18	46	7	30	1,99	-3.27	.90	....	7	5	15	10	SE	23, 25, 29
Greene	Butler	924	5	66 6	-2.8	88	23	44	7	35	4.30	† .23	.69	....	13	7	7	16	W	
Hampton	Franklin	1,155	12	66.2	-2.0	87	23	45	7	38	4.73	- .50	1.22	....	10	6	20	4	SE	
Hanlontown	Worth	.....	....	63.8	.....	84	23	44	7	31	5.16	.....	1.55	.	12	9	6	5	S, NW	18, 19, 20, 25, 29
Humboldt	Humboldt	1,095	10	66 6	-3.4	88	23	44	7	33	8.35	†3.68	2.08	....	12	19	7	4	SE	2, 3. 20, 23, 24, 25, 29
Inwood	Lyon	.....	....	65.5	....	89	19	45	6	30	4.08	.....	1.10	....	7	20	2	8	S	
Larrabee	Cherokee	1,366	11	67.2	-1.7	94	24	42	7	44	5.39	- .51	1.75	...	9	8	17	5	SE	
Mason City	Cerro Gordo	1,132	.	66.3	-1.4	86	23	46	7	30	6.60	- .44	2.10	....	11	7	19	4	NW	2, 4, 18, 19, 20, 24, 25, 29
New Hampton (a)	Chickasaw	1,169	...	64.0	-4.6	85	23	42	7	32	3.35	-1.13	.97	....	10	11	6	13	NW	
Northwood	Worth	1,222	....	64.8	-2.0	83	23	44	7	27	6.16	†1.35	1.83	....	11	14	13	3	SE, NW	2, 4, 20, 22, 23, 24
Osage	Mitchell	1,184	11	65 4	-1.0	86	14, 23	43	8	38	6.10	†1.58	3.20	....	8	6	13	11	S	2, 18, 23, 25
Pocahontas	Pocahontas	.....		66.2	.....	87	23	44	7	45	4.84	.	1.61	....	11	15	10	5	SE	24, 25, 29
Plover	Pocahontas	1,190	5	65.6	-3.0	88	23	44	7	31	4.42	† .39	1.25	..	9	20	4	6	S	1, 10, 13, 18, 19 20, 24, 28, 29
Ridgeway	Winneshiek	1,215	....	68.7	-0.5	94	23	48	7	30	2.98	-1.54	.99	....	13	15	14	1	S	2, 3, 13, 18, 20 23, 24, 25, 29
Ruthven	Palo Alto	.....	....	68.2	.....	94	23	42	7	37	3.88	.....	1.00	.	....	....	...	..	SE	
Sheldon	O'Brien	1,422	....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	...	...	...	...	.....	
Sibley	Osceola	1,512	....	63.7	-3.4	86	19, 23	39	7	33	4.96	† .83	1.66	....	14	13	2	15	S	29
Sioux Center	Sioux	.....	....	65.4	-3.6	89	19, 23	40	6	31	4.57	† .27	1.52	....	8	14	6	10	S	20, 24, 25, 29
Storm Lake	Buena Vista	1,440	7	64.5	-3.5	85	23	43	7	27	3 66	-1.22	.96	..	11	15	3	12	SE	
Washta	Cherokee	1,157	....	.....	.....	.....	.....	.....	.....	.....	4.55	† .14	1.70	....	7	16	10	4	S	
Waverly	Bremer	9,426	6	65.8	-3.0	83	23	46	7	30	3.43	-1.05	.67	....	12	10	14	6	....	2, 3, 13, 18, 19 20, 24, 25, 29
West Bend	Palo Alto	1,197	8	65.3	-2.5	87	19	42	7	31	6.93	†3.12	1.91	....	10	....		....	S	20, 23, 25, 29
West Union	Fayette	.....	...	.....	....	.....	.....	.....	.....	.....	1.60	. .	.41	...	7	13	0	17	SW	
Average		.....	..	65 7	-2.6	87.3	.....	43.4	.....		33 3 4 53	- .15	.....	....	10	13	10	7	SE	

SOUTHERN SECTION.

Afton	Union	1,212	7	69.5	-2.1	90	19, 20, 23	49	6, 7	38	2.55	-1.75	.83	....	8	5	21	4	SW	
Albia	Monroe	957		67.4	...	87	23	48	7	32	1.67	....	.58	....	8	13	9	8	SE	
Allerton	Wayne	.....	....	68.4	.....	86	20	48	7, 14	33	2.36	.....	1.10	....	8	20	8	2	SW	2, 3, 15, 18, 20, 24
Atlantic	Cass	1,164	11	67 1	-2 6	92	18	43	14	40	3.84	-1.84	1.00	....	8	0	9	21	S	1, 2, 20, 23, 24, 28, 29
Bedford	Taylor	.....	....	67.0		86	19	47	14, 27	32	2.71	.....	.92	.	9	11	7	12	SE	
Belknap	Davis	877	7	68.4	-2.6	85	22, 24	50	14	32	4.80	† .72	2.05	....	8	16	6	8	S	
Bonaparte	Van Buren	.....	10	67.4	-5.0	88	20	48	7	31	4.41	† .17	1.28	.	10		....	....	.....	
Burlington	Des Moines	541	....	68 4	.....	90	19, 23, 25	52	22	30	4.05	.....	1.80	....	11	14	12	4	SW	
Chariton	Page	1,042	7	67.2	-3.2	86	20	47	14	33	3.40	- .87	1.00	....	6	11	11	8	SE	20
College Springs	Page	.....	10	69.5	-2.0	90	19	49	6	35	5.04	† .61	1.25	....	14	16	11	3	SE	
Columbus Jct	Louisa	596	....	68 3	....	87	19, 20, 23, 24	48	7	29	3.81	.....	1.64	....	10	19	9	2	SE	2, 3, 24
Corning	Adams	1,127	10	66.7	-3.7	83	23	43	14	34	2.83	-1.36	.60	....	9	9	16	5	SE	1, 3. 20, 24, 28
Corydon	Wayne	992	9	68.0	-2.8	85	18, 19	49	7, 14	32	1.73	-2.60	.58	....	7	9	10	11	SE	20, 24
Clarinda	Page	1,069	....	68.1	-3.7	91	23	43	14	42	4 86	- .25	.95		10	12	6	12	SE	
Cumberland	Cass	.....	....	.....	....	....	.....	.....	.....		3.71	.....	1.22	....	5	21	5	4	S	
Earlham (e)	Madison	.....	....	64.1	.....	85	23	42	22	33	2.41	.....	.85	...	8	....	....	....	.....	1, 2, 15, 20, 23, 24, 28, 29
Fort Madison	Lee	516	51	....	.....	.....	.....	.....	.....	.....	3.70	- .64	.87	....	8	2	18	10	SW	1, 3, 4, 13, 20 22, 24, 29, 30
Glenwood	Mills	....	15	68 6	-5.0	88	23	50	7, 21	31	3.03	- .88	1.80	....	5	2	24	4	.....	
Greenfield	Adair	.....	11	67.7	-2.9	90	19	47	7	31	2 61	-2 50	.62	..	12	16	8	6	SE, S	1, 2, 3, 4, 16, 17, 19, 22, 23, 24
Hopeville	Clarke	.....	11	67.9	-2.6	87	23	49	7	33	2.28	-2.07	.63		10	2	20	8	.....	
Indianola (a)	Warren	969	11	68.3	-2 1	89	23	50	7, 14	32	1.73	-2.35	.43	....	11	....	....	....	.....	1, 2, 4, 15
Keokuk	Lee	619	31	69.7	-2.8	86	23	54	7	25	3.62	- .92	1.34	....	9	11	16	3	NE	3, 4, 13, 18, 20, 24, 29, 30
Keosauqua	Van Buren	664	10	69.0	-4.0	87	13, 23, 24	50	7, 9, 10, 22	31	4.85	† .79	1.20	....	11	2	16	12	.....	
Lacona	Warren	.....	.....	.....	.....	...	.....	.....	.....	.....	2.00	.....	.97	.	10	7	15	8	.....	
Lenox	Taylor	1,250	7	67.0	-3.2	86	20	48	6, 7	30	3.45	- .68	.80	....	11	18	6	6	S	1, 2, 3, 20, 24
Leon	Decatur	1,120	....	68.4	....	85	19, 23	50	7	31	3.43	.....	1.26	....	13	20	6	4	.....	
Massena	Cass	.....	....	68.4	.....	91	23	45	14	41	2.97	.....	1.02	....	12	18	8	4	S	3, 20
Mount Ayr	Ringgold	1,236	6	69.0	-1.7	89	23	50	6, 7	34	2.94	-1.50	.75	....	12	7	12	11	E	
Mount Pleasant	Henry	729	20	69.2	-1.9	90	20, 24	49	7	32	3.26	- .95	1.13	....	11	14	13	3	SW	2, 24
Omaha, Neb	Douglas	1,113	32	69.1	-2.4	90	23	51	6	29	3.11	-2.56	1.09	....	11	5	12	13	SE	1, 2, 13, 21, 23, 24, 25, 29
Osceola	Clarke	1,130	6	68.3	-2.4	89	10	49	7	37	2.79	-1.49	1.10	....	10	16	7	7	SE	
Oskaloosa	Mahaska	843	18	67.8	-2.1	88	23	48	14, 22	33	1.49	-2 64	.75	....	6	15	3	12	SW	
Ottumwa	Wapello	649	8	69.2	-3.2	88	23	51	1, 7	36	2 76	-1.03	1.10	....	7	8	16	6	E	
Pacific Junction	Mills	960	...	68.3	.....	90	23	47	6, 7, 15	39	2.72	.....	1 29	....	8	9	18	3	S	
Red Oak	Montgomery	1,033	....	69.0	-3.6	85	18, 23	49	27	26	3.10	-2.06	.92	....	9	3	23	4	SE	1, 3, 15, 17, 20, 24, 28
St. Charles	Madison	1,070	....	67 7	....	86	20	51	7	28	2.09	.....	.54	....	12	12	15	3	SE	
Sigourney	Keokuk	887	....	68.7	-3.6	92	20	42	7	39	1.53	-2.16	.64	..	4	19	8	3	SE	13, 20, 24
Stockport	Van Buren	.....	...	69.4	.....	84	12, 13, 20, 23	54	7	29	6.27	.....	1.46	....	13	8	10	12	SE	2, 13, 20, 24
Thurman	Fremont	.....	...	68 8	-3.4	91	23	46	14	36	4.08	-3.46	1.17	...	10	8	11	11	SW	
Wapello (a)	Louisa	588	....	68.2	-3.3	86	23, 26	51	9	28	2.47	- .45	.90	....	5	....	....	....	SE	
Washington (a)	Washington	769	20	68.2	-5.0	88	23	51	7, 8, 14, 22	29	1.22	-2 02	.38	....	6	....	....	....	SE	
Woodburn	Clarke	961	...	.....	.....	.....	.....	.....	.....	.....	1.61	.....	.53	..	6	19	5	6	NW	23
Average		.....	....	68 2	-3.1	87.9	.....	48.4	.....		32.8	3.08	-1.33	.....	....	7	11	12	7	SE	
Average for state		.....	....	67.1	-2.5	88.1	.....	45.9	.....		33.4	3.45	-1.05	.....	....	7	13	10	7	SE	

CLIMATOLOGICAL DATA FOR JUNE, 1904—Continued.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				SKY.					DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days	Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.	
Amana	Iowa	721	25	67.8	-1.9	89	23	47	7,8	34	.59	-3.90	.19	....	5	12	14	4	SE	2, 18, 20, 22, 24
Ames	Story	926	20	67 4	-2.6	88	23	46	22	36	3.45	-1.30	1.91	....	10	19	8	3	SE	18, 19, 29
Audubon	Audubon	1,301	8	65.6	-3.2	89	19,23	41	14	43	4.02	† .25	1.36	....	10	11	9	10	SE	1, 3, 12, 20, 24
Baxter	Jasper	998	....	67.2		87	20, 23	46	7	33	1.25	.....	.40	....	7	11	9	10	SE	
Buckingham	Iowa	.....	....	.....		.....	.....	.....	.....		.80		.20	..	5	10	20	0	.....	
Carroll	Carroll	1,265	12	65.6	-3.9	90	23	45	6,7	39	5.61	† .78	2.12	....	12	19	1	10	.....	1, 3, 12, 18, 19, 24, 2[illegible]
Cedar Rapids	Linn	733	19	68.9	-1.8	90	23	47	7,8	32	2.64	-1.23	1.20	....	7	12	13	5	NE, E	
Clinton	Clinton	609	34	69.2	-0.7	94	23	45	7	37	1.64	-3.04	.74	....	6	13	12	5	.....	3, 15, 2[illegible], 25,
Davenport	Scott	606	31	69.0	-1.9	88	23	49	1	23	2.23	-1.11	.58	..	6	11	13	6	E	2, 3, 4, 20, 24, 29
Delaware	Delaware	1,083	11	66.0	-2.6	86	23	45	7	34	2.50	-1.78	1.02	..	8	9	17	4	S	
Denison	Crawford	1,180	8	66 2	-2.7	88	23	45	7,14	33	4.02	† .44	1.86	....	9	17	9	4	N	12, 18, 23 29
Des Moines	Polk	861	24	68 4	-1.7	87	23	52	6	27	2.08	-3.23	1.03	....	10	3	20	7	SE	1, 2, 3, 18, 20, 23, 24, 29
De Soto	Dallas	866	...	67.2	.....	86	23	49	14, 22	31	2.14	.....	.91	....	[illegible]	24	3	3	SE	
Dubuque	Dubuque	655	29	67.5	-2.0	87	3	47	7	31	.74	-4.46	.58	....	5	14	10	6	SE	3, 20, 24, 25, 29, 30
Fort Dodge	Webster	1,126	....	66.0	.....	87	23	46	7	31	7.73	.....	2 60	...	11	....	....	....	SE	
Galva (a)	Ida	1,290	8	66.6	-2 4	93	21	44	6,7	35	3.57	- .66	1.53	..	8	....	....	.	S	
Gilman	Marshall	1,052	..	....	.....	.....	.....	....	.....	.....	.44	....	.20	....	5	11	14	5	SE, SW	
Grinnell (near)	Poweshiek	1,023	9	68.0	.....	89	20, 22	49	23	31	1.22	.....	.42	....	6	8	17	5	SE	2, 18, 19, 20 24, 25, 28, 30
Grundy Center	Grundy	976	11	65.6	-3.5	87	23	41	7	34	1.89	-3.95	.54	....	8	12	11	7	E, S	3, 4, 19, 24, 29
Guthrie Center	Guthrie	1,077	6	67.6	-2.0	90	19	46	7,14	37	5.06	†1.00	1.15	..	10	12	14	4	SE	1, 2, 15, 20, 23
Harlan	Shelby	1,192	....	67.4	...	13	19	44	14	38	4.2	-1.90	1.11		9	6	14	10	SE	1, 13, 23, 24, 29
Ida Grove	Ida	1,220	....	68 4	.....	91	22	47	6	30	2.57	.....	1.05		5	18	8	4	S	23
Independence	Buchanan	921	38	65.2	-3.9	85	23	44	7,14	36	2.05	-2.98	.60	....	6	19	10	1	S	3, 18, 20
Iowa City	Johnson	685	43	68.8	-0.5	90	24	48	7	35	2.14	-2.49	1.08	..	8	11	6	13	S	
Iowa Falls	Hardin	1,176	90	65 4	-3.1	88	23	43	7	36	5.45	† .63	1.92	..	8	15	8	7	NE, E, SE, NW	2, 14, 19, 20, 24, 29, 30
Jefferson	Greene	1,052	....	.....	.....	.....	.....	.....	.....	.....	3.94	.....	1.55		9	5	11	14	SE	1, 19, 28, 29
LeClaire	Scott	576	....	.....	.....	.....	.....	.....	.....	....	1.02	.	.61	..	7	....	....		S	
Logan	Harrison	928	35	68.9	-1.2	93	23	48	7	34	3 12	-2.58	1.01	....	7	14	7	9	SE	
Maquoketa	Jackson	688	9	66.2	-3 8	87	13, 19, 23, 24	43	1, 17	40	.99	-4.73	.49	....	6	19	7	4	SW	
Marshalltown	Marshall	947	9	67 6	-1.8	91	23	45	7	34	.85	-4.09	.28	....	9	11	10	9	SE	
Monticello	Jones	925	48	70.6	†2.1	88	15, 16, 18	46	5	33	90	-3.59	.50	....	2	20	9	1	SW	
Mt. Vernon	Linn	847	35	68.6	-2.6	92	12, 19	42	6	37	2.7	+1.04	1.10	....	8	15	8	7	NW	18, 20
Montezuma	Poweshiek	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.18	.....	.62	..	4	....		....	.....	24
Odebolt	Sac	1,356	5	67.4	-3.4	92	23	45	6,7	36	4.07	- 24	1.45	....	6	17	7	6	.....	
Ogden	Boone	1,088	8	66 4	-3.2	86	23	47	6	33	4.06	- .82	1.73	....	11	21	6	3	SE	
Olin (i)	Jones	760	....	68 6	-1.0	88	24, 25	45	1	33	1.42	-2.10	1.00	....	4	....	....	....	.....	18, 20
Onawa	Monona	1,053	....	69.4	.....	92	23	48	6	31	8.02	†2 82	3.15	....	8	22	....	8	SE	1, 3, 18 21, 25, 29
Perry (a)	Dallas	975	....	68.4		89	18, 23	49	6, 14	33	3.22	.....	1.29	....	10	6	19	5	.....	
Rockwell City	Calhoun	.....	....	67.4	-1 5	89	23	46	6	32	5.35	† .85	1.60	....	11	20	4	6	..	
Sac City	Sac	1,278	22	66.4	-2.2	89	23	46	6,7	30	4 77	- .12	1 68	....	7	16	7	7	S	1, 3, 19, 24, 29
Sioux City	Woodbury	1,165	13	67.0	-3.3	88	23	49	6	27	3.46	- .34	1.89	....	10	8	13	9	S	3, 12, 18, 24, 25, 29
Stuart	Guthrie	1,316	5	67.3	-3.5	93	19, 23	44	6	39	2.59	-1.38	1.32	..	8	....	....	....	E	
Tipton	Cedar	807	....	69.8	.....	89	20	48	7	30	3.55	.....	2.66	....	6	18	11	1	SW	3
Toledo	Tama	856	8	66.0	-4.7	87	23	43	7	36	1.30	-2.30	.40	....	5	9	13	8	SE	
Vinton (a)	Benton	810	12	66.4	-3.3	88	23	45	7,8	36	.57	-3.41	.24	....	6	24	3	3	SE	
Waterloo	Black Hawk	862	15	66.8	-1.9	89	23	45	7	34	1.43	-2.53	.36	....	8	....	....	....	E	24
Waukee	Dallas	1,039	....	69.6	.....	91	23	50	6	37	2.67	.....	1.10	....	9	9	19	2	S	1, 3, 15, 18, 24
Wilton Junction	Muscatine	683	7	68.7	-2.3	90	20, 24	46	8	36	1 40	-1.88	.42	....	6	16	8	6	NW	13
Whitten (f)	Hardin	1,036	..	68.6	†0.3	90	18	47	22	38	...	.....		....	....	....	....	....	.....	.....
Zearing	Story	.....	....	66.0	.....	86	23	46	7	32	1.79	.. .	.85	....	6	17	8	5	SE	3, 19, 20, 24, 29
Average		...	....	67.5	-2.0	89.1	.....	64.0	.....		34.0	2.74	-1.56		.....	5	14	10	6	SE	.....

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Above normal. ‡Received too late to be computed with means. a, One day missing; b, two days, etc. §Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JUNE, 1904.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		MEAN.
Afton	Max..	80	82	75	77	69	78	87	84	81	84	86	86	79	85	77	83	88	89	90	90	80	86	90	86	77	79	80	80	78	78	..	82 1
	Min ..	60	57	62	59	54	49	49	56	54	54	56	57	59	50	58	52	56	62	62	64	55	53	64	64	62	51	57	56	57	54	..	56.9
Albia	Max..	76	81	77	76	69	75	73	78	79	82	79	85	81	81	67	79	83	83	85	85	77	82	87	79	78	72	75	75	79	78	..	78.5
	Min ..	50	60	65	63	58	54	48	53	52	54	56	51	60	49	55	51	57	58	63	65	58	51	62	66	64	55	51	51	52	54	..	56.2
Algona	Max..	70	68	74	75	69	66	72	77	78	82	82	79	72	80	76	80	83	83	85	81	72	76	83	82	76	72	78	73	75	73	..	76.4
	Min ..	56	57	56	59	59	46	48	52	53	53	58	58	55	51	53	52	55	63	53	62	53	49	63	64	62	50	50	51	55	52	..	54.8
Allerton	Max..	77	85	74	75	71	75	80	79	78	82	82	85	83	81	72	78	81	84	85	86	77	81	84	80	79	73	77	78	80	80	..	79.4
	Min ..	60	60	63	62	56	53	48	56	54	54	55	56	60	48	58	50	56	66	62	64	59	53	64	64	63	54	56	58	56	52	..	57.3
Alta	Max..	66	66	66	70	58	67	72	78	78	78	75	76	68	76	75	80	81	78	84	76	72	80	86	80	70	74	74	72	77	74	..	74.3
	Min ..	59	56	59	57	48	43	46	55	55	54	57	62	53	52	56	56	58	63	61	60	52	54	66	64	54	49	52	55	52	53	..	56.4
Amana	Max..	74	82	83	78	73	72	74	78	81	80	82	84	82	82	75	80	84	87	84	87	74	81	89	82	81	72	79	76	80	78	..	79.8
	Min ..	52	60	65	64	59	56	47	47	48	50	56	57	54	48	53	50	53	62	59	62	56	49	59	67	65	55	49	55	59	55	..	55.7
Ames	Max..	73	76	76	75	68	71	75	81	82	84	81	83	75	82	76	82	83	87	83	78	76	82	88	83	76	78	78	75	77	75	..	78.6
	Min ..	56	60	64	62	54	50	50	55	51	52	59	58	58	48	56	50	54	59	60	65	57	46	61	64	64	56	49	57	57	56	..	56 3
Atlantic	Max..	74	75	70	75	67	77	85	83	80	84	83	85	73	83	80	83	82	92	90	87	80	82	89	80	77	78	77	75	79	80	..	80.2
	Min ..	61	57	60	57	52	48	46	56	51	50	55	51	55	43	57	47	55	55	58	60	55	49	66	63	62	47	46	55	50	54	.	54.0
Audubon	Max..	74	76	70	74	63	70	78	81	79	82	82	82	71	84	76	82	84	88	89	82	76	82	89	81	76	75	78	78	77	77	..	78.5
	Min ..	60	57	61	55	50	44	52	54	52	47	52	50	54	41	52	48	52	55	58	62	54	46	63	63	50	46	45	57	51	52	..	52.8
Baxter	Max..	73	78	76	75	72	74	76	78	80	83	80	85	79	80	70	80	82	85	83	87	77	80	87	81	77	77	76	75	79	80	..	78.8
	Min ..	54	53	65	60	54	51	46	51	50	58	54	56	62	47	55	50	53	60	70	63	54	48	63	63	64	50	50	59	55	53	..	55.5
Bedford	Max..	75	78	71	75	67	76	82	81	77	80	81	83	77	84	76	82	84	88	89	82	76	82	89	81	76	74	75	74	78	78	..	77.9
	Min ..	60	56	61	59	54	49	50	60	57	53	57	55	57	47	60	53	57	62	62	62	54	53	67	63	62	52	47	54	49	50	..	56.1
Belknap	Max..	70	79	75	75	72	70	72	73	76	77	77	80	82	82	71	77	77	82	82	80	82	85	84	85	80	70	70	75	80	75	..	77.2
	Min ..	60	65	66	64	60	60	58	60	60	57	55	60	60	50	52	55	58	58	65	68	60	55	67	63	63	58	58	60	59	57	..	59.7
Bonapar'e	Max..	73	78	82	76	73	74	73	76	76	79	79	81	85	79	67	76	80	78	83	88	75	79	85	84	81	71	72	73	79	77	..	77.7
	Min ..	53	63	64	62	61	55	48	56	51	51	55	56	54	51	53	55	53	63	60	61	59	51	58	64	63	57	57	59	60	58	..	57.0
Britt	Max..	70	72	76	74	65	63	75	80	81	83	85	82	75	80	74	84	85	87	86	80	76	82	87	84	73	80	81	76	78	72	..	78.2
	Min ..	65	57	57	57	50	47	42	52	55	56	56	56	55	46	54	53	55	61	56	61	58	54	62	59	60	47	52	51	52	50	..	54.5
Burling'n	Max..	74	78	82	75	71	70	73	74	78	79	80	81	86	78	74	79	88	79	90	89	77	82	90	88	82	72	76	82	77	..	..	79.8
	Min ..	65	62	63	63	58	60	61	54	55	54	59	61	56	55	56	59	58	64	60	64	61	52	63	66	64	66	60	60	63	65	..	56.9
Carroll	Max..	68	75	70	72	61	65	76	80	79	82	80	84	72	86	77	81	83	84	87	82	79	22	90	83	75	77	76	73	78	77	..	77.8
	Min ..	58	56	57	56	50	45	45	53	52	49	54	55	55	47	56	50	55	57	60	61	52	48	64	62	61	47	49	52	50	50	..	53 5
Cedar R	Max..	76	83	83	79	71	70	75	79	82	82	82	83	83	84	73	82	86	87	83	81	75	83	90	81	81	73	80	77	80	77	..	80.1
	Min ..	52	54	59	65	62	56	47	47	53	55	58	60	58	52	55	53	56	61	65	66	59	53	62	66	67	57	54	60	61	58	..	57.7
Chariton	Max.	76	80	73	75	72	74	77	78	78	82	80	83	80	80	74	78	83	84	84	86	75	80	85	81	76	70	74	75	78	78	..	78.3
	Min ..	58	59	63	61	54	51	49	55	51	53	55	55	58	47	56	50	55	64	60	62	59	50	62	63	63	54	54	55	54	53	..	56.1
Charles C.	Max.	71	77	78	76	67	62	69	76	80	80	79	83	68	81	73	81	83	86	84	87	74	81	89	82	81	72	79	76	80	78	..	79.8
	Min ..	52	35	58	62	54	51	59	44	48	49	54	52	57	44	53	48	53	58	59	63	55	47	60	62	65	50	53	52	56	55	..	55.7
Clarinda	Max..	78	78	70	76	67	80	85	86	79	83	85	86	76	85	80	81	79	85	89	84	80	83	91	86	76	75	75	77	80	82	..	80.5
	Min ..	60	55	60	58	50	48	50	53	56	55	57	56	58	43	55	52	57	63	63	63	57	54	60	63	62	53	49	52	55	55	..	55.7
Clear L.	Max.	78	73	74	75	70	62	74	85	87	85	83	82	82	83	78	84	78	88	82	82	83	80	83	80	86	79	80	77	80	77	..	79.7
	Min ..	56	59	61	61	54	48	46	50	52	51	58	61	64	56	55	53	60	63	60	60	65	53	60	65	64	54	60	54	54	54	..	57.0
Clinton	Max..	81	79	90	82	77	68	76	80	85	82	84	86	90	84	80	81	86	90	90	93	79	84	94	93	81	75	81	80	84	82	..	82.9
	Min ..	46	52	62	59	62	57	45	47	48	53	53	53	59	53	52	52	51	55	62	67	53	50	64	66	64	52	61	50	60	53	..	55.4
Col. Sprgs	Max..	76	78	72	72	68	82	86	82	78	83	85	87	82	86	82	83	84	85	90	87	82	83	89	80	77	76	76	76	80	80	..	81.1
	Min ..	59	59	60	54	54	49	51	52	58	58	60	60	60	51	62	55	60	64	66	65	53	57	68	65	68	60	53	54	54	54	..	57.9
Colum. J.	Max..	77	81	84	77	74	72	74	72	81	80	82	84	86	80	71	80	83	85	87	87	75	81	87	87	71	73	78	75	81	73	..	79 3
	Min ..	51	59	63	62	62	55	48	51	52	54	56	58	57	52	55	53	54	62	60	64	59	52	59	65	64	56	55	66	60	55	..	57 3
Corning	Max..	75	76	72	73	66	76	79	80	78	81	80	82	72	79	74	78	79	83	80	86	86	75	81	88	85	82	73	76	74	80	78	..	79.1
	Min ..	60	55	61	59	56	49	48	58	56	54	57	53	57	43	49	51	56	64	63	63	54	54	66	64	62	52	46	53	53	52	..	55.6
Corydon	Max.	76	80	73	74	70	75	81	77	77	81	82	84	82	80	73	77	80	85	85	83	79	79	83	80	78	72	73	74	79	80	..	78.4
	Min ..	61	62	61	62	56	52	49	56	55	53	51	57	61	49	58	50	57	66	63	66	60	51	69	66	64	54	54	57	57	54	..	57.7
Cresco	Max..	75	70	75	74	69	57	59	70	80	80	79	82	57	61	49	58	50	57	66	63	66	60	68	64	62	54	54	75	73	75	..	76.8
	Min ..	50	55	52	53	55	49	52	60	60	54	55	55	50	51	50	49	54	56	60	62	58	54	50	68	46	52	53	52	56	52	..	54 1
Davenpo't	Max..	74	77	84	77	73	68	73	77	82	78	80	82	85	81	75	79	83	80	86	86	75	81	88	85	82	73	76	74	80	78	..	79.1
	Min ..	49	55	63	64	63	56	50	54	56	58	56	58	63	54	59	55	55	63	64	67	59	56	63	66	64	57	59	59	63	59	..	58.9
Decorah	Max..	72	73	77	76	67	61	63	78	82	81	79	83	68	78	72	78	82	82	82	83	74	79	87	77	73	72	79	73	77	82	..	76.3
	Min ..	53	57	61	65	57	52	50	44	48	47	55	53	57	47	57	47	53	58	62	61	58	48	60	63	64	52	50	53	60	61	..	55.1
Delaware	Max..	73	74	78	76	75	64	68	75	79	77	79	84	78	81	75	79	83	83	87	83	74	80	86	82	79	69	79	75	80	74	..	77.5
	Min ..	46	4	60	61	58	52	45	49	54	54	3	56	56	48	55	52	49	57	63	61	53	51	57	62	64	52	50	54	58	53	..	54 6
Denison	Max..	71	71	72	72	66	73	75	79	78	80	79	81	69	78	75	80	81	84	86	79	75	80	88	80	73	75	75	74	76	75	..	76.7
	Min ..	60	58	59	66	49	47	45	55	57	54	55	56	58	45	58	52	58	55	62	62	55	53	67	63	61	49	50	57	52	54	..	55 6
Des M.	Max..	73	77	72	75	66	75	73	77	77	82	81	84	74	79	69	78	81	83	84	86	76	80	87	78	76	76	74	75	79	76	..	77.4
	Min ..	59	61	66	63	57	52	53	58	57	58	60	58	62	56	60	54	59	64	64	65	60	53	65	66	64	55	54	60	58	57	..	59.3
De Soto	Max..	72	77	72	75	68	75	73	76	77	80	78	82	79	79	77	78	80	83	84	84	77	80	83	80	80	73	74	75	76	76	..	77.5
	Min .	59	58	64	60	55	51	52	57	52	52	56	56	59	49	56	51	55	60	61	65	58	49	65	64	65	52	51	60	57	57	..	56.9
Dows	Max..	70	72	73	73	68	64	73	77	78	78	79	78	81	74	79	75	78	81	83	80	76	70	78	86	80	74	75	75	72	75	..	75.6
	Min ..	54	59	60	60	51	47	42	51	50	54	56	55	57	50	54	50	55	60	60	59	54	48	61	60	63	50	52	53	54	52	..	54.4
Dubuque	Max..	73	73	81	77	71	62	68	77	83	78	80	82	80	80	74	78	83	84	84	86	75	80	87	85	82	71	78	72	78	75	..	77 7
	Min ..	54	59	60	60	51	47	42	51	50	54	56	55	57	50	54	50	55	60	60	59	54	48	61	60	63	50	52	53	54	52	..	54.4
Earlham	Max.	78	76	70	73	..	..	..	..	..	79	79	82	73	78	73	76	79	81	84	84	75	80	85	81	76	74	74	76	78	78	..	78.8
	Min .	58	52	60	55	..	..	..	..	..	45	48	49	52	41	49	45	49	50	55	60	44	42	62	58	61	47	42	53	49	52	..	51.0
Elkader	Max..	75	79	83	76	74	63	70	83	86	83	82	88	78	85	75	83	86	87	86	87	76	84	89	85	80	79	83	78	81	77	..	80.6
	Min ..	48	57	61	62	57	53	48	45	48	48	54	54	57	46	55	47	48	55	63	60	54	48	57	63	66	50	50	52	57	53	..	53 9
Esthervil.	Max..	66	67	70	73	65	62	71	77	78	80	75	72	71	78	72	74	82	79	84	80	73	79	85	82	73	75	76	71	72	73	..	74.3
	Min ..	57	55	54	55	49	45	42	50	50	49	55	59	55	51	53	50	56	59	56	62	50	49	54	65	60	46	52	53	54	53	..	53.3
Forest C'y	Max..	71	67	74	74	67	61	73	76	81	82	81	82	73	80	73	81	81	85	82	84	80	73	79	85	82	73	75	80	82	82	75	..	77.0
	Min ..	53	55	57	60	50	48	43	47	51	53	57	57	57	48	54	51	55	62	51	61	52	48	61	63	62	49	53	50	54	51	..	53.8
Ft. Dodge	Max..	71	70	72	61	62	68	73	79	80	83	79	82	59	82	70	79	78	83	85	88	82	83	89	80	75	76	77	78	80	77	..	76 3
	Min ..	56	58	60	61	53	49	46	53	53	53	5	82	77	75	78	79	85	87	86	87	82	82	84	89	93	78	78	80	81	78	..	79.3
Galva	Max..	70	71	72	74	60	68	76	87	80	84	52	54	..	53	47	54	52	54	57	53	63	50	49	66	63	63	45	46	53	54	..	53.8
	Min ..	59	57	64	58	48	44	44	54	53	52	54	56	58	76	78	79	78	76	84	85	84	75	79	88	84	79	72	72	77	77	.78	..	77.7
Glenw'd	Max..	74	73	72	72	66	76	8	80	76	78	79	82	58	82	67	78	79	78	76	84	85	84	75	79	88	84	79	72	72	75	59	..	58.2
	Min ..	59	56	55	65	52	48	50	58	58	60	60	58	58	61	62	56	60	62	65	65	52	58	69	62	60	54	50	58	56	59	..	58.7
Grand M.	Max..	77	74	79	75	64	65	65	76	80	78	79	82	67	78	71	79	81	84	83	82	72	79	78	88	77	69	79	75	76	73	..	76.0
	Min ..	49	47	59	61	54	54	46	47	53	56	55	57	55	56	50	51	49	53	63	61	62	53	49	64	61	62	49	53	52	55	..	51.5
Greene	Max..	75	76	79	76	69	62	72	81	83	82	84	86	74	81	78	83	83	84	82	78	74	83	88	82	74	79	81	77	79	78	..	78.6
	Min ..	52	57	62	62	53	51	44	46	48	52	54	54	56	49	55	53	53	59	59	63	55	47	60	62	65	78	78	77	77	78	78	..	51.5
Greenfi'ld	Max..	78	78	71	76	67	75	78	78	79	83	82	76	80	79	78	84	85	88	90	77	80	89	88	62	85	78	78	77	77	78	78	..	78.4
	Min ..	58	57	60	58	52	4	47	53	50	52	58	57	49	59	54	58	60	62	64	55	54	64	60	62	68	50	48	48	55	55	50	..	77.7
Grinnell(near	Max..	72	81	78	77	77	70	76	76	76	80	82	87	79	86	68	79	82	87	87	89	76	79	87	71	63	51	52	58	58	58	53	..	79.7
	Min ..	49	63	59	62	52	51	47	54	53	58	56	55	61	60	55	52	57	63	60	64	55	61	49	71	63	51	52	53	77	75	..	76.9
Grundy C	Max..	72	77	78	75	65	68	52	77	79	79	79	83	71	80	78	81	84	80	81	73	80	87	79	63	58	50	51	56	56	53	..	54.3
	Min ..	52	60	63	62	53	51	4	48	48	52	55	51	59	48	52	49	54	59	61	63	53	46	63	63	58	50	51	56	56	53	..	54.6
Guthrie C	Max..	74	75	75	73	69	75	76	80	79	83	81	85	54	55	46	56	51	55	59	60	65	56	48	65	64	64	50	49	59	53	..	79.8
	Min ..	61	57	63	58	52	48	46	56	54	50	55	56	58	50	55	54	56	61	60	63	56	50	61	64	65	51	54	53	54	55	..	55.4
Hampton	Max..	73	73	75	75	65	64	73	79	80	82	81	84	74	79	69	78	81	83	84	86	76	80	87	78	76	76	74	75	79	76	..	77.1
	Min .	52	60	61	62	52	49	45	49	50	52	55	56	58	50	55	54	56	61	60	63	56	50	61	64	65	51	54	53	54	55	..	55.4
Hanlont'n	Max.	68	69	73	73	66	58	66	74	76	77	78	80	78	82	69	78	80	83	84	84	77	80	83	80	80	73	74	75	76	76	..	74.0
	Min .	51	55	58	61	51	48	44	47	45	50	54	54	50	57	57	54	49	56	60	57	62	54	46	61	63	63	77	77	81	80	78	77	..	53.6
Harlan	Max.	75	76	72	75	68	74	81	82	81	85	84	84	72	82	80	83	84	89	93	85	81	83	90	83	83	61	49	47	56	49	54	..	80.4
	Min .	60	56	60	55	50	46	45	55	55	54	56	54	53	44	57	50	54	59	60	61	54	51	63	63	61	49	47	56	49	54	..	54.4
Hopeville	Max..	78	81	72	75	65	76	82	77	78	81	83	85	74	81	72	79	84	85	86	86	75	82	87	85	83	76	74	74	76	78	88	..	78.8
	Min ..	60	57	62	64	55	51	49	56	54	54	56	56	58	57	58	51	57	64	62	63	50	53	64	65	61	53	52	58	62	57	..	57.0
Humboldt	Max.	70	68	78	74	68	66	72	78	80	84	84	82	76	80	78	82	85	88	82	83	75	80	85	81	75	74	74	75	76	75	..	77.4
	Min ..	58	60	60	60	52	50	44	55	50	51	58	56	54	50	56	51	58	62	58	64	57	51	64	63	64	50	52	52	56	54	..	55.7
Ida Grove	Max..	74	69	70	72	66	72	77	80	81	81	78	78	77	74	80	80	85	86	80	87	81	84	84	82	82	79	80	82	81	77	..	79.0
	Min .	60	58	61	57	50	47	48	50	61	56	56	56	59	54	51	59	55	60	61	63	66	56	69	66	66	65	49	66	57	54	56	..	57.9
Independ	Max..	73	77	78	75	68	62	68	77	80	79	53	53	55	55	44	53	50	50	56	63	62	55	50	57	63	64	52	50	55	77	79	..	76.3
	Min ..	51	55	62	61	55	50	44	47	50	77	77	81	80	84	..	82	69	79	83	85	86	85	76	82	89	81	76	73	53	59	57	56	..	54.2
Indianola	Max..	75	80	75	78	70	75	75	77	57	55	56	59	56	..	50	56	51	57	64	64	65	59	52	64	64	64	54	70	72	82	72	73	..	78.6
	Min ..	59	60	65	68	55	52	50	57	77	69	80	72	72	78	72	81	81	85	89	75	75	81	88	78	59	50	58	61	60	53	65	..	58.0
Inwood	Max..	69	65	62	66	54	47	45	45	54	57	56

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JUNE, 1904—CONTINUED.

STATIONS.		DATE.																													MEANS.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Keokuk..	Max..	73	78	83	75	73	73	73	75	78	81	79	81	85	80	76	77	81	78	84	81	76	80	86	86	80	76	71	72	80	76	..	78.0
	Min ..	57	65	65	64	66	59	54	60	59	57	59	61	60	56	59	59	58	65	62	61	64	58	64	66	66	62	61	63	65	55	..	61.2
Keosa'qua	Max..	76	80	82	78	73	78	76	79	80	81	81	84	87	82	71	79	82	83	84	86	79	81	87	87	83	75	74	75	81	81	..	80.2
	Min ..	54	60	66	64	61	57	50	57	59	50	55	55	54	52	52	53	54	64	66	62	66	50	60	71	64	58	58	59	59	54	..	57.8
Larrabee.	Max..	58	70	71	71	62	75	80	82	83	82	81	75	78	82	82	87	86	86	92	82	82	83	92	94	75	82	80	84	71	82	..	79.9
	Min ..	49	53	55	54	48	47	42	53	50	51	58	57	53	55	56	55	57	60	59	58	50	52	68	66	59	52	49	53	54	53	..	54.4
Lenox....	Max..	74	76	71	74	68	75	78	78	77	80	80	80	76	78	73	76	79	81	84	86	75	78	85	82	75	73	73	75	78	77	..	77.2
	Min ..	60	57	61	58	55	48	48	57	55	54	58	57	59	50	59	52	57	64	63	63	54	54	65	63	62	54	52	57	55	52	..	58.9
Leon.....	Max..	79	80	75	77	75	77	81	81	78	80	80	81	79	81	80	78	81	84	85	83	77	81	85	82	77	77	74	78	78	78	..	79.4
	Min ..	59	58	64	63	54	52	50	56	53	55	57	58	60	52	58	52	56	65	62	65	57	52	63	65	63	56	52	58	57	54	..	57.5
Logan....	Max..	73	75	71	75	66	78	82	85	81	80	85	87	71	83	82	85	85	89	92	85	79	85	93	85	79	78	83	85	78	79	..	81.1
	Min ..	61	55	58	58	51	46	48	57	59	58	56	57	56	65	56	54	57	63	61	63	54	53	68	64	61	50	43	56	58	58	..	56.7
Magro'ta.	Max..	75	77	83	78	74	67	76	79	83	79	81	84	87	83	74	80	83	86	87	86	78	81	87	87	84	76	79	73	83	80	..	80.8
	Min ..	43	53	56	60	63	57	45	45	45	46	54	50	50	50	51	46	43	50	60	56	56	45	53	63	65	53	47	50	59	53	..	52.2
Marshlt'n	Max..	74	81	81	79	69	74	76	81	82	85	83	83	76	85	74	83	86	89	85	86	77	85	91	84	80	78	82	77	80	80	..	81.0
	Min ..	52	56	65	61	55	52	45	50	47	50	58	53	61	47	55	47	52	57	60	63	54	46	57	63	64	50	50	55	54	53	..	54.2
Mexon C..	Max..	68	72	73	74	65	61	70	78	81	82	81	80	74	78	75	80	83	79	76	76	72	81	86	80	73	76	78	74	75	72	..	75.6
	Min ..	54	54	61	62	53	49	46	50	51	54	57	58	57	53	55	52	60	63	60	65	55	54	62	65	65	53	58	55	57	55	..	55.8
Massena..	Max..	76	79	73	74	67	79	86	85	83	84	82	87	82	86	83	83	84	89	90	85	80	82	91	83	79	77	79	78	79	79	..	81.5
	Min ..	60	56	61	59	53	48	47	56	55	53	57	55	55	45	57	50	55	55	60	63	54	52	76	64	62	51	47	50	53	51	..	55.3
M'nticello	Max..	70	82	83	83	76	75	78	76	78	77	80	83	84	85	88	88	80	88	84	83	80	83	82	85	82	80	80	79	81	75	..	80.9
	Min ..	43	58	55	49	46	49	50	59	62	65	60	55	59	70	75	70	69	72	70	72	70	69	75	70	58	52	47	48	49	50	..	60.2
Mt. Ayr..	Max..	76	83	73	75	70	79	84	88	80	83	82	83	77	85	75	82	81	85	88	86	82	83	89	85	78	74	80	78	83	84	..	80.9
	Min ..	59	56	61	58	54	50	50	56	55	55	58	58	61	52	58	52	56	64	62	66	54	55	64	63	62	55	52	56	56	53	..	57.9
Mt. Pl'snt	Max ..	76	79	84	78	79	73	71	80	78	83	82	85	88	82	75	80	84	80	87	90	79	82	88	90	85	73	78	75	82	80	..	80.9
	Min ..	58	61	64	62	62	54	49	52	52	53	55	56	56	52	57	54	55	65	60	64	59	52	61	65	63	57	58	59	60	52	..	57.4
Mt. Ver'n	Max	78	81	81	81	73	70	78	87	88	87	88	92	80	87	78	89	86	83	92	81	85	82	87	80	80	72	80	74	81	78	..	82.1
	Min	48	50	62	61	59	42	43	50	58	54	55	59	58	50	56	52	53	61	62	63	52	50	52	62	62	54	52	56	59	54	..	55.0
New H. ..	Max..	71	76	76	66	68	62	67	77	81	80	78	84	76	..	78	77	80	82	78	77	71	76	85	79	74	78	77	72	74	72	..	75.6
	Min ..	49	54	58	58	50	48	42	46	49	50	52	56	54	..	47	48	57	58	58	60	50	46	57	60	59	47	50	51	52	50	..	52.3
Northw'd	Max..	79	72	79	72	69	70	70	76	79	78	79	77	78	77	71	77	79	80	79	79	69	76	83	80	76	72	76	73	69	70	..	75.3
	Min ..	51	50	60	60	52	47	44	47	51	53	55	56	57	51	54	50	54	69	59	63	53	47	60	60	63	50	52	51	57	53	..	54.3
Odebolt ..	Max.	67	69	69	74	69	76	81	83	83	85	83	85	74	83	83	86	87	88	90	81	80	80	92	86	80	82	81	80	80	79	..	80.6
	Min ..	59	51	60	56	49	45	45	54	54	53	54	58	53	50	56	52	51	59	60	64	53	49	62	64	62	46	49	56	52	54	..	54.3
Ogden ...	Max.	76	72	72	74	69	77	74	72	79	82	80	84	72	81	72	82	84	85	82	75	75	81	86	82	79	75	74	76	75	76	..	77.4
	Min ..	56	53	58	63	50	47	48	54	51	53	57	57	58	48	53	54	51	60	61	62	55	50	65	63	53	50	50	55	64	60	..	55.5
Olin	Max..	74	79	84	78	73	..	..	..	..	..	..	..	..	..	79	78	81	84	85	87	75	78	87	88	88	77	77	77	79	76	..	80.2
	Min ..	45	55	62	66	58	..	..	..	..	..	..	..	..	..	53	48	48	56	65	60	59	56	57	65	65	55	51	56	61	55	..	57.0
Omaha, N	Max.	73	71	69	72	67	78	82	83	78	75	79	82	69	80	81	80	77	86	87	82	76	79	90	80	74	74	73	79	79	79	..	77.8
	Min ..	61	60	61	60	58	51	53	61	62	64	62	64	57	54	64	60	63	63	67	68	55	61	70	64	62	58	56	60	59	59	..	60.4
Onawa. ...	Max..	73	70	69	70	68	77	79	83	79	75	78	82	75	83	81	85	84	84	91	84	83	82	92	90	81	78	79	84	83	81	..	80.1
	Min ..	62	57	61	56	50	48	51	59	61	63	58	62	55	52	61	58	62	62	64	66	57	57	70	65	63	52	54	60	55	57	..	58.6
Osage.....	Max	70	75	77	75	67	58	68	80	82	83	83	81	70	86	74	82	83	83	82	80	72	80	86	82	78	76	79	76	78	78	..	77.4
	Min ..	52	57	61	61	51	50	44	43	49	52	53	54	56	48	53	51	53	60	58	61	54	47	60	62	63	49	52	51	56	53	..	53.8
Osceola ..	Max..	80	81	73	79	81	75	80	80	79	89	83	82	79	81	74	80	82	88	80	85	80	82	88	83	80	75	80	76	81	80	..	80.5
	Min ..	55	57	55	61	53	61	49	53	52	52	55	56	58	52	56	51	54	63	62	65	57	50	57	64	63	54	50	53	56	55	..	56.1
Oskaloosa	Max..	73	81	77	76	72	73	72	78	78	82	81	83	81	81	73	77	81	83	84	87	76	80	88	80	78	71	76	73	78	77	..	78.3
	Min ..	57	63	65	63	58	54	50	58	49	52	57	55	56	48	55	52	56	65	62	63	59	48	63	66	65	56	59	59	57	55	..	57.2
Ottumwa	Max..	77	83	80	79	72	78	72	82	82	85	84	87	84	83	67	81	84	87	86	87	79	84	88	84	80	75	77	75	81	80	..	80.9
	Min ..	51	63	65	68	59	55	51	57	52	53	54	53	57	53	56	55	56	62	63	65	60	52	52	65	63	58	56	62	60	57	..	57.6
Pacific J'n	Max..	74	76	75	73	67	80	86	83	80	80	83	85	76	83	81	82	86	88	83	82	77	83	90	84	74	76	74	81	80	79	..	80.0
	Min .	60	55	58	56	54	47	47	59	59	61	57	55	58	62	47	55	59	64	59	62	53	56	68	62	59	51	48	56	55	56	..	56.6
Perry.....	Max..	..	77	73	77	67	74	77	80	82	86	81	85	77	84	77	84	85	89	87	83	75	84	89	85	77	77	79	78	82	79	..	80.3
	Min .	..	58	65	60	54	49	51	57	53	53	57	57	58	49	50	51	57	60	61	65	57	51	65	60	65	52	51	60	54	55	..	56.4
Plover....	Max..	72	72	72	77	67	67	70	77	78	83	84	77	70	80	76	81	86	82	86	77	72	81	88	84	76	75	78	75	75	72	..	77.0
	Min ..	58	59	58	56	47	46	44	54	53	52	55	58	54	55	54	52	55	60	58	55	52	50	65	64	63	48	50	50	52	53	..	54.3
Pocah'tas	Max..	70	68	70	73	64	68	74	80	81	83	83	78	71	80	79	81	84	80	84	78	73	82	87	84	76	78	77	74	77	73	..	77.0
	Min .	57	58	59	59	52	47	44	55	52	54	52	60	54	53	55	53	57	61	58	62	56	52	58	65	63	51	54	52	53	53	..	55.3
Primghar	Max..	65	64	68	70	59	68	71	78	70	74	79	72	72	88	72	81	84	84	88	74	76	80	86	85	70	77	75	76	77	72	..	75.2
	Min ..	58	56	57	55	46	43	45	54	56	54	56	58	52	53	55	54	58	58	62	61	48	66	67	64	58	46	56	53	49	50	..	54.9
Red Oak..	Max..	74	75	70	72	67	75	79	80	77	79	79	81	78	77	78	78	76	85	84	83	75	80	85	83	78	75	75	76	77	78	..	77.6
	Min ..	63	60	62	60	57	52	54	63	62	61	63	60	61	52	64	58	63	64	67	68	58	59	70	66	65	57	49	60	59	58	..	60.5
Ridgeway	Max..	76	74	79	76	71	60	80	84	85	83	89	84	72	82	85	87	82	88	83	92	81	91	94	90	75	76	79	83	80	75	..	81.2
	Min ..	52	57	61	64	53	52	48	59	54	56	57	60	60	50	56	52	55	61	62	64	54	52	62	64	63	50	54	52	58	54	..	56.2
Rock R...	Max..	80	70	70	70	72	70	78	80	78	73	81	74	79	79	80	84	84	85	92	80	72	80	86	84	84	83	84	83	80	76	..	79.0
	Min	56	54	56	58	52	44	40	54	55	56	56	60	55	51	51	55	60	60	76	50	62	60	68	66	56	48	49	54	53	52	..	54.6
Rockw'l C	Max..	78	75	75	76	63	72	75	80	83	85	85	84	75	80	80	80	86	85	86	80	78	80	89	84	80	75	80	78	79	75	..	79.2
	Min ..	57	56	50	56	50	46	47	58	52	53	55	58	58	51	56	56	55	65	63	65	53	57	67	65	60	48	51	53	53	51	..	53.7
Rathven.	Max..	80	71	70	72	75	61	71	82	83	84	79	85	83	88	90	83	87	84	86	83	78	84	94	93	86	88	86	83	84	80	..	81.8
	Min ..	57	51	51	57	48	47	42	52	53	51	53	63	54	51	55	51	59	63	59	63	51	53	65	65	60	50	48	56	52	53	..	51.6
Sac City..	Max..	71	70	70	74	62	71	75	81	80	81	80	80	74	80	78	83	84	83	86	79	76	82	89	83	78	78	78	73	79	77	..	77.8
	Min ..	58	57	50	55	49	46	46	55	53	54	52	58	54	52	57	53	57	60	60	60	54	51	65	64	62	50	50	56	53	55	..	54.9
St. Cha'les	Max..	75	78	73	73	68	73	74	76	77	80	79	83	75	81	71	75	80	82	84	86	74	79	85	79	76	76	75	75	77	75	..	77.1
	Min ..	59	59	64	61	56	52	51	56	55	56	57	59	61	53	58	53	57	63	65	67	58	55	64	65	65	55	55	61	58	50	..	58.3
Sibley	Max	64	66	66	69	59	63	72	80	80	78	79	73	71	76	72	79	81	82	86	74	72	80	86	82	69	74	75	75	76	71	..	74.8
	Min ..	58	54	55	56	50	44	39	49	54	53	54	59	52	47	52	52	57	61	59	60	48	51	57	63	57	46	53	53	50	51	..	53.1
Sigourn'y	Max..	79	84	84	78	73	75	81	84	85	87	85	90	88	85	71	84	85	89	91	92	78	86	90	83	80	79	79	81	80	80	..	82.2
	Min ..	52	63	63	62	59	54	42	47	50	52	54	56	56	47	52	50	52	64	60	60	54	48	48	65	64	60	62	59	56	53	..	55.2
Sioux C'y.	Max..	67	66	66	68	60	71	77	81	77	69	78	70	73	78	76	80	79	81	87	78	77	79	88	83	73	77	74	81	75	76	..	75.5
	Min .	60	55	60	56	51	49	52	59	62	62	60	62	54	58	56	59	63	62	65	64	55	61	70	66	57	51	53	54	57	59	..	58.4
Sioux C'r.	Max..	69	65	66	67	58	66	74	82	79	75	79	75	74	76	75	80	82	84	89	81	76	82	89	87	77	78	76	81	76	74	..	76.4
	Min ..	57	56	56	54	49	40	46	54	57	55	56	56	51	52	54	53	59	61	59	59	52	51	66	65	59	48	47	53	52	54	..	54.4
Stockport	Max..	75	77	80	75	72	72	73	78	77	79	82	84	84	77	78	71	78	80	83	84	74	78	84	83	79	72	76	78	79	76	..	77.9
	Min ..	57	64	66	64	62	59	54	59	56	59	60	59	55	57	56	56	68	65	65	65	61	55	62	70	66	60	60	62	64	59	..	60.8
Storm L..	Max	63	66	66	65	70	67	70	76	76	76	74	75	70	76	75	77	80	78	83	75	73	78	85	80	70	74	73	71	76	73	..	73.4
	Min ..	58	57	57	57	49	44	43	51	54	54	57	59	53	52	56	57	59	60	60	63	51	56	59	64	62	50	55	57	52	54	..	55.3
Stuart ...	Max..	75	78	77	77	73	78	79	81	81	84	84	84	88	86	84	83	86	87	93	89	79	83	93	92	81	77	79	77	79	79	..	82.3
	Min ..	55	53	55	55	50	44	45	51	51	50	52	55	51	47	52	49	52	57	58	58	51	49	60	56	59	49	48	53	50	51	..	52.3
Thurman.	Max..	78	75	74	75	68	81	88	84	78	81	82	84	78	80	84	82	79	81	84	83	81	83	91	84	79	72	74	79	79	81	..	80.1
	Min .	60	55	60	58	54	48	52	59	60	63	59	55	57	46	61	58	61	61	65	62	54	56	70	64	61	53	48	58	55	54	..	57.6
Tipton....	Max..	76	80	83	76	73	69	76	82	84	83	83	88	87	85	74	82	83	85	88	89	79	82	88	86	83	76	82	77	83	81	..	81.4
	Min ..	51	55	62	62	62	54	48	53	55	58	58	60	60	55	58	55	55	62	65	65	58	57	62	66	64	57	56	59	60	58	..	58.3
Toledo....	Max..	74	79	79	75	71	69	72	79	79	83	81	85	76	80	71	78	82	85	84	86	72	80	87	80	78	73	78	77	73	75	..	78.0
	Min .	51	60	65	62	55	52	43	46	46	50	53	55	60	45	54	48	52	60	59	61	52	44	61	64	65	50	48	54	55	54	..	54.1
Vinton. ..	Max..	73	79	80	76	74	67	70	80	80	80	79	..	80	82	76	80	83	74	82	83	75	81	88	84	79	74	77	74	80	77	..	78.2
	Min ..	52	57	57	63	58	52	45	45	47	50	56	..	56	46	53	47	58	60	64	62	55	47	60	64*	65	52	49	59	57	55	..	54.7
Wapello..	Max..	71	77	80	71	68	70	71	73	76	78	77	79	80	78	69	75	79	77	82	81	79	78	86	81	..	86	74	71	79	77	..	76.7
	Min ..	53	60	64	63	63	61	62	65	51	53	54	56	55	55	56	56	55	64	61	65	61	60	62	67	..	58	60	61	64	67	..	59.7
Washi'ton	Max..	75	80	82	77	72	72	74	78	80	81	80	83	85	80	67	78	81	82	85	86	77	80	88	84	81	71	77	72	80	..	..	78.9
	Min ..	52	61	64	63	61	56	51	51	52	53	57	57	56	51	57	53	53	64	61	65	58	51	61	68	63	55	55	60	60	..	..	57.6
Waterloo.	Max..	73	81	79	77	69	65	72	80	82	83	81	86	69	82	76	79	86	87	81	82	75	81	89	83	78	76	82	76	79	78	..	78.9
	Min ..	53	56	50	63	56	50	45	47	48	51	54	55	59	48	54	50	52	56	62	63	56	49	55	62	65	52	51	56	56	56	..	54.6
Waukee..	Max .	72	83	80	83	82	85	80	82	81	83	81	90	81	88	76	84	83	90	89	83	83	84	91	84	79	80	77	79	80	78	..	82.4
	Min ..	54	59	59	59	55	50	54	56	54	55	58	56	59	51	59	51	51	62	62	65	58	55	59	62	64	53	52	60	59	56	..	56.9
Waverly..	Max..	70	76	78	76	70	62	69	75	79	79	78	81	75	79	76	72	81	80	79	77	73	78	86	80	73	73	77	73	75	73	..	75.8
	Min ..	53	52	62	63	56	51	46	47	49	55	56	56	54	50	57	54	55	60	62	63	56	50	61	65	65	62	54	56	57	51	..	55.9
W.Bend .	Max..	70	72	75	75	65	66	73	79	80	83	84	77	75	78	76	81	84	83	87	75	72	80	86	83	72	74	76	73	76	70	..	76.7
	Min .	57	57	57	58	48	46	42	51	50	54	55	59	53	50	54	52	54	61	57	62	52	50	63	63	60	47	50	52	53	51	..	53.9
Whitten..	Max	75	..	..	..	..	..	..	81	84	82	84	86	81	85	80	85	86	90	86	83	75	85	89	84	75	77	81	89	78	75	..	82.3
	Min ..	53	..	..	..	..	..	..	50	49	55	56	54	59	48	54	50	53	60	62	62	54	47	59	62	63	50	51	56	54	53	..	54.6
Wilton J.	Max..	77	83	81	72	74	77	74	78	83	78	79	84	79	82	76	80	84	85	88	90	77	82	89	90	85	77	80	82	83	80	..	81.3
	Min ..	51	57	63	62	54	47	52	46	59	52	55	60	53	50	54	50	60	61	62	64	57	50	55	64	65	53	52	58	61	56	..	56.1
Zearing...	Max..	72	73	73	75	68	69	72

DAILY AND MONTHLY PRECIPITATION FOR JUNE, 1904.

DAY OF MONTH.

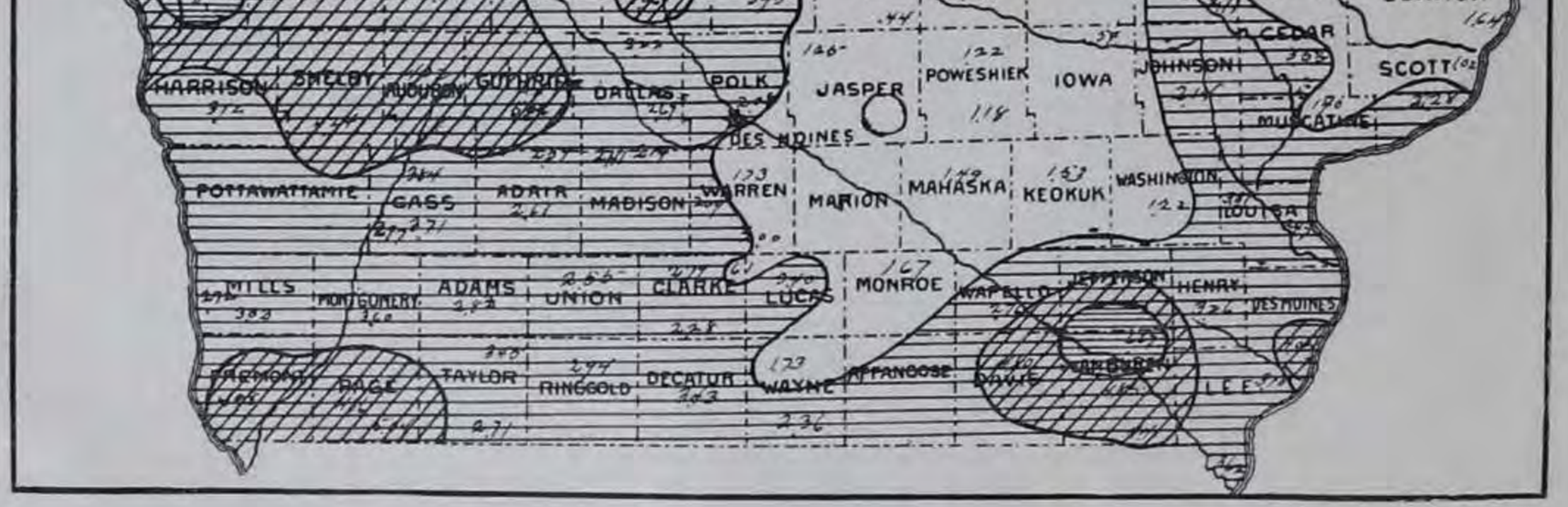
STATIONS.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
fton		.88	.14	.10											.31
lbia			.08		.03	.04									
lgona	.12	.55	.30	T	.03								.23		
llerton		.23	.33	T	.10			T							.37
lta	1.04		.78		.01								.70		
lta [near]	.92		.55		.02								.59		
mana		.08	T	T		T							T		.15
mes	.04	1.91	.35	.53	T	.01									.01
tlantic	.74		.43												T
ububon	.48		.26	.03											1.36
axter		.40					T								.20
edford		.35	.30	T									T		.47
elknap		.05	.04	.05									.90		.61
onaparte		.42	.20	.26									.27		.50
ritt	.10	.79	.24	.53	.10	.04							.17	.02	
uckingham		.29		.07		T							.07		T
urlington		.20	1.80	.50	T		.04						T		.22
arroll	2.12		.50	.04								1.02	.20	.10	
edar Rapids		.04		.33	T	T	T							T	
hariton	T	.18	.43	T	T								T		.67
harles City		.39	.10	.21	.21	.08							T		
larinda	.82		.32	.43									T		.63
lear Lake		.30	1.80		T								T		
linton			.74	.18											.05
ollege Springs	1.25	.08	.61	.87									.02		.60
olumbus Junct'n		.43	.80	.15		.08							.07	.05	.44
orning	.55		.60	.40									T		.05
orydon			.37	T	.07										.50
resco		.35	.85	.25	T										
umberland	.95			.62	T								T		
avenport		.06	.09	.49		T							T		T
ecorah		.42	.36	.06	T										
elaware		.47	1.02	.18		.11									
enison	.12	.08	.11	T								.28	.20		
es Moines	.77	.26	T	.05	.03		T	.06					T		.20
e Soto	.12	.49	.03	.10			T								.30
ows		1.45	.22	.42									.23		
Dubuque		T	.04	.56	T	.04							.02		T
Earlham	.14	.47	.06	.08											.76
Elkader			1.35	.12									.05		
Estherville	.26	1.00	.25	.26	T	.08						T	.10	.30	T
Florence	.02	.93	.26	.40									.51		
Forest City		1.40	.37	.21	.31	.03								.12	
Fort Dodge	.02	2.50	.20	.10	.02	T							.38	.53	
Fort Madison	.03		.50	.50		T	T						T		.50
Galva	.88	.02	.33		T								1.53		
Gilman	T	.20		T	T	T	T					T		.03	
Glenwood	.33	T	.60	T	T								T		T
Grand Meadow		.05	.45										.30		
Greene		.67	.17	.43	.18	.03							.54		
Greenfield	.15	.31	.45	.20	.14	.05	.01					T		.53	
Grinnell (near)		.40	.02	T		T	T						.15		.12
Grundy Center	.02	.54	.04	.03									.31		
Guthrie Center	.36	1.15	.47	.78											.65
Hampton	1.16	.25	.15	.56									.10		
Hanlontown	.18	1.55	.71	.46	.12								.06	T	
Harlan	1.00		.60	.02	T		T						.45		
Hopeville		.07	.24	.11	.02				.26						.33
Humboldt	.24	2.08	.40	.11									.34		
Ida Grove	1.05		.42										.60		
Independence		.05	.55	.10	T								T		
Indianola	.25	.13	.05	.02	.03		.01								.40
Inwood	.79	.78	1.10										.30		
Iowa City		.03		.47	T									.05	
Iowa Falls		1.10	.16	.20	.19	T								T	
Jefferson	1.55	.02	.26	.40											.05
Keokuk		T	.58	.78										T	.23
Keosauqua		.42	.04	.41		T		T						1.20	
Lacona	.04		.12	.03	.01	.01	.03								.44
Larrabee	1.75	.50	.75	T	.05							.20	.87		
Le Claire		.03	T	.61		.02									
Lenox	.30	.8[illegible]	.56	.19											.34
Leon	.03	.05	.28	.07				.26							.71
Logan	1.01		.50									.10			
Maquoketa		.09		.49										.20	
Marsh[illegible]ltown		.18				.02								.08	
Ma[illegible]ity		2.10	.18	1.05	.02								.05		
Ma[illegible]e	.03	.72	1.02	.22		.02							.03		.07
Mont[illegible]llo	T	T	.50					T							
Montezuma	.12														.19
Mount Ayr	.10	.20	.30	.40									T		.45
Mt. Pleasant		1.13	.07	.24		.07							.10	T	.43
Mt. Vernon			.77											.06	.07
New Hampton		.32	.02	.20	.05								.35		
Northwood	T	1.83	.21	1.12	T								.11	T	.06
Odebolt	1.45		.50										.40		
Ogden	1.73	.39	.26	.05				.02							
Olin	T	T	1.00	.02											T
Omaha, Neb	.98		.63	.02	.02	T					T		.02		.01
Onawa	3.15		.27	T	T						T		1.95		
Osage		.77	.25	.79									.05		
Osceola		.60	.15	.02				T							.21
Oskaloosa			.05	.04			T						T		.75
Ottumwa		.15				.06							.15		1.10
Pacific Junction	.46	T	.40	.09									.03		T
Perry	1.29		.30					.14	.23						.16
Plover	.75		.36										.35		
Pocahontas	.95	.03	.19	T	T								.43		
Red Oak	.92		.84	.37	T								.13		.12
Ridgeway		.40	.9[illegible]	.17	.05	.02							.05		
Rockwell City	.35	1.60	.40	.10									.60		
Ruthven	1.00	.50	.03										.40		
Sac City	1.68		.38		T								.52		
Sibley	.21	1.66	.71	.59	.01								.37	.19	
St. Charles	.34	.20	.05	.06	.04	.05									.54
Sigourney			T	T		T							.02		.64

STATIONS.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	TOTAL.
fton		T			.05	.12			.69				.26	T		2.55
lbia	.58		.49			.02				.38				.05		1.67
lgona					.55			.04	.16	1.58				.10	.05	3.71
llerton		T	.06		.10	.07			1.10	T					T	2.36
lta			.41		.02				.10	.53			.02	.02		3.63
lta [near]			.26		.18				.08	.45				.15		3.20
mana					.19			.05	.12					T		0.59
mes			.06	.15	T				.10	T				.29	T	3.45
tlantic					1.00	.19		.47	.66				.29	.06		3.84
ububon	T	T	.25		.27	.12		.18	.71					.35		4.02
axter			.03	.32	.05				.13					.12		1.25
edford		.25			.03	.21			.92				.08	.10	T	2.71
elknap			2.05		.38				.72							4.80
onaparte			1.28		.16				.15					.11	.06	4.41
ritt			.02	.08	1.35				.46	.74			T	.05		4.69
uckingham				T				.17	T	T				.20		0.80
urlington			.19		.01				.95	.10			.01	.03		4.05
arroll			.25	.08					.73	.02			.50	.10		5.61
edar Rapids	.05			1.20		.50			.40	.12					T	2.64
hariton		T	.51		1.00	T			.61							3.40
harles City			T	3.67	.60				.20	.17	.23			T	T	5.96
larinda			.13			.88			.28	.95			T	.38	.04	4.86
lear Lake			2.00	T	.80				.30					.10	T	5.30
linton					.21					.40					.06	1.64
ollege Springs		.07		.01	.03	.25			.95	.20			.02	.08		5.04
olumbus Junct'n					.10				1.64						.05	3.81
orning		T	.58		T	.40			.15	.07			.03	T	T	2.83
orydon			.13		.04	.04			.58							1.73
resco			.20					.50		.30						2.45
umberland					1.22				.72						.20	3.71
avenport					.07	T		T	.58				T		T	2.28
ecorah									1.50							2.34
elaware			.33		.03				.27					.09		2.50
enison			.72	.02					1.86					.63		4.02
es Moines			.02		.09	T			.49	T				.11		2.08
e Soto			T		.02				.91					.17	T	2.14
ows				.48	1.22				1.15	.10				.20	.05	5.52
Dubuque						T		T	.08	T				T	T	0.74
Earlham					.03	.02			.85	T			T	T	T	2.41
Elkader			.55						.43				T	.25		2.75
Estherville				.20	.75			.04		.42	.05			.56	1.00	5.27
Florence					1.35			2.25	.22	.87				1.18	.10	7.59
Forest City				.10	.74				.07	.75				T	T	4.09
Fort Dodge				T	.48				2.60					.87	.03	7.73
Fort Madison			.87		.40				.62					.28	T	3.70
Galva			.16						.41	.26			T		.04	3.57
Gilman			T	.09			.08	.09	T				T		T	0.44
Glenwood					T	.10			1.80	.20				T		3.03
Grand Meadow								.90		.05				.16	.08	1.99
Greene			.69	.50	.18				.53	.20				.16	.02	4.30
Greenfield		T		.02	.01				.62				T	.12		2.61
Grinnell (near)					.15				.3[illegible]	T			T	T	T	1.22
Grundy Center				.19	T				.50					.26		1.89
Guthrie Center			.03		.71				.78					.10	.03	5.06
Hampton			1.22	.08				.66	.13				.42			4.73
Hanlontown			.27	.23	.80				.17	.56				.05		5.16
Harlan			T			.14		.46	1.11	.01				.45		4.24
Hopeville					.53	.07			.6[illegible]	.02			T			2.28
Humboldt			.04		.71			1.68	.36	.89				1.20	.30	8.35
Ida Grove			T					.30	.20							2.57
Independence			.40		.35				.60							2.05
Indianola	T				.06	.02		.32	.43	T			T	.01		1.73
Inwood		.05		.03					1.03							4.08
Iowa City	.22			.04		1.08			.13	.12					T	2.14
Iowa Falls				T	1.92	T			1.54	T				.33	.01	5.45
Jefferson				.32					1.16						.18	3.94
Keokuk			.70		.32				.56	.25			T	.04	.16	3.62
Keosauqua	.73		.82			.08				.98	.02		.03	.12		4.85
Lacona					.97	.05			.30							2.00
Larrabee			.06		.36					.85				T		5.39
Le Claire	.11					.02			T	.22			.01		T	1.02
Lenox		.05			.48	.25			.40	.05			.03	T	T	3.45
Leon		.05	.14		.34	.16			1.26	.05				.03		3.43
Logan								.02	.28		.78		T	.48		3.12
Maquoketa						.02			.10	.09						.99
Marsh[illegible]ltown	.02				.12				.10	.03				.28	.02	.85
Ma[illegible]ity			.65	.40	1.10				.65	.20				.20		6.60
Ma[illegible]e					.10	.28			.41	.02				.05		2.97
Mont[illegible]llo				T					.40			T			T	.90
Montezuma					.25				.62							1.18
Mount Ayr		.05	.15		.10	.30			.75	.05			.09	T	T	2.94
Mt. Pleasant			.26		.08				.74	.04					.10	3.26
Mt. Vernon			.10	.25	1.10				.35			T			.01	2.71
New Hampton			.86	.05	.20				.97	.33						3.35
Northwood			1.00		.19			T	.30	1.29				.03	.02	6.16
Odebolt			.50						.50					.72		4.07
Ogden			.40	.40	.10				.33				.19	.19		4.06
Olin			T		.05				.35					T	T	1.42
Omaha, Neb		.03				.15		.15	.94	.12				.06	T	3.11
Onawa						.03			1.30	.70				.60	.02	8.02
Osage			3.20		.25				.22	.57						6.10
Osceola	.14		.10			.12	.10		.25	1.10				T		2.79
Oskaloosa					.16				.45						.04	1.49
Ottumwa			.65		T				.62					.03		2.76
Pacific Junction	T				T	.25		T	1.29	.19			.01	T		2.72
Perry			.31	.27	.16				.20					.16		3.22
Plover			.16	.08	.26					1.10			1.25	.11		4.42
Pocahontas			.09	T	.78			.05	.23	.42			T	1.61	.06	4.84
Red Oak		T			T	.34			.43	.17			.28	T		3.60
Ridgeway			.18	T	.02			.59	.03	.23				.06	.19	2.98
Rockwell City			.15	.15	.45				.60					.65	.30	5.35
Ruthven			.40		.70					.60				.25		3.88
Sac City			.19					T	1.27	T			T	.69	.04	4.77
Sibley			.02	.22	.03					.70	.05			.03	.17	4.96
St. Charles					.35	.10			.30				T	.02	.04	2.09
Sigourney					.27				.60							1.53

DAILY AND MONTHLY PRECIPITATION FOR JUNE, 1904--Continued.

STATIONS.	DAY OF MONTH																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sioux City	1.89	.01	.59	T	.03					.02		T	.1					.13					T	.05	.24			T	.32	T		3.46
Sioux Center	1.05	.20	1.52							T		.38	.65					T		.31				T	.44				.02			4.57
Stockport	T	.83	.37	.18		.02	T						.82		.58			1.46		.34				1.40	.06			.02	.06	.13		6.27
Storm Lake	.02	.94	.86	.03									.51	.18					.36	41				.08	.24				T	.03		3.16
Stuart	.10	.39	.17												.42					.07				1.32					.08	.04		2.59
Thurman	.67	T	.53	.38									.09		.64		T				.22			.92	25		.28	.10				4.08
Tipton			2.66	.10											.22			T		.22				.34					.01		3.55
Toledo		.35													.40					.10			.20		T				.25		1.30
Vinton		.10				.07							.03		T			T	.11					.24				.02			.57
Wapello		.18	.90	.36									T		.43									.60							2.47
Washington		.22	.18										.05		38					.05				.34							1.25
Washta	1.70		.63								T	T	1.10					T		20				.56	.20			.16			4.55
Waterloo		.17	.01			.01							.18					.08	.10	35				.56				.17			1.43
Waukee	.42	.18	.07	.18			.05								.26			.26	T	T				1.10				.15			2.67
Waverly		18	.12	.06	.03	.05							.52					.27	.21	.55				.67	.31				.46			3.43
West Bend	.24	.61	.55										.31					.04		.55			1.66		1.06				1.75	.16		6.98
West Union		.35	.37	.05									.30					.12					.41					.06				1.66
Wilton Junction			.42	.12	T	T							T		.25					.15				.35					T	.11		1.40
Woodburn	T	.10	.25	.15											.44			.14		.10			.53					T				1.61
Zearing		.45	.19															T	.85	T				.07					.19	.04		1.79

Precipitation Chart June 1904.



JULY, 1904. No. 7



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Shenandoah	Reuben Mullison
State Center	E. P. Thompson
Stuart	W. W. Bailey
Toledo	W. G. Malin
Van Horne	Spencer Smith
Waukon R. D	T. B. Wiley
Weldon	Ed Worden
Winterset	H. A. Kinsman
West Branch	Wrigley Smith
West Union	A. B. Blackman
Wilton	Thos. Boot
Wiota	I. S. Coomes
Woodward	George Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

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IOWA CROP REPORT, AUGUST 1, 1904.

Tabulated reports received from correspondents of the Iowa Weather and Crop Service show the following estimates of the condition of the staple crops on August 1, 1904:

Spring wheat, 75 per cent; corn, 88 per cent; oats, 89 per cent; flax, 94 per cent; pastures, 96 per cent; potatoes, 101 per cent; apples, 73 per cent; grapes, 86 per cent.

At corresponding date last year the estimates were as follows: Spring wheat, 82 per cent; corn, 73; oats, 77; flax, 84; pastures, 104; potatoes, 80; apples, 65; grapes, 80.

Compared with the estimates of condition on July 1, 1904, spring wheat shows a decline of 16 points, on account of the serious attack of rust and blight during the latter part of July. The estimates are two points lower on corn and oats as compared with the July rating. As a matter of fact, however, the general outlook of the corn crop is better than it was about the first of July, though it is still relatively about eight to ten days later than usual.

Secretary Greene, of the Iowa Horticultural Society, gives the following report of the fruit crop for August 1, 1904:

Summer apples, 62 per cent; fall apples, 64; winter apples, 54; peaches, 10; American plums, 60; domestic plums, 38; Japan plums, 45; grapes, 82 per cent. The best crop of apples is grown this year in the eastern part of the State.

JULY WEATHER AND CROPS.

This has been the coldest July since 1891, when the mean temperature for the state was 68.6°. The mean for this month, 70.6°, was 3.6° below the normal. The warmest period was the second decade. The average rainfall for the state, 4.41 inches, was .18 of an inch above normal. The northern section received an average of 3.77 inches; central section, 4.47; southern section 5.00 inches. Rain in measurable quantity fell at one or more stations in the state every day during the month. And yet the average number of clear days was 16, partly cloudy, 9, and cloudy, 6. Generally there was sufficient sunshine to promote plant growth. The days were warm, and nights unusually cool. The heaviest storm of the month, in respect to amount of rainfall, occurred on the night of the 19th; but the excessive downpour was limited to a few counties. On the whole the month was favorable for crops and field work. Corn was laid by from the 4th to the 15th,—about a week later than usual. During the showery period in the early half of the month spring wheat and oats were attacked by rust. The wheat crop was damaged seriously, but oats were not very badly injured. The latter half of the month was favorable for harvest operations and most of the small grain was in shock or stack before August 1st. Haying progressed quite favorably and though the yield was lighter than the average the quality was superior, and most of it was secured in good order. Corn made notably fine progress, despite the cool weather, and at the close of the month that crop was much more advanced than was deemed possible earlier in the season. Potatoes, garden truck, apples, small fruit and all minor crops made normal advancement.

WHEN CORN IS TASS'LING OUT.

There is music in the breezes
As they rustle thru the corn,
There is grandeur in the sunrise
As it dries the dew each morn;
There is gladness 'mongst the people
And the farmers fairly shout—
There is always joy in Iowa
When the corn is tass'ling out!

There is singing in the hayfield
And along the dusty roads,
Where the farm boys drive the wagons
With their fresh and fragrant loads;
The housewives sing so gaily
As their tasks they go about—
There is heaps of joy in Iowa
When the corn is tass'ling out!

Over yonder in the stack yard
Rise the swelling yellow cones,
And the stackers toil and listen
For the dinner bell's sweet tones,
While they laugh and greet each other
With a lusty, ringing shout—
There's a pile of joy in Iowa
When the corn is tass'ling out!

And the waving, nodding tassels
Tell a story, short, but true,
Of the happy times a-coming,
Of the debts a-coming due;
How we'll meet 'em and pay 'em.
Every one without a doubt—
There's prosperity in Iowa
When the corn is tass'ling out.

—J. F. Dalton, in Manson Democrat.

AS TO SEED CORN.

Throughout the corn belt there was last spring a vigorous effort made by some of the agricultural experiment stations to instruct the growers of corn in regard to their seed corn, its selection, planting, etc. While much good was thus no doubt accomplished, the right time to do this sort of work is in the fall of the year, at the time when the seed corn should be gathered from the field. Once knowing what to select for seed, the winter care of it is really a simple matter, bearing in mind the fact that to insure a perfect germination of seed corn it should be picked before frost and kept where it will not freeze until planted, for it is frost which is the principal destroyer of the vitality of seed corn.—*Trigg's Farm Notes.*

NOTES.

In Iowa corn is grown principally for the grain. In Franklin county, Missouri, the cob is more valuable in the market than the shelled corn grown thereon. The variety produced in that region is known as the cob-pipe corn, and the factories in that section manufacture cob-pipes for shipment to all parts of the world. In Iowa dry cobs are used for kindling fires, for which purpose they are sold in towns for about a dollar per load. So corncobs end in smoke, whether sold at the pipe factory or for fuel.

Our American maize is growing upon the world. Its merits as a wholesome food are just beginning to be understood. In every way corn, employing the word in the sense peculiar to America, is a staff of life. Where its use is most abundant the finest type of men and women is raised and domestic animals are unsurpassed in vigor. Corn is nutritious, compact in bulk, easily transported, and one of the least perishable of foodstuffs. It contains in itself the elements that will sustain life for an indefinite period. In this age of rapid commercial communication there should be no famine as long as such a large surplus of corn is available. Corn is cheap, in fact, too cheap. It is worth relatively more than it sells for. The price is not likely to go too high, for its production in this country, great as is the yield, could easily be doubled. From every point of view corn is one of the greatest of nature's gifts to man, though as yet imperfectly appreciated.—*St. Louis Globe-Democrat.*

THE MISCHIEF OF WRONG THEORIES.

During the past century there has been such steady progress in all branches of science that the more intelligent portion of the community has abandoned those notions with regard to astrology, alchemy, spontaneous generation, witchcraft, and other philosophies that were formerly accepted by the most learned. The diffusion of education has raised the children of the present generation above the level of the philosophers of a former generation. And yet we have seen it demonstrated again and again that the popular majority does not fully appreciate the extent of our present knowledge of the laws of the weather, and is still liable to resort to unscientific methods in hope of accomplishing that to which science has not yet attained.

We have seen communities in America and Australia carried away with the idea that cannonading can produce rain, or in Europe that the ringing of church bells or the offering of prayers can avert droughts and floods. In southern Europe the agriculturists are but just recovering from the strange belief that hail can be prevented by shooting rings of smoke toward the clouds. During the past ten years a wealthy engineer of Russia has devoted his fortune to the conversion of the people to his idea that the moon controls the weather, and so seriously does his advocacy of this error affect the uneducated agricultural community that the director of the weather service at Odessa (Klossovsky) has gone to the trouble of publishing an elaborate statement of the errors in fact and theory committed by this engineer. He shows very clearly that Demtchinsky's method of predicting the weather by lunar periods amounts to nothing more than predicting an average condition, an average which very rarely occurs, whereas the departures from it are very frequent. The verifications of these predictions are like the combinations in an ordinary game of chance, where there is an equal number of heads and tails, or hits and misses.

As the collection of meteorological statistics depends so largely upon the voluntary work of thousands of upaid observers, it is to be feared that the good work we are doing in America may be seriously interrupted if erroneous views are allowed to have an influence in this country as profound as they seem to have in southern Russia.

We can not repeat too often and too clearly the general proposition that meteorology is to be advanced only by studying in details the effects on the atmosphere of insolation, radiation, the diurnal rotation and annual revolution of the earth, and the presence of continents and oceans.—*Monthly Weather Review.*

THE PLANETARY WEATHER PROPHETS.

The prophets who profess to believe that variations in temperature and precipitation are due to movements of the planets have come to grief out in California. According to the most recent issue of "The United States Monthly Weather Review," they promised the farmers an abundance of rain last winter, but their hopes were not realized in the southern part of the State. There is no reason to imagine that the authors of these fallacious assurances are particularly dejected over the result, but the failure of the prediction is influencing public opinion in a wholesome manner. Remarking upon the disappointment, The San Diego *Times* says: "We are thrown again upon the Weather Bureau, with added experiences in discounting old-time signs as interpreted by that wonderful array of weather-wise men who annually find their way into print to demonstrate what they can not predict about the weather."

The methods of the planetary forecasters—those of them who are honest, at least—are defective in several ways. They seldom sit down a year after their predictions have been issued and make a rigid comparison between the promise and the actual facts. Such a proceeding would be instructive in the extreme, though highly discouraging. They also neglect to formulate any system of mechanism whereby the planets can do the work imputed to them. They usually exhibit a singular ignorance of well established and fundamental laws. One of these men, for instance, mentions in a letter to the Weather Bureau the usual prevalence of easterly winds in Southern California last winter, and thinks that they were the result of some magical celestial influence. There is a much more simple way to account for them. Observation at government stations shows that there was an unusually high atmospheric pressure in the centre of the continent for several months, beginning with November, and a deficiency along the Pacific Coast. Now, the air always flows from a high area toward a low one, and the velocity is proportional to the "gradient." The latter having been steeper than is common, the movement should have been more vigorous than ordinary. The abnormal prevalence of easterly winds and the deficiency in precipitation in the vicinity of San Diego and Los Angeles, therefore, were closely related

o the severity of the winter in the eastern half of the country, which was due primarily to differences in pressure between the heart of the continent and the Atlantic Coast.

One of the most important advances made in meteorology in the last few years is the revelation that simultaneous changes occur in pressure in widely separated regions. In a recent number of "Nature" W. J. S. Lockyer gave striking illustrations of the barometric seesaw. Going back through an interval of over thirty years, he showed that when the pressure was sensibly higher than the average in India it would almost invariably be below the mean in South America. Between the areas which exhibit opposite conditions the boundaries are not yet well defined, nor is the duration of an abnormal state of things always the same. The interval apparently varies from one year to four. There does not appear to be a regular periodicity from which conclusions regarding the future can safely be drawn. Nevertheless, there is a significance in the single fact that the opening of a new chapter of history in one locality is often attended by a corresponding change in another, remote from the first. The phenomenon needs more study before it can be turned to account practically, but it seems to point to a thoroughly rational system of long range forecasting. It will not enable the expert to predict what will happen on a particular day, but it may possibly assist him to reach a fairly accurate conclusion of the general character of a period several months in length.

Caution must be exercised in attempting to explain sustained departures from the average of many years over a large area. Compensating excesses or deficiencies in other parts of the globe are perfectly intelligible because there is only just so much atmosphere. Accumulations here mean scarcity there. It is conceivable, of course, that exceptional obscurity in one locality, say, from an abundance of volcanic dust, might thus destroy the balance by cutting off some of the sun's heat in one locality. There is a stronger probability, however, that fluctuations in the output of solar energy will some day be logically connected with the observed effect. Any one who is familiar with the extent and violence of the disturbances which occur on the sun will find such a suggestion more credible than the notion that diminutive bodies, whose surfaces undergo no apparent change, have any appreciable influence.—*N. Y. Tribune*.

CLIMATOLOGY OF THE MONTH.

BAROMRTER.—Mean pressure, 29 98 inches; highest observed, 30.32 inches, at Dubuque, on the 2d; lowest observed, 29.69 inches, at Davenport on the 11th; range for state, 0.63 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 119 stations, was 70.6°, which is 3.6° below normal. By sections the mean temperatures were as follows: Northern section 69.1°, which is 3.9° below normal; Central section 71.0°, which is 3.1° below normal; Southern section 71.70°, which is 3.9° below normal. The highest monthly mean was 74.0° at Keokuk; lowest monthly mean, 66.5° at Cresco. The highest temperature reported was 100°, at Marshalltown on the 17th; lowest temperature reported, 38°, at Fayette on the 2d. The average monthly maximum was 93.1°; average monthly minimum, 46.8°. Greatest daily range, 43°, at Logan; average greatest daily ranges 33.4°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 117 stations, was 4.41 inches, which is 0.16 of an inch above normal. The averages by sections were as follows: Northern section, 3.77 inches, which is 0.41 below normal; Central section, 4.47 inches, which is 0.38 above normal; Southern section, 5.00 inches, which is 0.54 above normal. The largest amount reported was 11.97 inches at Thurman; least amount reported, 1.28, at Plover. The greatest daily rainfall reported was 7.73 inches at De Soto on the 19th. Average number of days on which .01 of an inch or more was reported, 10.

WIND AND WEATHER.—Prevailing direction of the wind, southwest; highest velocity reported, 42 miles per hour, from the northwest, at Sioux City on the 3d. Average number of clear days, 16; partly cloudy, 9; cloudy, 6.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	29.97	30.27	2	29.69	11
Des Moines	30.00	30.28	2	29.77	13
Dubuque	29.99	30.32	2	29.72	11
Omaha, Neb	29.96	30.20	23	29.66	13
Keokuk	29.98	30.27	2	29.76	11
Sioux City	29.96	30.19	23	29.70	16
Means	29.98	30.32	2	29.66	13

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	4.731	36	SW	13
Des Moines	5.357	34	SW	14
Dubuque	4.481	29	S	3
Keokuk	4.908	32	SW	3
La Crosse, Wis	4.566	31	W	17
Omaha, Neb	5.154	36	W	11
Sioux City	8 275	42	NW	3

OBSERVERS' NOTES.

ALTA.—*David E. Hadden.* July mean temperature was 3° below normal, and rainfall about 1.50 inches less than average of preceding fourteen years.

AMANA.—*C. Schadt.* Nights were cool, and weather very favorable for ripening grain and harvesting, with sunshine and rain enough to promote growth of corn.

ATLANTIC.—*J. W. Love.* Corn has made rapid growth, though nights were cool.

BONAPARTE.—*B. R. Vale.* Rain, 4.43 inches, but latter half of month was dry; good harvest weather after the 10th.

BRITT.—*Geo. P. Hardwick.* Wind and hail on 14th and 17th lodged grain and blew off apples. Wheat barley and potatoes good.

CHARITON.—*C. C. Burr.* No severe storms; temperature did not rise above 90 in July.

CLINTON.—*Luke Roberts.* A fine month for all crops, out of door work and personal comfort. Rain, 3.18, barely enough for crops; corn, potatoes and fruit doing well; grain and hay mostly secured.

COLUMBUS JUNCTION.—*J. B. Johnston.* On the 30th a severe electric storm caused damage to buildings and live stock.

FOREST CITY.—*J. A. Peters.* Harvesting oats began about 23d; early corn in tassel on 25th; oats about one-third in shock at close of month.

GRAND MEADOW.—*F. L. Williams.* Month was generally favorable for crop growth; barley crop heavy; oats and wheat rusted; pastures extra good; hay light; corn late.

GRINNELL.—*A. O. Price.* Perfect harvest month and all matured crops secured in fine condition.

HANLONTOWN.—*Miss G. M. Paschen.* Haying began the 6th; harvest of oats, 28th; heavy storm night of 29th damaged small grain and corn; some damage by hail.

IDA GROVE.—*J. E. Conn.* Corn doing well; haying nearly done; fruit crop good.

INWOOD.—*G. M. Larson.* The month was very favorable for farm work; abundant crop of good hay put up; corn looking well.

LOGAN.—*M. B. Stern.* Month changeable, cool and warm, but crops have grown finely.

OLIN.—*Nathan Potter* Good month for farm work, which was well advanced at its close.

POCAHONTAS.—*F. E. Hronek.* Excellent weather for haying and harvesting; corn tasseling and silking at close of month.

RIDGEWAY.—*Arthur Betts.* Coolest July on record here; 341 hours of sunshine; just enough rain, and crops are promising; hard windstorm on the 18th, with some damage to orchards, etc.

WAUKEE.—*E. J. Leonard.* Storm on 19th was severest in years; more rain fell in ten hours (6.80) than fell in May and June.

BELATED REPORTS.

FAYETTE.—May. Mean temperature 57.0°; mean maximum 70.0°; mean minimum 44.1°; maximum temperature 87° on the 20th and 22d; minimum 30° on the 10th; greatest daily range 39°; total precipitation 4.99 inches; greatest in 24 hours 1.16 inches on the 25th; number of rainy days, 7.

FAYETTE.—June. Mean temperature 65.3°; mean maximum 77.8°; mean minimum 52.8°; maximum temperature 88° on the 23d; minimum temperature 40° on the 9th; total precipitation 2.02 inches; greatest in 24 hours .83 inches on the 23d; number of rainy days 8.

VILLISCA.—June. Mean temperature 66.6°; mean maximum 79.0°; mean minimum 54.1°; maximum temperature 88° on the 21st; minimum temperature 43° on the 30th; greatest daily range 35°; total precipitation 2.73 inches; greatest in 24 hours .57 inches on the 20th; number of rainy days 11; clear 10; partly cloudy 16; cloudy 4; prevailing direction of wind, southwest.

CLIMATOLOGICAL DATA FOR JULY, 1904.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.						PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.	
gona	Kossuth	1,213	28	69.4	-4.3	90	16,17	47	1	30	3.75	†0.08	.93	....	9	17	8	6	SE	3, 10, 26
ta	Buena Vista	1,513	11	69.4	-3.3	92	16	49	2	27	3.12	-1.59	1.17	....	9	17	2	2	S	3, 10, 13, 18, 20, 25, 29
ta (near)	Buena Vista										3.96		1.14		9					
itt	Hancock	1,236	5	69.4	-3.5	91	16,17	45	1	33	4.74	†0.42	.94		16	7	19	5	N	14, 17, 26
arles City	Floyd	1,012	11	68.2	-5.5	93	18	44	2	32	4.75	†1.52	.93		11	20	1	10	S, SW	4, 19, 30
ear Lake	Cerro Gordo	1,241	....	71.2		92	16	50	1,2	32	4.70		1.90		13	12	16	3	NW	
esco (*d*)	Howard			66.5	-4.6	90	17	43	2	35					7					
corah	Winneshiek	857		67.9	-4.7	92	16,18	43	2	32	2.84	-0.37	.84		10	19	5	7	NW	18, 25
ws	Wright	1,142		69.1	-3.9	91	16,17	48	1,3	32	3.65	-0.70	1.64		9	20	9	2	NW	3, 8, 11, 18
kader	Clayton	727	21	71.0	-3.0	99	17	42	2,24	42	3.05	-1.29	1.40		12	18	2	11	NW	14
therville	Emmet	1,298	7	67.2	-5.5	93	17	44	15	41	4.50	†0.62	1.00		8				SE, SW	3, 5, 8, 18, 30
yette (*b*)	Fayette			67.4	-4.9	93	17,18	38	2	39	4.37	†0.67	1.88		11	10	21	0	W	3, 4, 7, 8, 10, 14, 26, 29, 30
orence	Wright	1,226	8								4.54		2.14							
rest City	Winnebago	1,226	8	69.2	-3.7	91	16	48	1,2	33	4.76	†1.33	1.33		11	15	4	12	S	
rand Meadow	Clayton	1,180	11	68 0	-3.0	92	17	45	2	33	4.03	-0.29	1.98		13	12	13	6	SW	
reene	Butler	924	5	70.0	-5.1	94	16	46	2	38	3.06	-1.13	.75		14	8	10	13	W	3
ampton	Franklin	1,155	12	71.0	-1.7	95	17	48	2	34	4.79	†0.65	2.08		13	13	13	5	NW	
anlontown	Worth			67.5		90	16	45	2	30	5.53		2.50		14	17	8	6	SE	3, 10, 14, 17, 18, 25, 29
umboldt	Humboldt	1,095	10	69.8	-4.1	93	16,17	50	1,2	39	2.65	-1.29	.72		12	22	5	4	SE	
wood	Lyon			69.4		94	16	40	14	38	3 78		1.29		7	24	2	5	NE	13, 29
arrabee	Cherokee	1,366	11	71.8	-1.2	95	16,18	45	1	40	3.58	-1.08	.73		7	14	14	3	SW	2, 25, 29
eMars (*i*)	Plymouth	1,224	6	69.6	-4.3	93	16	45	23		3.27	-1.63	1.05		6					
ason City	Cerro Gordo	1,132		70.3	-1.1	96	16	50	1,2	32	3.01	†0.22	.65		9	10	15	6	S	3, 4, 10, 14, 17, 26, 29
ew Hampton (*c*)	Chickasaw	1,169		66 8	-6.6	90	18	44	1	20	2.47	-2.01	.92		11	17	5	9	NW	
sage	Mitchell	1,184	11	68.6	-2.4	92	16	44	2	35	3.21	-0.33	.94		15	12	7	12		3, 10, 17, 29
ocahontas	Pocahontas			70.8		94	17	47	23	33	1.42		.50		8	19	8	4	S, NW	3, 10, 17
lover	Pocahontas	1,190	5	69.8	-4.7	94	16	47	23	32	1.28	-3.85	.55		3	21	7	3	S	
rimghar (*a*)	O'Brien			68.4	-6.3	90	16	47	1	30	5.76	†0.63	2.01		10	20	0	11	S	18
ldgeway	Winneshiek	1,215		71.2	-5.4	99	16	48	1	33	3.65	-1.44	1.05		13	18	11	2	S	3, 10, 13, 17, 18, 20, 25, 29, 30
ock Rapids	Lyon	1,021		69.4	-3.4	92	16,17	45	23	34	3.95	†1.43	1.10		4					
bley	Osceola	1,512		66.8	-4.5	90	16,17	44	23	34	4.51	†0.60	1.76		14	16	3	12	S	14, 19, 28
ioux Center	Sioux			69.8	-4.7	91	16	49	1,2	32	7.75	†2.37	1.46		11	15	12	4	S	10, 13, 14, 18, 20, 29
pirit Lake (*f*)	Dickinson	1,458	8	68.5	-6.1						3.90	-0.50	.80		7					
torm Lake	BuenaVista	1,440	7	68 6	-4.5	90	16,17	45	23	30	2.56	-1.72	.73		9	13	16	2	SE	4, 10, 14, 29
Vashta	Cherokee	1,157									2.51	-2.59	.60		10	18	12	1	N	
Vaverly	Bremer	942	6	69.4	-4.5	93	17	48	2	30	4.07	†0.23	1.50		14	14	12	5	S, E	3, 8, 10, 14, 17, 18, 27
West Bend	Palo Alto	1,197	8	69.0	-3.9	92	16,17	44	23	36	2.25	-1.59	1.15		9	17	9	5	S	3, 10, 18
Average				69 1	-3.9	92.6		45 7		33 8	3.77	-0.41			10	16	9	6	S	

SOUTHERN SECTION.

Afton	Union	1,212	7	72.6	-3.5	92	18	49	1	31	4.22	-0.58	1.25		7	13	14	4	SW	
Albia (*b*)	Monroe	957		70.2		92	16,18	50	2	34	4.65		1.15		9				SE	
Allerton	Wayne			71.1		91	17,18	51	2,23,24	32	4.77		1.26		9	21	7	3	SW	3, 5, 6, 11, 19, 30
Atlantic	Cass	1,164	11	70 6	-3.1	93	17	45	23,24,25	42	5.47	†1.12	1.41		9	5	12	14	S	13, 19, 20, 30
Bedford	Taylor			70.4		89	18,31	48	1	36	5.36		1.26		9	16	11	4	SE	
Bellknap	Davis	877	7	71.9	-3.6	90	17,18	54	1,2	26	4.28	-0.88	1.20		8	18	10	3	S	
Bonaparte	Van Buren		10	71.4	-5.0	93	30	47	2	31	4.43	†0.83	1.85		6					
Burlington	Des Moines	544		73.4		93	17	51	2	28	5.19		1.30		11	18	9	4	SW	30, 31
Chariton	Lucas	1,042	7	70.2	-4.9	90	16,17,18	48	2	34	5.14	-1.10	1.95		6	15	8	8	SE	
College Springs	Page		10	73.4	-2.0	98	10	53	1,23	32	6.88	†1.15	3.15		12	19	8	4	SE	
Columbus Jct	Louisa	596		71.6		92	16,17	47	2	31	3.84		0.85		11	24	6	1	NW	3, 14, 30
Corning	Adams	1,127	10	70.1	-4.4	90	18	45	1	35	6.31	†1.87	2.15		9	14	15	2	SW	5, 10, 11, 14, 19, 20
Corydon	Wayne	992	9	71.6	-4.2	90	18	51	1,2	29	5.25	†0.85	1.96		10	16	7	8		3, 5, 19
Clarinda	Page	1,069		72.0	-4.3	95	17,18	50	1,24	36	7.28	†2.60	3.55		12	14	2	15	SE	19
Earlham	Madison			67.9		90	17,18	48	2,24	41	6.23		4.15		8	21	6	4	S	3, 11, 14, 19, 20, 30
Fort Madison	Lee	516	51								4.43	†0.32	1.78		5	9	15	7	S	5, 7, 14, 30
Glenwood	Mills		15	70.8	-6.2	90	18	53	23	27	5.20	†1.54	1.80		10				SE	
Greenfield	Adair		11	71.0	-3.6	92	17,18	48	1,23	31	4.00	-0.89	1.73		10	21	7	3	S	2, 3, 5, 7, 11, 13, 14, 19, 29, 30
Hopeville	Clarke		11	71.2	-3.2	91	18	51	1,2,23	27	5.24	†0 62	1.69		9	8	18	5	S	
Indianola	Warren	969	11	71.9	-3.7	94	17,18	50	2	32	5.37	†1.73	3.19		10					4, 14
Keokuk	Lee	619	31	74.0	-2 9	93	30	54	2	26	4.48	†0.38	1.58		8	14	14	3	SW	3, 5, 7, 14, 15, 27, 30, 31
Keosauqua	Van Buren	664	10	72.2	-4.6	94	30	47	2	31	4.72	†0.75	2.07		9	9	13	9		30
Knoxville	Marion	920	6	71.6	-4.6	93	18	49	2,23	30	3.31	-1.15	0.60		9	17	5	9	SE, SW	
Lacona	Warren										6.47		3.50		9	11	13	7		
Lenox	Taylor	1,250	7	70.5	-4.2	89	17,18	51	1,2	31	4.76	-0.46	1.68		9	20	8	3	S	10, 11, 14
Leon	Decatur	1,120		71.6		90	16,17,18	50	2	31	5.34		1.43		10	21	7	3	W	3, 5
Massena	Cass			71.8		94	16,18	49	1	39	4.70		1.54		10	20	8	3	S	3, 13, 19, 30
Mount Ayr	Ringgold	1,236	6	72.2	†1.5	93	17,18	51	2	33	4.14	-0.30	1.20		10	13	11	7	NW	
Mount Pleasant	Henry	729	20	73.8	-1.5	97	17	50	2	29	3.92	†0 18	1.35		9	14	9	8	SW	3, 31
Omaha, Neb	Douglas	1,113	32	73.1	-3.1	93	18	54	23	27	3.15	-1.60	0.68		14	12	14	5	S	3, 5, 11, 13, 14, 19, 20, 21, 29, 30
Osceola	Clarke	1,130	6	71.2	-4.7	93	17,18	49	2	33	4.35	-0.79	1.50		10	22	3	6	SW	
Oskaloosa	Mahaska	843	18	70.2	-5 2	92	17	48	2	30	5.89	†1.84	1.89		11	21	2	8	SW	18, 30
Ottumwa (*b*)	Wapello	649	8	73.9	-2.9	95	16,17,18	50	2	35	3.70	-0.59	0.95		7				SE	
Pacific Junction	Mills	960		71.5		92	17,18	49	1,23	34	5.00		1.06		12	13	17	1	S	
Red Oak	Montgomery	1,033		72.2	-4.3	89	18	54	1	23	6.66	†1.86	1.96		12	11	17	3	S	5, 6, 11, 13, 14 19, 20, 30
St. Charles	Madison	1,070		71.4		93	17	52	2	26	4.92		2.25		14	18	9	4	S	
Sigourney	Keokuk	887		71.7	-5.9	94	17	51	1	36	2.44	-2.23	0.98		8	15	9	7		3, 14, 31
Stockport	Van Buren			72.4		89	17,30	56	23,24,25,28	28	3.65		1.22		10	13	7	11	SE, SW, NW	14, 31
Thurman	Fremont			73.9	-2.6	94	18	52	1,23,24	34	11.97‡	†6.49	6.27		12	14	12	5	SE	3
Wapello (*b*)	Louisa	588		72.0	-5.4	91	17,18	49	2	36	3.68	†0.59	1.07		12	16	12	1		
Washington (*g*)	Washington	769	20	72.4	-3.2	92	16,17	54	23,24	33	4.23	†0 69	1.20		10				SW	
Winterset	Madison	1,129	11	71.6	-2.7	95	18	48	1	31	5.18	-0.75	3.40		5					
Woodburn	Clarke	961									5.01		1.56		8	19	7	5	SW, NW	3, 5, 14
Average				71.7	-3.9	92.3		50.0		31.8	5.00	†0.54			10	16	10	5	SW	
Average for state				70.6	-3.7	93.1		46.8		33.4	4.41	†0.18			10	16	9	6	SW	

CLIMATOLOGICAL DATA FOR JULY, 1904—Continued.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				SKY.				Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days	Number clear days.	Number partly cloudy days.	Number cloudy days.		
Amana	Iowa	721	25	70.8	-3.2	93	17	44	2	30	6.64	†2.44	1.67	....	11	15	11	5	S	3,8,14,18,27
Ames (*a*)	Story	926	20	70.2	-4.8	94	18	44	27	38	2.89	-2.19	.80	....	9	21	4	6	NW	11,14,26
Audubon	Audubon	1,301	8	69.8	-3.1	93	17,18	44	24	42	4.98	†1.06	1.60	..	15	12	11	8	.....	3,4,5,10,11, 19,20,30
Baxter	Jasper	998	....	70.4	.....	92	16,17,18	45	2	33	6.70	.....	2.25	....	10	15	10	6	SW	18,19
Belle Plaine	Benton	826	12	69.4	-4.2	93	16,17,18	47	2	30	3.99	†0.35	1.45	....	10	10	14	7	SE	
Buckingham	Iowa	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.70	.....	1.21	....	9	12	16	3	.....	
Carroll	Carroll	1,265	12	70.6	-3.3	93	17,18	47	2,23	36	3.92	†0.02	1.78	....	14	15	4	12	.....	2,3,10,11, 18,20
Cedar Rapids	Linn	733	19	72.6	-3.2	98	16	48	2	32	5.62	†1.75	2 75	....	12	9	14	8	SW	
Clinton	Clinton	609	34	71.4	-2.6	95	16,17,18	42	2	39	3.78	-0.31	1.04	....	11	17	6	8	S	3,14,18,26,27
Davenport	Scott	606	31	72.9	-2.1	92	16	52	2	28	3.34	-0.32	.93	....	12	12	13	6	SW	3,10,11,14,19, 19,26,27,31
Delaware	Delaware	1,083	11	69.0	-3.6	92	17	45	2	32	3.38	-0.30	1.32	...	11	13	14	4	S	
Denison	Crawford	1,180	8	71.8	-2.0	92	16,17	46	1	33	3.33	-0 99	.48	....	16	22	8	1	S	3,4,5,6,7,10, 11,13,18,19, 20,21,25,29 30
Des Moines	Polk	861	24	71.6	-2.9	93	18	54	2	30	6.94	†3.24	4.32	....	11	13	12	6	SW	10,11,13,14, 18,19,20,29, 30
De Soto (*a*)	Dallas	866	....	70.7	.....	93	17	51	2,24	32	9.98	.....	7.73	..	11	....	....	....	SW	
Dubuque	Dubuque	655	29	71.2	-3.1	94	17	47	2	28	1.86	-2.42	.83	....	11	13	12	6	NW	3,11,14,18, 26
Fort Dodge	Webster	1,126	....	70.6	.....	95	17	49	23	35	2.21	.....	.48	....	13	....	....	....	... .	
Galva	Ida	1,290	8	69.8	-4.2	93	18	43	23	39	4.09	-0.11	.99	.	11	17	8	6	.....	10,29
Gilman	Marshall	1,052	...	.....	.....	.....	.....	.....	.....	.....	5.56	.....	2.27	....	13	18	6	7	S,SW	
Grinnell (near)	Poweshiek	1,023	9	70.8	.....	94	17,18	49	1	37	5.55	.....	3.05	....	10	16	10	5	SW	3,6,8,10,11, 14,18,19,20
Grundy Center	Grundy	976	11	69.7	-2.5	93	17,18	48	1,2	32	5 38	†1 20	1.46	....	14	17	6	8	S	3,4,8,18,19
Guthrie Center	Guthrie	1,077	6	71.6	-2.4	94	18	47	2	35	6.90	†2 36	3.10	. .	14	21	7	3	SE	2,3,11,13,18, 20
Harlan	Shelby	1,192	....	71.4	-3.2	93	17,18	47	1	38	5.20	-0.80	2.11	....	14	8	17	6	S	3,4,13,14,19, 20,21,30
Ida Grove	Ida	1,220	....	72.4	.....	95	16	46	23	37	2.70	.....	.80	..	6	19	10	2	E	
Independence	Buchanan	921	38	67.9	-5.5	92	17,18	45	2	30	3.73	-0.99	2.00	....	10	17	5	9	N,SW,NW	18
Iowa City	Johnson	685	43	71.6	-2.6	96	16,17	46	2	35	2.49	-2.01	.69	....	13	....	....	....	N	
Iowa Falls	Hardin	1,170	90	68.9	-4.1	93	17,18	47	2	42	3.86	†0.02	1.21	..	13	16	6	9	S	4,8,11,14,18, 26,27,30
Jefferson	Greene	1,052	....	.....	....	.....	.....	.....	.....	.....	6.84	.....	1.77	....	11	....	....	....	SE	
LeClaire	Scott	576	....	.....	.....	.....	.....	.....	.....	.....	4.04	.....	2.13	....	12	..	....	....	S	
Logan	Harrison	928	35	71.6	-3.4	98	27	40	23	43	.....	.....		....		12	10	9	SW	
Maquoketa	Jackson	688	9	69.6	-5.5	96	17	39	2	39	2.48	-1.61	1.33	..	9	16	10	5	SW	
Marshalltown	Marshall	947	9	71.4	-2.4	100	17	46	7	38	4.50	†0.05	1.66	....	13	19	5	7	SE	
Mt. Vernon	Linn	847	35	71.9	-5.4	94	31	47	2	35	3.19	-1.44	.83	...	9	16	7	8	S	
Odebolt	Sac	1,356	5	73.0	-3.1	96	16,17	48	23	38	2.82	-2.30	.65	....	11	21	5	5	.....	
Ogden	Boone	1,088	8	70.0	-4.9	92	17	49	1,23	28	6.14	†2.02	1.88	....	13	18	5	8	SE	
Olin	Jones	760	....	71.0	-3.8	94	16	47	2	31	2.59	-1.01	1.03	....	10	15	13	3	SW,NW	3,8,11,14,18
Onawa	Monona	1,053	....	73.6	.....	95	16	52	1,23	32	3.33	-1.30	.74	....	13	25	3	3	SE	3,5,6,11,13, 19,20,25,29
Perry	Dallas	975	...	71.6	....	94	18	50	2	30	6.52	....	1.84	....	12	10	10	11	.....	
Rockwell City	Calhoun	.....	....	71.5	-2.4	95	17	48	2,23	32	2.86	-1.14	.55	....	12	19	11	1	.....	
Sac City (*c*)	Sac	1,278	22	70.4	-2.9	94	16	49	2,6,23	33	3.15	-0.66	.87	....	11	....	..	....	SW	
Sioux City	Woodbury	1,165	13	71.4	-2.9	94	16	50	1,23	27	5.49	†2.12	1.88	...	14	15	9	7	SE	13,20,25,26
Stuart	Guthrie	1,316	5	71.1	-5.2	97	17	47	2	35	8.30	†3.33	5.60	...	11		....	....	E	
Tipton	Cedar	807	....	73.3	.....	96	17	50	2	31	2.25	.....	0.42	..	10	17	12	2	SW	
Toledo	Tama	856	8	70.2	-4.7	95	17	44	2	35	3.71	†0 48	1.40	....	10	15	11	5	SW,NW	14
Vinton	Benton	810	12	70.4	-3.3	94	17	43	2	35	3.51	†0.12	1.10	....	11	23	4	4	SW	3
Waterloo	Black Hawk	862	15	70.0	-4.0	98	17	46	2,3	37	3.56	-0.59	1.17	....	11	15	11	5	SW	3,18
Waukee	Dallas	1,039	....	73.6	.....	97	17,18	52	1,2	33	9.31	.....	6.80	...	11	16	11	4	S	11,14,19,20
Wilton Junction	Muscatine	683	7	71.9	-3.5	96	17	43	2	36	2.14	-3.13	.44	...	8	16	7	8	NW	30
Whitten	Hardin	1,036	....	71.1	-3.6	94	16,17,18	48	1,2	35	6.05	†2.28	2 00	....	8	15	9	7	SW	3,8,11,14,18
Zearing	Story	.....	...	69.6	.....	93	18	47	2	30	4.73	.....	.98	....	9	17	9	5	S	
Average				71.0	-3.1	94.4	....	44.6	.....	34.1	4.47	†0.38	..	....	11	16	9	6	SW	

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Above normal. ‡Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. § Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JULY, 1904.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
on....	Max..	80	83	88	83	75	73	71	84	90	90	85	86	86	83	92	93	93	94	86	84	78	78	79	83	84	85	84	87	87	90	88	84.6
	Min ..	49	63	63	59	56	57	58	58	59	65	66	58	58	64	57	71	69	67	67	63	56	53	57	57	55	61	62	58	61	71	64	60.7
ia.....	Max..	75	78	86	78	70	66	72	79	82	86	80	80	83	84	89	92	91	92	83	81	80	77	76	80	81	82	82	86	82	..	..	81.1
	Min ..	51	50	52	63	56	60	58	58	60	60	65	57	57	60	58	59	72	71	65	62	60	57	51	51	58	60	64	58	60	65	..	59.3
ona...	Max..	75	72	76	80	75	73	75	75	79	86	80	80	77	78	85	90	90	88	86	78	78	75	78	78	80	84	81	82	80	84	81	80.0
	Min ..	47	51	60	54	58	59	56	62	64	60	59	9	57	63	55	7	71	70	61	59	54	55	48	51	59	61	52	57	64	71	57	58.9
erton .	Max..	77	77	83	80	68	69	71	80	84	87	82	80	81	84	88	90	91	91	84	82	79	77	78	80	83	83	82	85	83	90	86	81.8
	Min ..	52	51	62	62	55	59	60	63	59	64	65	55	60	65	56	70	68	68	64	64	61	53	51	51	55	62	61	55	63	71	67	60.4
a.....	Max..	74	76	79	80	74	68	64	75	80	83	80	79	79	77	87	92	91	87	86	79	78	73	74	79	77	82	81	84	83	82	80	80.1
	Min ..	50	49	62	53	58	58	56	56	58	62	60	56	61	60	56	74	70	70	63	60	53	54	50	54	61	60	54	57	64	62	56	58.7
iana...	Max..	73	78	86	78	75	70	74	81	79	85	79	78	83	84	85	92	93	92	84	81	78	77	76	80	81	85	81	84	79	84	86	81.3
	Min ..	53	44	60	62	54	62	57	63	60	58	67	58	53	66	56	70	71	71	67	63	57	59	53	51	55	63	63	56	62	69	66	60.3
ies	Max..	77	79	82	80	76	70	71	82	81	86	83	82	84	80	..	92	93	94	85	81	76	78	76	80	81	84	82	84	83	80	86	81.5
	Min ..	52	47	61	58	55	61	55	62	59	61	..	57	56	63	52	72	74	69	65	62	57	60	50	49	56	64	44	52	64	70	59	58.9
antic..	Max..	78	79	82	82	76	70	68	80	90	90	87	85	82	82	90	92	93	92	87	84	79	79	82	80	82	85	87	87	83	81	89	83.6
	Min ..	46	51	63	56	54	60	55	60	50	65	65	51	61	61	48	72	71	70	65	62	58	52	45	45	45	60	55	50	65	73	55	57.7
dubon.	Max..	77	79	81	81	73	70	67	78	88	88	82	82	82	80	90	92	93	93	86	82	77	76	79	81	79	85	85	87	85	83	86	82.2
	Min ..	46	46	62	55	53	60	59	61	51	64	63	52	58	60	48	72	72	70	66	60	56	55	47	44	58	59	52	50	64	71	51	57.5
xter. ..	Max..	77	78	84	81	74	71	75	77	82	85	80	82	82	83	86	92	92	92	84	83	81	78	77	78	81	80	83	84	80	80	85	81.5
	Min ..	49	45	62	58	54	59	55	60	59	62	63	54	57	62	53	71	71	69	64	62	55	59	60	51	56	62	59	55	64	70	65	59.2
lford..	Max..	77	77	81	80	72	73	68	78	87	88	85	84	82	80	88	88	88	89	84	81	79	77	79	78	78	85	85	83	85	84	89	81.5
	Min ..	48	51	64	58	56	60	58	58	55	53	65	55	63	63	52	71	62	69	64	62	60	51	51	50	58	68	58	54	64	73	63	59 3
lknap..	Max..	70	70	80	80	73	70	75	75	80	82	83	81	80	85	88	89	90	90	82	82	77	75	76	83	80	80	80	85	85	85	87	80.6
	Min ..	54	54	55	60	62	62	61	62	63	65	68	65	60	65	62	73	73	73	65	63	61	60	57	58	58	65	67	62	61	65	75	63.2
lle Pl'e	Max..	70	75	83	77	70	57	67	77	79	82	77	76	80	83	85	93	93	93	80	76	77	75	74	78	81	82	80	81	77	85	84	78.9
	Min ..	52	47	60	60	55	50	57	62	60	59	65	53	55	65	55	70	70	71	61	64	56	53	52	55	57	63	63	58	64	68	67	50.9
napar'e	Max..	74	75	87	80	82	68	75	79	84	85	83	80	82	83	88	92	92	91	84	80	79	77	80	82	84	84	86	85	93	86	82.9
	Min ..	52	47	59	65	51	60	57	61	62	59	66	57	57	65	56	70	68	69	63	59	59	55	53	53	54	63	60	54	59	68	69	59.8
itt.	Max..	76	71	80	83	77	77	77	80	83	87	81	82	79	80	86	91	91	90	85	82	79	73	80	79	71	85	79	85	82	84	80	81.1
	Min ..	45	58	58	53	57	59	55	62	59	57	57	54	57	61	51	71	68	69	61	58	52	53	47	51	58	59	51	58	64	67	55	57.6
rling'n	Max..	80	77	86	80	77	69	76	77	84	83	84	81	81	88	88	90	93	91	83	88	82	82	77	82	85	84	85	85	84	92	89	83.3
	Min ..	55	51	62	70	57	61	59	63	65	61	67	69	62	66	61	74	71	73	69	71	72	60	54	58	57	64	59	59	64	67	67	63.5
rroll...	Max..	77	78	80	82	76	71	72	76	84	88	80	83	84	82	90	92	93	93	88	84	80	77	76	80	77	82	86	86	86	80	78	82.0
	Min ..	48	47	54	52	57	59	55	59	62	62	64	54	59	60	54	72	73	71	64	65	58	58	47	57	60	61	54	55	64	73	55	59.1
dar R..	Max..	76	80	86	77	75	68	75	80	82	86	80	83	84	85	90	98	97	96	87	83	81	80	85	85	85	86	85	86	80	82	89	83.5
	Min ..	54	48	57	62	58	62	59	63	63	60	65	60	57	66	60	68	74	75	68	67	59	60	55	54	59	62	62	59	62	67	66	61.6
ariton .	Max..	76	77	85	77	72	67	70	79	82	86	83	79	80	81	88	90	90	90	84	81	80	76	77	79	81	82	81	85	82	87	85	81.0
	Min ..	49	48	62	60	53	59	60	62	58	64	64	56	59	58	54	70	68	63	64	63	59	54	51	52	55	60	61	55	63	71	65	59 5
arles C.	Max..	71	76	76	77	74	68	74	76	76	86	78	78	77	81	84	92	91	93	84	76	78	73	75	78	77	82	81	84	83	84	86	81.3
	Min ..	48	44	59	57	58	59	54	61	55	55	73	55	54	61	52	68	72	70	64	50	51	55	49	47	55	59	50	55	60	63	56	57.1
arinda..	Max..	80	80	86	81	74	73	68	83	88	91	87	85	85	84	92	94	95	95	82	83	78	79	78	83	80	86	87	88	90	92	94	84.5
	Min ..	50	53	58	60	66	58	59	58	56	61	64	58	62	62	56	61	69	68	64	62	61	52	51	50	57	60	65	54	60	67	64	59.5
ear L...	Max..	82	78	79	88	75	78	74	81	82	83	84	85	76	82	87	92	91	91	89	89	81	84	74	80	80	77	82	81	84	82	88	82.0
	Min ..	50	50	58	56	64	59	56	62	59	61	59	56	58	62	61	69	74	71	66	62	59	55	51	55	62	63	56	60	63	71	61	60.3
inton...	Max..	73	81	86	81	84	71	72	81	84	85	88	80	84	90	89	95	95	95	88	91	86	81	80	84	87	85	86	84	86	91	90	84.9
	Min ..	52	42	52	53	52	62	59	59	63	57	63	59	50	63	56	62	69	70	65	55	54	56	52	48	52	63	61	56	58	64	68	57.9
l. Sprgs	Max..	76	80	86	90	73	75	70	88	88	98	90	88	86	88	91	91	91	93	81	81	80	80	84	80	81	85	84	85	89	88	94	85.0
	Min ..	53	54	66	58	59	61	59	61	61	62	64	60	60	63	60	72	70	68	64	64	63	55	53	54	58	60	62	67	66	72	64	61.7
olum. J.	Max..	72	78	86	80	78	67	77	80	84	85	80	79	83	86	87	92	92	91	82	86	81	78	78	81	82	84	82	85	86	90	86	82.5
	Min ..	53	47	60	66	57	60	57	62	62	60	66	63	56	64	58	72	71	71	67	62	58	56	52	54	58	62	61	56	63	59	67	60.6
orning..	Max..	75	78	84	79	70	72	68	78	86	86	82	81	82	80	88	89	89	90	81	80	76	75	75	78	79	82	81	83	85	84	87	80.7
	Min ..	45	50	63	56	57	59	57	63	51	63	64	59	63	60	57	71	69	70	64	62	60	53	49	52	59	61	59	55	65	72	57	59.5
orydon..	Max..	77	77	82	81	71	68	69	78	86	87	84	83	80	84	87	89	89	90	85	83	79	81	77	78	80	84	85	85	83	87	89	81.9
	Min ..	51	51	63	62	56	60	61	63	60	65	66	56	62	65	58	72	69	70	65	65	60	56	52	53	57	62	62	58	65	72	66	61.4
resco ...	Max..	70	75	74	78	77	79	78	75	78	80	79	73	..	..	..	..	90	90	83	77	78	75	75	76	74	78	81	82	80	81	77	85	84	78.9
	Min ..	45	43	51	58	51	59	58	54	58	53	60	54	..	..	..	..	55	60	63	58	51	52	50	45	56	60	50	60	62	58	57	54.8
avenpo't	Max..	70	76	87	79	79	67	72	77	83	83	82	79	80	87	86	92	92	91	86	88	82	80	77	80	81	83	84	84	84	90	87	82.2
	Min ..	55	52	59	65	60	64	57	61	66	62	68	61	63	66	64	74	74	74	70	66	61	59	55	57	62	65	65	59	68	69	70	63.6
ecorah. .	Max..	70	75	77	77	74	69	74	74	72	79	78	80	72	78	86	92	90	92	85	83	78	76	74	76	77	82	78	78	73	79	81	78 4
	Min ..	48	43	57	52	58	57	55	60	61	56	63	57	53	66	56	64	71	71	64	62	53	49	52	47	57	53	58	51	62	70	53	57.4
elaware.	Max..	70	77	80	77	80	65	74	79	78	85	81	78	80	86	85	91	92	91	84	82	78	75	74	81	82	85	78	83	78	79	84	80.4
	Min ..	46	45	53	60	55	58	54	57	58	55	64	56	54	64	55	65	70	70	65	61	55	58	49	50	53	62	58	54	59	66	63	57.7
enison..	Max..	74	76	80	79	74	70	67	77	84	86	81	80	80	81	83	92	92	91	86	80	76	75	74	79	78	85	87	86	85	84	84	81.0
	Min ..	46	51	63	55	57	60	60	60	53	64	64	52	61	61	55	73	73	71	74	71	66	63	55	55	68	68	70	71	71	71	51	62.7
es M....	Max..	74	76	83	80	73	70	70	78	82	86	82	80	82	83	87	92	92	93	83	79	78	77	75	78	78	80	82	84	81	83	87	80.9
	Min ..	55	54	64	62	58	62	60	63	60	66	64	60	61	65	57	73	73	65	64	66	62	60	55	54	60	64	65	60	66	72	64	62.4
e Soto ..	Max..	74	77	83	77	74	70	68	78	81	85	82	78	82	80	87	91	93	92	87	79	76	74	73	77	77	81	80	83	82	80	..	80.0
	Min ..	54	51	63	59	54	61	59	61	59	65	65	59	61	65	55	74	73	72	65	63	59	60	54	51	58	65	62	57	67	72	..	61.4
ows.	Max..	73	75	76	81	75	69	70	73	80	82	79	79	80	79	84	91	91	90	88	83	82	73	71	77	79	83	80	82	80	81	81	79.8
	Min ..	48	50	58	55	55	59	54	62	59	60	60	57	57	63	52	72	72	68	65	61	52	56	48	50	57	61	53	57	63	69	51	58.4
ubuque.	Max..	69	75	82	79	79	68	74	78	78	82	82	79	81	86	88	93	94	93	86	83	78	76	76	80	80	82	79	80	80	82	87	80.9
	Min ..	53	47	58	64	59	61	59	60	62	58	67	62	58	66	61	69	75	70	69	64	59	59	55	54	58	65	64	55	64	66	66	61.5
arlham .	Max.	75	76	82	79	70	69	67	79	82	86	81	80	81	81	87	89	90	90	83	80	78	75	75	77	76	82	82	83	83	80	85	80.1
	Min ..	45	43	60	55	49	58	56	56	51	61	60	50	53	61	46	70	69	67	62	57	51	52	47	43	53	60	56	48	63	68	56	55.7
lkader ..	Max..	76	81	82	82	80	70	78	81	79	87	84	85	82	86	92	97	99	97	92	90	81	81	82	84	82	88	84	86	84	81	88	84.5
	Min ..	47	42	54	63	56	60	55	60	56	58	64	56	53	66	53	63	75	68	68	59	52	55	49	42	52	63	55	51	58	70	58	57 4
sthervil.	Max..	74	75	81	80	75	69	68	77	80	83	81	80	77	78	85	93	90	87	87	80	80	74	76	80	80	78	80	88	83	85	80	80 1
	Min ..	49	47	58	54	54	59	56	60	49	45	60	54	45	47	44	59	66	72	57	57	54	52	46	48	57	58	50	55	58	54	56	54.2
ayette ..	Max..	71	77	77	77	76	68	74	76	79	81	80	78	78	81	87	92	93	93	86	85	84	75	72	72	78	87	..	84	78	81	.	80.0
	Min ..	40	38	48	57	56	55	49	58	56	53	62	58	50	58	52	66	67	68	58	54	54	50	48	48	54	61	..	51	52	65	..	54.9
orest C'y	Max..	77	81	79	79	74	74	74	76	80	84	82	83	76	81	85	91	90	88	88	81	80	75	80	79	77	86	79	81	81	84	81	80.8
	Min ..	48	48	54	54	59	59	55	60	58	57	59	55	57	61	53	59	72	71	61	60	56	52	49	51	58	59	56	59	63	68	58	57.5
t. Dodge	Max..	75	78	82	80	74	72	71	77	81	85	81	81	81	79	88	94	95	91	89	81	80	76	79	82	82	84	83	87	83	81	85	81.8
	Min ..	51	52	54	56	58	60	57	59	60	63	64	57	58	64	56	59	75	72	68	64	56	59	49	50	62	63	58	57	59	64	60	59 5
alva.....	Max..	79	81	82	82	78	71	66	78	85	88	82	83	81	83	88	92	92	93	90	82	79	76	78	82	80	85	83	88	86	83	80	82 0
	Min ..	46	46	63	51	56	59	55	52	53	62	63	51	61	63	51	73	70	71	61	58	58	57	43	45	61	58	50	57	64	68	60	57.6
lenw'd .	Max..	75	75	79	75	72	70	68	78	87	86	83	80	72	80	88	89	89	90	86	79	77	75	73	77	78	79	82	84	89	80	84	80.0
	Min ..	55	54	63	58	57	60	58	62	60	58	64	62	64	62	60	74	73	73	65	64	61	55	53	55	63	61	63	60	67	65	61	61.6
rand M.	Max..	70	75	78	75	77	67	72	77	74	82	79	78	77	80	84	90	92	90	85	73	78	74	75	78	78	82	77	77	79	85	80	78.5
	Min ..	46	45	55	59	57	58	54	57	57	55	62	56	54	65	55	65	71	69	65	60	55	54	50	50	57	60	55	54	59	67	61	57.6
reene...	Max..	75	79	79	80	80	70	76	78	81	84	82	82	79	80	89	94	93	92	88	84	80	77	79	81	77	85	83	85	81	84	84	81.9
	Min ..	47	46	59	56	58	59	53	63	57	56	59	54	53	63	51	68	73	67	65	61	63	55	48	48	56	60	53	58	62	70	58	58.0
reenfi'ld	Max..	79	79	85	78	74	68	69	82	83	90	83	78	82	79	89	90	92	92	87	78	80	75	75	79	80	85	82	87	84	85	83	82.3
	Min ..	48	50	63	57	56	58	59	56	54	66	65	54	57	63	58	72	72	69	64	64	58	56	48	53	58	63	61	58	64	63	60	59.6
rinnell .	Max..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	....
	Min ..		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
rinnell(near	Max..	74	76	87	81	76	67	72	80	82	87	79	79	80	83	85	92	94	94	87	82	82	77	75	81	83	84	81	85	80	84	86	81.8
	Min ..	49	50	50	59	55	60	57	60	60	63	63	55	60	63	56	72	70	71	64	63	57	57	51	55	57	61	60	56	63	69	66	59.7
rundy C	Max..	74	76	83	77	72	70	74	77	80	84	79	78	81	80	86	92	93	93	86	80	76	77	76	77	79	83	82	83	80	79	84	80.4
	Min ..	48	48	56	57	55	58	53	62	57	58	64	55	55	65	54	70	72	70	65	61	54	58	49	52	56	61	60	64	62	70	60	59.0
uthrie C	Max..	78	79	86	82	80	73	70	81	84	89	88	83	84	82	90	92	92	94	93	84	81	79	77	81	80	84	83	85	86	85	85	83.5
	Min ..	50	47	63	57	58	61	57	60	55	65	63	56	60	62	55	73	73	72	66	64	57	57	49	49	58	62	57	54	66	70	57	59.7
ampton.	Max..	75	76	77	79	72	70	73	81	83	84	81	86	80	83	91	94	95	94	90	84	81	79	83	81	80	87	83	86	81	81	86	82.5
	Min ..	50	48	58	57	58	60	55	62	60	60	60	56	57	64	57	71	74	70	65	62	56	57	50	50	58	61	54	58	64	71	60	59.5
anlont'n	Max..	71	74	77	78	71	69	71	76	76	81	77	77	74	77	83	90	85	88	85	76	77	71	75	77	75	82	77	79	79	81	79	77.7
	Min ..	46	45	58	56	59	59	54	62	57	54	57	54	53	62	53	70	71	71	61	59	52	53	49	48	61	59	50	57	62	67	57	57.3
Harlan....	Max..	78	81	85	84	74	72	75	79	90	87	84	84	83	81	89	91	93	93	88	84	79	75	79	82	81	87	84	86	86	83	85	83.4
	Min ..	47	50	63	53	55	59	58	62	64	51	63	55	60	60	51	72	71	70	66	64	59	52	48	48	60	58	56	54	65	69	52	58.5
Hopeville.	Max..	76	78	83	81	70	69	68	81	85	90	83	80	82	80	83	90	90	91	83	81	78	75	76	80	80	85	82	86	83	86	90	81.6
	Min ..	51	51	63	60	57	59	59	60	58	65	68	58	60	64	57	71	68	68	64	63	60	56	51	53	56	61	63	56	63	72	66	60.7
Humboldt	Max.	75	78	83	78	74	71	74	76	80	86	80	86	78	79	78	86	93	93	91	87	78	78	74	78	81	79	76	70	85	81	81	82	80.1
	Min ..	50	50	61	56	58	61	60	64	60	64	62	56	60	58	54	54	74	71	65	62	54	58	58	52	61	62	56	58	65	65	60	59.6
Ida Grove	Max..	79	79	83	84	71	73	70	79	85	88	86	85	81	83	92

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JULY, 1904—Continued.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Inwood..	Max..	76	77	82	82	71	65	64	74	81	83	82	80	73	78	87	94	83	89	87	79	81	80	75	81	84	81	82	87	88	83	80	80.9
	Min ..	50	52	63	52	65	55	59	54	65	61	73	55	61	40	56	74	70	66	60	62	56	48	68	50	50	52	53	58	65	65	54	58.6
Iowa City	Max..	76	81	89	80	76	69	70	82	84	87	78	81	86	86	91	96	96	95	86	86	80	79	80	84	84	87	83	87	79	84	90	83.9
	Min ..	54	46	56	63	55	62	57	63	61	56	65	57	54	62	57	61	73	73	67	63	57	58	53	53	54	56	65	55	61	63	67	59.6
Iowa Falls	Max..	74	89	79	80	72	71	74	78	80	85	78	81	82	80	86	92	93	93	87	79	77	74	79	78	78	83	79	83	82	82	81	80.3
	Min ..	50	47	50	57	54	57	54	56	60	58	60	55	54	58	50	65	72	70	62	61	53	56	49	48	52	51	57	57	59	66	57	56.0
Keokuk..	Max..	73	76	86	78	76	70	77	76	84	85	83	79	81	89	89	91	93	90	86	88	81	79	76	80	82	83	86	85	85	93	86	82.8
	Min ..	56	54	62	70	59	63	62	64	67	66	71	63	62	70	67	76	76	75	69	65	65	59	60	58	58	67	67	59	67	71	70	65.1
Keosa'qua	Max..	75	78	87	82	77	69	78	80	86	87	83	82	83	90	90	92	93	93	87	88	82	80	78	81	84	88	88	89	84	94	87	84.4
	Min ..	52	47	62	67	52	61	57	62	64	60	67	59	55	67	55	67	69	70	67	58	60	54	52	50	54	61	62	53	60	65	70	60.0
Knoxv'le.	Max..	75	79	86	82	75	73	80	80	80	87	80	80	84	82	88	92	92	93	74	83	78	76	76	80	83	83	80	85	81	86	85	81.9
	Min ..	56	49	64	62	57	61	58	60	60	63	63	60	58	65	63	73	71	71	63	61	60	59	49	52	58	62	65	56	65	72	67	61.4
Larrabee.	Max..	85	81	88	85	84	78	66	82	90	90	89	89	82	80	94	95	93	95	91	82	84	86	83	84	81	85	85	88	91	83	81	85.5
	Min ..	45	52	64	51	52	57	53	55	53	59	60	51	60	60	61	75	69	72	63	60	57	57	46	52	60	57	53	57	65	67	56	54.0
Le Mars..	Max..	..	..	..	81	73	68	77	82	83	84	..	81	79	78	88	93	90	87	86	80	78	74	75	80	80	85	..	..	..	..	..	81.0
	Min ..	..	..	..	52	61	58	57	54	60	60	..	51	61	60	56	74	68	71	60	63	60	59	45	50	48	59	..	..	..	..	..	58.2
Lenox....	Max..	73	75	83	77	73	71	68	79	84	86	82	79	81	79	87	88	89	89	85	77	75	75	73	77	78	81	81	83	85	85	85	80.1
	Min ..	51	51	63	58	58	59	58	59	57	64	64	68	61	63	56	72	69	68	63	63	61	55	52	55	58	61	64	57	64	72	64	60.9
Leon.....	Max..	76	77	83	79	71	71	70	80	85	87	88	80	83	82	89	90	90	90	87	82	81	76	77	80	80	83	82	84	86	87	83	82.0
	Min ..	53	50	62	62	57	57	59	61	58	65	67	59	59	65	58	72	69	68	64	64	61	58	53	53	56	62	63	56	63	72	67	61.1
Logan....	Max..	81	85	86	81	80	78	77	84	90	95	92	90	90	88	89	84	88	86	82	78	76	74	83	82	89	88	08	89	91	87	78	85.1
	Min ..	48	58	61	58	50	56	58	57	55	66	67	66	57	64	60	62	68	64	64	50	55	44	40	67	60	56	58	49	75	55	50	58.0
Maquo'ta.	Max..	78	78	85	80	78	66	74	78	84	85	85	82	81	88	89	95	96	94	88	88	84	82	80	84	83	83	87	86	81	84	91	83.6
	Min ..	50	39	53	58	52	61	53	58	60	54	63	58	50	60	53	60	72	70	67	58	49	50	48	45	48	50	57	47	54	60	64	55.5
Marshlt'n	Max..	77	80	88	82	74	70	78	79	82	89	79	83	85	84	91	98	100	98	87	80	80	80	80	85	87	87	85	87	83	89	89	84.4
	Min ..	50	46	52	58	53	60	54	60	59	59	64	55	53	63	53	61	72	70	64	62	55	58	54	49	55	61	59	56	61	66	62	58.4
Mason C..	Max..	73	77	79	80	75	70	73	76	78	80	80	79	74	78	90	96	88	88	90	83	83	74	79	82	77	85	80	80	80	82	83	80.4
	Min ..	50	50	60	57	62	60	56	63	60	59	59	56	60	63	58	72	66	72	67	63	58	55	51	55	62	61	55	60	65	72	61	60.9
Massena..	Max..	81	80	85	84	79	72	70	83	90	91	88	86	82	83	90	94	93	94	92	85	81	78	81	84	81	88	86	88	88	84	88	84.8
	Min ..	49	50	50	57	58	59	58	60	52	65	66	59	61	62	51	72	71	71	65	63	59	55	50	50	57	61	59	54	54	70	57	58.9
Mt. Ayr..	Max..	78	83	85	82	74	74	70	81	89	90	85	84	84	84	92	92	18	93	86	82	80	80	80	82	80	87	86	87	86	86	91	84.1
	Min ..	52	51	62	59	56	59	59	59	59	63	64	59	60	62	59	71	68	67	64	63	61	56	52	54	57	61	61	56	62	71	65	60.4
Mt. Pl'snt	Max	75	79	89	82	76	67	79	80	86	86	90	84	85	93	91	96	97	95	88	91	86	81	79	82	83	88	87	87	85	95	90	85.5
	Min ..	67	50	60	56	56	62	57	61	64	61	66	58	57	65	72	72	70	71	66	62	60	57	53	54	57	65	69	56	63	68	69	62.7
Mt. Ver'n	Max.	80	82	84	80	76	71	75	79	85	91	85	90	84	88	90	91	93	93	90	83	78	81	85	84	82	83	83	89	78	80	94	84.1
	Min .	50	47	57	60	56	60	56	62	62	64	64	56	55	64	58	68	71	70	65	63	58	57	51	51	52	62	62	57	61	65	68	59.7
New H. ..	Max..	71	74	75	77	75	68	75	..	74	81	78	77	75	78	83	89	88	90	84	76	78	74	75	77	..	81	77	80	76	79	80	78.1
	Min ..	44	45	55	55	57	57	62	..	52	55	59	52	52	63	51	65	68	67	63	58	53	..	48	50	52	..	50	53	59	67	55	55.6
Odebolt ..	Max.	81	81	82	84	88	76	75	77	88	90	86	87	84	82	92	96	96	93	93	90	87	81	84	85	86	91	89	81	87	86	86	86.3
	Min ..	59	49	62	53	57	60	56	59	54	63	65	54	61	63	56	74	73	72	63	60	57	57	46	60	60	60	53	56	64	71	55	59.7
Ogden....	Max.	74	77	82	81	73	70	70	78	81	85	78	79	81	80	85	91	92	91	85	79	77	75	77	79	79	85	83	84	82	82	84	80.6
	Min ..	49	55	60	58	55	59	55	60	56	62	62	54	58	61	57	71	72	69	65	62	56	57	49	52	58	62	58	56	64	71	57	59.4
Olin	Max..	70	77	84	78	80	69	75	81	82	82	82	82	80	85	85	94	93	93	85	85	82	78	77	80	83	85	80	81	82	85	85	81.9
	Min ..	52	47	58	65	55	63	56	60	61	57	66	60	56	66	56	67	69	71	68	68	54	67	53	49	53	63	60	52	59	67	65	60.1
Omaha, N	Max..	76	76	78	79	74	68	69	79	86	89	84	84	84	83	90	93	92	93	85	81	76	75	76	79	78	83	84	86	90	83	84	81.5
	Min ..	56	58	65	61	61	61	61	62	59	69	64	65	69	64	65	76	75	74	68	65	63	59	54	60	65	63	64	65	70	71	64	64.4
Onawa....	Max..	79	81	85	85	83	74	68	80	89	90	86	87	84	86	93	95	93	91	83	85	82	79	79	83	79	86	85	88	91	88	86	84.8
	Min ..	52	54	65	57	61	62	61	57	56	68	66	60	67	64	61	75	71	73	66	67	64	60	52	55	63	62	59	60	68	71	56	62.4
Osage.....	Max..	76	79	77	80	74	70	64	78	79	83	81	80	73	79	87	92	88	90	87	80	81	74	78	80	76	86	79	83	76	84	82	79.9
	Min ..	46	44	57	58	69	58	54	62	56	55	54	54	53	62	53	68	72	66	61	58	53	53	48	48	53	58	53	56	62	69	59	57.2
Osceola...	Max..	79	82	84	81	73	79	72	80	87	81	85	82	85	81	90	92	93	93	83	82	81	78	81	69	82	85	83	87	89	86	90	83.1
	Min ..	51	49	57	57	54	58	54	61	58	60	64	58	57	60	60	59	69	68	64	66	60	58	52	50	56	60	64	56	63	68	66	59.9
Oskaloosa	Max..	73	78	85	76	72	67	73	78	80	84	79	78	82	82	86	91	92	91	84	78	78	77	74	78	81	81	81	84	82	84	85	80.2
	Min ..	52	48	60	63	53	62	58	61	59	61	64	54	56	65	55	73	72	71	65	60	59	57	54	51	57	61	62	55	55	71	67	60.9
Ottumwa	Max..	78	79	87	82	..	67	78	81	86	89	82	82	84	89	91	95	95	95	87	83	82	81	..	83	86	86	85	89	85	92	89	85.1
	Min ..	53	50	52	63	58	63	60	63	64	64	67	61	59	67	61	75	73	76	68	63	63	60	57	55	60	66	67	58	67	71	61	62.7
Pacific J'n	Max..	79	76	82	79	75	71	71	82	89	90	86	84	82	81	90	91	92	92	87	83	78	78	77	81	80	82	84	87	90	84	86	82.9
	Min .	49	52	63	58	58	60	58	58	55	64	63	55	64	60	56	72	71	70	66	64	60	56	49	50	61	59	60	57	67	67	57	60.1
Perry.....	Max..	78	86	84	81	76	71	69	74	84	87	82	81	85	83	89	92	92	94	86	80	77	76	78	82	80	86	83	86	84	80	85	82.1
	Min ..	52	50	62	58	57	61	57	61	58	65	64	53	60	63	55	73	74	71	67	64	58	60	51	53	60	64	58	56	68	71	60	61.1
Plover....	Max..	77	77	83	82	76	70	75	76	83	86	81	80	79	78	87	94	93	86	86	80	80	72	76	80	81	85	81	87	83	85	80	81.3
	Min ..	50	49	62	52	58	55	52	53	60	61	62	59	56	54	56	72	69	72	64	64	60	60	47	48	55	58	52	55	64	70	55	58.2
Pocah'tas	Max..	76	78	81	81	76	70	70	77	81	85	80	81	78	80	86	93	94	90	89	81	80	75	80	80	80	86	83	87	84	81	83	81.5
	Min .	49	51	62	54	58	59	57	60	59	64	64	56	62	64	56	73	73	71	68	64	62	61	47	53	55	60	54	55	60	71	57	60.0
Primghar	Max..	75	76	81	80	76	68	63	71	81	81	80	78	..	75	86	90	89	84	85	77	78	71	75	80	79	81	81	81	85	82	77	78.9
	Min ..	47	51	61	50	50	59	55	58	55	62	63	55	60	59	55	74	68	68	62	60	55	55	49	50	60	57	54	55	65	67	53	57.8
Red Oak..	Max..	75	78	80	77	74	71	71	78	82	84	82	81	82	78	87	88	88	89	85	80	76	72	74	76	78	79	82	83	84	83	83	80.0
	Min ..	54	58	66	63	63	62	62	64	59	68	67	62	67	65	65	74	75	73	68	65	65	58	55	56	63	65	64	61	70	73	66	64.4
Ridgeway	Max..	77	80	76	79	78	74	79	76	83	81	85	83	79	83	91	99	92	95	88	82	81	77	78	80	75	86	83	84	80	85	85	82.4
	Min ..	48	50	57	60	60	60	55	60	60	58	64	57	54	66	58	67	75	70	64	62	58	56	53	54	58	62	57	59	63	71	60	60.0
Rock R...	Max..	76	80	84	82	74	69	70	70	74	80	85	80	76	83	90	92	92	84	89	78	80	80	78	82	80	82	80	86	88	82	80	81.0
	Min	48	46	53	60	62	57	60	55	56	60	55	62	60	58	66	68	68	66	58	62	54	52	45	48	62	60	50	60	64	60	55	57.7
Rockw'l C	Max..	76	80	83	87	80	78	73	75	85	87	85	80	82	82	88	93	95	93	86	80	78	75	80	81	84	85	86	87	85	85	83	83.1
	Min ..	50	48	60	55	58	58	55	57	65	67	65	55	58	63	56	77	73	71	66	68	56	57	48	52	60	60	58	56	62	68	55	59.9
Sac City..	Max..	76	77	82	82	75	70	66	79	..	..	..	87	82	81	88	94	93	91	90	82	81	76	79	81	79	81	83	86	84	83	84	81.9
	Min ..	51	49	62	54	51	49	53	58	..	..	..	57	60	62	55	73	73	75	67	60	59	58	49	50	61	61	55	57	64	70	58	59.0
St. Cha'les	Max..	75	78	83	78	69	67	69	77	82	85	80	80	81	80	87	91	93	92	81	76	79	75	74	78	79	81	81	84	82	86	87	80.8
	Min ..	55	52	63	60	59	61	59	62	59	65	66	59	61	65	61	73	72	71	65	65	62	59	54	55	59	63	64	60	66	73	65	62.4
Sibley	Max.	73	77	81	81	68	67	64	76	79	82	83	80	76	76	85	90	90	83	86	79	79	73	75	70	79	83	81	84	83	81	79	79.1
	Min ..	46	49	55	51	54	56	57	58	53	58	50	50	54	60	51	57	67	71	57	60	53	51	44	47	51	53	48	52	58	63	54	54.5
Sigourn'y	Max..	83	82	87	82	72	69	76	85	85	83	78	82	83	85	87	92	94	93	81	83	81	78	79	82	85	86	83	88	84	88	89	83.4
	Min ..	51	46	59	62	54	61	55	56	60	73	66	56	56	64	56	66	70	70	64	64	58	57	55	53	55	61	62	55	62	69	65	60.0
Sioux C'y.	Max..	76	76	82	81	72	68	66	74	83	84	85	81	81	80	88	94	90	86	87	81	77	75	74	79	79	86	82	85	90	83	84	81.0
	Min ..	50	57	62	57	63	60	61	57	57	66	66	57	64	63	61	75	72	74	67	61	63	59	50	58	61	60	57	63	68	68	61	62.0
Sioux C'r.	Max..	79	79	83	82	74	69	67	77	84	83	82	82	77	77	87	91	90	85	86	78	79	75	77	81	83	83	85	87	85	85	84	81.2
	Min ..	49	49	62	52	61	58	59	57	56	60	62	56	60	60	55	78	67	66	59	60	59	57	51	50	62	57	53	57	67	65	54	58.5
Spirit L..	Max..	..	78	80	80	75	69	67	75	78	80	81	84	76	75	..	..	..	..	..	..	..	..	82	81	76	84	70	88	82	82	82	78.4
	Min ..	..	48	60	53	62	57	62	59	60	60	61	54	62	62	..	..	..	..	..	..	..	..	49	53	61	55	65	60	64	66	56	58.6
Stockport	Max..	71	77	83	79	79	68	79	77	83	82	82	79	80	83	85	88	89	88	82	86	80	78	74	80	79	82	83	84	83	89	85	81.2
	Min ..	57	58	62	68	57	63	60	66	67	68	71	62	60	67	59	74	72	72	69	62	63	59	56	56	56	66	65	56	63	71	73	63.6
Storm L..	Max..	74	74	78	78	72	69	64	75	81	84	80	79	79	78	85	90	90	88	87	80	79	74	74	78	76	84	81	83	83	83	80	79.4
	Min ..	48	51	55	53	57	51	56	58	55	57	65	54	58	62	60	65	70	72	62	60	55	57	45	51	61	61	51	56	60	65	59	57.7
Stuart...	Max..	79	80	85	85	76	75	72	83	87	91	87	89	84	84	91	95	97	95	93	81	79	76	79	83	78	86	83	83	87	83	85	84.4
	Min ..	49	47	50	52	54	55	55	55	55	60	59	55	56	59	56	68	67	68	64	56	55	56	51	54	55	63	62	58	66	69	62	57.8
Thurman.	Max..	80	78	80	82	79	73	70	83	90	93	90	87	83	84	91	92	91	94	89	82	78	78	78	81	81	83	84	85	90	87	85	83.9
	Min .	52	56	62	60	60	63	60	63	60	67	63	60	66	62	57	74	87	73	66	65	61	54	52	52	63	63	60	57	69	73	62	63.9
Tipton....	Max..	77	80	85	80	75	71	78	78	84	87	81	84	88	88	90	94	96	94	87	87	84	84	81	83	86	87	87	87	87	85	90	84.4
	Min ..	59	50	60	63	59	65	61	58	62	61	67	59	59	65	59	71	72	72	68	68	60	59	56	56	58	63	64	59	64	66	66	62.2
Toledo....	Max..	74	77	85	78	75	69	76	76	78	84	78	80	83	81	87	93	95	93	85	82	78	78	77	80	82	82	82	83	80	84	85	81.3
	Min .	49	44	61	59	53	60	56	60	60	57	64	55	51	65	52	72	71	70	66	63	54	59	50	48	57	63	60	55	64	69	65	59.1
Vinton. ..	Max..	74	78	84	79	75	68	74	77	78	85	81	80	81	84	88	92	94	93	89	81	77	76	78	79	80	84	82	83	79	82	87	81.4
	Min ..	50	43	59	60	56	60	56	62	60	57	66	57	53	65	56	70	71	72	66	64	57	58	51	49	55	63	61	56	63	68	61	59.5
Wapello..	Max..	74	85	..	84	76	67	70	75	87	81	78	79	79	84	83	89	91	91	85	82	81	80	76	..	80	81	85	84	83	89	89	81.7
	Min ..	55	49	..	66	55	62	58	54	64	60	69	61	54	66	60	74	73	74	69	63	61	59	56	..	55	64	64	57	64	68	71	62.2
Washi'ton	Max..	..	..	..	..	.	..	74	77	83	84	80	79	82	86	86	92	92	91	83	85	80	79	76	79	82	83	83	84	82	87	85	82.9
	Min ..	..	..	..	..	..	..	..	60	63	60	67	58	57	66	57	59	71	72	66	63	59	58	54	54	57	63	64	57	62	69	68	61.8
Waterloo.	Max..	75	79	83	83	75	69	76	78	79	84	80	81	81	83	89	95	93	97	86	80	77	78	78	80	81	87	83	85	80	78	82	82.1
	Min ..	48	46	46	59	56	58	54	58	58	58	64	56	54	61	56	59	74	72	67	62	56	60	50	49	54	60	59	58	61	64	60	58.0
Waukee..	Max.	84	80	84	88	79	73	69	84	92	95	85	86	83	85	91	96	97	97	90	86	86	82	82	82	80	90	89	84	80	91	92	85.9
	Min ..	52	52	58	68	56	54	59	61	59	69	63	58	59	64	58	73	72	70	64	63	60	59	52	59	58	63	60	66	58	71	63	61.8
Waverly..	Max..	70	74	78	76	74	67	78	76	75	81	79	77	79	79	84	91	93	92	85	80	80	74	73	77	75	81	78	80	78	79	82	78.7
	Min ..	50	48	59	59	58	59	56	63	58	57	62	56	55	65	54	71	74	70	68

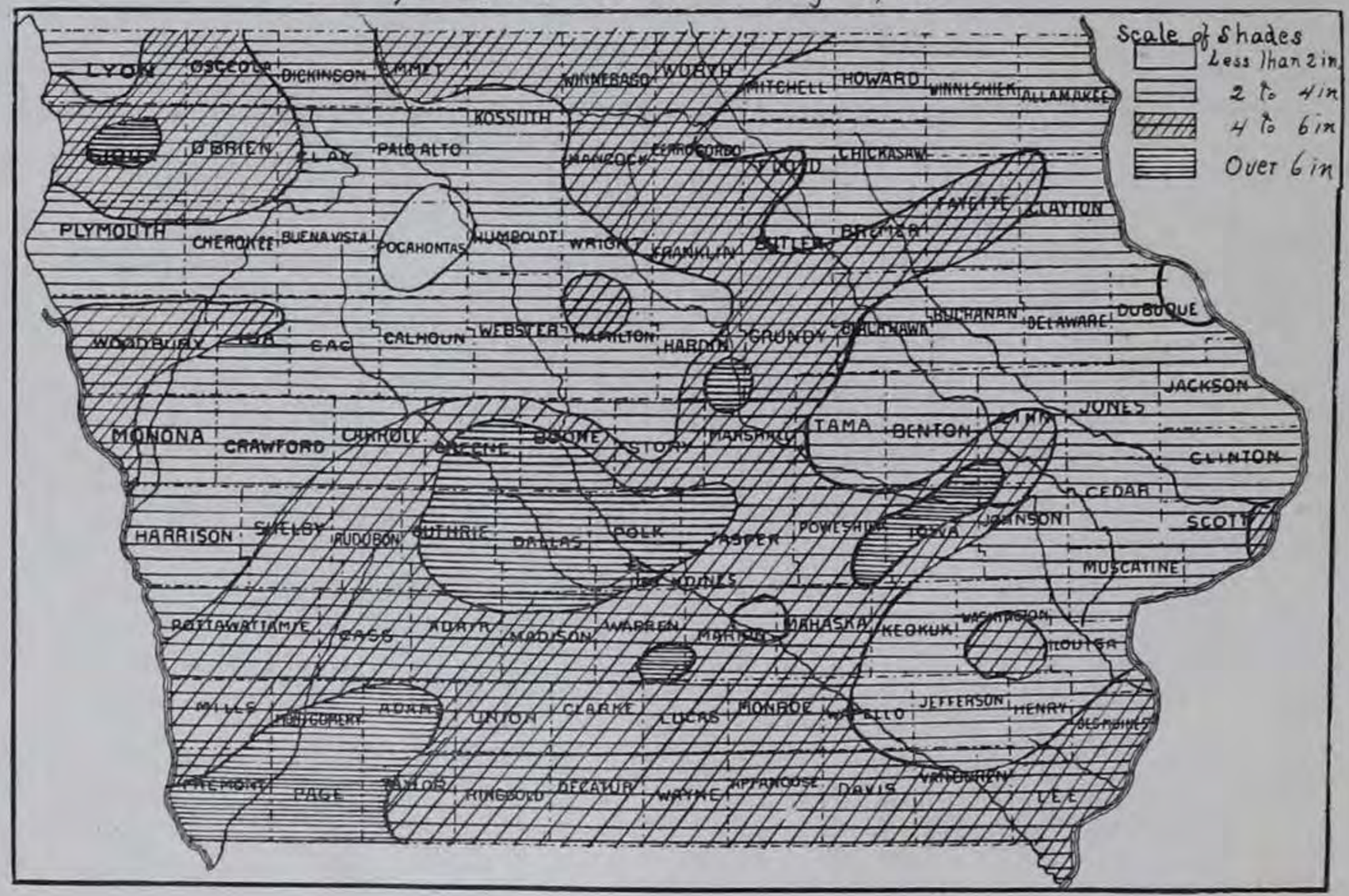
DAILY AND MONTHLY PRECIPITATION FOR JULY, 1904.

STATIONS.	DAY OF MONTH.																															TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
ton			.77		1.16	T	.11			T	T			.74					1.25	.14										.05		4.22
bia				.28		1.15	.85	.13			.35	.06		.58					1.05	.20												4.65
gona			.90	.15		T	.16			.93			T	.18			T	.08		T					.12	.73			.50			3.75
lerton			.44		1.00	1.19	.07	T		T	.10			.45					1.26	.01						T				.25	T	4.77
ta.			.04	.45		.03	.23			.53			.04					T		T					.51	.12			1.17			3.12
ta [near]			.72			.08	.25			.62			.08					.15		.24					.68				1.44			3.96
nana			1.15	.10	T	.99	.03	1.67			.07			1.26					1.11	T		1.06				.02	T		T	.18		6.64
nes			.80		.03	.04	.22	.05			.45			.37						T						.41			.02			2.39
lantic			1.41		.55	.08	.10						.20	.08					1.39	.70									T	.96		5.47
ubub on			.79	.21	.29	.05	.11	.02	T	.75	.44		.09						1.60	.52	.01				.01	T			.05	.04		4.98
xter			.42			.13	.12	.75			.13			.50				1.75	2.25	.25										.40		6.70
dford			.75		1.01	.54	.07			1.00	.18		T						1.26	.48	.07									T		5.36
lknap			.20		1.20	.52	.12	T			T			.40					.96	T							T			.10	.78	4.28
ile Plane			.14	.23		.50	.02	.93						.40					1.45			.02				.10				.20		3.99
naparte			.13		1.85	.26				T	T			.40					.13												1.66	4.43
itt			.61	.20			.13	.13		.94	.02		.12	.98			.54	.04	.01	.05		.07			.24	.20			.46	T		4.74
ckingham			1.21		T	.20	.29	T		.02			.17						.92			.09				.44			T	.36		3.70
rlington			.04		.46	.16	.16	1.21			.90			.55					.07							T	.04			.30	1.30	5.19
rroll			.42	.40	.14	.02	.14			.22	.10		T	.04					1.78	.24	.02				.05			.25		.10	T	3.92
dar Rapids	T		.31	.48		T	.40	.09	.33		T	.06		.34					.52			.14					2.75			.18	.02	5.62
ariton			.55		.85	1.10	.10	T			T			.59					1.95	T	T					T			T	T		5.14
arles City	T		.25	.50		T	T	.38	.86		.93			.17			.38		.83			T				T			.07	.17	.21	4.75
arinda				.31	.52	.76	.26			.39	30			.61					3.55	.44	.12									T	.02	7.28
ear Lake			.20	.55	T	T	.30	.05	T	1.90	T	.10		.25			.50	T		T		T			.10	.05		.10	.50	.10		4.70
inton			1.02			.42		1.04			T			.35				.15				.07				.26	.11			.36		3.78
llege Springs			.20	.08	.60	.75	.28			.05	.12		.02	.76					3.15	.76	.11									T		6.88
lumbus Junct'n			.05		.30	.38	T	.85			.54			.38					.26	T		.05				.12			.22		.69	3.84
orning			.40		80	.17	.12			.23	.29		T	1.35					2.15	.80	T				T				T	T		6.31
orydon			.34		.75	1.39	.07	T			.24			.82					1.96	.06	T					.04			T	T	.08	5.25
umberland			1.91	.04	1.00		.20	.04	.02				.02	.35					.84	.28									T	.01		4.71
avenport			.43	.13	T	.31	T	.72			.18			.36					.02	T		03				.10	.18		T	.51	.42	3.34
ecorah			.66	.10	T	T	.42	.12									.84	.20												.50		2.84
elaware			1.32	.30	.08	.35		.16			.08			.22					.39							.14			T	.31	.03	3.88
enison			.48	.20	13	.13	.08	.13		.07	.14		.11					.10	.40	.31	.07				.25				.42	.31		3.33
es Moines			.38	.01	.09	.11	.08	.68		T	.35			.24					4.32	.52	T				T	T			T	.16	T	6.94
e Soto			.37		.14	.02	.14	.05		.13	.26			.22					7.73	.77	T					T			T	.15		9.98
ows			1.64	.49	.07	T	.19	.25						.05			T	.19								.26			.37	.14		3.65
ubuque			.44	.39	.06	.21	.01	.10	.04					.11					.16			T				.20			T	.14	T	1.86
arlham			.82		.35	T	.11				.21			.28					4.15	.22	T								T	.19		6.23
lkader			1.40		.07	.15	T	.65						.09			T	.30				.03				.18			T	.18		3.05
stherville			.24	.03		.17		.75			.05			1.00			T		.15		T	.05			.21	.75			1.00	.10		4.50
ayette		.30	1.36		.04			1.88		T								.38				.07							T	.34		4.37
lorence			.20	.78	.04		.15	.05		.04			.30	.06					.30							2.14			.48			4.54
orest City			.23	.34				.20	.04		1.17			1.33				.16	T		T					.51			.18	.50	.10	4.76
ort Dodge			.21	.33		.03	.02	20	T	.11	.03			.08					.05							.48			.10	.29	.28	2.21
ort Madison					.28	T	1.48	T			T			.08	T												.81			1.78		4.48
alva			.63	.03	T	T	.16	.03		.31	.02		.47							.99					.46	.01			.98			4.09
ilman			.43	.32	.03	.08	.05	.67			.18			.47				.75	2.27	.09		T				.15			T	.07		5.56
lenwood			1.80		.85	1.00	T				.20		.65						.15	.75	.10				.05				T	.15		5.20
rand Meadow			1.98		.02	.10		.68			36			.13			.19	.11		.01	.07					.10			.02	.26		4.03
reene			.69		.14	.06	.18	.25		.10			.05	.23			.05	.75	.03							.18			.10	.25		3.06
reenfield			.54		.66	.24	.24				.02		T	.26					1.45	.28	T								T	.30	.01	4.00
rinnell (near)			.55		.05	.50	.10	T			.20			.75					2.90	.15									.15	.20		5.55
rundy Center			1.46	.07	.05	.14	.19	.38	T		.57			.24				.85	.93			.10				.45			.01	.14		5.38
uthrie Center			.94	.08	.15	.17	.22	.03		.16	.28			.63					3.10	.72	.02								.04	.36		6.90
Hampton		.38	1.23		.10	.03	.42			.06			.08					2.08							.07			.03	.11	.20		4.79
Hanlontown			.40	1.00			.17	.04		.38			.09	.44			.23	.07							.12			.05	1.00	1.50	.04	5.53
Harlan			.53	.88	.37	.21	.01				.49		.11	.10				T	2.11	.72	.02				.01				.06	.08		5.20
Hopeville			.85		1.22	.27	.06			.07				.97					1.69	.08	T								T	.03		5.24
Humboldt			.72	.50			.20	.18		.05			.02	.07				.03				.03			.15	.27			.43			2.65
Ida Grove			.80			.10	.50			.20			T							.60	T					T			.50			2.70
Independence			2.00		.12	.30	.20	.18		T				.10				.30	.18						.10				T	.25		3.73
Indianola				.40	.22	.25	.03	T			.08			.90					3.19	.15	T								.05	.10	T	5.37
Inwood						.04	88	.32		.35			.80	.10											T				1.29			3.78
Iowa City	T		.16	.27		.05	.69	.07			.13	.06		36					.53	T	T	.03					.07			.05	.02	2.49
Iowa Falls	T		.22	.95		.02	.01	.18	.52		.09			.04					1.21			.05				.46		T	T	.02	.09	3.86
Jefferson			1.20		.17	.03	.51			1.77	.95			.80					.73	.33									.15	.20		6.84
Keokuk			.12	.04	1.09	.27	.03	1.55									T											.11		T	1.27	4.48
Keosauqua	.32		.04	.27		1.00	.30	.46			T	T		.10					.16									T		T	2.07	4.72
Knoxville			.53		.28	.32	.05	.47			.60		.32						.57	.17	T								T	T		3.31
Lacona			1.33		.80	.25	.02												3.50	.50	T					.01			.02	.04		6.47
Larrabee		.26	T		T		.35	T	.58				.51							.50					.65				.73			3.58
Le Claire			.03	.41		.02	.41	.61				.03		.13	.05				.07							.04	.11			T	2.13	4.04
Le Mars			.45				1.05					.55	1.00			.07		T							.15							3.27
Lenox			.28		1.22	.17	.10			.07	.09		T	.80					1.68	.85	T									T	T	4.76
Leon			1.15	.05	.70	1.43	.09			.09	.06			.34					1.28	.15										T		5.34
Logan							[illegible]																									....
Maquoketa			.10	1.33			.23	.20	.06					.12					.07											.22	.15	2.48
Marshalltown			.10	32		.05	.06	.16	.32	T		.21		.83					1.66		T	.02				.77				.05	.45	4.50
Mason City			.33	.46	T	T		.30		.45			T	.33			.65			T						.16		.10	.23			3.01
Massena			1.64		.53	.39	.20			.12	T		.40						.92	.35	.03								T	.22		4.70
Mount Ayr			.70		.36	.90	.07			.10	.08		T	.35					1.20	.35	T								T	.03		4.14
Mt. Pleasant			.14	T	.79	.26	.04	.40			.14			.28					.52								T			T	1.35	3.92
Mt. Vernon			.83	T	T	.73	T	.31		T	.02			.36					.46			.20				.08	T		T	.20		3.19
New Hampton			.92			.32	.15		.37	.02				.14			.22					.09				.02			.04	.18		2.47
Odebolt			.50	.30		.20	.05						.08						.10	.65					.23	.14			.55	.02		2.82
Ogden			.89	.07		.18	.16			1.88	.81			.92				.02	.78	.20		.07							.05	.11		6.14
Olin			1.03		T	.48	.07	.19		T	T			.18				.25				.03			T	.01	.03			.32		2.59
Omaha, Neb			59	.09	.46	.26	.01				.31		.12	.27			T		.04	.62	.06				.14				.09	.09		3.15
Onawa			.32	.15	.08	.74	.20				.05		.07				.07		.83	.52	.06				.52				.22			3.83
Osage			.27	.45	.10	.02	.14	.26		.94			03	.21			.29			T	.08				.06	.07			.25	.04		3.21
Osceola			T	.15	1.50	.50	.10	.05		T	T		.50					1.30	.10	T	T				T							
Oskaloosa			.74		85	1.00	.11	.23			.20		.29					.03	1.39	.77												
Ottumwa			.55		.75	.58		.15						.18					.95	T												
Pacific Junction			1.06	.10	.85	71	T				.22		.63	16					28	60	.22				.05							
Perry			1.36	.22	.07	.14	.13	.04		.24	.87			.37					1.84	1.05												
Plover			.42															.31														
Pocahontas			.39	.05		T		T	T	.20			08	.03			.02	T		T					.15							
Primghar			.10			.04	1.00	.18		2.01			.40					.41			.02				.75							
Red Oak			1.49		.67	.17	.02				.27		.02	1.18					1.96	.73	.06				T							
Ridgeway			.88		.07	.08	.50	.55					.11				.54	.38		.06	.02											
Rock Rapids							.90					.95																				
Rockwell City			.55			.05	.10	.05		.55								.03	.35	.08												
Sac City			.87			52	.08			25				.07					.11	.20												
Sibley			.11			.05	.01	1.03		.18				.93					.08													
St. Charles			.42	.46	.46	.14	.06	03			.18			65					2.2[illegible]	.10												

DAILY AND MONTHLY PRECIPITATION FOR JULY, 1904--CONTINUED.

STATIONS.	DAY OF MONTH																															TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sigourney	....	....	.43	....	.40	.9	T	.16	....	....	....	....	....	.26	....	....	....	....	....	.04	....	....	....	....	....	.04	....	....	T	.03	.10	2.44
Sioux City	....	....	.21	....	.01	.02	1.35	.03	....	.01	.07	....	.43	....	....	....	T	.01	....	1.88	.04	....	....	....	1.22	.04	....	....	.17	....	....	5.49
Sioux Center	....	....	.22	....	T		.85	.31	....	.84	T	....	1.46	.90	....	T	....	.20	....	.37	....	....	....	....	.86	.34	....	....	1.40	....	....	7.75
Spirit Lake	....	....	T	....	T	T	.60	.80	....	....	....	....	.25	.55	....	....	....	....	....	....	....	....	....	....	.60	.80	....	....	.30	....	....	3.90
Stockport	....	....	.13	.09	.57	.37	.10	.25	....	....	T	....	....	.57	....	....	....	....	.35	....	T	....	....	....	....	....	....	T	....	.27	.95	3.65
Storm Lake	....	....	.34	.27		T	T	.20	....	.55	T	....	....	.16	....	....	....	....	....	....	T	....	....	....	.22	.09	....	....	.63	.10	....	2.56
Stuart	....	....	.36	.30	.25	.07	.17	.09	....	....	.42	....	....	.20	....	....	....	....	5.60	.60	....	....	....	....	....	....	....	....	....	.24	....	8.30
Thurman	....	6.09	.18	.12	.62	.32	10	....	....	....	.28	....	.30	.42	....	....	T	....	1.40	1.07	.30	....	....	....	....	....	....	....	T	.27	....	11.97
Tipton	....	.22	.34	.11	.04	.34	.16	.14	....	....	....	....	....	.12	....	....	....	....	.42	....	....	....	....	....	....	....	....	....	.36	....	....	2.25
Toledo	....	....	T	.90	.05	.16	T	.10	....	....	.10	....	....	.35	....	....	....	....	1.40		....	....	....	....	....	.30	....	....	T	.35	....	3.71
Vinton	....	....	1.10	....	.06	.42	.06	.40	....	.03	....	....	....	....	....	....	....	....	1.08	.06	....	.15	....	....	....	.07	T	....	....	.08	....	3.51
Wapello	....	.20	....	....	.24	.40	T	.55	....	....	.15	....	....	.50	....	....	....	....	.15	....	....	....	....	....	.29	....	....	....	.13	1.07	....	3.68
Washington	....	....	.32	....	....	.83	....	.30	....	....	.10	....	....	.50	....	....	....	....	1.20	....	....	....	....	....	....	.10	....	....	....	.12	.16	4.23
Washta	....	.15	.11	....	T	....	.42	....	....	.20	.05	....	.23	....	....	....	....	.48	....	.25	.02	....	....	....	....	....	....	....	.60	....	....	2.51
Waterloo	....	....	1.17	....	.12	.13	.14	.62	....		.03	....	....	.10	....	....	....	.88	....	....	....	.01	....	....	....	.10	....	....	T	.26	....	3.5
Waukee	....	....	.50	....	.15	T	.15	.01	....	.11	.64	....	....	.20	....	....	....	....	6.80	.57	.02	....	....	....	T	....	....	....	....	.16	....	9.31
Waverly	....	....	.48	.06	.16	.25	.14	1.50	....	.03	....	....	T	.15	....	....	....	1.02	....	....	....	.08	....	....	.03	.05	....	....	.02	.10	....	4.07
West Bend	....	....	1.15	....	....	T	.31	....	....	.03	....	....	.05		....	....	.02	.05	....	.02	....	....	....	....	.21	....	....	....	.41		....	2.25
Whitten	....	....	2.00	.11	T	T	.10	.70	....	....	.80	....	....	.35	....	....	....	.99	1.00	T	....	....	....	....	....	....	....	....	....	T	....	6.05
Wilton Junction	....	....	.27	.29	..	30	....	....	....	.10	....	....	....	....	....	....	....	....	.44	....	....	....	....	....	....	.10	.31	....	....	.83	....	2.14
Winterset	....	....	.58	....	....	....	.10	....	....	....	....	....	....	.70	....	....	....		3.40	.40	....	....	....	....	....		....	....	....	....	....	5.18
Woodburn	....	....	1.00	....	1.33	.46	.06	.05	....	....	T	....	....	.50	....	....	....	1.56	....	.05	....	....	....	T	....	....	....	....	T	....	....	5.01
Zearing	....	....	.94	....	....	.07	.10	.98	....	....	T	....	....	.31	....	....	....	.65	.77	....	....	T	....	....	....	.77	....	....	....	.14	....	4.73

Precipitation Chart July 1904



AUGUST, 1904 No. 8



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Seymour	L. B. Sager
Shenandoah	Reuben Mullison
State Center	E. P. Thompson
Stuart	W. W. Bailey
Toledo	W. G. Malin
Van Horne	Spencer Smith
Waukon R. D	T. B. Wiley
Weldon	Ed Worden
Winterset	H. A. Kinsman
West Branch	Wrigley Smith
West Union	H. B. Blackman
Wilton	Thos. Boot
Wiota	I. S. Coomes
Woodward	George Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

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AUGUST WEATHER AND CROPS.

The average temperature of August, 1904, was exactly the ame as August, 1903, 1902 and 1891. The mean was 2.7° be- ow the August normal. In the northern section it was 67.3°; entral section, 69.2°; southern section, 70.7°. The month was mostly clear and warm by day, though unseasonably cool it night. The average rainfall was normal for the state, but in ts distribution the larger amount was received in the south and eastern districts, where it was most needed. The bulk of the rainfall came about the 17th to 21st and the 29th. There were, on the average, 17 clear days, 8 partly cloudy, and 6 cloudy, affording an ample amount of fair weather for harvesting, stacking, threshing, cutting wild hay, millet, etc., and fall plowing. In all these farm operations very good progress was made. The pastures were revived and made green as in June by the copious showers in the latter half of the month. The corn crop made fair advancement during the month, though in view of its belated condition its progress was not as rapid as seemed desirable. The most advanced portion of the crop was well filled and dented at the close of the month. Reports at that time indicated that about one-third of the crop, with favorable conditions, would be mature by September 20th, while the balance required abundant warmth and sunshine until October 1st to be safe from harm by killing frost. The crop was unusually rank, green, and heavily eared. The minor crops were in good condition. Potatoes made heavy yield, and early apples were especially good and abundant. The yield of tomatoes and green corn for canning has been better than usual. Garden truck, cucumbers for pickling and melons yielded abundantly.

THE WEATHER SERVICE.

The *American Cultivator*, one of the ablest agricultural journals in America, says:

"The weather-reporting service, particularly in New England and the Middle States, has been excellent this summer, and has proved decidedly of use during the hay harvest. Year by year the department workers and their correspondents are adding to their efficiency as the result of experience.

"The time has come, arrived long ago, in fact, when farmers can rely quite safely upon the reports given out. A farmer who is naturally a good judge of local weather signs, and who has learned how to study the government weather reports including the weather conditions in other parts of the country, has a decided advantage in planning his farm work.

"Local signs by themselves are not very reliable, and do not usually indicate the weather long in advance. But the government weather men are often able to predict fairly well several days in advance, owing to the reports of weather in other sections, and its known rate of advance and length of duration. Those who still doubt the usefulness of these reports should compare them for awhile with the judgments of those who depend wholly upon observation of the sky and similar means. For long-time predictions the station reports will no doubt show the better average of correctness.

"The careful observer will soon learn to strike a balance between the reports and local indications, and will get the full usefulness of each. The study of weather signs, and also the charts and reports, should be an item in the public school course of every town."

SELECTED NOTES.

All the gold in America—the greatest hoard of yellow metal ever gathered in any country—could not buy one year's harvest of our corn and wheat. To buy one season's wheat crop would take all the gold mined in this country in six years. In the past seven years all the gold mines of the world have only produced enough to buy one year's yield of our six cereals. The cereal, cotton and hay crops, more than one hundred and fifty million tons, could not be bought with all the money in the country, as our stock of money—gold, silver and paper—has not yet reached the stupendous total of two and three quarter billion dollars.—*Wall Street Journal*.

It has been ascertained that not less that 4,000,000 acres of land in the state of Iowa, much of it under cultivation, would be greatly benefited by drainage, while Minnesota has probably as much more. These wet lands are the best lands when the water is got rid of. This needed drainage is now well under way in both states. Huge ditchers operated by steam and gasoline engines are at work making main waterways sometimes twenty miles in length, while smaller machines are putting in laterals and feeders. Later tile drains on the farms tributary to these ditches will relieve these choice lands from the plague of standing water and make possible the production of the finest of crops.—*J. S. Trigg*.

Of course not all of the carbonic acid in the air is secured, nor indeed all of that which enters the cellular air pass ges of the green parts of the plant, and hence it follows that very much larger volumes of air than have been stated must be brought into close contact with the growing clover in order to meet its needs. This air, however, can not come into intimate relations with the green chlorophyll-bearing cells of the clover in the field without of necessity permitting the evaporation of large quantities of water from the plants; and this brings us to realize how imperative is the demand for water by rapidly growing crops. The writer has found, for example, by direct measurement that the air passing three feet above a clover field, and at a moderate rate,

even as early as May 30th, in Wisconsin, when the air temperature is only 52.48 F., may have its relative humidity increased from 44 to 48 per cent by the moisture taken from the field; and this means that 3,510 pounds of water are required to make even the observed change of humidity in a volume of 152,600,000 cubic feet of air, which is the amount required to carry to the clover crop its carbon, supposing all the carbon which the air contained to be utilized.—*Prof H. F. King*.

GREAT VALLEYS FOR GREAT NATIONS.

The following article from the columns of the *New Orleans Picayune* contains matter of interest, especially for geographic students:

The Mississippi Valley is the most extensive and the most fertile and productive agricultural region on the globe. It is in the north temperate zone, and, therefore, it possesses climates best suited for the residence of people of the white race, and consequently, is the most favorable to the development of the highest civilization. Covering an area of nearly two million square miles, it embraces conditions capable of sustaining a dense population, and there is no question that it is destined to become the seat of power of the greatest nation that has ever inhabited the earth.

All great nationalities grow up in valleys, because it is only in such situations that food products and the other material requisite for the maintenance and employment of a large population can be found. The Valley of the Nile was the seat of a great Egyptian power. The Valley of the Euphrates was the heart of the Babylonian Empire. The great nations of India and China grew up in the wide valleys along their mighty rivers. In modern times when ocean transportation is so available food products and other raw material can be carried to the countries that do not possess them, but it may be laid down as a rule that the greatest nations grow up in locations where their populations can be most cheaply fed and most advantageously employed.

It has been frequently suggested that the Valley of the Amazon, in South America, is to be at some time in the future the seat of one of the world's greatest national powers. It contains two million square miles, while the Amazon itself is the greatest river on our globe, with numerous navigable tributaries. All such prophecies are vain, because the mouth of the mighty river lies immediately under the equator, and the whole of the valley's area is in the torrid zone.

United States Consul Louis H. Ayme, in a report to the Department of Commerce, at Washington, gives an account of a recent journey of exploration made by him to Manaos at the mouth of the Rio Negro, a large tributary that comes into the main river from the north. He reports that the Amazon river may be divided into three parts: "The lower Amazon, extending as far as Manaos, where the Rio Negro flows into it, a distance of about 900 miles; the upper Amazon, from Manaos to Iquitos, near the Peruvian boundary, a distance of perhaps 1,800 miles, and the Peruvian Amazon region, with navigable rivers for a distance of 1,600 miles and more. This amazing river system, which empties into the Atlantic, through a series of mouths 180 miles wide, more than twice as much water as the Mississippi carries in flood, and which stains the ocean for a distance of 600 miles, lies in a broad, flat valley elevated but a few inches above flood level, with an inclination of only about 1 foot in 5 miles. This valley almost always flooded, is covered with vast forests, in which at sparse intervals are found occasional hard-wood trees of some value. This depression, at least 30 miles wide, has a swift, very deep river running through it, with a breadth of from 2 to 6 miles. The thick forest growing up out of the water forms the so-called "banks." Here and there are patches of slightly elevated ground on which Indian huts are erected. To make this huge river and to sustain the growth of the vast matted forest, rain—much rain—is needed, and it is a fact that more rain falls in this region than in any other of like extent in the world. As one sails or steams up the great river there are seen occasional patches of green, level vegetation, for all the world like wondrously fertile meadows, and it is not difficult to imagine great flocks of cattle feeding on them, until the sight of a capybara or tapir, more than knee deep in the green ooze, informs one of the real consistency of that tempting and solid-looking meadow; it is little better than a swamp.

In these extraordinary forests there are found some of the most beautiful and valuable woods in the world, as well as fruits, nuts, oils, balsams and gums, but—and this but is unsurmountable—they are found as rarely as diamonds in the gravel or gold nuggets in the streams. There is a false impression existing that rubber trees, ebony, rosewood, and all the rest are found in great groves or clusters, like our pine or oak forests. The fact is that these trees are solitary. When two of them are only a quarter of a mile apart (and remember that the quarter-mile is not open space, but thick-matted, almost impenetrable swamp forest) they are considered close together; if they are a mile apart they are not considered to be very far distant from each other. Nor does this huge forest produce any great quantity of food for human beings. The staple articles of food for the dweller on the Amazon is dried pirarucu, a huge, fat river fish, and "farinha," the starch of the manioc root.

In all that vast region which lies under a tropical sun the only towns are Para, at the mouth of the Amazon, and Manaos, 900 miles up the river at the confluence of the Rio Negro, and in every other direction there are no settlements, and only a few scattered tribes of natives, who move about from tree to tree of the dense forest when they can no longer remain upon the flooded lands.

If the Valley of the Amazon were in a temperate zone, it would be sought and settled by the whites, who would control its river floods by levees, cut down its forests, cultivate its lands, and build towns and cities. But under a tropical sun and in a climate which is deadly to all people of the white race, the Valley of the Amazon is as hopeless of such a future as are the valleys of the Congo and the Niger.

The only parts of South America that are fit for the habitation and development of the white races are the countries in the lofty mountain region of the Pacific coast, and Argentina, the southern part of Brazil, Paraguay and Uruguay. South America is not likely to ever give rise to any great dominating power, because the requisite physical and climatic conditions are lacking. Only a small portion comparatively of South America lies in a temperate zone, and, therefore, North America will continue to dominate the hemisphere.

WHEAT RUST.

In an article on "Wheat Rust," Prof. W. M. Hays, who is one of the greatest authorities on wheat cultivation, discusses the subject very exhaustively.

Professor Hays says that the rusts of cereal grains are caused by a class of minute parasite plants, which do not produce flowers or seeds, but their means of reproduction are by spores. There are several species of these pestilerous plants, the life histories of which are not fully worked out; but it is certain that their spores live over winter and germinate on the surface of the leaves of wheat and other members of the grass family.

The only outward evidence of the presence of these plants is their heads or seed-like spores. The bodies of the plants are mere slender branching threads, growing through the tissues of the leaves and stems of plants. Sometimes they grow throughout the plant without forming spores. Their thread-like branches extend out under the plant's skin, there developing some little round spores so numerous, that as they g ow and

well, they push up the underskin of the plant and burst it pen. The patches on leaf or stem being evidence of the presnce of yellow or black masses of spores.

These rust parasites use the food that belongs to the kernel f the wheat in producing both the spores and the thread-like odies of the rust plants. It may be that the parasite has other ajurious effects on the growing grain than the mere absorption f its food, but of this little is known. The amount of spores howing is evidently not always the index to the amount of ajury done.

But when there are large amounts of rust spores there is ertain to be considerable damage. This subtle disease is always resent and all our fields are exposed to it, as all towns are onstantly exposed to the germ of consumption. In favorable easons the rust diseases do not spread rapidly and each wheat lant has none or so little that its vitality is not sapped; just as nen do not succumb to consumption in the high altitudes and lry atmospheres of some southern states. In moist warm seasons, on the other hand, the rust multiplies rapidly and the arge, soft wheat plants are compelled to support such a burden of these internal foes that their vigor is seriously impaired, just as the human family when placed in damp, unhealthful conditions is much more liable to succumb to germs of tuberculosis.

As a man or a cow will thrive under favorable conditions with a small amount of tubercular germs in the system, so a wheat plant will fatten up its berries if burdened with only a few of the thread-like bodies of its parasite. But if the conditions are unfavorable the man or the cow grows poor; and with bad conditions the wheat can not fatten up its berries; or, if the rust develops early in the life of the host plant, it sets but few berries and we have but few shrunken kernels.

Little is known, it seems, as to whether one species of rust under certain climatic conditions is worse than another, but appearance of spores before harvest is generally heralded as an unusually bad omen, and whether the presence of dark-colored spores is more significant of injury than yellow spores is not well understood. It is true, however, that the dark spores usually appear later in the season on the stubble of the grain and live over the winter. In a year of cool weather at the ripening season the effect of rust is often over-estimated as proven at threshing time.

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 30.03 inches; highest observed, 30 34 inches, at Dubuque and Des Moines, on the 23d and 26th; lowest observed, 29.60 inches, at Davenport, on the 19th; range for state, 0.74 inch.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 115 stations, was 69.1°, which is 2.7° below normal. By sections the mean temperatures were as follows: Northern section, 67 3°, which is 3.2° below normal; central section, 69.2°, which is 2.4° below normal; southern section, 70.7°, which is 2.9° below normal. The highest monthly mean was 73.3° at College Springs; lowest monthly mean, 65.0° at New Hampton and Sibley. The highest temperature reported was 97°, at Mt. Ayr and Waukee, on the 13th; lowest temperature reported 35°, at Earlham, on the 8th. The average monthly maximum was 91.4°; average monthly minimum, 44.0°. Greatest daily range, 45° at Rock Rapids; average of greatest daily ranges, 35.1.

PRECIPITATION.—Average precipitation for the state, as shown by records of 126 stations, was 3.43 inches, which just equals the normal. The averages by sections were as follows: Northern section, 2.89 inches, which is 0.16 inch below normal; central section, 3.24 inches, which is 0.29 inch below normal; southern section, 4.15 inches, which is 0.45 inch above normal. The largest amount reported was 6.75 inches at Fort Dodge; least amount reported, 0.66 inch, at Sibley. The greatest daily rainfall reported was 4.00 inches at Fort Dodge on the 29th. Average number of days on which .01 of an inch or more was reported, 7.

WIND AND WEATHER.—Prevailing direction of wind, southwest; highest velocity reported, 42 miles per hour, from the south, at Sioux City, on the 3d. Average number of clear days, 17; partly cloudy, 8; cloudy, 6.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	30.02	30.33	23	29.60	19
Des Moines	30.06	30 34	26	29.72	19
Dubuque	30.04	30.34	23	29.66	19
Omaha, Neb	30 02	30.29	22	29.68	19
Keokuk	30.02	30.30	23	29.63	19
Sioux City	30.00	30.26	22	29 70	21
Means	30.03	30.34	23&26	29.60	19

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	4.560	27	N	21
Des Moines	5.196	30	W	24
Dubuque	4.646	24	NW	25
Keokuk	4.433	30	NW	21
La Crosse, Wis	5.014	26	NW	25
Omaha, Neb	5.059	33	NW	5
Sioux City	7 918	42	S	3

OBSERVERS' NOTES.

ALTA.—*David E. Hadden.* The rainfall for August was .88 inch above the 14 years' normal; temperature about normal.

ALLERTON.—*Rex Shriver.* Favorable month for all kinds of work; fall pastures starting well; apple crop good.

AMANA.—*C. Schadt.* First and second decades very dry and favorable for threshing; corn made good progress.

AMES.—*Thos. S Hunt.* Corn backward at close of August, needing 3 or 4 weeks without frost.

ATLANTIC.—*J. W. Love.* A peculiar month; only one thunderstorm in August; light, harmless frost on morning of 8th.

BONAPARTE.—*B. R. Vale.* Rain 4.40 inches, well distributed; temperature below normal; pastures good.

BRITT.—*Geo. P. Hardwick.* Generally fair, with no severe storms; cool nights, with two light frosts on low lands (8th and 22d); wheat rusted badly; oats yielding 28 to 30 bushels, of good quality; barley about same; corn uneven.

CHARITON.—*C. C. Burr.* A month of bright, pleasant days and cool nights; corn needing 30 days after close of August.

CLINTON.—*Luke Roberts.* Mean temperature of August 2.4° below normal; rainfall 2.34 inches in excess of normal; crops made good growth; lightning did some damage in this county.

FOREST CITY.—*J. A. Peters.* Light frost in low places on 8th; no damage; not over 25 per cent of corn in full roasting ears at close of month.

GREENFIELD.—*J. G. Culver.* Two brilliant meteors on evening of 10th, between 9:30 and 11.

GRINNELL.—*A. O. Price.* Weather fine for stacking and threshing; clear days prevailed.

HAMPTON.—*E. C. Grenelle.* Frost observed in several places on morning of 8th and 22d; no damage.

HANLONTOWN.—*Miss G. M. Paschen.* Threshing from shock begun on the 11th. Oats good quality and average 40 bushels per acre.

HOPEVILLE.—*M. T Ashley.* Month closed with corn late; will require a full month of warm weather to mature the crop.

IDA GROVE.—*J. E. Conn.* Exceptionally fine weather; warm days and cool nights; corn doing well and pastures good.

INDIANOLA.—*John L. Tillon.* On 17th lightning struck a barn six miles west of town, set it on fire and killed a boy.

INWOOD.—*G. M. Larsen.* August generally fair; nights were cool; oats and barley make good yield; wheat damaged by rust and poor; large fruit crop; lightning has done much damage.

KEOSAUQUA.—*J. H. Landes.* Remarkably cool nights have been most marked features of the month.

LARRABEE.—*H. B. Strever.* On the 17th lightning struck barn of Jas. Main, a few miles northeast of Cherokee. Martin Main was killed instantly.

OLIN.—*N. Potter.* Rain sufficient for fall pasture and for fall plowing; corn has done well, but is ten days late.

RIDGEWAY.—*Arthur Betts.* Warmest August since 1901, with 354 hours of sunshine; rainfall light, more than half falling on 9th; a pretty fog-bow observed on the 20th; mirages on the 2d and 6th; crops will compare favorably with 1898.

ZEARING.—*H. E. Burkhart.* Four miles northwest of town about 15 acres of corn killed by frost, on the 8th; shock threshing all done by 31st.

ERRATA IN JULY REVIEW.

EARLHAM.—Total precipitation recorded 6.23 inches on pages 7 and 11, should have been 6.33 inches.

ESTHERVILLE.—Maximum temperature recorded on the 17th, page 7, should have been on the 16th.

FLORENCE.—Total precipitation recorded 4.54 inches on pages 7 and 11, should have been 4.00 inches. Amounts on 13th and 19th, should have been .03 inch, instead of .30 inch.

HARLAN.—Mean temperature recorded 71.4° on page 8, should have been 71.0°.

MT. AYR.—Mean maximum temperature recorded 84.3° on page 10, should have been 84.1°.

SIGOURNEY.—Minimum temperature recorded 51° on the 1st, page 7, should have been 46° on the 2d.

WAUKEE.—Minimum temperature recorded 52° on the 1st and 2d, page 8, should have been 1, 2, 23d.

ATLANTIC.—Mean temperature recorded 70.6° on page 7, should have been 70.5°. Mean maximum temperature recorded 83.6° on page 9, should have been 83.3°.

GALVA.—Mean maximum temperature recorded 82.0° on page 9, should have been 82.4°. Mean temperature recorded 69.8° on page 8, should have been 70.0°.

IDA GROVE.—Mean temperature recorded 72.4° on page 8, should have been 72.2°. Mean maximum temperature recorded 83.9° on page 9, should have been 83.6°.

MARSHALLTOWN.—Mean maximum temperature recorded 84.4° on page 10, should have been 84.3°.

MASON CITY.—Mean minimum temperature recorded 60.2° on page 10, should have been 60.3°. Mean temperature recorded 70.3° on page 7, should have been 70.4°.

CRESCO.—Maximum temperature recorded on the 17th, page 7, should have been 17th and 18th.

BELATED REPORTS.

MONTEZUMA, July.—Total precipitation, 5.13 inches; greatest in 24 hours, 3.10 inches on the 19th; number of rainy days, 6.

VILLISCA, July.—Mean temperature, 70.6°; mean maximum, 82.4°; mean minimum, 58.9°; 59.8°; maximum temperature, 92° on the 16th, 17th and 18th; greatest daily range, 34; total precipitation, 7.70 inches; greatest in 24 hours, 3.05 inches on the 19th; number of rainy days, 8; clear, 17; partly cloudy, 12; cloudy, 2; prevailing wind from the southwest.

NORTHWOOD, July.—Mean temperature, 69.3°; mean maximum, 80.5°; mean minimum, 58.1°; maximum temperature, 91° on the 17th; minimum, 47° on the 2d; greatest daily range, 35; total precipitation, 5.00 inches; greatest in 24 hours, 1.00 on the 6th and on the 17th; number of rainy days, 11; clear, 16; partly cloudy, 9; cloudy, 6; prevailing direction of wind from the northwest.

CLIMATOLOGICAL DATA FOR AUGUST, 1904.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	PRECIP., IN INCHES. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days	SKY. Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.	DATES OF THUNDER STORMS.
gona	Kossuth	1,213	28	67.5	-3.6	89	12	45	8,22,26	33	2.95	-0.76	1.00	....	6	18	9	4	NW	9,21
ta	Buena Vista	1,513	11	67.6	-3.2	89	14	44	22	33	4.9	†1.08	1.38	....	8	16	10	5	S	9,15,17,20,21,28
ta (near)	Buena Vista										4.96		1.97	..	9					
itt	Hancock	1,236	5	66.6	-3.4	90	12	41	8	35	2.39	-1.28	0.81	....	7	10	17	4	N	
arles City	Floyd	1,012	11	65.4	-5.7	90	24	39		36	2.42	-0.51	1.08	....	6	16	2	13	E	4,9,15
ear Lake	Cerro Gordo	1,241	....	68.4	...	89	14	47	22	30	1.00		0.80	....	4	13	17	1	S,W	
esco	Howard			66.2	-5.0	90	24	39	8	35	2.66	-0.19	1.70	....	4	16	13	2	NW	
corah	Winneshiek	857		66.7	-3.8	89	24	39	8	34	2.06	†0.38	0.86	..	5	....				
ows	Wright	1,142	....	66.4	-3.6	89	24	40	8	32	2.57	-1.31	0.80	....	6	21	4	6	SE	
kader	Clayton	727	21	68.5	-2.3	94	12	40	8	42	2.06	-0.74	0.70	....	7	22	9	0	NW	4,9,13,15,21
itherville	Emmet	1,298	7	66.6	-4.4	94	13	44	10,11,23	38	3.93	†0.66	2.00	....	7	18	0	13	SE, NW	2,3,9
ayette (*b*)	Fayette	....	..	66.2	-3.3	91	12	36	8	41	3.81	†0.91	1.12	....	8	....	....	..		3,4,9,13,15 19,21,28
orence	Wright	1,226	8								2.29		0.90	....	6	7	22	2	NW	9,21,28
orest City	Winnebago	1,226	8	66.0	-4.8	9	12	43	8	37	2.97	†0.76	0.9	....	8	18	3	10	W	
rand Meadow(*a*)	Clayton	1,180	11	66.2	-2.8	86	12	40	26	30	2.95	†0.45	1.20	....	6	16	10	5	SW	15
reene	Butler	924	5	67.8	-4.6	91	24	40	8	37	2.5	-0.56	1.20	..	7	9	10	12	W	
ampton	Franklin	1,155	12	69.4	-0.8	92	24	44		34	2.50	-0.65	0.83	....	6	13	14	4	NW	
anlontown	Worth			65.4		88	24	41	8	32	2.33		0.75	....	5	21	5	5	S	3,9,21
umboldt	Humboldt	1,095	10	68.2	†1.3	89	12	45	8	31	3.66	†0.55	1.24	....	6	23	8	5	SE	21
wood	Lyon			68.3		92	14,24	45	22	36	1.99		0.65	....	5	15	4	12	S	9,31
arrabee	Cherokee	1,366	11	69.0	-2.2	92	24	45	22	36	3.38	†0.04	1.50		7	17	10	4	SW	
eMars (*e*) †	Plymouth	1,224	6	69.2	-2.8	93	14	41	10	37	1.92	-0.79	1.85	..	4	....	....			
ason City	Cerro Gordo	1,132		68.2	-1.4	89	12,24	48	8,10,22	30	2.10	-0.56	0.68	...	4	14	12	5	S	3,8,21,28
ew Hampton(*a*)	Chickasaw	1,169	...	65.0	-5.7	88	24	43	22	36	1.84	-0.66	1.05	....	5	16	12	3	NW	
orthwood	Worth	1,222	....	65.6	....	87	4	43	22	30	2.65		0.80	....	7	18	11	2	NW	
sage (*h*)	Mitchell	1,184	11	67.6	†0.1	89	12	42	8	35	1.91	-1.09	1.33	..	5					
ocahontas	Pocahontas			69.0		90	24	44	9,22	33	4.53		1.55		7	19	7	5	S,NW	9,19,21,28
lover	Pocahontas	1,190	5	67.7	-3.3	90	12,24	4	8	34	4.47	†0.47	2.18	...	4	24	3	4	NW	
rimghar (*b*)	O'Brien			67.6		89	14,24,26	43	22	31	2.88	†0.44	1.00	...	8	19	0	12	S,NW	
idgeway	Winneshiek	1,215	....	69.7	-3.1	94	24	50	8,22,26,30	37	2.27	-0.43	1.30	....	7	22	8	1	S	3 4,9,15,21 28
ock Rapids	Lyon	1,021	....	67.6	-2.2	90	14	40	20	45	2.40	†0.64	1.75	....	2	....	....	....		
ibley	Osceola	1,512	....	65.0	-4.1	91	24	38	22	41	0.66	-2.59	0.45	....	7	23	1	7	S	3,9 20
ioux Center	Sioux			67.8	-1.4	91	24	42	23	39	1.47	-2.63	0.77	....	8	14	15	2	S	9,22
pirit Lake	Dickinson	1,458	8	67.9	-4.4	89	24	44	10,22	34	3.08	-0.93	1.13		5	15	10	6	S	
torm Lake (*a*)	BuenaVista	1,440	7	66.4	-5.1	88	14	44	10	32	5.16	†2.24	1.50	....	9	19	0	12	SE	9,17
Washta	Cherokee	1,157	....								1.42	-1.49	0.76	....	4	20	11	0	S	
Waverly (*a*)	Bremer	942	6	67.3	-4.1	90	24	41	8	35	2.42	-0.11	1.16	...	8	18	11	2	S	
West Bend	Palo Alto	1,197	8	66.9	-2.8	88	12,24	42	8	36	3.18	-0.45	1.64	....	6	17	9	5	S	8,9,19,21,28
Average				67.3	-3.2	90.0		42.4		35.1	2.89	-0.16		....	6	17	8	6	S	

SOUTHERN SECTION.

Afton	Union	1,212	7	71.0	-2.9	92	14	45	8,23	36	4.66	†1.15	2.20	....	5	19	8	4	SW	
Albia (*a*)	Monroe	957	..	69.9		92	12	46	8	38	3.73		1.70	....	7	....	....	....	E,S	
Allerton	Wayne			71.2		95	13	47	8,26	34	3.90		1.47	....	10	23	5	3	SW	9,13,18,21,25,29
Atlantic	Cass	1,164	11	69.8	-1.1	94	14	39	8,26	41	3.80	†0.74	1.50	....	4	6	12	13	S	9
Bedford	Taylor			70.2		94	14	43	26	33	6.39		3.00	..	6	15	6	10	S	
Bonaparte	Van Buren		10	69.4	-5.5	92	12	45	26	35	4.40	†0.57	1.69	....	6					
Burlington	Des Moines	544		71.0		91	21	50	26	32	6.08		1.71	..	10	21	7	3	SW	15,19,21,29
Chariton	Lucas	1,042	7	69.6	-4.1	91	14	45	8	28	3.32	†0.42	0.95	....	5	20	6	5	SE	
College Springs	Page		10	73.3	-0.9	94	13	48	21,27	41	4.19	†0.75	1.25	....	10	21	10	0	SE	
Columbus Jct	Louisa	596		69.1		90	13	48	8	33	5.72		1.96	....	10	20	9	2	NW	9,13,15,21
Corning (*a*)	Adams	1,127	10	69.4	-3.4	90	14	42	26	35	5.35	-0.05	1.50	....	5				SW	
Corydon	Wayne	992	9	71.4	-2.9	93	13,14,15	45	8	33	2.82	-1.19	1.23	....	8	17	7	7	S	17
Clarinda	Page	1,069		71.2	-3.2	95	14	44	23,26	38	4.17		2.27	....	8	22	1	8	SW	29
Cumberland	Cass										3.25		1.41	..	6	25	4	2	SW	
Earlham	Madison			67.2		89	13	35	8	40	2.84		1.18	....	6					4,9,14,17,18 29
Fort Madison	Lee	516	51								5.32	†1.66	1.33	....	8	8	17	6	SW	
Glenwood	Mills		15	70.4	-3.7	90	14	49	22	32	3.22	-0.29	1.75	....	4	8	20	3	SW	
Greenfield	Adair		11	69.6	-3.0	89	12,14,24	45	22	35	3.94	†1.12	1.56	....	8	21	8	2	S	4,9,14,17,18 19,21,28,29
Hopeville	Clarke		11	71.0	-2.1	95	14	47	8	31	4.97	†1.68	2.23	....	6	15	15	1	S	9
Indianola (*a*)	Warren	969	11	70.2	-2.5	91	12,13	45	8	41	3.99	-0.17	1.12	..	7	....	....	....	SE	4,9,14,17,21 28
Keokuk	Lee	619	31	71.9	-2.6	91	21	53	23	29	4.63	†1.80	1.45	....	12	18	7	6	NW	4,9,10,11,13 14,15,17, 21,26,31
Keosauqua	Van Buren	664	10	70.2	-4.7	94	12	46	8,11,28	42	3.85	†0.36	1.00	....	9	5	14	12		
Lacona	Warren										3.61		0.98	....	9	7	18	6		
Lenox	Taylor	1,250	7	69.9	-3.3	90	13,14	47	8,26	31	5.16	†1.56	2.17	..	7	22	8	1	S	13,15,18,21,29
Leon	Decatur	1,120		71.2		91	13	47	8	32	4.45		1.98	....	6	24	3	4	N	
Massena	Cass			71.2		95	14	43	8	43	4.23		1.76	....	6	25	3	3	S	4,9,29
Mount Ayr	Ringgold	1,236	6	72.8	-2.9	97	13	48	8	36	5.87	†2.55	2.85	....	7	17	9	5	SW	
Mount Pleasant	Henry	729	20	70.6	-1.8	92	13	47	8	30	5.21	†1.30	1.29	....	9	14	11	6	SW	4,9,21
Omaha, Neb	Douglas	1,113	32	72.4	-1.3	93	14	54	22	26	4.45	†1.11	1.88	....	11	16	6	9	S	3,4,5,9,15,21,28,29
Osceola	Clarke	1,130	6	71.1	-3.1	95	14	44	8	39	5.67	†2.48	1.32	....	8	21	3	7	SE,SW	9,14
Oskaloosa	Mahaska	843	18	69.8	-2.0	90	12,13,24	45	8,26	35	2.36	-0.78	2.01	....	8	17	4	10	SW	21,28
Ottumwa	Wapello	649	8	72.9	-2.1	95	12,14	50	8,11	34	2.72	-0.96	1.00	....	9	14	12	5	SE	
Pacific Junction	Mills	960	..	70.6		93	14	45	22,26	35	3.24		1.15	....	8	15	12	4	S	
Red Oak	Montgomery	1,033	....	72.1	-2.6	88	13,14,15,24	50	26	26	2.03	-1.06	0.86	....	8	12	16	3	S	6,9,15,17
St. Charles	Madison	1,070	....	70.8		90	13,14,24	49	8	30	4.33		1.32	....	8	21	8	2	NW	
Stockport	Van Buren			70.6		89	13	50	8,11,23,26	32	3.67		1.47	....	8	16	4	11	NW	4,19,21
Thurman	Fremont			71.3	-2.9	93	14	44	26	32	3.38	-2.05	0.85		10	15	10	6	SW	
Wapello	Louisa	588		70.1	-4.8	88	12,15,21	49	8	29	6.40	†1.15	2.51	....	10	19	9	3	SW	3,9,13,15,18,19,21
Washington	Washington	769	20	69.6	-3.6	92	13,22	48	8,9	40	4.39	†0.90	1.47	...	7	....	....	....	SW	
Winterset	Madison	1,129	11	71.2	-1.2	95	13	46	8	31	2.30	†1.24	1.35	....	6	22	7	2	S	
Woodburn	Clarke	961									4.33		1.56	....	7	20	7	4	SW	9,17,21,29
Average				70.7	-2.9	92.1		46.3		34.3	4.15	†0.45			8	17	9	5	SW	
Average for state				69.1	-2.7	91.4		44.0		35.1	3.43	†0.00			7	17	8	6	SW	

CLIMATOLOGICAL DATA FOR AUGUST, 1904—CONTINUED.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted)		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Amana	Iowa	721	25	68.8	-2.0	91	12, 13	43	8	34	2.88	-.70	1.73	....	7	19	7	5	SW	15, 21, 28
Ames	Story	926	20	69.0	-3.2	92	24	40	8	35	3.37	-.17	1.30	....	6	21	8	2	S	28
Audubon	Audubon	1,301	8	69.8	-2.1	91	13, 14, 24	36	8	43	3.11	-.84	1 23		6	19	7	5	SW	4, 9, 15, 19, 21, 28
Baxter	Jasper.	998	....	68.5	..	91	13	44	8	34	2.23	.....	.75	....	5	19	8	4	SW	
Belle Plaine	Benton	826	12	68.4	-2.2	90	5, 13	47	26	33	2.68	-1.68	1.35	....	6	15	8	8	E, SE	
Buckingham	Iowa	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.30	.....	1.36	....	5	8	23	0	.....	
Carroll	Carroll	1,265	12	68.8	-2.4	90	14, 24	41	8	34	3.16	-.61	1.60	..	7	18	3	10	.....	9, 17, 20, 21, 28
Cedar Rapids	Linn	733	19	70.1	-2.6	94	12, 13	47	8	38	2.54	-.71	1 30	....	7	15	12	4	SE, S	
Clinton	Clinton	609	34	68.0	-3.2	95	12	42	8	43	5.36	†2.31	2.75	....	9	14	13	4	....	13, 15, 21, 25
Davenport	Scott	606	31	70 0	-2.8	90	13	52	8	30	3.60	.....	.89	....	10	17	9	5	SW	4, 9, 13, 15, 21, 25, 28, 29
Delaware	Delaware	1,083	11	66.9	-2.9	90	12	44	8, 26	36	2.50	-.36	.89	..	7	19	9	3	S	2
Denison †(b)	Crawford.	1,180	8	69.7	-2.4	92	24	42	26	37	2 95	-.43	1.25	....	6	....	....	....	S	
Des Moines	Polk	861	24	70 2	-1.8	91	24	49	26	37	2.60	....	1.00	....	7	19	6	6	SW	4, 19, 17, 21, 28
De Soto	Dallas	866	....	70.0	.....	90	24	44	8	33	3.08	.....	1.40		7	23	3	5	SE, SW	
Dubuque	Dubuque	655	29	68.8	-2.8	91	12	45	8	31	2.58	..	1.04	....	11	13	12	6	NW	4, 9, 13, 15, 21
Fort Dodge	Webster.	1,126	....	67 9	.....	91	5	42	8	33	6.75	.....	4.00	....	9	20	3	8	S	20
Galva	Ida	1,290	8	67.8	-3.6	90	12, 14	39	8	40	2.56	-.78	.94		5	15	10	6	.....	4, 9, 21
Gilman	Marshall	1,052	..	.....	.....	.....	.....	.....	.....	.....	2.92	..	.89	....	7	20	8	3	S	
Grinnell (near)	Poweshiek	.....	....	69.1	....	91	13	47	8, 22, 26	34	2.56	.....	1.10	....	5	18	7	6	SW	9, 15, 17, 21, 28, 29
Grundy Center.	Grundy	976	11	67.8	-2.9	91	24	41	8	33	2.61	- 96	.82	....	6	17	9	5	SW	
Guthrie Center	Guthrie	1,077	6	70.0	-2.4	91	13	41	8	35	4.12	- 44	2.15		8	22	5	4	NE	9, 14, 17, 19, 28
Harlan	Shelby	1,192	....	69.0	....	91	14	41	22, 26	34	1.91	.....	.70	....	5	12	13	6	S	4, 9, 15, 17, 21
Ida Grove	Ida	1,220	....	69.6	.....	93	14	43	8, 26	38	2.28	.....	1.05		4	18	10	3	S	17
Independence	Buchanan.	921	38	67.6	-2.6	92	24	41	8	40	1.80	-1.63	1.00	....	7	23	3	5	SW	9, 13, 15
Iowa City	Johnson.	685	43	69.4	-2.2	94	12	46	8	42	3.93	-.53	2.03	....	7	15	1	15	N	
Iowa Falls	Hardin	1,170	90	65 8	-4.4	90	24	39	8	36	2.14	-1.26	.94		6	21	3	7	NW	9, 18, 21, 29
Jefferson	Greene	1,052	....	.....	....	.....	.....	.....	.....	.....	4.07	.....	1.68	...	9	....	....	....	NW	9, 15, 18, 28
Little Sioux (k)	Harrison	.....	....	72.6	.....	94	14	44	22	32	1.78	.....	.88	....	6	16	9	6	SE	3, 9, 17, 21
LeClaire	Scott	576	....	.....		.....	.....	.....	.....	..	4.29	.....	.81	....	8	....	....	....	S	
Logan	Harrison	928	35	71.2	-1.3	95	14, 15	43	26, 28	39	.99	-2.87	.50		4	15	12	4	SW, NW	
Maquoketa	Jackson	688	9	66.8	-5.1	93	13	38	8	43	4.47	†1.64	1.45	....	10	15	4	12	NE	
Marshalltown	Marshall	947	9	69.0	-3.0	95	24	40	8	42	3 24	-.33	2.00	..	7	13	3	15	NW	4
Monticello	Jones	925	48	.....	.....	.....	.....	.....	.....	.....	3.08	-.47	1.00	....	4	20	9	2	SW	
Mt. Vernon	Linn	847	35	70.1	-0.1	93	13	45	8	36	4 07	-.50	1.53	....	6	22	2	7	NW	1, 9
Montezuma	Powshiek.	.....	....	.....	.....	.....	.....	.....	.....	....	3.60	.	1.90	....	4	....	....	....	.....	
Odebolt	Sac	1,356	5	70.0	-4.6	95	14	42	8	38	3.36	-.33	1.33	....	11	15	10	6	.....	
Ogden	Boone	1,088	8	68.8	-4.2	91	24	46	8, 22	32	2.51	-1.55	1.21	....	6	24	3	4	SE	
Olin	Jones	760	....	68.0	....	91	13	42	8	36	3.54	-.04	1.10	....	7	21	7	3	NW	
Onawa	Monona	1,053	....	72.8	.....	96	14, 24	49	22	34	2.63	-1.26	.95	....	7	23	4	4	SE, S	4, 6, 17, 19, 21
Perry	Dallas	975	....	70.0	.....	91	24	44	8	34	4.21	.....	1.75	....	5	14	10	7	.....	9, 17
Rockwell City	Calhoun	.....	....	68.2	-3.2	91	12	45	22	34	5.95	-2.41	1.70	..	5	22	4	5	.....	
Sac City	Sac	1,278	22	69.3	-0.7	91	14	44	8	32	5.48	†2.12	1.74	...	7	19	3	9	S	9
Sioux City	Woodbury.	1,165	13	69.8	-1.8	96	14	46	10	35	2.68	.....	1.10		11	12	10	9	S	3, 9, 15, 17, 20
Stuart	Guthrie	1,316	5	71.0	-2.9	90	24	48	8	30	3.48	.....	2.25	..	6	0	24	7	SE	
Tipton	Cedar	807	..	71.0	.....	94	13	51	8, 26, 27	32	3 06	.	1.27	..	6	24	5	2	NW	
Toledo	Tama	856	8	68.6	-3.8	92	13, 24	40	8	36	3.00	-.82	1.65	..	8	17	8	6	NW	
Vinton (a)	Benton	810	12	68.6	-2.1	92	13, 15	40	8	36	2.41	.....	1.14	..	6	....	....	....	.....	
Waterloo	Black Hawk.	862	15	68.4	-2.4	93	24	43	8	37	2.93	-67	1.16	..	8	19	10	2	SW	4, 9
Waukee (a)	Dallas	1,039	....	72.0	.....	97	13	45	8, 9	40	3.25	.....	1.20	....	6	21	4	6	NW	9, 29
Wilton Junction	Muscatine.	683	7	69.4	-3.5	93	12	43	8	36	5.15	.....	1.80	....	6	22	4	5	NW	15
Whitten	Hardin	1,036	..	68 0	-2.9	90	12, 24	42	8	37	3.24	.....	1.30	....	6	15	11	5	SW	
Zearing	Story	718	....	68.3	.....	91	24	42	8	32	3.48	.....	2.07	....	5	21	4	6	NW	15, 29
Average	....	....	....	69 2	-2.4	92.1	....	43 4	.....	35.9	3.24	-.29	..		7	18	7	6	SW	

*Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Above normal. ‡Received too late to be computed with means. a, One day missing; b, two days, etc. § Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR AUGUST, 1904.

STATIONS.		DATE.																															MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
:ton.. ..	Max..	88	85	91	83	86	81	75	81	77	78	86	91	91	92	89	88	91	84	82	85	87	72	77	90	85	77	80	88	68	76	83	83.4
	Min ..	59	54	59	68	59	57	59	45	56	56	52	63	69	67	69	61	67	58	67	58	62	49	45	59	62	48	58	57	60	59	57	58.7
lbia.	Max..	88	80	87	86	84	78	73	76	78	74	83	92	91	90	90	90	88	82	77	84	88	73	79	91	73	78	80	84	76	78	84	82.3
	Min ..	..	57	55	61	56	59	55	46	47	58	51	54	66	64	69	60	62	60	62	62	64	51	50	54	64	48	52	55	64	60	60	57.5
lgona. ..	Max..	78	78	83	78	85	77	76	73	68	71	79	89	82	87	84	85	80	78	79	85	77	73	76	88	82	78	80	81	72	72	80	79.2
	Min .	58	47	60	59	57	57	58	45	56	46	51	67	66	56	64	57	54	53	62	60	59	45	47	60	55	45	51	57	61	54	60	55 8
llerton .	Max..	83	81	86	85	85	80	74	77	78	77	84	91	95	92	91	90	89	86	81	84	89	75	77	92	80	79	80	85	78	79	84	88.5
	Min ..	59	54	60	66	54	61	54	47	59	57	52	63	68	67	71	61	65	60	68	56	66	50	49	58	57	47	50	55	66	62	61	58.8
lta.	Max..	75	78	84	78	87	76	70	74	67	73	84	86	86	89	83	84	75	77	78	84	72	73	77	88	74	80	82	79	70	70	81	78.5
	Min ..	55	50	61	58	55	53	54	47	55	47	55	67	65	61	65	59	59	55	65	63	56	44	50	63	54	49	54	61	61	57	62	56.8
mana. ..	Max..	79	79	84	83	84	78	73	75	78	73	80	9	91	87	89	88	80	82	74	83	87	72	77	89	82	76	79	83	69	77	81	80.7
	Min ..	55	53	56	66	55	57	53	43	59	59	49	60	71	59	65	58	59	59	64	58	67	50	46	55	65	46	50	53	59	55	61	56.9
mes	Max..	81	82	85	84	88	80	75	75	73	71	79	89	91	88	89	88	75	79	74	83	85	76	78	92	82	79	84	89	84	76	81	81.8
	Min ..	54	57	60	66	56	55	54	40	58	50	50	61	72	53	69	54	58	58	65	59	67	47	46	57	56	44	50	55	61	57	57	56.3
tlantic..	Max..	81	83	84	85	85	84	75	79	74	80	87	89	93	94	92	86	88	83	80	85	84	77	78	91	82	80	83	81	78	77	84	83.3
	Min ..	53	53	62	62	47	53	49	39	55	52	53	67	71	65	69	57	63	59	66	57	67	41	48	61	59	39	50	58	62	59	57	56.4
udubon.	Max..	79	83	85	88	85	80	73	77	78	79	87	89	91	91	86	86	85	79	80	85	80	78	79	91	78	81	83	85	69	76	82	85.0
	Min ..	50	45	58	62	48	50	50	36	53	42	53	67	69	63	69	57	62	59	65	56	64	42	43	58	60	38	47	59	60	58	54	54.7
axter. ..	Max..	80	82	85	85	83	79	74	74	75	72	78	89	91	88	89	86	83	80	75	83	85	75	77	90	80	76	80	85	65	76	80	80.6
	Min ..	54	54	59	67	57	53	54	44	57	54	48	61	74	61	69	56	59	57	65	54	65	46	48	57	46	46	50	55	59	57	61	56.4
edford ..	Max..	86	85	83	83	82	83	75	77	77	80	84	87	92	94	93	85	89	83	83	82	86	75	76	89	79	78	78	85	78	76	81	82.7
	Min ..	58	57	60	63	49	55	56	48	59	54	56	65	66	64	61	60	62	60	67	58	62	47	44	62	61	43	48	59	65	61	61	57.8
elle Pl'e	Max..	77	78	84	82	90	80	70	73	76	68	78	89	90	85	87	85	76	76	72	80	85	70	74	88	73	75	78	85	62	71	79	78.8
	Min ..	56	54	59	64	57	68	68	50	57	57	49	60	72	60	65	59	58	58	62	57	62	50	50	55	63	47	52	57	60	55	58	58.0
onapar'e	Max..	82	80	84	85	82	78	75	75	81	72	79	92	91	87	90	88	84	81	75	82	90	74	78	90	79	76	79	85	74	75	84	81.5
	Min ..	59	54	57	62	57	60	54	46	57	55	48	57	68	62	66	59	64	61	67	61	61	53	46	55	64	45	46	50	61	57	61	57.2
Britt.	Max..	76	81	82	77	85	75	69	76	71	74	80	90	81	86	82	84	80	80	79	84	74	72	76	89	78	79	80	83	72	78	85	79.3
	Min .	53	47	59	59	53	49	52	41	56	43	51	64	65	55	63	54	54	54	62	58	59	42	46	58	44	51	52	56	58	53	60	53.9
Burling'n	Max.	85	80	83	84	82	80	78	75	81	74	81	90	88	88	85	89	86	82	78	83	91	73	79	88	81	77	80	84	73	79	83	81.9
	Min ..	62	58	58	63	59	61	56	51	59	60	56	61	71	64	66	65	65	64	68	65	66	55	51	56	64	50	51	55	61	59	62	60.1
Carroll ...	Max	80	81	84	80	87	80	74	75	70	84	87	88	89	90	86	88	78	80	80	84	78	78	80	90	76	71	82	82	70	74	80	80.8
	Min	54	50	60	60	58	50	52	41	56	48	56	69	68	64	67	56	60	58	65	61	66	45	50	61	58	44	55	61	62	57	58	56.9
Cedar R..	Max..	83	84	88	85	86	81	76	78	79	76	80	94	94	92	93	91	81	82	72	85	88	78	81	93	78	79	82	85	63	75	84	82.8
	Min ..	58	55	59	62	59	60	58	47	49	57	55	56	66	63	64	62	62	63	63	58	59	53	50	52	61	50	52	56	59	55	56	57 4
Chariton .	Max	80	81	84	88	84	79	72	75	78	75	82	90	90	91	89	87	86	80	79	83	82	75	76	90	83	78	77	83	77	76	77	81.0
	Min ..	59	55	61	66	54	58	55	45	58	57	49	63	69	65	70	59	64	59	67	55	62	49	48	57	62	46	49	55	65	60	59	58.1
Charles C.	Max.	77	77	83	77	84	75	70	74	70	70	78	88	81	86	84	84	79	77	74	83	77	74	78	90	78	78	81	86	70	75	83	78.6
	Min ..	55	49	53	60	54	51	54	39	57	53	49	53	52	50	60	56	52	56	59	52	55	44	46	49	58	42	46	54	59	49	49	52.1
Clarinda..	Max	88	84	90	86	88	83	75	80	78	80	90	91	94	95	94	89	93	83	85	87	88	78	80	94	72	82	84	76	88	78	85	85.1
	Min ..	59	59	60	62	52	54	58	49	54	56	55	59	66	64	65	60	62	61	64	59	62	48	44	47	64	44	47	55	62	63	61	57.3
Clear L. ..	Max..	74	82	82	81	86	77	71	74	69	74	79	87	83	89	85	85	78	80	79	84	76	76	77	86	81	79	81	81	72	77	79	79.5
	Min ..	56	52	61	62	62	54	52	48	57	49	51	64	68	61	62	64	60	55	62	60	63	47	49	57	57	55	55	61	59	51	60	57.2
Clinton ...	Max..	84	81	85	85	85	82	75	76	83	83	83	95	92	85	89	90	83	82	74	82	91	78	78	87	79	76	79	84	70	78	85	82.5
	Min ..	54	58	54	57	52	57	50	42	51	51	46	52	67	55	57	57	57	61	62	62	63	44	48	48	59	45	44	46	58	51	51	53.5
Col. Sprgs	Max..	..	83	87	83	85	82	75	79	80	79	87	90	94	93	92	84	88	86	85	85	89	78	91	80	80	77	84	86	79	80	86	86.6
	Min ..	63	60	63	64	57	62	59	51	58	55	57	65	65	67	67	62	65	63	67	63	48	50	62	62	62	49	48	60	64	60	63	60.0
Colum. J.	Max..	80	80	83	84	87	78	74	74	79	72	79	89	90	86	89	86	84	80	75	81	89	72	76	87	72	75	87	83	74	75	82	80.7
	Min ..	60	54	58	63	57	60	55	47	57	56	52	59	67	61	61	60	64	60	67	63	65	51	49	54	55	48	51	53	59	55	60	57.5
Corning ..	Max..	81	85	82	83	81	76	78	76	75	..	84	87	89	90	87	84	87	80	81	83	83	72	74	89	80	75	78	84	77	73	81	81.2
	Min .	56	57	62	49	53	51	43	57	55		57	66	68	67	67	65	63	60	68	59	62	45	45	63	61	42	51	60	60	59	60	57.7
Corydon..	Max..	85	84	85	86	85	80	75	75	78	80	82	91	93	93	93	89	88	81	80	83	86	77	77	91	82	80	82	85	77	75	82	83.2
	Min .	60	55	62	67	56	60	56	45	59	57	52	65	69	66	72	63	65	61	69	57	67	49	52	58	63	48	53	58	64	62	60	59.7
Cresco . .	Max	81	80	80	75	85	76	69	71	66	71	80	86	80	85	84	83	85	73	81	76	73	78	84	90	86	77	81	86	70	75	79	78.9
	Min ..	52	47	48	64	54	49	52	39	55	53	45	51	66	49	65	53	50	54	69	53	61	42	49	56	56	44	53	56	57	46	58	53.4
Davenpo't	Max..	81	77	81	85	82	80	74	73	80	70	78	89	90	85	90	87	82	79	73	81	89	73	77	87	81	74	77	80	63	76	82	79.9
	Min ..	63	58	62	66	59	61	59	52	59	59	56	59	68	63	67	62	64	63	65	64	67	55	54	58	59	53	56	59	58	53	60	60.0
Decorah. .	Max..	78	77	81	75	84	77	70	73	71	74	88	88	78	86	84	88	77	78	72	81	78	73	77	89	88	78	80	83	69	62	73	78.4
	Min ..	58	50	55	66	55	57	53	39	57	47	65	63	62	50	64	54	53	57	62	55	62	50	45	57	58	44	52	58	55	57	47	55.0
Delaware.	Max..	78	81	83	81	83	78	71	75	77	70	78	90	87	86	86	87	81	79	70	81	85	73	71	88	80	77	80	86	72	75	82	79.7
	Min ..	53	50	54	64	55	52	51	44	55	55	47	56	69	55	63	58	56	55	58	58	65	46	45	52	61	44	49	52	56	45	53	54.1
Des M....	Max..	79	82	84	83	85	79	73	74	76	72	81	89	91	81	89	87	81	78	76	83	86	74	76	91	80	77	79	83	64	74	80	80.4
	Min ..	63	56	63	65	57	59	57	50	59	56	53	66	74	67	72	60	62	61	66	64	64	53	53	54	59	49	54	58	60	59	63	59.9
De Soto ..	Max..	83	78	83	80	83	78	72	76	74	72	82	87	89	87	85	86	81	78	75	83	84	75	77	90	82	79	82	84	76	74	80	80.5
	Min ..	59	54	62	67	57	58	57	44	54	56	54	67	74	67	73	60	64	60	68	60	66	51	49	62	64	46	51	58	60	64	59	59.5
Dows. ...	Max	75	78	82	78	86	76	69	72	67	70	77	88	84	86	82	85	78	76	76	82	76	74	76	89	82	77	79	81	71	73	81	78.3
	Min ..	52	47	60	61	55	51	52	40	57	49	45	64	68	57	67	54	54	55	60	56	62	43	47	58	56	45	51	56	59	53	60	54.6
Dubuque.	Max..	78	79	83	82	85	79	70	74	76	70	78	91	87	87	88	89	81	79	70	82	87	73	77	88	80	76	78	83	68	76	82	79 9
	Min	59	54	59	67	57	60	56	45	59	56	51	60	66	58	65	59	61	61	61	62	64	52	52	57	59	50	57	56	57	53	58	57.8
Earlham .	Max.	80	8	83	81	83	79	70	75	74	75	82	87	89	87	87	85	84	78	78	82	85	74	76	88	78	78	80	84	75	80	..	80.6
	Min ..	52	47	56	63	50	50	50	35	50	52	48	63	70	62	70	55	61	55	63	53	61	40	43	57	58	38	44	55	57	53		53.7
Elkader ..	Max..	84	84	87	82	88	80	76	79	76	77	82	94	88	93	92	91	83	83	73	86	83	79	81	93	78	82	86	88	73	80	85	83.4
	Min ..	50	48	51	65	52	50	52	40	57	56	46	59	64	51	60	55	52	59	60	51	69	47	44	55	63	42	48	53	58	45	59	53.6
Esthervil.	Max.	84	80	84	80	87	81	74	74	70	72	81	86	94	90	86	85	84	81	81	89	75	76	81	92	74	80	84	78	70	65	77	80.5
	Min	51	48	52	54	56	52	50	45	46	44	44	52	65	55	61	60	55	53	51	60	65	45	44	54	52	46	50	56	58	56	55	52.7
Fayette ..	Max	83	81	85	83	86	80	70	77	73	73	85	91	83	87	86	85	80	77	71	82	70	73	77	90	70	..		87	76	73	8	79.9
	Min ..	51	45	50	53	51	49	5	36	55	58	41	56	53	49	64	58	53	58	59	51	60	45	43	54	58	..	..	65	60	42	55	52.6
Forest C'y	Max..	75	81	82	77	81	76	70	74	67	75	78	89	83	86	82	85	81	78	80	86	70	73	78	88	73	77	80	80	73	77	79	78.5
	Min ..	54	50	53	59	56	55	52	43	52	45	48	56	66	56	65	55	57	53	57	57	62	44	45	51	54	45	52	57	60	50	52	3.6
Ft. Dodge	Max..	77	80	84	85	91	79	70	80	71	73	84	90	87	90	86	86	79	78	78	85	74	74	79	89	74	79	82	76	71	72	81	80.1
	Min ..	55	51	56	63	58	55	55	42	45	49	50	57	69	61	66	58	59	57	58	61	63	48	48	52	58	48	51	56	63	57	57	55.7
Glenw'd .	Max..	81	78	84	80	84	80	73	77	74	73	85	87	88	90	89	84	86	82	80	83	83	72	76	89	87	77	79	83	74	76	80	80.6
	Min ..	59	58	65	62	57	59	58	50	55	53	58	69	71	67	70	62	66	62	64	65	62	49	52	65	55	50	56	64	63	59	62	60.2
Grand M.	Max..	78	80	81	78	83	76	70	73	70	71	76	86	82	83	84	83	77	77	70	80	76	72	76	82	81	75	78	84	66	78	..	77.5
	Min ..	53	52	54	62	56	53	52	43	55	54	49	61	65	55	64	59	55	56	59	56	64	47	54	58	60	40	49	51	56	56	..	54.9
Greene...	Max..	79	82	85	80	86	77	71	77	70	73	80	90	83	88	86	87	83	80	76	85	78	77	80	91	82	79	82	85	72	78	83	80.8
	Min ..	53	49	57	63	56	53	52	40	56	51	49	60	68	55	66	57	54	56	61	54	66	44	45	56	58	45	52	55	58	50	59	54.8
Greenfi'ld	Max	81	82	83	86	84	78	73	76	74	73	83	89	88	89	86	87	87	82	82	83	85	73	77	89	84	78	82	86	79	78	80	81.8
	Min ..	57	54	56	62	55	56	55	47	55	56	53	54	71	66	69	62	64	59	65	60	60	45	50	60	61	49	52	54	59	58	58	57.5
Grinnell(near	Max..	80	79	85	85	85	79	75	75	78	72	78	90	91	89	89	89	82	78	73	82	88	75	77	90	83	78	82	85	70	73	83	81.3
	Min .	55	53	60	65	56	56	53	47	57	55	51	61	72	61	69	57	61	57	63	50	66	47	50	56	60	47	51	56	57	55	61	56.9
Grundy C	Max..	80	80	84	81	84	78	73	73	74	71	78	89	88	87	87	86	80	78	74	82	85	76	77	91	82	78	80	82	66	75	81	80.0
	Min ..	53	50	58	66	64	52	51	41	56	52	46	63	69	58	61	57	55	56	62	54	66	45	47	58	57	45	51	56	58	54	61	55.7
Guthrie C	Max..	85	83	85	83	85	81	76	76	75	76	85	90	91	90	88	86	85	79	78	83	83	79	82	90	85	77	80	85	80	74	80	82.3
	Min ..	55	50	60	61	55	55	53	41	62	59	54	68	78	64	64	59	64	59	66	60	65	46	47	60	62	44	51	59	61	61	57	57 6
Hampton.	Max..	77	85	87	81	88	78	75	77	72	77	80	91	88	90	85	89	83	79	74	85	78	78	89	92	81	83	84	83	74	79	85	81.9
	Min ..	54	52	59	64	59	54	54	44	58	49	49	65	71	69	70	60	57	55	67	57	62	46	48	58	53	49	53	59	63	50	60	56.9
Hanlont'n	Max.	73	77	81	75	85	74	67	71	66	69	75	87	79	85	82	83	75	76	75	82	74	72	75	88	81	77	80	81	68	73	76	76.8
	Min ..	54	48	59	60	55	51	52	41	57	44	47	65	67	53	66	55	52	52	61	55	56	42	48	58	55	45	53	58	53	50	58	54.0
Harlan....	Max	82	83	86	79	86	79	72	78	75	76	86	89	89	91	87	87	88	82	81	85	80	74	76	88	80	78	80	86	78	77	83	82.0
	Min ..	55	50	59	60	51	55	51	44	53	47	55	64	65	64	67	57	63	59	66	59	61	41	43	61	60	41	47	57	6	58	59	55.9
Hopeville.	Max .	82	85	86	83	84	81	72	78	77	78	85	90	90	95	91	87	90	80	81	84	87	76	77	90	72	80	81	86	77	72	83	82.6
	Min ..	61	56	62	68	58	57	57	47	58	57	53	64	70	67	71	64	66	60	67	58	62	50	48	60	57	49	57	58	62	60	60	59.5
Humboldt	Max..	76	75	84	87	87	79	70	75	68	70	80	89	85	88	84	86	79	78	77	84	76	68	71	87	82	72	70	70	70	70	74	77.6
	Min ..	54	68	75	77	53	55	55	45	59	49	51	69	69	58	66	56	56	56	64	60	65	46	49	62	58	48	56	60	64	56	60	58.8
Ida Grove	Max.	76	82	88	8	89	84	80	76	72	78	87	88	89	93	85	86	76	79	80	84	77	74	77	88	83	78	81	83	74	85	87	81.9
	Min ..	52	49	55	61	51	52	45	43	58	49	57	69	68	66	69	58	62	58	67	53	58	45	52	65	58	43	57	64	64	65	66	57.4
Independ.	Max.	78	80	85	80	82	77	72	74	74	71	77	91	87	88	86	88	78	80	75	83	82	75	78	92	83	78	81	86	68	76	81	80.2
	Min .	55	51	55	63	54	55	54	41	56	55	48	59	72	55	65	65	55	56	60	50	66	47	44	52	61	42	48	62	58	47	57	55.1
Indianola.	Max..	80	81	83	82	83	79	73	77	76	73	84	91	91	90	88	86	86	78	78	85	85	74	..	90	83	78	82	85	75	75	81	81.7
	Min ..	60	55	62	66	57	58	56	45	59	57	52	54	73	65	73	61	64	59	69	62	54	50	..	49	62	47	50	57	60	59	62	5 .6
Inwood, ..	Max.	77	78	87	80	88	81	73	74	69	74	85	87	82	92	90	82	80	84	84	85	80	76	78	92	82	89	84	75	71	73	77	80.6
	Min .	55	50	61	57	55	53	52	47	55	57	57	65	65	61	63	58	58	56

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR AUGUST, 1904—CONTINUED.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Keosa'qua	Max..	83	83	86	87	84	80	76	75	84	79	81	94	92	90	93	91	86	82	76	83	91	78	78	90	87	77	79	85	79	78	85	83.8
	Min ..	59	55	57	62	56	61	54	46	53	57	46	52	65	63	67	60	64	61	65	63	63	55	46	49	63	47	48	50	62	60	59	57.0
Larrabee.	Max..	81	84	88	81	91	79	72	79	69	78	87	90	87	91	87	86	83	83	82	86	76	74	79	92	82	80	84	91	72	73	86	82.4
	Min ..	49	48	59	58	55	48	48	46	55	46	51	68	69	58	59	59	58	56	65	62	58	45	50	63	51	46	55	61	63	59	61	55.6
Lenox....	Max..	80	81	84	84	82	78	73	76	77	76	84	88	90	90	87	84	87	80	82	82	84	73	75	89	80	76	82	85	76	73	80	81.2
	Min ..	62	57	61	55	55	56	56	47	58	55	56	66	68	66	68	62	65	59	67	60	62	49	49	61	62	47	51	59	60	59	60	58.0
Leon.....	Max..	83	82	85	83	83	82	77	77	77	76	84	89	91	89	90	86	88	85	79	82	85	73	75	89	88	75	78	84	77	78	82	82.2
	Min ..	60	56	61	68	57	60	59	47	59	57	52	69	69	68	71	64	66	59	69	59	65	52	49	59	64	50	50	56	66	62	61	60.1
Lit. Sioux	Max..	..	..	.	..	..	..	..	..	..	..	..	91	89	94	90	89	87	81	82	86	79	76	78	92	83	81	83	83	77	79	83	84.1
	Min ..	..	..	..	..	..	..	..	..	..	..	..	63	71	69	63	60	67	61	67	67	63	44	54	67	61	49	57	66	65	61	64	62.0
Logan....	Max..	81	80	88	89	82	89	75	82	85	79	90	92	91	95	93	90	90	84	85	89	79	7	80	92	80	82	85	82	77	80	85	84.8
	Min ..	63	53	60	63	52	57	55	46	57	48	58	67	67	60	67	58	64	54	67	67	60	44	49	68	61	43	51	43	62	61	64	57.0
Maquo'ta.	Max..	84	82	84	87	86	82	77	76	79	74	79	92	93	89	91	91	83	80	71	83	88	77	77	88	77	79	78	85	65	78	84	81.9
	Min ..	50	47	50	62	51	53	50	38	48	57	44	49	60	53	50	56	55	58	61	61	62	51	44	47	56	48	42	45	59	46	53	51.0
Marshlt'n	Max..	83	83	89	85	87	81	77	80	79	73	82	94	92	91	91	90	82	83	72	86	88	78	82	95	79	82	87	85	64	78	83	83.3
	Min ..	54	51	56	65	55	54	54	40	57	53	49	53	65	60	69	56	57	56	58	54	55	46	48	53	60	44	47	54	61	55	56	54.7
Mason C..	Max..	75	79	82	79	85	76	70	75	68	72	76	89	82	88	83	84	78	78	78	83	75	74	78	89	82	80	82	81	70	75	77	78.8
	Min ..	55	53	58	63	59	55	55	48	58	48	54	65	70	60	70	62	60	56	62	59	65	48	50	59	58	54	54	57	58	51	61	57.0
Massena..	Max..	85	86	90	83	85	81	75	79	75	80	88	92	93	95	90	89	88	86	83	87	83	88	86	90	89	80	84	88	78	76	83	85.0
	Min ..	55	53	60	62	52	52	53	43	55	55	55	66	71	67	65	65	65	60	67	58	63	45	48	60	61	40	50	60	60	58	59	57.5
Mt. Ayr..	Max..	88	89	87	88	84	84	77	81	81	83	90	91	97	98	96	89	92	88	88	85	87	77	81	92	81	82	84	89	78	80	85	86.0
	Min ..	63	58	60	66	58	60	57	48	58	55	54	64	66	67	68	64	64	60	68	61	63	50	49	61	63	50	52	59	62	60	61	59.6
Mt. Pl'sant	Max..	88	83	84	86	83	81	79	76	83	73	81	91	92	87	89	87	86	82	74	81	91	72	77	89	81	77	80	83	76	78	84	82.4
	Min ..	60	55	59	65	58	60	56	47	57	57	51	62	69	63	63	62	65	61	67	61	66	53	50	56	67	49	51	54	60	57	61	58.8
Mt. Ver'n	Max..	85	89	85	85	84	82	79	80	76	82	83	92	93	92	92	89	82	80	73	82	85	83	86	88	79	85	84	81	78	81	85	83.7
	Min ..	55	57	55	63	57	57	54	45	56	55	53	58	72	59	63	59	58	59	61	59	66	49	49	57	63	49	50	53	53	51	56	56.5
New H. ..	Max.	75	79	80	76	83	76	70	72	67	69	74	86	81	83	84	83	79	77	..	81	76	71	75	88	82	75	78	83	67	73	79	77.4
	Min .	52	48	55	62	53	49	51	47	51	57	48	57	65	50	62	56	55	53	..	57	63	43	44	52	52	44	46	51	51	45	55	52.8
Odebolt ..	Max..	82	85	89	82	90	85	77	79	72	79	88	91	93	95	89	90	80	81	83	86	80	77	80	91	85	82	85	84	73	74	85	83.8
	Min ..	52	49	62	59	52	50	53	42	56	46	55	67	68	63	67	57	61	51	66	62	63	44	48	63	56	44	55	60	62	58	60	56.5
Ogden....	Max .	78	81	84	81	86	80	73	75	72	73	80	90	90	89	86	86	78	79	76	84	83	76	78	91	78	79	81	85	67	75	81	80.5
	Min ..	54	52	60	63	54	56	52	46	56	48	52	65	70	68	65	60	56	58	65	58	66	46	49	59	60	48	52	57	62	58	58	57.2
Olin	Max	79	79	81	84	82	83	72	73	84	73	77	88	91	89	87	86	82	81	74	82	89	70	74	86	81	70	72	77	79	79	81	80.2
	Min	53	50	57	64	53	54	52	42	55	57	47	58	70	67	65	57	57	61	64	62	67	51	46	50	65	46	50	61	47	45	58	55.9
Omaha, N	Max..	82	80	86	81	88	78	71	76	72	75	87	89	91	93	88	88	87	82	80	85	77	76	78	91	80	79	80	84	71	77	82	81.7
	Min ..	62	61	65	62	62	63	62	58	59	55	62	70	74	70	70	64	69	64	69	68	63	54	55	68	62	56	58	66	62	60	64	63.1
Onawa....	Max.	83	80	88	83	90	84	78	77	73	80	89	92	89	96	90	88	85	80	83	88	86	81	81	96	91	84	86	83	80	78	83	84.7
	Min ..	56	56	65	62	56	57	58	50	60	50	59	68	69	69	70	61	67	62	69	66	64	49	53	65	61	52	57	65	66	62	63	60.9
Osage.....	Max.	..	..	..	.	..	..	..	..	..	75	76	89	83	87	84	85	79	80	80	83	75	75	79	90	80	79	83	84	66	78	78	80.1
	Min ..	..	..	..	..	..	..	..	..	..	49	49	60	67	52	67	57	54	54	60	54	61	45	47	56	57	47	50	55	59	51	59	55.0
Osceola...	Max..	85	85	88	86	88	82	85	81	80	79	84	90	93	95	91	90	90	82	85	84	87	83	79	90	75	80	87	92	70	78	83	84.7
	Min ..	60	56	60	64	59	58	54	44	52	57	51	56	67	66	75	62	61	58	61	57	60	50	48	51	62	46	50	54	65	59	58	57.5
Oskaloosa	Max..	81	79	85	82	83	78	73	77	75	68	80	90	80	89	88	88	83	79	78	82	87	73	78	90	83	76	80	86	75	74	87	81.0
	Min ..	61	54	59	66	57	57	55	45	61	58	47	62	72	63	71	57	64	61	69	60	67	51	48	58	65	45	50	51	60	58	62	58.5
Ottumwa	Max..	85	85	87	87	87	81	76	77	79	74	83	95	94	95	93	93	87	83	78	85	92	82	81	94	76	80	85	6	70	80	86	84.4
	Min ..	64	53	63	66	60	63	57	60	62	60	50	64	64	67	73	63	68	65	67	65	73	54	52	61	69	52	51	56	65	61	65	61.4
Pacific J'n	Max	84	83	85	81	86	80	75	79	76	87	84	88	91	93	90	88	90	85	85	86	80	73	76	89	78	76	80	88	78	81	84	83.2
	Min ..	54	58	61	60	51	55	51	49	55	57	52	65	70	66	64	60	63	62	67	62	62	45	46	63	59	45	50	60	63	60	60	57.9
Perry.....	Max..	78	82	85	83	83	80	73	78	75	74	83	90	90	89	86	89	80	80	77	84	83	75	78	91	81	79	81	86	69	76	82	81.8
	Min ..	56	52	62	66	58	56	55	44	58	51	55	67	71	64	70	56	63	60	69	60	67	49	48	61	61	47	52	60	61	59	59	58.6
Plover....	Max..	78	83	80	78	88	77	70	75	67	70	80	90	87	89	87	86	82	81	80	87	79	72	77	90	82	79	83	84	73	70	83	80.3
	Min ..	50	52	64	58	54	52	53	41	55	45	55	65	65	55	64	56	55	58	64	60	62	44	45	60	55	45	50	55	60	55	59	55.2
Pocah'tas	Max..	77	83	6	77	89	81	73	77	70	75	82	89	86	88	84	85	81	77	79	85	76	74	78	90	85	80	83	78	78	70	82	80.6
	Min ..	54	50	61	60	56	53	54	45	44	50	56	70	70	68	66	64	62	63	64	62	59	44	49	61	56	49	54	59	63	57	57	57.4
Primghar	Max..	74	71	80	77	80	75	69	74	78	72	84	86	81	89	83	82	80	79	80	85	76	74	77	89	77	89	79	78	69	..	..	78.9
	Min .	55	49	60	66	57	55	51	46	52	46	55	66	62	59	62	59	59	55	65	65	56	43	50	62	50	48	59	59	60	57	60	56.4
Red Oak..	Max..	81	79	83	81	82	78	75	77	75	75	83	86	88	88	88	84	86	82	80	83	81	73	75	88	84	76	78	81	80	76	80	80.8
	Min ..	63	61	67	67	58	62	62	55	62	58	61	69	73	71	72	66	66	72	71	64	66	54	52	67	62	50	56	65	65	62	66	63.4
Ridgeway	Max..	80	81	83	80	89	80	74	75	74	73	75	87	85	88	87	86	81	79	76	85	81	77	88	94	85	80	84	90	74	79	81	81.6
	Min ..	58	54	60	65	58	55	55	50	56	54	52	62	70	56	70	62	60	57	60	59	71	50	51	59	60	50	54	58	57	50	59	57.8
Rock R...	Max..	78	83	80	78	88	78	70	74	75	75	87	88	86	90	83	82	78	76	83	85	78	76	78	88	78	82	85	82	80	78	82	80.8
	Min .	50	47	46	66	62	52	50	46	43	55	55	62	60	58	58	58	56	54	55	40	50	56	54	58	42	54	60	60	58	60	58	54.3
Rockw'l C	Max..	78	81	80	81	89	80	76	78	70	69	83	91	98	89	87	90	79	80	82	80	78	73	78	90	78	78	80	80	79	78	84	80.9
	Min ..	54	51	58	58	55	53	53	50	50	48	53	66	65	61	65	56	56	58	56	60	60	45	47	58	55	48	52	55	56	56	58	55.4
Sac City..	Max..	78	82	86	83	88	80	74	76	70	76	85	90	89	91	86	88	75	79	80	85	76	75	78	90	78	79	82	79	71	71	82	80.7
	Min ..	57	51	60	61	57	55	55	44	56	48	54	68	68	62	68	59	60	56	66	62	63	60	49	60	57	48	54	59	61	58	60	57.9
St. Cha'les	Max..	87	80	85	81	85	79	72	76	76	73	83	89	90	90	87	88	86	78	77	82	84	73	76	90	82	80	81	84	76	73	80	81.4
	Min ..	61	57	63	66	60	60	58	49	59	56	54	66	73	66	73	64	64	59	65	61	63	51	50	60	64	51	53	59	60	59	61	60.2
Sibley	Max..	74	79	83	87	87	75	71	74	61	75	85	82	81	89	80	82	77	76	82	86	68	74	77	91	73	80	82	77	73	69	77	78.3
	Min	50	45	51	55	51	50	50	43	49	41	44	59	63	57	58	53	56	53	55	62	61	38	40	51	51	42	44	57	58	58	57	51.7
Sioux C'y.	Max..	76	76	86	80	91	78	73	73	67	73	86	89	88	96	85	85	79	78	83	86	76	76	77	92	74	80	83	78	74	74	81	80.4
	Min ..	55	54	64	60	56	56	56	53	54	46	59	69	68	67	65	61	63	59	67	66	59	49	56	66	54	51	58	64	60	60	64	59.3
Sioux C'r.	Max	76	79	85	78	87	77	70	75	69	75	85	85	85	90	86	83	80	77	84	85	80	75	75	91	77	74	84	82	74	75	80	79.9
	Min ..	55	50	62	57	56	51	52	45	54	43	57	64	65	61	61	57	60	55	65	65	58	46	42	63	50	45	45	60	61	59	63	55.7
Spirit L..	Max..	75	80	82	80	85	75	70	70	65	78	82	84	78	87	82	82	83	81	80	87	79	78	78	89	83	80	83	80	76	65	75	78.9
	Min ..	55	49	55	57	65	52	52	49	55	44	58	64	65	64	67	64	60	58	55	64	61	44	53	61	53	48	57	59	57	57	62	56.9
Stockport	Max	80	80	83	83	80	78	75	79	79	78	78	88	89	85	86	86	84	82	75	79	87	74	75	88	82	75	76	83	74	76	81	80.6
	Min ..	62	57	60	65	59	63	58	50	59	61	50	62	71	63	69	62	67	68	70	65	72	54	50	56	63	50	51	52	62	60	64	60.5
Storm L..	Max..	76	79	83	78	87	76	71	73	63	72	82	86	86	88	83	84	75	76	78	83	69	73	75	87	72	77	80	78	70	67	..	77.6
	Min ..	51	46	56	59	53	53	54	49	54	44	50	57	65	60	64	58	62	55	55	64	62	45	48	55	54	50	55	58	61	57	56	55.3
Stuart ...	Max..	81	83	87	85	86	83	78	78	76	73	83	89	88	89	89	87	87	82	80	85	84	74	77	90	88	78	80	86	82	75	82	82.7
	Min ..	58	55	61	65	59	58	57	48	57	53	53	66	73	66	72	63	64	59	66	61	64	49	49	60	58	50	51	60	61	59	59	59.2
Thurman.	Max..	82	83	86	81	85	78	74	78	73	77	87	90	92	93	90	85	86	82	81	84	80	74	76	91	84	76	79	85	80	78	83	82.4
	Min ..	57	60	64	63	52	57	58	50	59	53	58	68	71	69	66	62	63	63	68	61	63	48	49	68	63	44	55	65	65	60	63	60.2
Tipton....	Max..	85	84	84	88	87	83	79	77	78	75	81	91	94	90	91	90	82	82	75	83	89	78	78	88	82	79	80	83	73	75	83	82.8
	Min ..	59	58	59	65	60	59	58	51	58	58	54	59	71	62	65	61	62	62	63	63	68	53	53	56	68	51	51	54	57	52	59	59.3
Toledo....	Max..	82	80	85	83	84	80	74	76	77	70	79	91	92	89	89	88	81	80	72	82	87	76	77	92	83	78	81	3	68	75	83	81.2
	Min ..	53	50	55	67	55	53	52	40	57	57	46	63	74	59	67	56	56	56	63	55	66	46	45	58	61	45	53	54	59	56	61	56.0
Vinton. ..	Max	81	81	85	84	84	81	74	75	76	74	79	91	92	..	92	89	83	81	76	83	85	76	78	91	87	80	81	82	71	75	1	81.6
	Min ..	55	50	56	56	56	56	53	40	58	57	48	61	75	..	58	58	57	60	61	54	66	50	48	55	63	46	50	53	57	53	60	55.7
Wapello..	Max..	82	75	82	83	81	80	78	73	79	70	78	88	87	86	88	86	80	77	75	78	88	74	86	88	76	76	81	74	76	76	83	80.0
	Min ..	64	56	59	62	57	61	56	49	59	59	55	61	71	64	67	62	65	62	68	64	69	52	57	55	50	57	59	60	52	62	67	60.2
Washi'ton	Max..	81	80	83	83	82	78	75	74	79	69	80	90	92	88	90	87	82	79	74	81	88	92	78	89	79	74	77	82	66	76	81	80.9
	Min ..	60	54	59	66	57	58	55	48	48	57	51	61	70	62	66	61	63	61	67	61	67	52	52	57	58	49	52	54	61	55	62	58.4
Waterloo.	Max..	87	82	87	82	86	80	75	76	73	73	79	91	89	89	90	89	82	82	72	85	85	79	82	93	80	82	84	88	69	78	84	82.4
	Min ..	54	50	55	59	55	56	54	43	57	55	49	55	70	59	67	58	56	56	60	54	55	48	45	49	60	48	47	53	62	49	50	54.5
Waukee..	Max..	91	89	90	84	88	81	81	78	74	82	85	96	97	96	93	91	83	..	81	90	85	86	84	96	84	88	87	84	73	80	84	86.0
	Min ..	58	58	62	66	58	55	56	45	45	54	53	65	73	65	69	59	62	..	59	59	64	49	49	60	61	48	52	58	60	59	61	58.1
Waverly..	Max..	77	77	82	79	84	76	76	74	71	69	77	87	88	85	85	85	79	77	71	81	77	73	77	90	79	67	80	84	78	74	80	78.5
	Min ..	55	52	56	66	54	52	54	41	57	55	52	61	70	56	67	..	56	59	61	56	67	59	46	55	60	47	52	57	58	51	51	56.1
W.Bend..	Max..	76	80	84	78	86	76	69	76	66	71	81	88	82	87	83	85	81	80	80	84	74	72	76	88	77	77	80	83	74	72	83	79.0
	Min ..	50	44	61	57	63	50	53	42	54	44	51	62	64	56	62	55	54	54	62	58	58	43	48	60	54	46	53	56	62	55	69	54.8
Whitten..	Max..	83	81	87	86	87	78	74	76	75	72	81	90	89	88	87	88	80	80	76	82	80	81	77	90	83	77	80	83	67	75	81	81.1
	Min ..	53	50	58	66	56	52	53	42	57	50	49	62	70	59	68	51	55	56	60	54	58	45	45	55	58	45	49	55	59	54	59	54.9
Wilton J.	Max..	87	85	85	86	89	82	77	78	83	73	81	93	93	91	90	90	85	87	76	90	91	74	72	88	82	76	84	85	70	78	82	83.3
	Min ..	61	51	55	54	59	55	49	43	55	56	52	55	70	59	57	58	59	61	64	60	63	62	48	56	52	46	48	53	52	53	58	55.6
Winte'set	Max .	83	83	88	86	89	84	75	77	79	78	78	92	95	90	92	91	86	80	80	83	90	80	78	77	80	80	80	86	75	79	87	83.3
	Min ..	60	60	64	67	58	56	52	46	60	58	57	62	72	66	70	60	65	59	65	60	64	50	50	48	50	54	60	60	60	61	5.	59.1
Zearing...	Max..	78	80	84	81	85	77	71	74	74	70	79	88	87	87	86	87	83	79	74	82	83	74	77	91	86	78	80	82	66	75	81	80.0
	Min ..	55	52	61	65	55	52	53	42	58	51	49	64	70	60	69	57	53	57	63	56	66	48	49	60	60	46	52	58	59	56	59	56.6
.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
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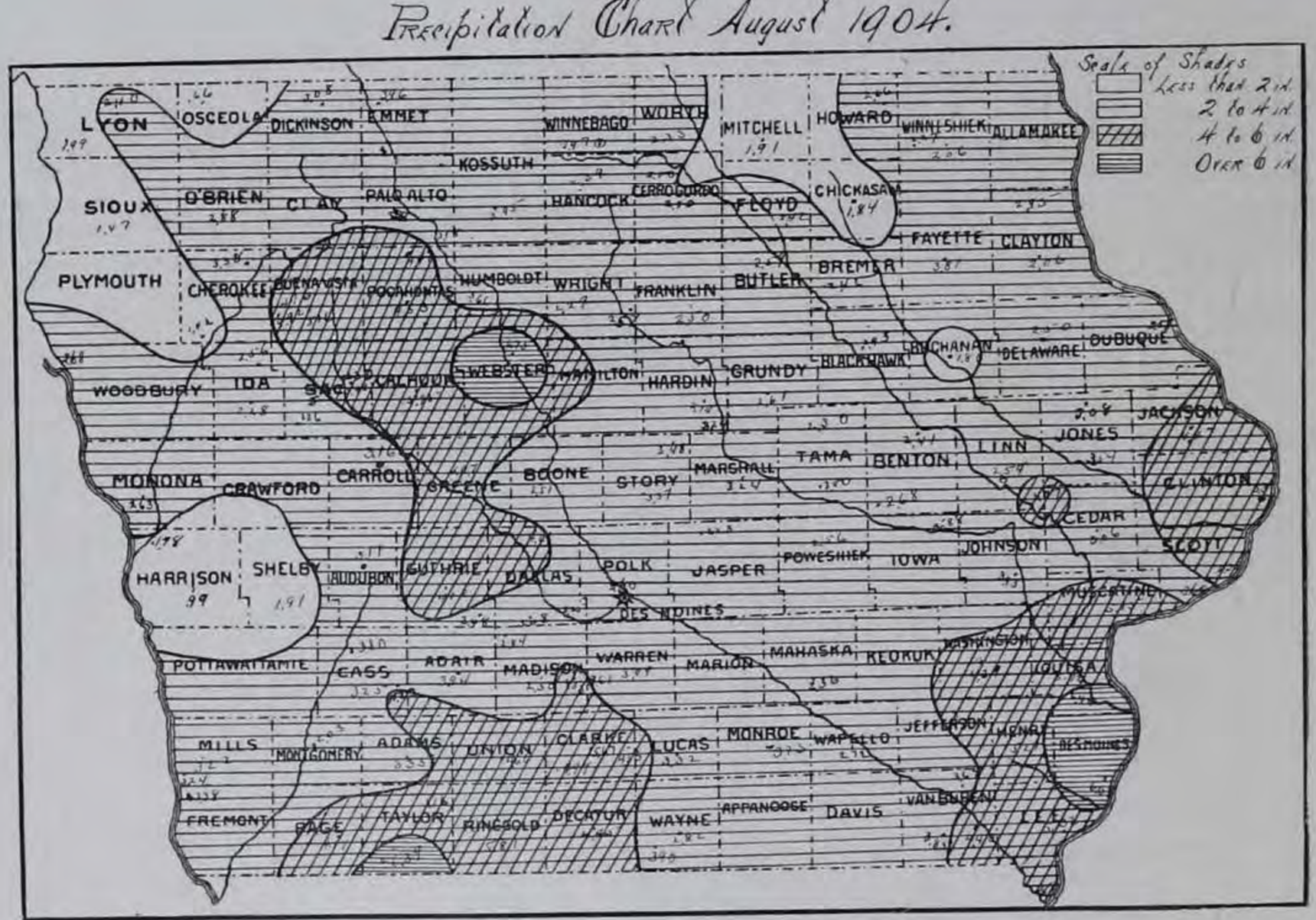
DAILY AND MONTHLY PRECIPITATION FOR AUGUST, 1904.

DAY OF MONTH.

STATIONS.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL.
on				T					.58									.48	.70		.70								2.20			4.66
ola				T					.18					T				1.70	10	50		.59			T				.40	.26		3.73
gona	.53		.10						.75										.06		1.00							.51				2.95
erton									.87				.10				.02	.04	1.06		.77	.08			.01				1.47	.03		3.90
a.	.03								1.37						T		.78		.17	.03	1.16							1.34	.04			4.92
a [near]	.08								1.97								.69		.18	.09	.90							1.00	.02	.03		4.96
nana				T					.14						.17		T		.12		.69	.03			T			.17	1.56			2.88
nes			.01						1.14								.61	.20		T								.11	1.30			3.37
lantic									1.50									.50	.81		.99											3.80
dubon				T					1.23					.55	T		.04		.53		.13							.63	T			3.11
xter									.55								.23		.20		T							.50	.75			2.28
dford				T					.85						.06			.24	1.38		.86							T	3.00	T		6.39
lle Plaine									.02						.15		.10		.30		.76								1.35			2.68
naparte				.50									.09		.23				1.69		1.04								.85			4.40
itt	.04		.21						.81	.01		T									.77							.53	.02			2.39
ckingham				.19			T		.40										.23		.12							1.36	T			2.30
rlington				.29					T				.36		.16			.53	1.71		1.11	.27			.01				1.47		.17	6.08
rroll	.15								1.60								.40		.07	.36	.28							.30		T		3.16
dar Rapids				T				T	.10	.13					.03				T	.23		.65			T				1.30	.10		2.54
ariton				T					.89								.18	T	.85		.45							T	.95			3.32
arles City				.45					1.08	.14					.10							.15							.50			2.42
arinda		.06		T		T			.85							.24		.52				.23							.07	2.20		4.17
ear Lake	T		.25						.80		T				T		T		T		.30							.65				2.00
inton				.21					.21				.55		.05				.80		2.75				.01				.78			5.36
llege Springs		.02		.15		T	.02		1.00							.50	.08	.60	.02		.55								1.25			4.19
lumbus Junct'n				.24					.20	.02			.60		.15			.13	.98		1.25	.19							1.96			5.72
rning								.57		T						T	T	.87	.12		.29				T				1.50			3.25
rydon									.26								.22		.51		.47	.05			.03				1.26	.02		2.82
esco			.35						1.70												.11							.50				2.66
mberland				.41					1.41									.21	.51		T							.69	.02		T	3.25
avenport				.20					.14	.04			.70		.04				.81	T	.51	.26			.01				.89			3.60
ecorah			.34					.86							.81		T		T		.28							.27	T			2.06
elaware				.21					.34				.27		.34		T		.40		.05								.89			2.50
s Moines				.19					1.00						T		.44	.09	.15		.02							T	.71	T		2.60
e Soto				.19					1.40					.04	T		.44		.26		.03							T	.72	T		3.08
ows	T								.80								.14		.41		.48							.32	.42			2.57
ubuque				.03					.25				.20		.08		T	T	.58	.01	.38	.01							1.04			2.58
arlham				T					1.18					.22	T		.05	.29	.10		T								1.00			2.84
kader				.30					.32				.05		.04				.15		.50							.70				2.06
therville		.90	2.00						.40	.10				T					T		.10								.42		.04	3.96
ayette			.07	.04					1.06				.17		.80		T		.03		1.12							.52				3.81
lorence	.04								.72						.03		T		.12		.48							.90				2.29
orest City		.05	.86	.10					.63	T			T		T			T	.03		.25	.53							.52			2.97
ort Dodge		T		.05					1.00								.36	.36	.27	.13	.45	.13							4.00	T	T	6.75
ort Madison				.55									.13		.87		.36	.05	1.33	1.25					T				.78			5.32
alva	T			T			T		.94			T			T		.37	.09	T	T	.93							.23				2.56
ilman	T		T						.42						.14		.18			.42	T	.12						.89	75			2.92
lenwood		T			T	T			1.75						T			1.00	T		.12				T			T	.35			3.22
rand Meadow									1.20				.14		.18				.10		.63							.70				2.95
reene			.28						1.20						.12				.13		.12							.42	.32			2.59
reenfield	T		.25						1.56					.20	T		T	.25	.35		.08								1.24	.01		3.94
rinnell (near)									.53								T		.68		.25							.10	1.00			2.56
rundy Center									.82								.15		.36		05							.47	.76			2.61
uthrie Center									2.15					.25			.45		.89		.07							.02	.24	.04		4.12
ampton			.04					83									.03		.54		.28							.78				2.50
anlontown			.75						.65										.02		.49							.42			T	2.33
arlan		T	T	.38					.65						T	T	T	.03	.70		.15									T		1.91
opeville									.43					.05				.84	.53		.89				T				2.23			4.97
umboldt									.90								.05		.30		.75							1.24	.42			3.66
da Grove	T								1.05						T		1.00		.15	T	.08											2.28
ndependence				.03					.42				T		.18		.02		.10		.05							1.00				1.80
ndianola				.47					1.12				T	.11	T		.55	T	.12		.81								.81			3.99
nwood									.65										.21	46								.03			64	1.99
owa City				T					T	.35					.14				.03	.48		.92							1.63	.40		3.93
owa Falls		T						T	.83	T			T					.07	.14	.15	T	.01							.94			2.14
efferson									1.65						.02		.18		.50		.01							1.68		.03		4.07
eokuk				1.45					.16	.02		T	.05		.39		.20	.11	1.18		.22	.87							.40		.08	4.63
eosauqua					.28					T				.85	.09			.06	.26	69		1.00							.55	.07		3.85
acona		T		.03					.98					.18	.01	.20	.18	.42			.63								.98			3.61
arrabee	T								1.09			T			T		20		.16	.01	.42								1.50	T	T	3.38
e Claire					.54					.30				.70	T				.35	.81		.79			T				.43	.37		4.29
enox									.75				.02	.32				1.00	.28		.62								2.17			5.16
eon									.38									.05	1.38		.62	.04							1.98			4.45
Little Sioux		T		.07		.02			.88								.05		.39		.37											1.78
Logan				.04					.44										.50			.01										.99
Maquoketa				.25						.17			.63	.02	.15				.07	.86	1.45								73	.14		4.47
Marshalltown				.31					.53	.03								.31	04										2.00	.02		3.24
Mason City			.50						.68								T		T		.38							.54				2.10
Massena				.15					1.06									.80	.21		.05								1.76			4.23
Monticello	T			.75									.45								1.00							.88				3.08
Montezuma																																......
Mount Ayr									.64					.10		T	.01	08	1.47		.69							T	2.85			5.87
Mt. Pleasant				.58					.08	.21			.15		.85			.36	1.29		.70								.99			5.21
Mt. Vernon				.12			T		.87						.07				1.53		.66								1.32			4.07
New Hampton			.25						1.05						.18				.08		.28											1.84
Odebolt	.03					.03			1.33								.42	.08	.04	1.12							.13	.13	.04	.01		3.36
Ogden							.01		1.21								.24		.09									.04	.92			2.51
Olin				.20					.02				.01		.84				1.02		.85								1.10			3.54
Omaha, Neb		.03	T	.26		.60			1.15						.02	.01		.25	1.63		.12				T			.03	35	T		4.45
Onawa			T	.08		.29			.95							.01	.38		.67		.25							T		T		2.63
Osage									1.33			T					T		.02		.30							.21	.05		T	1.91
Osceola									.50	.10				T	T		.80		.75	.20	1.32					T			1.50	.50	T	5.67
Oskaloosa				.13					.31						T		.04	.06	.47		.34							.01	1.00			2.36
Ottumwa									.06								.67		.47		1.00							.49	.03			2.72
Pacific Junction				.03		.15	.09		1.15							.04		T	.90		.15				T			T	.73			3.24
Perry	T								1.60						T		.40	T	.44	T	T							T	1.75	.02	T	4.21
Plover									.83										.22		1.24							2.18				4.47
Pocahontas	T			T					1.34			T			T		.06		.52	.13	.91							1.55	.02			4.53
Primghar	.02		.41						1.00										.28	.10	.25	.15						.67				2.88
Red Oak		T		.05		.02			.86						T	.01	.02	T	35		.07				T			T	.65			2.03
Ridgeway	.02		.20	.07					1.30								.01		T		.17							.50			T	2.27
Rock Rapids							.65	T						T		T		T													1.75	2.40
Rockwell City									1.55								1.70		1.20		.50							1.00				5.95
Sac City	.02						T		1.74						T		.80		.81	.06	1.18							.87				5.48
Sibley			.04						.45										.07	.01	.04	.02							.03		T	.66
St. Charles				.35										.20			.76	.56	.49		.64								1.32	.01		4.83

DAILY AND MONTHLY PRECIPITATION FOR AUGUST, 1904--CONTINUED.

STATIONS.	DAY OF MONTH																														TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sioux City	.04	.02	....	.20	..	..	....	....	1.10	....	....	...	-	....	.01	....	.59	....	.16	.43	.10	....	..	....	....	....		.02	T	.01	....	2.68
Sioux Center	.07	....	....	-	....	....	....	....	.77	....	....	...			.01	..	....	....	.18	.04	....	....	....	....	....	....	..	.38	....	.01	.01	1.47
Spirit Lake	.19	....	1.13	....	....	....	....	T	.46	....	T	T	T	T	T	....	T	....	T	....	....	....	..	....	....	....	....	1.00	....	T	.30	3.08
Stockport	...		....	.49	..	....	....		T		....	...	T	....	..	...	T	.06	1.47	.02	.47	.37		....	T	....	....	T	.77	.02	...	3.07
Storm Lake	...	.03	...	...	..		....	....	1.50	....	...	..	....	....	...	.	.30	89	.10	...	1.12	.04	....	....	....	....	....	..	1.13	.0	T	5.16
Stuart	....	....			....	....	....	....	2.25	....		..		.09	....	....	.06		.33	..	....	....	....	..	....	....	....	.78	....	.02	..	3.48
Thurman	...	T	T	.25	....	.10	.05	....	85	..	..	..	....		.2	.10	....	.28	.32	....	.38	....	....	....	T	....	....	T	.85	....	..	3.55
Tipton	..	....	..	..	....			....	.25		....	....	....	....	.17	....	....	....	.62	....	.53	.22	..	....	....	....	....		1.27	...	..	3.06
Toledo	....	....	...	.10	....	..	....		.40	...	...		....	..	.10	....	.15	....	.50	....	.10	....		....	....	....	....		1.65		....	3.00
Vinton	..	...	....	.05	....	....	....	....	.43	..		..	....			..	....	..	.58	...	.12	...	....	....	....	....	....	.09	1.14	....	T	2.41
Wapello	....	....	..	.06	..	....	.	...	.55	....	....	....	.41	....	.20	....	....	.16	2.51	....	.42	.22	....	....	....	....	....	1.61	.26	..	..	6.40
Washington	....	....	....	.08		....	....		....		..	....	....		.28	....	.20	....	1.12		1.18	..	..	..	.06	....	....		1.47	....	....	4.29
Washta	T		T		...	..	T	....	.30		....		....	....	T	..	T	T	....	.16	.76	....		....		....		.20	T	T	....	1.42
Waterloo	....	....	.02	.65	..	..	....	....	.92	....		..	.02	....	T		....	....	.07	...	.09	....	....	....	....	..	....	.32	.84	....		2.96
Waukee	....	....	..	.15	....		..	....	1.20	....	....	....	....	....	T	....	.65	...	.25	....	.02	....	..	....	....	..	....	....	.98	T	....	3.25
Waverly	....	....		.05	....	....	....		1.16	....	....	T	....		.02	....	.02		.03	....	.11	..		....	.	....	....	.38	.65	....	....	2.42
West Bend	.03	..	....	....	....	....	....	T	.85	....	..	T		....	..	....		..	.17	....	.32	.17	..	....	....	..	....	1.63	.01	T	....	3.18
Whitten	..	....	....			....	....		1.00	T	....		....	....	....	....	.24	.03	.27	....	....	....			....	....	....	.40	1.30	....	..	3.24
Wilton Junction	....	....	....	.10	....		....	....	.53	....	....	....	....	....	.42	..		..	.68	....	1.80	....	....	....	....	....	....	....	1.62	...	..	5.15
Winterset	....	....	.	....	....	....		....	1.35	..	....	....	....	.23	....	..	.26	.36	.05	....	.05	..	....		....	....		....	....		....	2.30
Woodburn	..	..	..	..	....	....	....	....	.75	....	....	....	....	.04	....	....	.16	.51	.28	....	1.00	....		....	....	....	....	....	1.58	....	..	4.33
Zearing	...	....	....	....	..	..	....	....	.96	....	..	....	....	....	T	....	.26	.	.19	....	....	....	....				....	.80	1.27		....	3.48



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VOLUME XV. SEPTEMBER, 1904. No. 9.

SEPTEMBER WEATHER AND CROPS.

The average temperature of September was about normal for the state, the southern and central sections showing an excess, and the northern section a small deficiency. The coldest period was from about the 11th to the 22d. The average rainfall for the state was 2.78 inches, which amount is about 0.52 of an inch below the normal for September. In its distribution there was much inequality, ranging from less than a tenth of an inch at one station in the northwest to over eight inches in the southeast district. The southeast and northeast districts received the heaviest rainfall. The week ending September 12th was normal in temperature and sunshine, with very light rainfall, and generally favorable conditions for ripening the belated corn crop, a considerable portion of which was well dented with husks and blades putting on the brown shade of autumn. The week ending the 19th brought several days of good ripening weather, but much anxiety for the safety of the immature portion of the corn crop was caused by the occurrence of light to heavy frosts on the mornings of the 12th, 14th and 15th, the cold wave extending to all districts in the state. A few stations also reported frost on the 21st. The lowest temperature recorded was 30° at four stations. The observed effects proved that the frosts were not "killing," and that the damage to the corn crop was limited to late planted fields in the bottom lands of the central valleys of the state. Broadly stated, the actual damage by frost affected less than one-fourth of the area planted, and the shrinkage of the frosted portion of the crop was probably less than 20 per cent. This would indicate possible loss of 5 per cent of the crop for the state, as the direct result of frost. The cold weather of that period, however, retarded the development of the crop, and made it desirable to extend the ripening weather beyond the 1st of October. During the month good progress was made in the usual farm operations, such as plowing, seeding fall wheat and rye, harvesting potatoes, apples and millet, and threshing small grain. The yield of potatoes and fall apples has been very satisfactory. The grape crop is heavy, and there has been a good yield of plums. The growth of all kinds of garden truck has been unusually heavy. The pastures have been much better than usual for September. At the close of the month it was estimated that ninety per cent of the corn crop was practically safe, giving promise of more than the average output of merchantable corn.

A VALUABLE SERVICE.

That the government climate and crop service as conducted under the auspices of the weather bureau of the United States Department of Agriculture is playing an important part in the economic conditions of the farmer is forcibly called to mind in the review of the annual Iowa report for the year 1903 as it has been issued by the director of the Iowa bureau at Des Moines. It is interesting to note that during the year there were issued 10,000 copies of the 1902 report, 32,000 monthly reviews, 70,000 weekly climate and crop bulletins, not to mention an appendix of 185 pages in connection with the annual report. This shows the magnitude of the service in one state from the standpoint of printed matter distributed.

Fortunately, in Iowa, the state and the federal goverments have been enabled to unite their forces, thus insuring better results to the farmer by virtue of this consolidated service. It is interesting to note that at the end of the fiscal year ending June 30, 1904, there were 50,000 rural patrons of telephones in Iowa who were daily receiving the benefit of the climate and crop service. In addition to these there were 7,000 farmers getting the reports from the bureau through the mails direct, not to mention the tens of thousands who had the information placed before them through the agency of the daily press.

The Iowa service has six regularly equipped stations in different portions of the state, from which accurate information regarding climatic changes is always available. In addition to this there are 132 correspondents in various portions of Iowa who are in close touch with local conditions and report weekly their observations to the main office at Des Moines, from which the officials of the service are enabled to summarize the important details in making up their weekly crop reports.

Every year farmers are learning the value of this service. With the advent of the telephone and the rural mail their value to the man in the country is to be rapidly enhanced until the time is here when no progressive farmer will be without daily, and, if necessary, hourly information relative to possible climatic changes.—*Chicago Drovers Journal.*

NOTES AND COMENTS.

According to a recent report of the U. S. consul at Halifax, the province of Nova Scotia has been scorched by one of the worst droughts in its history, the most disastrous effects being suffered in the eastern portion. It will cause much privation, and possible hunger.

Macaroni wheat escaped rust in the Dacotas, and this fact is likely to enlarge the area of that grain in future years. If good bread may be made of the flour, its rust-resisting quality will insure its commercial value.

In a flash of lightning the air is simply heated momentarily to the point of incandescence along the path of the discharge. This is the accepted scientific theory as to the nature of the electric spark or flash.

The moon affects the tides and is an aid to courting but, she has not a thing to do with the weaning of babies and calves or the planting of potatoes.—*J. S. Trigg.*

If the fertilization of the soil is the main thing sought, try mammoth clover, plowing the whole thing under the second year. It is the cheapest method of renovating a wornout field there is to be found.—*J. S. Trigg.*

The brief summer season of the north country is a miracle worker. Out of the long winter paralysis, the snow banks, the chill and dilatory spring, with May frosts and snowstorms, the grip of the cold is broken at last, and heat, moisture, electricity and seventeen hours of sunshine get in their work. Grain, fruit and flower then go on a wild sixty mile an hour race, and the garden of Eden replaces the arctic winter waste. Such wheat, such oats, such flax, such potatoes and garden truck, and life on the farm one mad rush to save and gather the abundance before the geese start south and the praties freeze in the ground! Three months of heaven to offset nine months of purgatory! The Finn, the Russian and the Norseman take kindly to these conditions.—*J. S Trigg.*

WEATHER AND CROPS IN UNION COUNTY.

The close of this year of crop reports finds us with clear skies and warm air. This has been a whole season of anxiety as to the outcome of our crops. Today finds our corn crop ripening except the belated plantings, and even this is turning color in husk and blade, and with present indications is likely in this part of the state to make corn. Taking it altogether we have an average crop for ten years. Hay not so good as last year, but oats equally as good. Potatoes much better, and, corn very much better; and during all the year pastures have been fine. The rainfall last year, from May to September, inclusive, was 37.43 inches, while this year it was only 19.01 inches; and yet for the farmer this has been as wet a season as last. This is from the fact that we had frequent rains, and some quite heavy. We have had no great downpour at any one time. In May last year we had 11.90 inches while this year we had 4.20. In August, 1903, we had 12 34; this year, 4.66 inches. This excess for 1903 is from two great rains, one in May and one in August. The average temperature has been lower this year than last. With the promise of high prices for farm products (except meats) the farmers are quite as well off as they have been in the best seasons.

N. W. Rowell,
Vol. Observer.

Alton, Iowa, October 1, 1904.

CROP SEASONS AT RIDGEWAY.

Observer Arthur Betts, of Ridgeway, Winneshiek county, has tabulated meteorological data for the crop season—April 1st, to October 1st, for seven years. The figures below show the mean temperature in degrees, precipitation in inches, and total hours of sunshine for the six months period in the years named:

YEAR.	Mean Temperature.	Precipitation.	Sunshine.
1898	67.7	13.59	1,557
1899	66.8	19.70	1,561
1900	69 4	23 43	1,715
1901	69 8	20.47	1,704
1902	66.0	30.86	1,378
1003	66.4	25 04	1,436
1904	67.1	18.45	1,584
Average	67.6	21.65	1,562

FAKE FORECASTS.

In ordinary mercantile business it is quite a common experience for the manufacturer of a good article that is rapidly growing in popular favor to find counterfeits or infringements on his patent springing up like mushrooms, and sometimes offering very serious and illegitimate rivalry. The Weather Bureau has gone through a very similar experience. In 1870 there were, we believe, no long-range forecasters known to the country, except the ordinary farmers' almanacs, and we doubt whether any but the most credulous placed any faith in them. I have often told of the confession of one of these almanac weather makers, who with a twinkle in his eye said that after the proper astronomical part of the almanac was completed, and when he was in the spirit for writing up the weather, he would sit down and make it up for a year ahead, or so long as he felt in the mood. He fully understood that some people can be gulled sometimes, but we all know that we can not fool all the people all the time. So far as we recall the names of those who have distinguished themselves for making popular weather predictions based on principles that are contrary to all our knowledge of meteorology, the list runs somewhat as follows: Venor, 1875–1890; Hicks, 1890 to date; Dunne, 1892 to date; Foster, 1885 to date; Elmer, 1903 to date; Snavely, 1902–1904.

While these have been active in the United States, the rest of the world has also had its varied experiences. In England, Mr. Hugh Clements and his great expounder, Hon. William Digby, have vexed the printer with an imposing volume and the public with daily predictions in the local newspapers. These authors speak as confidently about the moon as Rev. Mr. Hicks does about Vulcan, Jupiter and the other planets, real and imaginary. Italy and Austria have gone through a sad experience with vortex-ring cannons for driving away hail. Russia has enjoyed the gratuitous services of Demtschinsky and his predictions based upon the moon.

In general, it would seem that weather predic ion and long-range forecasts are so greatly desired that everyone is willing to give a man a fair show. The wonder is that the indefinite utterances of these oracles can be accepted as forecasts, or that their flat failure when they do not become definite should not have consigned them to oblivion. Recall, for instance, the sad work of Falb, who in 1895 predicted terrible earthquakes and storms, possibly indicating the approaching end of the world, thereby frightening the whole of Spanish America, so that no work could be done for weeks and the whole community was thrown into a hopeless state of panic. Recall the prediction made about 1880 of an awful storm that would scourge the Gulf and South Atlantic States. Many of the intelligent inhabitants and nine tenths of the less intelligent were frightened by the prediction, and allowed it to entirely alter their ordinary lives and business.

Who was it that in 1901 started a newspaper paragraph, purporting to come from some responsible person, predicting a hurricane for the coast of New Jersey on a certain date? So great was the anxiety that it was necessary for the Secretary of Agriculture to issue a counteracting telegram showing that the original was certainly a fake. A community even of the most intelligent, cool-headed people is likely to be carried off its feet by enthusiasm for some hero, or by a mania for some financial scheme, or to be stampeded by fright. Emotions are contagious, and it is necessary for a community to protect itself against injurious popular movements, just as it would protect itself against injurious contagious diseases. Freedom of individual action is the ideal on which we have built up our republic; but when that freedom of action threatens the existence of the republic it must be restrained, moderately, if you will, and wisely, but still sufficiently to protect the public from danger. We would not for a moment countenance the publication of numerous nautical almanacs differing considerably in the pre-

liction of exact positions of the sun, moon, and stars, because we know that only one of these can be right, and that the others would certainly lead to errors in navigation that would endanger the l ves of thousands of persons. The community does not allow either druggists or physicians to operate without first giving satisfactory evidence that they are competent to handle the drugs that they deal in. Every state has its laws relative to the licensing of steam engineers, since a steam engine in incompetent hands would be a menace to the lives of many.

Wherever the life and property of the citizens are at stake, the government of the people, by the people, and for the people, must necessarily look after their interests, and the time must soon c me when a general law will forbid the publication of weather predictions and storm warnings, especially those of a sensational character, by any others than properly licensed persons.—*U. S. Monthly Weather Review.*

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 30.04 inches; highest observed, 30.55 inches at Dubuque on the 21st; lowest observed, 29.71 inches at Sioux City on the 28th; range for state, 0.84 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by the records of 114 stations, was 64.0°, which is 0.4° above normal. By sections the mean temperature was as follows: Northern section, 61.8°, which is 0.5° below normal; central section, 64.3°, which is 1.1° above normal; southern section, 65.6°, which is 0.2° above normal. The highest monthly mean was 68.6° at Belknap; lowest monthly mean, 59.0° at Sibley. The highest temperature reported was 94° at Wilton Junction on the 11th; lowest temperature reported, 30° at Atlantic, Earlham, Hanlontown and Rock Rapids on the 14th, 15th and 21st. The average monthly maximum was 88.9°; average monthly minimum, 34.7°. Greatest daily range, 54° at Estherville; average of greatest daily range, 36.5°.

PRECIPITATION.—Average precipitation for the state, as shown by the records of 122 stations, was 2.78 inches, which is 0.52 of an inch below normal. The averages by sections were as follows: Northern section, 2.67 inches, which is .74 inch below normal; central section, 2.13 inches, which is 1.13 inches below normal; southern section, 3.53 inches, which is 0 28 inch above normal. The largest amount reported was 8.33 inches at Keokuk; least amount reported, .09 of an inch at Ida Grove. The greatest daily rainfall reported was 3.01 inches at Keokuk on the 18th and 19th. Average number of days on which .01 of an inch or more was reported, 7.

WIND AND WEATHER.—Prevailing direction of the wind, south and southwest; highest velocity reported, 39 miles per hour from the northwest at Sioux City on the 1st. Average number of clear days, 13; partly cloudy, 8; cloudy 9.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	30.03	30.46	21	29.74	17
Des Moines	30.07	30.49	21	29.72	1
Dubuque	30.05	30.55	21	29.72	17
Omaha, Neb	30.03	30.43	21	29.65	17
Keokuk	30.01	30.42	2	29.77	17
Sioux City	30.05	30.45	21	29.71	28
Means	30.04	30.55	21	29.71	28

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	4.848	24	NE	25
Des Moines	5.855	35	NE	19
Dubuque	4.791	28	N	25
Keokuk	5.136	30	W	2
La Crosse, Wis	5.309	32	NW	1
Omaha, Neb	5.761	37	SW	24
Sioux City	8 324	39	NW	1

OBSERVERS' NOTES.

AFTON.—*N. W. Rowell.* A month of great anxiety to all; we have alternated between hope and fear as sunshine and shadows came and went. But a kind Providence has so tempered the winds that no blighting frost has fallen. Our corn crop is secure and our pastures green, with ripe fruit upon tree and vine. Let us give thanks.

ALTA.—*David E. Hadden.* The mean temperature for September was about 1° below the normal; no killing frost occurred during the month.

AMANA.—*C Schadt.* Weather favorable for maturing corn; no real killing frost; only about 5 per cent lost by late planting from effect of frost on the 15th on low ground; grapes, plums and apples abundant.

AMES.—*Thos. S. Hunt.* Corn is now well out of danger.

ATLANTIC.—*J. W. Lov*. A moderately warm September; first ice formed on 14th; corn is nearly all safe.

BONAPARTE.—*B. R. Vale.* Rain 6.73 inches; too wet for farm work or the good of the corn; subsoil full of water; pasture good.

BRITT.—*Geo. P. Hardwick* Frost damaged corn on low lands and slightly on high lands; injured about 35 per cent. Thunder and windstorm on the 28th damaged corn and light buildings.

CHARITON.—*C. C. Burr.* Month passed without a killing frost; on 15th frost did some harm to corn on low land; some corn yet needs ten days to ripen; pastures better than average.

CLINTON. *Luke Roberts.* Mean temperature 2° above normal; rainfall .55 of an inch below normal; per cent of cloudiness, 50; frost affected corn only in places and but slightly; crop as good as in 1903, possibly better.

DECORAH.—*F. H. Baker.* There was a light frost on 15th.

EARLHAM.—*Geo. Phillips.* Month closed with no damage by frost; corn now safe except very late planted.

CLARION.—*J. H. DuBois.* Frost on 15th killed leaves of tender vines; apple, plum and potato crop very large.

FOREST CITY.—*J. A. Peters.* No killing frost in September; frost on the 15th damaged corn only on low land and creek bottoms; ground in good condition for plowing.

GRAND MEADOW.—*F. L. Williams.* There being no killing frost was favorable to corn; corn cutting well advanced, and fall work well along.

GREENFIELD.—*J. G. Culver.* No frost sufficient to injure vegetation except in few places on lowest bottoms; very little damage to corn.

GRINNELL.—*A. O. Price.* No serious damage by frost; large amount of corn cut; plowing well advanced.

GRUNDY CENTER.—*E. S. King.* A variable month; corn practically safe; potatoes yield 200 to 300 bushels per acre.

HOPEVILLE.—*M. L. Ashley.* Eighty per cent of corn safe at close of month; late fields need 10 to 15 days of good weather.

INWOOD.—*G. M. Larsen.* Month favorable for corn, and crop will be heavy; pastures good.

KEOSAUQUA.—*J. H. Landes*. Five rainstorms, each attended with fierce electric disturbance, causing loss of stock and buildings in different parts of the county.

LARRABEE —*H. B. Strever*. Corn touched by frost on low lands on 21st; bulk of crop safe at end of month.

LOGAN.—*Mrs. M. B. Stern*. Frost on 15th killed very tender precipitation, but did not do much injury to corn.

MT. VERNON.—*J. W. Hubbard*. Season closes favorably; small grains and root crops good; corn crop large, with an unusual per centage of soft ears.

OLIN.—*Nathan Potter*. A fine month; frost damaged corn on low land; apple and po ato crops large.

RIDGEWAY.—*Arthur Betts*. Warmest September since 1898; sunshine 262 hours; on night of 5th nine fires were kindled by lightning in sight of this station. Hail on 17th, and hailstones averaged size of plums.

WAUKEE.—*E. J. Leonard*. Month free from heavy storms; some corn frosted on low lands, but bulk of crop is now safe.

WAVERLY.—*H. S. Hoover*. Upland corn untouched by frost; last ten days worked wonders in ripening corn.

WHITTEN.—*Frank P. Butler*. Frost did but little damage and corn is now practically safe.

BELATED REPORT.

BELKNAP—*August*. Mean temperature 71.8°; highest 91° on the 13th; lowest 50° on the 9th; greatest daily range 26°; total precipitation 4.25 inches; greatest in 24 hours 1.80 inches; number of clear days 25, partly cloudy 2, cloudy 4, rainy 5; prevailing direction, south.

ERRATA IN AUGUST REVIEW.

MASSENA.—Minimum temperature recorded 43° on the 8th, page 7, should have been 40° on the 26th. Total precipitation recorded 4.23 inches on page 7, should have been 4.03 inches.

WILTON JUNCTION.—Maximum temperature recorded on the 12th, page 8, should have been on the 12th and 13th.

LOGAN.—Maximum temperature recorded on the 14th and 15th, page 8, should have been on the 14th.

OSAGE.—Maximum and minimum temperature on the 1st, page 10, omitted, should have been 75 and 54 respectively. Maximum temperature recorded 89° on the 12th, page 7, should have been 90° on the 24th.

CLIMATOLOGICAL DATA FOR SEPTEMBER, 1904.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Igona	Kossuth	1,213	28	61.6	-0.9	86	28	35	15,21	34	2.07	-1.09	.81	....	6	11	10	9	S	1
lta	Buena Vista	1,513	11	61.4	-1.8	87	9	36	15,21	36	1.17	-1.60	.61	....	4	1	13	5	S	1,10,27,28
lta (near)	Buena Vista										1.69		.68		5					
ritt	Hancock	1,236	5	61.4	-0.2	87	23	33	5	35	3.19	- .86	1.22	....	8	8	16	6	SW, NW	1,6,10,25,28
harles City	Floyd	1,012	11	60.6	-2.1	88	28	33	15	41	3.31	† .44	1.11	....	6	12	2	16	SE	2,6,11,29
lear Lake	Cerro Gordo	1,241	...	62.8	....	89	28	39	21	32	2.05	...	.75	....	6	12	12	6	SE	
resco	Howard		....	60.4	-1.2	87	17	33	18	37	4.95	†1.26	1.10	....	6	6	23	1	NW	
ecorah	Winneshiek	857	..	61.9	† 0	83	10,17,23	34	15	34	5.44	†2.00	1.76	..	7	....	.	.	.....	
ows	Wright	1,142	....	62.4	†0.8	87	28	34	15	35	4.60	† .3	1.75	....	8	14	5	11	S, W	1,10
lkader	Clayton	727	21	64.5	†2.5	93	23	32	15	47	4.39	† .57	2.00	....	6	18	10	2	SE	1,6,13,17,19,25,28
atherville	Emmet	1,298	7	60.4	-0.5	92	18	31	2	54	1.35	-1.75	.63	....	7	11	3	16	NW	
lorence	Wright	1,226	8	....	....	....	....	....	....	....	3.69		1.28	....	9	3	24	3	SW	1,5,28
orest City	Winnebago	1,226	8	60.8	-1.5	90	28	34	15	43	1.77	-2.05	.70	....	7	11	4	15	S, W	
rand Meadow	Clayton	1,180	11	62.4	†0.7	85	23	36	14	32	6.09	†2.92	2.50	....	7	12	5	13	SW	1
reene	Butler	924	5	62.7	-1.4	88	23	34	15	39	3.30	† .05	1.10	..	8	6	7	17	W	
ampton	Franklin	1,155	12	64.2	†1.9	91	28	37	15	36	4.24	† .74	2.20	....	8	5	19	6	NW	1,10,28
anlontown	Worth		....	60.9	....	84	28	30	15	41	1.55		.45	....	9	15	8	7	SE	1,25,28
umboldt	Humboldt	1,095	10	63.2	†0.9	87	28	37	15	32	2.00	-1.44	.70	....	6	13	6	11	SW	1
nwood	Lyon		....	60.5	....	90	9	34	21	37	.41	....	.30	....	2	18	5	7	S	
arrabee	Cherokee	1,336	11	62.0	-1.1	89	9	35	21	40	.97	-1.91	.59		5	11	12	7	SW	1,27,28
eMars	Plymouth	1,224	6	62.0	-0.9	91	9	35	21	40	.85	-2.34	.85	..	1	14	8	8	S	
lason City	Cerro Gordo	1,132		62.6	-0.4	87	28	37	15	34	2.55	† .70	.74	....	8	7	13	10	NW	1,2,11,25,28
New Hampton	Chickasaw	1,169	..	60.2	-2.4	87	28	32	15	36	2.75	†1.00	1.27	....	7	11	8	11	S	28
sage	Mitchell	1,184	11	61.1	†1.7	85	17,28	34	15	36	4.16	† .66	1.93	..	10		9	13	S	
ocahontas	Pocahontas			63.2	....	88	28	37	21	33	1.76		.69		5	13	9	8	SW	1,13
lover (a)	Pocahontas	1,190	5	62.2	-1.2	88	28	34	15	38	4.33	† .32	2.04	..	6	16	6	8	.....	1,5,11,17
idgeway	Winneshiek	1,215	....	63.7	†1.5	90	17	38	15	36	5.16	†1.03	1.21	....	11	13	16	1	S	1,5,6,11,17,19,25,28
Rock Rapids	Lyon	1,021	....	60.1	-2.9	88	9,17	30	21	44	.60	-1.70	.60	....	1		....	....	.....	
Sheldon	O'Brien	1,422	...	62.4	† 0	92	9	32	21	38	1.53		1.25	...	6	16	9	5	S	1,18,
Sibley	Osceola	1,512	....	59.0	-2.2	89	9	31	21	52	2.70	- .46	1.18	...	7	12	1	17	S	1,2,13,20,28
Sioux Center	Sioux		....	61.2	†0.5	89	9,17	34	21	49	.71	-3.67	.65	....	3	15	6	9	NW	
Spirit Lake	Dickinson	1,458	8	61.3	-2.7	89	9	36	21	39	1.03	-4.68	.43		3	6	10	4	S	
Storm Lake	Buena Vista	1,440	7	60.4	-3.1	88	9	34	21	34	.99	-2.03	.35	....	5	11	3	16	SE	
Washta	Cherokee	1,157	....	....	....		....	..	....		2.11	.....	1.65	....	3	19	8	3	S	
Waverly	Bremer	942	6	62.8	†0.3	89	23	37	15	35	3.78	† .53	1.74	...	10	9	11	0	.....	2,18,20,21,25,28,29
West Bend	Palo Alto	1,197	8	61.8	†1.0	87	23	34	21	33	2.69	- .49	1.38	....	8	7	15	8	S	1,6,11,28
Average				61.8	-0.5	88.2		31.3		33.2	2.67	- .74			6	12	9	9	S	

SOUTHERN SECTION.

Afton	Union	1,212	7	65.2	†0.1	86	1,10,28	35	15	34	2.80	-1.07	1.08	....	7	15	9	6	SW	
Albia (a)	Monroe	957	..	65.2	.....	90	10	40	12,15	38	5.55	.....	2.58	....	7	13	2	15	SE	
Allerton (j)	Wayne	.....	....	65.2	.....	90	10	36	15	33	....	....	.....	....	..	....	....	....	.....	1,2,13,19,20
Atlantic (a)	Cass	1,164	11	64.0	†4.1	89	9	30	14	43	3.06	† .39	.73	...	7	....	...	....	S	1,10,13,2,25,27
Bedford	Taylor	.....	....	65.6	....	87	9,28	33	15	33	4.40	.....	1.40	..	8	15	6	9	S	
Belknap	Davis	877	7	68.6	†1.9	89	1	41	22	35	5.61	†1.97	2.25	....	7	18	7	5	N	
Bonaparte	Van Buren	.....	10	66.0	-1.7	90	28	35	15	31	6.73	†2.72	1.92		7		....	....		
Burlington	Des Moines	541	....	67.3	....	90	10,28	39	15	32	3.98	.....	1.09	....	9	18	5	7	S	13,18,24,26
Chariton	Lucas	1,042	7	65.4	-0.2	89	23	35	15	33	2.66	-1.07	.79	....	5	13	6	11	.....	
College Springs	Page	.....	10	66.9	-0.2	90	27	37	15	34	1.12	-1.34	.58	....	3	21	3	6	S	
Columbus Jct	Louisa	596	....	65.2	.....	87	23	37	15	31	4.61		1.60	....	8	19	9	2	SW	18,19,20
Corning	Adams	1,127	10	64.8	-0.3	87	28	38	14,15	32	2.23	- .25	.75	....	7	11	11	8	SE	2,20
Corydon	Wayne	992	9	66.8	†0.3	90	10	38	15	41	2.73	-1.13	1.00	....	7	13	8	9	SW	
Clarinda	Page	1,069	...	65.0	-1.0	91	29	34	15	42	1.39	-1.17	.61		8	16	2	12	SW	
Cumberland	Cass	.....	....	....	....		.....	.....	.....		2.03	.....	1.75	....	3	21	3	6	SW	
Earlham	Madison	.....	....	62.4	...	86	10	30	15	41	3.37	.....	1.70	...	7	20	2	8	S	1,2,24,26,29
Fort Madison	Lee	516	51	.....	...	.....	.....	.....	.....	.....	5.04	†1.25	1.75	...	6	10	8	12	S	
Glenwood	Mills	.....	15	66.1	-1.8	90	27	39	14	29	3.15	†1.02	1.25	....	5	7	21	2	SE, SW	
Greenfield	Adair	.....	11	65.0	-0.8	87	1,28	37	14	30	2.80	- .48	.94	....	8	19	7	4	SW	2,13,18,20,23,24,27,28,29
Hopeville	Clarke	.....	11	66.0	.....	89	1,28	37	15	32	2.35	-1.18	.76	..	7	7	15	8	S	
Indianola (a)	Warren	969	11	66.2	†0.6	83	28	33	15	35	2.74	- .31	1.27		9	...	....	....	SW	1,18,24,27,29
Keokuk	Lee	619	31	67.2	†0.8	89	28	42	15	27	8.33	†4.81	3.01	....	8	15	9	6	SW	2,13,18,20,24,27
Keosauqua	Van Buren	664	10	65.2	-2.2	90	10	35	15	42	6.26	†1.78	2.11	....	7	8	7	15	.....	2,13,19,24,27
Lacona	Warren	.....	....	.....	.....	.....	.....	.....	.....	.....	3.20	.....	1.03	....	7	9	17	4	.....	
Lenox	Taylor	1,250	7	65.2	-0.1	86	28	38	15	30	2.44	- .53	1.00		9	21	6	3	S	1,2,13
Leon	Decatur	1,120	....	65.8	....	86	1	38	15	35	2.19	.....	1.06	....	3	16	6	8	S	11,24
Massena	Cass	.....	....	65.0	.....	88	9,10,17	32	16	45	2.72	.....	1.31	....	7	17	1	12	S	24,27
Mount Ayr	Ringgold	1,236	6	67.0	-6.8	90	1,28	40	14	37	2.28	-1.04	.95	....	8	11	9	10	SW	
Mount Pleasant	Henry	729	20	66.1	†2.5	89	10	38	15	30	6.97	†3.61	2.16	....	7	13	10	7	SE	18,20,27
Omaha, Neb.	Douglas	1,113	32	66.3	†1.5	89	28	42	14	32	2.60	- .31	.66	....	8	12	5	13	S	1,10,13,23,26,27,28
Osceola (a)	Clarke	1,130	6	65.2	†0.1	90	1	35	15	39	2.87	-1.31	1.25	....	5	17	7	6	SW	
Oskaloosa	Mahaska	843	18	65.4	†1.0	89	10	35	15	34	3.46	† .86	.95	...	7	18	1	11	SW	19,21,27
Ottumwa	Wapello	649	8	68.2	†1.6	92	10	39	15	34	4.58	† .26	2.10	....	6	14	6	10	SE, W	
Pacific Junction	Mills	960	...	66.4	.....	91	28	38	14	36	2.43	.....	1.05	....	6	16	12	2	S	11,13,24,28
Red Oak	Montgomery	1,033	...	66.8	†0.1	87	28	40	15	27	2.01	- .95	.90	....	6	10	14	6	SW	1,2,13,27
St. Charles	Madison	1,070	....	66.4		89	23	41	15	34	2.27	.....	.78	....	8	16	9	5	NW	13,20,24,27
Stockport	Van Buren	.....	..	66.0	.....	88	10	38	15	30	7.08	.....	1.96		7	13	4	13	SE, NW	2,13,19,24,27
Thurman	Fremont	.....	....	66.5	†0.7	89	28	37	14	34	1.52	-1.69	.92	....	3	17	3	10	SW	
Washington	Washington	769	20	65.2	†0.2	88	10,28	38	15	31	3.99	†1.37	1.41	..	7	....	....	....	SW	
Winterset	Madison	1,129	11	67.1	†1.9	90	28	41	15	32	2.72	- .63	1.07	....	7	17	7	6	S	
Woodburn	Clarke	961	....	.....	.....	.....	.....	....	.....	....	2.77	.....	.97	....	8	13	7	10	SW	13,24
Average		.....	....	65.9	†0.2	88.8	.....	37.1	.....	34.4	3.53	† .28	.....	..	7	15	7	8	SW	
Average for state		.....	....	64.0	†0.4	88.9	.....	34.7	.....	36.5	2.78	- .52	.....	....	7	13	8	9	S, SW	

CLIMATOLOGICAL DATA FOR SEPTEMBER, 1904—Continued.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted)		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Amana	Iowa	721	25	64.5	†1.8	88	28	33	15	35	1.44	-1.02	.43	....	9	11	13	6	S	1, 6, 17, 19, 24, 25, 27
Ames	Story	926	20	61.5	†1.1	88	23	34	15	39	3.37	-.16	1.05	....	8	18	5	7	SW, NW	
Audubon	Audubon	1,301	8	63.6	†0.2	91	28	13	15	42	2.22	-.84	52		8	16	5	9	SW	
Baxter	Jasper	998	..	64.2	.	88	28	36	15	35	2.45	.....	1.00	....	7	15	6	9	SW	
Belle Plaine	Benton	826	12	63.4	-0.3	88	28	35	15	33	2.53	-.57	.92	...	8	12	12	6	SE, NW	
Buckingham	Iowa	....	....	....	.....	.....	.....	.....	.....	.....	2.12	.....	1.52	....	6	7	22	1	.....	
Carroll	Carroll	1,265	12	63.4	†0.3	89	9	36	14	33	1.66	-1.46	.55	..	6	12	5	13	.....	1, 11, 14, 24
Cedar Rapids	Linn	733	19	65.0	†1.4	92	28	36	15	42	1.02	-1.87	.45	....	8	8	15	7	NW	
Clinton	Clinton	609	34	64.0	†0.9	90	28	33	15	37	2.67	-.43	.87	....	10	9	13	8		1, 13, 17, 25
Davenport	Scott	606	31	65.6	†0.9	89	10	42	15	27	3.93	†.80	2.07	....	8	11	5	14	SW	1, 2, 13, 17, 18, 19, 20, 24, 25, 26, 27
Delaware	Delaware	1,083	11	62.6	†1.2	87	28	34	15	39	2.65	-.59	1.23	..	7	11	14	5	S, NW	28, 29,
Denison	Crawford	1,180	8	64.2	†0.8	91	9	37	15	37	1.53	-1.68	.85	....	5	16	5	9	S	
Des Moines	Polk	861	24	65.2	†1.1	89	1	38	15	31	1.95	-1.55	.71	...	10	8	14	8	SW	1, 13, 18, 19, 23, 24, 27, 28, 29
De Soto	Dallas	866		66.0	.....	89	28	37	15	34	1.78	.....	.50		8	18	3	9	SW	
Dubuque	Dubuque	655	29	64.2	†1.0	89	28	39	15	37	2.21	-1.88	1.16	....	8	6	13	11	SE	1, 2, 17, 18, 25, 26, 29
Fort Dodge	Webster	1,126	....	62.2	....	88	9	40	15	42	4.02	.....	1.70	....	7	15	5	10	SE	2
Galva	Ida	1,290	8	60.9	-3.6	89	28	33	15, 21	39	1.07	-2.93	.46		4	15	7	8	.....	28
Gilman	Marshall	1,052	..	....	.....	.....	.....	.....	.....	.....	1.67		1.05	....	6	12	8	10	S	
Grinnell (near)	Poweshiek	.....	....	65.8	†2.4	91	10	37	16	33	1.00	-1.46	.35	....	7	13	5	12	SW	1, 2, 6, 13, 17, 18, 27
Grundy Center	Grundy	976	11	63.8	†0.9	89	28	35	15	36	3.18	-.14	1.27	....	9	14	7	9	S, NW	1, 2, 6, 11, 20, 29
Guthrie Center	Guthrie	1,077	6	65.2	†1.7	88	28	33	15	34	1.64	-1.82	.43		8	19	5	6	NE	1, 2, 13, 27, 28
Harlan	Shelby	1,192	....	63.6	....	89	28	34	15	37	2.48	-2.12	.53	..	9	12	6	12	SW, NW	1, 11, 13, 19, 20, 24, 27, 28
Ida Grove	Ida	1,220	....	64.1	.....	88	28	37	15	35	.09	.....	.05		3	17	7	6	S	1, 28
Independence	Buchanan	921	38	62.6	†1.3	90	28	31	15	38	1.86	2.84	1.30	....	4	14	12	4	W, SW	1, 6, 17
Iowa City	Johnson	683	45	64.3	†0.9	91	10, 28	35	15	41	3.12	-.71	1.01	....	7	11	2	17	N	
Iowa Falls	Hardin	1,170	90	61.6	†.0	89	28	31	15	40	2.24	-1.08	.63		7	18	2	10	SW	1, 2, 11, 29
Little Sioux	Harrison	.....	....	65.9	.....	92	28	38	14	33	1.33	.....	.39	....	6	14	6	10	SE	1, 11, 19, 28
LeClaire	Scott	576	...	.....	.....	.....	.....	.....	.....	.....	3.65	.....	2.01	....	8	....	....	....	S	
Logan	Harrison	928	35	65.5	†1.5	92	9	34	15	39	2.55	-.56	.83		6	12	4	14	S	
Marshalltown	Marshall	947	9	63.4	-0.8	91	10	33	15	41	3.68	†1.01	2.12	..	9	12	4	14	SE	
Mt. Vernon	Linn	847	35	64.7	†3.0	88	10, 28	35	15	40	1.78	-1.03	.68	...	8	14	7	9	W	
Montezuma	Poweshiek	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.57		.60	....	4	....	....	....	.....	
Odebolt	Sac	1,356	5	63.8	†0.7	91	9	33	4	50	1.17	-1.98	.74	....	4	11	15	4	.....	
Ogden	Boone	1,088	8	63.6	-1.1	88	28	40	15	32	3.51	-.29	1.45	....	8	15	5	10	S	
Olin (*b*)	Jones	760	....	63.6	†2.1	87	28	32	15	39	1.56	-1.82	.77	....	7	13	13	4	.....	2, 13, 17, 19, 24
Onawa	Monona	1,053	....	66.3	.....	91	9	41	14	34	2.58	-.19	.85	....	8	15	10	5	NW	1, 11, 19, 28
Perry (*i*)	Dallas	975	..	63.8	.....	87	10	37	15	34	.....	.....	....	....	....	..	....	....	.....	
Sac City	Sac	1,278	22	63.7	-2.1	89	9	37	15	35	1.47	-1.82	.90	...	5	12	6	12	SW	
Sioux City	Woodbury	1,165	13	63.3	-1.9	92	9	40	21	37	.86	-1.23	.51		5	12	4	14	SE	1, 27
Stuart	Guthrie	1,316	5	65.8	†1.6	87	28	38	15	37	2.34	-.48	1.17	...	7	....	..	....	S	
Tipton	Cedar	807	..	66.4	...	90	10	39	15	30	3.02		1.61	...	8	16	13	1	S	
Toledo	Tama	856	8	64.5	†0.4	93	10	31	15	40	1.65	-1.46	.75	...	6	14	6	10	NW	
Vinton	Benton	810	12	65.3	†2.5	91	28	33	15	30	1.30	-1.49	.62		6	24	1	5	SW	1
Waterloo	Black Hawk	862	15	64.0	†1.6	93	28	33	15	40	2.15	-2.53	.80		9	9	13	8	S	2, 6, 29
Waukee	Dallas	1,039	....	67.7	.....	93	10	38	15	34	1.79	.....	.76	....	8	16	9	5	S	2, 24, 27, 29, 30
Wilton Junction	Muscatine	683	7	65.0	†0.7	94	11	32	12	43	1.91	-1.29	.65	....	6	15	7	8	NW	1, 19
Whitten (*l*)	Hardin	1,036	..	65.4	†2.8	89	28	38	12	31		.....	.....	....	....	...	..	...	.....	
Zearing	Story	718		64.3	.....	89	28	33	15	40	2.35	.....	1.05	....	5	13	7	10	NW	1, 2
Average			....	64.3	†1.1	89.7	....	..	35.7	.....	37.0	2.13	-1.13		..	7	13	8	9	S, SW	

* Means determined from 7 A. M., 2 P. M. and 9 P. M. observations, and maximum and minimum are taken from eye readings. †Above normal. ‡ Received too late to be computed with means. *a*, One day missing; *b*, two days, etc. § Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR SEPTEMBER, 1904.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
rion ...	Max..	86	77	73	77	80	75	70	79	85	86	75	71	61	61	69	73	68	79	85	71	64	68	79	81	84	80	84	86	78	71	..	75.9
	Min ..	66	60	50	51	54	54	51	48	57	59	49	40	53	40	35	47	58	60	63	51	47	44	61	68	56	63	65	67	63	56	..	54.6
lbia.	Max..	89	76	74	78	80	80	74	80	85	90	67	72	62	64	70	76	75	78	74	60	60	70	77	84	82	79	84	88	80	..	..	76.1
	Min .	62	62	52	53	55	57	53	48	55	64	53	40	43	42	40	46	53	68	60	54	43	42	45	62	60	62	64	64	67	60	..	54.3
lgona...	Max..	78	75	73	77	79	74	69	78	83	76	69	69	62	61	69	71	84	75	78	69	54	64	78	70	67	73	77	86	77	68	..	72 8
	Min .	64	57	47	50	58	51	54	50	53	58	45	40	48	41	35	40	52	47	57	40	35	42	58	55	49	53	58	67	56	54	..	50.5
llerton .	Max	88	78	73	80	80	80	72	81	84	90	76	72	63	62	69	79	85	80	78	73	..	..	..	..	..	..	..	.	..	..	..	77.2
	Min .	66	66	52	50	52	56	52	48	57	60	51	39	53	40	36	49	58	67	62	52	..	..	..	..	..	..	..	..	..	..	..	53.3
lta.	Max..	78	71	73	79	83	71	73	80	87	72	67	70	60	62	72	74	80	84	84	53	57	60	80	70	67	76	80	86	77	62	..	72.8
	Min ..	62	56	46	49	56	52	48	52	57	56	45	42	45	39	36	42	52	47	57	40	36	44	60	49	50	52	60	65	54	50	..	50.0
mana...	Max..	86	76	73	77	77	77	72	75	82	87	77	66	63	62	68	73	85	76	77	71	58	66	77	81	75	78	80	88	80	67	..	75.0
	Min ..	65	63	51	51	50	58	56	49	57	61	54	37	50	40	33	46	48	65	60	56	39	42	56	65	53	64	60	68	66	57	..	54 0
mes	Max..	86	79	76	78	80	73	73	79	85	87	68	70	62	64	70	82	87	77	77	68	57	67	79	73	72	77	82	88	79	69	..	75.5
	Min ..	65	61	50	50	53	58	66	45	48	57	45	38	49	41	34	43	51	56	59	57	45	42	59	64	56	62	64	68	62	56	..	53.5
tlantic..	Max	85	80	78	81	83	61	76	80	89	88	70	69	62	70	76	83	78	85	73	64	61	80	74	77	76	77	87	74	67	..	..	76,3
	Min ..	64	59	46	38	58	52	44	43	49	48	48	36	46	30	40	56	55	63	49	45	47	61	61	55	61	61	67	60	53	..	..	51.6
udubon.	Max	84	77	74	81	85	72	73	82	90	89	69	72	62	64	73	76	86	77	79	74	62	63	83	75	78	81	86	91	80	67	..	76.8
	Min .	62	58	46	40	51	49	44	43	50	52	45	37	49	38	31	43	51	53	62	47	43	44	60	63	53	60	61	67	59	50	..	50.4
Baxter. ..	Max	85	74	74	75	79	75	74	77	84	87	75	69	60	62	68	75	85	78	75	72	59	67	78	79	75	79	80	88	79	68	..	75.2
	Min ..	65	60	49	52	53	58	51	49	55	62	51	40	51	40	36	44	50	57	58	51	41	40	57	63	56	60	63	69	64	55	..	53.3
Bedford ..	Max	84	77	77	77	79	75	75	80	77	86	76	70	63	64	69	80	84	81	82	77	65	64	77	84	83	77	86	87	79	70	.	77.2
	Min .	67	60	51	45	52	52	48	46	54	54	50	40	52	38	33	45	57	61	63	51	49	47	61	63	60	65	65	69	63	57	..	53.9
Belknap..	Max..	89	75	74	87	83	80	75	80	81	85	64	80	60	63	68	79	87	87	80	65	68	76	80	82	81	81	87	88	80	72	..	77.9
	Min .	74	66	56	60	60	60	57	54	58	61	60	47	55	45	48	52	64	64	63	58	50	41	60	68	64	69	62	72	71	64	..	59 4
Belle Pl'e	Max.	79	85	72	75	77	78	75	75	82	83	64	67	60	56	67	72	85	78	75	62	51	65	76	78	72	77	79	88	79	65	..	73 5
	Min .	64	62	52	51	53	58	55	49	55	61	50	38	53	40	35	46	52	58	59	53	40	40	50	61	55	68	60	62	65	56	..	53.4
Bonapar'e	Max..	88	79	74	80	80	82	78	79	84	89	75	69	64	61	70	78	85	80	81	72	63	68	81	79	80	77	86	90	83	68	..	77.4
	Min .	64	63	53	50	50	53	53	49	54	61	54	38	51	41	35	47	55	66	78	57	40	48	55	63	67	66	64	68	68	60	..	54.5
Britt.	Max	82	75	74	79	81	74	71	77	84	77	64	69	61	60	68	71	84	75	75	67	60	67	79	73	71	77	81	87	78	65	..	73.5
	Min ..	63	57	47	47	49	51	53	47	52	56	45	57	47	38	33	37	50	48	57	41	38	41	58	55	50	55	54	65	55	49	..	49.2
Burling'n	Max	88	78	73	81	83	81	74	79	84	90	77	70	67	60	71	78	86	75	83	69	66	70	80	77	79	75	84	90	84	70	.	77.4
	Min	66	66	56	52	57	56	54	54	65	64	57	42	55	43	39	52	58	66	60	58	42	45	59	65	61	67	63	70	70	60	..	57.2
Carroll ...	Max..	84	74	75	85	83	72	75	83	89	86	69	69	59	66	71	75	85	77	87	57	62	68	79	72	67	77	83	88	79	61	..	75.2
	Min ..	65	58	45	47	57	50	46	55	57	59	45	40	52	36	37	45	54	50	60	45	41	42	57	63	51	55	57	69	56	55	..	51.6
Cedar R..	Max	87	74	78	78	82	78	76	79	86	90	69	69	60	63	72	79	89	78	79	65	56	68	78	79	75	80	81	92	82	63	..	76.2
	Min ..	62	65	5	55	53	54	60	51	52	61	55	40	42	43	36	37	62	63	61	58	40	40	44	60	55	56	62	63	69	60	.	53.7
Chariton .	Max	88	77	72	78	79	78	74	79	85	89	75	71	60	63	68	72	84	79	80	74	62	68	76	84	81	81	86	89	83	71	.	76.9
	Min ..	66	61	50	49	51	56	51	45	57	60	52	39	47	39	35	48	58	65	61	51	44	43	59	62	53	60	62	67	65	59	.	54.0
Charles C.	Max	83	72	75	74	79	73	65	76	82	83	64	67	57	60	68	71	85	74	70	57	60	67	77	71	68	74	77	88	78	66	..	72.0
	Min .	50	57	51	49	52	57	59	45	46	59	50	36	37	41	33	43	44	52	52	50	39	39	40	58	52	54	57	59	62	51	..	49 1
Clarinda..	Max..	84	79	76	82	85	77	78	84	90	83	72	74	60	65	72	78	89	84	88	58	70	67	79	82	83	74	87	91	76	63	..	77.8
	Min .	65	59	51	46	52	53	48	42	48	54	51	40	42	40	34	38	47	61	61	51	50	49	50	65	60	63	64	60	62	59	..	52.2
Clear L. ..	Max	78	72	75	79	75	74	69	77	80	78	66	69	60	62	69	76	82	78	72	65	67	67	76	74	67	75	82	89	76	66	..	72.8
	Min ..	65	56	49	56	58	56	58	55	59	62	47	43	48	42	41	46	50	49	59	47	39	41	67	57	52	56	56	62	59	54	..	52.9
Clinton ...	Max..	87	77	78	76	80	80	76	79	82	88	69	69	62	62	69	74	85	77	80	65	60	67	80	79	75	77	80	90	83	70	..	76.0
	Min .	62	58	51	49	48	55	53	52	51	58	51	37	50	41	33	46	48	63	58	56	41	43	47	61	54	60	56	63	62	57	..	52.1
Col. Sprgs	Max..	86	78	75	77	81	6	75	80	86	89	77	72	67	60	71	76	86	84	85	72	65	69	83	83	85	78	80	89	80	72	..	78.7
	Min ..	67	59	51	50	53	53	50	52	55	59	50	44	47	39	37	49	60	62	64	51	52	50	63	66	60	64	66	67	61	53	..	55.1
Colum. J.	Max.	85	81	72	78	78	79	74	78	80	86	74	67	62	59	68	73	83	81	79	72	62	67	68	78	75	76	81	87	79	70	..	75.1
	Min .	65	63	52	52	56	56	53	50	57	62	53	40	53	41	37	49	55	64	68	58	40	42	55	63	58	64	62	68	69	59	..	55.4
Corning ..	Max	83	77	72	75	79	71	72	78	84	85	76	69	63	61	67	73	84	78	83	72	63	64	78	80	82	79	85	87	79	67	..	75.5
	Min .	67	60	50	45	55	56	47	46	55	60	50	40	52	38	38	44	56	58	64	51	47	47	60	62	58	65	66	67	63	53	..	54.0
Corydon..	Max	88	78	76	79	79	86	82	80	86	90	77	72	65	65	69	80	85	80	78	74	62	74	76	84	81	80	85	88	81	73	..	78.4
	Min ..	67	62	52	52	54	45	54	47	59	62	52	40	51	39	38	50	60	62	63	53	45	44	55	63	60	66	65	69	65	59	..	55.1
Cresco ..	Max..	80	72	72	75	76	71	70	75	82	81	73	66	60	60	68	70	87	70	70	63	62	67	75	70	70	71	72	86	72	68	..	71 8
	Min ..	63	56	59	49	53	59	55	55	56	60	50	37	44	40	34	43	50	33	58	44	38	40	56	49	52	47	57	60	49	42	..	49.9
Davenpo't	Max..	85	79	74	78	78	79	73	76	82	89	74	68	61	59	68	74	84	76	81	69	59	65	78	78	75	77	77	88	80	68	..	75 1
	Min ..	68	63	54	55	57	58	57	56	60	66	51	44	50	44	42	53	57	64	60	46	42	45	55	62	55	63	59	69	67	58	..	56.0
Decorah. .	Max..	80	72	73	77	78	74	68	74	80	83	66	62	56	59	56	68	83	76	72	68	59	64	73	77	69	72	73	83	81	69	..	71.5
	Min ..	61	58	56	50	51	60	58	49	60	63	53	38	47	42	34	38	49	55	53	48	39	41	57	60	53	59	58	62	64	53	..	52 3
Delaware.	Max..	83	78	72	76	78	76	71	75	82	86	77	66	58	58	68	71	86	75	77	72	55	64	75	74	68	74	75	87	78	69	..	73.4
	Min ..	63	58	48	50	50	57	54	47	55	59	50	39	47	37	34	44	47	59	57	52	57	37	53	62	48	59	57	65	65	62	.	51.7
Denison ..	Max..	82	76	74	81	86	77	72	82	91	84	67	71	65	64	72	75	87	78	80	75	63	61	81	77	70	81	86	90	80	72	..	76.9
	Min ..	67	59	45	44	56	50	46	51	56	56	44	40	48	38	37	42	56	51	59	47	40	46	59	57	50	56	62	66	68	52	..	51.6
Des M....	Max	89	76	74	77	80	72	71	78	86	86	68	70	62	64	69	75	85	77	77	66	59	67	78	78	78	77	82	88	79	69	..	75.2
	Min ..	67	62	51	51	56	59	54	49	58	62	50	41	46	43	38	48	57	60	62	52	46	44	60	59	57	64	66	71	65	54	..	55.1
De Soto ..	Max.	85	76	75	79	81	73	70	80	87	88	77	73	64	66	71	77	87	78	82	74	61	66	80	79	79	79	82	89	80	70	..	76.9
	Min .	67	60	51	50	56	58	51	49	59	62	52	41	52	42	37	46	55	59	64	51	48	44	61	64	56	64	66	71	64	56	.	55.2
Dows. ...	Max.	80	75	73	77	77	71	60	77	84	80	67	68	61	60	68	73	85	78	72	68	57	67	82	85	77	77	80	87	77	67	..	73.8
	Min ..	63	58	48	51	56	53	58	45	55	59	48	37	48	40	34	39	50	5	58	48	41	40	57	58	48	58	58	65	58	52	..	50.9
Dubuque.	Max..	82	77	73	76	77	76	72	75	82	88	71	66	59	59	68	73	86	75	78	68	57	62	74	76	66	76	74	89	79	67	..	73 4
	Min ..	65	63	51	54	54	61	57	55	61	65	51	43	40	43	39	51	49	64	58	47	41	42	55	63	57	61	57	67	67	58	..	55 0
Earlham .	Max.	84	74	73	73	80	75	71	79	85	86	74	70	59	59	64	75	84	78	82	71	63	65	77	82	81	81	82	84	83	68	..	75.4
	Min .	63	58	45	43	51	55	45	41	55	54	48	33	49	36	30	34	48	55	61	49	48	41	52	51	54	62	57	53	56	53	..	49.3
Elkader ..	Max.	86	75	78	81	82	78	75	81	87	91	76	72	58	62	72	78	90	79	78	69	60	70	78	73	72	78	77	93	80	68	..	76.9
	Min ..	60	59	53	47	49	60	58	49	57	63	51	35	51	40	32	44	43	58	58	50	34	39	56	66	58	59	54	63	65	51	..	52.1
Esthervil.	Max.	76	70	80	81	83	71	70	81	87	75	66	70	60	62	72	76	92	83	77	48	59	63	80	65	67	74	76	85	80	65	..	73 1
	Min ..	63	56	47	51	56	55	51	49	0	52	42	36	45	42	36	37	38	44	56	44	31	33	45	53	52	46	47	62	53	5	..	47.6
Forest C'y	Max..	78	74	76	79	81	73	70	78	85	77	65	69	58	62	69	74	87	76	72	65	61	65	78	64	67	78	79	90	80	65	..	72.8
	Min ..	61	55	48	48	55	58	53	47	49	54	45	40	43	39	34	36	44	47	58	46	36	41	43	60	51	55	55	61	56	50	..	48.9
Ft. Dodge	Max..	82	72	74	79	82	72	72	80	88	79	67	70	58	62	71	75	86	76	78	54	52	64	78	68	67	76	82	87	79	62	..	73.1
	Min ..	63	60	50	50	53	55	53	52	52	55	48	41	44	43	40	41	44	52	52	48	44	44	45	62	55	55	60	66	60	56	.	51 4
Glenw'd .	Max.	80	77	72	78	84	66	77	80	89	83	72	70	67	61	70	74	85	80	82	77	74	64	83	78	82	78	90	87	75	71	..	76.9
	Min ..	68	56	51	52	57	55	50	54	60	64	47	46	49	39	44	49	63	56	64	48	47	50	62	62	58	61	66	67	62	51	..	55.3
Grand M.	Max..	81	69	72	75	76	72	70	74	80	83	70	67	65	58	68	68	83	73	72	68	56	64	74	73	69	73	72	85	78	65	..	71.7
	Min ..	66	61	52	58	56	58	58	50	60	60	50	40	48	36	37	48	51	54	57	51	37	40	58	64	51	58	56	65	62	53	..	53.2
Greene...	Max	83	74	75	78	80	73	65	78	85	82	67	69	59	62	69	74	86	78	71	66	59	68	79	73	70	75	79	88	80	67	..	73.7
	Min ..	65	57	50	50	54	58	57	46	55	60	49	38	50	40	34	43	47	53	60	50	40	40	57	62	48	58	55	66	59	5'	..	51.7
Greenfi'ld	Max.	87	79	72	77	80	74	78	79	82	86	77	72	64	62	69	72	86	80	84	78	65	67	80	80	85	80	80	87	77	68	..	76.9
	Min .	58	58	47	50	57	55	48	50	51	57	48	43	50	37	41	47	58	54	65	49	44	45	60	59	57	60	61	68	62	56	..	53.2
Grinnell(near	Max..	88	76	75	80	80	78	76	78	85	91	80	70	75	63	70	76	87	78	76	73	58	68	79	82	76	78	83	90	83	73	..	77 5
	Min ..	65	60	50	50	54	59	53	49	58	62	51	40	53	40	37	45	55	59	58	50	41	48	58	63	57	61	64	68	64	55	..	54.2
Grundy C	Max.	85	73	75	77	78	73	74	77	83	86	76	68	59	63	69	75	86	79	74	70	56	68	78	75	71	78	81	89	82	67	..	74 8
	Min ..	65	60	50	51	55	60	54	45	57	60	50	39	50	40	35	44	50	55	58	54	41	38	58	62	50	61	61	68	62	53	..	52.9
Guthrie C	Max.	86	84	73	77	82	75	74	79	87	87	73	70	65	63	70	77	85	84	84	78	66	64	81	75	74	79	82	88	78	71	..	77.0
	Min .	65	60	48	48	57	53	47	45	58	59	49	39	51	40	36	47	52	55	63	50	46	45	62	63	55	62	64	70	61	55	..	53.5
Hampton.	Max.	85	75	75	82	80	76	73	80	87	83	67	73	64	63	73	80	89	81	78	67	60	71	79	73	79	80	79	91	77	67	..	76.1
	Min ..	64	57	49	48	56	56	57	48	57	60	50	40	48	42	37	45	51	52	58	50	42	40	58	58	53	53	57	67	60	53	..	52.4
Harlan....	Max.	84	76	73	79	83	72	73	80	88	86	67	71	62	61	70	72	83	76	85	73	67	63	84	74	80	82	86	89	81	67	..	76.2
	Min ..	65	57	46	43	50	50	45	47	51	54	46	38	48	39	34	44	53	53	63	46	42	47	59	61	53	59	62	64	58	51	..	50.9
Hopeville.	Max..	89	78	73	78	80	76	70	80	87	87	70	71	61	62	69	79	86	78	82	71	63	67	78	84	83	79	86	89	80	66	.	76.7
	Min .	67	61	51	51	53	56	52	50	57	60	50	43	51	41	37	47	60	62	63	51	47	45	61	62	59	65	67	67	62	58	..	55.2
Humboldt	Max..	77	77	74	78	80	72	72	78	84	78	67	69	63	62	69	70	84	77	77	72	58	64	80	75	76	75	80	87	76	70	..	74.0
	Min .	65	60	49	51	58	54	51	50	55	60	47	40	48	44	37	41	2	50	60	44	43	45	60	60	51	58	60	67	58	55	..	52.4
Ida Grove	Max.	83	74	73	87	83	75	72	81	87	79	73	71	64	62	71	72	84	75	82	73	68	65	8	77	71	78	83	88	79	70	..	76.0
	Min .	60	59	49	62	48	53	48	53	56	60	47	40	49	41	37	40	57	50	59	46	38	47	60	57	50	56	61	70	58	54	..	64 1
Independ.	Max.	85	73	72	69	77	73	70	75	83	86	78	67	58	60	69	73	83	76	74	74	56	66	75	73	71	82	81	80	78	70	..	73.9
	Min .	63	59	50	47	50	59	55	44	57	59	50	36	50	40	31	41	48	53	58	54	35	35	55	62	45	60	59	66	64	52	..	51.2
Indianola.	Max..	87	79	75	78	81	73	73	80	87	87	76	72	60	..	71	76	85	77	79	73	62	68	78	80	78	77	82	88	77	69	..	76.8
	Min ..	66	61	66	50	54	57	52	47	58	61	51	40	50	..	36	47	57	61	61	51	46	43	60	64	58	64	64	69	65	56	..	55.7
Inwood..	Max.	74	70	71	79	78	68	73	82	90	79	66	69	64	60	70	74	85	70	75	59	53	64	80	71	67	76	76	70	76	60	..	71.8
	Min .	56	46	44	56	62	64	45	54	53	58	44	42	40	39	38	46	60	46	57	38	34	47	58	46	45	49	64	59	53	46	..	49.2
Iowa City	Max..	89	75	75	78	81	80	75	79	85	91	67	72	62	63	76	78	87	77	80	64	61	69	78	83

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR SEPTEMBER, 1904—Continued.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Keosa'qua	Max..	88	81	74	79	80	83	76	78	84	90	75	70	64	62	70	78	85	81	80	66	63	68	81	79	80	77	87	88	81	67	..	77.2
	Min ..	60	64	54	50	51	53	54	54	54	57	55	37	40	41	35	36	50	61	59	61	41	42	45	61	61	64	64	65	68	62	..	53.3
Larrabee.	Max..	81	72	74	79	85	75	75	82	89	74	67	72	62	63	74	74	87	74	82	67	68	69	83	73	69	82	83	87	81	66	..	76.0
	Min ..	65	45	45	46	53	51	45	53	49	58	39	45	49	40	39	39	56	44	50	46	35	45	45	52	46	45	55	64	60	49	..	48.4
Le Mars..	Max..	78	74	75	80	86	72	75	85	91	75	77	70	64	64	76	75	88	75	80	65	57	63	80	70	68	78	80	85	80	67	..	75.1
	Min ..	64	56	45	47	54	51	45	51	51	59	41	40	45	40	38	37	54	45	51	41	35	47	54	54	46	54	61	67	54	41	..	48.9
Lenox....	Max..	84	77	73	76	79	75	70	78	84	85	76	68	61	62	68	77	85	77	82	75	63	64	77	81	83	76	85	86	78	70	..	75.5
	Min ..	67	59	51	50	55	56	49	50	56	59	49	43	52	39	38	47	60	60	63	50	47	46	61	61	58	64	66	68	62	54	..	54.7
Leon.....	Max..	86	81	73	74	77	76	71	76	83	85	77	64	64	60	67	73	83	79	78	76	62	68	76	80	81	80	84	85	80	75	..	75.8
	Min ..	65	61	52	53	54	56	52	50	57	60	42	53	53	40	38	50	59	66	61	52	46	45	60	62	59	66	66	68	65	60	..	55.7
Lit. Sioux	Max..	83	78	76	83	87	80	80	84	91	81	72	72	66	66	75	77	88	81	86	75	65	61	84	80	71	84	86	92	82	71	..	78.6
	Min ..	67	58	46	52	58	49	47	57	60	57	43	47	48	38	44	47	62	50	63	47	41	52	61	57	54	53	61	69	55	52	..	53.2
Logan....	Max..	83	79	75	82	87	77	80	90	92	85	74	72	65	64	73	75	85	78	73	71	72	62	85	76	75	82	78	91	82	78	..	78.0
	Min ..	62	57	45	43	51	51	48	68	74	56	41	49	49	35	34	44	56	53	62	47	48	50	60	62	52	56	63	60	62	52	..	58.0
Marshlt'n	Max..	89	75	77	81	83	77	76	81	87	91	69	73	59	65	73	78	89	81	76	60	59	70	80	79	73	79	82	71	83	65	..	76.0
	Min ..	62	60	49	50	51	54	54	45	49	58	51	37	42	41	33	37	47	57	58	52	40	39	47	60	54	58	59	62	63	55	..	50.8
Mason C..	Max..	74	70	73	78	79	72	63	78	84	76	67	68	60	60	69	72	85	79	72	67	58	66	75	72	66	73	75	87	76	67	..	72.2
	Min ..	64	54	49	54	59	58	60	48	53	68	57	38	50	40	37	44	51	51	60	49	40	42	57	60	54	57	57	57	60	53	..	52.9
Massena..	Max..	83	78	75	80	86	75	75	81	88	88	79	72	68	63	76	77	88	81	86	76	69	63	81	78	84	82	83	87	80	70	..	78.4
	Min ..	63	60	49	44	44	45	46	46	55	59	50	39	50	38	36	32	57	57	57	50	45	46	60	60	58	62	67	58	63	53	..	51.6
Mt. Ayr..	Max..	90	80	78	79	81	78	74	82	89	87	78	75	61	68	71	81	88	79	82	77	61	71	80	87	86	80	87	90	81	73	..	79.2
	Min ..	65	59	51	51	54	54	51	52	59	60	49	43	50	40	41	49	60	62	62	50	46	45	60	62	49	65	68	68	64	57	..	54.9
Mt. Pl'snt	Max..	87	78	73	79	80	81	76	77	82	89	76	68	63	60	68	74	85	78	80	70	62	68	80	78	78	76	82	88	81	71	..	76.3
	Min ..	66	63	54	53	56	56	55	52	56	63	54	42	53	42	38	49	57	64	58	58	40	43	56	64	58	64	64	69	71	60	..	55.9
Mt. Ver'n	Max..	87	78	76	80	80	78	74	78	82	88	76	75	60	63	69	83	84	79	77	70	57	69	74	79	71	83	83	88	78	71	..	76.3
	Min ..	65	61	50	50	53	56	56	48	53	60	52	40	52	39	35	43	53	65	57	54	36	40	54	63	51	61	59	67	65	55	..	53.1
New H. ..	Max..	81	70	72	74	76	72	68	74	80	82	66	67	60	58	65	68	83	76	78	68	59	64	75	71	69	72	76	87	83	68	..	72.0
	Min .	62	53	43	47	51	58	55	43	53	57	47	36	37	37	32	42	47	54	56	48	35	37	45	49	47	55	41	63	58	63	..	48.6
Odebolt ..	Max..	81	75	75	83	86	80	76	83	91	81	70	73	64	65	72	76	86	82	86	74	63	62	82	77	70	80	84	88	79	72	..	77.2
	Min ..	65	58	45	33	51	52	47	51	55	59	44	40	47	39	38	40	54	49	58	46	36	45	60	56	49	56	60	67	56	52	..	50.3
Ogden ...	Max..	85	73	75	79	85	74	71	80	85	86	72	69	64	63	70	75	81	77	80	68	60	65	78	72	70	71	82	88	82	70	..	75.0
	Min .	60	58	48	51	53	54	48	50	56	59	49	41	45	41	40	46	49	55	62	47	45	44	58	57	55	52	61	69	61	55	..	52.3
Olin	Max..	85	78	72	74	79	79	74	75	79	6	78	64	64	60	65	71	84	77	78	71	58	65	76	79	73	..	..	87	81	69	..	74.3
	Min	65	64	52	49	54	56	59	50	55	60	55	15	48	42	32	45	45	65	58	59	39	43	53	66	49	..	..	60	68	57	..	52.8
Omaha, N	Max..	82	79	74	80	85	70	79	85	88	86	68	70	64	64	75	76	86	80	84	62	64	64	84	71	80	79	81	89	78	70	..	76.4
	Min ..	65	58	52	54	58	57	53	58	61	54	50	52	50	42	46	52	64	57	62	48	48	52	65	59	59	62	68	68	63	52	..	56.2
Onawa. ...	Max.	81	79	80	84	88	80	79	86	91	82	74	69	65	70	77	79	89	83	87	74	59	62	82	79	70	80	85	88	81	72	..	78.5
	Min ..	65	58	50	50	58	56	52	56	59	60	48	47	50	41	43	47	59	52	60	46	44	51	60	58	52	56	65	68	57	54	..	54.1
Osage.....	Max.	76	72	73	77	78	74	64	77	83	79	66	68	59	60	68	73	85	77	69	64	57	67	74	72	68	73	76	85	79	68	..	72.0
	Min ..	63	56	49	50	54	58	56	46	54	60	48	37	48	42	34	43	49	44	49	49	39	39	39	59	49	56	56	64	58	52	..	50.2
Osceola ..	Max..	90	76	74	80	81	78	75	80	87	89	57	73	62	65	70	78	87	80	82	58	58	70	79	87	73	81	87	89	82	..	..	76.8
	Min ..	59	60	50	57	50	55	53	48	53	61	50	42	43	42	35	40	48	68	62	52	47	43	46	63	59	65	65	65	64	60	..	53.5
Oskaloosa	Max..	87	77	72	76	79	78	73	78	84	89	78	69	62	62	69	73	85	78	77	72	61	67	76	82	78	76	82	87	81	71	..	76.0
	Min ..	66	63	52	50	52	55	54	49	59	64	53	36	54	41	35	45	53	59	60	54	44	44	57	65	58	64	65	69	67	59	..	54.9
Ottumwa	Max..	91	78	80	82	86	83	76	82	87	92	75	72	61	65	71	78	87	80	82	71	67	72	80	83	82	81	86	88	84	74	..	79.2
	Min ..	65	65	52	56	52	58	57	53	60	63	55	43	54	43	39	52	60	71	61	57	42	41	61	66	63	68	66	70	68	52	..	57.1
Pacific J'n	Max	82	79	74	85	86	79	81	81	88	87	82	69	71	68	71	75	86	81	85	75	65	64	84	76	84	80	86	91	77	70	..	78.7
	Min ..	66	56	50	49	55	52	47	52	57	57	49	49	45	38	40	46	59	57	65	49	49	52	63	62	52	62	65	69	62	50	..	54.1
Perry, ...	Max..	86	77	73	78	81	72	70	88	86	87	71	71	63	63	70	73	86	78	82	73	..	..	..	..	..	..	..	..	..	73	..	75.9
	Min ..	68	61	50	49	54	55	49	47	56	59	50	42	49	41	57	45	52	57	64	49	..	..	..	..	..	..	..	..	..	49	..	51.6
Plover....	Max..	84	73	75	79	83	75	73	80	84	73	64	70	58	60	70	73	84	75	83	58	..	67	80	74	73	74	80	88	78	73	..	74.5
	Min ..	65	60	47	46	55	55	48	55	62	55	45	39	45	40	34	43	50	47	45	38	..	45	58	55	53	51	52	68	55	48	..	50.0
Pocah'tas	Max..	79	73	74	78	82	73	72	80	86	76	66	69	66	62	71	73	84	75	82	72	70	65	81	74	68	76	80	88	77	65	..	74.0
	Min ..	66	59	47	50	58	55	50	53	53	59	44	42	49	40	38	42	53	48	62	46	37	45	59	58	53	55	58	67	57	53	..	51.9
Red Oak..	Max..	81	79	73	75	80	75	74	78	84	84	72	72	66	59	67	72	82	81	83	77	66	65	79	78	77	77	83	87	76	73	..	75.8
	Min .	69	62	52	51	59	59	53	54	59	61	54	50	52	43	40	50	62	61	67	52	52	54	63	66	62	65	69	71	66	58	..	57.9
Ridgeway	Max..	79	70	75	76	79	77	70	79	82	88	71	66	65	60	69	74	90	79	73	70	59	66	77	75	74	72	75	87	75	68	..	74.4
	Min .	64	56	52	51	57	61	58	49	59	63	51	43	47	41	38	48	54	54	59	48	40	40	58	65	53	57	59	64	62	51	..	53.4
Rock R...	Max.	78	70	75	82	80	70	74	84	88	72	70	68	64	64	74	78	88	70	72	50	58	64	78	70	72	75	78	80	76	74	..	78.2
	Min ..	58	56	45	48	50	52	46	52	56	48	38	42	48	46	38	34	44	44	48	38	30	42	56	40	46	44	54	64	54	49	..	47.0
Sac City..	Max.	80	74	75	81	78	77	72	81	89	84	68	69	63	62	71	74	85	77	84	74	59	62	79	76	71	77	82	88	79	74	..	75.5
	Min .	65	58	48	49	56	53	50	59	55	58	45	41	48	41	37	44	50	49	60	46	39	44	60	57	51	55	60	68	57	55	..	51.9
St. Cha'les	Max .	86	77	74	80	82	75	71	81	87	86	72	74	61	64	70	78	85	79	79	67	61	78	79	80	80	79	81	89	79	69	..	76.8
	Min ..	67	60	51	52	56	58	58	52	60	64	51	45	51	42	41	50	58	61	61	51	46	44	61	63	58	64	65	69	65	56	..	56.0
Sheldon..	Max..	76	74	78	82	85	75	76	85	92	85	72	71	65	68	77	76	90	79	78	66	57	60	78	73	70	80	78	85	82	70	..	76.1
	Min ..	63	57	44	49	54	52	45	52	64	53	40	41	45	40	37	35	52	44	53	42	32	45	58	52	52	45	57	62	50	48	..	48.8
Sibley	Max.	75	72	74	80	83	70	72	82	89	71	67	69	60	63	73	74	87	73	74	45	57	64	79	65	66	76	75	83	78	66	..	72.1
	Min ..	62	55	43	45	53	52	48	51	51	52	40	41	46	41	35	34	35	44	45	41	31	37	46	54	49	44	44	60	51	48	..	45.9
Sioux C'y.	Max..	78	74	75	81	87	71	75	86	92	74	68	67	62	64	75	73	8	76	82	50	61	61	84	69	68	79	83	84	81	67	..	74.5
	Min	61	56	49	54	59	55	47	57	55	57	45	48	46	42	43	45	59	48	50	43	40	52	61	51	50	51	65	64	57	52	..	52.1
Sioux C'r.	Max..	78	72	74	0	84	70	75	85	89	77	65	70	63	64	75	75	89	73	77	62	55	62	82	73	68	76	79	84	80	68	..	74.5
	Min ..	65	56	45	42	48	53	45	53	53	45	37	41	45	37	38	41	40	44	52	41	34	47	58	54	43	46	58	67	54	53	..	47.8
Stockport	Max	86	79	71	76	77	79	73	76	82	88	77	69	62	59	68	73	82	79	78	72	72	67	70	77	79	75	83	87	80	71	..	75.6
	Min ..	67	64	56	50	50	56	56	52	56	64	56	41	50	43	38	48	59	69	60	57	42	44	56	62	62	67	65	71	70	61	..	56.4
Storm L..	Max..	75	72	74	78	83	71	72	80	86	73	67	67	60	63	70	72	84	83	84	51	55	65	80	70	68	75	80	85	79	60	..	72.7
	Min ..	62	58	47	48	58	54	48	50	56	59	44	45	48	40	43	40	41	46	50	44	34	39	45	55	48	48	49	49	47	48	..	48.1
Stuart ...	Max	82	80	73	79	81	76	74	79	86	83	82	82	67	60	69	71	85	79	84	79	62	66	81	77	79	81	83	87	79	73	..	77.3
	Min ..	66	60	49	50	53	58	51	51	58	63	47	45	49	40	38	48	55	56	63	50	47	45	60	62	56	62	63	68	62	56	..	54.4
Thurman.	Max..	81	78	72	78	83	75	76	80	86	87	74	70	67	62	70	72	88	80	85	76	66	67	84	78	85	78	79	89	79	68	..	77.1
	Min ..	68	57	52	44	57	54	48	48	58	58	52	44	50	37	63	48	57	59	65	50	50	52	62	68	60	63	68	69	62	53	..	55.9
Tipton....	Max..	86	80	75	78	80	79	76	78	83	90	77	72	62	62	69	76	85	76	81	73	58	76	72	81	76	80	78	89	84	70	..	76.7
	Min ..	66	63	55	53	55	57	57	53	57	61	57	45	51	41	39	48	56	67	59	55	43	53	57	64	55	63	59	67	69	59	..	56.1
Toledo....	Max..	87	76	74	78	79	75	75	80	84	93	72	71	61	61	70	76	87	79	76	72	59	68	77	78	73	79	82	89	80	68	..	76.0
	Min ..	65	61	51	50	50	58	57	45	58	63	52	34	49	41	31	43	47	59	58	53	41	40	58	63	53	62	61	68	65	55	..	53.0
Vinton. ..	Max.	80	75	74	77	79	75	73	77	83	88	82	69	65	6	70	77	87	82	76	73	60	68	76	77	73	82	81	91	85	74	..	76.6
	Min ..	66	61	51	52	51	59	57	46	59	61	53	35	53	41	33	54	48	63	60	55	39	41	58	64	50	62	61	68	65	55	..	54.0
Washi'ton	Max..	86	78	73	77	77	80	74	76	83	88	72	69	61	62	69	75	85	79	78	71	63	68	73	80	77	75	80	88	77	67	..	75.5
	Min ..	67	61	52	52	56	56	55	51	52	63	48	41	51	42	38	49	56	65	59	54	40	43	56	63	58	64	63	69	66	57	..	54.9
Waterloo,	Max	90	74	76	79	81	77	73	80	85	89	68	71	61	65	73	76	70	80	75	67	59	69	78	75	73	82	83	93	81	68	..	75.7
	Min ..	61	60	51	52	51	55	56	47	57	61	50	38	55	41	33	45	46	57	60	54	39	39	53	60	49	57	60	62	63	54	..	52.2
Waukee..	Max..	90	80	81	85	86	76	78	85	91	93	80	74	62	69	78	86	89	83	83	73	64	68	80	83	80	81	83	92	82	83	..	80.6
	Min ..	62	59	59	58	55	58	51	49	58	60	51	40	49	41	38	51	55	58	63	51	47	44	55	63	50	63	63	70	63	54	..	54.8
Waverly..	Max..	84	72	72	75	77	72	68	75	82	83	62	67	59	61	68	70	84	79	72	65	57	65	75	77	70	74	78	89	81	68	..	72.7
	Min .	65	57	52	51	55	60	58	46	58	62	41	39	49	41	37	46	49	57	60	52	41	43	57	62	47	60	61	68	63	54	..	53.0
W.Bend..	Max..	83	72	74	76	81	72	71	78	84	74	64	69	67	61	70	71	83	75	82	69	59	64	80	73	69	76	81	87	78	68	..	73.7
	Min ..	64	58	46	48	57	51	50	51	53	56	44	38	47	40	37	39	52	47	58	43	34	42	57	56	48	53	55	64	54	51	..	49.8
Whitten..	Max..	85	71	73	76	79	71	73	77	83	87	68	67	..	..	..	..	..	76	..	..	.	69	80	74	73	77	83	89	80	71	..	76.6
	Min .	65	54	48	50	54	58	54	45	55	60	48	38	..	..	..	..	..	55	..	..	..	39	57	61	51	60	60	67	61	54	..	54.3
Wilton J.	Max..	87	80	77	79	80	81	76	79	84	90	94	75	70	71	77	75	74	76	81	70	62	68	80	81	79	77	79	90	81	78	..	78.4
	Min ..	61	58	68	50	52	54	56	48	52	56	57	32	40	42	35	42	48	54	57	54	40	42	53	55	57	53	59	64	59	54	..	51.6
Winte'set	Max..	88	79	77	82	83	81	75	81	87	89	76	72	68	67	69	78	78	82	83	75	68	76	80	89	81	81	83	90	82	68	..	78.9
	Min ..	68	60	50	50	56	58	50	50	60	60	50	47	52	42	41	48	60	60	64	52	48	46	62	63	55	61	63	68	60	55	..	55.3

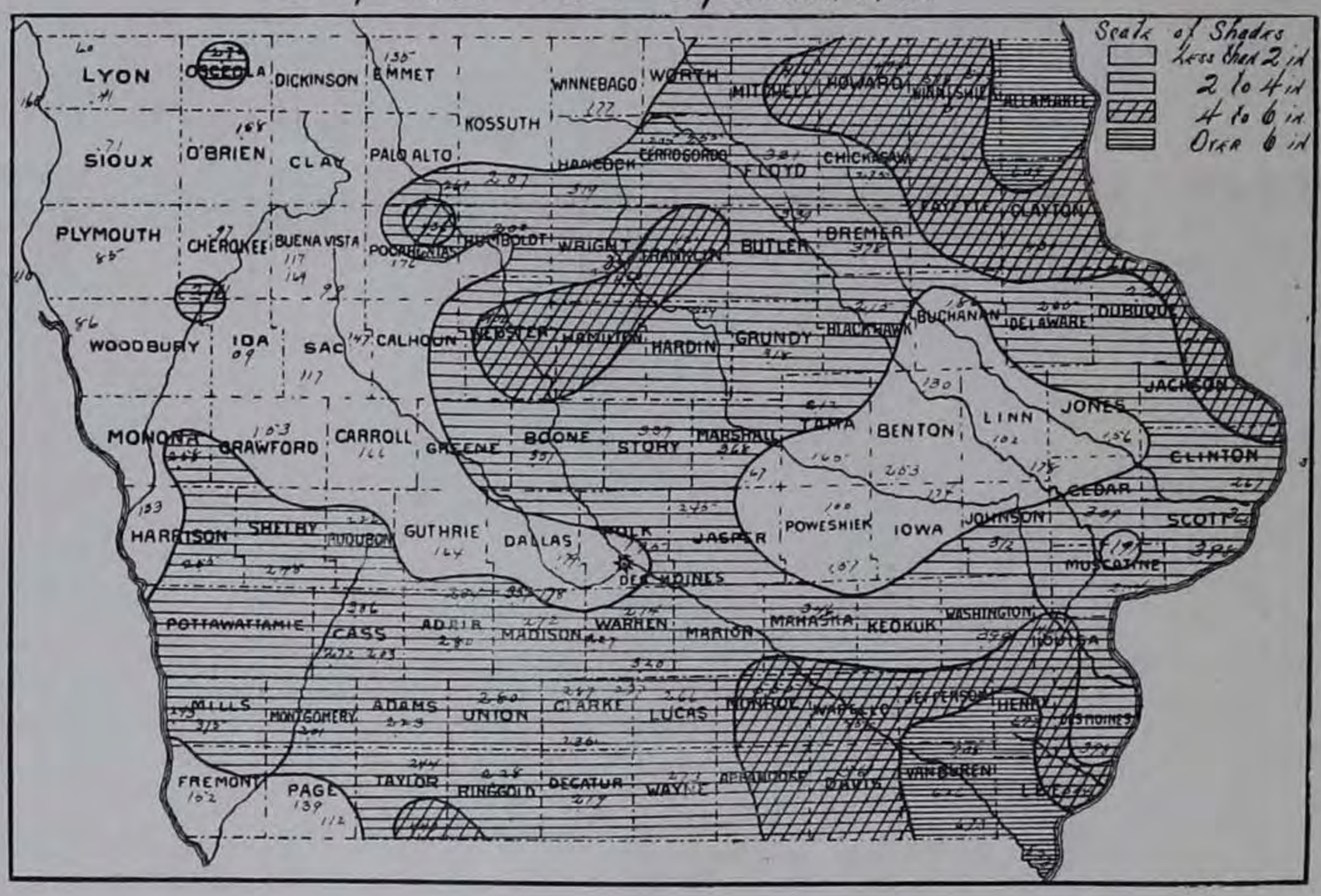
DAILY AND MONTHLY PRECIPITATION FOR SEPTEMBER, 1904.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Afton	.05	.75	....	....	....	....	....	....	....	....	.04	....	.68	....	....	....	....	....	....	..	..	....	....	1.08	..	....	T	....	.12	.08	....	2.80
Albia	....	.45	....	....	....	....	....	....	....	....	....	....	.82	.50	....	..	....	....	T	.60	....	....	..	1.08	..	....	2.58	....	.02	....	....	5.55
Algona	.81	.27	....	....	....	.08	....	....	..	....	T	....	.16	..	....	....	....	....	T	....	T	..	....	....	....	....	....	.63	.42	....	....	2.07
Alta	.61	....	....	....	..	....	....	....	..	T	....	....	.10	....	....	....	....	..	....	....	T	....	....	....	....	....	.03	.43	....	....	....	1.17
Alta [near]	.65	....	....	....	....	....	....	....	....	.19	....	....	.12	....	....	....	....	....	....	....	T	....	....	....	....	....	.05	.65	....	....	....	1.69
Amana	.43	.27	....	....	....	.04	....	..	....	....	....	....	.22	....	....	..	.08	....	T	17	....	....	....	.26	....	....	.08	....	.19	....	....	1.74
Ames	.37	.80	....	....	....	....	....	..	....	....	T	....	.20	....	....	....	....	....	....	1.05	.01	....	..	.09	....	....	.37	....	.48	T	....	3.37
Atlantic	.29	....	....	....	..	....	....	..	....	.40	....	....	.78	....	....	....	....	....	....	..	....	.25	....	....	....	.72	.42	....	.20	....	....	3.06
Audubon	.28	....	....	....	....	....	....	..	....	....	.52	....	.52	....	....	....	....	....	....	.05	....	....	....	.01	T	..	....	.43	.10	.31	....	2.22
Baxter	.70	1.00	....	....	....	....	....	....	....	....	....	....	.15	..	....	....	....	....	....	.05	....	....	....	.18	....	....	.12	....	.05	....	....	2.45
Bedford	.82	....	....	....	....	....	....	....	....	..	.12	....	1.40	....	....	....	....	....	....	1.17	....	.04	....	.42	T	T	T	.04	....	.39	....	4.40
Belknap	.56	....	....	....	....	....	....	....	....	....	....	....	1.11	....	....	....	....	.13	.91	.10	....	....	....	.55	....	....	2.25	....	....	....	....	5.61
Belle Plaine	.50	.35	....	....	....	.12	....	....	....	....	....	....	.12	....	....	....	....	....	....	.08	....	....	....	.20	....	....	.24	....	.92	....	....	2.53
Bonaparte	....	1.00	....	..	..	..	....	....	....	..	....	....	1.50	....	....	....	....	....	.90	.28	....	....	....	1.05	....	.08	1.92	....	....	..	....	6.73
Britt	1.22	.13	....	....	....	.41	....	....	..	.19	....	....	.29	....	....	....	....	T	.03	T	T	T	T	T	....	..	....	.70	.22	....	..	3.19
Buckingham	1.52	....	....	..	....	.07	....	..	....	....	T	..	.11	....	....	....	....	....	.12	....	....	.06	....	....	....	....	T	.24	....	....	....	2.12
Burlington	.01	.11	....	....	....	....	....	....	....	....	T	..	.98	....	....	....	....	1.09	.19	.24	....	....	..	.34	....	.10	.92	....	....	..	....	3.98
Carroll	.40	.02	....	..	....	..	....	....	....	..	.55	..	....	.15	....	....	....	....	....	....	....	....	....	....	....	....	....	.54	....	....	....	1.66
Cedar Rapids	.06	.45	....	....	....	....	.06	....	....	....	....	....	....	.12	....	....	....	.08	....	.08	....	T	..	.13	....	....	....	....	.04	....	..	1.02
Chariton	T	.96	....	....	....	....	....	....	....	....	T	..	.79	....	....	..	....	....	T	.27	....	....	..	.72	....	T	.42	T	T	....	....	2.66
Charles City	.17	1.11	T	....	T	.42	....	....	....	....	.48	....	T	.53	....	..	..	....	....	T	....	....	....	....	....	T	....	....	.60	....	....	3.31
Clarinda	....	.25	....	....	....	....	....	....	....	..	....	....	.51	.10	....	....	....	....	....	.39	....	....	.02	....	....	T	....	....	.12	..	....	1.39
Clear Lake	.35	.40	.05	....	....	T	..	....	....	....	.30	....	.20	....	..	T	....	T	....	....	....	....	....	....	....	T	....	.75	....	....	....	2.05
Clinton	.02	.28	....	..	....	....	....	..	....	..	....	....	.81	..	....	....	.36	....	....	.12	....	....	.07	.07	.01	.87	....	....	.06	....	....	2.67
College Springs	....	.53	....	....	....	....	....	....	....	..	....	....	.58	....	..	..	....	....	....	....	....	.01	....	....	....	....	....	....	....	....	....	1.12
Columbus Junct'n	....	.68	....	..	.	....	....	....	....	....	.07	....	.92	....	....	....	....	.38	.22	.49	....	....	....	.25	..	....	1.60	....	....	....	....	4.61
Corning	....	.57	....	....	....	....	..	....	....	....	.14	..	.75	....	....	..	....	....	....	.10	....	.05	....	.41	....	....	T	....	.21	T	..	2.23
Corydon	.09	.44	....	....	....	....	....	....	....	..	T	....	1.00	....	....	....	..	....	....	.29	..	....	....	.72	....	....	.17	....	.02	..	....	2.73
Cresco	.80	....	....	....	....	1.00	....	....	....	....	.70	..	.75	....	....	....	....	..	....	....	....	....	....	....	1.10	....	....	.60	....	....	....	4.95
Cumberland	T	....	....	....	....	....	....	....	....	....	....	.27	....	....	....	..	....	....	....	....	....	....	....	1.75	....	....	T	....	.01	....	....	2.03
Davenport	T	.35	....	....	....	....	....	....	....	....	T	....	1.12	....	....	..	....	.01	T	.12	T	T	T	.16	....	2.07	.14	....	.01	....	..	3.98
Decorah	.92	.68	....	....	....	1.76	....	....	....	....	.28	....	.50	....	....	....	....	....	T	....	....	....	....	....	....	.81	....	....	.59	....	....	5.44
Delaware	.04	1.23	....	....	....	....	....	....	....	....	.01	....	.08	....	....	....	....	....	....	....	....	....	....	....	....	....	.68	....	.57	....	....	2.65
Denison	.12	T	....	....	....	....	....	....	....	....	T	....	.24	....	....	....	....	....	....	....	....	....	.34	....	T	T	....	.85	.06	.26	....	1.53
Des Moines	.07	.64	....	....	....	....	....	....	....	....	.01	..	.30	....	....	....	....	.02	....	.60	....	....	T	.05	T	....	.22	....	.03	.01	....	1.95
De Soto	....	.45	....	....	....	....	....	....	....	....	.18	....	.36	....	....	....	....	....	....	T	....	T	....	.07	....	....	.50	.07	.09	.06	....	1.78
Dows	1.75	.95	....	....	....	....	....	....	....	....	.54	....	.21	....	....	....	....	....	....	.05	.05	....	T	....	T	....	T	.65	.40	....	....	4.60
Dubuque	.06	.38	....	....	....	T	....	....	....	....	....	....	.07	T	....	....	T	.07	....	T	....	....	T	.03	1.12	.04	....	....	.44	....	..	2.21
Earlham	.05	.55	....	....	....	....	....	....	....	....	.29	....	.51	....	....	....	....	....	..	T	....	T	....	.23	....	1.70	....	....	.04	T	....	3.37
Elkader	.98	....	....	....	..	.07	....	....	..	....	.07	....	.45	....	....	....	....	....	....	....	....	....	....	.02	.80	....	....	....	2.00	....	..	4.39
Estherville	.66	.34	T	....	....	..	T	....	....	....	....	....	.10	.05	....	....	....	....	....	T	....	....	....	....	....	.04	....	.12	.04	....	..	1.35
Florence	1.25	.25	....	....	.04	....	....	....	....	....	.45	....	.22	..	....	....	....	....	....	....	.01	....	....	....	....	....	.01	1.28	.18	....	....	3.69
Forest City	.30	.40	T	..	T	.20	....	....	....	....	.08	....	....	.25	....	....	....	....	....	....	....	....	....	....	....	.10	....	T	.44	....	....	1.77
Fort Dodge	.43	.50	T	....	..	....	....	..	....	..	.43	....	....	.20	....	....	....	....	....	1.70	....	....	....	....	T	.02	....	.75	..	....	....	4.02
Fort Madison	....	.18	....	....	....	....	....	....	....	....	....	..	.96	..	....	....	....	1.75	.18	....	....	....	....	.89	....	....	1.08	....	....	....	....	5.04
Gilman	1.05	.10	....	....	....	.15	....	....	....	....	T	....	.07	....	....	....	T	....	....	T	T	T	T	.12	....	T	.18	....	....	....	....	1.67
Glenwood	T	....	.10	....	....	....	..	....	....	.15	....	....	.65	....	....	....	....	....	....	....	T	T	....	1.25	....	....	....	....	1.00	....	....	3.15
Grand Meadow	2.50	....	....	....	....	.37	....	....	....	....	.46	....	.56	....	....	..	.04	....	....	....	....	....	....	....	1.07	....	....	....	1.09	....	....	6.09
Greene	1.10	.40	....	....	....	.30	....	..	....	....	.45	....	.31	....	..	....	....	....	.10	....	....	....	....	....	....	.03	....	....	.70	....	....	3.39
Greenfield	T	.47	....	....	....	....	....	....	....	....	.08	....	.51	..	....	....	....	....	....	....	T	T	T	....	.94	..	.43	.17	.11	.09	....	2.80
Grinnell (near)	.05	.30	..	....	....	.05	....	....	....	....	....	....	.25	....	....	....	....	....	....	.05	....	....	....	....	....	....	.25	....	.05	..	....	1.00
Grundy Center	1.27	.92	....	....	T	.09	....	....	....	....	.10	....	.18	..	....	....	....	.06	....	.07	T	....	....	.04	..	....	....	....	.45	....	....	3.18
Guthrie Center	.07	.12	....	....	....	....	....	....	....	....	.36	....	.37	....	....	....	....	....	....	....	....	T	....	.06	....	....	.16	....	.43	.07	....	1.64
Hampton	2.20	....	....	....	....	....	....	....	....	.53	....	....	.27	....	....	....	.05	..	.04	....	.08	....	....	....	.05	....	....	1 02	....	....	....	4.24
Harlan	.32	....	....	....	....	....	....	....	....	....	.58	....	.48	....	....	....	....	....	T	.35	....	....	....	.01	....	....	.10	.37	.13	.14	....	2.48
Hopeville	.01	.67	....	....	....	....	....	....	....	....	.05	....	.72	....	....	....	....	....	....	....	....	....	....	.76	....	....	....	....	.05	.09	....	2.35
Humboldt	.70	....	....	....	....	....	....	....	....	....	.40	....	.28	....	....	....	....	....	....	....	.10	....	....	....	....	....	....	.37	.15	....	....	2.00
Ida Grove	.03	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.05	....	.01	....	.09
Independence	1.30	....	....	..	..	T	....	....	..	....	....	....	T	....	....	....	....	.05	....	....	T	.01	....	....	....	....	....	.50	....	....	....	1.86
Indianola	.03	.26	....	....	....	....	T	T	....	....	01	....	.43	..	....	....	....	.15	....	....	....	T	....	.52	....	....	1.27	..	.02	.02	....	2.74
Inwood	..	....	....	....	....	..	....	....	....	..	....	.30	....	....	....	....	....	....	....	....	....	....	....	....	....	.11	....	....	....	....	....	.41
Iowa City	T	1.00	....	....	....	....	T	....	....	..	....	T	T	.52	....	....	....	T	.14	.24	....	....	....	1.00	....	.08	.14	T	....	....	....	3.12
Iowa Falls	.24	.60	....	....	T	....	....	....	....	....	.63	..	....	.07	....	....	....	....	T	.10	....	T	..	.03	....	T	....	T	.57	....	....	2.24
Keokuk	..	.33	....	....	....	T	.	....	..	....	.01	....	.36	....	....	....	....	2.70	.31	.23	....	..	....	2.49	....	....	1.90	....	....	T	....	8.33
Keosauqua	T	.95	....	....	....	....	..	..	..	....	....	....	.63	1.48	....	..	....	....	.79	.23	....	....	T	.90	.10	....	1.18	....	....	....	....	6.26
Lacona	....	.33	....	.	.	....	..	....	....	....	....	..	.57	.	....	....	....	..	....	.38	....	....	....	.82	....	....	1.03	.05	....	.02	....	3.20
Larrabee	.59	T	....	....	....	....	....	..	....	....	..	..	.01	....	....	.	....	....	....	....	.01	....	....	....	....	....	.15	.21	....	....	....	.97
Le Claire	....	.43	..	....	....	..	.	.	....	....	....	..	.04	.67	..	....	....	.08	T	.28	....	....	....	.12	....	2.01	.02	....	T	....	....	3.65
Le Mars	.85	....	....	....	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	T	....	....	....	T	....	T	T	....	....	....	.85
Lenox	.20	1.00	....	....	....	....	....	....	....	....	.07	....	.57	..	....	....	....	....	....	.15	....	T	.05	.25	....	..	....	..	.10	.05	....	2.44
Leon	T	....	.	....	....	....	....	....	.	....	....	....	1.06	....	....	....	....	....	.13	....	....	....	....	1.00	..	....	....	....	....	T	....	2.19
Little Sioux	.37	....	....	....	....	....	....	....	....	....	T	....	.19	....	....	....	....	....	.09	....	....	....	....	....	....	....	....	.39	.02	.27	....	1.33
Logan	.22	....	....	....	....	....	T	....	....	.83	....	.43	....	....	....	....	....	....	.09	....	....	....	....	....	....	....	.75	....	....	.23	....	2.55
Marshalltown	.07	2 12	....	....	....	....	....	....	....	....	....	....	.02	.10	....	....	....	T	.18	....	....	T	....	.10	....	....	.40	.02	.72	..	....	3 68
Mason City	.60	.40	....	...	.03	T	....	....	....	....	.45	....	.27	....	....	....	....	....	.03	....	....	....	....	....	.03	....	....	.74	....	....	....	2.55
Massena	.51	....	....	....	....	....	....	....	....	....	....	.05	.51	....	....	....	....	....	....	....	....	....	....	1.31	....	....	.05	....	.18	.11	....	2.72
Montezuma	T	.42	....	....	....	T	....	....	....	....	....	....	35	....	....	....	T	T	....	....	....	....	....	.20	....	....	.60	....	....	....	....	1.57
Mount Ayr	T	.30	....	....	....	....	....	....	....	....	.20	....	.95	....	....	....	....	....	....	.06	....	T	.03	.65	....	....	....	....	.06	.03	....	2 28
Mt. Pleasant	....	.73	....	....	....	T	....	..	..	....	....	....	1.44	....	....	....	....	1.42	2.16	.26	....	....	T	.25	..	....	.71	T	....	....	..	6.97
Mt. Vernon	T	.68	....	....	....	.01	....	....	....	....	T	....	.40	....	....	....	.01	....	....	.15	T	....	T	.26	....	.21	....	....	.06	....	....	1.78
Muscatine	....	.35	....	..	....	....	....	....	....	....	....	....	....	.45	....	..	....	....	.27	.26	....	....	....	.21	....	T	.50	T	T	....	....	2.04
New Hampton	1.27	.20	....	.	....	.26	....	....	....	..	.41	....	.26	....	....	....	....	....	....	....	....	....	....	....	.05	....	....	....	.30	....	....	2.75
Odebolt	.13	....	....	....	....	....	....	....	....	....	....	....	....	....	.17	....	....	....	....	....	....	....	....	....	....	....	....	.74	....	.13	....	1.17
Ogden	.18	.57	....	....	....	....	....	..	....	....	.53	....	.18	.10	....	....	....	....	....	1.45	....	....	....	.13	....	....	....	....	.37	....	....	3.51
Olin	.77	....	..	....	..	.02	....	....	....	....	T	....	.48	....	....	....	.01	....	....	..	..	....	....	.12	.10	....	....	....	.06	....	....	1.56
Omaha, Neb	.02	..	....	....	....	....	....	....	....	.02	48	....	.66	....	..	....	....	....	....	....	T	T	T	.65	T	....	.01	.52	T	.24	....	2.60
Onawa	.85	....	..	....	....	....	....	....	....	....	.14	....	.15	....	....	....	....	....	.18	....	....	....	....	....	..	....	.01	.70	.05	.50	....	2.58
Osage	1.96	.21	....	....	....	.26	....	....	....	....	.28	....	.30	.06	....	....	....	....	.05	....	....	....	....	....	.45	.02	....	....	.57	....	....	4.16
Osceola	....	1.25	....	....	....	....	....	....	....	....	T	....	.32	....	....	....	....	....	....	T	....	....	T	1.05	T	T	.20	T	.05	T	....	2.87
Oskaloosa	T	.76	....	....	....	....	....	....	..	....	T	....	.60	..	....	....	....	.02	.95	....	....	....	T	.48	....	....	.60	..	....	.05	....	3.46
Ottumwa	.10	.15	....	....	....	....	....	....	....	....	....	....	.88	....	....	....	....	.35	....	1.00	....	....	....	....	....	....	2.10	....	....	....	....	4.58
Pacific Junction	.06	....	....	....	....	....	....	....	....	....	.18	....	1.05	....	....	....	....	....	....	....	T	T	....	.55	....	....	....	.40	....	.19	..	2.43
Plover	1.80	....	....	....	.12	....	....	....	....	....	....	....	.18	....	....	....	.07	....	....	....	....	....	....	....	....	....	.15	2.04	..	....	....	4.36
Pocahontas	.69	....	....	....	....	..	....	....	....	....	.17	....	.34	....	....	....	....	....	....	....	.01	....	....	....	....	....	....	.55	....	....	....	1.76
Red Oak	.13	.01	....	....	....	....	..	....	....	....	....	....	.72	....	....	....	....	....	....	....	....	T	....	.90	T	....	T	....	.21	.04	....	2.01
Ridgeway	1.01	....	....	....	.20	1.01	....	....	..	....	.56	....	.60	.03	....	....	.10	....	.07	....	....	T	....	....	.94	..	.02	.62	....	....	..	5.16
Rock Rapids	T	T	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	T	....	T	....	....	....	....	....	....	.60	....	....	....	.60
Sac City	.09	T	....	....	....	....	....	....	....	....	.28	....	.19	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.90	T	.01	....	1.47
Sibley	1.03	1.18	T	....	..	T	....	....	....	....	....	.	.18	....	....	....	....	T	....	.06	....	.02	....	....	....	....	....	.20	.03	....	....	2.70
St. Charles	.07	.45	....	....	....	..	....	....	....	....	.05	....	.05	....	....	....	....	....	....	.07	....	.	....	.70	T	..	.78	.	.10	T	....	2.27
Sheldon	1.25	T	..	....	....	....	....	....	....	....	....	....	.11	....	....	....	T	.17	.01	.	.01	....	....	....	....	..	T	.03	....	....	....	1.58
Sioux City	.51	....	..	....	....	....	....	....	....	....	..	....	.04	....	....	....	....	....	....	....	T	....	T	..	T	....	.01	.11	T	.19	..	.86
Sioux Center	.65	.03	....	.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	....	T	....	T	....	....	....	T	.03	....	....	....	.71
Stockport	T	.99	....	....	....	....	....	....	....	....	....	....	1.96	....	....	....	....	T	1.36	.37	....	....	T	.57	T	.35	1.48	....	T	T	....	7 08
Storm Lake	.17	24	T	....	....	....	....	....	..	....	.13	..	....	.10	....	....	....	....	....	....	.	T	....	....	....	....	....	T	.65	....	....	.99
Stuart	.04	.24	....	....	....	....	..	....	....	....	....	....	.32	.14	....	....	....	....	....	....	....	....	.08	....	....	1 17	....	.35	..	....	....	2.34

DAILY AND MONTHLY PRECIPITATION FOR SEPTEMBER, 1904--CONTINUED.

STATIONS.	DAY OF MONTH																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Thurman	T	...	....	....	....	....		...	....	....	T	....	.92	....	....	....	....	....	....	....	....	T	....	....	..	....	T	.38	....	.22	....	1.82
Tipton	.10	1.61	....	....	.	....	...		..	....	..	....	.50	....	....	....	....	.12	....	.20	....		....	.28	....	.13	.08	....	....		....	3.02
Toledo	.75	.50	..	....	.	....	....	....	....	...		....	.10	....	...	....	....	....	.05		T	....	....		..	10		.15	....	....	....	1.65
Vinton	....	.62		....	...	.59	....		....		....		.07	..	....	....			.09	....	....		....	.08	..	..	....	.05	....	...	....	1.30
Washington	..	.65	....	....		..	....	....	..	T	.02	....	.58	..		....	...	.87	...	.30		...		.18	....	..	1.4	....	....	..	....	3.99
Washta	.65	T	....		....	..	....	....		T		....	....	..	....	....	....	....	T	T	....	....				....	.06	.40	..	....	..	2.11
Waterloo	.80	.74	....	...	...	.08	....			..	.02	....	.04	..			..	....	..	.02	.01		T	.02		....		..	.42	..	..	2.15
Waukee		.76		....		....	....	....	....	..	.13	....	.30	....						.08		T		.07	T	....	.18	..	.20	.07	..	1.79
Waverly	1.74	.54		....	.02	.10	...				.1	...	.48	....	....	....	....	.05		.05	T	....	.02	...	.05	....		....	.73		...	3.78
West Bend	.95	....	..	....	...	.01	....						.17	..	....	....	..	.03	.01	....	.02	....	....	....	....	....	T	1.38	..	...	...	2.69
Wilton Junction	.30	....	....	..	..	T	..	....	....	....		...	.65	..	....		....	.15	.49	...	....	....	....	.22	.10	....	T		....		....	1.91
Winterset	.07	.60	.		....	..	..	....		...	.07	..	.47		....	....	....			...	....	....	...	.39	.	..	1.07	....	.05	....	....	2.72
Woodburn	T	.49				....			....		.05	....	.73	...		...	..	....	T	.07	....	T	....	.97		...	.39		.05	.02	...	2.77

Precipitation Chart September 1904



OCTOBER, 1904 No. 10



MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

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DIRECTOR.

GEO. M. CHAPPEL,
LOCAL FORECASTER,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

THE IOWA WEATHER AND CROP SERVICE

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Algona	Dr. F. T. Seeley
Allerton	Rex Shriver
Alta	D. E. Hadden
Alta (near)	W. J. Minard
Amana	Conrad Schadt
Ames	Exp. Station
Atlantic	J. W. Love
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Baxter	W. T. Thorp
Bedford	E. E. Healy
Belknap	A. W. Rankin
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Mason City	J. S. Mills
Massena	Fred. T Knott
Montezuma	C. J. Griffin
Monticello	C. E. Heisey
Mount Vernon	Rev. J. W. Hubbard
Mt. Ayr	A. F. Beard
Mt. Pleasant	Prof. J. W. Edwards
New Hampton	A. F. Kemman
Newton	Hon. J. P. Beatty
Northwood	Dr. E. R. Young
Odebolt	E. Starner
Ogden	C. L. Zollinger
Olin	Hon. Nathan Potter
Omaha, Neb	*L. A. Welsh
Onawa	C G. Perkins
Osage	G. D. Pattingill
Osceola	Mrs. S. Lewis
Oskaloosa	Jos. Boyd
Ottumwa	Dr W. B. La Force
Pacific Junction	Agent C., B & Q. R'y
Perry	J. A. Harvey
Plover	J. S Smith
Pocahontas	F. E. Hronek
Red Oak	J. S. Cole
Ridgeway	Arthur Betts
Rock Rapids	W. C. Wyckoff
Rockwell City	C. M. Randall
Ruthven	F. M. Fitzgerald
Sac City	J. A. Sodestrom
St. Charles	C. W. Minard
Sheldon	Dr. A. W. Beach
Sibley	H. G. Doolittle
Sigourney	Mrs. R. F. Ashbaugh
Sioux Center	Jacob de Ruyter
Sioux City	*U. G. Purssell
Spirit Lake	W. C. Drummond
Stockport	C. L. Beswick
Storm Lake	L. E. Burdick
Stuart	Hon John Herriott
Thurman	C. R. Paul
Tipton	F. K. Gregg
Toledo	Herbert Giger
Vinton	H G. Haines
Wapello	Geo. W. Schofield
Washington	Wm. A. Cook
Wa-hta	H L. Felter
Waterloo	M. L. Newton
Waukee	E. J. Leonard
Waverly	H. S Hoover
What Cheer	R. S. Alexander
Whitten	Dr. Frank P. Butler
Wilton Junction	J. M. Rider
Winterset	B. L. Sprinkle
West Bend	Phil Dorweiler
Woodburn	C. B. McDonough
Zearing	H. E. Burkhart

*U. S. Weather Bureau.

WEATHER-CROP OBSERVERS.

Reporting for the Weekly Bulletin.

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Allerton	James Piper
Alta	Jonas Cushman
Audubon	A. H. Edwards
Blairstown	T. H. Weil
Burt	R. Jain
Cedar Rapids	Hon. A. J. Fuhrmeister
Centerville	Jacob Harter
harles City	W. B. Towner
Clarksville	F. M. Russell
Correctionville	Hon. W. B. Chapman
Creston	M. V. Ashby
Danville	Sherman Matthews
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Fort Dodge	R. W Blaine
Fruitland	R. T. Hummel
Goldfield	D. M. Stephens
Geneva	Wm. H. Thompson
Hartford	H. E. Slack
Hartwick	Fred McCulloch
Harlan	H. B. Kees
Hesper	G. E. Dillingham
Humeston	Hon. S. H. Moore
Independence	Geo. H. Wilson
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Orange City	H. J. Vande Waa
Pella	J. H. Ver Steeg
Pittsburg	G. C. Duffield
Portland (Nora Springs, P. O.)	Arthur Pickford
Platte (Creston R. D.)	M. H. Dibel
Red Oak	Hon. C. L. Stratton
Rock Rapids	D. E. F. Merrill
Seymour	L. B. Sager
Shenandoah	Reuben Mullison
State Center	E. P. Thompson
Stuart	W. W. Bailey
Toledo	W. G. Malin
Van Horne	Spencer Smith
Waukon R. D	T. B. Wiley
Weldon	Ed Worden
Winterset	H A. Kinsman
West Branch	Wrigley Smith
West Union	H. B. Blackman
Wilton	Thos. Boot
Wiota	I. S. Coomes
Woodward	George Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

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OCTOBER WEATHER AND CROPS.

October was warmer and drier than usual, the daily mean temperature being about 1° above normal, and the average rainfall for the state 0.73 of an inch below normal. The northern section received the largest amount, the average being about 0.29 of an inch above the October normal. The first frost of the month occurred on the morning of the 6th, and was heavy enough to kill vines and most of the cornstalks remaining green in the northern half of the state. In the southern half that frost was light, causing no damage. The first general killing frost covering the state occurred on the morning of the 23d, all crops being safe at that time. The bulk of the rainfall came in the first and second decades—mainly between the 5th and 20th, the balance of the month being dry and favorable for farm work, for drying out the corn crop and harvesting the minor crops. No better weather could be desired for preparing corn for cribbing than was prevalent from the 20th to 31st. Good progress was made in harvesting the corn during the last week, though the heavier ears contained considerable moisture. But the weather was cool by night, though moderate and clear by day. The heavy potato crop was harvested in good condition, the quality of the product being unusually good. Pastures were very good throughout the month. Good progress has been made in fall plowing. The small acreage in fall wheat and rye showed an excellent growth and good stand. On the whole October was a very mild and favorable month, crowning a fairly productive crop season.

NOTES AND COMMENTS.

October brought an abundant supply of health-giving ozone, with the delightful glow and warmth of the temperate zone. There is nothing in the torrid zone that equals the Indian summer of this latitude.

What will be the character of the coming winter? That question is frequently propounded to observers of the Weather Bareau, and it's easily answered. It will be an open winter—sure! It will be open on all sides and above, for free entrance of all the winds that blow; for boreal blasts, blizzards, snow flurries from the north and west, and for some balmy breezes from Gulfland. It will be an old-fashioned winter; that is to say, it will be quite like some of the fashions of winter that prevailed in the pioneer years between the 40's and 70's. Whether severe or mild its prototypes may be noted in the old-time records. There will be some sudden changes, intermittent temperatures, and a goodly number of bright, cold, crisp and health-giving days. All in all, it will be good winter for indoor social enjoyment, for hearing lectures, attending institutes and meetings for mental and moral improvement. It will be a good winter for taking account of stock and preparing for next season's business. This is fully as specific as any of the long-range prognostications.

At the recent session of the International Geographic Congress, held in Washington, D. C., Commander Robert E. Peary, U. S. N., served as president and made the opening address. Referring to the rapid progress made in recent years, he said; "Wireless telegraphy is an accomplished fact today, not an experiment, and the atmosphere of the globe in a short time will throb incessantly with countless messages." He referred to the isthmian canal as the grandest project, the greatest engineering, financial, and diplomatic problem of the age, and added; "A fearless master hand has at a stroke cut the Gordian tangle that has hitherto defied the ablest statesmen and financiers of the world, and the nations today accept without question the Panama canal as a fact."

With deep regret announcement is made of the death of Isaac Young of Jefferson, Greene county, one of the faithful voluntary observers and crop reporters of the climate and crop service of Iowa. His death occurred on the evening of September 21st, after a brief illness. In all things he was faithful until the end.

By joint action of the boards of supervisors of Monona and Harrison counties a great drainage ditch is to be dug, at an estimated cost of $258,000, which will reclaim 86,000 acres of land that is now too wet for cultivation. It is likely to be a very profitable enterprise, from a sanitary as well as a financial point of view. Within a few years the rich land thus brought into cultivation will grow the heaviest crops produced in those counties. The soil is practically inexhaustible. The reclaimed tract may produce four to five million bushels of corn per year.

Will Chamberlain, in his "Wayside Notes," says: As a weather prophet, Bob White is a profound fizzle. He does not belong to the Hicks school, because he makes no claims to weather prognostications. His "More Wet" is his personal clarion, and has no relations to storms in any sense of the word, The quail is very neat and trim little gent of the by-ways.

It is the surplus water in the soil that injures crops, and this is removed by tile drainage. No moisure is drained from the soil by tiling that would be helpful to plant growth.

United States Consul Winslow says that Belgium has eleven large mills that grind American corn exclusively, and that the product of these mills is used for bread making. One large bakery turns out 10,000 loaves of bread weekly made of a mixture of 25 per cent corn flour and 75 per cent rye or wheat. Over 800 bakeries in Berlin are selling bread made of this same mixture. Commenting on this statement an exchange says: "The short wheat crop and the probable advance in the price of bread will afford the corn grower an unusual good opportunity this year to start a propaganda in the United States for the more general use of corn as food. If it has been possible to lead Europeans into using corn it ought to be even less difficult to do the same thing in this country. A more general use of corn would not only largely benefit the western states, which are the chief producers of this cereal, but would be a blessing to poor people the country over who find their slender incomes hardly equal to the feeding of large families on such an expensive luxury as white bread.

The molasses, gluten and sugar feeds and the multitude of other balanced and mixed feeds which have developed of very late years are constantly growing in importance and in the appreciation in which they are held in the trade. At the same time, millfeeds are as highly esteemed as ever they were, and it cannot justly be said that they have suffered at all in the estimation of the public by the increasing use of the multitude of special feeds which have come to the front. This is explainable by two reasons; one that millfeeds are quite largely used as a basis for various mixed foods, and the other that the practice of feeding stock in a special and careful way has made immense strides in the last five years. Once bossy got grass in season and hay out of season, and if she succeeded in annexing a bran mash on the side or a dessert of cut up pumpkins or whole turnips she regarded herself as a lucky if not pampered animal. Nowadays, all this is changed. The farmer has his sharp eye glued on the analyses and tests of the agricultural colleges and state boards of agriculture, and the consequence is that the bill of fare which the progressive farmer serves up to his stock and poultry rivals the menu of the average country hotel for length and variety. All this is pleasant for the live stock and profitable for the farmer, and, at the same time, gives wide scope to the feed business, which daily assumes greater and greater importance. Nor is the end of this movement by any means in sight, for it is based upon the purely business principle of securing the best possible results from a given investment.—*Flouer and Feed.*

UNRELIABLE WEATHER PROPHETS.

The following article clipped from the editorial columns of the *Homestead* is scientifically sound, and worthy of a careful reading:

Nothing could be of greater practical value to the farmer than a reliable prognostication of the weather for a year or even for a single season. Such a prediction would be a controlling factor in the decision of many important questions regarding crops and farm management. If the characfer of the weather as to temperature, humidity, sunshine, wind and rainfall could be foretold with accuracy, the farmer could well afford to invest a generous sum each year in the forecasts.

Many intelligent and generally well-informed persons will tell you that certain men whom they can name have solved this problem; that their predictions from year to year have been marvelously verified by the results, and that their publications are worthy of attention and study.

When the prognostications of these long-range weather forecasters are examined they are almost invariably characterized by two features, either of which would condemn them as being worthy the credence of educated people. One of these is their pretended dependence on astronomical or astrological conditions; the other is their general character, varying enough as to either time or locality to be valueless and unsusceptible of being tested.

Astrology has no standing as a science. It makes its appeal to the ignorant and superstitious. Astronomy is one of the genuine sciences and its conclusions are everywhere received with respect; but any astronomer of standing will tell you that there is no body of astronomical knowledge on which long-range weather predictions, or weather forecasts of any character, can be based. There is a supposed connection between the variations in the size and character of sun-spots and atmospheric and magnetic conditions on the earth; but the problem has not yet been worked out; and any writer who leads his readers to infer that it has been even partially solved is either uninformed or mendacious.

The professional long-range weather prophet makes his forecasts so indefinite and general that he can and actually does claim any storm of any character at any place within several days of his assigned dates as being a substantial fulfillment of the prediction. The futility of such logic is seen when it is remembered that some kind of an atmospheric disturbance is occurring in some part of the United States almost every day in the year. Like our "equinoctial storms" of fall and spring, give the weather prophet's storm a leeway of three or four days each way, six or eight days in all, and it will be pretty sure to come along, according to programme.

In its very nature, the weather depends on an infinite variety of causes, conditions and combinations between them. It is not susceptible of reliable long-range prediction. The weather forecasts now published by the government are mainly reliable because they are made in accordance with known scientific principles. They are based on observed phenomena, calculated on actual movements of storm centers. They are not always verified by results in every part of the territory they cover; but they are infinitely more valuable than any long-range forecasts made. It is safe to give the long-range weather prophet a wide berth.

THE WEATHER AND THE ALMANACS.

The way to determine the value of long-range weather forecasts is to compare them with the records, noting misses as well as hits. They ought to score about 50 per cent of verification by the law of chance, even if the storm dates were drawn from a lottery wheel. From an almanac published by one of the planetary weather prophets the following extracts have been clipped covering the period from October 20 to November 7, 1904:

OCTOBER—"Fourth storm period. This period runs from the 20th to 25th, central on the 22d. The disturbing factors at this time are the Vulcan equinox, the Mercury disturbance, the opposition of Jupiter, with moon on the celestial equator and full. Things to be expected. It is probable that some of the most marked disturbances of the month will occur at this time. Low barometer and rapid change to warmer may be expected in all western sections as early as the 21st. Rain with probable thunderstorms will quickly follow, and during the 22d, 23d and 24th, a series of storms will pass over the country from west to east. Mercury will begin his work of thick cloudiness, mist and sleet northward at this time. Earthquake disturbances will be felt in many parts of the globe not far from the 24th."

"Fifth storm period.—This period is central on October 27th and 28th. Some energetic storms, especially on and about the

lakes and North Atlantic will appear at this time. Rain will turn to sleet and snow northward," etc.

NOVEMBER—"First storm period. This period covers the first six days of the month, having its center on the 3d. In most western extremes the weather will turn quite warm. From about the 3d to the 6th these conditions will develop into cloudiness and rain and pass eastwardly across the country. The culmination of the period will fall on and touching the 5th, about which day rain, with possible thunder, will turn to colder and snow in the north and be followed by rising barometer, high westerly winds and much colder."

Now it is scarcely necessary to refer to the weather maps, covering the period from October 20th to November 8th, to be assured that these almanac forecasts were not verified in Iowa. During that period there has been a steady prevalence of most delightful Indian summer weather over the greater part of the western half of the United States, and most of the time throughout the northern states. The almanac maker did not correctly decipher the wireless messages sent by Jupiter and the other planets. Storms were sweeping over some other portions of the earth, and even over portions of this continent, not only on the specified storm days of the almanac, but also on all the days in October, and all other days in the year. So of course all long-range forecasts may be verified by allowance of a liberal range of time and locality. But—*cui bono*.

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 30.06 inches; highest observed, 30.54 inches at Dubuque on the 6th; lowest observed, 29.46 inches at Davenport and Dubuque on the 21st; range for state, 1.08 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 111 stations, was 53.1°, which is 1.0° above normal. By sections the mean temperatures were as follows: Northern section, 51.1°, which is 0.4° above normal; central section, 53.0° which is 1.6° above normal; southern section, 55.2°, which is 0.7° above normal. The highest monthly mean was 58.4° at Belknap; lowest monthly mean, 49.2° at Estherville. The highest temperature reported was 96° at Waukee on the 4th; lowest temperature reported, 16° at Earlham on the 27th. The average monthly maximum was 81.9°; average monthly minimum, 23 2°. Greatest daily range, 51° at Waukee; average of greatest daily range, 36.9°.

PRECIPITATION.—Average precipitation for the state as shown by records of 120 stations, was 1.67 inches, which is 0.73 of an inch below normal. The averages by sections were as follows: Northern section, 2.50 inches, which is .29 inch above normal; central section, 1.60 inches, which is .78 inch below normal; southern section, 0.90 inch, which is 1.73 inches below normal. The largest amount reported was 4 43 inches at Sioux Center; least amount reported, .14 inch at Bonaparte and Corydon. The greatest daily rainfall reported was 3.00 inches at Olin on the 9th. Average number of days on which .01 of an inch or more was reported, 6.

WIND AND WEATHER.—Prevailing direction of the wind, southeast, south, and northwest; highest velocity reported, 52 miles per hour from the northwest at Sioux City on the 21st. Average number of clear days, 15; partly cloudy, 8; cloudy, 8.

OBSERVERS' NOTES.

ALTA.—*David E. Hadden.* October rainfall occurred during the middle decade; last decade was ideal weather; frost on the 6th was only heavy in low places; first general killing frost came on night of 22d.

AMANA.—*C. Schadt.* Weather very favorable for ripening and drying corn, and a considerable part of the crop is harvested; despite apparently unfavorable season nearly all crops have been abundant; fall sown fields look green and healthy; first killing frost October 23d.

ATLANTIC.—*J. W. Love.* A very fine month for farm work; farmers husking corn and report heavy yield of good quality. Ducks made southward flight on 2d and wild geese the 4th.

BAXTER.—*W. L. Thorp.* Corn matured without damage by frost.

BONAPARTE.—*B. R. Vale.* A royal month for farm work and maturing the corn crop; rainfall 0 14 inch—the lowest record in years.

BRITT.—*Geo. P. Hardwick.* First killing frost here on October 6th, with but few mornings of frost temperature; corn husking begun the 25th, though much was unfit to crib.

CHARITON.—*C. C. Burr.* Month favorable for farm operations, and work is well advanced; some corn being cribbed.

CLINTON.—*Luke Roberts.* A very fine month with 20 clear days and no killing frost until 23d; rainfall only 0.59 inch—the least October rainfall in the last 26 years, except in 1897 when it was only 0.37 of an inch.

FOREST CITY.—*J. A. Peters.* Very little corn cribbed; not dry enough; first killing frost here October 6th.

GARDEN GROVE.—*F. L. Williams.* Very favorable month for ripening corn; but little in crib yet; pastures fine as in June; plowing well along.

GRINNELL.—*A. O. Price.* First killing frost October 23d; weather fine; corn dry enough to crib.

GRUNDY CENTER.—*E. S. King.* A remarkable month; best kind of weather for corn and harvesting potatoes; some begun to crib corn on the 19th.

HANLONTOWN.—*Miss G. M. Paschen.* Corn husking begun last week in October. About one third soft, one third sound, and balance rotten.

HUMBOLDT.—*H. S. Wells.* Corn all right and turning out good; pastures still good.

IDA GROVE.—*J. E. Conn.* An exceptionally warm and dry October; corn husking begun on the 20th.

INWOOD.—*G. M. Larsen.* A fine month. Good yield and quality of corn; considerable clover threshing.

LARRABEE—*H B. Strever.* Frost killed corn on 6th, but flowers were in bloom till 23d.

LEON—*M. F. Stookey.* Freezing temperature forming ice on night of 21st–22d. Not much frost on account of wind.

LOGAN—*Mrs. M. B. Stern.* A remarkable month for mildness; killing frost came later than usual.

OLIN—*Nathan Potter.* An ideal month for fall work; corn-picking began with better crops than usual.

RIDGEWAY—*Arthur Betts.* Coolest October since 1898; 212 hours sunshine; first killing frost on 6th; very heavy thunder on 10th, struck in several places.

SHELDON—*A. W. Beach.* First killing frost on 6th; corn all safe; husking generally begun on 24th.

STOCKPORT—*C. L. Beswick.* Least rainfall for any month since these records begun, over three years ago.

WAUKEE—*E. J. Leonard.* Fine month for maturing corn; no frost sufficient to kill tomato vines till 23d, and frost every night after that except one.

WHITTEN—*Frank P. Butler.* Morning of 23d ice formed; it was the first killing frost; the one the 6th was light.

ZEARING—*H. E. Burkhart.* Frost of the 6th did no damage; corn being cribbed last of month, and yield reported to average 50 bushels per acre.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Davenport	30.05	30.48	6	29.46	21
Des Moines	30.08	30 52	6	29.66	21
Dubuque	30.07	30.54	6	29.46	21
Omaha, Neb	30 05	30.46	6	29.64	19
Keokuk	30.06	30.44	6,14	29.57	21
Sioux City	30.05	30.48	6	29 70	9
Means	30.06	30.54	6	29.46	21

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Davenport	5.488	34	NW	21
Des Moines	6.362	34	NW	21
Dubuque	4.702	29	NW	21
Keokuk	5.986	40	NW	21
La Crosse, Wis	5.525	29	N	21
Omaha, Neb	6.570	40	N	19
Sioux City	10 545	52	NW	21

BELATED REPORTS.

SIGOURNEY—*August*. Mean temperature 70.8°; highest 95° on the 13th; lowest 46° on the 8th; greatest daily range 36°; total precipitation 3 62 inches; greatest in 24 hours 1.47 inches; prevailing direction, northwest. Number of clear days 18, partly cloudy 9, cloudy 4, rainy 8.

SIGOURNEY—*September*. Mean temperature 65.6°; highest 94° on the 10th; lowest 36° on the 15th; greatest daily range 33°; total percipitation 2.99 inches; greatest in 24 hours .69 inch; prevailing direction, southwest. Number of clear days 5, partly cloudy 17, cloudy 8, rainy 10.

ROCKWELL CITY—*September*. Mean temperature 62.2°; highest 90° on the 28th; lowest 38° on the 14th, 15th, 19th; greatest daily range 42°; total precipitation 1.75 inches; greatest in 24 hours .55 inch. Number of clear days 14, partly cloudy 10, cloudy 6, rainy 4.

WAPELLO—*September*. Mean temperature 67.6° highest 89° on the 17th; lowest 40° on the 15th; greatest daily range 31°; total precipitation 4.24 inches; greatest in 24 hours 1 51 inches; prevailing direction, southeast. Number of clear days 16, partly cloudy 11, cloudy 3, rainy 6.

AFTON—*September*. Mean temperature 65.2°; highest 86° on the 1st, 10th, 28th; lowest 35° on the 15th; greatest daily range 34°; total precipitation 2.80 inches; greatest in 24 hours 1.08 inches; prevailing direction, southwest. Number of clear days 15, partly cloudy 9, cloudy 6, rainy 7.

MAQUOKETA—*September*. Mean temperature 62.0; highest 90° on the 10th; lowest 30 on the 15th; greatest daily range 44°; total precipitation 3 99 inches; greatest in 24 hours 1 52 inches; prevailing direction, northwest. Number of clear days 11, partly cloudy 5, cloudy 14, rainy.

ERRATA IN SEPTEMBER REVIEW.

CHARITON.—Maximum temperature recorded on the 28th, page 7, should have been 10th and 28th.

CRESCO—Mean temperature recorded 60.4° on page 7, should have been 60.8°.

CLARINDA.—Maximum temperature recorded on the 29th, page 7, should have been the 28th.

ESTHERVILLE.—Maximum temperature recorded on the 18th, page 7, should have been the 17th.

SIOUX CENTER.—Mean temperature recorded 61.2° on page 7, should have been 61.0°. Mean Maximum temperature recorded 74.5° on page 10, should have been 74.1°

CLIMATOLOGICAL DATA FOR OCTOBER, 1904.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	50.4	-0.2	76	9	22	27	35	1.47	- .63	.51	....	7	18	8	5	NW	
Alta	Buena Vista	1,513	11	50.6	-0.2	78	3, 4	25	25, 27	36	2.48	†.29	.83		10	11	12	8	S	8, 10, 17
Alta (near)	Buena Vista	.....	....	.....	.....	.....	.....	.....	.....	.....	2.45	.....	.92	....	7	....		...		
Britt	Hancock	1,236	5	50.9	-0.8	78	9	22	23, 27	38	1.65	- .53	.51	..	9	7	16	8	S	
Charles City	Floyd	1,012	11	49.4	-1.2	78	9	21	27, 28	39	1.94	- .10	.72	....	11	12	6	13	SE	
Cresco (e)	Howard	.....	....	52.2	† 46	76	10, 11	25	27	27	2.25	- .12	.80	...	5	..		....		
Decorah	Winneshiek	857	..	51.6	†0.9	88	10	23	26	37	.....	.....	.....	.....	.....	.....		....		
Dows	Wright	1,142	....	51.3	-1.3	79	4	20	27	38	2.13	- 22	.66	T	7	19	4	8	NW	17
Elkader	Clayton	727	21	51.8	†2.3	82	17	20	27	43	1.74	-1.01	.66		6	12	13	6	NW	4, 9
Estherville	Emmet	1,298	7	49.2	†0.1	77	3, 8, 16	22	6	41	2.85	†1.23	1.10	..	8	12	5	14	NW	
Florence	Wright	1,226	8	.....	.....	.....	.....	.....	.....	.....	1.69	.....	.80	....	9	3	7	21	SW	19
Forest City	Winnebago	1,226	8	51.0	†0 5	88	3	24	23, 27	48	1.89	- .48	.78	....	6	15	3	13	W	
Grand Meadow	Clayton	1,180	11	50 8	†0.8	76	9	25	27	24	3.09	† .52	1.30	....	6	7	9	15	SE, SW	
Greene	Butler	924	5	51.6	-.20	78	4	23	27	36	2.34	† .20	.63	....	7	8	12	11	SW	
Hampton	Franklin	1,155	12	53.2	†.26	86	4	23	27	36	2.13	- .50	.88	....	7	12	15	4	NW	
Hanlontown	Worth	.....	....	50.0		79	17	20	27	43	2.23	.....	.82	....	6	15	5	11	NW	9
Humboldt	Humboldt	1,095	10	52.3	†.26	77	9	22	27	38	1.59	- .14	.88	....	8	14	9	8	NW	
Inwood	Lyon	.....	....	50.6		80	3	26	22, 25, 26	35	4.34	.....	.....	....	7	15	3	13	S	
Larrabee	Cherokee	1,366	11	51.8	†1.3	81	3, 16	24	27	37	3.18	†1.34	1.25	....	7	12	11	8	SW	9, 18, 19
LeMars	Plymouth	1,224	6	51.1	-1.4	82	3	20	27	38		.....	.....	..	...	9	16	6	S	10
Mason City	Cerro Gordo	1,132		51.0		75	9	27	6	32	1.85	.....	.52	..	8	8	15	8	SE	17, 19
New Hampton	Chickasaw	1,169		50.6	-2.9	77	1	24	27	32	2 34	- .21	1.20	....	7	13	9	9	S	9, 19
Osage	Mitchell	1,184	11	49.8	†2.9	76	9	24	27	33	2.08	- 35	.64	....	9	7	10	14	NW	
Pocahontas	Pocahontas	.....		52.0		78	9	25	25, 27	36	2 40	.....	.80	....	7	15	5	11	S	
Plover	Pocahontas	1,190	5	50.8	-1.5	78	9	24	23, 25, 27	39	2.62	† .31	1.03	....	7	13	7	11	W	8, 9
Ridgeway	Winneshiek	1,215	....	51.8	-2.1	80	7, 8	25	27	30	2.71	-1.17	.82	....	12	12	15	4	S	3, 7, 9, 10, 17, 19
Rock Rapids	Lyon	1,021	....	51.0	†3.5	78	4, 16	25	6	40	2.65	†. 90	1.35	....	3	....	....	....		
Sheldon	O'Brien	1,422	....	52.4	-1.0	85	3	22	27	45	3.86	†1.86	1.45	..	9	18	7	6	S	10
Sibley (b)	Osceola	1,512	....	51 1	†0.2	81	2, 3	22	25, 26	40	3.96	†2.29	1.72	....	12	....	....		SE, NW	
Sioux Center	Sioux	.....	....	51 3	-1.9	82	3	26	25, 27	40	4.43	†2.87	1 85		8	14	7	10	S	
Storm Lake	Buena Vista	1,440	7	50.4	-5.1	79	4	26	25, 27	36	3.09	†1.33	1.04		9	14	3	14	NW	
Washta	Cherokee	1,157	....	.....	.....	.....	.....	.....	.....		2 50	† .53	1.00	..	4	20	7	4	SE	
Waverly	Bremer	942	6	52 4	-1.0	79	9	23	27	36	1.68	- .96	.53	...	9	12	10	9	S	7, 9, 17, 19
Average		.....	....	51.1	†0.4	79.6	.....	23.3	.....	36.9	2.50	†0.29	.....	T	8	12	9	10	S, NW.	

SOUTHERN SECTION.

Afton	Union	1,212	7	.....	....	.....	.....		.....	.....	.85	.....	.61	....	3	....	...	...	.....	
Albia	Monroe	957	...	53.7	...	82	4	24	27	41	.21	.....	.06	....	5	16	3	12	SE	
Allerton	Wayne	.....	....	55 4	.....	84	4	23	27	40	.52	.....	.35	....	6	20	5	6	NW	5
Atlantic	Cass	1,164	11	52.4	†0.4	85	4	19	27	47	1.40	-1.24	.70	...	3	10	8	13	SW	18
Bedford	Taylor	.....	....	55.9	.....	85	4	23	23	40	.58	....	.29		5	17	3	11	SE	
Belknap (h)	Davis	877	7	58.4	†2.8	82	8	32	23, 27	32	.....	.....		....	...		...		.....	
Bonaparte	Van Buren	.....	10	54.6	-1.1	83	9	26	23, 27	39	.14	-1.68	.14		1		..	...	.....	
Burlington	Des Moines	544	....	55.8	.....	83	9	28	23, 27	38	.43	.....	.39	...	4	22	3	6	NW	18, 21
Chariton	Lucas	1,042	7	54.8	†0.0	84	4	24	23, 27	39	.45	2 37	.45	....	1	20	6	5	SE	
College Springs (b)	Page	.....	10	56 6	-1.1	85	4, 8	27	27	35	1.34	-1.77	.70	....	4	21	3	7	SE	
Columbus Jct	Louisa	596	....	53 1		81	9	25	27	31	.74	....	.40	T	3	25	6	0	SW	4, 5, 19
Corning	Adams	1,127	10	54.6	†0.6	83	4	22	27	39	2.13	- .43	1.65	....	5	15	9	7	SE	19
Corydon	Wayne	992	9	56.4	†1.3	88	18	23	27	42	.14	-2.73	.09	....	4	19	7	5	NW	
Clarinda	Page	1,069	....	54.4	-0.2	90	5	25	27	44	1.72	-1.07	.97	..	7	19	0	12	S	
Cumberland	Cass	.....	...	. ..	.....	.....	.....	..	.....	.....	1.32	....	1.00	....	3	22	2	7	S	
Fort Madison	Lee	516	51	.....	.....		.....	.....	.....	.....	.52	-2.23	.27	..	2	11	12	8	SW	5, 19
Glenwood	Mills	.....	15	56.2	†0.3	85	4	26	27	35	.45	-2.13	.35	...	2	12	12	7	SW	
Greenfield	Adair	.....	11	54.1	†0.5	83	4	24	27	34	1.49	- .81	.91	....	9	21	5	5	S	18
Hopeville	Clarke	.....	11	55.1	†0 4	85	4	26	27	34	.90	-1.53	.42	....	5	14	10	7	S	
Indianola (a)	Warren	969	11	54.0	-0.2	80	4, 17	24	27	34	1.09	- .97	.50	...	6	....	....		NW	4, 19
Keokuk	Lee	619	31	56 5	†2.4	82	9	32	27	29	.30	-2.46	.28		2	14	12	5	SW	5, 8, 19
Keosauqua	Van Buren	664	10	53.5	-2.6	82	9	25	27, 28	39	.39	-1.51	.18	....	3	9	11	11	.. ..	
Lacona	Warren	.....	...	.....	.....	.....		.....	.....	.....	1.20	.	.63	....	5	11	9	11	.....	
Lenox	Taylor	1,250	7	54.6	†0.3	85	4	25	27	31	1.03	-1.96	.50	....	5	22	3	6	S	
Leon	Decatur	1,120	....	54.4		80	4	25	27	31	.74	.....	.41		3	17	5	9	S	
Mount Ayr	Ringgold	1,236	6	56.8	†1.5	86	4	26	27	39	1.08	-1.31	.35	....	8	18	9	9	NW	
Mount Pleasant	Henry	729	20	54.0	†3.4	82	9	28	27	30	.43	-1.65	.23	....	4	15	11	5	SE	18
Omaha, Neb	Douglas	1,113	32	56.6	†3.7	87	4	32	27	32	1.40	-1.07	.53	....	9	12	6	13	S	8, 9, 17, 18
Osceola	Clarke	1,130	6	57 4	†2.8	86	4	27	23	41	.27	-2.80	.22	....	2	20	6	5	S	
Oskaloosa (c)	Mahaska	843	18	54.9	†3.0	82	4	25	23, 27	37	.....	.....	.....	....	....		....	....	.....	
Pacific Junction	Mills	960	...	55.2	.....	87	4	22	27	36	1.07	.....	.33	....	6	13	12	6	S	18
Red Oak	Montgomery	1,033	...	56.2	-1.1	81	4	30	27	32	2.00	-1.20	1.38	....	7	10	16	5	SE	4, 18, 19
St. Charles	Madison	1,070	....	56.2	.....	89	4	24	27	35	1.50	....	.70	....	8	25	0	6	NW	5
Stockport	Van Buren	.....	...	55.2	.....	81	9	27	27	33	.34	.....	.30	T	3	16	8	7	NW	
Thurman	Fremont	.....	....	55 4	-0.9	86	4	22	27	39	2.44	-1.60	1.08	....	5	15	7	9	SW	4, 18, 19
Wapello	Louisa	588	5	53.9	-2.3	78	9	29	27	26	.77	-1.45	.40	T	3	16	13	2	SE	19, 20
Washington	Washington	769	20	53.9	-0 1	82	9	26	27	36	.54	-1.59	.34	..	3	....	....	....	SW	
Winterset	Madison	1,129	11	55.2	†1.5	90	4	20	27	39	1.00	-1.37	.49	....	5	16	6	9	SW	
Woodburn	Clarke	961	....		.....	.....	.....	...	.....	.....	.50	.	.35	....	2	19	2	10	NW	
Average		.....	....	55.2	†0.7	83 9	.....	25 4	.....	36.0	0.90	-1.78	.....	T	4	17	7	7	SE S, Sw, NW	
Average for state		.....	....	53.1	†1.0	81.9	.....	23.2	.....	36.9	1.67	-0.73	.....	T	6	15	8	8	SE S, NW	

CLIMATOLOGICAL DATA FOR OCTOBER, 1904—CONTINUED.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted)		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Amana	Iowa	721	25	52.6	†3.0	79	9	22	27	36	1.00	-1.74	.42	....	7	18	9	4	SE	5,9
Ames	Story	926	20	53.6	†2.7	84	4	23	27	39	1.78	- .74	.86	....	5	17	6	8	NW	
Audubon	Audubon	1,301	8	53.0	†1.8	87	4	19	27	44	1.82	- .41	.52		7	17	5	9	NW	9,17,19
Baxter	Jasper.	998	...	53.0	.....	83	4	23	27	36	1.40	.....	.50	....	5	14	9	8	SE	
Belle Plaine	Benton	826	12	52 3	†1.7	81	4	22	27	37	1.55	- .73	1.04	T	5	12	14	5	SE, W	
Buckingham	Iowa	....	....								1.83	.....	.45		9	11	17	3	.....	
Carroll	Carroll	1,265	12	52.7	†1.4	85	4	24	27	42	1.99	- .27	.72	....	7	19	3	9	.....	17,18
Cedar Rapids	Linn	733	19	52.8	†1.3	82	9	25	27	36	1.04	-1.55	52	....	5	13	11	7	NW	
Clinton	Clinton	609	34	51.8	†1.4	83	9	26	23,29	3[illegible]	.59	-1.82	.26	....	4	20	9	2	SW	4
Davenport	Scott	606	31	54.4	†2.3	81	9	30	27	33	1.15	-1.47	.64	....	5	16	10	5	SW	5,19
Delaware	Delaware	1,083	11	50.4	†1 4	78	4,9	22	27	33	2.62	† .40	.96	....	7	14	16	1	SE, SW	5,9,10,19
Denison (a)	Crawford.	1,180	8	53 3	†2.5	85	4	20	27	41	1 41	-1 00	.57	...	7	....	....	....	S	
Des Moines.	Polk	861	24	54.6	†2 4	86	4	28	27	33	1.50	-1.51	.40	....	10	10	11	10	SW	4,5,8,19
De Soto	Dallas	866		54.9		88	4	22	27	38	1.57	.....	.88	....	7	19	2	10	SE	
Dubuque	Dubuque	655	29	52.8	†2.2	80	9	29	27	32	3.18	†1 47	1.13		10	6	13	12	S	4,5,9,10
Earlham (f)	Madison,	.....	....	52 8	.....	85	4	16	27	37	1.55	.....	.86	....	7	....	....	....	.....	5
Fort Dodge	Webster.	1,126	....	51 5	.....	77	9,16	22	27	37	2.08	.....	.70	....	10	18	3	10	SE	5
Galva	Ida	1,290	8	.....	....	.....	.....	19	27	.....	2.93	†1.26	1.35		8	19	3	9	.....	9
Gilman	Marshall	1,052		....	.....	.....	.....	.....	.....	.....	.76	.....	.25	....	5	15	10	6	S	
Grinnell	Poweshiek	1,023	9	53.6	†1.3	81	4	25	27	30	.64	-1.81	.30	....	5	17	6	8	SW	19
Grinnell (near)	Poweshiek	.....	....	53.8		82	17	24	27	33	.83	.....	.35	....	4	12	10	9	S	6,10,20
Grundy Center	Grundy	976	11	52.8	†1.4	81	4	23	27	38	1.70	- 99	.71	..	8	14	5	12	SE	4,5
Guthrie Center	Guthrie	1,077	6	54.0	†1.5	84	4	22	27	39	2.68	† 46	.98	....	10	21	4	6	NE	4,9,18
Harlan	Shelby	1,192	....	53.0		84	4	20	27	40	.92	.....	.20		8	14	6	11	S	10,17,18,19
Ida Grove	Ida	1,220	....	52.2	.....	80	4	20	27	39	1.40	.....	.60	....	4	17	8	6	S	
Independence	Buchanan.	921	38	51.5	†3.3	80	4	23	27	41	1.89	- .48	.50	....	6	19	7	5	S	9,10,19
Iowa City	Johnson.	683	45	53.2	†2.1	81	4,9,17	24	27	41	1.59	- .95	.60		6	18	2	11	N	
Iowa Falls	Hardin	1,170	90	50.4	†0.1	79	9	19	27	38	1.92	- .38	.82	....	8	14	4	13	NW	5,8,9,17,18
Little Sioux	Harrison	.....	....	55.6	.....	89	4	23	27	46	1.34	.....	.54	....	8	16	8	7	SE	1,17
LeClaire	Scott	576	...	.....	.....	.....	.....	.....	.....	.....	.87	.....	.41		4	....	....	....	N, SW	
Logan	Harrison	928	35	53.5	†1.2	85	4	22	27	40	1.53	- .92	.48	..	5	17	4	10	NW	
Maquoketa	Jackson.	688	9	51.0	-3 4	81	9	20	27	47	1.83	-1.11	1.01	....	6	14	11	6	SW	
Marshalltown	Marshall	947	9	51.6	-1.4	85	4	22	27,28	44	1.73	- .74	.45	....	9	15	4	12	SE	
Muscatine	Muscatine.		...	.....		.....	.....	.....	.....	.....	1.00	-2.04	.65	....	4	....	....	....	S	
Mt. Vernon	Linn	847	35	52.8	-0 8	80	17	24	27	41	2.49	† .09	1.30	....	6	18	7	6	W	
Odebolt	Sac	1,356	5	52 5	-2.9	80	4	21	27	35	1.24	- .97	.38	....	6	19	6	6	.....	
Ogden	Boone	1,088	8	53.4	‡0.0	83	4	25	23,27	33	1.53	-1.13	.72	....	3	19	2	10	S	
Olin (a)	Jones	760	....	52.4	†0.5	79	9	26	23	37	3.78	†1.36	3.00	....	5	15	11	5	E	
Onawa	Monona	1,053	....	55.7		85	4	29	27	36	2.07	- .32	.95	...	8	21	4	6	SE	17
Perry	Dallas	975	...	53.4		84	4	23	27	37	2.01	.....	.65	..	7	13	6	12	.....	
Rockwell City	Calhoun.	....	....	52.0	-0.7	80	9	25	25,27	35	1.88	- .70	50	....	6	16	7	8	.....	
Sac City	Sac	1,278	22	52.3	†2.4	78	4	24	27	35	1.18	-1.38	.30	....	8	17	5	9	SW, NW	
Sioux City	Woodbury.	1,165	13	53.5	†2.5	84	3	30	23	36	2.39	† .69	.17	....	6	14	8	9	N	18,19
Stuart	Guthrie	1,316	5	54.1	-2.3	82	4	26	27	30	2.17	- .81	.98	....	4	3	15	13	W	
Tipton (a)	Cedar	807	....	54.1	.....	80	9,17	27	23	34	.89		.44	....	3	17	13	1	SW	
Toledo	Tama	856	8	53.2	†0.7	82	4	19	27	42	1.10	- 77	.40	T	6	14	7	10	NW	
Vinton	Benton	810	12	54.5	†2.9	81	4,5	19	27	44	1.35	- .25	.92	....	3	17	7	7	SW	
Waterloo	Black Hawk.	862	15	53.8	†4.1	81	4,17	23	27	41	1.24	-1.08	.56		9	17	8	6	W	4,19
Waukee (a)	Dallas.	1,039	....	56.0	.....	96	4	24	27	51	1.07	.....	.63	....	6	20	7	4	S	
Wilton Junction	Muscatine.	683	7	53.4	†0.6	84	9	24	27	37	.94	-1.13	.66	....	4	23	5	3	NW	
Whitten	Hardin	1,036		51.7	-1.2	79	9	21	27	33	1.50	-1.12	.55	....	6	9	13	9	NW	5,9,19
Zearing	Story	718		52.6	.....	83	4	21	27	36	1.01	.....	.58	....	6	16	7	8	SE	19
Average	.....	.....	....	53.0	†1.6	82.3	.....	21 0	.....	37.9	1.60	-0.78	.....	T	6	16	8	7	SE	

† Above normal. ‡ Received too late to be computed with means. *a*. One day missing; *b*, two days, etc. § Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR OCTOBER, 1904.

STATIONS.		DATE.																														MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Albia	Max	71	75	75	82	58	56	66	73	80	74	71	66	67	55	69	77	79	77	62	57	56	52	57	54	54	57	54	66	68	64	71	65.9
	Min	48	48	46	51	53	32	37	42	52	63	46	40	41	43	41	43	54	50	50	42	46	35	28	44	28	28	24	25	36	35	36	41.5
Algona	Max	70	62	72	68	61	50	57	62	76	67	60	62	64	57	65	75	73	69	57	56	51	49	53	47	47	45	50	62	65	61	68	60.7
	Min	50	48	41	51	38	26	43	50	53	52	40	37	43	47	45	51	49	49	43	38	40	36	23	40	23	32	22	37	30	32	36	40.2
Allerton	Max	71	68	75	84	71	55	67	83	80	77	73	79	67	57	70	77	80	77	67	59	55	51	57	53	50	56	57	68	72	71	75	67.8
	Min	50	48	51	59	48	33	42	59	65	59	43	49	42	45	42	43	54	47	44	40	42	33	26	41	27	32	23	31	34	36	35	43.0
Alta	Max	70	66	78	78	57	46	61	64	74	65	59	66	63	59	69	76	70	57	48	54	51	48	56	47	50	46	49	64	66	65	67	60.9
	Min	45	46	42	54	34	31	45	49	53	46	42	38	47	49	46	57	46	47	38	36	37	30	27	36	25	32	25	38	40	35	41	40.4
Amana	Max	72	69	69	78	71	54	62	74	79	76	65	62	63	62	64	73	77	73	63	54	53	48	52	54	46	55	50	61	64	59	65	63.5
	Min	49	47	38	56	46	32	42	58	66	56	46	38	38	40	43	49	55	49	49	41	42	38	25	42	30	32	22	30	28	36	31	41.7
Ames	Max	71	71	74	84	64	50	61	75	83	71	63	65	68	54	69	82	79	77	68	62	62	52	56	53	48	54	52	65	67	64	70	65.6
	Min	47	46	41	54	41	31	44	59	65	55	41	36	42	46	41	51	52	47	47	40	44	36	24	39	28	34	23	39	30	34	31	41.5
Atlantic	Max	68	70	77	85	72	50	62	75	68	61	66	69	68	58	72	75	77	69	56	58	53	50	60	52	49	55	54	66	70	72	72	64.8
	Min	48	45	47	50	42	32	47	57	65	54	36	34	46	49	44	56	46	46	41	40	41	32	20	40	30	28	19	35	23	25	26	40.1
Audubon	Max	69	70	78	87	71	51	63	75	77	70	66	68	69	61	72	78	74	70	57	57	52	50	60	52	51	52	53	67	66	70	70	65 4
	Min	49	47	44	54	46	31	47	59	64	57	38	32	46	50	43	55	47	44	44	39	44	32	22	41	26	32	19	32	24	26	26	40.6
Baxter	Max	70	70	72	83	75	53	60	73	78	72	68	68	65	57	66	77	77	75	64	57	53	50	54	52	47	55	50	60	65	63	70	64.5
	Min	47	46	39	55	45	31	41	58	65	55	43	39	41	45	46	53	54	48	45	40	42	35	24	40	27	32	23	33	32	34	34	41.4
Bedford	Max	71	79	75	85	75	53	66	82	76	71	75	70	70	63	73	76	78	74	68	70	55	50	59	55	50	57	53	65	70	71	74	68.0
	Min	50	42	52	61	49	38	39	60	67	60	39	43	48	50	44	54	55	50	49	55	45	31	23	39	29	31	25	30	30	35	35	43.8
Belknap	Max	70	74	76	79	..	60	69	82	80	76	76	..	..	..		..	..	..	70	64	56	52	55	65	60	60	60	65	70	73	70	67.9
	Min	51	54	55	62	55	40	58	61	69	70	56	49	..	..	..	..	..	..	60	44	45	39	32	48	36	40	32	40	43	41	44	49.0
Belle Pl'e	Max	70	69	69	81	55	55	62	74	78	75	65	63	65	64	65	75	78	74	64	57	52	48	53	54	47	55	49	60	65	60	68	63.5
	Min	48	49	40	45	50	33	42	50	55	65	45	40	42	43	42	46	53	50	52	40	42	37	23	40	26	30	22	30	28	33	32	41.1
Bonapar'e	Max	73	76	73	82	70	58	68	78	83	81	72	66	66	64	68	78	80	77	65	55	57	48	57	65	50	56	54	67	68	60	71	67.0
	Min	48	46	45	54	46	36	40	65	65	58	49	40	40	41	45	47	54	48	48	43	43	36	26	33	29	31	26	28	30	35	36	42.2
Britt	Max	71	61	70	68	62	63	67	65	78	69	58	63	66	54	67	76	74	74	59	55	51	49	52	48	49	45	49	61	66	61	68	61.9
	Min	54	47	40	53	36	27	42	50	53	51	37	49	41	47	44	53	48	49	46	36	40	37	22	36	24	29	22	27	28	36	34	39.9
Burling'n	Max	74	76	73	80	70	61	67	76	83	81	73	67	69	65	70	73	80	78	63	51	56	50	57	57	51	58	54	65	68	60	72	67 0
	Min	50	49	46	52	51	39	41	56	66	64	52	48	45	42	43	48	57	52	50	42	45	39	28	45	31	35	28	34	35	38	34	44 7
Carroll	Max	71	68	78	85	55	51	64	72	77	64	64	67	68	61	71	78	74	69	60	60	55	54	56	52	56	42	53	68	68	72	72	64 7
	Min	45	49	42	55	45	31	45	59	60	57	40	34	45	44	43	56	46	45	50	38	41	30	25	30	28	31	24	32	26	30	36	40.7
Cedar R.	Max	75	69	71	81	58	56	65	77	82	73	66	63	65	63	67	76	81	77	64	55	51	49	52	53	45	54	52	62	64	61	69	64 4
	Min	51	50	40	41	50	35	34	44	44	68	50	43	43	43	42	46	54	53	53	42	41	39	29	29	32	32	25	28	30	31	35	41.1
Chariton	Max	70	76	76	84	72	55	68	80	80	72	72	69	66	56	70	77	80	77	66	49	55	50	56	54	49	56	55	67	71	69	74	67.1
	Min	49	46	49	58	49	33	42	60	66	58	41	38	42	45	41	53	50	46	47	41	44	34	24	42	27	31	24	31	32	35	38	42 5
Charles C.	Max	71	62	66	78	52	55	60	67	78	64	61	60	65	55	65	75	74	73	59	56	57	50	59	52	54	49	49	60	66	59	67	61 7
	Min	41	42	37	37	48	25	25	40	54	61	42	38	37	44	45	45	50	48	48	38	40	37	24	24	29	25	21	21	27	27	32	37.2
Clarinda	Max	70	80	79	90	59	54	67	84	76	67	75	76	75	61	75	79	80	73	51	61	47	53	62	54	53	59	57	68	73	75	79	67.8
	Min	49	45	49	58	51	40	41	48	60	59	41	41	48	41	43	45	53	45	47	36	40	31	26	31	30	31	25	27	30	31	32	41 1
Clinton	Max	73	65	69	78	60	56	65	75	83	78	62	60	63	63	65	73	72	77	72	50	52	48	59	55	50	55	49	61	64	58	65	63.7
	Min	45	43	37	48	46	35	44	55	54	52	49	40	39	32	41	43	52	43	44	41	39	33	26	40	29	33	27	28	26	35	34	39.8
Col. Sprgs	Max	66	76	77	85	70	56	..	85	79	73	74	70	73	72	74	79	79	73	..	64	62	55	64	62	52	56	53	66	67	70	69	69.0
	Min	47	47	50	60	50	41	47	57	67	55	44	43	49	47	45	55	55	51	41	36	45	52	29	44	29	34	27	31	38	39	39	44.3
Colum. J.	Max	69	67	68	77	69	56	64	77	81	77	67	64	64	63	65	72	76	75	64	52	55	48	53	54	48	55	49	62	65	59	67	64.0
	Min	49	47	41	52	49	34	34	58	65	59	57	38	41	41	41	48	55	49	49	40	40	34	28	43	29	33	25	31	35	34	33	42.2
Corning	Max	66	75	75	83	73	53	65	79	76	71	69	68	68	60	70	76	75	72	61	59	54	49	58	54	49	54	52	62	66	68	68	66.4
	Min	50	54	51	61	46	36	43	62	66	53	49	48	46	50	44	55	55	50	44	39	43	33	25	43	27	30	22	33	27	35	36	43.7
Corydon	Max	72	79	75	83	76	54	66	82	80	73	75	70	68	60	71	78	81	88	70	60	59	58	57	56	52	62	56	69	75	72	75	69.4
	Min	50	46	51	60	50	32	42	60	66	58	44	38	43	45	42	54	55	47	45	42	45	43	26	40	26	34	22	32	33	35	39	43.4
Cresco	Max	70	65	61	70	65	53	60	63	75	76	76	..	..	70	64	73	72	72	69	60	55	52	50	45	49	40	45	..	..	..	65	62.1
	Min	49	48	39	54	45	26	39	58	53	55	43	..	..	39	46	51	53	52	48	38	38	26	27	35	38	28	25	..	..	..	50	42.4
Davenport	Max	73	66	69	78	69	54	64	74	81	78	67	60	61	60	66	75	78	76	64	51	53	46	52	54	47	55	50	62	68	58	68	63.8
	Min	52	50	46	55	46	37	42	59	69	56	52	46	46	44	44	52	60	56	48	42	42	37	32	41	32	36	30	37	37	37	35	45.1
Decorah	Max	72	73	68	70	60	54	70	75	73	88	62	59	61	61	64	74	75	63	58	52	48	51	48	39	46	48	59	55	63	60	69	61.9
	Min	48	48	46	39	35	27	56	55	54	54	52	39	44	43	48	55	48	53	41	39	38	28	41	32	28	23	34	36	34	33	32	41.2
Delaware	Max	73	61	66	78	68	53	61	75	78	73	62	55	60	60	63	72	75	72	66	50	46	45	49	49	43	51	46	57	62	55	63	60.9
	Min	45	47	37	52	42	31	40	53	58	56	49	39	38	39	42	47	53	48	47	38	37	34	26	40	26	29	22	32	32	31	30	40.0
Denison	Max	69	69	79	85	70	49	63	78	77	72	65	69	65	62	..	78	74	67	56	57	54	49	60	55	61	52	52	65	67	71	71	65.4
	Min	45	49	43	57	45	30	47	56	64	57	37	33	50	50	.	47	47	51	42	39	42	32	23	41	27	32	20	34	26	30	40	41.2
Des M	Max	71	71	75	86	64	51	64	75	78	68	67	65	65	54	69	78	78	76	62	58	54	51	56	53	49	56	53	64	66	63	71	64.9
	Min	50	51	48	58	43	37	45	62	66	56	45	41	44	46	42	55	55	53	43	42	42	36	29	42	31	36	28	35	34	38	38	44 2
De Soto	Max	74	71	77	88	74	51	64	75	79	70	69	68	68	58	76	83	81	80	62	58	55	52	58	54	52	56	54	66	65	65	72	66 9
	Min	50	50	45	57	45	33	45	60	67	58	43	36	44	48	43	55	55	49	46	41	44	36	26	41	28	35	22	31	29	32	34	42.9
Dows	Max	78	70	78	79	64	50	55	65	78	70	62	62	64	56	66	76	75	73	62	56	51	49	51	49	45	50	49	62	68	62	69	62.6
	Min	46	42	40	56	39	27	42	52	56	53	40	38	41	46	45	52	50	48	48	37	40	37	23	37	25	30	20	31	29	34	36	40.0
Dubuque	Max	75	63	65	78	59	53	61	76	80	72	63	57	57	59	64	73	79	73	61	51	51	46	51	51	44	51	49	59	63	50	68	61.4
	Min	50	50	43	54	43	36	43	55	61	56	51	48	44	42	46	53	61	53	48	41	40	38	34	40	34	33	29	38	33	36	36	44.2
Earlham	Max	70	71	75	85	72	50	62	75	76	70	67	66	67	57	71	76	..	..	..	..	..	..	71	51	49	54	53	64	68	70	71	66.4
	Min	45	45	44	56	46	29	43	58	63	56	39	30	39	45	39	51	..	..	..	..	..	..	23	30	25	32	16	32	24	33	35	39.1
Elkader	Max	76	68	65	78	55	58	60	79	80	70	67	60	64	59	69	77	82	77	57	52	48	47	52	50	40	54	52	64	70	58	71	63.2
	Min	42	49	37	53	43	28	43	52	54	57	52	39	40	37	45	50	57	45	52	40	40	36	26	40	29	29	20	30	27	31	29	40.4
Esthervil.	Max	75	62	77	70	50	48	60	77	71	59	60	64	64	56	67	77	74	57	47	56	51	52	54	46	48	38	50	63	69	62	73	60.5
	Min	47	46	36	44	40	22	29	45	52	50	39	32	35	45	47	51	50	51	46	38	40	35	24	37	24	30	23	28	29	28	32	37.9
Forest C'y	Max	75	65	88	73	49	54	58	65	81	57	61	62	67	63	67	79	75	75	58	55	49	48	50	46	44	44	49	64	70	68	68	61.8
	Min	46	48	40	57	44	26	35	45	53	56	39	39	41	44	45	48	49	51	50	37	40	37	24	37	25	29	24	28	32	35	38	40.1
Ft. Dodge	Max	71	66	75	71	53	49	62	72	77	59	59	65	65	55	69	77	74	73	60	56	52	50	55	49	48	49	.2	62	67	71	68	62.3
	Min	48	48	43	45	48	30	32	36	56	58	43	42	42	49	45	47	53	47	48	40	42	38	28	35	28	28	22	25	30	42	43	40.7
Galva	Max	..	.	..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
	Min	43	43	41	52	40	26	45	45	54	49	35	35	48	49	45	56	44	49	40	36	43	32	23	40	23	31	19	29	24	28	33	38.7
Glenw'd	Max	67	75	78	85	79	52	67	80	77	73	69	71	64	71	72	77	76	64	52	58	55	49	65	60	51	54	53	63	67	72	72	66.7
	Min	48	49	50	62	47	40	49	67	67	57	45	47	50	57	47	58	55	53	40	37	47	33	30	45	31	34	26	36	36	39	41	45.8
Grand M.	Max	70	60	65	72	68	54	56	70	76	68	62	58	62	56	62	73	75	73	65	52	48	45	49	49	40	48	46	56	59	55	65	59.8
	Min	47	48	40	54	40	30	41	53	56	56	50	41	43	42	45	51	51	50	50	39	39	36	37	38	28	30	25	36	39	32	31	41.9
Greene	Max	72	64	67	78	67	55	75	68	77	69	60	63	65	55	65	76	76	74	66	55	54	48	51	47	42	48	50	62	66	58	68	62.6
	Min	45	49	38	55	46	27	43	51	55	55	42	38	41	44	44	52	52	48	52	38	40	38	26	37	28	29	23	32	30	32	32	40.7
Greenfi'ld	Max	67	72	76	83	74	52	63	78	77	69	64	67	67	58	71	75	78	75	50	59	55	51	57	46	52	54	53	67	66	69	70	65.0
	Min	47	47	48	58	44	34	45	59	66	51	44	45	48	48	43	55	52	51	44	40	44	32	28	40	26	31	24	34	35	35	46	45.2
Grinnell	Max	70	69	69	81	75	53	61	71	78	71	66	63	63	55	65	75	76	74	67	55	52	50	52	71	46	54	49	58	64	59	68	65.8
	Min	49	49	43	58	45	33	42	57	66	57	47	43	42	42	41	52	56	51	47	41	44	36	29	42	29	29	25	35	37	36	42	48.4
Grinnell(near	Max	73	72	72	57	80	76	52	52	75	80	75	72	64	67	69	78	82	68	78	73	57	52	58	54	50	57	52	64	67	61	72	66.4
	Min	47	47	43	43	45	43	32	35	50	66	55	43	42	40	43	51	55	41	49	47	29	35	25	42	27	32	24	33	35	34	45	41.2
Grundy C	Max	73	69	70	81	71	54	60	77	78	70	64	62	64	54	64	76	79	76	66	66	53	52	51	52	46	56	51	62	66	61	70	64 4
	Min	47	48	39	57	43	28	43	57	60	56	42	38	40	44	40	52	52	48	49	39	42	37	25	41	27	28	23	33	28	33	36	41.1
Guthrie C	Max	68	64	75	84	75	54	63	74	77	71	64	66	67	61	70	77	75	74	60	57	58	58	57	51	48	54	51	62	65	68	68	65.0
	Min	50	49	44	60	46	33	47	61	67	58	43	35	45	49	44	56	50	46	46	40	45	33	25	41	28	35	22	36	26	29	40	42.9
Hampton	Max	76	70	71	86	64	58	57	70	79	69	60	67	70	54	67	79	80	76	68	56	50	51	52	50	44	55	52	69	73	65	72	64.8
	Min	48	49	38	57	42	28	42	57	57	53	41	37	39	46	44	53	53	46	47	38	41	38	26	40	28	32	23	34	37	34	39	41.5
Hanlontown	Max	75	61	66	70	63	51	55	59	78	70	57	59	65	54	65	77	79	74	60	55	49	48	50	45	44	44	50	61	69	60	70	60.7
	Min	44	45	37	56	39	24	40	40	53	53	40	34	38	44	41	50	58	57	50	38	48	35	24	36	25	28	20	31	30	32	27	39 3
Harlan	Max	67	69	76	84	77	53	63	77	78	70	66	68	69	62	71	76	78	69	59	56	53	49	60	52	50	52	51	63	66	68	68	65.0
	Min	46	43	48	52	45	33	47	57	65	55	39	37	49	49	44	55	44	47	42	39	43	32	22	42	29	31	20	27	26	33	32	41.1
Hopeville	Max	72	77	75	85	73	53	64	82	78	70	71	69	69	56	71	77	79	77	62	58	55	49	58	53	49	55	55	65	70	72	72	66.8
	Min	50	47	52	60	47	35	44	59	65	60	44	40	42	48	44	52	52	47	41	41	37	33	27	37	35	34	26	33	36	38	40	43.4
Humboldt	Max	70	74	75	71	64	48	60	65	77	71	58	64	66	58	68	76	75	72	61	56	55	50	56	51	48	48	51	62	66	62	70	62.8
	Min	49	50	42	51	42	27	46	55	58	55	40	37	45	48	46	56	50	46	49	40	45	38	26	41	26	35	22	30	28	34	38	41.8
Ida Grove	Max	68	66	77	80	68	56	63	70	66	70	75	67	68	63	71	75	75	60	57	55	55	49	58	52	50	49	50	64	66	65	67	63.6
	Min	46	50	44	65	39	30	47	51	45	40	47	35	50	52	49	58	48	50	40	38	43	34	24	42	26	34	20	25	25	30	35	40.7
Independ.	Max	73	64	67	80	68	54	62	76	78	70	62	60	62	60	64	74	77	74	64	53	48	47	47	50	41	52	48	59	68	60	68	62.3
	Min	47	49	38	55	41	30	42	54	59	56	45	39	38	39	42	48	54	48	49	39	38	36	25	39	28	28	23	29	27	32	36	40.7
Indianola	Max	70	71	76	80	73	52	65	75	78	..	67	65	66	56	71	78	80	77	63	57	54	52	57	53	49	57	53	64	66	64	72	65.0
	Min	50	47	47	59	45	33	43	61	68	..	44	49	44	46	42	45	54	63	44	46	44	34	26	41	28	35	24	34	32	37	39	42.9
Inwood	Max	73	68	80	61	56	57	68	62	75	68	58	65	66	64	62	70	66	67	66	58	60	58	62	56	50	43	50	58	60	58	65	61.9
	Min	50	42	45	44	28	30	48	53	55	41	40	45	46	49	52	50	40	51	34	38	39	26	32	29	26	26

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR OCTOBER, 1904—CONTINUED.

STATIONS.		DATE.																														MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Keokuk ..	Max..	70	73	71	80	72	57	66	81	82	81	70	65	65	62	68	75	79	75	67	56	56	48	55	58	48	56	52	64	66	62	69	66.1
	Min ..	58	50	50	59	53	40	43	59	69	64	53	50	45	44	43	49	58	50	52	44	43	40	32	47	34	35	32	38	38	38	40	46.8
Keosa'qua	Max..	70	75	72	80	62	58	74	80	82	81	81	66	64	62	67	75	78	75	68	56	56	50	55	55	48	56	52	64	67	65	69	66.4
	Min ..	48	47	45	46	57	36	38	43	55	60	51	41	40	40	36	47	51	46	49	44	45	37	27	33	29	29	25	25	30	30	29	40.6
Larrabee.	Max..	71	65	81	77	66	49	62	65	74	67	62	67	64	64	78	81	72	57	49	56	53	51	56	49	53	47	53	64	64	65	69	62.8
	Min ..	45	48	39	4	36	27	46	53	56	51	41	39	49	50	50	57	47	49	40	35	41	32	25	45	25	31	24	33	34	35	32	40.8
Le Mars..	Max..	71	68	82	80	61	49	65	65	75	69	61	67	67	65	70	76	70	58	48	55	55	48	56	48	54	51	50	64	65	67	67	62.8
	Min ..	42	46	44	49	39	27	46	48	59	53	40	37	43	49	47	58	46	48	38	35	40	29	24	38	26	31	20	28	28	29	35	39.4
Lenox....	Max..	67	74	75	85	73	52	64	80	76	71	70	68	66	59	70	75	76	73	64	58	55	49	58	58	49	55	52	62	66	68	68	65.6
	Min ..	50	47	51	61	45	36	45	60	66	59	44	40	46	49	43	53	54	48	44	38	43	32	27	42	27	31	25	34	36	38	38	48.6
Leon.....	Max..	66	74	73	80	77	54	65	79	78	75	70	65	65	57	69	74	76	74	69	57	55	49	56	53	48	54	51	63	66	66	68	65.4
	Min ..	50	48	51	60	47	36	43	58	60	58	45	40	42	48	42	52	55	47	44	41	45	34	28	43	29	33	25	32	38	38	38	45.5
Lit. Sioux	Max..	72	73	82	89	69	58	65	73	79	73	70	73	66	66	72	79	74	60	57	60	56	51	64	58	55	54	54	68	72	72	73	67.3
	Min ..	47	51	52	61	45	36	44	55	67	59	39	44	54	53	50	60	53	50	41	31	47	34	27	43	27	29	23	33	26	32	46	43.8
Logan....	Max..	64	71	79	85	72	55	69	75	76	66	68	70	65	66	71	75	67	75	69	57	66	56	61	54	52	54	51	65	67	69	69	66.4
	Min	47	47	49	57	46	35	49	67	55	40	42	33	42	50	47	53	33	55	43	37	30	31	24	32	32	34	22	32	30	29	35	40.6
Maquoketa	Max..	77	67	68	79	62	57	64	75	81	79	68	61	58	62	67	75	80	76	61	51	50	50	52	54	49	57	51	63	71	55	67	64.1
	Min ..	45	47	33	50	53	29	33	41	58	66	53	38	35	35	37	38	52	42	43	41	41	37	25	26	30	29	20	22	24	21	30	37.9
Marshlt'n	Max..	75	73	72	85	59	58	63	78	80	67	69	67	68	54	69	79	80	78	67	68	53	53	54	53	48	57	52	62	68	62	72	64.6
	Min ..	47	48	38	41	47	28	30	44	60	63	43	38	39	40	40	40	54	46	47	40	42	38	25	28	28	28	22	22	28	30	33	38.6
Mason C..	Max..	72	65	65	67	65	53	52	62	75	70	60	60	63	55	63	74	73	70	60	55	48	48	50	45	43	45	50	60	63	58	67	59.9
	Min ..	48	49	41	57	45	27	42	50	55	53	45	38	43	47	45	42	43	52	50	40	42	40	30	40	28	30	28	35	35	36	35	42.0
Massena..	Max..	70	75	77	85	77	53	..		75	74	69	70	69	61	72	76	78	75	60	57	53	49	59	..	.	..	..	..	..	..	..	....
	Min ..	50	47	50	58	46	35	..	.	50	58	39	48	46	49	45	55	53	47	45	40	45	33	25	..	..	..	..	..	..	..	..	....
Mt. Ayr..	Max..	74	79	79	86	75	57	68	81	79	72	78	75	72	62	76	80	82	80	68	62	57	53	58	55	58	58	57	70	73	73	73	70.0
	Min .	49	46	52	59	47	36	49	59	66	59	43	41	44	48	43	53	54	50	43	39	41	33	28	42	28	27	26	31	40	40	40	43.7
Mt. Pl'snt	Max..	69	73	70	78	70	58	64	71	82	79	69	65	65	64	66	74	78	75	70	53	55	49	55	55	49	55	50	62	65	57	67	64.9
	Min .	49	47	45	56	48	35	40	52	62	61	49	44	41	41	41	48	56	55	50	41	41	37	28	43	29	33	26	32	36	35	39	43.2
Mt. Ver'n	Max..	78	74	72	79	68	63	61	77	77	72	67	68	68	61	68	75	80	73	54	46	50	47	48	51	45	60	52	65	69	65	73	64.7
	Min ..	45	46	40	54	50	30	40	55	64	58	48	41	40	39	43	48	56	43	47	34	40	34	26	38	28	32	24	29	35	32	32	41.0
New H. ..	Max	77	64	62	74	68	50	54	62	76	75	59	61	62	60	63	72	73	71	64	57	49	48	48	43	49	48	59	64	59	67	60	60.8
	Min .	52	46	38	52	44	29	40	44	49	51	44	45	45	48	45	50	51	49	49	37	39	36	26	35	28	29	24	31	34	35	3	40.5
Odebolt ..	Max.	68	67	77	80	64	48	62	72	77	74	61	66	65	61	70	76	72	64	57	55	53	49	56	52	48	49	49	63	65	67	69	63.1
	Min ..	44	52	43	58	43	29	45	51	60	55	41	35	47	49	46	57	51	46	42	36	44	32	25	41	25	32	21	35	28	32	34	41.9
Ogden ..	Max	70	69	74	83	70	48	60	75	78	69	62	64	65	55	69	76	75	71	61	57	52	52	55	52	43	54	50	63	67	65	70	63.7
	Min .	58	52	44	52	41	31	44	58	63	56	52	40	44	47	42	52	51	47	47	40	44	35	25	42	36	32	25	36	38	32	37	48.2
Olin	Max	72	66	66	77	72	53	62	77	79	75	..	..	62	62	63	74	75	73	63	63	51	48	51	54	47	53	47	59	64	56	65	62.7
	Min	48	46	35	54	51	33	43	56	64	63	52	49	38	38	40	48	55	45	51	42	42	37	26	41	30	30	28	29	27	32	31	42.1
Omaha, N	Max..	69	76	79	87	63	53	69	75	78	68	69	73	62	63	72	78	70	64	58	58	56	49	64	59	52	53	52	63	70	71	70	65.9
	Min ..	51	53	54	63	45	42	52	59	66	55	48	48	53	53	50	60	54	55	42	39	43	36	34	40	35	37	32	39	38	40	46	47.2
Onawa....	Max.	74	73	83	85	75	52	70	70	80	73	70	71	63	66	73	79	73	59	55	59	55	54	64	56	56	55	55	66	69	70	72	66.9
	Min ..	50	50	49	58	45	40	48	52	65	57	43	42	53	52	49	59	47	52	40	39	47	34	30	44	32	33	29	32	33	36	40	44.5
Osage.....	Max.	73	64	63	70	65	51	50	60	76	69	60	59	62	64	64	73	73	72	65	52	48	47	47	44	40	44	47	59	62	57	66	59.2
	Min ..	44	47	37	54	43	27	41	50	53	54	44	39	40	42	44	52	50	48	52	39	38	37	26	37	28	27	24	39	34	39	33	40.5
Osceola ...	Max..	78	66	75	86	80	72	66	84	82	84	80	80	72	73	82	80	74	80	73	55	61	59	70	49	51	60	65	63	67	73	73	71.4
	Min ..	59	48	49	54	51	41	40	49	64	60	46	39	40	45	42	40	66	48	41	46	45	34	27	47	28	29	40	29	32	34	34	43.5
Oskaloosa	Max.	68	71	71	82	..	..	..	75	80	74	70	68	66	66	67	77	81	78	66	57	53	52	55	55	49	57	53	65	66	62	71	65.8
	Min ..	49	48	46	60	..	..	..	60	67	57	46	41	41	43	42	54	58	51	48	43	47	39	25	44	29	35	25	34	29	37	34	44.0
Pacific J'n	Max	72	76	80	87	70	52	66	83	76	78	76	76	63	63	74	78	79	66	57	56	55	48	62	55	52	52	54	65	67	70	69	67.0
	Min ..	50	49	51	58	48	42	50	60	63	59	40	43	52	51	53	59	47	54	40	35	44	31	27	38	28	30	22	30	26	34	34	43.5
Perry.....	Max.	70	68	75	84	70	50	61	74	78	70	62	65	68	57	70	77	76	77	59	58	53	50	56	52	50	53	52	62	64	62	70	64.3
	Min ..	47	48	45	55	45	31	45	58	66	58	44	37	43	48	42	53	50	48	45	40	43	36	27	42	29	34	23	33	30	35	33	42.4
Plover....	Max..	72	71	75	70	60	48	61	64	78	65	60	60	65	68	70	75	70	65	64	55	50	51	55	51	48	45	48	63	65	68	66	62.1
	Min ..	52	50	40	55	42	25	45	47	55	42	40	35	40	52	42	45	50	48	40	38	40	35	24	40	24	33	24	30	30	29	33	39.5
Pocah'tas	Max..	70	65	76	72	63	48	60	64	78	68	60	65	64	57	68	75	72	64	68	56	52	50	57	49	49	46	52	63	67	63	70	62.3
	Min ..	48	50	40	53	40	26	45	50	56	52	43	38	42	50	47	54	49	48	57	39	42	36	26	36	25	32	25	34	33	44	35	41.8
Red Oak..	Max..	69	71	76	81	78	55	65	77	78	71	67	68	69	63	69	75	75	70	61	55	62	55	56	55	48	53	49	60	65	63	64	65.3
	Min	53	51	50	62	49	44	51	62	67	57	48	47	53	54	50	61	53	57	43	41	43	38	32	44	37	38	30	37	33	38	38	47.1
Ridgeway	Max..	75	65	66	76	63	54	54	69	75	70	65	58	66	59	65	78	80	80	60	52	45	47	53	45	42	52	50	61	66	60	67	61.9
	Min	47	48	41	57	42	30	42	54	55	54	50	40	43	44	48	52	53	52	44	38	40	36	27	38	28	29	25	32	36	33	37	41.8
Rock R...	Max.	76	74	76	78	54	50	67	68	75	64	64	68	68	66	70	78	70	62	48	50	40	40	48	51	42	56	64	65	70	66	68	62.5
	Min ..	48	58	46	46	34	25	45	50	55	48	42	38	48	46	48	48	50	48	36	34	38	33	26	27	28	30	28	28	30	30	34	39.5
R. City...	Max..	70	65	75	78	65	50	60	70	80	72	60	60	65	60	78	75	70	70	60	55	54	50	50	50	55	50	50	55	63	64	65	62.7
	Min ..	45	45	40	55	45	31	45	51	55	53	43	36	45	48	52	48	45	45	45	39	41	40	28	35	25	34	25	34	35	34	35	41.2
Sac City..	Max.	69	66	77	78	66	47	60	68	76	72	61	66	68	60	70	77	71	66	56	55	52	49	58	53	50	48	52	63	66	66	70	63.1
	Min	46	51	40	57	42	31	45	52	58	55	45	35	47	49	44	54	47	46	44	38	38	33	27	41	27	35	24	34	32	34	35	41.5
St. Cha'les	Max..	74	73	77	89	73	52	63	76	78	70	69	69	71	56	74	79	82	79	65	50	56	54	59	55	53	59	58	71	77	69	76	67.9
	Min ..	50	49	49	60	45	34	44	62	67	58	47	41	43	47	43	55	53	50	54	41	40	35	29	42	29	35	24	37	36	35	41	44.4
Sheldon..	Max..	75	75	85	83	60	47	65	65	77	72	68	68	60	64	71	80	75	60	50	57	54	52	58	52	57	49	54	72	73	70	76	65.3
	Min ..	45	46	42	44	40	26	44	47	55	52	41	38	48	50	48	55	44	48	39	35	40	32	25	37	24	31	22	27	29	34	36	39.5
Sibley	Max..	..	81	81	74	50	48	52	66	75	57	62	51	58	63	67	78	72	54	44	55	..	57	52	44	50	52	44	65	70	63	70	64.0
	Min ..	48	..	40	40	37	28	33	47	52	52	41	36	39	51	48	52	48	52	43	35	33	..	25	36	22	22	23	28	30	32	34	38.2
Sioux C'y.	Max..	70	69	84	82	54	51	72	67	7.	66	63	70	59	64	70	78	68	58	47	58	58	47	60	53	53	49	52	66	67	68	69	63.5
	Min	47	53	49	51	36	35	51	5.	66	51	44	44	52	53	50	60	51	47	38	40	39	34	30	38	31	36	31	37	32	32	42	43.5
Sioux C'r.	Max..	72	65	82	77	60	49	65	62	75	71	59	67	57	65	69	75	68	57	47	54	54	46	56	49	51	45	50	63	66	65	67	61.5
	Min ..	45	48	42	47	39	29	45	50	57	55	42	39	50	51	49	55	47	48	38	35	41	32	27	38	26	30	26	32	36	36	37	41.1
Stockport	Max	78	69	70	78	72	59	67	76	81	78	70	66	63	61	66	75	79	75	69	53	55	48	53	53	52	55	52	65	66	59	69	65.5
	Min ..	61	51	48	58	48	37	41	57	67	60	50	46	43	43	43	49	58	49	53	43	45	39	29	45	31	34	27	33	33	36	36	44.9
Storm L..	Max..	70	67	77	79	52	50	63	68	74	54	60	65	63	60	69	75	70	59	49	55	51	49	55	48	50	47	50	65	67	65	69	61.1
	Min ..	46	48	42	46	42	27	34	47	50	56	46	38	40	47	42	50	50	49	47	38	36	34	29	32	26	27	26	29	32	36	36	39.6
Stuart ...	Max	67	68	74	82	78	52	53	75	76	75	63	57	66	60	70	75	77	75	62	57	53	50	55	56	49	52	50	60	62	65	66	63.9
	Min ..	50	50	48	59	48	34	46	39	65	59	47	40	48	49	43	49	54	48	45	39	44	34	31	44	30	35	26	37	36	35	41	44.3
Thurman.	Max..	65	74	78	86	73	55	69	83	77	73	70	72	66	63	73	78	77	68	62	58	56	51	65	60	52	55	53	63	67	69	68	67.1
	Min ..	55	46	52	60	49	42	51	63	68	57	39	42	52	52	46	60	43	57	42	35	38	30	25	38	27	32	22	35	28	33	32	43.6
Tipton....	Max..	75	71	75	78	71	60	65	73	80	77	69	63	65	63	68	76	80	71	66	51	52	46	51	55	49	58	51	63	65	61	68	65.0
	Min .	51	..	43	54	50	36	40	56	65	60	53	45	43	42	42	50	55	51	47	40	40	35	27	42	30	32	29	32	37	35	35	43.2
Toledo....	Max..	71	72	70	82	70	58	61	75	80	70	68	65	67	56	67	77	80	79	64	57	55	53	53	52	47	58	52	63	69	63	71	65.3
	Min ..	48	47	35	56	42	29	43	58	65	56	42	37	41	44	41	53	56	48	47	40	43	38	22	42	28	32	19	32	27	32	30	41.1
Vinton. ..	Max.	70	72	70	81	81	58	61	72	80	79	66	58	6.	61	68	76	80	76	69	55	53	49	51	52	45	50	51	63	70	63	70	65.0
	Min ..	52	51	35	66	50	30	46	54	65	39	45	36	40	40	45	56	57	56	51	40	40	39	25	43	30	31	19	32	26	32	31	42.0
Wapello.	Max..	65	65	67	75	71	53	62	72	78	71	70	61	61	59	63	71	74	73	72	52	53	46	50	51	48	52	47	58	58	57	64	61.9
	Min	53	56	45	55	51	38	41	57	67	60	54	45	44	45	45	49	59	55	51	49	44	38	31	46	33	37	29	36	34	39	38	45.9
Washi'ton	Max..	72	68	71	78	68	58	65	76	82	77	70	66	66	63	63	76	80	76	63	53	54	48	54	53	50	57	52	66	67	61	71	65.3
	Min ..	50	47	43	57	44	34	41	57	66	57	47	43	41	41	42	50	56	49	47	41	40	36	27	41	29	33	26	32	32	34	35	42.5
Waterloo.	Max	76	78	69	81	60	58	61	80	80	73	66	64	67	65	69	80	81	78	77	57	53	52	52	55	45	55	58	64	70	64	73	66.0
	Min ..	48	45	38	58	45	29	43	56	61	60	45	38	40	41	45	51	56	48	47	40	42	39	27	39	30	29	23	30	29	32	32	41.5
Waukee..	Max..	84	80	..	96	75	52	62	76	80	70	72	73	70	57	74	83	84	80	61	62	57	57	62	53	56	58	62	75	74	70	80	69.8
	Min ..	49	48	..	45	45	32	44	60	62	50	44	38	44	47	42	53	54	50	45	40	44	34	27	39	27	35	24	34	34	36	40	42.2
Waverly..	Max..	72	63	66	78	67	55	57	72	79	70	60	63	64	68	66	76	77	75	66	55	50	49	50	50	42	52	50	60	65	60	68	62.7
	Min .	48	51	40	56	42	30	44	56	59	55	45	40	43	44	47	53	55	50	49	40	42	39	26	38	30	28	23	33	29	33	35	42.0
Whitten..	Max	70	66	70	78	74	59	60	74	79	71	62	62	64	56	65	74	74	74	63	55	51	50	50	51	46	53	49	59	63	59	65	62.8
	Min .	47	48	40	55	42	35	41	55	61	55	41	39	40	45	41	49	49	47	47	38	41	37	23	40	26	28	21	30	30	34	35	40.6
Wilton J.	Max..	72	70	70	82	61	65	68	77	84	80	70	67	66	65	66	68	67	78	72	55	54	48	53	55	50	56	50	62	65	61	66	65.8
	Min ..	47	46	38	52	39	33	38	57	68	58	53	40	40	40	39	48	49	52	50	43	43	34	25	43	30	32	24	30	28	34	30	41.4
Winte'set	Max..	74	73	75	90	75	52	64	78	79	70	73	68	69	58	65	78	80	78	62	59	56	56	57	54	53	57	57	66	70	71	76	67.5
	Min ..	46	44	45	67	45	30	43	60	65	58	42	53	43	46	48	44	56	50	44	45	42	28	25	42	25	32	20	35	31	36	41	42.9
Zearing ..	Max..	71	67	72	83	74	51	60	76	79	70	59	64	65	55	66	77	79	75	63	57	51	50	52	51	47	54	51	63	68	63	70	64.0
	Min ..	46	47	38	55	44	30	43	59	62	55	40	38	38	45	41	52	52	48	45	39	43	37	24	41	28	29	21	34	32	33	41	41.3
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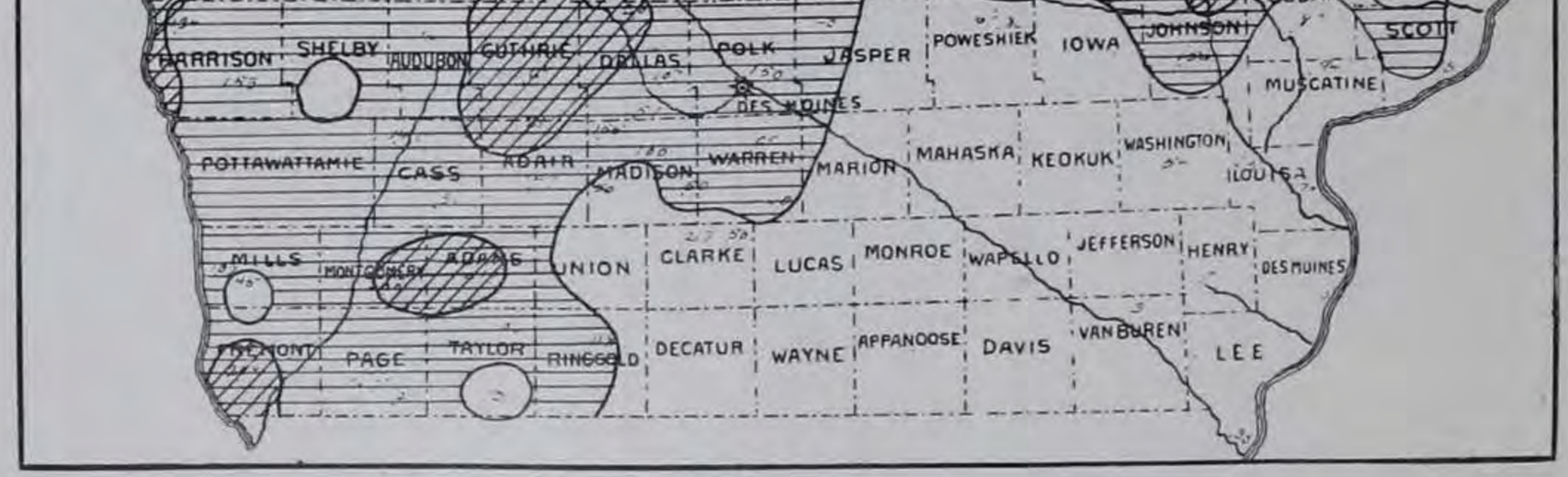
DAILY AND MONTHLY PRECIPITATION FOR OCTOBER, 1904.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	....	....	....	....	....	....		.20	....	..	....	....	....	....	....	....	.61	04	....	....	....		....	....	..	..	....	..	....	....	.85
Albia	.06	....	....	....	.04	....	....	....	....	.02	....	....	....		.04	....	....		.05	....	..	....	....	..		...	....		....	....	....	.21
Algona	..	..	....	....	....	....	T	....	.51	.11	....	....	....	.14	....	....	.12	.03	.20	.36	....	....	....	..	....		..	....	....	....	...	1.47
Allerton	.35	..	....	....	.04	...	T	...	.02	T	....	....	....	.06		....	..	T	.02	.03	....	....	....	..	....	....	....	....	....	....	....	.52
Alta		....	....	....	....	....	.04		.72	.09	....	....	.10	.03	....		.21	.83	.34	.10		....	....	....	....	....	....	....	....	....		2.46
Alta [near]	...	....	....	....	....	....		....	.70	.08	....	....	.10	.04		....	.23	.92	.38			....	....	....	....	....	....	....	....	....		2.45
Amana	....	..	....	.03	.08	....	T	....	.42	.06	....	..	....	T	....	....	....	....	.34	.06	.01	....	....	..	....	....	....	....	....	....	....	1.00
Ames	...	....	..	....	....	....	.46	....	.26	.14	....	..	....	.06	....	....	....	....	.86	....	....	....	....	..	....	....	....	....	..	....	....	1 78
Atlantic		....	....	.	....	....	....	....	.55	....	....	....	T		....	....	....	.70	15	...	....	....	....	..	....	....	....	....	....	....	....	1.40
Audubon	....	.	....	....	....	....	T	..	.19	.52		....		.07	...	....	.10	.22	.64	.08	....	....	..	....	....	....	....	....	....		....	1.82
Baxter	....	...	...	....	30		....	..	.25	.20	....	....	....	.15	...	....	....		.50	....	....	....	..	....	....	....	....	....	....	....	....	1.40
Bedford	....	..	....	T	T	T	.04	....	.11	T	....	....	.07	....	....		....	.29	.07	....	.	....	....	....	....	..	....	....	....	....	....	.58
Belle Plaine	..	...	....	.09	.24	....		....	1.04	....		....	..	....	....	....	....		.10	.08	T	..					....	....	....	....	....	1.55
Bonaparte	....	....	..	....	....	..		..	....	....	....		..	....	....	....	..	....	..	....	.14	..	....	....	....	..	....	....	....		..	.14
Britt	....	..	....	....	....	....	.16	....	.51	.07	....	....	....	.14	....	....	.10	.09	.46	.11	.01		....	....	....	....	....	....		....	....	1.65
Buckingham	..	....	....	.25	....	....	.04	.26	.20	.44	..	..	....	.06	..	....	....	....	.45	.09	.04	T	....	....	....	....	....	....	....	....	....	1.83
Burlington	....	....		T	.01	....	....	....	T	....		....	....		....	....	....	....	.39	.02	.01	....		....	....	....	....	....	....	....	....	.43
Carroll	.17	....	....	....	....	....	.12	T	.15	....	....	..	....	.15		....	.50	.72		.18	..	....	....	....	....	....	....	....	....	....	..	1.99
Cedar Rapids	....	....	....	.04	.06		....	T	.52	06	....	..	....		T	....	....	....	T	.36	T	T	....	....	....	....	....	....	....	....	....	1.04
Chariton	..	....	....		T	....	T	....	T	T	....	....	....	T		....	....	T	.45	T	..					....	....	....	....	....	....	.45
Charles City	....	....	....	.04		....	T	.72	.12	.20	.10	....	T		.15		....	.12	.22	.22	.03	.02	....	....	....	....	....	....	....	....	....	1.94
Clarinda	.49	....	...	....	....	..	.03	....	.05	....	....	....	....	.08	....	...	....	....	97	.10	T					....	....	....	....	....	....	....	1.72
Clinton		....	....	....	.26	....	....	....	....	....	....	....	....	....	....	..	....	....	.12	04	.17	....	....	....	....	....	....	....	....	....	....	.59
College Springs	.70		..	....	....	....	T	....	T	T	....	..	....	.02		....	....	.55	.07	....	....	....	....	....	....	....	....	....	....	....	....	1.34
Columbus Junct'n	....	....	...	T	.15	....	....	....	....	....	....	....	....	....	....	...	....	....	.40	.19	T	....	....	....	....	..	..	....	....	....	....	.74
Corning	.27	....	....	T	....	....	T	.03	T	....	....	..	.	.06	....	...	....	...	1.65	.12		....	....	....	....	....	....	....	....	....	....	2.13
Corydon	.09	....	...	T	....	....	.	....	T	.02		....	....	.02		....	....		.01	....	..	....	....	....	....	..	....	....	....	....		14
Cresco	....	....			....		.50	....		.30	.25	..	....	....	..	....	....	....	.80	....	.40	....	....	....	....	..	....	....	....	....	....	2.25
Cumberland	....	....	T	....	T	....	T	T	.01	...	....	....	....	....	..	....	....	1.00	.31			....	....	....	....	....	....	....	....	....	....	1.32
Davenport	....		....	T	.64	...	T	T	...	.01	....	..	....	....	....	....	....		.35	.10	.05	T	T		....	....	....	....	....	....	....	1.15
Delaware	....	....	..	.07	.96	.	.07	..	.55	.20		....	....	....	..	....	....	....	.65	....	.12	....	....	....	....	....	....	....	....	....	....	2.62
Denison	.01	....	..	....	....	....	....	....	.07	.01	....	....	T	....	....	....	.57	.40	.80	.05	....	....	....	..	....	....	....	....	....	....	....	1 41
Des Moines	.03	....	..	.01	.29	....	.01	.09	35	.19	T	....	..	.14	.01	....	....	..	40	T	T	T	....	....	....	....	..	....	....	....	....	1.50
De Soto	.06	....	....	...	.16	....	.03	....	T	.29	....	....	..	.11	....		....	T	.88	.04	....	....		.	....	....	....	....	....	....	....	1.57
Dows	....	..	..	....			.66	....	.33	T	....	..	..	.03		....	.35	.05	.61	.10	T		....	..	....	....	....	....	....	....	....	2.13
Dubuque	....	T	....	.02	1.11	....	.04	T	.86	.40	.02	T		....	....	....	....	....	.60	.01	.10	.02		....	....		....	....	....	....	....	3.18
Earlham	.12	....	....	..	.21	....	.05	T	.06	T	....	....	....	.15	....	....	....	.86	.10	....	....		....	....	....	....	....	....	....	....	....	1.55
Elkader	....	....	....	.23	....	....	.14	....	.66	....	....	....	....	....	....	....	....	.04	.49	....	.18	....	....	....	....	....	....	....	....	....	....	1.74
Estherville	....	....	....	....	....	..	....	.12	.60	.10	.18	T	....	.29	....	....	....	.14	1.10	.32	T	T	....	....	....	..	....	....	....	T	....	2.85
Florence	....	....	....	....	....	....	.33	....	.29	.01	....	....	....	.02	....	....	.10	.01	.80	.12	.01	....	....	....	....	....	....	....	....	....	....	1.69
Forest City	....	....	....	....	....	....	..	.27	.34	.36	....	....	....	.14	....	....		....	.48	.30		....	....	....	....	....	....	....	....	....	....	1.89
Fort Dodge	....	....	....	.18	.02	....	T	.30	.15	.11	....	....	..	.17	.08	....	....	.12	.70	.25		....	....	....	....	..	....	....	....	....	....	2.08
Fort Madison	....	....	....	....	.27		....	....	....	....	....			....	....	....	....	....	.25	....	T	....	....	....	....	....	....	....	....	....	....	.52
Galva	....	....	....	....	....	....	....	1.35	.10	....	....	.08	.01	....	....	.13	.75	.39	.12			....	....	....	....	....	....	....	....	....	....	2.93
Gilman	....	....	....	....	.25	....	T	T	.15	.04	....	....	....	.07	..	....	....	....	.25	T	T	....	....	....	....	....	....	....	....	....	....	.76
Glenwood	....	....	.	....	....	....			T	....	....	..	T			....	....	.10	.35	....	..	....	....		....	....	....	....	....		..	.45
Grand Meadow	....	....	....	....	....		50		.47	1.30	..	....	....	....	....	....	T		.50	.06	.26	...	....		....	....	....		....	....	....	3.09
Greene	....	....	....	....	....		.63		.48	.12	....	....		.16	....	....	..	.20	.60	.15		.	....	....	....	....	....	....	....	....	....	2.34
Greenfield	.16	....	...	....	....	....	.01	.07	12	.01	....	....	....	.14	....	....	....	.03	.91	.04	..	....	....	....	....	....	....	....	....	....	....	1.49
Grinnell	....	....	....	....	.30	....	.02		.09	....	....	....	....	.01		....	..	....	.22		....	....	....	....	....	....	....	....	....	...	....	.64
Grinnell (near)	....	....	....	T	....	.35	....	T		.10	T	....	....	....	.03		....	....	....	.35	T	....	....	....	....	....	....	....	....	....	....	.83
Grundy Center	...	....	....	.14	.05	....	.05	...	.24	.37	....		....	.08	...	....	....		.71	.06	....	....	....	....	....	....	....	....	....	....	....	1.70
Guthrie Center	.09	....		....	.98	....	.02	....	.20	.17	....	....	....	.23	.01	....	....	.03	.82	.13		....	....	....	....	....	....	....	....	....	....	2.68
Hampton	....	....	....	....	....	....	.66	.12	.11	....	....	....	....	.04	....		.12	.88	.20		....	....	....	....	....	....	....	....	....	....	....	2.13
Hanlontown	....	....	....	..	....	....	.32	....	.56	.30	....	....		T	....			.08	.82	T	.15	....	....	....	....	....	....	....	....	....	....	2 23
Harlan	.09	....	....	..		..	T		.16	.11		....	T	.18	....	....	.04	.10	.20	.04	....	....	....	T		....	..	..	....	....	....	.92
Hopeville	.09	..	....	....	....	....	.01	....	.15	T	....	....	....	.23	....		....	....	.42	....	....	....	....	....	....	....	....	....	....	....	....	.90
Humboldt	....	....	....	....	....	..	.22	....	.33	.03	....	..	....	.19	....	....	.21	.04	.30	.22	....	....	....	....	....	....	....	....	....	..		1.59
Ida Grove	....	....	..		....	....	.10	..	....	....	....		T	....	....	....	.60	.40	.30	..	....	....	....	....	....	....	....	....	....	....	....	1.40
Independence	....		.12	.40	....	....	T	....	.35	50	....	....	....	....		....	..	....	.50	..	.02	T	....	....	....	....	....	....	....	....	....	1.89
Indianola	.03	....	....	.01	.50	....	T	T	03	T	....	....	....	.16	....	....	....	....	.36	T			....	....	....	....	....	....	....	....	....	1.09
Inwood		....	..	....	....	....	03	....	1.05	.20	....	....	.50	....	....	....	....	2.56	....	....	..				....	....	....	....	....	....		4.34
Iowa City	....	....	....	T	.38	....	T	26	.05	T	....	....		....			....	....	.17	.60	.13	T	....	....		....	....	....	....	....	....	1.59
Iowa Falls	....	...	....	T	.08	T	.01	.21	.06	.82	T	....	....	....	.05	....	T	.60	....	.09	T	T	..		....	....	....	....	....	....	....	1.92
Keokuk	.02	..		....			..	T	....	....	..		....		..		....	....	.28	T	T	....	....	....	.	....	....	....		....	....	.30
Keosauqua	.14	....	T	....	.07	....	....	....	....	T	....	.	.	....	....	....	....	....	....	.18	T	T	....	....	....	....	....	....	....	....		....	.39
Knoxville	..	.	....	....	....	.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.	....	....	....	....	....	....	....	....	....	..
Lacona	.03	....	....	.41	....	....	T	T	....	01		....	....	.12			....	....	.63	....	....	....	....	....	....	....	....	....	....	....	..	1.20
Larrabee	....	....	....	....	....	....	.15	....	.45	.48	....	....	.22	....	....	T	.30	....	1.58	....	..	....	....	....	....	....	....	....	....	....	....	....	3.18
Lenox	.80	....	....		....	....	.03	....	T	....	....	....	....	.17	....	....	..	....	.50	.03	....	....	....	....	....	....	....	....	....	....	....	....	1.03
Le Claire	....	..	..	T	.07	....	....	T	....		.41	....	..	....	....	....	....		....	.30	.09	T		....	....	....	....	....	....	....	....	....	.87
Little Sioux	.08	....	....	....	....	....	....	....	.26		....	....	.14	.07	....		.16	.54	.06	.03	....	....	....	....	....	....	....	....	....	....	....	....	1.34
Leon	.18	....	....	....	T	....	....	....	T	T	....	....	....		.15			T	.41	....	....	....	....	....	....	....	....	....	....	....	....	....	.74
Logan	....	....	....	....	....	....	....	.23	....	.07	....	....	....	....	....	....	..	.48	.42	.33	....	....	....	....	....	....	....	....	....	....	....	....	1.53
Maquoketa	....	....	....	.03	.10	....	....	....	1.01	.07	....	....	....	....	....	....	....	....	....	.47	....	.15	....	....	....	....	....	....	....	....	....	....	1.83
Marshalltown	....	....	....	.19	.22	....	....	..	.22	.09	.45	....	....	..	.09		....	..	.40	.05	T	.02	....	....	....	....	....	....	....	....	....	....	1.78
Mason City	....	....	....	....	..	....	.30	....	.52	.20	....	..	....	.07	....	....	.15	....	.50	.07	.04	....	....	....	....	....	....	....	....	....	....	....	1.85
Muscatine	....	....	....	....	.10	....	....			T	....	....	....	....	....	....	....	....	T	.65	.15	.10	..	....	....	....	....	....	....	....	....	....	1.00
Mt. Vernon	..	..	.	.02	.11	....	T	...	1 30	.14	....	....	....	....	....	....	..	..	.90	....	.02	....	..	....	....	....	....	....	....	....	....	....	2 49
Mount Ayr	.35	....	..	.05	.03	.02			.03	T	....	..		.25	....	....	....	....	33	.02	....	....	....	....	....	....	....	....	....	....	....	....	1.08
Mt. Pleasant	....	....	....	T	.23	....	....	.02	T		....	....	....	....	....	....	..	.05	....	.13	T	....	....	....	....	....	....	....	....			43
New Hampton	....	....	..	....	....	....	.34	T	1.20	.03	....	.	....	T		....	....	.02	.67	.04	.04	....	....	....	....	....	....	....	....	....	....	....	2.34
Odebolt	....	....	....	..	..	....	....	T	....	....	.15	....	....	.20	....	....	....	.23	.88	.16	.12	....	....	..	....	....	....	....	....	....	....	....	1.24
Ogden	..	....	..	....	....	....	.11	....	.70		....	....	..	....	....	..	....	....	.72	....		....	....	....	....	....	....	....	....	....	....	....	1.53
Olin	....	....	....	.02	....	...	T	....	3 0	T	....	....	....	....	....	....	....		.74	T	.01	.01	....	....	....	....	....	....	....	....	....	....	3.78
Omaha, Neb	.10	....	....	....	T	...	T	.06	46	07	.	...	.(8	.07	...	....	.06	.33	.17	....	..	..	...	....	....	....	....	....	....	....	....	...	1.40
Onawa	.04	....	....	....		....	T	...	.34	...	....	....	.30	.08	....	.	.18	.95	.15	.03	....		....	....	....	....	....	....	....	....	..	..	2.07
Osage	..		...	....	....	....	..	.57	....	.28	.26	....	....	...	.13	....	....	.09	....	.64	.07	.03	.01	....	....	....	..	....	....	..	....		2.08
Osceola	.05	....	....	....	T		.	....	T		....	....	....	.22	....	....	....	....	....	.	..	....	....	....	....	..	....	....	....	....	....	....	.27
Pacific Junction	.24	..	....	....	....			....	07	07	..	....	.07		....	....	T	.33	.29	....	....		....	....	....	....	....	..	....	....	....	....	1.07
Perry	.04	....	....	...	.10	..	.14	....	.50	.24	..	....		.18	....	....	T	T	.65	.16	T	....	....	....	....	....	....	....	..	....	....	....	2 01
Plover	....	....	....	....	....	....	.16	....	1.03	.16	....	....	.18	..	....	....	.26	.22	.61	....	..	....	....	....	....	....	....	....	....	....	....	....	2.62
Pocahontas	....	....	....	....	....	....	.08	....	.80	.08	....	....	....	.30	....	....	.13	.58	.43	....	....	..	....	....	....	....	....	....	....	....	....	....	2.40
Red Oak	.33	....	....	...	T	...	T	.07	.04	T	....	....	T	.09	....	....	....	.05	1.38	.04	....	....	....	....	....	....	....	....	....	....	....	....	2.00
Ridgeway	..	....	.01	....	.01	....	.54	....	.82	.15	..	....	....	.02	.03	....	.04	....	.75	.12	.18	.04	..		....	....	....	....	....	....	....	....	2.71
Ro k Rapids	....	..	....	....	....	....	....	....	.40		....	....	....	1.35	.90	..	....		....	....	....		..	..	....	....	....	....	....	....	....	....	2.65
Rockwell City	....	..	....	....	....	....	.30	....	.35	...	....	....		.23		....	.25	.50		.25	....	....	....	....	....	....	....	....	....	....	....	...	1.88
Sac City	....	....	.03	....	....	....	.04	....	.12	T		....	T	.20		....	15	.23	.30	.11	..	..	....	....	.	....	....	....	....		....		1.18
St. Charles	.12	....	....	....	.70	....	.05	....	.01	.03	....	....		.18		....	....		.38	.03	....	....	....	....	....	....	....	....	....	....	....	....	1.50
Sheldon	....	....	....	.	....	....	.09	....	1.15	.20	.01		.12	.13	....	....	.08	.58	1.45	.05	...	....		....	....	....	....	....	....	....	....	....	3.86
Sibley	....	....	..	....	....		.12	.04	1.72	.03	.06		.03	.27	....	.01	.01	.21	.75	.65	....	....	....	....	T		....	....	....		....	....	3.96
Sioux Center	....	....	....	....	....	....	.03	....	1.80	T	....	....	.51	.06	.	.02	.06	.60	1 85	....	....	....	....	....	....	....	....	....	....	....	....	....	4.43
Sioux City	....	....	....	....	....		T	....	.70	....			.64	.15	T	....	.05	.33	.54	....	..	....		....	....	..	....	....	....		....	....	2.39
Stockport	.02	....	....	T		....	T	....	T	T		...	....	T	....	....	....	.30	T	.02	T	....	....	....	....	..	....	....	....	....	....	....	.34
Storm Lake	....	..	....	.07	....	....	....	T	.61	1.04	.08	....	.05	.12	..	....	....	.21	57	.34	..	....	....	....	....	....	....	....	....	....	....	....	3 09
Stuart	....	....	....	....	..	....	....		.98	....	....	....	.16	....	....	....	....	.87	.16	....	....	....	....	....	....	....	....	....	....	....	....	....	2.17

DAILY AND MONTHLY PRECIPITATION FOR OCTOBER, 1904—CONTINUED.

STATIONS.	DAY OF MONTH																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Thurman	.56			.10			T	T	.32	T			T	T	T			.38	1.08													2.44
Tipton									.44										.41	.04												.89
Toledo				.10	.40		T		.05	.10				.05					.40	T												1.10
Vinton				.01	.42				.92																							1.35
Wapello					.10														.40	.27												.77
Washington				.05															.34	.15												.54
Washta							T		1.00				T				.10	.60	.80													2.50
Waterloo				.15	.10		.05		.21	.07				.04			T		.56	.05	.01											1.24
Waukee	.04			T			T	.14	.06					.15					.63	.05												1.07
Waverly				.01			.20		.58	.02				.02			.12		.56	.10	.07											1.68
Whitten					.55		T		.10	12				.21			T		.47	.05	T											1.50
Wilton Junction									T										.66	.16	.12											.94
Winterset	12				.15				.11						.13				.49													1.00
Woodburn	T			T	T		T	T	T	T				.15					.35													.50
Zearing				T	.18		.05	T	.04					.11					.58	.05												1.01

Precipitation Chart October 1904.



NOVEMBER, 1904. No. 11



MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

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CENTRAL STATION, DES MOINES, IOWA.

J. R. SAGE,
DIRECTOR.

GEO. M. CHAPPEL,
LOCAL FORECASTER,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

THE IOWA WEATHER AND CROP SERVICE

WAS ESTABLISHED BY ACT OF THE TWENTY-THIRD GENERAL ASSEMBLY, AND IS UNDER SUPERVISION OF THE

STATE BOARD OF AGRICULTURE,

CONSTITUTED AS FOLLOWS:

OFFICERS.

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METEOROLOGICAL STATIONS AND OBSERVERS.

From the following, weekly and monthly reports of Metorological data are received by the Iowa Weather and Crop Service.

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*U. S. Weather Bureau.

WEATHER-CROP OBSERVERS.

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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

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IOWA CROPS—FINAL REPORT, 1904.

TOTAL YIELD FOR THE STATE—VALUE OF SOIL PRODUCTS AT FARM PRICES DECEMBER 1ST.

Despite somewhat adverse conditions at the outset, and belated growth of the cereal crops, the final report for the season of 1904 makes a satisfactory exhibit of the agricultural resources of the state. The warmth and dryness of the autumn made partial amends for low temperature and slow progress during the summer.

CORN.—The area planted this season was 9,052,450 acres. The loss of acreage from various causes was relatively small compared with recent seasons, and it is probable that practically about nine million acres were harvested. The average yield for the state appears to have been about 36 bushels per acre. The total yield is 323,853,330 bushels, which is 93,342,000 above the yield last year and the largest crop produced since 1900. During the past fifteen years there have been two larger crops; viz.: 345,000,000 bushels in 1900, and 335,000,000 bushels in 1901. This year's output is 62,000,000 bushels above the fifteen year average.

The average price per bushel, at the farms December 1st, was about thirty-five cents; total value of the crops, $113,348,665.

WHEAT.—This crop was badly damaged by rust and blight. The area of winter wheat was about 71,030 acres, and the average yield 14.3 bushels per acre; total yield, 1,017,000 bushels. The acreage of spring wheat was 775,040 acres; yield 9.1 bushels per acre; total output for the state, 7,080,430 bushels. Farm prices, winter wheat 92 cents; spring wheat, 86 cents. Total value of wheat crop, $7,024,809.

OATS.—Area seeded, 4,018,980 acres; yield per acre 29.4 bushels; total bushels, 118,435,570. The farm value, 26 cents; total value December 1, $30,793,284.

RYE.—Area seeded, 99,590 acres; yield per acre, 15 bushels; total yield, 1,517,090 bushels. Value, at 54 cents per bushel, $819,228.

BARLEY.—Area seeded, 493,370 acres; yield per acre, 25 bushels; total yield, 12,317,710 bushels. Value, at 34 cents per bushel, $4,188,021.

FLAX. Area, 51,370 acres; yield, 11 bushels per acre; total yield, 591,140 bushels. Value, at $1.15 per bushel, $679,811.

POTATOES.—Yield per acre, 125 bushels; total output, 14,255,680 bushels. Value, at 28 cents per bushel, $3,991,590.

HAY (TAME).—Area harvested, 2,797,640 acres; total yield, 4,499,090 tons. Value, at $5.62 per ton, $25,284,885.

HAY (WILD).—Total amount cut, 1,091,590 tons. Value, at $4.50 per ton, $4,912,155.

PASTURAGE AND GRAZING.—The value of pasturage and grazing, harvested by live stock, in pastures and in grain fields, cornfields and meadows after harvest, is placed at $90,000,000, or about $400 per farm of 160 acres. This is believed to be a very low estimate, for reasons set forth in a separate article.

TABULATED CROP SUMMARY.

CROPS.	Total Products.	Farm value December 1st.
Corn	323,853,330 bushels	$113,348,665
Wheat	8,097,430 bushels	7,023,809
Oats	118,435,570 bushels	30,793,284
Rye	1,517,090 bushels	819,228
Barley	12,317,710 bushels	4,188,021
Flax	591,140 bushels	679,811
Potatoes	14,255,680 bushels	3,991,590
Hay (tame)	4,499,090 tons	25,284,885
Hay (wild)	1,091,590 tons	4,912,155
Pasturage and grazing (cornfields, etc.)		90,000,000
Buckwheat (estimated)		250,000
Sweet potatoes		850,000
Sorghum and broom corn		260,000
Timothy seed		950,000
Clover and millet seed		175,000
Flax seed		679,810
Fruits and garden truck		7,500,000
Total soil products		$291,207,258

In this estimate no account is made of the profits derived from the consumption of the staple crops in the dairy and live stock industry.

The average farm value of milch cows is $28, and of horses, $92 per head.

NOVEMBER WEATHER AND CROPS.

The month was unusually warm and the driest November on record for the state. The mean temperature, as shown by records of 110 stations, was 41.0 degrees, which is 6.3 degrees above normal. The average in 1902 was .2 of a degree higher and 2.9 degrees higher in 1899. The average precipitation for the state at 119 stations was .15 of an inch, which is 1.25 inches below normal. Nine stations reported no rain in measurable amount. Practically all the precipitation fell on the 9th and 10th, and the average number of clear days was twenty. The conditions were ideal for husking corn and drying out the surplus moisture. At the close of the month the bulk of the crop was harvested. Conditions were also favorable for fall plowing and general farm work of the late autumn period. The pasturage was better than usual, though the fields were brown. Winter wheat and rye suffered some damage for want of moisture.

FINAL CROP REPORT, 1904.

TOTAL YIELD AND AVERAGE PER ACRE—BY COUNTIES.

Counties.	Winter Wheat.		Spring Wheat.		Corn.		Oats.		Rye.		Barley.		Flax Seed.		Potatoes.		Hay (tame).		Hay (wild).	
	Bushels per acre.	Total bushels.	Bushels per acre.	Total bushels.	Bushels per acre.	Total bushels.	Bushels per acre.	Total bushels.	Bushels per acre.	Total bushels.	Bushels per acre.	Total bushels.	Bushels per acre.	Total bushels.	Bushels per acre.	Total bushels.	Tons per acre.	Total tons	Tons per acre.	Total tons
Adair	15	4,050	8	75,200	36	3,754,440	25	774,500	18	3,060	26	9,360			110	128,700	1.5	68,410	1.2	2,280
Adams	18	18,080	12	38,640	30	2,182,500	22	337,700	19	8,930					100	59,000	1.7	77,530	1 0	2,140
Allamakee	9	1,080	10	31,900	37	1,491,740	35	1,771,350	15	18,750	26	162,500	8	3,280	120	130,800	1.6	62,880	1.5	3,460
Appanoose	15	18,300			33	1,823,250	25	287,000	12	21,720					150	162,000	1.7	71,580	1.2	1,080
Audubon			6	114,960	35	3,309,950	30	934,500	15	310	30	68,400			90	88,200	1.5	38,790	1 0	4,130
Benton			10	15,200	33	3,969,240	30	1,918,800	15	10,650	28	451,920			140	249,200	1.2	46,930	1.0	7,210
Black Hawk			8	3,260	37	3,596,400	29	1,522,790	15	24,750	29	107,010			150	207,000	1.8	72,270	1.4	12,950
Boone			8	27,320	35	3,556,350	34	1,695,240	15	5,100	30	9,300			150	175,500	2 0	42,940	1.5	22,100
Bremer			8	8,360	36	2,198,520	35	1,817,300	18	22,860	28	46,840	10	7,400	130	174,200	1.5	25,890	1.5	19,140
Buchanan			12	4,920	33	2,885,850	33	1,628,880	19	9,690	32	52,240	9	720	130	137,800	1.5	53,770	1.2	14,240
Buena Vista			10	72,800	31	3,389,540	32	1,959,680	16	5,020	25	81,500	8	4,160	110	144,100	1.5	27,850	1.3	21,200
Butler			10	3,600	32	3,592,000	28	2,039,800	17	22,270	24	19,680	8	3,600	160	208,200	1.7	31 600	1.2	16,920
Calhoun			10	41,900	33	3,653,430	34	2,127,880	20	4,600	27	114,120			125	132,500	1.8	29,610	1.5	19 160
Carroll			12	196,320	41	4,599 380	32	1,555,840	20	4,800	28	85,960			130	223,600	1.6	33,930	1.5	22,680
Cass	20	10,200	8	174,000	35	4,068,750	30	822,300	15	5,700	25	24,000			110	174,900	1.5	51,780	1.2	4,110
Cedar	20	13,400	10	14,200	42	4,651,860	35	1,233,750	15	22,200	28	321,480			160	193,600	1.8	70,470	1.5	1,220
Cerro Gordo			9	10,530	33	3,275,910	30	2,154,300	15	7,350	20	41,000	7	5,670	120	160,800	2.0	46,300	1.5	16,800
Cherokee			10	193,200	40	4,502,000	35	1,756,300	14	1,260	28	132,360	8	960	140	175 000	1 8	41,670	1 5	10,300
Chickasaw			12	12,960	35	2,369,050	40	2,414,800	17	10,710	32	80,320	12	50,160	110	158,600	1.8	34,110	1.3	13,170
Clarke	20	6,400			32	1,847,040	20	317,000	15	7,050					150	81,000	1.7	77,320	1.2	600
Clay			10	52,500	33	3,118,830	37	2,007,640	15	13,650	27	439,600	8	2,880	120	116,400	1.6	30,570	1 4	29,700
Clayton	14	17,500	12	68,760	37	2,845,670	34	2,135,540	19	76,760	33	195,030			130	245,700	1.8	81,370	1.5	3,130
Clinton	20	8,400	11	36,960	42	4,397,240	35	1,328,250	20	46,200	30	142,500			120	140,800	1.4	61,990	1.0	4,180
Crawford			9	363,680	36	4,348,080	34	1,428,340	18	10,620	30	65,400			110	209,770	1.8	58,840	1.5	12,460
Dallas	12	17,160	10	43,200	40	4,431,200	29	934,480	17	8,160	20	16,400			115	110,400	1.6	39,450	1.5	12,690
Davis	15	23,100			35	2,043,650	28	427,000	15	30,600					105	70,350	1.4	65,290	1.0	210
Decatur	20	12,400			32	2,245,760	20	322,200	18	11,520					100	67,000	1.4	76,130	1.0	890
Delaware	20	24,200			37	3,308,910	33	1,513,710	22	40,920	30	124,500			120	139,700	1.2	44,950	1.2	6,400
Des Moines	15	45,600	8	3,680	38	1,927,260	30	725,400	20	15,600	25	505,680			95	102 600	1.5	30,210	1 0	1,100
Dickinson			9	74,970	24	1,044,240	27	728,190	20	6,400	25	380,250	12	25,440	100	52,000	2.0	15,840	1.5	27,350
Dubuque	18	1,980	15	54,300	39	2,656,490	40	2,046,400	21	39,690	33	80,520			130	240,900	1.5	67,680	1.4	8,820
Emmet			12	35,160	30	1,611,600	45	1,631,700	20	4,400	35	287,350	11	15,070	90	44,800	1.8	20,610	1.5	23,410
Fayette	20	2,600	8	24,080	30	2,763,600	31	2,236,030	20	19,200	33	193,380	9	9,360	110	180,400	1.5	71,860	1.2	8,210
Floyd			9	5,220	31	2,535,490	30	2,044,200	21	24,570	22	103,620	8	15,440	95	188,100	2 0	34,320	1 2	9,020
Franklin			13	18,860	36	3,592,440	35	2,607,850	18	9 720	25	26,500	9	8,280	130	137,800	1 6	32,200	1.3	18,110
Fremont	12	26,760	8	12,880	35	3,866,100	22	244,640	15	9,150					150	103,500	1.8	25,390	1.5	8,560
Greene			12	29,400	41	3,715,420	23	964,510	15	1,800	25	51,250			120	90,400	1.7	30,970	1.2	14,120
Grundy			8	18,160	38	3,720,960	25	1,598,250	16	1,760	24	219,120			150	229,500	2.0	42,420	1.2	7,500
Guthrie	15	4,800	9	60,390	33	2,711,280	30	1,116,900	20	2,800	25	52,500			150	85,500	1 5	43,050	1.0	7,850
Hamilton			15	60,300	39	3,699,930	30	1,527,300	20	1,200	25	24,500	12	5,400	150	216,000	2 0	37,220	1.5	28,250
Hancock			8	32,160	25	2,203,000	28	2,057,440	18	4,680	25	62,750	9	9,540	160	152,000	1 3	22,690	1.0	20,130
Hardin			12	36,720	33	3,237,630	28	1,556,350	12	2,520	26	18,980			120	166,800	1.5	30,480	1 5	21,120
Harrison	20	420	9	280,890	38	4,955,960	33	495,560	15	13,650	30	31,800			110	169,400	2.0	24,570	1.8	20,130
Henry	14	28,840	12	480	43	2,805,750	35	990,850	20	70,800	25	38,250			140	74,200	1.8	37,870	1.0	210
Howard			12	14,280	28	1,322,760	30	1,805,100	20	2,240	30	105,600	12	48,960	100	95,000	1.5	44,550	1.5	15,210
Humboldt			12	94,080	38	2,588,560	35	1,277,200	20	2,800	33	63,030	12	11,040	160	73,600	1.5	22,660	1.2	18,210
Ida			10	190,100	37	3,427,680	40	1,286,000	20	5,200	30	123,900			100	95,000	2.0	40,420	1.5	7,210
Iowa	28	5,880	13	21,840	41	3,530,920	32	1,059,840	14	7,280	27	106,650			150	184,500	1.5	66,120	1.5	1,900
Jackson	12	3,120	10	82,200	40	2,844,800	28	957,040	16	33,280	25	90,250			110	128,700	1.5	66,030	1.5	8,200
Jasper	10	8,200	9	62,190	37	4,266,840	24	991,440	22	11,660	25	16,250			120	241,200	1.8	44,340	1.2	2,610
Jefferson	15	29,400	12	600	43	2,541,730	32	726,7 0	16	65,120	30	61,800			120	70,800	1.5	45,520	1.0	2,310
Johnson	15	11,420	13	13,390	42	4,448,640	31	1,317,810	16	45,920	32	185,920			130	170,300	1.7	62,280	1.0	1,910
Jones			10	9,800	40	3,665,200	31	1,086,550	18	31,500	30	154,200			130	126,100	1.3	58,810	1.0	2,100
Keokuk	14	19,740	10	9,200	37	3,570,500	27	949,050	14	42,980	20	91,200			140	120,400	1.4	55,560	1.0	470
Kossuth			12	194,160	28	4,161,360	34	4,258,500	15	3,150	28	177,800	12	38,640	160	254,400	1.5	32,340	1.2	68,000
Lee	15	96,150			35	1,869,350	28	628,600	15	72,160					120	141,600	1.5	57,310	1.0	180
Linn			10	12,100	34	3,771,280	32	1,611,520	15	16,200	25	23,000			110	203,500	1.5	60,420	1.0	4,110
Louisa	15	33,600			40	2,407,400	33	666,930	16	48,640	30	46,800			90	53,100	1.6	27,360	1.2	1,520
Lucas	14	8,680			30	1,521,300	25	345,250	14	8,680	22	7,480			85	44,200	1.3	54,730	1.0	220
Lyon			8	290,600	28	2,443,560	33	1,443,850	16	2,560	25	1,131,750	9	1,980	120	148,800	1.5	13,660	1.5	20,550
Madison	10	7,500	5	20,600	40	3,178,000	25	478,750	15	7,350	26	39,260			150	103,500	1.8	69,150	1.5	6,150
Mahaska	15	22,800	9	16,290	40	4,087,600	30	964,200	15	27,150	25	75,500			110	100,110	1.5	51,180	1.0	910
Marion	18	37,880	10	30,900	39	3,642,990	30	844,800	17	24,480	25	20,250			120	117,700	1.5	42,150	1.2	1,530
Marshall			11	55,110	42	4,630,340	33	1,707,420	15	6,450	24	60,240			140	161,000	1.4	39,420	1.2	2,800
Mills	12	21,600	7	42,840	35	2,625,350	20	229,600	10	3,200					90	75,600	2.0	32,280	1.0	2,410
Mitchell			12	29,640	35	2,152,150	34	2,215,440	12	6,120	28	334,880	10	83,400	110	191,400	1.5	36,180	1.0	2,410
Monona	21	14,900	10	287,100	36	4,523,400	35	632,100	16	14,560	30	152,400			110	134,200	1.9	8,320	1.5	27,630
Monroe	15	3,750	8	960	37	1,897,360	25	280,750	16	13,280					100	62,000	1 5	45,310	1.0	480
Montgomery	12	33,720	7	102,970	35	3,363,850	22	294,800	12	6,120					80	72,800	1.5	48,610	1.5	2,240
Muscatine	18	28,620	12	176,520	40	3,048,400	33	720,060	14	70,140	28	171,360			100	212,000	2.0	48,040	1.5	2,210
O'Brien			10	147,100	30	3,307,500	33	1,757,910	15	3,300	25	650,750	9	2,520	110	136,400	1.5	26,860	1.5	18,030
Osceola			11	101,420	30	2,440,500	34	1,115,900	15	1,650	26	704,860	8	5,360	120	78,000	1.7	18,920	1.5	16,410
Page	15	128,550	8	36,720	31	3,570,890	20	325,400	12	14,400	22	18,040			120	108,200	1.8	61,570	1.5	4,050
Palo Alto			10	38,100	30	2,457,300	30	1,652,700	15	4,650	30	156,300	9	18,090	140	124,600	1.2	12,130	1.2	42,140
Plymouth			10	901,200	40	6,555,600	35	1,786,050	14	5,460	25	239,250	10	2,100	110	212,300	1.5	26,940	1.0	26,150
Pocahontas			12	33,720	27	2,927,070	36	2,467,440	15	6,150	28	87,080	10	16,200	100	108,800	1.8	21,970	1.2	36,160
Polk	15	13,950	10	51,110	40	4,482,800	32	1,239,040	12	11,340					100	192,000	1.8	38,350	1.2	10,670
Pott'wattamie	15	13,050	8	305,520	40	8,051,200	32	963,840	12	6,120	20	16,600			120	312,200	1.6	53,580	1.0	13,260
Poweshiek	13	910	12	27,120	40	4,352,800	30	1,203,300	15	5,850	25	86,250			140	149,800	1.4	58,950	1.0	650
Ringgold	13	9,360	10	850	25	1,982,000	20	416,400	15	9,300					100	51,000	1.5	78,280	1.2	910
Sac			12	94,080	34	4,094,280	35	1,756,300	20	2,800	30	143,100	12	960	150	160,500	1.7	42,680	1.5	21,910
Scott	17	35,020	14	85,680	43	3,350,130	30	641,700	15	27,150	22	518,760			150	721,500	1.4	36,690	1.2	6,330
Shelby			10	30,120	40	4,808,400	30	818,400	15	1,350	25	34,500	10	3,100	140	193,200	1.5	31,810	1 5	6,240
Sioux			7	421,260	33	4,920,960	35	1,754,200			30	864,300	8	3,280	120	169,200	1.5	15,610	1.5	30,910
Story	20	1,800	10	17,400	42	4,721,200	32	1,645,120	20	9,800	30	15,300			150	123,000	1.5	33,780	1.0	18,380
Tama	20	800	8	50,480	40	4,807,600	33	1,719,630	15	6,150	25	720,250			140	245,000	1.5	60,270	1 0	5,240
Taylor	15	47,400	5	400	25	1,828,000	15	252,200	12	14,850	20	13,400			120	78,000	2.0	68,220	1.5	2,100
Union	15	2,700	8	720	29	1,853,400	23	408,760	16	2,720	20	10,200			120	97,200	1.7	74,250	1.0	1,290
Van Buren	13	28,860			42	2,105,140	30	517,200	12	45,960					150	63,000	1.8	65,010	1.0	1,520
Wapello	15	31,050	10	1,100	41	2,575,620	40	647,200	20	83,200	25	39,500			100	92,000	1.5	48,420	1.0	210
Warren	16	9,760	10	30,800	40	3,644,800	26	1,532,520	15	18,900	20	26,600			140	113,400	1.7	69,780	1.2	420
Washington	20	18,400	10	2,800	43	3,177,270	30	978,300	15	42,150	21	84,210			130	89,700	1.8	47,280	1 0	240
Wayne	20	1,800			38	1,857,800	22	336,380	15	12,300					130	72,800	1.7	100 980	1.0	460
Webster			12	61,400	35	4,241,300	40	3,021,200	20	3,600	22	21,1 0	10	8,100	120	135,600	2.0	38,440	1.0	24,110
Winnebago			8	66,000	25	1,253,000	28	1,125,880			25	81,000	6	11,340	105	64,050	1.5	18,150	1.2	26,110
Winneshiek	15	1,350	7	42,840	39	2,627,820	33	2,276,670	20	5,200	30	307,800	10	73,100	110	129,800	1.3	58,860	1.0	11,200
Woodbury			9	379,620	41	6,979,020	35	996,450	12	7,920	30	197,700	7	1,470	120	177,600	2.0	22,180	1.2	14,120
Worth			10	30,200	30	1,298,400	40	2,287,600	15	1,650	35	192,850	12	75,480	150	111,000	1.8	28,990	1.0	14,240
Wright			14	68,180	36	3,593,520	33	2,274,030	15	1,800	20	80,600	11	18,260	110	92,400	1.9	35,910	1.5	28,160
Totals, state		1,017,000		7,080,430		323,853,330		118,435,570		1,517,090		12,817,710		591,140		14,255,680		4,099,090		1,091,590
Av. per acre	14.3		9.1		36		29.4		15		25		11		125		1.5		1.2	

VALUE OF PASTURAGE AND GRAZING.

In net value the grass crop is easily foremost among the soil products of this state. Conservative figures show that the hay crop, both cultivated and wild, was worth on December 1st, $30,197,040, at the low prices current at the farms on that date. But pasturage and grazing can not be measured by the ton or bushel, and the value must be estimated by taking into account the value of the farm animals and the output of the dairy industry. Here is one statement of the problem to be solved: If the grass crop when made into hay is worth $30,000,000, cut from less than 4,000,000 acres, what is the relative value of over 8,000,000 acres in pastures harvested by stock seven months in the year, plus the immense amount of grazing obtained from about 16,000,000 acres of grain fields, corn fields, meadows, etc., after harvest and through a portion of the winter season? It is not an exaggerated statement to say that pasturage and grazing count three fold the value of the hay crop in the production of live stock and in the dairy. According to the United States census the value of live stock and dairy products disposed of in Iowa in 1899 was approximately $150,000,000. Unquestionably two thirds of that amount must be credited to pasturage and grazing. That would signify a total value of about $100,000,000, or a little over $430 per farm.

MRS. MILLICENT B. STERN.

This office has been saddened by receipt of a note announcing the death of Mrs. Millicent B. Stern, who passed away at her home in Logan, November 12, 1904, in the 84th year of her age. She was the wife of Jacob T. Stern, who served as volunteer weather observer from 1860 till his decease in 1892. For the period of about twelve years the station has been kept with rare fidelity by Mrs. Stern, whose record bore evidence of the possession of a bright intellect until the final summons came. The records of the Logan station are of inestimable value to the people of that place and the state at large.

THE MUSKRAT AS A LONG-RANGE WEATHER PROPHET.

A valued correspondent inclosed the following clipping from a Minnesota paper, requesting the opinion of the editor of this publication as to the reliability of the muskrat as a true prophet of the character of the coming winter. The writer said: "I know from personal experience that the muskrat builds larger houses some years than others, but I had attributed it to the abundance or lack of material."

Following is the clipping referred to:

BEMIDJI, Minn., Dec. 2.—The muskrat as a weather prophet never misses. The little animals have about completed their winter building now and their houses are flimsy affairs, a sure sign of an open winter. The Indians and old settlers have more confidence in the little furry creatures than in human weather prognosticators. They say muskrats can tell months ahead what the weather will be and in Northern Minnesota they have shown their foresight by building thin walls to their winter homes.

REPLY.

DEAR SIR,—I am in receipt of your letter of the 3d inst., and the clipping relative to the muskrat as a long-range weather prophet. Responding to your request, I venture the opinion that the muskrat is quite like his biped brother of the human species—he works under stress of necessity. If his house is thinner than usual just now, it is due to the fact that October and November were phenomenally mild; the muskrat was out enjoying the sunshine. Possibly he had heard some of the talk that the climate is changing and the winters are growing milder since the old pioneer days. He concluded that the good time had come—sure, and what's the use building thick houses any more? From this point of view we may regard thin muskrat houses as signs of mild autumns, and not as sure indications that the coming winters will be of the same sort. When zero pinches the musky rodent may wish he had thatched up betimes in better shape. Really, now, I don't believe the animal, however strong his instinct may be, knows any more about the coming winter than the almanac-maker, or other long-range weather fakir.

Very respectfully,
J. R. SAGE.

WEATHER BUREAU STATION AT CHARLES CITY, IOWA.

A new Weather Bureau station was opened at Charles City, Floyd county, Iowa, on November 1, 1904. The longitude of Charles City is 92° 38′ W., latitude 43° 04′ N. and elevation 1015 feet above mean sea level. The city is situated in the valley of the Cedar River, and is partially surrounded by hills ranging in height from 50 to 68 feet above street level. The station is located one block from the river. It is furnished with a full instrumental equipment, the wind instruments and electrical sunshine recorder being mounted on a 50 foot steel tower, in the base of which the thermometer shelter is suspended. The rain gauges have a ground exposure in the yard. Two observations will be taken daily and the usual records kept.

CLARENCE J. ROOT,
Assistant Observer, Weather Bureau.

CONCERNING WEATHER FORECASTS.

Benjamin Franklin was a pioneer in meteorology, as well as in the correlated science of electricity. His kite experiment, demonstrating the identity of lightning with artificial electric sparks, gave him world-wide fame; but no less important from a scientific point of view, and of greater practical value, was his discovery of the rotary circulation of winds in the general storms of the Atlantic coast, and a progressive movement in a northeasterly direction. By inquiries addressed to numerous correspondents and travelers in the colonies he reached the conclusion that the northeast storms of that region began at extreme southwest points about a day earlier than at Boston. From a careful study of the mass of facts thus laboriously collected he formulated his tentative philosophy of storms.

Franklin's contemporaries, and the people generally, were not deeply impressed by this new theory. There was nothing spectacular about it, appealing to the popular imagination like his famous kite-flying experiment performed amid thunder and lightning. He was a century in advance of his age. And the bulk of the people were biased by the teachings of the oldtime astrologers that the moon is the dominant force, with the planets as adjuncts, in the production of storms and weather changes. But Franklin was unique among the philosophers of the eighteenth century. Though a great reader of books and current literature, in scientific studies he consulted chiefly the book of nature. His methods were characterized by simplicity and directness. He was richly endowed with the genius of common-sense. He gave little heed to the occult doctrines and mysticisms of ancient philosophy. To him the vaporings of the oldtime astrologers were of less value than the soughing of the east wind, which was a portent of a coming storm from the westward.

In the field of meteorology Franklin was essentially an explorer, setting up landmarks for guidance of future investigators. Following his line of research, in the first half of the nineteenth century a number of able scientists brought some measure of order out of chaos, and were able to discern regular lawful sequence in the apparently erratic sweep of wind currents and storm-eddies. With the rapid advance of settlements to the westward, and construction of railways and telegraph lines, conditions were made favorable for collecting and making a scientific analysis of climatic data. This was done by scores of observers and scientists under the auspices of the Franklin Institute of Philadelphia, and the Smithsonian Institution, aided in some measure by the government. Upon the foundation thus prepared the structure of the National Weather Bureau was begun in 1870. From a small beginning, with an initial expenditure of $20,000, this branch of the public service has been enlarged in its scope until it has become of vital importance to all interests and all classes of people. The annual appropriation for its support is about a million and two hundred thousand dollars, and this great Bureau has won the admiration of the civilized world. Its field of observation now embraces the continent from the Arctic circle to the northern coast of South America. And today marine interests, inland commerce and agriculture share about equally the benefits of the service.

It is a Bureau of applied science, with ample provision for original research. It is both progressive and conservative—proving all things and holding fast that which is good. It has been founded upon well-attested scientific principles. All the discoveries and generalizations in meteorology made by the most eminent scientists of America and Europe have been utilized and reduced to practical form in the work of the forecast division. Inventive skill has been called into requisition to construct instruments for recording automatically the most minute changes in atmospheric pressure, temperature, humidity, precipitation, wind velocity and direction, sunshine, etc. These complex and almost infallible instruments have been installed at about 200 regular stations within the territory covered by this service, in charge of thoroughly trained observers who have become experts in this line. Simultaneous observations are collected by telegraph twice daily, and oftener when needed; and by this means the forecast officials are enabled to note the actual weather conditions in all parts of the continent. On prepared maps lines are drawn showing areas of low and high pressure, noting differences of temperature and direction of wind at the various stations. Storm centers are thus located, and the graphic pictures show the area of disturbance, energy and direction of movement. Upon this basis of actual conditions, thus graphically presented to the eye of the official in charge the forecast is made as to the weather changes that are likely to occur in the different parts of the country within the coming twenty-four, thirty-six or forty-eight hours.

In the methods of forcasting there is nothing even remotely akin to occult science or the practice of astrology. No storm forecast is issued until a storm actually appears, or is in the initial stage of development. When the weather map reveals the outlines of a storm at the far west or northwest the problem to be solved by the forecaster relates to its probable future course, its velocity of translation, its increase or decrease in extent and force, and the disturbance of elements likely to be caused during its progress across the continent. This is something of a complex problem, requiring in its solution a very thorough study and the application of well established principles of meteorological science. Due consideration must be given to the results of experience and observation of weather processes in previous storms, but that does not insure perfect accuracy of the forecast. There are different types of storms, and those belonging to a certain type of form and combination of lows and highs on the map frequently display very eccentric behavior in their transcontinental movement. Nature's great law of diversity holds true in the weather to a remarkable degree. No exact duplicate of any general storm has been issued. And this extreme variability of movement, under quite similar conditions at the outset, has prevented an overproduction of perfectly successful weather forecasters. It is indeed marvelous that in this country, with its widely variant storm-types, they have achieved from 80 to 90 per cent of accuracy in their work.

Well now, having made so good a record at short range, why not extend the period a full week or month? This is a question often propounded. The answer of experience is that those who venture further usually fare worse. Just beyond what is shown on the daily weather chart is an illimitable realm of uncertainty, wherein those who enter must walk by faith not by sight. Forecasters take large risks if they attempt to hit storm centers offhand, or by random shots; to hit even at short range they must take very deliberate aim with the weather map as a rest.

Unquestionably there is a general desire for an extension of the range of forecasts, to cover the near future, and if possible the coming season. If some explorer in meteorology and astronomy should discover a fundamental law, whereby he could accurately calculate the time of arrival, the force and pathway of all storms for weeks and months in advance, and could warn the people of future floods or drouths in defined localities, he would at once take rank as the greatest scientist in the world. And then if he would reveal the secret of his discovery for the benefit of future generations, he would be honored as the greatest of philanthropists as well as the wisest of mankind. But alas, up-to-date this great man has not arrived, and as yet we have not even a postal card notification of the date of his coming.

In ancient times astrologers worked a profitable "graft" to satisfy the public demand for knowledge of the future, representing that all human events, and even weather changes, were due to the influence of the moon and planetary bodies, and that they alone knew how to read the celestial cipher. Isaiah, the great Hebrew prophet, referred to that guild in rather uncomplimentary terms, as "Stargazers, astrologers, and monthly prognosticators." Since the middle ages this practice has fallen into disrepute, but we have some "modern instances" indicating a survival of the superstitious beliefs which formed the basis of old-time astrology. Our modern stargazers and monthly prognosticators refer in mysterious phrase to the moon, Mercury, Venus, Saturn and even the hypothetical Vulcan, as the powers of the air which brings storms and all weather changes and earthquakes. These men peddle their long-range forecasts in almanacs and other publications, profiting by practice on human credulity and ignorance of natural laws. Their alleged predictions are usually very indefinite as to the exact date of arrival of storms, and their line of travel when they arrive; and by skillful ambiguity of language they may claim a verification if a storm crosses the continent anywhere between Hudson's Bay and the Gulf of Mexico, at any time within an alleged storm period of three to five days.

Some of the ablest scientists of this country and Europe have devoted much time and labor to the study of this problem. They have consulted weather records of all countries, taking note of the dates of heavy storms, making comparison with the position of the moon and planets, to determine if there in any discoverable connection between the movement of those minor bodies and the sweep of storm-eddies in earth's atmosphere. The consensus of opinion has been that there is no foundation of fact or philosophy for that system of long-range forecasts. So thus far there has been an entire failure to establish a scientific and practical basis for any kind of trustworthy predictions as to the occurrence of storms, floods or drouths in specified localities and at certain dates in future months or seasons. Though such foreknowledge is very desirable, yet at the pre-

sent stage of human progress it is beyond possibility of realization. In this field of scientific research the wisest students have been most deeply sensible of the limitations of human knowledge; but charlatans and pretenders claim to hold a key to mysteries in earth and the heavens that are hidden to the balance of mankind. Quackery in meteorology as well as in medicine is indicated by the extravagant pretensions of its practictioners.

Modern astrologers, following closely the lines of their ancient prototypes, give the sun a minor or passive role, while the moon and planets form an all-star aggregation in the ever-shifting scenes of earth's drama. To each planet is assigned some specialty act on the stage, each producing a different type of weather; and when two or three act in conjunction the complex results are startling. In the program as presented by a long-range almanac the leading role in developing regular storm periods is given to "Vulcan", though that hypothetical planet modestly keeps out of sight. The almanac says: "The Vulcan period is the foundation and frame work around which all storm disturbances grow."

According to this almanac the planet Mercury is in control of the sprinkling apparatus, causing mist and drizzles in summer, and damaging sleet in winter. Just how Mercury produces such an effect on the earth is one of the curious things in occult science. The almanac says: "Mercury moves and operates at such distance from the sun as to admit of much vapor and humidity. At the same time its nearness to the sun causes perpetual evaporation and steam and vapor in its atmosphere and skies, and this is in some as yet indefinable way communicated to our own and other planets in our system. * * * This peculiar infection infused into the sun by the Mercury perturbation, we hold, may reasonably take on such forms as to be thrown out by the solar energy, being reconverted into something like its original elements in our own globe and atmosphere. Hence our thick prolonged cloudiness, our mist and drizzling rains and sleet storms during the Mercury disturbances.

This abstruse statement translated into plain English signifies that the planet Mercury when it gets into a "disturbance," throws water into the face of the sun, and that body retaliates by turning his hose on the whole planetary family! That relieves great Jupiter Pluvius from some measure of blame for excessive humidity.

Another extract from the almanac will throw more light on this problem. It says: "The disturbances of each and all the planets are communicated to all the rest of the planets, not directly, but through the perturbations caused by the planetary equinoxes to the sun. * * * When the plane of each planet's equator cuts the sun, this force is violently antagonized, the center of energy is put out of balance in the great solar orb, and perturbing waves react upon all bodies in our system, resulting in the phenomena which we witness in our earth and skies and which we denominate as meteorological."

There we have the gist of the system,—straight! The planents are dynamos revolving swiftly in space, each projecting from its equator tremendous electric force. When that equinoctial stream of planetary thunder and lightning strikes the sun squarely in the face it makes old Sol hot, and of course he strikes back! Who wouldn't? It's no very pleasant thing to be cut in the face by that sort of electric buzzsaw! This theory accounts not only for terrestrial storms and extreme heat, but also for the great spots that appear occasionally on the sun's face. The noxious planetary equinoxes cause all that disfigurement. Science is a great thing when it aids us in solving such problems as that! In reading over this almanac's dramatic story of how the planets are continually "perturbing" the sun, and how the sun hurls it back at all creation, one is reminded of a lot of boys poking sticks into a mammoth hornet's nest, and the stinging "reactionary disturbance" issuing from that previously passive body!

Really, it is difficult to treat such ludicrous matter with becoming dignity and seriousness. The chapter of the almanac descriptive of "Each planet's peculiar phenomena" is absolutely irresistible as a mirth-provoker to any reader who possesses a sense of the ridiculous and some elementary knowledge of meteorology and astronomy. One is impressed by the evident earnestness of the author, and yet it seems that he must be too intelligent to believe in his absurdly fantastic theories. They are no more believable than the myths and legends of the ancients. It is inconceivable that a learned astronomer and meteorologist actually believes that the sun is passive except when it is "perturbed" by some planet's equinox; that mists and vapors are injected and infused into the sun by Mercury's perturbation, and then thrown out by solar energy to form mists and sleet on earth; and that during the so-called "Jupiter period" the carrying capacity of earth's atmosphere becomes disordered and weakened, so that it cannot transport and diffuse humidity, thereby causing consuming drouths in places and destructive cloudbursts in other localities. One who actually believes that kind of absurdity is beyond the reach of influence by evidence and argument. The bare statement of such propositions is a sufficient refutation.

Students in the primary class in meteorology learn that the ever-changing phenomena of the weather are all referable to the action of the sun upon the earth and its atmosphere, vapors and gases; that the constantly radiated energy of the sun supports heat, light and electric force in the solar system. The planets possess no form of independent energy whereby they may "perturb" the sun and increase its potency. Gravitation is only a name given to the statical relation of all matter in the universe, and it is a physical constant. There is absolutely no proof of any "perturbation" or increase in storm energy when the sun crosses the equator of the earth or any other planet. That is merely a hypothesis, supported by a priori assumptions and occasional coincidences. People often confound coincidence with consequence.

Planetary weather forecasts are too-far fetched to be practicable. The prophets in that line work at the wrong end of the problem. When there is more than the usual degree of heat or storminess, they peer into the nebular spaces to see what caused the disturbance on earth, and then allege that it was done by Jupiter, or was the malign work of Saturn, which in their philosophy causes epidemics and pestilential contagious diseases. Possibly also they may in time discover that it is due to Saturnian potency that we have rings and combines in human affairs; why not?

True science, in the last analysis, is plain common sense applied to the study of nature's problems. In erecting philosophical structures the foundation should rest on the earth. Begin with facts as the solid basis of theories. Reason from the known to discover the unknown. In forecasting a storm, observe the good old recipe of the cook book for cooking a hare—first catch your storm, and then predict its future course and time schedule. A storm in hand (i. e., on the map), is worth two in some nebular hypothesis! It's mighty easy forecasting storms if one is allowed a broad range as to the exact locality and a long range as to the date. Storms are coming and going all the time, somewhere; on all dates as well as the specified days of the almanac's storm period.

It is probably true that cyclones or storm eddies, are as much in evidence one day as another, considering the earth as a whole. So one may safely predict storms for every day in the year with the certainty that they will rage somewhere. It would keep the moon and planets mighty busy with their equinoxes to maintain the continual stream of atmospheric eddies flowing over the face of the earth. But really the moon and planets are not charged with that duty. In respect to light, heat and power of gravitation these bodies are infinitesimal as compared with the sun, which is the prime cause of weather phenomena on earth.

J. R. SAGE.

CLIMATOLOGY OF THE MONTH OF NOVEMBER, 1904.

BAROMETER.—Mean pressure, 30.10 inches; highest observed. 30.56 inches, at Sioux City, on the 11th; lowest observed, 29.49, inches, at Davenport, on the 28th; range for state, 1.07 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 110 stations, was 41.0°, which is 6.3° above normal. By sections the mean temperatures were as follows: Northern section, 39 3°, which is 7.0° above normal; Central section, 40.7°, which is 6.1° above normal; Southern section, 43.1°, which is 5.4° above normal. The highest monthly mean was 45.8°, at St. Charles; lowest monthly mean, 37.4° at Maquoketa. The highest temperature reported was 80°, at Ruthven and Waukee, on the 18th; lowest temperature reported, 4°, at Britt, on the 30th. The average monthly maximum was 71.1°; average monthly minimum, 9.6°. Greatest daily range, 56°, at Rock Rapids, average of greatest daily ranges, 37.8°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 119 stations, was 0.15 of an inch, which is 1.25 inches below normal. The averages by sections were as follows: Northern section, 0.17 of an inch, which is 1.19 inches below normal; Central section, 0.15 of an inch, which is 1.28 inches below normal; Southern section, 0.14 of an inch, which is 1.30 inches below normal. The largest amount reported was 0.50 of an inch, at Bonaparte and Glenwood; least amount reported, none, at Rockwell City. The greatest daily rainfall reported, was 0.50 of an inch, at Bonaparte and Glenwood, on the 9th and 10th respectively. Average number of days on which .01 of an inch or more was reported, 1.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 43 miles per hour, from the northwest, at Sioux City, on the 29th. Average number of clear days, 20; parly cloudy, 6; cloudy, 4.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Charles City	30.08	30.50	10	29.52	28
Davenport	30.07	30.45	11	29.49	28
Des Moines	30.13	30.54	26	29.61	28
Dubuque	30.09	30.48	11	29.53	28
Omaha, Neb	30.12	30.58	10	29.61	28
Keokuk	30.11	30.48	26	29 51	28
Sioux City	30,11	30.56	11	29 55	28
Means	30.10	30.56	11	29.49	28

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Charles City	5,139	36	NW	23
Davenport	4.557	31	W	29
Des Moines	4.913	27	SW	19
Dubuque	4.266	33	NW	23
Keokuk	4.543	34	NW	29
La Crosse, Wis	5.294	27	NE	9
Omaha, Neb	5.284	36	NW	29
Sioux City	8.016	43	NW	29

OBSERVERS' NOTES.

ALLERTON.—*Rex Shriver.* Weather during the month has been unusually fine.

ALTA.—*David E. Hadden.* An ideal November. One of the finest on record here. The daily mean temperature of the month was 8° above the average of the preceding 14 years. There was only one storm of rain and snow during the month and the greatest number of clear days and the least number of cloudy days on record.

AMANA.—*Conrad Schadt.* Indian summer weather prevailed throughout the month. The nights were cool and often foggy and the days mild and hazy. The ground seems to be as dry as ever at this time of the year. The roads are as dry, hard and even as paved streets.

ATLANTIC.—*J. W. Love.* This has been the finest November of which I have any record. Pasturage good for this season of the year. Roads never were in better condition. Dandelions in bloom on the 29th.

AUDUBON.—*Geo. E. Kellogg.* First snow of season on the 10th.

BONAPARTE.—*Hon. B. R. Vale.* A pleasant and profitable month. Only .64 inch of rain since September 27th.

BRITT.—*Geo. P. Hardwick.* An ideal month. But one cloudy day.

CHARITON.—*C. C. Burr.* November was a month of sunshine; no storms. Farm work is well advanced. Water for stock is getting to be an object, surface water being exhausted; but a trace of rain during the entire month.

CLINTON.—*Luke Roberts.* The month was almost rainless and cloudless.

FOREST CITY.—*J. A. Peters.* The most delightful November for years—no snow. Most of corn cribbed and fall work on farm well finished.

GRUNDY CENTER.—*E. S. King.* A very remarkable month for lack of storms.

IOWA FALLS.—*J. B. Parmelee.* A twelve-year record does not show such fine weather for November.

LARRABEE.—*H. B. Strever.* November has been very mild and clear, enabling farmers to carry forward fall work at a good pace.

MOUNT VERNON.—*Rev. Jos. W. Hubbard.* Remarkable for clear skies, moderate temperature and small amount of rainfall.

OSKALOOSA.—*Jas. Boyd.* November was a very dry and pleasant month. The least precipitation I have recorded for the past 14 years.

RIDGEWAY.—*Arthur Betts.* Wild geese going south on 17th. There were 13 days without a cloud and 15 days of uninterrupted sunshine. Drouth conditions prevailed.

ROCK RAPIDS.—*W. C. Wyckoff.* Finest fall in 23 years.

SHELDON.—*A. W. Beach.* First snow on 9th. Ground not frozen to prevent plowing.

WASHTA.—*H. L. Felter.* Unusually fine weather all during the month. All clear days but one. Could plow up to the 30th.

WAUKEE.—*E. J. Leonard.* Weather remarkably fine all the month. One light rain and no snow. Only 3 cloudy days and 2 partly cloudy since October 21st, or 36 clear days out of 41.

WAVERLY.—*H. S. Hoover.* No snow until the 29th; then only a trace.

BELATED REPORTS.

NORTHWOOD—September—Total precipitation 1.40 inches; greatest in 24 hours .50 inch on the 1st; prevailing direction, northwest; number of clear days 10, partly cloudy 9, cloudy 12, rainy 5.

CLEAR LAKE—October—Mean temperature 51.6°; highest 76° on the 16th; lowest 26° on the 25th and 27th; greatest daily range 25°; total precipitation 2.65 inches; greatest in 24 hours 1.25 inches; prevailing direction southeast; number of clear days 8, partly cloudy 17, cloudy 6, rainy 4.

NORTHWOOD—October—Total precipitation 2.30 inches; greatest in 24 hours .80 inch; number of rainy days 4.

SPIRIT LAKE—October—Mean temperature 50.4°; highest 78° on the 16th; lowest 22° on the 24th; greatest daily range 40°; total precipitation 2.38 inches; greatest in 24 hours .97 inch; prevailing direction, south; number of clear days 10, partly cloudy 7, cloudy 14, rainy 4.

WHAT CHEER—October—Mean temperature 55.2°; highest 86° on the 4th; lowest 24° on the 29th; greatest daily range 49°; total precipitation .37 inch; greatest in 24 hours .22 inch; number of rainy days 2.

CLIMATOLOGICAL DATA FOR NOVEMBER, 1904.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	38.5	† 6.6	68	2,3	7	30	31	.32	- .94	.20	1.0	2	....	....	....	NW	
Alta	Buena Vista	1,513	11	40.0	† 8.4	70	18	8	30	35	.31	- .86	.31	1.5	2	20	8	2	NW	
Alta (near)	Buena Vista	.....	....	.....	.....	.....	.....	.....	.....	.....	.10	.....	.10	...	1	....	....	....	.....	
Britt	Hancock	1,236	5	37.8	† 4.7	68	1,2,3	4	30	35	.26	- .72	.16	1.3	2	14	15	1	N, NW	
Charles City	Floyd	1,012	11	38.2	† 5.2	70	3	8	30	38	.25	-1.25	.25	T	2	14	11	5	NW	
Clear Lake	Cerro Gordo	1,241	....	38.4	.....	65	4,18	9	30	29	.25	.....	.25	T	1	17	10	3	NW	
Decorah	Winneshiek	857	..	38.8	† 6.5	68	1,2	10	30	35	.35	-1 24	.29	....	2	....	....	....	.....	
Dows	Wright	1,142	....	38.8	† 5.1	69	1,3	8	30	40	.05	-2.29	.05	.5	1	24	1	5	NW	
Elkader	Clayton	727	21	38.7	† 6.1	75	4	9	30	45	.14	-1.54	.14	T	1	14	12	4	NW	
Estherville	Emmet	1,298	....	39.2	†10.1	72	2	9	30	41	.14	-1 03	.14	1.5	1	21	1	8	NW	
Florence	Wright	1,226	8	.....	.....	....	.....	...	.....	.....	.19	.....	.15	T	2	9	19	2	SW	
Forest City	Winnebago	1,226	8	38.4	† 7.1	71	3	8	30	36	.22	-1.14	.22	T	1	20	5	5	W	
Grand Meadow	Clayton	1,180	11	39.4	† 7.2	66	1,2,3	8	30	29	.18	-1 41	.18	T	1	12	14	4	NW	
Greene	Butler	924	5	39.6	† 4.4	70	2,3	9	30	38	.33	- .96	.25	....	2	11	7	12	W	
Hampton	Franklin	1,155	12	41.4	† 9.3	74	2	9	30	41	.40	-1.21	.35	0.2	2	18	11	1	NW	
Hanlontown	Worth	.....	....	38.5	.....	72	3	5	30	40	.13	.....	.13	....	1	22	4	4	SW, NW	
Humboldt	Humboldt	1,095	10	40.0	† 6.5	72	2	10	30	40	.20	-1.26	.20	....	1	26	1	3	NW	
Inwood	Lyon	.....	....	38.4	....	65	19	9	29	37	T	.....	T	T	0	21	1	8	NW	
Larrabee	Cherokee	1,236	11	38.8	† 6.9	69	1,2,3	8	30	40	.29	- .69	.29	2.9	2	25	3	2	SW	
LeMars	Plymouth	1,224	6	38.6	† 5.2	68	1	9	30	40	.05	-1.01	.03	T	2	18	10	2	NW	
Mason City	Cerro Gordo	1,132		39.8	.....	67	1,2,3	10	30	28	.20	.....	.20	....	1	16	12	2	SW	
New Hampton	Chickasaw	1,169	...	40.7	† 5 9	67	3	7	30	31	.10	-1.69	.10	....	1	14	11	5	W	
Northwood	Worth	1,222		38.6	† 6.7	67	19	9	30	32	.25	-1.31	.25	...	1	13	7	10	NW	
Osage	Mitchell	1,184	11	38.4	† 9 2	63	1,2,3	9	30	33	.17	-1.28	.11	T	2	17	8	5	NW	
Pocahontas	Pocahontas	1,190	5	40.2	.....	70	2	9	30	41	.11	.....	.10	1.0	2	25	3	2	NW	
Plover	Pocahontas	.....	....	38.6	† 4.8	68	2,4,18	8	30	36	.20	-1.37	.10	1.0	1	25	3	2	N	
Ridgeway	Winneshiek	1,215	....	41.7	† 4.5	75	1	7	30	39	.29	-1.66	.26	.1	3	18	10	2	S	
Rock Rapids	Lyon	1,021	...	41.4	†13.4	70	3,5,7,15,23	9	30	56	T	- .29	T	T	0	....	....	....	.....	
Ruthven	Palo Alto	.....	....	40.6		80	18	8	30	41	.05	.....	.05	.5	1	29	0	1	N	
Sheldon	O'Brien	1,422	....	40.2	† 4.6	74	6	6	30	48	.16	.....	.10	.2	2	26	2	2	NW	
Sibley	Osceola	1,212	....	38.0	† 7.1	70	2,3	6	30	39	.05	- .82	.05	.5	1	19	9	2	NW	
Sioux Center	Sioux		...	39.4	† 3.9	67	2,3	9	30	35	.10	- .47	.05	1.0	2	17	5	8	N	
Storm Lake	Buena Vista	1,440	7	40.0	† 3.6	69	2	10	30	39	.03	- .93	.03	.3	1	27	0	3	NW	
Washta	Cherokee	1,157	....	.....	.....	.....	.....	....	.....	.....	.10	- .95	.10	1.0	1	29	0	1	N, S	
Waverly	Bremer	942	6	39.5	† 5.0	70	1	10	30	36	21	-1.27	.17	T	2	14	12	4	S	
West Bend	Palo Alto	1,197	8	....	...	.....	....	.....	.....	.....	.08	-1.31	.08	.3	2	21	6	3	N, NW	
Average		....	....	39.3	† 7 0	69.7	....	8.2	.....	37.5	0.17	-1.19	..	0.5	1	19	7	4	NW	

SOUTHERN SECTION.

Afton	Union	1,212	....	42.8	†6.9	68	1,2	13	30	36	T	-1.11	T	....	0	23	3	4	SW	
Albia (a)	Monroe	957	..	43.6	...	72	1,2,18,19	10	30	39	.08	.....	.08	....	1	21	3	6	NW	
Allerton	Wayne	.....	....	43.4	..	75	2	11	30	39	.06	.....	.06	T	1	27	1	2	NW	
Atlantic	Cass	1,164	11	40.4	†5.9	72	4	9	30	46	.08	- .78	.08	.8	1	15	10	5	NW	
Bedford	Taylor	.....	....	41.8	.....	74	2	10	30	39	.08	.	.07	T	2	24	4	2	NW	
Bonaparte	Van Buren	.....	10	42.4	†4.2	74	19	12	30	38	.50	-1.50	.50	....	1	..	...	...	.....	
Burlington	Des Moines	544	....	43.8	.....	74	1,2	13	30	35	.13	.....	.13	..	1	24	3	3	SW	
Chariton	Lucas	1,042	7	43.1	†4.5	74	2	9	30	39	T	.1 41	T	....	0	22	5	3	N	
College Springs(a)	Page	.....	10	44 0	†5.6	70	1,3,4,18	14	30	32	.10	- .94	.10	....	1	26	1	3	...	
Columbus Jct	Louisa	596	....	42.4		79	4	12	30	37	.16	.	.16	....	1	23	5	2	S, NW	
Corydon	Wayne	992	9	44.3	†6.2	76	2	9	30	40	.05	-1.45	.05	....	1	21	7	2	NW	
Clarinda	Page	1,069	....	42.2	†4.8	77	18	12	30	48	.09	- .94	.09	T	1	24	0	6	NW	
Cumberland	Cass	.....	....	.....	.....	.....	.....	...	.....	.....	T	.....	T	....	0	28	0	2	S	
Fort Madison	Lee	516	51	.....	.....	.....	.....	.....	.....	.....	.43	-1.73	.43	..	1	22	3	5	N, SW	
Glenwood	Mills	.....	15	45.0	†6.4	71	2	20	12	35	.50	- .10	.50	....	1	11	18	1	NW	
Hopeville	Clarke	.....	11	43.3	†7.8	73	2	11	30	37	.02	- .96	.02	....	1	15	13	2	SW, NW	
Indianola	Warren	969	11	43 1	†1.5	72	18	11	30	35	.03	-1.27	.03	T	1	14	9	7	SW	
Keokuk	Lee	619	31	44.8	†6.0	73	19	16	30	32	.21	-1.91	.21	....	2	22	4	4	NW	
Keosauqua (a)	Van Buren	664	10	39.8	†0 5	73	20	12	30	44	.14	-1.49	.14	....	1	14	8	8	.....	
Lacona	Taylor	1,250	7	.....	.....	.....	.....	.....	.....	.....	.03	.....	.03	...	1	13	12	5	.....	
Leon	Decatur	1,120	....	43.5	....	68	2,18,19	14	30	35	.09	.....	.09	T	1	15	6	9	N	
Massena	Cass	.....	....	41.2		70	1	10	30	36	.06	.	.06	....	1	28	0	2	S	
Mount Ayr	Ringgold	1,236	6	45.4	†7.5	76	2,18	13	30	41	.41	- .87	.41	T	1	18	10	2	NW	
Mount Pleasant	Henry	729	20	41.8	†7.1	72	19	11	30	30	.22	-1.37	.20	T	2	20	3	7	SW	
Omaha, Neb	Douglas	1,113	32	44 8	†8.2	70	18	21	30	31	.10	- .96	.10	0.3	2	15	10	5	NW	
Osceola	Clarke	1,130	6	.....	.....	.....	.....	.....	.....	.....	.06	-1.40	.06	....	1	22	6	2	SW	
Oskaloosa	Mahaska	843	18	42.0	†5.3	73	10	11	30	38	.03	-1.52	.03	....	1	24	3	3	NW	
Pacific Junction	Mills	960	..	40.6	.....	69	1	12	30	42	.18	.....	.13	1.8	2	20	8	2	S	
Red Oak	Montgomery	1,033	....	42.2	†0.6	64	3,4	19	30	31	.07	- .97	.07	T	1	15	13	2	NW	
St. Charles	Madison	1,070	....	45.8	.....	79	18	12	30	49	.09	.....	.07	....	2	27	2	1	NW	
Stockport	Van Buren	.....	...	42.7	.....	75	18	14	30	36	.15	.....	.15	T	1	21	3	6	NW	
Thurman	Fremont	.....	....	40.9	†2.7	69	1	10	30	42	.18	- .91	.10	1.8	2	21	5	4	SW	
Wapello ‡ (e)	Louisa	588	....	43.6	.....	70	19	15	30	31	.12	.....	.12	....	1	....	..	...	.....	
Washington (g)	Washington	769	20	40.2	†4 6	73	3	12	30	34	.23	-1.16	.23	....	1	....	...	....	.....	
Winterset ‡	Madison	1,129	11	43.8	†5.4	79	6	9	30	52	.30	- .91	.30	....	1	22	5	3	SW, NW	
Woodburn	Clarke	961	....		.....	.....	.....	....	.....	.....	.12	.	.12	T	1	21	2	7	SW	
Average		.....	....	43.1	†5.4	72.8	....	12.7	.....	38.2	0.14	-1.30	.....	0.3	1	20	6	4	NW	
Average for state		.....	....	41.0	†6.3	71.1	.....	9.6	.....	37.8	0.15	-1.25	.....	0.5	1	20	6	4	NW	

CLIMATOLOGICAL DATA FOR NOVEMBER, 1904—Continued.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Amana	Iowa	721	25	40.2	†7.0	71	19	10	30	35	.19	-1.56	.11	....	2	20	8	2	NW	
Ames	Story	926	20	41.3	†8.1	73	2	11	30	44	.02	-1.08	.01	....	2	19	7	4	SW, NW	
Audubon	Audubon	1,301	8	39.6	†5.1	70	3, 18	8	30	48	.17	-1.31	.17	1.3	1	22	4	4	....	
Baxter	Jasper	998	....	40.7	.....	72	3	9	30	34	.08	.....	.08	....	1	24	3	3	NW	
Belle Plaine	Benton	826	12	39.3	†4.9	70	2	6	30	37	.20	-1.63	.20	....	1	16	10	4	NW	
Buckingham	Iowa	....	....	....	.....	.....	.....	.....	.....	.....	.18	.....	.18	T	1	14	4	12	.....	
Carroll	Carroll	1,265	12	41.6	†8.4	74	18	6	30	44	.18	- .97	.18	1.0	2	23	5	2	.....	
Cedar Rapids	Linn	733	19	39.6	†3.8	72	19	12	30	40	.09	-1.33	09	....	1	18	7	5	NE, SW	
Clinton	Clinton	609	34	38.9	†3.4	69	3, 19	11	30	38	.10	-1.80	.10	....	1	18	7	5	SW	
Davenport	Scott	608	31	42.3	†5.5	71	19	14	30	31	.18	-1.88	.18	....	2	17	9	4	NW	
Delaware	Delaware	1,083	11	38.2	†6.2	67	2, 3, 19	7	30	29	.09	-1.52	.09	....	1	17	9	4	SW, NW	
Denison	Crawford	1,180	8	40.8	†6.4	71	3, 18	9	30	42	.15	- .75	.10	1.0	2	27	1	2	S	
Des Moines	Polk	861	24	42.9	†6.5	71	18	13	30	36	.06	-1.65	.06	T	1	18	6	6	SW	
De Soto	Dallas	866	..	43.8	.....	77	18	10	30	42	.10	.....	.10	....	1	22	5	3	NW	
Dubuque	Dubuque	655	29	41.2	†6.2	69	1	15	30	31	.08	-2 02	.08	T	2	12	11	7	NW	
Fort Dodge (a)	Webster	.....	....	40.6	.....	71	1	10	30	35	.20	.....	.20	.5	1	23	5	2	NW	
Galva ‡ (c)	Ida	1,126	8	36.7	†4.5	68	18	7	30	44	.09	-1.24	.09	.5	1	28	0	2	.....	
Gilman	Marshall	1,290	....	.....	...	.....	.....	.....	.....	.....	.25	.....	.25	T	1	18	9	3	S	
Grinnell	Poweshiek	1,052	9	41.4	†5.6	68	1, 12, 19	11	30	27	.12	-1.40	.12	T	1	22	6	2	NW	
Grinnell (near)	Poweshiek	1,023	....	42.0	.....	74	2, 3	11	30	34	.10	.	.10	....	1	22	4	4	NE	
Grundy Center	Grundy	.....	11	40.7	†7.9	72	2	6	30	37	.23	-1.05	.12	....	2	24	3	3	W	
Guthrie Center	Guthrie	976	6	41.9	†5.3	71	18	10	30	38	.13	- 92	.08	.8	2	25	4	1	NW	
Harlan	Shelby	1,077	....	39.4	.....	68	1	8	30	42	.17	- .72	.14	1.0	2	16	12	2	NW	
Ida Grove	Ida	1,192	....	38.3	.....	67	2, 3	8	29	39	.....	.....	.....	.....	....	25	3	2	S	
Independence	Buchanan	1,220	38	39.2	†6.0	70	2	8	30	34	.05	-1.47	.03	T	2	26	1	3	SW, NW	
Iowa City	Johnson	921	45	39.4	†3.9	73	19	10	30	45	.25	-1.07	.25	....	1	14	5	11	N	
Iowa Falls	Hardin	683	90	37.8	†5.6	68	1, 2, 3	7	30	41	.23	-1.05	.23	T	1	24	2	4	NW	
Little Sioux	Harrison	.....	....	42.2	.....	73	3	10	30	44	.20	.....	.18	1.5	2	24	4	2	SE	
LeClaire	Scott	576	....	..	.....	.....	...	.....	.....	.....	.31	.....	.31	....	1	....	....	....	SW	
Logan	Harrison	928	35	40.5	†4.9	68	1, 3, 18	12	30	42	.20	- 96	.20	2.0	1	22	4	4	NW	
Maquoketa	Jackson	688	9	37.4	-3.4	73	3, 4	10	14, 30	44	.22	-1.23	.22		1	17	6	7	NE, SW	
Marshalltown	Marshall	947	9	39.6	†3 9	72	1, 2	10	30	37	.17	-1.16	.17	T	1	19	3	8	NW	
Muscatine	Muscatine	.....	....	.....	.....	.....	.....	.....	.....	.....	.20	.....	.20	....	1	....	....	....	S	
Mt. Vernon	Linn	847	35	40.7	†7.5	73	3, 4	8	30	39	.13	- .99	.10	....	2	22	0	8	S	
Newton	Jasper	944	14	41.1	†6.6	68	2	10	30	33	.08	-1.72	.08	....	1	23	6	1	N	
Odebolt	Sac	1,356	5	40.2	-4.2	70	18	9	30	41	.24	- .88	.18	1.8	2	27	2	1	.....	
Ogden	Boone	1,088	8	40.8	†5.6	70	2	9	30	34	.02	-1.09	.02	.2	1	27	1	2	NW	
Olin	Jones	760	....	39.6	†2.7	70	19	10	30	35	.01	-1.19	.01	T	1	17	8	5	NW	
Onawa	Monona	1,053	....	42.2		72	6	12	30	41	.30	- .83	.25	2.5	2	27	1	2	NW	
Perry	Dallas	975	..	41.2		70	2	10	30	38	T	.....	T	T	0	18	10	2	.....	
Rockwell City	Calhoun	....	....	41.0	†7.0	68	2, 3, 18	9	30	36	.00	.....	.00	0	0	26	0	4	.....	
Sac City	Sac	1,278	22	41 4	†8.9	70	18	10	30	39	.24	- .87	.20	2.0	2	24	4	2	SW	
Sioux City	Woodbury	1,165	13	41.6	†7.3	70	1	15	30	36	.05	- .77	.05	T	2	19	8	3	N W	
Stuart	Guthrie	1,316	5	43.2	†8.4	67	2	13	30	28	.10	- .78	.10	T	1	6	20	4	W	
Tipton	Cedar	807	....	41.8	.....	70	1, 3, 19	12	30	31	.12	.	.12	....	1	24	3	3	NW	
Toledo	Tama	856	8	40.6	†4.5	72	1, 2, 3	9	30	41	.15	-1 38	.15	....	1	18	7	5	NW	
Vinton	Benton	810	12	41.2	†6.8	72	1, 3, 4	8	30	39	.10	-1.05	.10		1	24	0	6	SW	
Waterloo	Black Hawk	862	15	40.6	†5.4	75	2, 3	10	30	42	.21	-1.23	.21	T	1	18	8	4	NW	
Waukee	Dallas	1,039	....	45.2	.....	80	18	10	30	44	.10	.....	.10	....	2	25	2	3	SW, NW	
Wilton Junction	Muscatine	683	7	40.2	†2.8	70	3, 19	10	30	37	.35	.....	.35	....	1	18	5	7	NW	
Whitten	Hardin	1,036	..	39.5	4.7	68	2, 3	9	30	33	T	-1.29	T	T	0	19	7	4	SW	
Zearing	Story	718	..	41.5	.....	71	2	7	30	37	.16	.....	.13	T	2	22	4	4	.....	
Average				40.7	†6.1	70.9	.....	7.9	.....	37.7	.15	-1.28	.....	0.7	1	21	5	4	NW	

†Above normal. ‡Received too late to be computed with means. *a*. One day missing; *b*, two days, etc. §Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR NOVEMBER, 1904.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Afton	Max..	68	68	66	67	61	64	61	57	45	39	38	46	40	50	57	64	62	67	67	55	58	60	59	59	45	40	40	50	47	40	..	54.7
	Min ..	35	39	41	44	38	33	36	37	36	32	20	18	27	18	30	28	38	32	48	31	27	34	42	25	26	20	24	25	27	13	..	30.8
Albia	Max..	72	72	70	70	69	68	62	52	49	43	40	46	43	51	62	67	63	72	72	53	57	61	62	50	41	42	37	52	35	..	..	56.3
	Min ..	42	46	40	42	42	38	34	29	30	35	22	19	28	22	23	35	36	41	42	34	32	32	36	25	25	18	20	24	28	10	..	31.0
Algona	Max..	67	68	68	65	63	57	56	52	39	35	35	44	40	47	48	55	61	66	60	51	51	52	45	29	31	24	42	..	37	35	..	49.1
	Min .	37	37	38	37	35	31	35	27	32	27	19	21	25	18	24	31	35	27	42	37	29	35	21	22	18	19	24	..	18	7	..	27.9
Allerton	Max..	73	75	72	69	65	68	65	55	50	42	42	47	43	52	63	66	66	72	72	62	58	64	63	55	41	43	40	53	44	43	..	57.4
	Min ..	38	40	39	41	35	29	33	28	34	34	23	18	26	18	28	31	38	35	42	32	26	32	37	21	25	16	22	25	28	11	..	29.5
Alta	Max..	68	68	68	66	65	66	59	53	39	32	34	43	39	50	60	57	64	70	57	51	51	55	56	48	34	34	37	46	40	39	..	51.6
	Min ..	39	41	40	39	39	35	34	28	29	27	18	21	24	22	29	31	33	35	37	27	33	32	30	22	23	20	22	24	12	8	..	28.3
Amana	Max..	67	68	68	67	53	52	59	50	46	41	39	45	42	47	54	60	61	61	71	56	53	55	60	48	40	34	32	43	39	32	..	51.3
	Min ..	32	34	33	34	31	37	31	34	28	34	22	20	26	18	29	26	42	29	41	36	21	31	42	26	26	16	22	25	24	10	..	29.2
Ames	Max..	70	73	70	69	65	56	61	55	42	41	39	51	44	50	58	64	66	70	66	53	58	56	59	49	36	37	34	47	44	40	.	54.1
	Min ..	33	37	33	34	34	31	30	28	27	29	24	21	28	23	35	28	34	27	41	34	26	29	42	23	25	19	21	24	23	11	..	28.5
Atlantic	Max..	70	70	71	72	67	68	65	58	45	37	35	50	44	51	60	64	67	70	64	56	58	61	61	52	41	43	43	54	44	43	..	56.1
	Min ..	26	29	27	26	24	23	25	20	33	31	26	20	25	12	27	21	24	21	49	30	23	23	34	16	20	12	26	29	28	9	..	24.6
Audubon	Max..	68	68	70	69	66	68	62	55	43	36	33	46	43	50	59	62	65	70	62	54	56	59	59	50	38	39	41	50	42	32	..	53.8
	Min ..	37	33	28	28	26	24	37	25	35	30	21	20	26	14	25	21	25	22	38	32	29	32	37	16	19	13	22	25	24	8	..	25 4
Baxter	Max..	70	70	72	68	65	50	60	52	43	41	38	44	44	48	56	64	63	66	65	53	57	53	60	48	59	37	33	47	42	37	..	52 8
	Min ..	38	40	39	40	32	34	32	25	31	30	20	17	27	17	31	30	38	32	40	33	27	30	39	22	24	18	19	22	23	9	..	28.6
Bedford	Max.	72	74	71	68	66	66	63	56	45	38	37	46	43	49	58	65	64	68	67	54	58	60	60	53	43	41	43	54	46	41	..	55.6
	Min ..	35	35	33	34	31	28	33	26	36	31	22	14	27	14	28	32	30	31	49	30	24	30	38	19	24	14	27	29	27	10	..	28.0
Belle Pl'e	Max..	69	70	68	65	56	54	60	47	45	42	35	45	41	48	55	60	61	64	69	52	54	54	58	48	40	33	33	44	28	32	..	51.0
	Min ..	37	36	35	35	33	35	32	31	29	32	19	18	25	16	28	23	33	32	43	31	21	29	40	24	26	15	20	23	22	6	..	27.6
Bonapar'e	Max.	72	73	72	69	55	55	62	47	47	42	41	47	43	52	62	64	64	71	74	61	59	61	63	51	44	42	33	45	41	38	..	55.0
	Min ..	36	38	34	40	35	37	32	31	27	36	20	24	26	18	28	30	41	33	48	35	24	29	41	24	26	17	20	25	24	12	..	29.7
Britt	Max..	68	68	68	65	62	54	57	50	45	35	36	43	39	47	57	58	62	65	67	48	53	53	55	44	42	36	34	43	37	36	..	50.9
	Min .	33	33	33	33	32	29	31	21	29	27	15	20	21	16	22	28	26	28	36	29	28	23	28	19	24	13	20	23	16	4	..	24.7
Burling'n	Max.	74	74	73	72	56	57	64	50	42	44	46	45	46	52	61	61	65	70	72	65	56	64	66	53	47	44	31	45	45	37	..	55.9
	Min ..	39	40	38	44	35	33	37	35	32	37	23	21	27	21	32	33	44	35	50	37	32	33	44	22	28	18	20	27	25	13	..	31.8
Carroll	Max..	70	72	72	71	70	70	64	68	40	36	37	46	42	52	65	60	68	74	62	64	57	58	60	54	38	41	38	42	29	41	..	55.4
	Min ..	40	40	35	36	30	31	30	25	26	29	24	21	25	13	29	25	30	30	48	30	34	27	36	20	24	16	24	25	23	6	..	27.7
Cedar R.	Max..	70	71	70	69	45	51	60	47	47	41	40	46	47	49	57	62	61	68	72	54	55	57	58	48	38	33	29	41	31	33	..	51.5
	Min ..	34	35	36	37	33	32	31	31	30	30	23	22	22	21	21	27	29	31	32	37	25	25	32	31	29	20	22	22	19	12	..	27.7
Chariton	Max.	73	74	73	70	65	66	63	55	46	42	41	48	44	51	63	66	65	72	72	62	59	62	63	54	47	42	38	52	45	41	..	57.1
	Min ..	38	37	36	42	33	30	36	28	33	34	22	16	27	17	32	31	27	33	47	33	26	32	38	23	24	17	20	25	27	9	..	29.1
Charles C.	Max.	70	69	70	67	62	54	56	48	38	39	38	45	39	48	56	57	62	66	62	49	56	55	51	47	36	37	27	37	37	33	..	50.1
	Min ..	35	36	33	32	31	33	32	27	28	26	20	23	22	19	25	26	31	28	39	28	26	26	33	27	19	18	20	24	15	8	..	26.3
Clarinda	Max.	75	73	71	71	68	71	64	61	46	40	37	51	62	55	64	67	70	77	69	57	61	63	62	55	41	44	47	57	42	45	..	58.9
	Min ..	25	32	33	32	31	29	30	29	29	31	27	18	15	15	16	28	32	29	29	31	26	27	27	20	20	17	25	30	22	12	..	25.5
Clear L	Max..	64	64	63	65	61	55	51	49	43	32	32	41	39	45	53	59	50	65	57	54	52	52	52	45	37	30	30	39	35	32	..	46.5
	Min ..	42	43	43	38	38	33	34	29	32	29	20	25	25	26	32	30	35	36	46	31	33	31	38	25	28	21	20	23	15	9	..	30.2
Clinton	Max..	68	68	69	68	51	51	58	48	45	43	44	45	43	46	53	62	59	61	69	55	54	55	61	48	42	35	29	42	36	29	..	51.2
	Min ..	30	31	32	33	31	26	29	35	28	29	20	19	23	18	24	25	34	25	33	31	40	26	33	31	26	16	15	25	19	11	..	26.6
Col. Sprgs	Max..	70	68	70	70	68	65	66	56	53	45	35	49	45	52	60	65	65	70	68	54	60	64	63	56	50	45	49	58	41	46	..	57.5
	Min ..	39	41	43	39	..	..	36	30	38	31	25	18	25	20	29	35	35	40	34	35	28	34	40	25	23	19	23	30	27	14	..	30 6
Colum. J.	Max..	68	68	69	79	59	57	60	50	46	43	41	45	42	48	58	63	60	65	71	61	57	56	61	48	41	38	33	46	39	34	..	53.5
	Min ..	41	42	41	42	36	34	34	32	33	34	21	20	27	20	31	32	44	38	50	35	28	31	41	27	26	17	21	26	22	12	..	31.3
Corydon	Max..	74	76	74	73	71	70	66	60	51	44	43	48	48	52	64	66	67	73	72	62	59	63	64	54	50	45	40	52	49	43	..	59.1
	Min ..	41	42	34	41	36	30	35	29	35	34	21	11	21	13	30	34	40	36	49	32	27	32	37	22	23	17	22	25	27	9	..	29.5
Davenpo't	Max..	70	70	71	69	50	48	60	49	42	40	43	41	42	48	57	64	59	65	71	57	54	58	62	49	42	34	28	43	39	31	..	52.0
	Min ..	42	46	41	44	38	28	35	36	33	35	25	25	29	25	35	33	42	36	53	38	29	34	36	32	24	22	21	26	22	14	..	32.6
Decorah	Max.	68	68	67	65	48	52	54	42	39	38	38	43	41	47	53	55	61	66	61	53	56	56	52	48	34	30	28	33	37	29	..	48.7
	Min ..	43	40	35	32	31	32	32	33	32	28	22	23	28	19	27	24	37	31	32	35	27	28	40	39	24	20	18	26	20	10	..	28.9
Delaware	Max..	65	67	67	65	50	44	56	46	42	38	39	44	41	45	52	58	59	62	67	52	52	54	55	45	36	30	25	35	32	30	..	48.4
	Min ..	35	36	39	38	32	25	29	32	30	26	20	20	26	18	37	28	38	38	42	35	25	27	35	30	24	14	14	21	20	7	..	28.0
Denison	Max..	69	70	71	69	66	68	61	55	48	36	35	45	40	51	53	60	65	71	69	53	55	59	58	51	40	39	42	49	45	43	..	54.5
	Min ..	26	35	31	32	26	26	29	22	34	30	20	21	25	17	36	31	28	24	46	30	33	24	39	18	24	19	24	27	25	9	..	27.0
Des M.	Max..	70	71	70	68	64	56	62	55	44	41	38	50	43	50	59	66	66	71	66	54	58	58	61	49	38	40	36	50	46	40	..	54 7
	Min ..	41	42	37	38	37	33	34	34	35	29	24	21	29	22	34	32	39	35	44	36	30	34	38	26	23	20	25	27	20	13	..	31.1
De Soto	Max..	71	73	72	70	65	63	64	57	43	40	40	50	45	55	64	67	72	77	67	55	59	60	62	54	39	63	38	51	45	42	..	57.4
	Min ..	38	40	33	37	35	31	35	32	37	31	24	21	28	17	34	28	35	35	50	34	27	30	43	24	24	16	23	26	25	10	..	30.1
Dows	Max..	69	71	69	67	64	55	58	50	45	39	35	46	40	49	59	58	63	68	62	50	55	52	54	47	36	32	29	41	37	36	..	51.2
	Min ..	35	31	34	33	36	29	30	24	30	28	16	21	25	19	26	28	30	30	42	31	27	25	38	0	24	16	18	22	18	8	..	26.3
Dubuque	Max..	69	68	68	66	47	48	56	47	41	40	42	46	40	48	55	56	60	63	68	54	53	56	56	48	40	30	31	39	37	30	..	50.1
	Min ..	40	42	41	37	34	28	35	40	37	30	25	25	31	24	35	30	39	32	43	37	28	36	41	38	28	24	20	26	23	15	..	32.1
Elkader	Max..	73	74	72	75	45	44	55	48	40	42	42	47	44	50	57	58	62	70	68	53	56	58	54	45	37	36	26	35	25	32	..	50.8
	Min .	30	32	31	30	29	29	28	37	28	30	19	20	24	16	29	22	40	27	35	32	22	25	34	38	25	14	15	25	22	9	..	26.6
Esthervil.	Max..	70	72	70	67	65	68	59	54	38	32	38	46	39	51	63	54	65	63	69	65	54	52	51	47	34	30	32	42	24	36	..	51.7
	Min ..	33	34	42	36	31	27	34	28	29	25	17	18	25	20	28	25	30	33	35	38	33	27	29	20	20	18	20	22	15	9	..	26.7
Forest C'y	Max..	70	70	71	68	65	69	57	50	38	36	38	43	39	48	60	56	58	70	68	55	57	50	47	33	29	30	40	40	25	33	..	50 4
	Min ..	35	35	36	37	37	30	33	27	27	26	18	22	25	18	24	27	30	32	28	30	31	33	22	29	18	18	22	15	20	8	..	26.4
Ft. Dodge	Max.	71	70	70	66	62	61	62	53	40	36	36	45	42	49	58	59	63	69	69	63	50	55	54	56	46	33	36	34	43	2	..	51.8
	Min ..	41	42	37	36	31	30	34	31	40	30	22	23	28	22	25	31	34	34	34	32	33	31	33	24	24	20	23	25	20	10	..	29.3
Galva	Max..	..	..	..	..	66	63	58	53	43	33	33	43	38	50	58	58	62	68	58	50	52	58	56	48	34	35	38	36	28	40	..	48.4
	Min ..	31	..	..	..	45	26	25	30	23	31	28	14	21	24	17	22	28	25	24	40	28	31	23	36	12	22	18	25	24	20	7	..	25.0
Glenw'd	Max..	70	71	69	67	68	68	63	59	57	40	33	50	43	54	60	63	66	70	65	55	63	60	62	61	63	47	46	47	56	44	..	58 0
	Min ..	41	42	43	37	33	35	34	30	28	27	24	20	28	25	33	36	34	34	39	31	37	33	38	26	37	22	28	30	27	32	..	32.1
Grand M.	Max..	66	66	66	65	55	48	55	46	38	38	38	45	49	44	57	55	59	62	63	56	54	54	51	46	37	31	26	33	30	28	..	48.7
	Min ..	38	44	40	41	35	29	33	31	33	27	20	22	26	21	28	28	39	36	45	39	30	31	38	36	26	19	15	23	19	8	..	30.0
Greene	Max..	69	70	70	66	60	56	58	50	45	38	38	46	39	47	58	57	62	65	62	57	53	55	53	48	40	31	30	39	35	33	..	51.0
	Min ..	36	39	34	35	32	34	34	33	29	29	19	22	25	19	27	27	32	30	38	34	27	27	40	25	27	18	20	24	20	9	..	28.2
Grinnell	Max..	68	68	67	67	62	49	59	48	42	40	37	47	40	47	54	60	69	63	68	57	58	55	58	43	37	30	31	43	39	33	..	50.6
	Min ..	43	45	46	43	36	35	38	32	35	32	21	20	31	23	33	34	43	39	48	33	32	35	41	27	27	20	20	22	23	11	..	32.3
Grinnell(near	Max..	71	74	74	70	68	53	63	51	47	41	41	48	42	50	58	62	64	70	69	57	55	61	61	50	37	30	31	43	39	33	..	53.6
	Min ..	41	41	40	40	35	33	35	30	30	31	19	18	27	19	31	35	39	35	41	32	28	40	39	27	27	20	20	22	23	11	..	30.3
Grundy C	Max..	71	72	71	71	63	54	62	51	40	42	38	50	42	47	57	60	65	68	67	56	54	59	59	49	39	36	30	43	37	35	..	52.9
	Min ..	39	39	38	36	34	33	32	31	29	30	19	19	27	19	28	31	35	31	45	33	28	28	40	24	25	16	19	21	20	6	..	28.5
Guthrie C	Max..	68	68	68	67	64	66	62	55	44	39	34	49	41	49	58	63	66	71	60	63	56	60	60	55	39	40	38	50	45	40	..	54.6
	Min ..	37	41	33	41	33	30	33	30	36	31	26	20	27	17	32	25	34	33	38	34	30	29	42	21	25	15	24	25	24	10	..	29.2
Hampton	Max..	73	74	72	73	70	60	58	52	40	43	40	48	42	50	61	61	65	72	64	53	55	60	54	50	37	33	31	42	34	36	..	53.4
	Min ..	39	41	43	38	37	32	35	30	32	24	20	22	27	21	30	28	31	31	42	33	31	32	40	25	24	20	21	22	19	9	..	29.3
Hanlontown	Max..	70	71	72	66	61	61	55	50	38	35	40	47	38	48	61	55	64	68	61	49	58	57	51	49	35	29	27	39	36	34	.	50.8
	Min ..	36	36	33	33	31	30	32	28	29	26	18	22	25	19	26	25	28	28	39	31	28	26	36	22	21	15	20	21	16	5	..	26.2
Harlan	Max..	68	67	67	67	64	65	61	54	45	35	33	45	40	49	56	60	62	66	62	50	56	59	57	47	40	40	42	50	44	42	..	53.1
	Min ..	30	34	31	33	29	26	28	23	33	29	22	14	26	15	22	28	26	24	38	30	26	25	36	17	23	15	24	28	25	8	..	25.6
Hopeville	Max..	71	73	70	69	64	68	62	55	45	40	39	48	41	51	62	66	66	72	69	53	58	61	61	54	39	42	39	52	42	42	..	55 8
	Min ..	39	40	42	42	35	34	36	30	36	33	22	17	29	20	30	33	38	35	46	31	27	34	41	25	23	18	24	27	25	11	..	30.8
Humboldt	Max..	68	72	70	66	64	58	60	53	50	56	37	44	42	50	55	59	52	62	64	50	53	53	55	46	40	34	34	45	40	48	..	52.7
	Min ..	36	34	32	36	31	34	31	26	32	30	18	22	28	20	24	29	28	27	40	31	30	21	40	20	26	18	20	25	18	10	..	27.2
Ida Grove	Max..	62	67	67	66	64	64	59	53	48	38	39	38	40	43	49	51	52	56	55	52	46	47	52	52	41	33	35	42	43	30	..	49 5
	Min ..	37	39	31	34	25	25	30	25	40	32	29	22	27	18	25	27	26	28	43	29	33	23	38	17	25	20	25	20	8	16	..	27.1
Independ.	Max..	69	70	68	67	52	51	57	51	43	40	39	46	43	47	55	57	62	65	67	63	54	57	54	46	43	33	27	38	33	30	..	50.9
	Min ..	35	36	34	33	30	33	25	33	25	30	20	17	27	16	24	27	35	30	37	37	22	32	37	32	28	17	19	22	20	8	..	27.4
Indianola	Max.	71	71	70	69	65	59	63	55	44	41	38	49	48	51	61	67	65	72	68	54	58	59	61	50	39	41	37	50	45	41	..	55.4
	Min ..	41	41	39	43	35	32	34	29	36	33	22	19	28	18	32	32	40	35	49	33	27	32	42	24	25	18	22	26	25	11	..	30.8
Inwood	Max..	58	61	60	60	61	63	58	48	36	31	37	50	48	53	55	56	63	61	65	60	58	60	52	44	38	38	33	44	26	36	..	50.4
	Min ..	33	36	35	37	41	43	26	34	26	14	18	22	21	23	31	32	30	21	34	23	28	29	22	25	23	24	22	17	9	10	..	26.3
Iowa City	Max..	72	72	72	70	46	50	60	50	47	43	42	48	43	51	59	65	63	67	73	53	56	61	61	50	40	35	30	44	29	31	..	52.8
	Min ..	31	32	34	35	32	33	29	30	27	34	22	21	24	18	18	26	27	28	28	36	23	25	29	27	25	12	19	23	26	10	..	26.1
Iowa Falls	Max.	68	68	68	67	62	53	59	51	40	39	35	48	40	47	55	59	61	67	63	50	50	54	55	46	34	32	28	42	23	35	..	50.0
	Min ..	31	35	31	31	30	30	31	27	28	29	21	20	24	15	23	24	29	26	32	32	24	27	39	21	28	15	20	23	18	7	..	25.7
Keokuk	Max..	71	72	69	68	58	54	62	53	42	43	42	44	43	50	60	66	62	71	73

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR NOVEMBER, 1904—Continued.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		MEAN
Le Mars..	Max..	68	67	67	65	65	64	58	52	45	32	35	48	44	51	56	56	62	65	57	51	56	54	55	46	37	35	34	45	40	39	..	51.6
	Min ..	34	29	32	27	25	25	28	22	32	27	13	20	24	23	23	28	26	27	42	25	34	24	36	18	21	25	24	25	20	9	..	25.6
Leon.....	Max..	67	68	66	67	63	64	62	56	51	40	38	46	41	48	58	64	65	68	68	61	56	60	60	52	44	41	39	51	46	39	..	55.0
	Min ..	39	40	42	44	40	29	37	31	38	34	27	17	29	19	31	34	40	36	50	33	28	37	40	26	26	20	25	25	28	14	..	32.0
Lit. Sioux	Max..	72	71	73	70	67	71	64	57	46	37	35	47	43	53	64	58	67	69	63	55	58	58	60	52	42	41	45	54	48	45	..	56.2
	Min ..	42	51	33	32	31	27	29	21	36	29	22	23	25	22	28	28	26	27	49	25	32	25	32	19	19	18	28	33	28	10	..	28.8
Logan....	Max..	68	67	68	67	64	65	61	55	44	38	34	45	42	50	54	59	63	68	60	52	56	60	58	50	40	42	45	52	43	42	..	53.7
	Min ..	32	32	33	33	28	27	28	24	32	30	23	19	29	18	26	28	28	26	43	30	31	26	38	20	23	18	26	30	26	12	..	27.3
Maquoketa ..	Max..	71	70	73	73	48	49	62	52	43	42	46	47	45	48	55	62	60	66	70	51	54	61	62	53	41	36	26	40	29	33	..	52.9
	Min ..	26	27	29	29	30	21	22	27	25	30	11	17	20	10	15	21	22	23	23	38	20	21	23	32	23	16	15	22	25	10	..	22.4
Marshlt'n	Max..	72	72	71	70	65	51	61	52	41	42	38	49	48	49	55	61	63	68	66	53	55	58	58	47	37	36	32	44	27	35	..	52.4
	Min ..	33	38	34	35	33	33	31	30	29	30	20	20	22	17	18	29	30	31	31	34	25	30	31	25	25	19	19	22	22	10	..	26.9
Mason C..	Max..	67	67	67	65	61	55	55	47	43	35	37	43	40	47	55	54	58	63	60	54	53	53	50	46	38	30	27	37	32	28	..	48.9
	Min ..	42	42	40	38	37	35	35	33	33	28	21	24	26	25	30	30	36	35	45	34	33	31	37	26	28	20	20	25	18	10	..	30.0
Massena..	Max..	70	69	69	69	64	66	62	55	45	39	36	49	42	51	58	64	64	64	63	53	56	60	58	50	43	40	41	52	45	43	..	54.7
	Min ..	34	35	33	36	30	28	32	34	36	31	26	19	27	16	31	30	30	26	30	28	28	28	36	19	24	15	26	28	24	10	..	27.7
Mt. Ver'n	Max..	70	71	73	73	52	54	60	50	45	40	43	42	43	43	57	58	61	65	70	63	63	39	58	49	39	31	38	39	35	33	.	52.6
	Min ..	36	38	43	44	35	24	32	33	31	30	19	18	25	19	27	32	38	34	38	36	24	31	39	29	27	16	18	19	21	8	..	28.8
Mt. Ayr..	Max..	73	76	75	72	68	71	65	58	48	40	42	49	43	55	65	71	71	76	71	57	58	61	64	56	45	45	44	53	47	46	..	58.8
	Min ..	40	45	47	44	40	39	37	30	36	33	24	15	28	19	28	31	40	35	46	31	30	38	39	25	26	19	26	27	26	13	..	31.9
Mt. Pl'snt	Max..	69	69	70	67	53	50	60	49	48	45	41	45	42	48	56	63	62	67	72	63	57	56	61	49	42	40	32	45	40	33	..	53.1
	Min ..	40	42	40	41	36	36	36	33	31	35	21	18	21	19	29	36	42	36	48	34	27	31	41	25	25	17	20	24	24	11	..	30.6
New H. ..	Max..	67	66	67	66	57	52	58	52	42	38	35	45	40	46	53	57	60	63	65	60	55	54	52	45	42	32	27	37	37	30	..	50.0
	Min ..	36	37	37	37	37	34	33	34	28	28	20	20	25	18	20	31	34	31	38	36	27	28	38	32	28	18	17	23	18	7	..	28.0
Newton..	Max..	62	68	67	66	62	56	54	48	46	40	38	47	44	48	55	63	60	64	67	61	56	60	59	54	42	34	33	47	44	35	.	52.7
	Min ..	38	40	39	40	36	34	35	29	33	32	20	17	27	18	29	30	40	33	45	33	27	31	39	25	22	18	20	23	23	10	..	29.5
Northw'd	Max..	63	62	60	62	60	66	55	53	49	49	39	37	39	38	46	56	49	56	67	60	46	55	54	47	45	38	34	28	37	26	..	49.2
	Min ..	34	36	38	37	34	32	33	31	33	33	20	24	26	20	26	28	31	29	37	30	28	29	34	25	29	20	20	21	16	9	..	28.1
Odebolt ..	Max..	68	69	68	66	65	66	60	50	44	35	32	41	40	49	60	59	64	70	58	50	48	57	56	50	40	36	40	46	44	41	..	52.4
	Min ..	39	42	35	35	32	32	31	25	34	29	16	22	24	20	28	27	31	29	43	28	32	26	37	18	22	18	25	26	22	9	..	27.9
Ogden ...	Max ..	69	70	69	67	65	61	61	54	45	40	37	49	41	49	57	63	64	69	65	51	57	52	58	47	38	37	33	47	41	40	..	53.2
	Min ..	36	41	37	36	32	32	31	26	35	31	23	20	26	20	30	30	33	35	43	32	29	28	38	20	20	17	10	25	20	9	..	28.5
Olin	Max..	66	66	67	66	54	44	58	51	44	42	38	44	41	45	53	59	59	60	70	61	53	55	49	48	41	33	29	42	43	31	..	52.1
	Min ..	30	32	32	32	31	24	25	35	26	36	18	20	25	17	27	29	37	27	38	33	21	27	36	33	24	17	19	24	23	10	..	27.2
Omaha, N	Max..	70	68	66	69	65	69	63	54	48	34	33	49	42	52	58	61	66	70	60	53	59	58	59	53	38	40	46	55	48	43	..	55.0
	Min ..	44	46	43	43	38	40	40	34	32	30	25	25	31	30	35	37	41	39	41	32	36	39	41	31	28	26	31	34	26	21	..	34.6
Onawa....	Max.	71	71	71	69	68	72	63	54	47	36	38	48	47	52	61	57	66	67	60	54	59	55	60	54	41	42	45	53	43	45	..	55.6
	Min ..	39	39	39	37	34	31	31	26	35	28	18	20	26	22	26	27	30	29	42	29	33	29	32	22	21	20	25	31	27	12	..	28.7
Osage.....	Max.	66	66	66	65	59	52	55	49	43	36	36	41	38	45	55	55	59	61	59	55	54	51	48	44	39	27	26	37	36	30	..	48.4
	Min ..	37	38	37	36	33	33	34	32	31	26	21	22	25	19	25	29	35	28	39	34	26	31	38	28	27	19	20	23	16	9	..	28.4
Oskaloosa	Max..	72	70	70	68	63	55	62	49	47	42	39	48	43	51	60	65	63	69	73	57	58	58	62	49	42	42	36	50	42	38	..	54.8
	Min ..	36	39	32	38	32	31	30	29	29	34	20	19	26	15	32	30	43	34	48	34	23	31	40	25	26	17	21	26	24	11	..	29.2
Pacific J'n	Max	69	66	68	66	64	68	61	54	45	36	31	43	43	52	57	61	63	68	58	51	59	58	59	59	40	40	46	54	40	43	.	54.1
	Min ..	34	34	31	30	26	26	30	24	35	30	26	19	26	18	25	26	28	26	44	28	30	26	32	22	25	16	26	30	25	12	..	27.0
Perry,....	Max..	69	70	68	67	63	59	61	54	43	44	38	40	41	51	53	63	65	68	65	52	53	57	60	49	47	37	36	49	44	41	..	53.9
	Min ..	33	40	33	36	33	33	32	29	34	30	25	20	26	19	23	28	34	30	45	34	30	25	39	21	24	18	23	25	22	10	..	28.5
Plover....	Max..	65	68	66	68	64	66	60	51	39	36	32	45	41	48	50	57	63	68	60	50	51	53	51	42	37	32	34	45	36	28	..	50.2
	Min ..	33	35	36	35	34	30	32	30	35	26	22	20	25	20	24	28	30	28	43	29	28	29	28	19	24	19	20	25	13	8	..	27.1
Pocah'tas	Max..	69	70	69	67	65	66	58	55	42	34	37	38	40	49	60	59	64	69	60	52	52	54	54	48	30	34	35	45	39	38	..	51.7
	Min ..	38	39	39	36	34	33	35	27	32	30	24	23	25	22	27	29	32	31	41	30	31	30	36	21	22	20	21	24	19	9	..	28.7
Red Oak..	Max..	62	63	64	64	62	58	60	53	48	39	33	45	42	48	53	56	59	62	62	50	55	58	58	47	44	40	47	51	43	43	..	52.8
	Min .	36	38	38	35	35	34	36	32	38	32	27	25	31	23	30	32	32	31	49	35	32	31	40	25	27	23	33	35	29	19	..	32.0
Ridgeway	Max..	75	72	73	70	58	56	59	51	43	43	40	45	47	49	59	60	68	72	67	60	55	61	52	52	41	35	28	36	33	33	..	53.1
	Min ..	39	41	44	41	35	34	36	33	33	26	20	23	26	21	28	30	38	33	41	36	28	33	40	35	26	20	18	24	20	7	..	30.3
Rock R...	Max..	64	68	70	68	70	66	70	57	45	45	48	52	42	56	70	54	67	68	67	68	52	50	70	54	50	45	40	55	44	65	..	58.0
	Min ..	34	28	30	26	25	28	25	25	26	15	20	24	22	20	22	28	26	26	35	34	26	24	24	26	22	24	24	25	17	9	..	24.7
R. City...	Max..	63	68	68	65	65	67	65	55	45	35	35	45	40	50	58	55	65	68	65	58	58	50	57	58	48	35	39	49	40	41	..	53.7
	Min ..	36	42	40	36	33	28	23	26	33	23	23	21	26	23	28	28	34	32	32	31	30	28	37	36	22	20	22	24	19	9	..	28.2
Ruthven,	Max..	70	76	77	73	70	66	63	56	38	37	50	48	49	65	52	67	75	80	50	53	52	68	41	44	33	32	42	27	29	31	..	53.8
	Min ..	43	38	41	32	30	30	31	25	25	18	23	25	24	27	30	31	34	45	27	34	27	36	21	25	19	20	22	15	16	8	..	27.4
Sac City..	Max.	69	69	69	67	65	65	60	54	51	33	34	42	45	49	59	58	63	70	63	53	53	56	56	50	48	35	37	46	40	40	..	53.3
	Min .	37	41	40	40	36	31	37	29	31	28	20	22	26	21	28	29	35	31	41	30	32	32	40	22	25	21	24	25	21	10	..	29.5
St. Cha'les	Max..	76	76	77	75	70	71	67	61	46	42	42	51	48	55	67	69	72	79	69	60	60	63	65	54	40	43	38	51	43	45	.	59.2
	Min ..	43	44	43	46	37	30	40	32	37	33	25	21	28	23	33	32	39	39	49	34	30	36	43	25	24	16	23	28	25	12	.	32.8
Sheldon..	Max..	78	73	72	72	70	74	64	58	45	33	40	54	46	53	67	60	68	71	60	55	65	56	50	50	40	39	38	46	43	40	..	55.8
	Min ..	40	31	36	30	29	26	31	23	32	27	10	22	21	20	22	26	30	26	39	25	34	25	12	15	22	21	23	25	12	6	..	24.7
Sibley	Max..	67	70	70	66	68	..	60	55	34	29	39	50	41	51	65	55	66	69	56	51	58	54	52	47	36	..	36	43	34	38	..	51.8
	Min ..	38	31	34	32	30	29	..	23	22	27	11	15	24	21	23	29	26	28	35	23	24	25	26	19	23	19	21	24	15	6	..	24.2
Sioux C'r.	Max..	64	67	67	65	64	64	59	53	43	32	35	50	39	51	58	57	63	65	57	48	56	55	54	45	35	32	39	32	45	38	..	51.1
	Min	36	34	36	37	35	36	33	27	30	27	13	20	21	22	26	31	34	30	40	23	32	32	37	21	24	22	23	22	17	9	..	27.7
Sioux C'y.	Max..	70	69	69	66	65	66	58	51	44	30	36	51	42	54	58	57	67	69	60	50	59	57	56	49	36	38	43	51	41	42	..	53.5
	Min ..	39	38	35	40	34	30	36	31	28	24	18	25	26	27	26	37	35	33	40	27	39	30	33	22	24	24	28	32	18	15	..	29.8
Stockport	Max	70	70	70	70	53	54	61	48	46	42	44	44	43	51	62	66	65	75	74	64	57	61	62	54	43	41	32	47	41	37	..	54.9
	Min ..	36	39	35	43	35	39	34	36	29	36	22	19	28	19	32	30	32	35	49	37	24	30	43	28	25	18	21	21	26	14	..	30.5
Storm L..	Max..	62	69	68	67	65	68	59	54	39	33	29	44	40	50	63	61	59	68	61	58	52	54	56	50	35	35	57	46	28	40	..	52.3
	Min ..	38	43	43	38	34	35	34	29	29	27	15	15	23	24	24	29	32	34	35	29	28	28	30	20	22	21	22	23	18	10	..	27.7
Stuart ...	Max	66	67	65	65	61	62	63	62	54	39	34	47	48	49	54	60	61	66	62	62	55	58	57	49	44	42	38	49	44	39	..	54.0
	Min ..	40	45	44	45	38	36	36	34	33	32	27	22	22	23	34	32	40	38	45	44	32	35	41	25	22	21	25	26	25	13	..	32.5
Thurman.	Max..	69	66	65	68	64	68	53	55	44	38	34	48	43	51	57	62	64	68	63	53	57	58	60	50	41	41	49	53	45	42	..	54.3
	Min ..	30	33	30	29	27	26	31	24	37	30	24	19	29	17	26	24	31	26	50	33	25	26	39	20	27	17	29	33	24	10	..	27.5
Tipton....	Max..	70	69	70	68	57	49	60	51	48	45	43	45	46	48	55	63	59	64	70	62	53	58	60	50	41	35	29	41	38	32	.	52.6
	Min ..	40	41	43	43	38	25	32	36	32	34	21	20	22	22	30	32	40	36	45	36	29	32	41	30	30	20	20	23	22	12	..	30.9
Toledo....	Max..	72	72	72	71	64	53	62	48	42	43	40	48	43	50	57	63	63	70	66	54	54	59	59	49	42	37	31	44	39	34	..	53.4
	Min ..	36	38	31	34	31	34	31	30	27	31	19	19	27	14	30	27	36	29	47	32	22	29	41	27	24	16	19	23	22	9	..	27.8
Vinton. ..	Max..	72	71	72	72	63	56	60	52	43	41	40	48	44	50	58	60	62	68	68	63	54	61	58	50	44	32	30	39	42	35	..	53.6
	Min ..	39	39	35	33	30	34	32	34	28	32	20	20	29	19	20	26	39	35	41	35	23	30	42	30	27	17	20	25	22	8	..	28.8
Wapello..	Max..	64	63	63	64	55	46	59	55	43	45	46	45	47	50	57	62	60	65	70	..	..	62	66	55	..	..	..	45	40	38	..	54.6
	Min	42	44	38	41	39	33	34	40	30	32	26	26	23	22	33	34	39	34	53	..	..	29	28	29	..	..	..	21	25	15	..	32.5
Washi'ton	Max..	72	72	73	71	50	55	63	50	48	45	45	46	45	51	61	..	..	..	..	..	..	66	62	51	43	40	31	45	39	35	..	52.5
	Min ..	39	40	39	39	36	36	34	33	31	31	21	19	28	19	31	..	..	..	..	..	..	..	30	26	24	16	20	24	23	12	..	27.8
Waterloo,	Max	73	75	75	71	60	57	61	50	41	41	41	50	42	50	59	62	65	69	67	54	54	58	58	50	38	33	30	41	30	35	..	53.0
	Min ..	31	35	35	34	32	34	32	33	28	29	21	22	28	18	25	27	35	28	40	34	25	28	39	31	27	19	20	24	21	10	..	28.2
Waukee..	Max..	77	78	76	75	74	74	69	63	46	44	44	55	51	59	69	69	73	80	65	61	60	60	62	58	36	40	41	51	43	47	..	60.0
	Min ..	40	42	38	42	35	33	35	29	36	30	24	19	27	21	32	32	36	36	48	33	29	33	40	22	24	18	22	25	23	10	..	30.4
Waverly..	Max..	70	69	69	62	58	53	57	47	40	39	39	48	41	48	54	58	61	65	65	52	53	54	54	47	36	30	30	38	32	32	..	50.0
	Min ..	33	38	34	33	32	35	34	34	29	30	21	21	28	28	26	26	34	29	40	34	26	31	39	32	27	19	21	25	21	10	..	29.0
W. Bend.	Max..	66	68	66	65	63	61	59	53	45	34	35	45	39	48	58	56	61	66	59	50	51	52	52	44	39	31	34	43	39	36	..	50.6
	Min ..	36	37	37	33	31	31	32	24	33	23	21	22	25	21	24	30	31	29	39	28	32	27	35	20	23	17	20	19	15	7	..	26.9
Whitten..	Max	67	68	68	67	61	58	58	51	43	38	36	48	40	47	53	60	61	63	65	57	55	54	56	55	40	34	33	42	39	35	..	51.7
	Min .	36	58	35	35	31	33	30	28	30	29	17	18	27	17	26	30	35	30	42	32	27	27	24	22	25	16	19	32	19	9	..	27.3
Wilton J.	Max..	67	68	70	69	57	46	60	50	44	43	41	45	42	47	55	62	64	64	70	62	55	56	60	49	44	35	32	44	41	32	..	52.5
	Min ..	37	37	33	36	33	25	27	34	25	33	19	20	24	17	28	28	30	40	46	37	21	27	40	29	24	15	16	23	23	10	..	27.9
Winte'set	Max..	75	75	73	71	76	79	74	68	40	41	40	38	50	55	64	65	67	74	70	56	60	62	63	59	46	43	37	39	41	39	..	58.0
	Min ..	40	43	37	41	29	27	34	38	33	31	22	22	24	19	30	33	35	33	38	32	47	30	38	35	27	19	14	15	13	9	..	29.7
Zearing ..	Max..	70	71	70	69	65	64	60	54	43	40	38	50	41	49	57	62	65	68	65	53	57	56	59	59	48	36	37	57	39	37	..	54.6
	Min ..	41	41	40	36	37	32	36	26	33	30	21	19	27	19	29	30	34	32	47	34	30	28	30	24	11	18	17	21	21	7	..	28.4

DAILY AND MONTHLY PRECIPITATION FOR NOVEMBER, 1904.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	....	....	....	..	....	....	....	T	...	....	....	...	....	....	....	....	....	....	....	....	..	....	....	....	...	....	....	....	....	....	T
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Algona	..	..	...	....	....	....	....	....	.12	.2(	....	....	....	....	....	....	....	....	....	....	....	....	..	....		..	....	....	....	...	....	.32
Allerton	...	....	....	....	....	....	..	....	T	.06	....	....	.	.	....		....	....	....	....	..	....	..	...	....	....	....	..	....	....	...	.06
Alta	...	....	....	..	....	....	....	....	..	.31	....	....	....	..	....	....	...	..	....	..	....	....	....	....		....		....	....		....	.31
Alta [near]	...	....	....	....	....	....	...	....	.10	....	..	....	...	....	....	...	....	....	....	....	..	....	....	....	....	....	....	....	....	....	..	.10
Amana	..	..	....	....	....	..	..	....	.08	.11	....	....	....	....	....	....	....	....	....	....	..	....	..	..	....	....	..	....		....	....	.19
Ames	....	....	..	....	....	..	....	....	.01	.01	....	....		....	....	....	....	....	..	....	....	....	..	....	....	....	..	....	....	....	....	.02
Atlantic	....	....	....	....	....	....	..	....	....	.08	...	..		....	....	....	....	....	..		...	....	..	..	....	....	....	.	.	....	....	.08
Audubon	....	..	....	....	.	....	....	..	....	.17	....	....	....	....	....	....	....	....		....	....	..	....	....	....	....	....	....	....	....	..	.17
Baxter	..	..	..	....	....	....	....	..	....	.08	....		....	....	....		....	....	....	....	....	..	....	....	....	....	....	....	....		..	.08
Bedford	....	..	....		....	....	....	....	.01	.07		....	....	....	..		....	....	....	....	....	....	..	....	..	....	....	....	....	....	....	.08
Belle Plaine	....	..	....	....		....	..	..	.20	....	....	....	....	....	..	....	....		....	....						....	....	....	....	....	....	.20
Bonaparte	.	....	..	....	....	..	....	....	.50	....		....	....		....	....	....	..	....	.		....	....	....	..	....		...		..	....	.50
Britt	....	....	....	....	....	....		....	.10	.16	....	....		....	....	.	....	....	....	..	..	....	....	....	....	....	....		....	....	....	.26
Buckingham	....	....	....	...		.	....	....	.18	T	..		...	....	....	..	....	....	.	....	..	....	....	....	....	....	....	....	....	....	..	.18
Burlington	.	....		....		....	....	....	.13	....	..			....	....	....	....	....	....	....		....	....	....		....	....	....	....	....	..	.13
Carroll	....	....	. ..	...	....		....		....	.18	....	....	....	....	....	..	....		....	...	....	....	....	....	..	....	..	....	....	..	..	.18
Cedar Rapids		....	....	....	....	..	....		....	.09	....	....	.	...	...	....	..	....	....	....		....	....	..	....	....	....	....	....	....	....	.09
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Charles City	....	....	....	..	....	....		.	.22	.03			..	..	....							....	....		....	....	....	....	T	T	....	.25
Clarinda	..	....	...	...	....	....	....	....	.09	T	....	....	....	....	....	....	....	....	..	....	....		....	....	....	....	....	....	....	....	....	.09
Clear Lake	....	....	....	....	...	....	..	....	.25	...		....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	....	....	....		.25
Clinton	...		..	....	...	..	....	....	.10		...		..	..	..	...	..	..	....	....	....	....	...	....		..		....	....	....		.10
College Springs	....	....	..	...	....	....	....	....	T	.10	....	....	....	....	..	..	....	....	....	....	..	....		....	..	....		....	....	..	....	.10
Columbus Junct'n	....	....	....	....	..	..	....	....	T	.16	....	....	....	....	....	....	....		....	..	...	....	....	....		....	.	....	..	....	..	.16
Corydon	....	....	..	....	..	....	..		....	.05	....	....	...	...	....	...	....	....	....	....	..	...	....	....	.	...	....	....	....		....	.05
Cumberland	....	....		..	....		..	....	T	....	....		....		...	....	....	....	....	....	....	..	....	....		....		....	....		..	T
Davenport	....	....	..	....		....	..	..	.15	.03	....	....	....	....	....	...	....	....	....	....	.	....	....	....	...	....	....	..	....	..	....	.18
Delaware	....		....	...	....	..	.		.09		....	....	..	....	....	....	.	....	....	....	..			....	....	....	....	....	....	....	...	.09
Decorah	....	....	..	....	....	....	....	....	.29	.06	...	...	...		..	....	..	....	..	T	..	....	....	....		....	....	....	....	....	...	.35
Denison	..	....		....	.	....		...	.05	.10	...	..	...	....	....	....		....	....	..	...	....	..	....	....		....	....	....	....	..	.15
Des Moines	...	....		....	...	....	....	....	T	.06	..	....		...		..	....	...	.	....	....	....	....	..	....	.	....	....	....	....	....	.06
De Soto	....	....	....	.	....	....	....		T	.10	..	....	....	....	....	....	....	....	....	....	....	....		....	....	....	....	....	....	....		.10
Dows	....	..	..	....	....	...	....	....	T	.05	....	....	....		....	....	....	....	....	....	....	....	..	....	....		....	....	....	....	....	.05
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Elkader	....	....	..	....	....	....	..	....	.14	..		....	....	....	.	....	....	....	....	....	....	....	....	....		....	....	T	....	....	....	.14
Estherville	....	..	....	....	....	....	....	...	....	.14	...	....	....	....	....	....	...	....	....	....	....	....	....	....	..	....	....	....	....	T	....	.14
Florence	....	....	....	....	....	....	....	.	.04	.15		....	....	....	.	....		....	..	....		....	....	..	....	....	....	....	....	..	....	.19
Forest City	...	..	....	....	..	....		....	....	.22	....	...	..	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	...	...	....	.22
Fort Dodge	....	....	....	....	....	....	...	....	T	.20	....	....	....	....	....	...		..	....	..	....	....	....	....	....	....	..	....	....		....	.20
Fort Madison	....	....	....	....	...	...	..		.43	..	....		..	....	....	....	....	....	....	....	....	....	....	....	..	...	..	....	....	...	....	.43
Galva	....	....	....	....	...		....	....	....	.09	....	....		....	..	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	.09
Gilman	....	....	..	....	...	T	....	....	....	.25	T	....	....	....	....	....	....	....	....	....	..	....		....	....	....	....	T	....	....	....	.25
Glenwood	....	....	....	....	....	....	....	....	....	.50	....	..	....	....	....	..	....	....		....	....	....	....	....	..	....	....	....	....	....	....	.50
Grand Meadow		....		....	....	..	....		.18	...	....	....	....	....	....	....	....	....	....	....	....	....	....	.	....	....	....	....	....	..	....	.18
Greene	...	....	....	....	....	....	...		.25	08	....	..	....	..	....	....	..	..	....	....	..	....		....	....	....		....	....	....	....	.33
Grinnell	....	....	....	....	....	....	...	....	.12	T	....	....	..		....	....		....	....	....	....	....	....	..	....	....	....	....	....	....	....	.12
Grinnell (near)	...	....	..	....	....	....	....	....	..	.10	....	..	....	....	....	....	....	....	....	..	....	....	....	....	..	....	....	....		....	....	.10
Grundy Center	....	....	...	....		....	...	....	.11	.12	..	....	..	....	...	....	....	....	...	....	...	....	....	....	....	....	....	....	....	..	...	.23
Guthrie Center	...	....	....	..	...	....	....	...	.05	.08	....	....	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	T	...	....	.40
Hampton	....	...	....	....	....	...	....	.05	.35	....	...	...	..	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	....	.13
Hanlontown	...	....		....	.	....	....	....	.13		....	....	....		....	....	.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.17
Harlan	....	....	....	..	...	....	....	....	.03	.14		....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.02
Hopeville	....	....	....	.	....	....	..	.	.02	..	....	....	..	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	.20
Humboldt	....	....	....	....	....	....		...	....	.20	....	....	....	....	..	....	....	....	....	....	..	....	..		....	..	.	....	....	....	....	.05
Independence	...	...	....	..	..	...	..	....	.02	.03	....	....	....	....	....	....	..	....	....	....	..	....	....	....	....		....	....	T	....	....	.03
Indianola	....	....	....	....		....	....	....	T	.03	....	....	..	....	....	...	..	.	...	..	....	....		....	....	....		....	....	..	....	....	T
Inwood	....	...	..	....	..		....		T		....	....		....	....	....	....	....	....	....	....	....	....	....		....	T	....	....	....	....	.25
Iowa City	..	..	.	....	....	....	....	...	....	.25	..	....	..	....	....	....	..	....	....	....	..	....	....	....	....	....	....	...	....	....	..	.23
Iowa Falls		....	....	....		....		...	T	.23		...	....	....	....	..	....	....	....		....		....	....		....	....	....	T	....	....	.21
Keokuk	....	....	..	....	....	....	....	....	.09	.12	....	...	..	....	....	....	....	....	....	....		....		....	....	....	....	....	....	....	....	.14
Keosauqua		....	....	..	....	...	....	....	T	.14		...	..	....	....	....	....	....	....	....	....	....	..	....	....	....	..	....	....	....	....	.03
Lacona	....	....	....	....	....	....	....	....	.03	T	....	....		..	....	....	...	....	....	....	....	....	...	.	....	....	....	....	....	....	....	.29
Larrabee	....	...	..	.	...	.	....	....	.29	....	....	.	....	...	....	...		....	....	..		....	....	..	....	....	....	....	....	....	....	.31
Le Claire	...	....	....	....	...	..	....		....	.31	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....		T	....	..	....	.20
Little Sioux	....	..	....	....	....	....		..	.02	.18		....	....	.		....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	.05
Le Mars	....	....	....	..	....	....	....	.	.03	.02	....	....	....	....		....	..	....	....	....	....	....	....	....	.	....	....	....	....	....	....	.09
Leon	....	....	....	....	....	....	....	....	T	.09		....	....		...	..	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.20
Logan	....	....	....	....	....	....	....	....	....	.20	....	....	....	..	..	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.22
Maquoketa	....	....	..	....	....	....	....	....	....	.22	....		....		....	....	..	....	....	....	..	....	....	....	....	....	....	....	....	....	....	.17
Marshalltown	....	....	....	....	....	....	....	....	..	.17	..	....	....	..		....	....		....	....	...	....	....	....	....	....	....	....	....	....	....	.20
Mason City	....	....	....	..	....	....	....	....	....	.20		....	....	....	....	....	....	....	.	....	....		....	....	....	....	....	....	....	..	...	.06
Massena	....	....	....	....	....	....	....	....	T	.06	....	....	....		.	....	....	....	....	....	....	....	....	....	....	..	....	....	....		...	.20
Muscatine	....	....	....	....	....	....	..	....	....	.20	..	....	....	....	....	....	....	.	....	....	....	....	....	..	....	..	....	....	....	....	....	.13
Mt. Vernon	....	....	..		...	....		....	.10	.03	...		....	....	....	..	..	....	....	....	....	....	....	..	...	....	....	....	....	..	....	.41
Mount Ayr	....	....	....	....	....	..	....	....		41	....	...	...	....	....	....	....	....	....	.	....	....	....	....	....	....	....	....	....	....	....	.22
Mt. Pleasant	....	....	....	...	....	....	....	....	02	.20	....	....	....	....	....	....	....	....	....	....	..	....	..	....	....	....	..	...	....	....	....	.10
New Hampton	.	..	....	....	....	....		....	.10		....	....	....	....	....	....	.	....	....	....	..	....	....	....	....	..	..	....	....	.	....	.08
Newton	....	....	....	....	...	..	...	....	T	.08	...	..	....	....		....	....	....	....	....	...	....	...	....	....	....	....	....	....	..	....	.25
Northwood	....	....	....	....	..	...	....	....	T	.25	...	..	....	....	....	...	....	....	..	..	....	....	....	....	...	....	....	....	....	..	....	.24
Odebolt	....	....	...	....	....	..	....	....	.06	.18	....	.	....	....	....	.	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	.02
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Omaha, Neb	....	....	....	..	.	..	....	...	.03	.07	....	...	..	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	..	....	.30
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Osage	....	....	....	.	...	....	....	....	.11	.06	..	....	....	.	....	.	....	..	....	....	....	....	....	..	....	....	....	....	..	..	....	.06
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Oskaloosa	.	....	....	....	....	....	....	..	T	.03	...	....	....	....	....	....		....	....	....	....	....	....	....	..	....	....	....	....	....	....	.18
Pacific Junction	....	..	....	....	....	....	....	..	.05	.13	....	....	....		....	..	..	..	....	....		..	....	....	....	....	....	....	....	....	....	T
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Plover	....	....	....	..		....	....	....	.10	.10	..		....	....	..	....	....	....	...	....	..	....	....	....	....	....	..	....	....	....	....	.11
Pocahontas	....	....	....	....	....	....	...	..	.01	.10	....	....	....	....	....	....	....	....	...	....	....	....	....	.	...	....	....	....	....	....	....	.07
Red Oak	...	....	....	....	....	...	....	....	T	.07	....	....	....	....	....		..	....	....	....	....	....	....	..	....	....	....	....		....	....	.29
Ridgeway	...	....	....	....		.01	....	....	.26	.02	..		....	....	....	....	....	....	....	....	....	....	..	..	....	.	....	....	....	....	....	T
Rock Rapids	....	..	....	..	....	....	....	....	....	....	T	T	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.00
Rockwell City		..	....	....	....	..	....	....	....	...		....	....	....	....	....	..	....	....	....	....	....	....	....	..	....	....	....	....	....	....	.05
Ruthven	..	....	....	....	....	....	....	....	.05	....	....	....	....	....	....	....	....	....	....	....	..	....	....	....	..	....	....	....	....	....	....	.24
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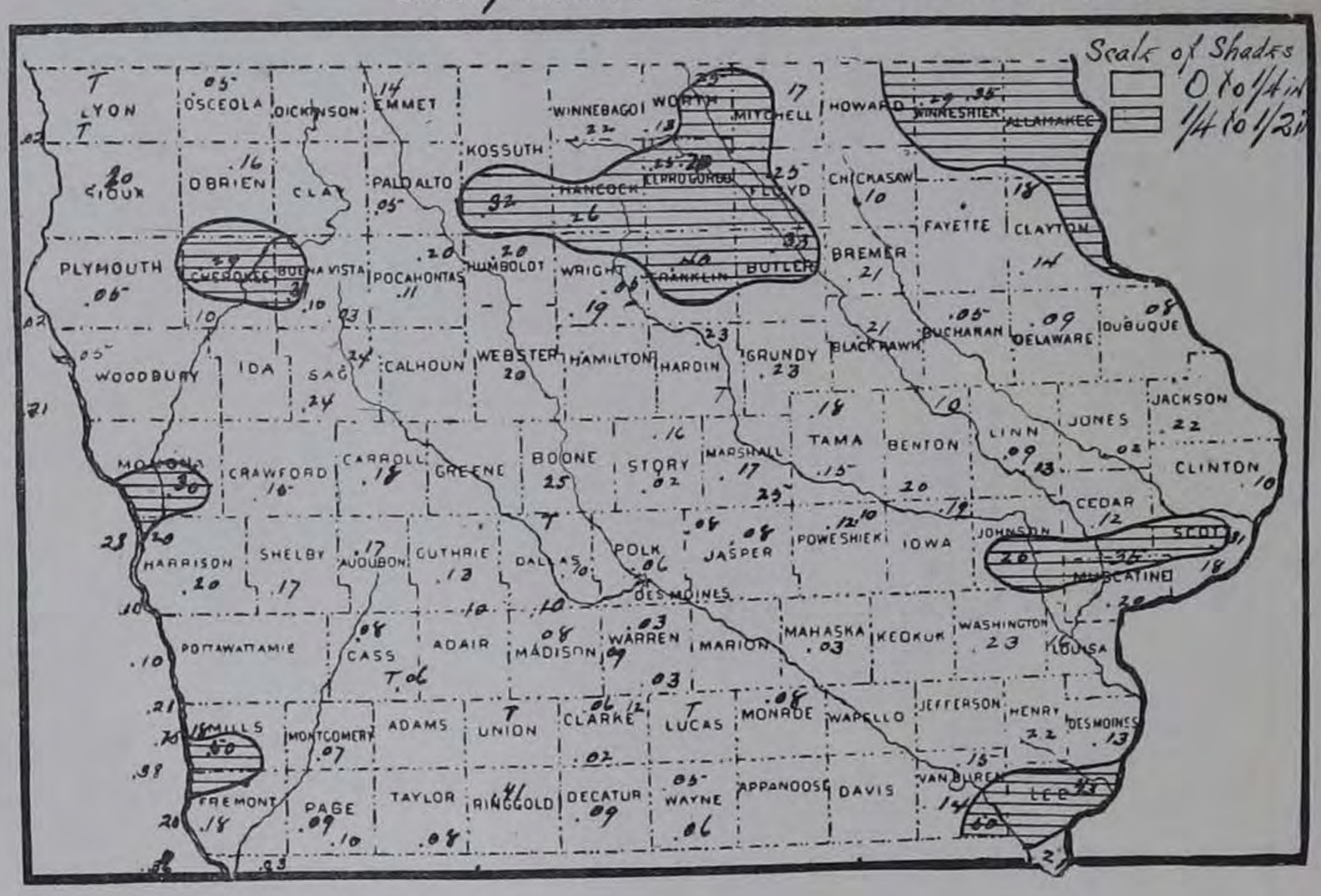
St. Charles	....	..	....	....	...		....	...	.02	.07	....	....	....		....	....		....	....	....	....	..	..	....	....	....	....	....	....	...	....	.16
Sheldon	....	....	..	....	....		....		.06	.10	....	..		....	....		....	....	....	....	....	..	....	....	..	....	....	....		....	....	.05
Sibley	....	....	....	....		....	....	....	....	.05	..	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.10
Sioux Center	....	....	....	....	....	.		..	.05	.05	....	....	..	...	....		....	....	....	....	....	..	..	...		....	..	T	....	....	..	.05
Sioux City	....	....	....	....	....	....	....	....	.02	.03	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	.15
Stockport	....	...	....	....	..	....	....	....	T	.15	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.03
Storm Lake	....	....	....	....	..	....	....	....	....	.03	....	...	....	....	....	....	...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.10
Stuart	....	....	....	....	....	...	....	....	.10	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	

DAILY AND MONTHLY PRECIPITATION FOR NOVEMBER, 1904--CONTINUED.

STATIONS.	DAY OF MONTH																														TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Thurman									.10	.08	T																				.18
Tipton									.12																						.12
Toledo									.15																						.15
Vinton										.10																					.10
Wapello									T	.12																					.12
Washington										.23																					.23
Washta									.10																				T		.10
Waterloo									.21																				T		.21
Waukee									.05	.05																					.10
Waverly									.17	.04																			T		.21
Whitten									T	T																	T		T		T
Wilton Junction									.35																						.35
Winterset									.30																						.30
West Bend									.05	.03																					.08
Woodburn									T	.12																					.12
Zearing									.03	.13																					.16

Precipitation: Chart: November, 1904.



DECEMBER, 1904. No. 12



MONTHLY REVIEW OF THE IOWA WEATHER AND CROP SERVICE

AND ANNUAL SUMMARY 1904.

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CENTRAL STATION, DES MOINES, IOWA.

J. R. SAGE,
DIRECTOR.

GEO. M. CHAPPEL,
LOCAL FORECASTER,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

THE IOWA WEATHER AND CROP SERVICE

WAS ESTABLISHED BY ACT OF THE TWENTY-THIRD GENERAL ASSEMBLY, AND IS UNDER SUPERVISION OF THE

STATE BOARD OF AGRICULTURE,

CONSTITUTED AS FOLLOWS:

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METEOROLOGICAL STATIONS AND OBSERVERS.

From the following, weekly and monthly reports of Metorological data are received by the Iowa Weather and Crop Service.

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Algona ..... Dr. F. T. Seeley
Allerton ..... Rex Shriver
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Dubuque ..... *Orin Parker
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Elkader ..... Chas. Reinecke
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Gilman ..... Jas. L. Wylie
Glenwood ..... J. P. Jackson
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Grundy Center ..... Ed King
Guthrie Center ..... D. G. Beardsley
Hampton ..... E. C. Grenelle
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Ogden ..... C. L. Zollinger
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Wilton Junction ..... J. M. Rider
Winterset ..... B. L. Sprinkle
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Woodburn ..... C. B. McDonough
Zearing ..... H. E. Burkhart

*U. S. Weather Bureau.

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Allerton ..... James Piper
Alta ..... Jonas Cushman
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Nevada ..... Geo. C. White
Northwood ..... T. L. Bolton
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Pella ..... J. H. Ver Steeg
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Weldon ..... Ed Worden
Winterset ..... H. A. Kinsman
West Branch ..... Wrigley Smith
West Union ..... H. B. Blackman
Wilton ..... Thos. Boot
Wiota ..... I. S. Coomes
Woodward ..... George Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XV. DECEMBER, 1904. No. 12.

DECEMBER WEATHER AND CROPS.

December was nearly normal as to temperature and precipitation. The mean temperature for the state was half a degree above normal, and the precipitation 0.15 of an inch above the average. The first decade was dry and fair, with ideal conditions for finishing corn husking, and the usual farm operations of the early winter period. For about half the month the ground was well covered with snow, which afforded protection to winter grain and the grasses during the coldest weather. The bulk of the precipitation came in form of snow and sleet, and fell mostly on the 11th, 16th, 26th and 27th. But one severe storm visited the state, and that was the blizzard that swept over all sections from the 26th to the 28th. It was unusually severe, causing blockades of railways in many localities. Farm animals, not well sheltered, suffered severely, and newspaper reports indicate some loss of valuable stock As a whole December was a fairly good and pleasant winter month.

EDITORIAL NOTES.

In the production of a ton of apples the soil loses less than thirty cents' worth of nitrogen, potash and phosphoric acid. The bulk of the crop is the product of sunshine, air and water.

A ton of butter, worth about $500, robs the soil of less than one dollar's worth of crop growing material while a ton of wheat takes away $7 50 worth of fertility.

In the final crop report of the Illinois Board of Agriculture, that state is credited with 7,825,000 acres of corn. The average yield was 36 bushels per acre The total yield for that state was 281,700,000 bushels. The government statistician credited Illinois with 9,428,000 acres, and a total yield of over 344,000,000 bushels The state report of acerage planted was based on the returns of assessors, and is more likely to be correct than estimates of crop reporters on the basis of the census of 1899.

Again the astronomers note the appearance of a comet sweeping into the domain of old Sol's planetary system. And now if there should be anything unusual in the line of weather on our planet, the "star gazers and monthly prognosticators" may attribute it to the perturbing influence of this new celestial nomad. Who knows but it had a hand in getting up that blizzard which came with the expiring gasps of the old year?

In the annual report of the U. S. Department of Agriculture for 1904, Secretary Wilson makes a summary of the value of agricultural products as follows:

"After a laborious and careful estimate of the value of the products of the farm during 1904, made within the census scope, it is safe to place this amount at $4,900,000,000, after excluding the value of farm crops fed to live stock in order to avoid duplication of values. A similar estimate made for 1903 gives $4,480,000,000, and the census total for 1899 is $3,742,000,000. It is by no means to be admitted that these figures represent fully the value of the wealth produced on farms. Within the limits of ascertainable values, the farms of 1904 produced an aggregate wealth with a farm valuation that was 9.65 per cent above the product of 1903, and 31.28 per cent above the figures for the census year 1899. An occupation that has produced such an unthinkable value as one aggregating nearly $5,000,000,000 within a year may be better measured by some comparisons. All of the gold mines of the entire world have not produced since Columbus discovered America a greater value of gold than the farmers of this country have produced in wealth in two years; this year's product is over six times the amount of the capital stock of all national banks; it comes within three-fourths of a billion dollars of equaling the value of the manufactures of 1900, less the cost of materials used; it is twice the sum of our exports and imports for a year; it is three times the gross earnings from the operations of the railways; it is four times the value of all minerals produced in this country."

Mr. Carl Fritz Henning, volunary observer at Boone, Iowa, who is a recognized local authority on birds, contributed an interesting article to the *Boone Republican* relative to the wholesale destruction of English sparrows during the blizzard, December 27th and 28th. He attributed this unusual fatality among these hardy "tramps of our streets" to the fact that the blizzard was preceded by heavy mist and sleet, which covered the ground and trees with thick ice, rendering it impossible to obtain their usual supply of food.

CLIMATOLOGY OF THE MONTH OF DECEMBER, 1904.

BAROMETER.—Mean pressure, 30 07 inches; highest observed 30.52 inches, at Dubuque and Sioux City, on the 3d; lowest observed, 29 09 inches, at Dubuque on the 27th; range for state, 1.43 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 114 stations, was 23 4 degrees, which is 0.5° above normal. By sections the mean temperatures were as follows: Northern section 20.6° which is 0.5° above normal; central section 23.5°, which is 0.3° above normal; southern section 26.1° which is 0 4° above normal. The highest monthly mean was 29.9° at Keokuk; lowest monthly mean, 18.2°

at Forest City. The highest temperature reported was 67°, at Albia on the 22d; lowest temperature reported 19°, at Elkader on the 14th, The average monthly maximum was 55 5°; average monthly minimum, -8.8°. Greatest daily range, 57° at Maquoketa; average of greatest daily ranges 36.8.

PRECIPITATION.—Average precipitation for the state, as shown by records of 119 stations, as 1 44 inches, which is 0 15 of an inch above normal. The averages by sections were as follows: Northern section, 1.19 inches, which is 0.16 inch below normal; central section, 1.66 inches, which is 0.32 above normal; southern section, 1.48 inches, which is 0.32 inches above normal. The largest amount reported was 3.68 inches at Newton; least amount reported, .06 inch at Storm Lake. The greatest daily rainfall reported was 2 53 inches at Newton on the 27th. Average number of days on which .01 of an inch or more was reported, 5.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 57 miles per hour, from the northwest, at Sioux City on the 27th. Average number of clear days, 12; partly cloudy, 7; cloudy, 12.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Charles City	30.05	30.50	3	29.53	27
Davenport	30.04	30.45	14	29.27	27
Des Moines	30.10	30.51	3	29.64	27
Dubuque	30.06	30.52	3	29.09	27
Omaha, Neb	30.09	30.53	3	29.64	22
Keokuk	30.06	30.46	4	29.45	27
Sioux City	30.09	30.52	3	29 69	31
Means	30.07	30.52	3	29.09	27

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Charles City	6.578	37	NW	27
Davenport	6.945	39	NW	27
Des Moines	7.033	34	NW	27
Dubuque	5.292	28	W	20
Keokuk	7.405	36	NW	27
La Crosse, Wis	6.050	38	W	20
Omaha, Neb	8 132	39	NW	27
Sioux City	10.792	57	NW	27

OBSERVERS' NOTES.

AFTON.—*N. W. Rowell.* The blizzard commenced at 8 P.M. on 26th and continued to the 28th; the worst in my ten years' record.

ALLERTON.—*Rex Shriver.* The blizzard on the 27th blocked roads and paralyzed traffic.

ALTA.—*David E. Hadden.* Ideal weather most of the month; the blizzard on 27th raged all day, but was quickly followed by fine weather.

ATLANTIC.—*J. W. Love.* Month was very mild except during the heavy wind and snowstorm on 27th.

BONAPARTE.—*B. R. Vale.* Precipitation, 2.25 inches; a pleasant month with a bad storm on 27th; ground bare and without frost at close of month.

BRITT.—*Geo. P. Hardwick.* The summer of 1904 was cool; autumn warm and late, with insect life until close of December; very high wind, blizzard and drifting snow on 27th and 28th.

CHARITON.—*C. C. Burr.* On 26th had light sleet, some rain with thunder, followed by one of the worst blizzards on record.

CLARINDA.—*A. Van Sandt.* Storm of the 26th-28th was a hard one, with wind 35 to 40 miles, and snow drifts above fences.

CLINTON.—*Luke Roberts.* Temperature normal; precipitation 2.85 inches. Most of it coming on 26th and 27th.

CRESCO.—*L. G. Krumm.* The blizzard on 27th was the worst in recent years; the papers say it was the worst since 1873.

ELKADER.—*Chas. Reinecke.* Mean temperature for the year, 44.4°; total precipitation 25.36 inches; highest temperature 99° on July 17th; lowest, 32° below zero on January 27, 1904; total snowfall for the year, 44 inches.

ESTHERVILLE.—*Earl W. Peterson.* Beginning on the 26th at 3 P. M., we had the worst blizzard that has visited this place during the past twelve years; storm ceased during night of 27th.

GREENFIELD.—*J. G. Culver.* A blizzard, commencing 9 P. M. on the 26th and ending on the 28th, was the worst storm for years; roads and railway lines badly blocked by drifts.

HAMPTON.—*E. C. Grenelle.* Hard blizzard all day the 27th; worst since 1880.

HANLONTOWN.—*Miss G. M. Paschen.* The blizzard on the 27th was the most severe storm in this section since 1885. Drifts ten feet high where wind had full sweep, and objects were invisible four rods distant.

HOPEVILLE.—*M. L. Ashley.* Very severe storm on 27th and roads were blockaded.

HUMBOLDT.—*H. S. Wells.* Precipitation for year, 28.26 inches.

INDEPENDENCE.—*E. F. Wulfke.* On 27th the heaviest blizzard in 20 years visited this section; all roads blocked.

LARRABEE.—*H. B. Strever.* The month was mild and pleasant, except during the blizzard on 27th.

LOGAN.—*Glen H. Stern.* Fierce blizzard visited Logan on 27th; drifts in places 5 feet deep.

OLIN.—*N Potter.* Roads were blockaded two days by storm on 27th.

POCAHONTAS.—*F. E. Hronek.* The blizzard on 27th reminded us of old times; not enough snow to do much damage.

RIDGEWAY.—*Arthur Betts.* Warmest of eight Decembers, except in 1900. There were 148 hours of sunshine. The blizzard on 27th was the worst since December 11 and 12, 1899.

SHELDON.—*A. W. Beach.* A splendid month; only one bad storm, and that lasted but 24 hours.

STOCKPORT.—*C. L. Beswick.* A fine month, except on 26th and 27th, the latter being equal to any bad day on record here.

WATERLOO.—*M. L. Newton.* The storm on 27th was the worst in 20 years.

WAUKEE.—*E. J. Leonard.* The sensational feature of the month was the blizzard on the 27th; stock suffered much and roads drifted full in many places.

WAVERLY.—*H. S. Hoover.* A very heavy blizzard all day the 27th and snow drifted badly.

WHAT CHEER.—*R. S. Alexander.* Worst blizzard in years on 27th and 28th; terrific wind; roads blocked several days.

BELATED REPORTS.

LENOX—November—Mean temperature 42.2°; highest 68° on the 2d, 3d and 18th; lowest 11° on the 30th; greatest daily range 35°; total precipitation .11 inch; greatest in 24 hours .11 inch; total snowfall, trace; prevailing direction, south; number of clear days 27, partly cloudy 1, cloudy 2, rainy 1.

EARLHAM—November—Mean temperature 40.2°; highest 72° on the 3d and 17th; lowest 7° on the 30th; greatest daily range 45°; total precipitation .13 inch; greatest in 24 hours .13 inch; total snowfall, trace; prevailing direction, southwest; number of clear days 25, partly cloudy 3, cloudy 2, rainy 1.

GREENFIELD—November—Mean temperature 42.1°; highest 70° on the 3d and 19th; lowest 8° on the 30th; greatest daily range 35°; total precipitation .24 inch; greatest in 24 hours .24 inch; total snowfall .3 inch; prevailing direction, south; number of clear days 26, partly cloudy 3, cloudy 1, rainy 2.

OTTUMWA—November—Mean temperature 44.6°; highest 78° on the 19th; lowest 16° on the 30th; greatest daily range 37°; total precipitation .13 inch; greatest in 24 hours .13 inch; prevailing direction, northwest; number of clear days 21, partly cloudy 5, cloudy 4, rainy 1.

CLIMATOLOGICAL DATA FOR DECEMBER, 1904.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona (a)	Kossuth	1,213	28	19.6	-0.7	52	8	-10	28	46	1.27	† .22	.60	11.0	3	10	7	14	S	
Alta	Buena Vista	1,513	11	21.6	†0.8	56	8	-12	28	31	.52	- .51	25	5.0	7	13	9	9	NW	
Alta (near)	Buena Vista										.40		.20	4.0	4					
Britt	Hancock	1,236	5	19.8	†2.7	50	8	-10	28	33	.83	† .04	.45	8.3	8	5	16	10	SW	
Charles City	Floyd	1,012	11	18.6	-2.4	44	31	-12	14	35	2.24	† .88	1.20	23.6	9	7	9	15	NW	
Clear Lake	Cerro Gordo	1,241		20.8		45	8	-12	28	32	1.40		.60	14.0	4	8	10	13	SW	
Cresco	Howard		31	19.8	†1.6	43	23	-13	14	31	1.26	- .03	.89	14.5	4	11	6	14	SW	
Decorah	Winneshiek	857	10	21.2	†0.8	45	23	-12	14	31	1.74	† .38	.97	16.0	4					
Dows	Wright	1,142		20.8	†1.0	50	8	-12	27	35	1.97	†1.08	1.00	19.0	6	14	3	14	NW	
Elkader	Clayton	727	21	20.6	-1.0	48	31	-19	14	45	2.30	† .37	1.45	24.5	5	11	11	9	NW	
Estherville	Emmet	1,298	12	18.8	†2.4	56	8,31	-10	13,14	39	.62	† .03	.12	11.8	10	14	1	16	NW	
Florence	Wright	1,226	8													1	7	23	NE	
Forest City	Winnebago	1,226	8	18.2	-1.2	47	8	-10	28	37	.70	- .21	.40	7.0	3	12	4	15	N, W	
Grand Meadow	Clayton	1,180	11	19.0	-2.5	46	23	-16	15	30	1.75	† .19	1.00	15 5	4	10	9	12	SW	
Greene	Butler	924	5	20.3	†1.5	47	8	- 8	14	34	1.34	† 36	.56	20.0	6	10	6	15	W	
Hampton	Franklin	1,155	12	21 4	†0.5	51	8	-10	28	35	1.86	† .51	1.00	23.8	5	10	11	10	SW	
Hanlontown	Worth			19.6		48	8,31	-10	4,28	37	1.40		.60	14.0	5	11	11	9	NW	
Humboldt	Humboldt	1,095	10	23.0	†0.2	54	8	- 8	13	36	.78	† .02	.30	7.0	4	17	3	11	NW	
Inwood	Lyon			21.0		58	8	-15	28	39	.35		.20	3.5	2	23	1	7	NW	
Larrabee	Cherokee	1,366	11	21.6	-0 3	58	8	-12	28	34	.63	- .44	.20	4 9	7	15	9	7	SW	
LeMars	Plymouth	1,224	6	23.0	†1.5	57	8	-12	28	36	.15	- .94	.08	1.7	1	15	7	9	S	
Mason City	Cerro Gordo	1,132	7	21.2	†0.8	44	8	- 8	28	26	1.62	† .96	1.00	16 2	4	9	9	13	SW	
New Hampton	Chickasaw	1,169		20 6	†2.7	46	23	-11	28	31	2 22	†1.55	1.00		7	4	11	16	S, NW	
Northwood	Worth	1,222		18.6	-0.5	44	9	-10	28, 29	34	1 01	† .10	.70	10.1	6	7	1	23	NW	
Osage	Mitchell	1,184	11	19.4	†0.3	41	8,31	-10	28	30	2.29	†1.01	1 50	22.9	5	10	5	16	S	
Pocahontas	Pocahontas	1,190	5	22.5		55	8	- 8	28	33	.78		.38	7.8	4	12	8	11	S	
Plover	Pocahontas			20.4	†0.5	54	8	- 8	28	34	.69	- .19	.40	5.5	3	17	2	12	SW	
Ridgeway	Winneshiek	1,215	5	22.7	†1.5	49	23	- 8	28	32	2 75	† .25	2.00	16 9	7	9	14	8	S	
Rock Rapids	Lyon	1,021	6	21.2	†1.5	58	8	-12	28	54										
Sheldon (a)	O'Brien	1,422		22 6	†3.6	61	8	-13	28	40	.46	- .44	.25	5.8	5					
Sibley	Osceola	1,212		18 4	-0 7	58	8	-12	28	44	.50	- .36	.50	5.0	6	13	8	10	NW	
Sioux Center	Sioux			21.5	†1.8	58	8	-13	28	36	.60	- .23	.30	6.0	4	11	3	17	S	
Storm Lake	Buena Vista	1,440	7	20 7	†0.5	56	8	-13	28	38	.06	- .87	.02	.8	4	17	0	14	NW	
Washta	Cherokee										.30	- .87	.20	3.0	2	16	9	6	S	
Waverly	Bremer	942	6	20.7	‡0.0	47	22	-11	14	36	2.40	†1.32	1.00	21.8	7	10	7	14	S	
West Bend (a)	Palo Alto	1,197	8	21.3		51	8	- 8	28	34	1.30		.50	12.5	5	8	9	14	S	
Average				20.6	†0.5	50.9		-11.0		36.0	1.19	-0.16		11.6	5	11	7	13	NW	

SOUTHERN SECTION.

Afton	Union	1,212	7	25.6	†0.8	57	22	- 8	28	33	2 30	†1.02	1.00	23.0	3	9	9	13	SW	
Albia	Monroe	957		23.5		61	22	- 6	28, 29	41	1.17		.58	14 5	5	14	0	17	NW	
Allerton	Wayne			26.4		61	22	- 7	13	35	1.23		.50	11.6	5	17	3	11	S, NW	
Atlantic	Cass	1,164	11	24 8	†2.3	64	22	- 9	13	41	1.05	- .33	.60	10.5	3	6	11	14	NW	
Bedford	Taylor			26.1		63	20	- 8	28	35	.70		.30	3.8	4	17	2	12	NE	
Bonaparte	Van Buren		10	26.6	-1.2	58	23	- 2	28	33	2.25	† .80	1.12	4 0	4					
Burlington	Des Moines	544		28.1		57	22, 23	- 2	28, 29	37	2.48		.76		9	15	5	11	SW, NW	
Chariton	Lucas	1,042	7	25.8	†0.2	60	22	- 7	13	37	1 20	- .32	.65	8.0	3	15	9	7	NW	
College Springs (a)	Page		10	27.4	†0.3	66	22	- 7	28	36	.83	- .76	.47	8.3	3	16	6	9	SW	
Columbus Jct	Louisa	586		26.1		56	23	- 3	15, 28	34	2.54		1.20	7.8	7	21	3	7	NE, NW	
Corning	Adams	1,127	10	24.3	-2.9	62	22	- 8	28	42						10	11	10	SW	
Corydon	Wayne	992	9	26.6	†0.8	61	22	- 6	13, 28	36	1 39	- .23	.67	14 0	5	16	4	11	NW	
Clarinda	Page	1,069	12	24.0	-2.5	65	22	- 7	28	44	88	- .36	.30	10.3	7	17	4	10	S	
Cumberland	Cass										1.20		.50	12.0	3	15	9	7	N, NW	
Earlham	Madison			22.5		60	22	-16	14	36	1.29		.60	15.0	4	17	4	10	NW	
Fort Madison	Lee	516	51								1.78	- .22	1.38	7 0	3	10	5	16	N	
Glenwood	Mills		15	28.4	-0.7	64	22	- 7	28	43	.20	- .58	.10	2.0	2	9	13	9	NW	
Greenfield	Adair		11	24.6	†0.1	59	22	- 9	28	32	1.26	- .09	58	13.6	4	18	3	10	SW	
Hopeville	Clarke		11	25.3	-0.2	59	22	- 8	13	35	1.33	† .22	.60		4	7	13	11	NW	
Indianola	Warren	969	11	25.8	†0.6	60	22	- 9	13	34	1.57	† .16	.50	15 8	5	12	3	16	SW	
Keokuk	Lee	619	31	29.9	†0.1	60	22	- 1	28	33	1.45	- .51	1.08	3.7	7	13	8	10	SW	
Keosauqua	Van Buren	664	10	24.7	-2.3	59	22	- 4	15, 16	49	2.24	† .70	1.70	6.5	4	10	3	18		
Knoxville	Marion	920	6	26.2	†0.9	60	22	- 6	28	28	2.00	† .64	1.00	19.0	5	14	3	14	SW	
Lacona	Warren										1.61		.60	14.0	6	7	18	6		
Lenox	Taylor	1,250	7	24.9	†0.7	62	23	-10	28	40	.80	- .48	.40	8.0	4	19	3	9	S	
Leon	Decatur	1,120		26 4		59	22	- 6	28	32	1.70		.80	17.0	3	16	4	11	N, S	
Massena	Cass			24.8		60	22	- 9	28	37	.71		.40	8.5	3	14	5	12	S	
Mount Ayr	Ringgold	1,236	6	26.8	†2.2	65	22	- 8	28	38	1.97	† .65	.88	22.0	6	11	9	11	SW	
Mount Pleasant	Henry	729	20	26.3	†0.5	57	22, 23	- 3	28	30	3.34	†2.13	1.83	7.7	7	11	7	13	NE	
Omaha, Neb	Douglas	1,113	32	27.5	†0.8	61	22	- 5	28	34	.57	- .44	.30	6.3	3	7	13	11	N	
Oskaloosa	Mahaska	843	18	25.1	-0.7	59	22	- 4	14, 28	36	1.09	- .19	.46	12.5	7	15	2	14	NW	
Ottumwa	Wapello	649	8	27.2	-0.2	61	22	- 1	14, 28	33	1.52	† .15	.80	15.2	5	8	12	11	NW	
Pacific Junction	Mills	960		25.6		63	22	- 6	28	39	.58		.34	5.7	4	13	9	9	S	
Red Oak	Montgomery	1,033		28.2	†3.4	62	22	- 5	28	35	.94	- .28	.65	11 0	3	8	17	6	S	
St. Charles	Madison	1,070		26.9		61	22	- 6	13, 28	41	2.44		1.04	22.9	7	16	4	11	NW	
Stockport	Van Buren			27.4		59	23	- 1	15, 28	38	2.08		1.70	9.0	7	11	8	12	NW	
Thurman	Fremont			26.6	†3.4	65	23	- 5	27, 28	40	.40	-1.38	30		2	11	10	10	SW	
Wapello (a)	Louisa	588		27.2	†0.2	56	23	0	28	30	2.27	† .93	1.00	7.0	5				SW	
Washington	Washington	769	20	26.2	†2.2	56	22	- 4	28	34	2.01	† .54	1.45		4				SW	
Woodburn	Clarke	961									1.50		.80	15.5	3	16	2	13	SW	
Average				26.1	†0.4	60.6		- 5.9		36.4	1.48	†0.32		11.2	5	13	7	11	NW	
Average for state				23.4	†0.5	55.5		- 8.8		36.8	1.44	†0.15		12.3	5	12	7	12	NW	

CLIMATOLOGICAL DATA FOR DECEMBER, 1904—CONTINUED.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Amana	Iowa	721	25	23.4	†1.4	53	23	-13	15	36	1.62	† .13	.68	13.9	5	12	7	11	NW	
Ames ‡	Story	926	20	22.2	†0.4	53	8	- 6	15,28	36	.79	- .23	.25	8.5	5	15	9	7	NW	
Audubon	Audubon	1,301	8	23.2	†0.1	60	22	- 8	28	41	.45	- .80	.17	7.2	3	12	9	10	SW	
Baxter	Jasper	998	....	23.4	.....	54	22	- 8	28	35	1.40	.....	.50	15.0	4	12	7	12	NW	
Belle Plaine	Benton	826	12	21.4	-2.6	50	22	-14	15	40	3.15	†1.66	1.60	30.5	5	13	12	6	Ne,Se,W,Nw	
Boone	Boone	....	....	24.3	.....	54	22	- 7	28	37	1.65	.....	.84	18.1	3	19	3	9	NW	
Buckingham	Iowa	.....	....	.....	.....	.....	.....	.....	.....	.....	1.99	.....	1.20	22.8	5	14	11	6	.....	
Carroll	Carroll	1,265	12	22.9	-0.1	59	22	-11	28	35	1.45	† .37	.60	14.5	6	14	3	14	.....	
Cedar Rapids	Linn	733	19	21.8	-3.5	55	22	-11	15,16	55	1.75	† .14	.71	20.0	5	14	6	11	NE	
Clinton	Clinton	609	34	24.1	-1.0	52	22	- 7	14	32	2.85	†1.04	2.00	10.0	5	11	7	13	W,NW	
Davenport	Scott	606	31	26.7	-1.1	58	22	- 4	28	32	2.21	† .48	1.58	7.1	7	13	3	15	SW	
Delaware	Delaware	1,083	11	20.1	-1.1	45	22,23	-10	15	37	1.77	† .25	.90	17.0	4	14	7	10	NW	
Denison	Crawford	1,180	8	24.4	†2.6	59	22	-10	28	41	.62	† .02	.20	...	4	18	3	10	.....	
Des Moines	Polk	861	24	25.3	-1.5	58	22	- 6	18	33	2.02	† .58	.98	22.4	6	11	8	12	SW	
De Soto	Dallas	866	...	25.2	.....	59	22	-14	14	40	2.30	.....	1.20	23.0	3	15	3	13	SW	
Dubuque	Dubuque	655	29	23.4	-2.5	53	22	-12	14	26	2.37	† .56	1.32	15.5	9	12	8	11	NW	
Fort Dodge	Webster	1,126	....	20.6	.....	53	8	- 6	28	40	1.00	.....	.30	10.0	6	....	....	....	.....	
Galva	Ida	1,290	8	22.8	†1.2	56	8	-11	28	36	.32	- .52	.25	8.3	2	20	5	6	.....	
Gilman	Marshall	1,052	..	....	....	.....	.....	.....	.....	.....	2.07	.....	.70	20.0	5	12	9	10	W	
Grinnell (a)	Poweshiek	1,023	9	24.2	‡0.0	55	22	- 5	28	35	2.68	†1.39	1.08	17.0	3	12	11	8	N,W,Nw	
Grundy Center	Grundy	976	11	21.5	-0.7	50	22,23	-11	13,14	33	1.73	† .45	.70	21.0	6	14	4	13	NE, NW	
Guthrie Center	Guthrie	1,077	6	24.8	†3.5	60	22	- 9	13,14,28	36	1.14	- .13	.41	....	5	15	9	7	NW	
Harlan	Shelby	1,192	....	23.5	.....	60	22	-11	28	39	.60	- .82	.27	7.5	3	7	12	12	S	
Independence	Buchanan	921	38	19.8	-1.9	45	8	-12	15	34	2.10	† .62	.80	21.0	4	17	5	9	SW	
Iowa City	Johnson	683	45	22.4	-1.7	55	22	- 7	15	38	1.96	† .30	.95	11.0	4	14	2	15	N	
Iowa Falls	Hardin	1,170	9	20.4	-0.1	48	8,22	-11	14	41	1.85	† .69	.70	18.0	5	12	6	13	SW	
Little Sioux	Harrison	.....	....	25.6	.....	60	8	- 9	28	38	.07	.....	.07	.7	1	15	5	11	SE	
LeClaire	Scott	576	....	.....	.....	.....	.....	.....	.....	.....	1.67	.....	1.08	8.0	6	....	....	....	NE	
Logan	Harrison	928	35	25.4	†0.5	56	8,22	- 6	26	42	.60	- .75	.30	6.0	3	14	7	10	NW	
Maquoketa	Jackson	688	9	21.3	-3.8	54	22	-17	14	57	1.74	† .13	.93	13.5	4	16	3	12	NE	
Marshalltown	Marshall	947	9	20.0	-5.5	52	22	- 9	14,15	48	2.59	†1.11	.86	....	6	12	5	14	NW	
Muscatine	Muscatine		45	.....	.....	.....	.....	.....	.....	.....	2.12	- .16	1.56	1.5	5	....	....	....	S	
Mt. Vernon	Linn	847	35	22.8	-1.1	53	23	- 8	28	34	2.10	† .44	.80	17.0	5	14	5	12	.....	
Newton	Jasper	944	14	23.2	†1.2	52	22	- 7	28	34	3.68	†2.35	2.58	28.0	3	18	5	8	S	
Odebolt	Sac	1,356	5	24.0	†2.7	57	8	-11	28	35	.65	- .45	30	6.5	3	19	5	7	.....	
Ogden	Boone	1,088	8	24.5	†1.1	58	22	- 8	28	36	1.20	† .19	.50	12.0	3	13	7	11	NW	
Olin	Jones	760	....	23.0	†0.2	53	23	-12	15	39	2.00	† .54	1.00	11.6	4	13	7	11	NW	
Onawa	Monona	.....	....	25.3	....	59	8	- 9	28	37	.42	- .66	.20	2.2	4	19	2	10	SE,NW	
Perry	Dallas	975	...	24.0		58	22	-10	13	34	1.35	.....	.60	13.5	3	7	14	10	.....	
Rockwell City	Calhoun	.....	....	23.2	†2.3	55	8	-10	28	32	.71	- .59	.40	7.6	4	16	2	13	.....	
Sac City (g)	Sac	1,278	22	27.5	†4.1	64	23	-10	28	40	.....	.....	.....	....	....	....	....	....	.....	
Sioux City	Woodbury	1,165	13	23.8	-4.0	60	8	-10	27	40	.20	- .68	.11	2.6	4	8	11	12	S	
Stuart	Guthrie	1,316	5	25.3	†4.5	57	22	- 7	28	33	.....	.....	.....	....	....	1	21	9	SW	
Tipton	Cedar	807	...	25.2	.....	54	22,23	- 4	28	32	2.06	.....	83	13.0	5	12	11	8	NE	
Toledo	Tama	856	8	22.2	-1.0	54	22	-13	15	56	.....	.....	.....	20.5	5	13	6	12	NW	
Vinton	Benton	810	12	23.4	-0.5	50	23	-18	14	38	1.60	† .39	.50	16.0	4	14	0	17	NW	
Waterloo	Black Hawk	862	15	22.4	†1.3	49	8,22	-14	14	49	2.66	†1.52	1.50	23.0	5	16	6	9	S,NW	
Waukee	Dallas	1,039	....	26.2	.....	59	7	-12	13	38	1.90	.....	.60	17.5	5	18	5	8	NW	
Wilton Junction	Muscatine	683	7	24.8	-0.8	55	23	- 6	15	34	2.28	† .83	1.43	....	3	14	1	16	W	
Whitten	Hardin	1,036	..	21.0	†1.7	46	22	-10	13	36	2.30	†1.13	1.20	23.0	4	13	5	13	NW	
Zearing	Story	718		22.1	.....	51	8	- 8	15	33	1.60	.....	.80	17.3	4	13	8	10	SW	
Average				23.5	†0.3	54.9		- 9.6		37.9	1.66	†0.32		14.1	4	13	7	11	NW	

† Above normal. ‡ Received too late to be computed with means. *a*. One day missing; *b*. two days, etc. § Not supplied with self-registering instruments.

ERRATA IN OCTOBER REVIEW.

CLARINDA—Maximum temperature recorded on the 5th, page 7, should have been the 4th.

BELKNAP—Number of days missing marked as [H], pag. 7, should have been [G].

MARSHALLTOWN—Mean temperature recorded 51.6° on page 8, should have been 52.1°. Mean maximum temperature recorded 64.6° on page 10, should have been 65.6°.

CLEAR LAKE—Mean temperature recorded as 51.6° on page 8 of the November REVIEW, should have been 51.0°.

ERRATA IN NOVEMBER REVIEW.

CLEAR LAKE.—Mean minimum temperature recorded 30.2° on page 11, should have been 30.3°.

DELAWARE.—Minimum temperature recorded 37° on the 15th, page 11, should have been 35°.

INDEPENDENCE.—Minimum temperature recorded 28° on the 25th, page 11, should have been 22°. Mean minimum temperature recorded 27.4° on page 11, should have been 27.2°. Mean temperature recorded 39.2° on page 10, should have been 39.0°.

NEW HAMPTON.—Mean temperature recorded 40.7° on page 9, should have been 39.0°.

WAPELLO.—Maximum temperature recorded 43° on the 9th, page 12, should have been 45°. Mean maximum recorded 54.6° on page 12, should have been 54.7°.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR DECEMBER, 1904.

STATIONS.		DATE.																														MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max	40	33	29	31	34	44	52	54	45	35	33	30	14	23	23	35	28	41	32	39	36	57	56	29	32	30	30	13	32	40	45	35.3
	Min	22	19	18	15	19	13	23	30	25	14	29	1	- 5	- 3	1	16	16	16	7	24	16	29	23	17	27	28	- 3	- 8	4	26	35	15.8
Albia	Max	41	23	29	25	35	46	52	54	34	37	33	15	18	23	28	30	29	40	37	36	43	61	34	28	32	30	12	15	33	43	48	33.7
	Min	12	23	20	14	12	15	18	22	28	14	14	11	- 2	- 2	0	3	15	14	7	8	11	20	33	22	22	23	1	- 6	-6	15	30	13.3
Algona	Max	26	21	22	26	27	41	45	52	42	32	32	21	17	19	20	23	21	35	24	36	34	48	..	25	32	29	9	6	30	42	45	29.4
	Min	19	13	15	- 2	15	14	16	22	14	7	20	-1	- 6	- 1	3	16	13	18	-1	14	2	2	..	11	24	9	- 6	-10	0	20	32	9.7
Allerton	Max	46	39	30	29	36	46	54	56	45	38	34	30	24	26	25	32	31	39	34	38	41	61	58	29	31	32	32	10	36	43	50	37.3
	Min	22	21	19	13	17	14	19	25	28	11	28	5	- 7	- 1	2	16	17	14	5	23	14	31	26	20	22	19	0	- 6	3	28	36	15.6
Alta	Max	31	23	22	29	31	42	45	56	31	32	30	15	22	21	27	26	24	35	35	38	40	54	39	25	28	28	3	5	31	44	51	31.1
	Min	16	11	15	11	16	16	18	25	16	11	12	-1	- 1	- 1	11	18	10	17	0	19	17	29	11	12	21	3	- 6	-12	0	26	30	12.0
Amana	Max	34	28	32	25	32	43	42	46	41	34	31	30	16	19	23	29	29	38	26	35	35	50	53	31	32	33	33	6	26	38	42	32.7
	Min	22	19	17	9	17	7	20	24	28	15	28	9	- 6	-10	-13	10	16	17	4	21	-3	27	24	25	26	30	2	- 5	-3	21	34	14.1
Ames	Max	35	24	30	25	32	46	48	53	43	34	34	31	15	24	23	27	23	38	26	36	37	50	47	43	35	30	26	11	13	25	21	31.8
	Min	20	17	13	11	16	11	21	25	24	11	28	4	2	11	- 6	14	13	15	2	20	1	23	17	13	27	23	- 1	- 6	-1	10	8	12.5
Atlantic	Max	38	29	33	32	36	48	51	56	40	35	35	26	21	25	29	32	25	41	31	43	43	64	55	30	31	31	15	8	36	47	56	36.2
	Min	21	20	8	13	10	7	12	28	21	6	26	0	- 9	- 7	0	22	19	14	3	25	9	35	18	17	27	15	- 3	- 8	2	27	35	13.3
Audubon	Max	34	28	30	31	32	46	48	57	44	34	35	25	18	22	27	36	22	39	30	38	40	60	53	28	30	29	17	14	33	44	49	39.6
	Min	20	16	9	13	14	10	13	19	20	5	25	-4	- 6	- 7	- 2	21	14	17	3	26	6	22	12	15	26	11	- 7	- 8	3	25	32	11.7
Baxter	Max	34	29	34	25	33	46	48	50	44	34	32	30	15	24	23	27	25	39	27	30	37	54	52	28	32	35	30	9	28	41	45	33.5
	Min	20	17	10	7	17	11	20	23	23	10	27	3	- 7	- 6	- 2	14	12	16	3	20	6	26	27	18	25	26	- 2	- 8	0	24	36	13.4
Bedford	Max	45	36	30	30	36	45	43	55	45	38	35	31	18	19	27	33	27	41	34	63	59	40	61	30	31	31	19	10	35	43	50	37.1
	Min	24	22	14	12	19	10	14	22	26	8	29	5	- 3	0	12	21	19	18	7	31	14	27	23	17	28	16	- 5	- 8	0	29	36	15.7
Belle Pl'e	Max	35	23	33	24	31	42	43	47	35	35	32	13	13	15	23	28	32	36	33	36	40	50	32	29	32	32	13	8	29	39	43	30.8
	Min	20	18	9	5	14	7	17	22	24	10	27	9	- 6	- 9	-14	12	9	12	0	15	0	25	28	20	25	26	10	- 7	-5	20	32	12.1
Bonaparte	Max	43	34	31	28	38	45	51	52	40	38	32	28	22	24	28	31	31	39	33	33	40	57	58	32	32	32	32	9	33	42	49	35.8
	Min	21	23	23	17	19	12	21	27	29	19	28	15	0	0	0	13	12	9	8	22	7	30	27	26	27	29	3	- 2	2	30	39	17.3
Boone	Max	35	26	28	29	31	45	47	53	48	35	33	27	14	21	21	24	24	39	23	35	38	54	52	28	31	30	22	12	31	42	48	33.3
	Min	21	17	15	15	10	15	20	27	24	16	26	7	- 3	1	3	17	17	18	5	25	14	29	15	15	26	20	- 1	- 7	5	28	35	15.8
Britt	Max	28	20	30	27	28	39	43	50	42	33	31	23	18	22	24	24	23	34	23	35	38	48	38	27	32	28	18	7	26	40	47	30.4
	Min	18	13	13	- 6	12	9	14	20	15	9	21	-1	- 7	- 3	3	14	12	15	-4	15	0	24	8	8	25	15	- 7	-10	-4	17	25	9.1
Burling'n	Max	45	35	31	32	40	48	47	51	43	35	34	30	26	24	28	32	32	38	35	35	40	57	57	33	32	34	34	12	35	45	52	37.2
	Min	24	24	25	19	22	17	23	27	29	23	27	10	7	6	4	18	18	17	8	22	11	25	30	28	26	30	5	- 2	-2	30	39	19.0
Carroll	Max	23	25	26	34	37	54	46	57	33	38	33	16	20	24	28	31	33	40	34	39	42	59	22	29	30	29	0	14	34	47	54	33.3
	Min	14	15	11	15	16	15	16	22	17	7	26	-5	- 8	- 6	2	15	13	15	0	22	11	25	19	15	22	26	- 4	-11	0	28	35	12.5
Cedar R	Max	33	24	32	27	32	43	43	47	33	34	31	18	15	18	23	28	27	37	36	29	33	55	38	31	34	35	24	6	29	41	45	31.6
	Min	12	21	18	21	10	12	24	22	27	18	16	16	- 3	- 9	-11	-11	13	17	6	3	-1	0	31	25	25	27	21	- 5	-5	6	24	11.9
Chariton	Max	45	38	27	28	35	47	54	54	45	36	34	29	20	26	25	31	28	39	34	37	38	60	56	29	32	31	30	7	32	41	47	36.0
	Min	23	20	18	13	19	10	19	24	27	12	28	4	- 7	0	0	14	16	14	6	22	13	31	25	20	27	29	0	- 5	4	27	35	15.7
Charles C.	Max	23	21	24	22	28	38	42	44	30	34	30	22	18	17	18	23	22	34	27	34	32	43	41	26	30	30	19	3	24	39	44	28.5
	Min	18	14	9	- 6	7	7	17	24	18	9	22	-2	-10	-12	- 3	12	13	11	-2	5	-3	24	15	19	24	15	- 5	- 9	-4	14	27	8.6
Clarinda	Max	46	26	32	31	35	40	55	57	37	37	33	17	22	26	28	34	30	43	35	42	46	65	57	30	32	29	2	13	38	47	55	35.5
	Min	14	21	13	13	16	12	16	18	25	10	10	6	- 1	- 1	- 1	15	19	18	7	7	16	16	25	17	21	29	- 3	- 7	-6	10	29	12.4
Clear L	Max	32	22	25	26	28	36	39	45	44	32	31	28	20	21	21	24	23	33	22	27	35	43	42	25	30	30	26	1	27	39	43	29.7
	Min	18	12	16	- 2	15	16	17	23	17	14	26	3	1	3	1	12	12	15	-1	12	6	21	10	12	23	26	1	-12	1	21	31	11.9
Clinton	Max	35	29	32	27	37	41	39	42	39	33	31	29	19	17	20	30	31	37	27	31	35	52	45	36	33	35	35	11	30	42	45	33.1
	Min	20	20	17	14	15	9	20	24	25	21	25	15	3	- 7	- 6	6	11	14	5	14	3	24	31	28	25	28	10	- 2	1	24	30	15.1
Col. Sprgs	Max	48	36	31	33	37	46	56	57	47	38	36	30	18	24	31	35	30	44	38	44	44	66	59	33	34	33	15	12	36	46	52	38.4
	Min	24	22	14	15	19	15	22	28	26	12	30	6	0	4	15	26	18	20	9	..	..	32	23	17	.	15	- 4	- 7	4	24	30	16.4
Colum. J.	Max	41	31	32	27	35	42	44	48	42	36	33	30	21	24	26	34	33	40	29	34	38	55	56	33	33	34	34	8	31	41	46	35.2
	Min	23	21	23	15	20	14	23	26	29	23	27	8	3	- 2	- 3	16	16	14	5	21	7	21	27	26	27	30	3	- 3	3	27	36	17.0
Corning	Max	43	32	29	30	30	46	56	63	44	34	34	31	15	21	24	32	23	40	32	39	38	62	36	29	31	31	19	9	33	42	42	34.5
	Min	22	20	13	9	15	11	14	21	25	8	29	2	- 5	- 2	3	20	11	16	3	26	12	32	21	16	27	18	- 5	- 8	3	26	34	14.1
Corydon	Max	44	40	30	30	38	48	55	56	48	38	34	30	23	24	26	32	30	39	33	40	40	61	59	29	31	31	31	9	35	43	49	37.8
	Min	22	21	19	12	16	12	19	25	27	11	29	8	- 6	0	- 1	14	16	15	4	22	14	31	26	21	27	29	- 1	- 6	2	27	36	15.8
Cresco	Max	25	22	24	24	26	36	37	39	34	30	29	28	16	18	14	22	23	33	25	33	29	41	43	24	29	29	29	8	20	35	41	27.9
	Min	17	12	17	0	16	12	16	24	15	11	25	7	- 3	-13	3	5	13	16	-1	13	1	25	19	17	22	26	6	- 8	-3	18	32	19.8
Davenpo't	Max	37	28	32	25	34	42	42	47	38	34	32	29	21	22	35	32	30	38	30	33	38	58	57	35	31	35	35	5	32	44	48	34.5
	Min	26	22	23	16	20	17	25	28	28	25	26	14	6	4	4	15	19	18	7	17	11	32	33	27	26	29	3	- 4	4	28	38	18.9
Decorah	Max	27	33	28	23	28	38	39	42	29	33	34	30	20	19	18	25	27	34	24	27	27	44	45	28	32	30	18	8	23	38	43	29.5
	Min	12	16	6	1	16	14	19	25	19	9	27	8	- 9	-12	- 2	8	14	21	1	12	-2	24	22	19	23	27	8	- 6	-2	19	26	12.8
Delaware	Max	29	23	35	25	25	33	39	43	38	30	28	28	11	18	15	24	26	35	23	30	27	45	45	29	30	31	31	9	32	39	40	29.1
	Min	20	12	10	7	12	10	9	22	20	10	22	11	- 6	- 5	-10	4	12	16	-1	12	0	22	24	20	21	26	8	- 7	-5	19	30	11.1
Denison	Max	36	24	27	33	32	47	57	58	48	34	35	25	17	24	28	28	23	39	32	39	43	59	55	28	31	31	31	9	35	43	49	35.7
	Min	20	15	16	15	19	16	16	22	17	5	25	0	- 8	- 4	- 4	20	12	17	4	25	9	32	16	14	27	14	- 5	-10	4	29	32	13.2
Des M	Max	36	25	32	27	34	48	52	53	43	34	34	22	18	23	24	30	25	40	35	40	39	58	53	30	31	33	13	10	34	43	47	34.4
	Min	25	20	17	16	19	16	24	30	22	14	22	6	- 6	1	1	22	18	20	6	21	9	33	20	21	27	18	- 1	- 6	5	30	38	16.2
De Soto	Max	36	26	30	30	36	48	54	57	41	38	34	26	16	26	26	31	32	40	27	39	40	59	55	55	31	30	26	8	32	42	48	36.1
	Min	23	19	13	17	19	13	20	27	23	10	26	0	-11	-14	- 5	16	15	18	4	23	9	33	19	17	27	26	- 2	- 7	4	27	37	14.4
Dows	Max	27	21	25	27	28	43	44	50	44	32	30	28	14	19	20	22	22	34	23	35	35	46	44	25	29	29	26	7	26	39	45	30.3
	Min	18	14	15	2	18	12	16	22	18	8	27	2	- 9	- 6	- 3	14	12	15	-4	13	0	22	12	13	24	26	-12	..	0	20	30	11.3
Dubuque	Max	28	24	34	27	32	41	40	42	32	34	29	29	15	11	13	27	26	36	24	33	29	53	53	30	31	34	32	8	26	38	45	30.8
	Min	24	18	15	10	19	16	23	29	24	19	26	15	0	-12	-10	7	18	20	9	20	8	27	30	22	26	29	8	- 3	2	26	31	16.0
Earlham	Max	38	30	28	28	34	47	52	56	45	35	32	25	18	20	28	30	28	24	30	38	41	60	53	25	26	31	25	18	32	42	48	34.4
	Min	15	16	8	10	7	5	13	22	22	20	15	0	-15	-16	-12	8	12	3	-4	18	22	28	18	18	21	23	- 5	- 9	8	26	32	10.6
Elkader	Max	27	24	32	25	34	41	40	44	35	35	32	32	29	14	20	25	27	35	24	28	33	47	45	29	30	32	31	9	25	40	48	31.4
	Min	15	16	3	5	14	7	9	21	23	9	26	11	-16	-19	-18	- 4	18	16	3	13	-6	12	26	20	25	29	9	- 5	-5	18	31	9.9
Esthervil.	Max	21	17	20	30	29	40	45	56	26	35	30	10	20	19	23	23	32	34	38	30	40	49	20	27	28	28	- 2	18	36	44	56	29.6
	Min	12	8	6	- 8	6	17	16	18	14	8	14	-5	-10	-10	2	12	11	11	-1	0	3	20	12	9	20	26	- 6	- 9	-2	18	31	8.0
Forest C'y	Max	21	23	21	27	23	36	42	47	28	32	26	23	21	20	22	23	32	33	35	26	33	45	29	27	28	29	8	10	28	40	46	28.7
	Min	16	12	13	- 8	13	9	14	15	15	12	8	2	- 4	0	8	12	8	14	-2	0	2	16	11	10	19	24	0	-10	-8	1	19	7.8
Ft. Dodge	Max	32	25	21	29	31	40	45	53	31	32	31	13	19	22	24	34	26	36	29	33	38	51	25	27	31	29	0	10	30	42	48	30.2
	Min	12	16	13	16	15	16	20	20	19	10	11	0	- 5	- 5	5	11	16	11	4	4	9	10	22	14	24	27	- 1	- 6	-5	10	24	10.9
Galva	Max	28	24	22	31	30	43	48	56	43	35	31	19	21	26	30	28	24	37	37	39	40	55	42	28	31	30	9	9	34	45	50	33.1
	Min	20	11	15	16	19	14	13	22	17	5	18	1	- 2	- 1	10	18	11	19	1	23	7	28	13	13	28	7	- 4	-11	0	23	31	12.4
Glenw'd	Max	47	35	31	32	38	48	58	58	54	35	37	27	22	25	28	30	25	44	35	45	47	64	59	26	42	32	22	16	32	52	54	38.7
	Min	26	22	19	14	22	17	22	27	23	10	25	7	1	4	16	24	12	32	8	28	25	35	16	14	24	12	- 5	- 7	22	33	34	18.1
Grand M.	Max	25	22	28	21	28	37	37	38	34	31	32	26	15	17	12	22	27	35	21	31	31	44	46	26	29	30	29	5	20	37	41	28.3
	Min	19	14	8	2	14	10	17	22	17	11	22	8	- 3	-10	-16	6	8	16	0	10	1	23	23	17	22	26	5	- 8	-5	15	31	9.8
Greene	Max	31	22	27	25	28	40	43	47	44	34	31	29	17	18	20	23	22	33	25	23	34	42	39	26	31	30	27	4	25	38	43	29.8
	Min	21	15	16	1	17	12	17	23	20	9	17	-6	- 6	- 8	- 5	10	10	17	-2	15	0	23	15	15	24	27	2	- 7	-2	15	30	10.8
Greenfield	Max	38	31	32	33	34	45	49	54	43	35	34	26	17	23	25	38	25	42	30	40	42	59	52	28	31	30	28	9	33	40	45	35.0
	Min	22	18	9	17	17	14	20	25	18	9	26	-2	- 6	- 1	3	18	15	15	2	22	21	29	20	15	26	23	- 4	- 9	3	18	33	14.1
Grinnell	Max	35	27	30	28	31	43	43	48	44	34	31	30	13	18	28	27	25	37	25	32	36	55	54	30	31	32	..	..	3	25	35	13.7
	Min	21	18	11	6	19	18	22	27	25	13	28	6	- 3	0	2	13	12	18	4	22	11	28	19	19	25	28	..	- 5	3	26	39	44	31.9
Grundy C	Max	32	25	31	28	32	45	44	48	43	34	30	29	14	18	20	24	26	25	25	35	35	50	50	27	31	31	31	7	26	39	44	31.9
	Min	18	16	8	3	18	19	15	21	21	10	27	4	-11	-11	- 5	10	12	7	-2	17	2	26	18	17	25	27	- 1	- 7	-3	22	31	11.1
Guthrie C	Max	35	29	39	30	33	41	48	55	48	35	39	27	27	24	26	32	23	41	32	38	39	60	56	30	31	31	24	10	35	43	47	35.7
	Min	21	19	13	16	18	13	18	25	22	8	25	0	- 9	- 9	- 8	18	15	15	4	28	13	32	17	16	26	22	- 4	- 9	3	27	36	13.9
Hampton	Max	26	23	29	29	28	43	46	51	39	34	31	24	3	- 4	- 6	1	10	14	14	-1	15	2	23	15	14	24	19	- 5	-10	1	24	33	11.8
	Min	20	15	17	1	16	13	18	24	20	12	24	3	- 4	- 6	1	10	14	14	-1	15	2	23	15	14	24	19	- 5	-10	1	24	33	11.8
Hanlontown	Max	25	20	25	24	28	39	42	48	37	35	31	25	18	20	22	24	24	34	21	34	36	44	42	24	29	30	22	7	27	40	48	29.8
	Min	16	12	15	-10	12	8	11	21	15	7	23	2	- 9	- 7	2	12	10	10	-2	17	-1	18	9	12	22	19	- 4	-10	-3	20	30	9.3
Harlan	Max	37	27	29	33	31	46	51	58	44	35	34	25	20	24	30	31	23	40	32	40	42	60	44	29	33	30	9	10	38	45	49	34.8
	Min	22	16	10	15	14	9	15	23	19	5	25	0	- 6	- 4	7	21	12	16	2	22	14	27	17	14	26	9	- 7	-11	-1	19	27	12.2
Hopeville	Max	44	30	28	30	35	47	54	56	44	37	32	20	14	22	23	34	30	40	31	39	38	59	56	28	31	31	21	8	33	43	47	35.2
	Min	23	19	15	15	20	15	21	28	22	12	26	-2	- 8	- 1	1	18	15	19	5	27	15	28	21	18	27	21	- 3	- 7	4	27	35	15.4
Humboldt	Max	32	22	25	30	30	44	40	54	46	34	32	30	18	25	25	30	22	36	25	40	38	50	50	26	32	30	22	10	32	40	48	32.8
	Min	20	15	18	10	20	15	18	24	18	8	26	0	- 8	- 4	-4	16	15	18	1	22	4	25	14	14	26	20	- 2	- 6	0	20	32	13.1
Independ.	Max	30	22	30	27	29	41	41	45	43	31	27	27	15	14	15	23	23	34	27	33	31	43	43	28	29	31	31	4	22	37	41	29.6
	Min	18	15	9	4	13	7	18	24	20	9	28	8	- 6	- 8	-12	5	8	15	0	0	-3	22	21	21	24	27	4	- 7	-7	15	27	10.1
Indianola	Max	37	31	30	27	35	47	54	55	44	36	33	30	18	25	25	28	26	40	30	37	39	60	57	28	31	31	29	18	33	43	48	35.6
	Min	22	20	11	17	19	13	21	28	23	12	29	3	- 9	- 3	0	15	17	17	4	24	25	32	19	18	27	27	- 3	- 5	3	28	38	15.9
Inwood	Max

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR DECEMBER, 1904—CONTINUED.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Keokuk ..	Max..	45	38	31	29	38	45	49	50	44	37	35	30	25	26	30	32	31	39	36	37	44	60	58	53	33	35	34	17	39	47	54	38.1
	Min ..	25	27	27	23	25	19	28	31	33	22	30	11	7	9	7	19	21	19	10	26	17	27	31	29	28	29	17	-1	6	32	40	21.7
Keosauqua...	Max..	44	28	32	28	47	44	50	51	40	36	32	18	21	26	27	32	28	39	36	37	41	59	45	31	33	34	11	11	34	43	48	35.0
	Min ..	12	22	24	18	17	12	21	20	28	20	24	18	2	-1	-4	-4	21	11	9	8	8	10	17	27	28	28	10	-2	-2	11	32	14.4
Knoxville	Max..	39	31	31	28	33	46	53	53	37	37	34	30	..	25	26	31	31	41	26	37	40	60	52	32	34	31	28	8	32	43	49	34.8
	Min ..	23	20	19	16	22	14	21	29	27	15	29	6	-1	1	2	17	15	26	7	25	14	32	23	20	28	28	0	-6	5	29	38	17.5
Lacrabee.	Max..	30	22	26	31	32	41	46	58	36	34	32	15	22	25	30	29	23	39	34	34	41	54	42	27	29	32	5	7	32	46	55	32.5
	Min ..	18	10	8	10	17	16	13	14	16	8	15	-1	-2	0	1	22	10	20	0	21	13	22	12	8	27	5	-5	-12	-2	22	30	10.7
Le Mars..	Max..	34	21	22	32	30	42	48	57	45	32	32	22	22	24	30	27	25	36	36	41	41	50	40	30	30	28	8	6	35	45	52	33.0
	Min ..	20	11	9	15	22	18	18	21	20	7	20	2	-5	2	14	20	10	19	2	24	24	32	14	14	10	6	-7	-12	2	21	27	12.9
Lenox....	Max..	43	33	28	31	34	45	53	55	45	34	34	31	14	20	23	33	25	39	32	38	38	61	62	29	31	31	21	8	34	42	47	35.3
	Min ..	23	19	12	13	16	12	18	25	24	9	28	0	-5	-2	5	18	17	16	2	22	17	31	22	16	27	19	-7	-10	2	27	34	14.5
Leon.....	Max..	43	38	28	29	34	44	53	53	48	34	33	30	18	21	22	31	29	35	34	38	37	59	57	29	32	31	30	7	32	40	47	35.4
	Min ..	24	21	18	15	21	15	22	30	28	14	28	6	-3	2	2	16	20	18	7	23	18	31	25	20	28	30	-1	-6	4	26	35	17.3
Lit. Sioux	Max..	38	31	26	34	33	50	55	60	46	34	37	24	24	29	29	30	25	42	38	43	47	59	50	26	13	13	25	7	-6	-9	8	31	34	14.5
	Min ..	24	12	15	12	14	17	17	22	19	7	18	5	-3	4	18	23	12	19	3	22	20	35	13	13	25	7	-6	-9	8	31	34	14.5
Logan....	Max..	38	30	30	34	31	48	45	56	45	35	55	24	22	27	32	33	25	42	36	43	44	56	48	27	32	36	8	15	59	49	51	36.6
	Min ..	23	17	17	13	17	13	15	24	21	8	22	4	2	3	14	22	18	17	5	27	17	38	15	15	26	-6	-4	-2	4	14	32	14.2
Maquoketa ..	Max..	35	24	37	29	37	43	40	45	31	37	29	22	21	22	20	28	31	37	35	30	30	54	37	31	32	34	32	8	41	39	..	32.4
	Min ..	10	18	18	11	13	7	14	20	22	19	18	17	-7	-17	-16	-15	16	11	5	5	-5	-3	27	24	24	27	30	-5	-5	-1	35	10.2
Marshlt'n	Max..	34	23	31	27	32	44	44	48	34	34	31	14	16	20	24	26	31	38	36	38	37	52	32	29	33	31	8	9	30	41	46	31.2
	Min ..	11	17	10	5	7	10	18	20	23	12	9	9	-8	-9	-9	-6	12	14	1	1	-1	4	30	18	23	26	4	-6	-6	5	27	8.7
Mason C..	Max..	28	22	25	23	28	36	40	44	40	33	31	27	18	20	20	23	23	33	20	32	34	42	40	25	29	29	25	5	25	37	42	29.0
	Min ..	18	15	18	1	18	16	20	26	20	15	27	5	-2	2	3	11	13	17	3	15	8	22	15	15	23	25	0	-8	1	10	31	13.3
Massena..	Max..	41	30	31	33	34	45	50	54	45	36	31	28	17	22	27	32	32	41	32	33	39	60	57	32	31	30	18	9	34	44	49	35.4
	Min ..	23	18	12	15	18	15	13	23	19	9	26	1	-2	-1	9	21	17	18	4	6	11	31	20	19	27	16	-5	-9	3	26	33	14.1
Mt. Ver'n	Max..	32	25	34	24	34	43	42	47	35	36	30	26	21	21	26	28	27	33	15	33	28	46	53	30	30	30	28	9	27	39	45	31.5
	Min ..	20	18	19	8	15	9	20	25	25	15	25	11	-3	-2	-2	13	14	18	3	9	1	21	26	26	26	24	10	-8	-2	20	34	14.1
Mt. Ayr..	Max..	45	35	31	32	42	49	55	56	48	38	35	30	17	23	27	29	28	41	34	41	42	65	58	32	34	33	27	10	38	47	50	37.8
	Min ..	24	20	15	15	20	11	20	30	25	12	26	4	-3	2	6	19	10	16	6	23	20	30	23	18	27	23	-5	-8	1	25	34	15 8
Mt. Pl'snt	Max	42	34	32	30	37	42	45	47	42	36	33	30	23	25	25	33	32	40	35	35	37	57	57	33	32	33	32	8	31	42	46	35.7
	Min .	21	22	24	15	19	13	21	26	27	19	28	7	0	0	0	15	16	15	5	21	10	28	27	26	26	29	3	-3	2	27	36	16.9
New H. ..	Max	30	25	27	25	28	39	39	43	43	32	32	31	16	20	19	23	25	36	26	26	31	41	46	28	32	31	29	7	22	36	40	29.9
	Min	20	13	17	-1	14	10	16	23	13	10	25	5	-3	-1	-2	8	11	16	-2	13	0	23	18	18	23	27	5	11	-5	16	27	11.2
Newton..	Max..	36	32	30	29	31	44	48	49	47	34	32	30	16	21	23	28	27	37	35	34	36	52	51	29	31	31	31	8	28	38	42	33.5
	Min ..	20	17	11	9	12	10	20	26	24	12	25	5	-4	-2	-2	14	12	14	2	20	8	26	20	18	25	27	-2	-7	-2	22	22	13 0
Northw'd	Max.	31	24	22	24	28	27	36	40	44	24	33	31	17	20	23	24	29	28	34	35	22	35	40	22	30	32	29	12	10	27	39	28.1
	Min ..	13	13	15	-2	5	10	18	20	15	11	20	5	-3	-2	4	8	9	16	0	8	0	15	10	18	16	27	5	-10	-10	7	20	9.1
Odebolt ..	Max.	36	24	26	32	31	45	46	57	47	35	33	25	20	24	27	24	23	38	32	39	40	45	56	40	30	30	15	6	34	46	51	34.1
	Min ..	19	14	16	17	19	18	16	22	18	6	25	1	-2	0	6	20	12	16	3	24	14	20	31	14	26	15	-4	-11	2	26	32	14.0
Ogden ..	Max.	35	25	28	28	32	47	48	53	43	33	33	33	12	23	20	23	22	39	25	33	38	58	52	26	32	30	21	8	30	42	47	32.9
	Min ..	20	17	12	14	16	23	28	25	24	13	31	5	-3	3	6	18	18	15	20	19	10	22	16	15	26	20	3	-8	-1	25	34	15.7
Olin	Max	32	29	32	29	32	41	41	44	39	31	30	30	17	19	20	28	28	37	34	33	30	52	53	32	31	33	33	10	25	37	41	32.4
	Min ..	20	18	20	9	18	8	21	24	25	16	23	14	-2	-9	-12	-11	18	12	2	15	-5	19	29	24	26	29	10	-5	-2	29	30	18.2
Omaha, N	Max..	39	25	27	33	31	49	57	57	41	37	38	19	24	27	29	29	28	42	40	43	47	61	49	27	32	31	3	-5	-5	11	32	36	18.6
	Min ..	23	19	17	20	22	22	28	33	23	19	17	7	4	9	20	23	12	20	12	32	30	35	15	16	27	3	-5	-5	11	32	36	18.6
Onawa ...	Max..	37	27	26	34	36	50	55	59	46	33	35	24	25	26	29	30	25	40	39	42	46	56	48	26	31	30	5	12	35	50	55	35.9
	Min ..	23	16	12	16	16	14	18	23	20	11	21	5	0	4	17	25	12	18	7	26	18	30	14	14	25	6	-5	-9	5	24	29	14.7
Osage.....	Max..	27	23	24	20	26	36	39	41	40	31	31	27	16	19	18	24	21	33	23	34	31	40	40	24	30	28	27	5	22	36	41	28.3
	Min ..	17	13	18	-1	15	10	9	24	15	10	26	5	-5	-3	-1	10	12	16	0	14	1	24	13	15	28	27	4	-10	-5	15	15	10.5
Oskaloosa	Max..	42	31	29	25	34	45	51	52	43	39	34	29	20	25	25	32	29	40	27	37	40	59	57	30	32	32	31	8	31	42	46	35.4
	Min .	21	21	18	13	20	9	19	22	27	12	29	6	-3	-4	-3	14	12	15	0	23	0	20	22	21	26	29	2	-4	2	26	37	14.8
Ottumwa.	Max..	45	26	31	27	37	46	53	54	36	38	35	16	24	27	28	30	30	40	26	39	44	61	59	30	32	33	10	10	34	45	51	34.7
	Min ..	23	25	23	19	23	17	24	32	32	19	31	5	2	-1	0	23	18	19	10	26	18	33	26	26	29	31	3	-1	1	32	41	19.6
Pacific J'n	Max.	43	30	29	34	29	45	54	56	40	37	37	23	23	23	30	30	25	42	35	42	46	63	50	27	33	31	8	-4	7	26	29	15.2
	Min ..	22	20	13	12	14	10	15	21	25	9	23	8	3	6	20	23	10	20	5	25	18	32	15	15	27	8	-4	-6	7	26	29	15.2
Perry.....	Max..	34	25	33	34	33	47	50	55	42	36	34	26	17	22	24	31	23	40	28	37	38	58	51	28	32	30	18	8	31	42	45	33.4
	Min ..	22	18	13	22	18	14	18	24	24	10	25	2	-10	-7	-1	18	16	16	3	23	24	32	17	16	27	16	-1	-8	1	25	34	14.5
Plover....	Max..	25	22	22	28	30	43	44	54	45	35	..	..	29	24	25	20	25	36	27	31	36	53	40	25	30	30	8	-7	-8	-2	21	30	10.0
	Min ..	12	12	15	7	11	9	15	28	17	16	..	..	-4	-2	7	10	12	18	-3	12	7	14	7	10	25	8	-7	-8	-2	21	30	10.0
Pocah'tas	Max.	31	23	26	32	30	43	45	55	45	34	32	18	21	25	25	28	22	36	31	39	39	54	43	26	31	30	7	-4	-8	1	25	31	12.5
	Min .	19	13	16	12	12	15	17	24	16	9	18	0	-3	0	5	19	14	19	9	19	10	21	12	12	26	7	-4	-8	1	25	31	12.5
Red Oak..	Max..	42	33	30	33	33	44	49	56	44	37	40	31	21	24	37	41	29	40	32	42	46	62	55	31	34	38	18	14	34	45	48	37.5
	Min ..	28	21	16	20	22	20	21	28	26	14	30	9	1	3	13	26	18	23	12	29	19	36	20	20	31	12	3	-5	11	29	35	18.9
Ridgeway	Max..	32	27	32	27	32	42	40	47	33	40	35	27	23	25	28	25	33	35	22	33	33	46	49	28	33	35	35	8	27	41	45	32.8
	Min ..	18	13	18	2	15	10	16	24	15	10	27	10	0	-5	3	7	13	16	0	15	1	28	22	18	22	28	8	-8	-5	20	31	12.6
Rock R...	Max..	25	15	25	40	38	31	36	58	40	36	30	15	49	28	32	32	37	36	45	43	45	52	24	35	22	20	-2	10	30	40	45	33.0
	Min ..	10	5	7	1	10	15	16	24	16	10	8	-1	-5	4	11	14	15	6	3	15	21	20	8	15	16	7	-7	-12	5	10	22	9.3
R. City...	Max..	35	23	28	33	32	32	46	55	43	35	33	26	18	20	28	30	30	35	28	35	35	54	35	28	33	30	20	10	34	40	50	32.7
	Min ..	19	14	19	22	19	22	21	25	16	10	24	-2	-5	-2	12	18	19	21	-2	14	25	23	15	18	26	19	-5	-10	2	25	25	13.6
Sac City..	Max..	30	24	25	32	31	43	45	55	52	50	..	..	..	..	..	..	..	14	3	21	13	30	14	12	22	18	-3	-10	5	28	28	15 2
	Min ..	19	14	17	15	19	15	19	25	18	10	..	..	..	..	..	..	..	38	34	44	39	45	64	48	32	36	18	14	32	53	50	39.8
St. Cha'les	Max.	37	31	30	30	41	52	55	58	46	41	33	30	17	24	32	34	31	37	42	31	40	49	61	57	28	31	31	28	13	34	44	50	37.5
	Min ..	23	19	11	17	20	11	22	29	25	13	29	3	-6	-2	1	13	17	17	6	26	19	32	21	18	27	26	-1	-6	7	29	38	16.3
Sheldon..	Max..	30	20	28	33	35	43	47	61	42	35	31	20	23	21	28	27	25	36	33	40	42	50	37	..	..	..	30	10	33	48	55	34.4
	Min ..	11	9	6	8	19	15	12	21	15	7	20	-1	-3	0	10	20	8	18	-1	20	12	25	9	..	..	..	10	-13	-4	20	27	10.7
Sibley	Max	21	16	23	30	32	38	46	58	27	31	27	14	25	26	25	22	32	33	38	31	41	47	18	25	27	25	0	7	33	46	54	29.6
	Min ..	6	8	6	-2	11	15	13	17	14	7	9	-4	-4	-3	8	19	10	9	-1	1	8	21	8	6	18	24	-7	-12	-11	6	24	7.2
Sioux C'r.	Max..	33	18	23	32	30	40	46	58	40	32	28	15	24	22	29	25	22	35	36	40	41	47	38	25	29	28	13	6	33	47	53	31.9
	Min ..	10	8	7	12	19	16	17	25	15	9	14	0	-3	2	11	20	8	18	0	23	14	28	6	9	25	2	-9	-13	-2	22	32	11.1
Sioux C'y.	Max..	30	22	21	35	29	44	50	60	32	32	35	17	23	23	30	27	24	39	14	7	26	23	28	8	12	23	-2	-10	-10	9	26	32	14.0
	Min .	20	11	11	18	20	20	22	29	18	11	10	4	-1	8	20	19	9	14	7	26	23	28	8	12	23	23	32	11	33	44	49	37.1
Stockport	Max..	44	38	30	28	37	46	50	53	42	41	33	30	22	27	1	11	20	14	8	21	6	20	28	27	28	30	4	-1	3	30	38	17.8
	Min ..	21	28	24	17	21	11	23	30	29	20	29	10	1	1	-1	11	20	14	8	21	6	20	28	27	29	22	6	14	33	45	51	31.4
Storm L..	Max.	30	24	26	30	32	42	46	56	30	32	31	17	21	20	27	25	33	35	39	35	40	54	22	14	11	20	25	-6	-13	-12	12	29	10.0
	Min .	11	11	11	12	16	18	18	19	15	10	16	-1	-4	-3	6	16	9	10	1	3	15	22	14	11	20	25	28	10	32	40	45	35.0
Stuart ...	Max.	35	40	30	29	33	44	48	53	46	44	34	31	15	19	23	16	12	16	6	25	20	30	20	11	27	22	-1	-7	1	26	35	15.6
	Min .	22	20	13	19	26	18	22	28	13	13	30	2	-4	-1	4	16	12	16	6	25	20	30	20	11	27	22	-1	-7	1	26	35	15.6
Thurman.	Max..	40	31	30	33	33	46	57	55	45	36	37	27	21	25	30	32	28	43	36	43	46	55	65	55	32	32	9	15	38	50	45	37.7
	Min ..	21	20	13	14	17	8	14	22	25	8	19	8	3	4	18	23	14	21	9	27	13	25	29	15	26	9	-5	-5	10	23	33	15.5
Tipton....	Max	34	29	35	28	35	42	42	46	40	36	30	29	21	20	25	30	31	36	27	33	32	54	54	33	31	34	35	7	-4	2	24	37	16.9
	Min ..	21	20	22	12	16	10	21	27	26	20	26	9	5	4	2	12	18	16	5	19	7	28	30	27	27	29	7	-4	2	24	37	16.9
Toledo....	Max.	35	26	35	24	33	44	44	49	43	35	31	27	16	18	23	26	26	38	25	36	38	54	53	29	32	31	31	7	29	41	46	33.1
	Min ..	20	18	8	4	17	6	20	26	24	8	27	5	-8	-10	-13	13	9	12	3	20	-1	-2	19	19	25	28	-1	-6	0	23	34	11.2
Vinton. ..	Max..	34	30	27	28	33	44	45	48	42	35	35	29	19	20	22	25	25	35	30	35	35	46	50	30	30	32	33	5	25	40	46	34.2
	Min .	20	17	17	14	15	7	19	25	25	10	27	9	9	-18	-16	9	10	15	1	14	-1	23	22	22	26	28	3	-7	-4	20	34	12.5
Wapello..	Max..	43	35	32	30	37	44	45	51	..	42	33	31	24	27	29	32	33	36	35	35	35	55	56	33	31	33	33	13	30	40	48	36.0
	Min ..	24	24	21	18	21	14	24	21	..	25	28	12	4	4	9	15	16	15	9	22	6	30	31	28	28	30	7	0	5	28	36	18.5
Washi'ton	Max.	41	29	32	26	36	44	46	50	41	38	32	30	22	24	27	32	32	39	26	34	40	56	55	33	31	34	33	10	32	44	48	35.4
	Min ..	22	22	20	12	19	12	23	26	27	24	28	6	0	-1	-1	15	17	18	5	19	6	29	29	26	26	30	4	-4	0	27	37	16.9
Waterloo.	Max..	34	26	34	26	34	46	45	49	45	45	32	26	20	15	20	26	31	37	34	30	35	49	32	30	32	34	32	42	25	45	45	34.1
	Min ..	21	16	10	5	12	9	20	25	22	12	26	8	-9	-14	-11	0	6	13	2	10	-2	22	20	22	25	27	1	-7	-6	15	31	10.7
Waukee..	Max..	41	26	30	30	39	51	59	56	43	36	33	30	20	27	28	32	28	39	30	38	46	58	54	36	26	28	28	-1	-8	3	27	36	15 4
	Min ..	22	18	11	16	18	13	26	22	23	11	29	2	-12	-3	0	16	18	16	4	24	14	32	18	26	28	30	31	28	3	24	38	43	30.2
Waverly..	Max..	30	23	29	24	28	41	42	45	40	33	31	28	17	18	17	24	24	35	25	34	33	47	44	28	30	31	28	3	-8	-7	14	30	11.2
	Min ..	22	15	12	4	16	10	18	28	20	10	27	6	-7	-11	-8	10	10	15	0	17	-3	23	17	16	24	29	15	10	33	42	49	31.6
W. Bend.	Max..	30	21	24	28	29	41	44	54	47	33	31	23	18	24	23	24	22	35	25	37	37	52	45	24	30	29	15	10	33	42	49	31.6
	Min ..	19	14	16	2	19	13	15	..	16	9	..	-1	-6	1	4	17	14	15	-2	20	8	24	12	12	24	15	-5	-8	-1	22	30	11.0
What Ch.	Max.	..	34	..	31	39	..	..	55	45	41	..	..	..	..	..	34	38	42	34	42	45	63	60	32	31	35	40	32	37	49	50	41.3
	Min ..	..	21	..	10	12	..	..	24	27	11	..	..	..	..	..	26	26	10	5	20	0	25	25	24	27	29	28	-2	5	24	28	17.1
Whitten..	Max..	30	24	30	25	29	44	48	42	43	34	31	30	14	24	21	27	26	35	27	36	36	46	45	28	32	31	28	7	28	35	41	31 4
	Min ..	18	15	8	2	15

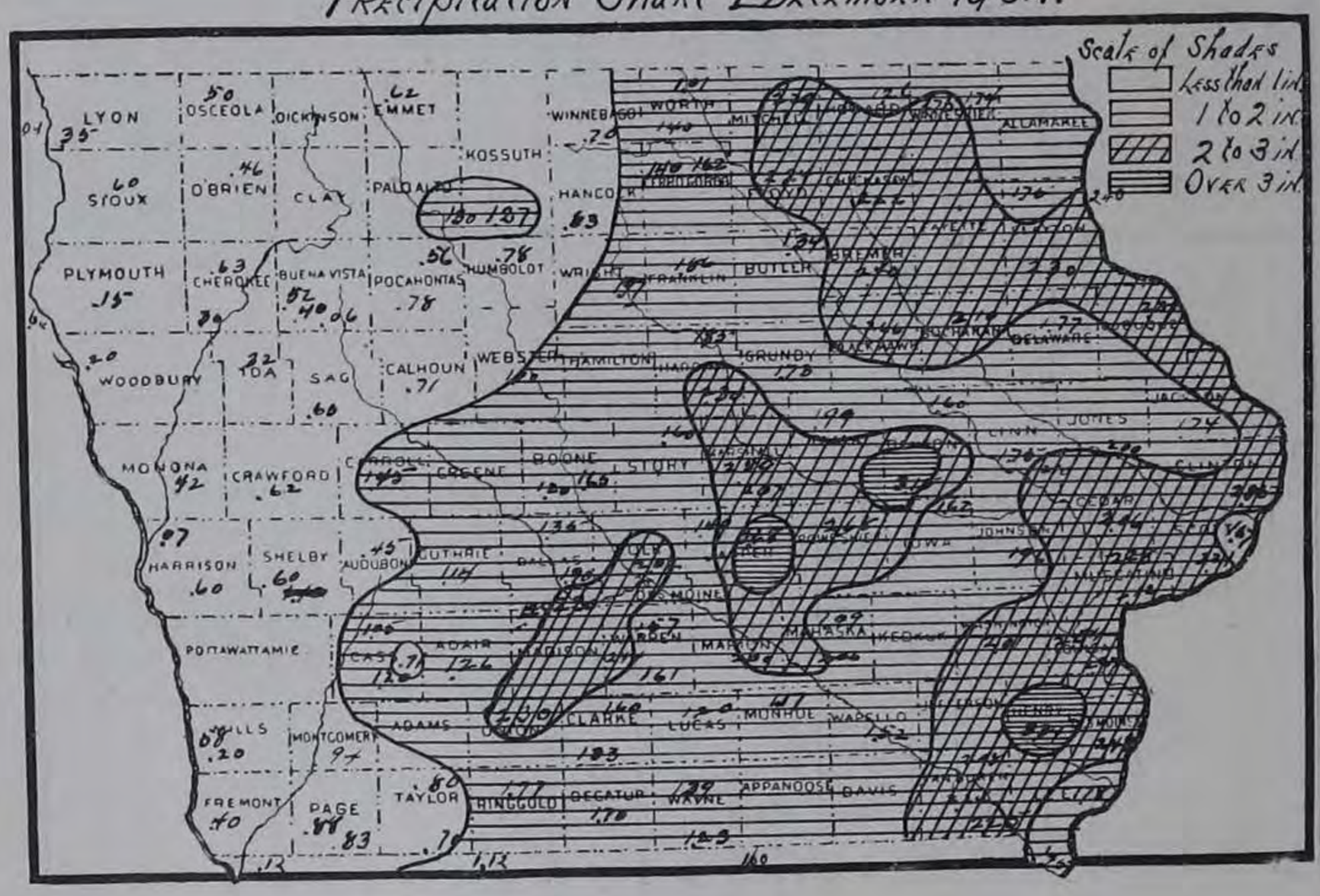
DAILY AND MONTHLY PRECIPITATION FOR DECEMBER, 1904.

STATIONS.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL.
	DAY OF MONTH.																															
Afton									T		.85					.45								T			1.00					2.30
Albia												.19				.05	.19							T	T	T	.58	.16				1.17
Algona	T	T								T	.12			T		.60											.55					1.27
Allerton											.43	T				.18	.05						T	T	T	.07	.50					1.23
Alta			.03								.02					.25	T							.02		.05	.15					.52
Alta [near]			.05								T					.20										.05	.10					.40
Amana											.20					.39	.20	T							T	.15	.68					1.62
Ames	.17			.02							.25					.15										.20						.79
Atlantic											.15					.30											.60					1.05
Audubon											.13					.17										T	.15					.45
Baxter		T									.50				.30											.10	.50					1.40
Bedford											.27					.10								T	T	.03	.30					.70
Belle Plaine		T									.60	T				.70	.15	T							T	.10	1.60					3.15
Bonaparte											.10					.25							T			.78	1.12					2.25
Boone		T									.38					.43		T								T	.84					1.65
Britt	.08	.01	.08	T							.08					.45		.03								.02	.13					.83
Buckingham		T									.27					.46		T						.03		.03	1.20					1.99
Burlington											.30	.03				.16	.08						.10	.07		.64	.76	.34				2.48
Carroll			T								.60					.45		T										.40				1.45
Cedar Rapids		T									.02	.19				T	.41								T	T	.71	.42				1.75
Chariton									T		.45														T	.10	.65					1.20
Charles City	.14	.02	T	T	T						.19	T		.01	T	.56	.04	T	T	T			T	T	T	.04	1.20	.04				2.24
Clarinda											.10	.10				.18									T	T	.20	.30				.88
Clear Lake	.10	T									.10			T		.60											.60					1.40
Clinton		.01									.38					.21											2.25					2.85
College Springs												.20					.16	T						T	T	T	.47					.83
Columbus Junct'n											.50					.15	.13						T	.04	T	.47	1.20	.05				2.54
Corydon									T		.44	.03					.19							T	T	.06		.67				1.39
Cresco	T	T	T								.18			T		.15	.04	T				T				T	.89					1.26
Cumberland											.30					.40											.50					1.20
Davenport		T									.06	.01	T			.10	.10		T				T	T	T	.34	1.58	.02				2.21
Delaware		T									.46					.31									T	.10	.90					1.77
Decorah		.04									.30			T		.43		T									.97					1.74
Denison											.20					.20									T	.05	.17	T				.62
Des Moines		T		T							.40	T		T		.38	T	T						T	.01	.07	.98	.18				2.02
De Soto		T									.50					.60									T	T	1.20	T				2.30
Dows		T	T								.30					.60	.40									.07	.40	.20				1.97
Dubuque	T	.01	.01						T	T	.61	T	T		T	.14	.14	T							.02	.17	1.20	.07				2.37
Earlham		T									.35					.28								T	T	.06	.60					1.29
Elkader	.03	T									.40			T		.40										.02	1.45					2.30
Estherville		.04	.06	.04							.06	T		T	T	.10	.12								.04	.06	.05	.05				.62
Forest City		.10	T								.20						.40									T						.70
Fort Dodge											.05	.05			.20	.20										T	.30	.20				1.00
Fort Madison												.05				.35							T				1.38					1.78
Galva												T				.25								T		T	.07					.32
Gilman		T									.40			T		.60	T								T	.07	.70	.30				2.07
Glenwood											T			T		.10		T								T	.10					.20
Grand Meadow		.02									.33					.40										T	1.00					1.75
Greene	T	.05									.19			T		.40	.10										.56	.04				1.34
Greenfield		T									.22					.58								T	T	.01	.45					1.26
Grinnell		T									.72					1.08								T	T	T	.88					2.68
Grundy Center		T									.40			T		.36	.15									.02	.70	.10				1.73
Guthrie Center		T									.28					.32									T	.07	.41	.06				1.14
Hampton										.12	.05					.62										.07	1.00					1.86
Hanlontown	.20	T	T								.15					.45								T			.60					1.40
Harlan			T								.15					.18	T							T	T	T	.27	T				.60
Hopeville									T		.58					.14								T		.01	.60					1.33
Humboldt											.20	.08					.30										.20					.78
Independence		T									.60			T			.70										.80					2.10
Indianola		T		T							.55					.30								.02		T	.50	.20				1.57
Inwood	T										T				T	.15									T		.20					.35
Iowa City											T	.05				T	.36								T	T	.95	.60				1.96
Iowa Falls		T	T		T				T		.20	.30			T		.70		T				T			T	.15	.50				1.85
Keokuk											.02	T				.10	.07						.02	.02	T	.56	.66	T				1.45
Keosauqua												.11	T			T	.26								T	T	1.70	.17				2.24
Knoxville				T							.30	T				.40								T	T	.10	1.00	.20				2.00
Lacona											.40					.40							.02	.04		.15	.60					1.61
Larrabee			.03													.20		T						.06	.15		.19					.63
Logan											T					.30										.10	.20					.60
Le Claire			T								.01	.18	T				.19			T					T	.02	1.08	.19				1.67
Little Sioux																.07										T	T					.07
Le Mars																.08		T						T		.03	.04					.15
Leon											.80					.10								T	T	T	.80					1.70
Lenox											.30					.10								T			.30	.10				.80
Maquoketa											T	.30					.26										.93	.25				1.74
Marshalltown			T								.20	.27				.18	.49								T		.86	.64				2.59
Mason City	.12		T								.10					.40											1.00					1.62
Massena											.11					.40									T	T	.20					.71
Muscatine												.02					.28								.01	T	1.56	.25				2.12
Mt. Vernon		T									.20			T		.30	.20	T								.60	.80					2.10
Mount Ayr									T		.65					.25		T						.02	.02	.15		.88				1.97
Mt. Pleasant											.17	T				.05	.20						.07	.10	T	.92	1.83					3.34
New Hampton	.05										.17			.10		.30	.10										1.00	.50				2.22
Newton											.35					.80											2.53					3.68
Northwood		T	.02	.05							.20					.02	.02		T							T	.70					1.01
Odebolt			T											T		.20										.15	.30					.65
Ogden		T									.40					.30											.50					1.20
Olin		T									.20					.30										1.00	.50					2.00
Omaha, Neb											T			T	T	.30	T	T					T	T	T	.05	.22					.57
Onawa			T									.02				.20										.05	.15					.42
Osage	.20	T	T								.14			T		.35	.10										1.50					2.29
Oskaloosa											.20				.22	.09							.01		T	.02	.46	.09				1.09
Ottumwa											.30						.42											.80				1.52
Pacific Junction											.02					.20		T					T	T	T	.02	.34					.58
Perry		T									.35					.40	T									T		.60				1.35
Plover		T														.40										.14	.15					.69
Pocahontas			T								.05					.35	T	T						T				.38				.78
Red Oak											.09					.20		T						T	T	T		.65				.94
Ridgeway	T	.05	T								.29			.01	.01	.38		T		T						.01	2.00					2.75
Rockwell City											.20					.40										.05	.06					.71
St. Charles		T									.60					.85	.01							.35	T	.05	1.04	.04				2.44
Sheldon	T	T	.02											T	T	.15	.02	T									.25	.02				.46
Sibley		T	T	T							T			T		.15	.05		T						.10	.05	.10	.05				.50
Sioux Center			.05											T		.30		T						.10		.15						.60
Sioux City	T		.02	T										T	T	.11	T	T					T	T	T	.03	.04					.20
Stockport											.14					.04	.10						.01	T	.01	.48	1.30					2.08
Storm Lake			T	T							T					.02	.01	T	T						T		.02	.01				.06

DAILY AND MONTHLY PRECIPITATION FOR DECEMBER, 1904--CONTINUED.

STATIONS.	DAY OF MONTH																														TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Thurman	..	....	....	....	...	...	....	....	...	....	T	....	....	....	.	.10	....	T	..	..	....	..	....	T	T	T	.30	....	....	....	....	.40
Tipton	....	....	....	....	....	....	....	..	...	..	.20	....	....	....	....	.45	.20	....	....	....	..	....		....	....	....	.83	.38	..	....	....	2.06
Vinton	..	....	....	....	..	....	....	...	....	.	.40	..	..	..	....	.40	.30	....	....	....	....	....	....		....	....	....		.50	....	..	1.60
Wapello	....		....	....			....	....	..	....	.14	....	....	..	....	.25	.19	....		....	....	....	....	T	....	....	.69	1.00	..	....	..	2.27
Washington	.		....	....	....	....	..	....	....	..	.18	....	....	..	....	.38	....	....	....	....	....	....	....	....	T	....	....	1.45	....	....	....	....	2.01
Washta	...	T	T	.	....	....	....	....	....	..	T	...	....	T	....	.20	....	T	....	....	..	..	....	....	T	...	.10	..	....	...	..	.30
Waterloo	....	.01		...	....	....	...	....	....	....	.51	....	....	..	....	.55	..	....	....	....	....	....	....	....	....	....	1.50	.09	....	....	....	2.66
Waukee	....	T		....	..	..	...	....	.	...	.60	....	....	.	....	.50	....	T	....	..	...	....	T	.05	.	.15	60	...	....	....	....	1.90
Waverly	T	.02	....	....	..	....	....	....	....	.30	T	....		.01	...	.75	.05	....	..	..	....	....	....	.	T	27	1.00		..	..	....	2.40
Whitten	....	T	....			....	....	....		....	.50	..	..	....	..	.50	.10	T		....	....	....	....	....	T	T	1.20	T	....	....		2.30
Wilton Junction	....		....		....	....	....	....		...	.30	....	....	....	....	.55	....	....	..	....	....	....	....	....	T	....	1.48	....		..	....	2.28
West Bend	....	T	.05	....	....	....	....	....	....	....	.20	....	....	....	....	.50	T	T	....	..	....	....	T	T	....	.30	.25	....	....	..	....	1.30
Woodburn	....	..	....	....	....	..		....	T	....	.55	....	..	..	....	.15	....	....	....	....	....	....	....	T	....	T	.80	....	....	....	....	1.50
Zearing	T	....	..	..	.	....	....	....	....	....	.23	....	....	....	..	.42	....	T	....	....	....	....	....	....	....	.15	.80	...	..	....	..	1 60

Precipitation Chart December 1904.



APPENDIX.

ANNUAL SUMMARY, 1904.

CLIMATOLOGY OF THE YEAR 1904.

BAROMETER.—The mean pressure for the year was 30.04 inches. The highest observed pressure was 30.85 inches on February 10th, at Sioux City; lowest pressure, 29.09 inches on December 27th, at Dubuque. Range for the state 1.76 inches.

TEMPERATURE.—The mean temperature for the state was 43.4°, which is 3.3° below normal. The highest temperature reported was 100° on July 17th, at Marshalltown. The lowest temperature reported was 32° below zero on January 27th, at Elkader and Fayette. Range for the year 132°.

PRECIPITATION.—The average amount of rain and melted snow for the year, as shown by complete records of 96 stations, was 28.74 inches, which is 2.68 inches below the normal, and 6.92 inches below the average amount in 1903. The greatest amount recorded at any station for the year was 38.93 inches, at Keokuk. Least amount recorded 19.34 inches, at Vinton. The greatest monthly rainfall was 11.97 inches, at Thurman in July; least monthly amount, none, at Rockwell City, in November. The greatest amount in any 24 consecutive hours was 7.73 inches, at De Soto, July 19th. The average number of days on which .01 of an inch or more of rain fell was 75.

WIND AND WEATHER.—The prevailing direction of wind was northwest. Highest velocity reported, 68 miles an hour, in Sioux City, from the northwest on March 2d. Average daily movement, 216 miles. There were 164 clear days, 97 partly cloudy, and 105 cloudy days; as against 156 clear days, 100 partly cloudy, and 109 cloudy days in 1903.

CLIMATE AND CROP REVIEW—1904.

The year 1904 was cooler than usual, the mean temperature being 43.4° which is 3.3° below normal. The average precipitation was 28.74 inches, which is 2.68 below normal.

The winter was colder than usual. In January the average daily temperature was 14°, which is 4.2° below the state normal. The lowest temperature recorded was 32° below zero, on January 27th, at Elkader and Fayette. In February the mean temperature was 4.8° below normal, and the lowest was 26° below zero on the 1st. The soil was frozen to an unusual depth. March brought moderate temperature, but the prevalence of cloudiness prevented rapid thawing of the soil, and the ground was generally too wet for seeding operations.

April was abnormally cold, the records of 115 stations showing a daily deficiency of 5.2° in temperature. The average rainfall was 3.63 inches, which is an excess of .74 of an inch above the April average. There were some dry periods, however, with sufficient sunshine to afford ample opportunity for seeding and preparing the ground for planting corn. Seeding of spring wheat, oats and barley begun generally from the 1st to the 4th, and that work was practically completed in the larger part of the state about the 20th or 23d. Germination of seed was unusually slow, but at the close of April there were indications of a good stand, except on low, wet fields. Fruit buds appeared healthy and promising, but there were only a few blossoms visible prior to the 1st of May. The pastures and meadows were unusually late in starting, and there was but little grass for stock at the end of the month. On the whole, though the growth of vegetation was much belated, the month was more favorable than the corresponding month in 1903.

May was nearly normal, the daily mean temperature showing a deficiency of only 0.8°. The average rainfall, 3.78 inches, was .35 of an inch below the May normal. In portions of the west central district, and in some of the southern counties, there were some heavy downpours, which caused much delay in planting, the great excess of moisture being due in large part to the saturated condition of the subsoil, resulting from abnormal rainfall in the preceding season. On the whole it was a favorable month, with sufficient warmth and moisture for grass and small grain, and general conditions favorable for farm work and the germination of the better qualities of seed. Except in quite limited areas, the corn crop was planted about as early as usual, and the soil was in very good condition. The month was especially favorable for the growth of grass in meadows and pastures, and for the small grain crops on well drained lands. The hay crop was well assured; oats and spring wheat stooled out fairly well, potatoes made a fine start; garden truck was well advanced at close of the month, and the fruits promised a better yield than has been produced in recent years.

June was cooler than usual, with less than the normal amount of rainfall, and a large percentage of cloudiness in portions of the state. The daily average temperature was 2.5 degrees below normal. The precipitation was quite unequally distributed; the nothern section receiving an average of 4.53 inches, the central section 2.74, and the southern section 3.08 inches. The week ending June 6th brought excessive rains in all parts of the state, except portions of the east central district. The wet and cloudy weather of that week caused much delay in the cultivation of corn, and in large portions of the state the fields became weedy and the growth of corn was considerably retarded by cold nights and wet, cloudy weather. The second week was generally very favorable for field work and the growth of crops, the days being bright and warm with ideal conditions for cleaning out the corn fields. The week ending the 20th was also favorable, though the temperature was below normal. There was but little interruption of work, and fair progress was noted in the growth of all crops. From the 20th to the close of the month the temperature was abnormally low and there was more than usual cloudiness in the larger part of the state. Despite all drawbacks, however, the corn crop advanced steadily, and at the close of the month the fields were generally clean and the stand was but little below the average of the past fifteen years. The month as a whole was favorable especially to small grain, which headed out about the usual time, though short in straw. The hay crop was well advanced and fairly good, especially in quality. Potatoes and garden vegetables were usually promising.

July was unseasonably cool, the mean temperature being 3.6° below normal. The warmest period was the second decade. The average rainfall for the state, 4.41 inches, was .18 of an inch above normal. The northern section received an average of

3.77 inches; central section 4.47; southern section 5 00 inches. Rain in measurable quantity fell at one or more stations every day during the month. And yet the average number of clear days was 16, partly cloudy, 9, and cloudy, 6. Generally there was sufficient sunshine to promote plant growth. The days were warm, and nights unusually cool. The heaviest storm of the month, in respect to rainfall, occurred on the night of the 19th, but the excessive downpour was limited to a few counties. On the whole the month was favorable for crops and field work. Corn was laid by from the 4th to the 15th,—about a week later than usual. During the showery period in the early half of the month spring wheat and oats were attacked by rust. The wheat crop was damaged seriously, but oats were not very badly injured. The latter half of the month was favorable for harvest operations and most of the small grain was in shock or stack before August 1st. Haying progressed quite favorably and though the yield was lighter than the average the quality was superior, and most of it was secured in good order. Corn made notably fine progress, despite the cool weather, and at the close of the month that crop was much more advanced than was deemed possible earlier in the season. Potatoes, garden truck, apples, small fruit and all minor crops made normal advancement.

The average temperature of August, 1904, was exactly the same as August, 1903, 1902 and 1891. The mean temperature was 2.7° below the August normal. In the southern section it was 67.3°; central section, 69.2°; southern section, 70.7°. The month was mostly clear and warm by day, though unseasonably cool at night. The average rainfall was normal for the state, but in its distribution the larger amount was received in the south and eastern districts, where it was most needed. The bulk of the rainfall came about the 17th to 21st and the 29th. There were, on the average, 17 clear days, 8 partly cloudy, and 6 cloudy, affording an ample amount of fair weather for harvesting, stacking, threshing, cutting wild hay, millet, etc., and fall plowing. In all these farm operations very good progress was made. The pastures were revived and made green as in June by the copious showers in the latter half of the month. The corn crop made fair advancement during the month, though in view of its belated condition its progress was not as rapid as seemed desirable. The most advanced portion of the crop was well filled and dented at the close of the month. Reports at that time indicated that about one-third of the crop, with favorable conditions, would be mature by September 20th, while the balance required abundant warmth and sunshine until October 1st to be safe from harm by killing frost. The crop was unusually rank, green and heavily eared. The minor crops were in good condition. Potatoes made heavy yield, and early apples were especially good and abundant. The yield of tomatoes and green corn for canning has been better than usual. Garden truck, cucumbers for pickling and melons yielded abundantly.

The average temperature of September was about normal for the state, the southern and central sections showing an excess, and the northern section a small deficiency. The coldest period was from about the 11th to the 22d. The average rainfall for the state was 2.78 inches, which amount is about 0.52 of an inch below the normal for September. In its distribution there was much inequality, ranging from less than a tenth of an inch at one station in the northwest to over eight inches in the southeast district. The southeast and northeast districts received the heaviest rainfall. The week ending September 12th was normal in temperature and sunshine, with very light rainfall, and generally favorable conditions for ripening the belated corn crop, a considerable portion of which was well dented, with husks and blades putting on the brown shade of autumn. The week ending the 19th brought several days of good ripening weather, but much anxiety for the safety of the immature portion of the corn crop was caused by the occurrence of light to heavy frosts on the mornings of the 12th, 14th and 15th, the cold wave extending to all districts in the state. A few stations also reported frost on the 21st. The lowest temperature recorded was 30° at four stations. The observed effects proved that the frosts were not "killing," and that the damage to the corn crop was limited to late planted fields in the bottom lands of the central valleys of the state. Broadly stated, the actual damage by frost affected less than one-fourth of the area planted, and the shrinkage of the frosted portion of the crop was probably less than 20 per cent. This would indicate possible loss of 5 per cent of the crop for the state, as the direct result of frost. The cold weather of that period, however, retarded the development of the crop, and made it desirable to extend the ripening weather beyond the 1st of October. During the month good progress was made in the usual farm operations, such as plowing, seeding fall wheat and rye, harvesting potatoes, apples and millet, and threshing small grain. The yield of potatoes, and fall apples has been very satisfactory. The grape crop was heavy, and there has been a good yield of plums. The growth of all kinds of garden truck has been unusually heavy. The pastures have been much better than usual for September. At the close of the month it was estimated that ninety per cent of the corn crop was practically safe.

October was warmer and drier than usual, the daily mean temperature being about 1° above normal, and the average rainfall of the state was 0.73 of inch below normal. The northern section received the largest amount, the average being about 0.29 of an inch above the October normal. The first frost of the month occurred on the morning of the 6th, and was heavy enough to kill vines and most of the cornstalks remaining green in the northern half of the state. In the southern half the frost was light, causing no damage. The first general killing frost covering the state occurred on the morning of the 23d, all crops being safe at that time. The bulk of the rainfall came in the first and second decades—mainly between the 5th and 20th, the balance of the month being dry and favorable for farm work, for drying out the corn crops and harvesting the minor crops. No better weather could be desired for preparing corn for cribbing than was prevalent from the 20th to the 31st. Good progress was made in harvesting the corn during the last week though the heavier ears contained considerable moisture. But the weather was cool by night, though moderate and clear by day. The heavy potato crop was harvested in good condition, the quality of the product being unusually good. Pastures were very good throughout the month. Good progress was made in fall plowing. The small acreage in fall wheat and rye showed an excellent growth and good stand. On the whole, October was a very mild and favorable month, crowning a fairly productive crop season.

The month was unusually warm and the driest November on record for the state. The mean temperature, as shown by records of 110 stations, was 41.0°, which is 6.3° above normal. The average in 1902 was .2 of a degree higher and 2.9° higher in 1899. The average precipitation for the state at 119 stations was .15 of an inch, which is 1.25 inches below normal. Nine stations reported no rain in measurable amount. Practically all the precipitation fell on the 9th and 10th, and the average number of clear days was twenty. The conditions were ideal for husking corn and drying out the surplus moisture. At the close of the month the bulk of the crop was harvested. Conditions were also favorable for fall plowing and general farm work of the late autumn period. The pasturage was better than usual, though the fields were brown. Winter wheat and rye suffered some damage for want of moisture.

The first decade of December brought continued fine weather with favorable conditions for gathering the corn and cribbing

the entire crop. The season as a whole was favorable for the production of a fair output of the staple crops. Though germination and growth were belated, the warmth and dryness of the autumn brought ample compensation to the patient and faithful tillers of the soil.

ERRATA IN ANNUAL SUMMARY, 1903.

BAXTER.—Annual temperature on page 16, omitted, should have been 47.6°.

BEDFORD.—Annual temperature on page 16, omitted, should have been 48.8°.

BELLE PLAINE.—Dec.—Mean temperature recorded 16 4° on page 6, should have been 16.5°.

CHARITON.—Dec.—Mean temperature recorded 22.4° on pages 7 and 21, should have been 22.3°.

CHARLES CITY.—Feb.—Mean temperature recorded 18.8° on page 21, should have been 19.8°.

COLUMBUS JUNCTION.—Dec.— Mean temperature recorded 21.5° on pages 7 and 21, should have been 21.6°.

CORNING.—Dec.—Mean temperature recorded 23.2° on pages 7 and 21, should have been 23.4°.

DECORAH.—Annual mean temperature recorded 44 7° on page 21, should have been 44.9°.

EARLHAM.—May.—Mean temperature recorded 60.6 on page 21, should have been 60.0°.

Mean temperature for December, and annual mean temperature recorded 21.5° and 46.7°, respectively, on pages 7 and 21, should have been 21.2° and 46.6°.

FOREST CITY—Dec.—Mean temperature recorded 13.8° on pages 6 and 11, should have been 13.9°.

GALVA.—Dec.— Mean temperature recorded 19.° on pages 6 and 21, should have been 19.1°.

GRINNELL (near).—Dec.—Mean temperature recorded 19.6° on pages 6 and 21, should have been 19.1°.

GRUNDY CENTER.—Mean temperature for June and annual mean temperature recorded 60.6° and 47.3° on page 21, should have been 63.6° and 46.4°, respectively.

HAMPTON.—Sept.—Mean temperature recorded 61.05° on page 21, should have been 61.4°.

INDEPENDENCE.—March.—Mean temperature recorded 37.6° on page 21, should have been 37.4°.

MOUNT VERNON.—Annual mean temperature recorded 47.4° on page 21, should have been 47.5°.

ONAWA.—Dec —Mean temperature recorded 26.4° on pages 6 and 21, should have been 24.0°.

Annual mean temperature recorded 49.3° on page 21, should have been 49.1°.

OSKALOOSA.—Dec.—Mean temperature recorded 20.2° on pages 7 and 21, should have been 19 9°.

Annual temperature recorded 48.5° on page 21, should have been 48.4°.

OTTUMWA.—Nov.—Mean temperature on page 21, omitted, should have been 37.7°.

Dec.—Mean temperature recorded 25.0° on pages 7 and 21, should have been 24.5°.

PACIFIC JUNCTION.—Annual temperature recorded 49.5° on page 21, should have been 49.1°.

PRIMGHAR.—Dec.—Mean temperature recorded 16.7° on pages 6 and 21, should have been 17.0°.

RIDGEWAY.—Dec.—Mean temperature recorded 16.3 on page 6 and 21, should have been 16.2°.

KEOSAUQUA.—June.—Mean temperature recorded 65.0° on page 21, should have been 65.1°.

LE MARS.—Dec.—Mean temperature recorded 19.8° on page 6 and 18.8° on page 21, should have been 20.2°.

Annual temperature recorded 45.7° on page 21, should have been 45 6°.

Dec.—Minimum temperature on 3d, page 9, recorded -5 should have been 15°.

Dec.—Mean minimum temperature recorded 8.8° on page 9, should have been 9.5°.

LEON.—June.—Mean temperature recorded 64.2° on page 21, should have been 66.2°.

Annual temperature recorded 49 7° on page 21, should have been 49.9°

RUTHVEN.—Sept.—Mean temperature recorded 60.6° on page 21, should have been 60.0°.

VILLISCA.—March.—Mean temperature recorded 40.6° on page 22, should have been 40.2°

WATERLOO.—Annual temperature recorded 46.7° on page 22, should have been 46.6°.

WHITTEN.—Dec.—Mean temperature recorded 17.4° on pages 6 and 22, should have been 17.8°.

BELLE PLAINE.—March.—Total precipitation recorded 2.00 inches on page 23 should have been 2.10 inches.

Annual precipitation recorded 34.33 inches on pages 16 and 23, should have been 34.43 inches.

CLEAR LAKE.—Annual precipitation omited, page 23, should have been 36.18 inches.

GRINNELL (near)—Total precipitation for July recorded 3.97 inches on page 23, should have been 3.79 inches.

IDA GROVE.—July.—Total precipitation recorded 4.41 inches on page 23, should have been 4.31 inches.

LEON—Dec.—Total precipitation on page 23, omitted, should have been .60 inch.

Annual precipitation on pages 16 and 23, omitted, should have been 34.30 inches.

OLIN.—Dec.—Total precipitation recorded .99 inch on pages 6, 10 and 23, should have been 1.09 inches.

Annual precipitation recorded 35 53 inches on pages 17 and 23, should have been 35.63 inches.

OSKALOOSA.—Dec.—Total precipitation recorded .32 inches on pages 7, 10 and 23, should have been .34 inch.

Annual precipitation recorded 28.01 inches on pages 17 and 23, should have been 28.03 inches.

OTTUMWA.—Dec.—Total precipitation on pages 7 and 23, omitted, should have been .81 inch.

RUTHVEN.—Nov.—Total precipitation on page 24, omitted, should have been Trace.

SAC CITY.—Nov.—Total precipitation on page 24, recorded .16 inch, should have been .26 inch.

Annual precipitation recorded 36.24 inches on pages 17 and 24, should have been 36.34 inches.

DATES OF LAST AND FIRST KILLING FROST, 1904.

	Last in spring.	First in autumn.
Afton	April 21	.....
Albia	April 26	Oct. 6
Algona	April 27	Oct. 6
Allerton	April 21	Oct. 23
Alta	April 26	Oct. 6
Amana	April 21	Oct. 6
Ames	April 21	Oct. 6
Atlantic	April 28	Sept. 14
Audubon	May 15	Sept. 15
Baxter	April 27	Oct. 6
Bedford	April 27	Oct. 22
Belknap	April 21	.....
Belle Plaine	April 27	Oct. 23
Bonaparte	April 21	Oct. 23
Britt	May 15	Oct. 6
Burlington	April 21	Oct. 23

Carroll	May	14	Oct. 6	Logan	May	10	Oct. 21
Cedar Rapids	April	22	Oct. 23	Maquoketa	May	15	Sept. 15
Chariton	April	21	Oct. 23	Marshalltown	April	27	Oct. 6
Charles City	May	15	Oct. 6	Mason City	April	21	Oct. 6
Clarinda	April	27	Oct. 22	Mt. Ayr	April	21	Oct. 23
Clear Lake	April	26	Oct. 6	Mt. Pleasant	April	21	Oct. 23
Clinton	April	21	Oct. 14	Mt. Vernon	April	21	Oct. 6
College Springs	April	21	Oct. 22	New Hampton	May	15	Sept. 15
Columbus Junction	April	25	Oct. 23	Newton	April	21	.....
Corning	April	27	Oct. 23	Northwood	April	27	Oct. 23
Corydon	April	21	Oct. 6	Odebolt	May	14	Oct. 6
Cresco	May	15	Oct. 6	Odgen	May	14	Oct. 6
Davenport	April	21	Oct. 23	Olin	April	21	Oct. 23
Decorah	May	15	Oct. 6	Onawa	April	27	Oct. 23
Delaware	May	15	Oct. 6	Osage	May	15	Oct. 6
Denison	April	28	Oct. 6	Osceola	May	14	Oct. 23
Des M ines	April	21	Oct. 23	Oskaloosa	April	21	Oct. 23
Dows	May	15	Oct. 6	Ottumwa	April	21	.....
Dubuque	April	21	Oct. 27	Pacific Junction	May	14	Oct. 22
Earlham	May	15	Oct. 6	Perry	April	27	Oct. 6
Elkader	May	15	Sept. 15	Plover	April	27	Oct. 6
Estherville	May	15	Oct. 6	Primghar	May	14	.....
Fayette	May	15	.....	Red Oak	April	19	Oct. 23
Forest City	May	10	Oct. 6	Ridgeway	April	27	Oct. 6
Fort Madison			Oct. 27	Rock Rapids	April	27	Oct. 6
Fort Dodge	April	28	Oct. 6	Rockwell City	April	21	Oct. 6
Galva	May	14	Oct. 6	Sac City	April	26	Oct. 6
Glenwood	April	20	Oct. 23	St. Charles	April	21	Oct. 23
Grand Meadow	May	15	Oct. 6	Sibley	April	28	Sept. 21
Greenfield	April	21	Oct. 22	Sigourney	April	21	Oct. 23
Grinnell	April	21	Oct. 23	Sioux City	April	26	Oct. 23
Grundy Center	April	21	Oct. 6	Spirit Lake	April	26	Oct. 3
Guthrie Center	April	28	Oct. 23	Stockport			Oct. 23
Hampton	April	27	Oct. 6	Storm Lake	April	27	Oct. 6
Hanlontown	May	15	Sept. 15	Stuart	April	8	Oct. 23
Harlan	April	28	Oct. 22	Thurman	April	27	Oct. 22
Hopeville	April	21	Oct. 23	Tipton	April	21	Oct. 23
Humboldt	April	28	Oct. 6	Toledo	April	27	Oct. 6
Independence	May	15	Sept. 15	Villisca	April	27	.....
Indianola	April	21	Oct. 23	Vinton	April	27	Oct. 6
Inwood	April	26	Oct. 5	Wapello	April	21	Oct. 23
Iowa City	April	26	Oct. 23	Washington	April	21	Oct. 23
Iowa Falls	May	15	Sept. 15	Waterloo	April	27	Oct. 6
Jefferson	April	29	.....	Waukee	April	21	Oct. 6
Keokuk	April	21	Oct. 27	Waverly	May	15	Oct. 6
Keosauqua	April	22	Oct. 23	West Bend	April	27	Oct. 6
Knoxville	April	21	.....	Whitten	April	21	Oct. 23
Larrabee	May	14	Oct. 6	Wilton Junction	April	21	Oct. 23
Lemars	April	27	Oct. 6	Winterset	April	27	Oct. 6
Lenox	April	31	Oct. 22	Zearing	April	21	.....
Leon	April	21	Oct. 22				

CLIMATOLOGICAL DATA FOR YEAR ENDING 1904.

STATIONS	COUNTIES	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.						PRECIPITATION, IN INCHES.						SKY.								
				Annual mean.	Highest.	Date.		Lowest.	Date.	Length of record, years	Total, for year	Greatest monthly.	Month.	Least monthly.	Month.	Total snowfall unmelted.	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days	Prevailing direction of wind.	Last killing frost in spring.	First killing frost in autumn.
Afton	Union	1,212	10	....	94	July	18	-18	Jan. 25	11		5.61	Apr...	T	Nov....	....	....		....	..	SW	Apr. 21	.....
Albia	Monroe	957	...	47.0	92	July	16	-19	Jan. 25	7	30.75	5.55	Sept. .	.08	Nov....	....	....	72	..	....	NW	Apr. 26	Oct. 6
Algona	Kossuth	1,213	29	43.8	90	July	16	-28	Jan. 24	32	22.76	3.75	July...	.28	Feb ...	23.5	71	...	...	...	NW	Apr. 27	Oct. 6
Allerton	Wayne	.....	....	48.6	95	Aug.	13	-21	Jan. 29		.....	.....	.....	.06	Nov ...	29.2	....	.....	.....	..	NW	Apr. 21	Oct. 23
Alta	Ruena Vista	1,513	12	44.1	92	July	16	-26	Jan. 25	14	29.59	6.39	May ..	.31	Nov ...	18.6	93	150	142	74	S	Apr. 26	Oct. 6
Alta (near)	Buena Vista	.....	....	....	....	....	....	.....	.....		29.52	6.34	May ...	.10	Nov ...	....	73	.....	.....	..	.....	.....	.....
Amana	Iowa	721	26	46.7	93	July	17	-18	Jan. 25	29	28.02	6.64	July...	.19	Nov ...	34.3	88	155	129	82	NW	Apr. 21	Oct. 6
Ames	Story	926	21	46.4	94	July	18	-24	Jan. 26	27	25.58	4.19	Apr....	.02	Nov ...	20.5	83	216	80	70	NW	Apr. 21	Oct. 6
Atlantic	Cass	1,164	12	47.1	94	Aug.	14	-31	Jan. 29	14	31.03	5.47	July....	.08	Nov ...	20.6	64	.....	.....	...	S	Apr. 28	Sept. 14
Audubon	Audubon	.....	....	45.9	93	July	17	-28	Jan. 29	..	24.92	4.98	July...	.15	Feb ...	20.1	83	168	74	124	NW	May 15	Sept. 15
Baxter	Jasper	998	....	46.4	92	July	16	-21	Jan. 24	..	27.51	6.70	July...	.08	Nov ...	21.4	67	162	86	118	NW	Apr. 27	Oct. 6
Bedford	Taylor	.....	....	48.3	94	Aug.	14	-23	Jan. 29	....	38.00	6.39	Aug	.08	Nov ...	16.2	80	174	62	130	SE	Apr. 27	Oct. 22
Belknap	Davis	877	8	....	91	Aug.	13	....	.....	...	.....	5.61	Sept...	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 21	.....
Belle Plaine	Benton	828	13	45.4	93	July	16	-22	Jan. 26	15	30.24	3.99	July...	.20	Nov ...	68.6	87	123	154	89	SE	Apr. 27	Oct. 23
Bonaparte	Van Buren	.....	11	48.1	93	July	30	-21	Jan. 3	13	35.96	6.73	Sept...	.14	Oct....	17.5	65	....	...	.....	.....	Apr. 21	Oct. 23
Britt	Hancock	1,236	6	43.6	91	July	16	-28	Jan. 24	8	27.06	4.74	July...	.26	Nov ..	21.5	108	81	205	80	NW	May 15	Oct. 6
Buckingham	Tama	.....	...	....	....	.....	.....	....	.....	5	22.62	3.70	July...	.18	Nov ...	36.9	68	.....	.....	.....	.....	.....	.....
Burlington	Des Moines	544	7	49.6	98	July	17	-15	Jan. 26	9	35.81	6.08	Aug....	.13	Nov ...		103	193	72	101	NW	Apr. 21	Oct. 23
Carroll	Carroll	1,265	13	45.8	93	July	17	-25	Jan. 25	15	26.83	5.61	June .	.18	Nov ...	32.0	82	190	48	128	.....	May 14	Oct. 6
Cedar Rapids	Linn	733	20	46.4	98	July	16	-19	Jan. 25	22	23.10	5.62	July...	.09	Nov ...	..	72	137	137	92	NE	Apr. 22	Oct. 23
Chariton	Page	1,043	8	47.8	91	Aug.	14	-20	Jan. 26	10	29.03	5.14	July...	T	Nov ..	....	52	167	108	91	SE	Apr. 21	Oct. 23
Charles City	Floyd	1,012	12	42.6	93	July	18	-31	Jan. 27	14	29.08	5.96	June ..	.25	Nov ...	38.7	81	167	49	150	E, W	May 15	Oct. 6
Clarinda	Page	1,069	13	47.9	95	July	17	-17	Jan. 29	15	34.48	7.28	July...	.09	Nov ...	27.3	97	180	59	127	NW	Apr. 27	Oct. 22
Clear Lake	Cerro Gordo	1,241	....	44.7	92	July	16	-30	Jan. 24	6	24.42	5.30	June ..	.25	Nov ..	30.2	62	....	....	....	NW	Apr. 26	Oct. 6
Clinton	Clinton	609	35	46.7	95	July	16	-17	Jan. 8	37	30.10	5.36	Aug....	.10	Nov ...	34.8	85	137	111	118	.....	Apr. 21	Oct. 14
College Springs	Page	.....	11	49.8	98	July	10	-15	Jan. 25	13	.....	6.88	July...	...	.....	.....	.....	.....	.....	.....	.....	Apr. 21	Oct. 22
Columbus Jct.	Louisa	595	3	47.8	92	July	16	-14	Jan. 3	4	32.69	5.72	Aug ...	.16	Nov ...	21.6	87	218	103	45	NW	Apr. 25	Oct. 23
Corning	Adams	1,127	11	....	90	July 18 / Aug. 14		-24	Jan. 29	12	.....	6.31	July...	...	.....	.....	.....	.....	.....	.....	NW	Apr. 27	Oct. 23
Corydon	Wayne	992	10	48.6	93	Aug.	13	-23	Jan. 29	12	27.54	5.25	July...	.05	Nov ...	27.7	79	173	87	106	NW	Apr. 21	Oct. 6
Cresco	Howard	..	....	....	90	May 23 / Aug. 24		-29	Jan. 24	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	NW	May 15	Oct. 6
Cumberland	Cass	.....	....	....	...	.....		....	.....	....	29.14	4.71	July...	T	Nov .	29.0	53	235	39	92	SW	.....	.....
Davenport	Scott	606	32	48.1	92	July	16	-13	Jan. 25	14	27.05	3.98	Sept...	.18	Nov ...	25.4	94	139	114	113	SW	Apr. 21	Oct 23
Decorah	Winneshiek	875	9	43.9	92	July	16	-31	Jan. 27	11	29.38	5.44	Sept..	.35	Nov ..	38.0	61	....	....	....	.....	May 15	Oct. 6
Delaware	Delaware	1,083	12	44.1	92	July	17	-25	Jan. 25	14	24.74	3.42	May...	.09	Nov ...	37.3	84	154	146	66	NW	May 15	Oct. 6
Denison	Crawford	1,180	9	46.6	92	July 16 / Aug. 24		-23	Jan. 26	10	21.28	4.02	June .	.15	Nov ...	....	85	...	...	...	N, S	Apr. 28	Oct. 6
Des Moines	Polk	861	26	47.7	93	July	18	-18	Jan. 25	26	28.43	6.54	July...	.06	Nov ...	35.6	97	113	138	115	SW	Apr. 21	Oct. 23
De Soto	Dallas	886	..	....	93	July	17	....	.....	5	.....	9.98	July ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dows	Wright	1,142	....	44.0	91	July	16	-27	Jan. 24	5	30.39	5.52	June ..	.05	Nov ...	36.5	88	207	40	119	NW	May 15	Oct. 6
Dubuque	Dubuque	655	30	46.3	94	July	17	-23	Jan. 25	32	23.03	3.86	May...	.08	Nov ...	36.0	100	140	127	99	NW	Apr. 21	Oct. 27
Earlham	Madison	.....	....	44.9	90	July	17	-22	Jan. 26	...	31.77	6.33	July...	.18	Nov ...	30.7	68	.....	.....	.....	.....	May 15	Oct. 6
Elkader	Clayton	727	22	45.1	99	July	17	-32	Jan. 27	25	25.36	4.89	Sept...	.14	Nov ...	45.0	69	176	128	62	NW	May 15	Sept. 15
Estherville	Emmet	1,298	8	42.3	94	Aug.	13	-31	Jan. 27	....	28.40	5.27	June ..	.14	Nov ...	....	90	178	24	164	NW	May 15	Oct. 6
Fayette	Fayette	....	....	....	93	July	17	-32	Jan. 27	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	May 15	.....
Forest City	Winnebago	1,220	9	43.1	91	July	16	-29	Jan. 24	11	23.62	4.76	July ..	.22	Nov ...	13.5	66	173	46	147	W	May 10	Oct. 6
Fort Madison	Lee	516	52	.....	.....	.....	.....	.....	.....	55	36.32	5.32	Aug ...	.35	Feb ...	23.2	62	101	132	133	SW	.....	Oct. 27
Fort Dodge	Webster	1,126	....	45.1	95	July	17	-25	Jan. 24	..	35.79	7.73	June ..	.20	Nov ...	....	81	....	....	....	.....	Apr. 28	Oct. 6
Galva	Ida	1,290	9	....	93	June 24 / July 18		-27	Jan. 24	11	.....	7.81	May ...	.09	Nov ...	....	....	....	....	....	.....	May 14	Oct. 6
Gilman	Marshall	1,052	..	....	....	.....	.....	....	.....	6	22.97	5.56	July...	.25	Nov ...	...	68	175	97	96	S	.....	.....
Glenwood	Mills	.....	....	49.3	90	July 18 / Aug. 14 / Sept. 27		-18	Jan. 25	..	25.92	5.35	May ...	.02	Feb ...	10.2	48	..	....	...	NW	Apr. 20	Oct. 23
Grand Meadow	Clayton	1,080	12	43.7	92	July	17	-29	Jan. 25	14	33.81	6.51	May ..	.18	Nov ...	35.0	80	117	129	120	SW	May 15	Oct. 6
Greene	Butler	924	6	....	94	July	16	....	.....	8	.....	.....	.....	.....	.....	.....	....	....	..	..	.....	.....	.....
Greenfield	Adair	.....	12	47.3	92	July	17	-20	Jan. 25	14	29.65	5.28	Apr...	.09	Nov ...	33.5	..	....	..	...	S	Apr. 21	Oct. 22
Grinnell	Poweshiek	1,023	10	....	94	July	17	-20	Jan. 24	....	.....	.....	.....	.12	Nov ...	.....	.....	.....	.....	.....	.....	Apr. 21	Oct. 23
Grundy Center	Grundy	976	12	45.1	93	July	17	-26	Jan. 24	14	26.15	5.38	July...	.23	Nov ...	36.5	87	162	88	116	NW	Apr. 21	Oct. 6
Guthrie Center	Guthrie	1,077	7	48.2	94	July	18	-23	Jan. 29	9	31.34	6.90	July...	.13	Nov ...		102	211	72	83	NW	Apr. 28	Oct. 23
Hampton	Franklin	1,155	18	45.5	95	July	17	-27	Jan. 24	15	31.54	4.79	July...	.40	Nov ...	45.9	84	108	189	69	SW	Apr. 27	Oct. 6
Hanlontown	Worth	....	....	42.7	90	July	16	-31	Jan. 27	....	.....	.....	.....	.....	.....	.....	.....	195	70	101	NW	May 15	Sept. 15
Harlan	Shelby	1,192	.	46.6	93	June 19 / July 17		-20	Jan. 25	6	24.27	5.20	July...	.17	Feb . / Nov.	20.0	89	112	146	108	NW	Apr. 28	Oct. 22
Hopeville	Clarke	.....	12	48.1	95	Aug.	14	-20	Jan. 29	14	31.24	5.24	July...	.02	Nov ...	....	85	101	171	94	.....	Apr. 21	Oct. 23
Humboldt	Humboldt	1,095	11	45.5	93	July	16	-28	Jan. 24	16	28.26	8.35	June ..	.20	Nov ..	14.9	.....	226	55	85	SE	Apr. 28	Oct. 6
Ida Grove	Ida	1,220	....	....	95	July	16	-26	Jan. 24	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Independence	Buchanan	921	39	..	92	July 17 / Aug. 24		-26	Jan. 27	37	21.62	3.73	July...	.05	Nov ...	41.5	70	210	82	74	NW	May 15	Sept, 15
Indianola	Warren	969	12	48.0	94	July	17	-19	Jan. 26		33.43	7.98	Apr ...	.03	Nov ..	35.2	96	....	....	....	.....	Apr. 21	Oct. 23
Inwood	Lyon	.....	....	44.0	94	July	16	-26	Jan. 24		21.08	4.34	Oct....	T	Nov ...	16.0	50	182	41	143	S, NW	Apr. 26	Oct. 5
Iowa City	Johnson	685	44	46.4	96	July	16	-21	Jan. 29	42	28.96	5.49	Apr ...	.25	Nov ...		82				N	Apr. 26	Oct. 23
Iowa Falls	Hardin	1,117	10	43.6	93	July	17	-26	Jan. 3	12	29.36	5.45	June ..	.23	Nov ...	42.3	83	175	64	127	NW	May 1	Sept. 15
Keokuk	Lee	619	32	50.2	93	July	30	-13	Jan. 22	33	38.93	8.33	Sept...	.21	Nov ...	25.8	100	165	114	87	SW	Apr. 21	Oct. 27
Keosauqua	Van Buren	664	11	47.5	94	July 30 / Aug. 12		-24	Jan. 29	13	37.45	6.26	Sept...	.14	Nov ...	....	77	118	95	153	.....	Apr. 23	Oct. 23
Knoxville	Marion	.....	...	....	93	July	18	-17	Jan. 25	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Apr. 21	.....
Lacona	Warren	.....	....	..	....	.....		...	.....	6	34.24	6.47	July...	.03	Nov ...	....	99	....	....	...	.....	.....	.....
Larrabee	Cherokee	1,366	..	45.1	95	July	16	-27	Jan. 24	15	27.08	5.39	June ..	.16	Jan....	14.8	72	151	145	70	SW	May 14	Oct. 6
Le Claire	Scott	576	....	....	....	.....		...	.....	...	26.14	4.29	Aug....	.31	Nov ...	....	....	....	....	...	.....	.....	.....
Le Mars	Plymouth	1,224	7	.	93	July 16 / Aug. 14		-23	Jan. 24	9	.....	.....	.....	.05	Nov .	....	....	....	....	..	.....	Apr. 27	Oct. 6
Lenox	Taylor	1,250	8	47.6	90	Aug.	13	-31	Jan. 25	10	31.37	5.16	Aug....	.09	Feb ...	...	....	....	....	...	S	Apr. 21	Oct. 22
Leon	Decatur	1,120	....	48.6	91	Aug.	13	-17	Jan. 26	....	31.77	5.34	July...	.05	Feb ...	37.5	79	220	64	82	.....	Apr. 21	Oct. 23
Logan	Harrison	928	36	48.1	98	Aug,	27	-17	Jan. 25	5	.....	.....	.....	.....	.....	28.0	64	181	67	118	NW	May 10	Oct. 21
Maquoketa	Jackson	688	10	44.7	96	July	17	-22	Jan. 3	12	25.54	4.47	Aug....	.22	Nov ...	26.8	80	174	63	129	NE	May 15	Sept. 15
Marshalltown	Marshall	947	10	45.6	100	July	17	-22	Jan. 26	11	27.10	4.50	July...	.17	Nov ...	...	92	151	54	161	NW	Apr. 27	Oct. 6
Mason City	Cerro Gordo	1,132	....	44.8	96	July	16	-26	Jan. 24	...	26.75	6.60	June ..	.20	Nov ...	33.2	69	110	166	90	NW	Apr. 21	Oct. 6
Mt. Ayr	Ringgold	1,236	9	49.6	97	Aug.	13	-18	Jan. 26	11	36.07	6.51	May...	.24	Feb ...	48.8	97	134	114	118	NW	Apr. 21	Oct. 23
Mt. Pleasant	Henry	729	21	48.6	97	July	17	-20	Jan. 29	11	37.59	6.97	Sept...	.22	Nov ...	....	87	158	121	92	SW	Apr. 23	Oct. 23
Mt. Vernon	Linn	847	36	46.9	94	July	31	-19	Jan. 25	9	26.71	4.07	Aug	.13	Nov ...	44.8	88	180	65	121	.....	Apr. 21	Oct. 6
New Hampton	Chickasaw	1,169	....	42.7	90	July	18	-29	Jan. 24	8	23.66	3.35	June ..	.10	Nov ...	31.0	79	....	...	...	NW	May 15	Sept. 15
Newton	Jasper	944	15	....	....	.....		-23	Jan. 25	..	.....	.....	.....	.....	.....	.....	.....	..	....	..	.....	Apr. 21	.....
Northwood	Worth	1,222	7	....	91	July	17	-28	Jan. 27	9	27.16	6.16	June ..	.25	Nov ...	32.7	73	...	....	..	NW	Apr. 27	Oct. 23

CLIMATOLOGICAL DATA FOR YEAR ENDING 1904—CONTINUED.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.						PRECIPITATION, IN INCHES.				SKY.								
				Annual mean.	Highest.	Date.	Lowest.	Date.	Length of record, years.	Total for the year.	Greatest monthly.	Month.	Least monthly.	Month.	Total snowfall, unmelted.	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.	Last killing frost in spring.	First killing frost in autumn.
Odeboldt	Sac	1356	6	46.5	96	July 16	-25	Jan. 24	7	22.69	4.07	June	.24	Nov	18.5	69	223	75	68		May 14	Oct. 6
Ogden	Boone	1088	9	....	92	July 17	-30	Jan. 26	10	.....	.....	.... ..	..	.....	....	...	....	....	..	.....	May 14	Oct. 6
Olin	Jones	760	....	46.1	94	July 16	-23	Jan. 29	6	25.49	3.78	Oct	.01	Nov ...	....	76	....	..	...	NW	Apr. 21	Oct. 23
Omaha, Nebr	.....	1113	33	49.6	93	July 18 / Aug. 14	-17	Jan. 25	34	25.48	4.86	May. ..	.10	Nov ...	17.8	103	122	111	133	N	Apr. 17	Oct. 27
Onawa	Monona	1053		49.0	96	Aug. 14	-16	Jan. 25	5	31.30	8.15	May...	.29	Feb. ..	17.2	90	248	41	77	SE	Apr. 27	Oct. 23
Osage	Mitchell	1184	12	43.5	92	July 16	-28	Jan. 24	17	27.83	6.10	June ..	.17	Nov...	40.6	92	....	....	..	.....	May 15	Oct. 6
Osceola	Clarke	1130	7		95	Aug. 14	-19	Jan. 26	....	.....	5.67	Aug ..	.05	Feb ...	....		....		..	.....	May 14	Oct. 23
Oskaloosa	Mahaska	843	19	47.5	92	July 17	-23	Jan. 29	27	.....	5 89	July...	.03	Nov ...	26.7	....	....	....	..	NW	Apr. 21	Oct. 23
Ottumwa	Wapello	649	9		95	July 16 / Aug. 12	....	.....	11	....	4.58	Sept...	.13	Nov ...	....	....	...	....	..	NW	Apr. 21	... .
Pacific Junction	Mills	960	..	48 3	93	Aug. 14	-16	Jan. 25	6	27.38	5.36	Apr ...	.07	Feb ...	...	83	151	150	65	S	May 14	Oct. 22
Perry	Dallas	975		47.0	94	July 18	-23	Jan. 24	....	30.59	6.52	July..	T	Nov ...	....	....	....	....	..	.....	Apr. 27	Oct. 6
Plover	Pocahontas	1190	6	44.1	94	July 16	-30	Jan. 25	8	28.80	4.74	May .	.20	Nov ...	19.5	56	208	51	107	NW	Apr. 27	Oct. 6
Primghar	O'Brien	....	....	....	90	July 16	-25	Jan. 24	....	.....	.....	...		....	....	....	....	....	..	.....	May 14	.....
Red Oak	Montgomery	1033	....	49.5	89	July 18	-14	Jan. 25	8	28.56	6.66	July. ..	.05	Feb ...	27.5	82	103	201	62	S	Apr. 19	Oct. 23
Ridgeway	Winneshiek	1215	....	46.2	99	July 16	-28	Jan. 24	7	32.20	5.16	Sept...	.29	Nov ...	41.8	127	161	148	57	S	Apr. 27	Oct. 6
Rock Rapids	Lyon	....	....	44 8	92	June 19 / July 16	-24	Jan. 24	..	.....	3.95	July...	T	Nov ...	...	....	....	....	.	.....	Apr. 27	Oct. 6
Rockwell City	Calhoun	....	....	45.8	95	July 17	-28	Jan. 24	9	29.55	5.95	Aug ...	.00	Nov...	21.1		204	78	84	.....	Apr. 21	Oct. 6
Sac City	Sac	1278	25	46.2	94	July 16	-26	Jan. 24	29	.....	5.48	Aug ...	.24	Nov...	....	61	....	....	..	.....	Apr. 26	Oct. 6
St. Charles	Madison	1070	...	48.6	93	July 17	-18	Jan. 25	4	34.05	8.97	Apr ...	.09	Nov...	....	107	197	93	76	NW	Apr. 21	Oct. 23
Sibley	Osceola	1512	9	42.1	91	Aug. 24	-28	Jan. 24	11	25.23	4.96	June .	.05	Nov...	....	....	....	....	..	NW	Apr. 28	Sept. 21
Sigourney	Keokuk	787		...	95	Aug. 13	-20	Jan. 29	9	...	3.92	Apr ...	T	Nov...	....	...		....	..	NW	Apr. 21	Oct. 23
Sioux City	Woodbury	1165	14	46.6	96	Aug. 14	-21	Jan. 25	16	21.46	5.49	July...	.05	Nov ...	....	88	119	115	132	NW	Apr. 26	Oct. 23
Sioux Center	Sioux	....	...	44.4	91	July 16 / Aug 24	-25	Jan. 24	6	26.79	7.75	July..	.10	Nov...	...	....	....	....	..	....	....	
Stockport	Van Buren	.....	..	....	....	.....	....	.....	3	37.23	7.08	Sept..	.15	Nov..	24.5	91	153	71	142	NW	.....	Oct. 23
Storm Lake	Buena Vista	1440	8	43.6	90	July 16	-30	Jan. 24	16	24.19	5.16	Aug ...	.02	Jan...	....	69	....		..	NW	Apr. 27	Oct. 6
Stuart	Guthrie	1216	6		91	July 17	-19	Jan. 25	....		8.30	July...	.10	Nov ...	....	....	....	....	..	.....	Apr. 8	Oct. 23
Thurman	Fremont	.	....	48.8	94	July 18	-20	Jan. 29	8	36.48	11.97	July...	T	Feb. ..	...	82	165	90	111	SW	Apr. 27	Oct. 22
Tipton	Cedar	807		48.0	96	July 17	-18	Jan. 3	7	27.15	4 22	Apr ...	.12	Nov...	35.8	75	183	124	59	SW,NW	Apr. 21	Oct. 23
Toledo	Tama	856	9	46.1	95	July 17	-23	Jan. 29		.....	3.71	July..	.15	Nov ...	42.5	70	147	111	108	NW	Apr. 27	Oct. 6
Vinton	Benton	810	13	....	94	July 17	...	.....	15	19.34	3 51	July...	.10	Nov...	36 6	....	....	....	..	.....	Apr. 27	Oct. 6
Wapello	Louisa	588	...	48.8	91	July 17	-12	Jan. 3	7	30.96	4 24	Sept...	.12	Nov...	....	67	....		..	.....	Apr. 21	Oct. 23
Washington	Washington	769	21	47.2	92	July 16 / Aug 13	-20	Jan. 29	14	27.87	4.39	Aug ...	.23	Nov ...	....	73	....	....	..	....	Apr. 21	Oct. 23
Washta	Cherokee	1157		....	....	.....		.....	7	24.60	6.08	May ...	.10	Nov..	....	..	....	....	..	S	.....	
Waterloo	Black Hawk	862	16	45.7	98	July 17	-25	Jan. 29	24	25.57	4.62	May ...	.21	Nov...	40.0	88	161	124	81	NW	Apr. 27	Oct. 6
Waukee	Dallas	1039	....	49.2	97	July 17 / Aug. 13	-19	Jan. 26	....	33 10	9.31	July. .	.10	Nov. ..	35.5	93	165	103	98	NW	Apr. 21	Oct. 6
Waverly	Bremer	942	7	44.6	93	July 17	-27	Jan. 27	9	28.63	4.69	May ...	.21	Nov. ..	41.8	101	127	137	102	... .	May 15	Oct. 6
West Bend	Palo Alto	1197	9	44.3	92	July 16	-29	Jan. 24	11	28.27	6.93	June ..	.08	Nov ...	28.7	82	....	....	....	S	Apr. 27	Oct. 6
Whitten	Hardin	1036	....	45.5	94	July 16	-28	Jan. 26	7	.....	6.05	July ..	T	Nov..	37.5	...	...	...	...	.....	Apr. 21	Oct. 23
Wilton Junction	Muscatine	683	8	47.5	96	July 17	-18	Jan. 3	10	...	5.15	Aug ...	.35	Nov...	....	....	190	56	120	NW	Apr. 27	Oct 23
Winterset	Madison	1129	12	..	95	July 18 / Aug. 13	-19	Jan. 25	14	.....	6.41	Apr ...	.30	Nov...	....	....	....	..	..	.... ..	Apr. 27	Oct. 6
Woodburn	Clarke	961	...	....	...	....	....	.....	6	30.19	5.01	July...	.12	Nov...	30.9	79	196	61	109	NW	.....	
Zearing	Story	.....	..	....	93	July 18	....	.....		.....	4.73	July...	.16	Nov...	....	....	....	....	...	..	Apr. 21	Oct. 6
Average	.....	.....	.....	43.4	100	July 17	-32	Jan. 27	....	28.74	11.97	July...	.00	Nov..	....	75	164	97	105	NW	.....	.....

MONTHLY MAXIMUM AND MINIMUM TEMPERATURES WITH DATES FOR 1904.

STATIONS.		Jan.		Feb.		March		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
		Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.
Afton	Max.	50	7	47	6	..	..	75	30	87	24	90	*19	94	18	92	14	86	* 1	..	..	68	* 1	57	22
	Min.	-18	25	-10	1	..	..	23	16	36	14	49	* 6	49	1	45	* 8	35	15	..	..	13	30	- 8	28
Albia	Max.	50	7	63	6	68	21	81	23	84	*22	87	23	92	*16	92	12	90	10	82	4	72	* 1	61	22
	Min.	-19	*25	-12	1	8	* 3	22	14	33	14	48	7	50	2	46	8	40	*12	24	27	10	30	- 6	*28
Algona	Max.	41	7	42	5	59	23	77	30	88	22	85	19	90	*16	89	12	86	28	76	9	68	* 2	52	8
	Min.	-28	*24	-19	1	0	3	18	3	33	10	43	7	47	1	45	* 8	85	*15	22	27	7	30	-10	28
Allerton	Max.	51	19	62	6	72	21	77	23	84	24	86	20	91	*17	95	13	90	10	84	4	75	2	61	22
	Min.	-21	29	-16	1	8	3	24	* 3	37	14	48	* 7	51	* 2	47	* 8	36	15	23	27	11	30	* 7	13
Alta	Max.	41	7	53	5	60	23	75	30	85	22	86	23	92	16	89	14	87	9	78	* 3	70	18	56	8
	Min.	-26	25	-15	8	0	3	20	16	34	14	43	6	49	2	44	22	36	*15	25	*25	8	30	-12	28
Amana	Max.	45	7	53	6	56	23	79	23	86	22	89	23	93	17	91	*12	88	28	79	9	71	19	53	23
	Min.	-18	*25	-11	1	10	3	23	*16	36	15	47	* 7	44	2	43	8	33	15	22	27	10	30	-13	15
Ames	Max.	46	7	47	23	62	* 2	77	30	85	22	88	23	94	18	92	24	88	28	84	4	73	2	53	8
	Min.	-24	26	-13	1	5	3	22	17	35	15	46	22	44	27	40	8	34	15	23	27	11	30	- 6	*15
Atlantic	Max.	52	7	49	5	69	9	77	30	87	24	92	18	93	17	94	14	89	9	85	4	72	4	64	22
	Min.	-31	29	-12	1	2	15	20	* 3	33	15	43	14	45	*23	39	* 8	30	14	19	27	9	30	- 9	13
Audubon	Max.	48	7	47	5	67	2	76	30	88	24	89	*19	93	*17	91	*13	91	28	87	4	70	* 3	60	22
	Min.	-23	29	-16	1	0	15	21	3	31	15	41	14	44	24	36	8	31	15	19	27	8	30	- 8	28
Baxter	Max.	49	7	49	6	62	2	78	30	85	*22	87	*20	92	16	91	13	88	28	83	4	72	3	54	22
	Min.	-21	*24	-10	16	5	3	20	* 3	35	15	46	7	45	2	44	8	36	15	23	27	9	30	- 8	28
Bedford	Max.	52	7	51	5	68	9	76	23	84	24	86	19	89	*18	94	14	87	* 9	85	4	74	2	63	20
	Min.	-23	29	-11	1	8	3	21	3	35	14	47	*14	48	1	43	26	33	15	23	23	10	30	- 8	28
Belknap	Max.	..	..	60	6	65	*21	80	23	83	24	85	*22	90	*17	91	13	89	1	82	8	..	..	..	..
	Min.	..	..	-11	1	10	3	27	* 3	40	14	50	14	54	* 1	50	9	41	22	32	*23	..	..	..	..
Belle Plaine	Max.	44	17	46	6	57	23	78	23	87	22	92	19	93	*16	90	* 5	88	28	81	4	70	2	50	22
	Min.	-22	26	-15	1	7	3	21	16	37	*10	45	7	47	2	47	26	35	15	22	27	6	30	-14	15
Bonaparte	Max.	45	19	63	6	69	21	83	23	84	22	88	20	93	30	92	12	90	28	83	9	74	19	58	23
	Min.	-21	* 3	-18	1	10	3	24	14	37	15	48	7	47	2	45	26	35	15	26	*23	12	30	- 2	28
Britt	Max.	40	7	43	28	57	23	73	*23	87	22	87	*18	91	*16	90	12	87	28	78	9	68	* 1	50	8
	Min.	-28	*24	-22	1	- 1	3	20	3	30	15	42	7	45	1	41	8	33	15	22	*23	4	30	-10	28
Burlington	Max.	46	19	65	6	67	21	83	23	83	*21	90	*19	93	17	91	21	90	*10	83	9	74	* 1	57	*22
	Min.	-15	26	-13	1	13	3	26	*14	41	10	52	22	51	2	50	26	39	5	28	*23	13	30	- 2	*28
Carroll	Max.	49	8	50	5	66	2	78	30	86	22	90	23	93	*17	90	*14	89	9	85	4	74	18	59	22
	Min.	-25	25	-14	1	2	3	19	16	31	14	45	* 6	47	* 2	41	8	36	14	24	27	6	30	-11	28
Cedar Rapids	Max.	45	7	54	6	59	23	80	23	89	22	90	23	98	16	94	*12	92	28	82	9	72	19	55	22
	Min.	-19	25	-12	2	10	3	23	16	35	15	47	* 7	48	2	47	8	36	15	25	27	12	30	-11	*15
Chariton	Max.	50	7	61	6	71	21	78	23	83	24	86	20	90	*16	91	14	89	*10	84	4	74	2	60	22
	Min.	-20	26	- 6	* 1	7	* 3	23	3	36	14	47	14	48	2	45	8	35	15	24	*23	9	30	- 7	13
Charles City	Max.	34	15	41	6	59	23	75	23	88	22	86	*18	93	18	90	24	88	28	78	9	70	3	44	31
	Min.	-31	27	-24	1	3	* 3	20	* 3	27	15	35	2	44	2	39	8	33	15	21	*27	8	30	-12	14
Clarinda	Max.	54	7	67	23	70	9	75	23	90	24	91	23	95	*17	95	14	91	28	90	4	77	18	65	22
	Min.	-17	29	- 6	1	5	15	23	* 3	36	*11	43	14	50	* 1	44	*28	34	15	25	27	12	30	- 7	28
Clear Lake	Max.	49	1	40	6	60	23	76	30	85	*20	88	16	92	16	89	14	89	28	76	16	65	* 4	45	8
	Min.	-30	*24	-21	1	- 2	3	18	3	35	14	46	7	50	* 1	47	22	39	21	26	*25	9	30	-12	28
Clinton	Max.	44	19	57	6	60	*24	83	23	90	22	94	23	95	*16	95	12	90	28	83	9	69	* 3	52	22
	Min.	-17	3	-10	* 1	11	3	21	4	33	15	45	7	42	2	42	8	33	15	26	*23	11	30	- 7	14
College Springs	Max.	53	7	49	* 5	70	9	77	23	85	24	90	19	98	10	94	13	90	27	85	* 4	70	* 1	66	22
	Min.	-15	25	- 2	4	8	3	22	16	35	14	49	6	53	* 1	48	*21	37	15	27	27	14	30	- 7	28
Columbus Junction	Max.	49	19	61	6	66	21	82	23	85	22	87	*19	92	*16	90	13	87	28	81	9	79	4	56	23
	Min.	-14	* 3	-11	1	- 3	3	23	*16	35	10	48	7	47	2	47	8	37	15	25	27	12	30	- 3	*15
Corning	Max.	52	7	49	23	68	9	75	23	83	24	86	23	90	18	90	14	87	28	83	4	..	..	62	22
	Min.	-24	29	-12	1	1	15	23	* 3	36	14	43	14	45	1	42	26	38	*14	22	27	.	.	- 8	28
Corydon	Max.	51	7	63	6	71	21	78	23	84	24	85	*18	90	18	93	*13	90	10	88	18	76	2	61	22
	Min.	-23	29	-17	1	3	3	18	3	35	14	49	* 7	51	* 1	45	8	38	15	22	27	9	30	* 6	*13
Cresco	Max.	38	8	40	28	52	23	73	30	90	25	90	20	90	*17	90	24	87	17	76	*10	..	..	43	23
	Min.	-29	*24	-22	1	0	3	18	1	32	*10	46	25	43	2	39	8	33	18	25	27	..	..	-13	14
Davenport	Max.	46	19	61	6	62	24	80	23	84	22	88	23	92	16	90	13	89	10	81	9	71	19	58	22
	Min.	-13	25	- 8	1	13	3	24	16	40	15	49	1	52	2	52	8	42	15	30	27	14	30	- 4	28
Decorah	Max.	38	7	43	28	57	23	77	29	86	22	87	23	92	*16	89	24	83	*10	88	10	68	* 1	45	23
	Min.	-31	27	-23	1	2	3	21	* 3	32	15	44	8	43	2	39	8	34	15	23	26	10	30	-12	14
Delaware	Max.	41	19	47	6	55	23	79	23	86	22	86	23	92	17	90	12	87	28	78	* 4	67	* 2	45	*22
	Min.	-25	25	-20	1	6	3	19	16	32	15	45	7	45	2	44	* 8	34	15	22	27	7	30	-10	15
Denison	Max.	47	7	57	5	68	* 2	74	30	86	*22	88	23	92	*16	92	24	91	9	85	4	71	* 3	59	22
	Min.	-23	26	-12	19	4	3	17	3	34	14	45	* 7	46	1	42	26	37	15	20	27	9	30	-10	28
Des Moines	Max.	50	7	47	6	63	2	74	30	85	24	87	23	93	18	91	24	89	1	86	4	71	18	58	22
	Min.	-18	25	- 9	1	8	3	26	3	38	14	52	6	54	2	49	26	38	15	28	27	13	30	- 6	13
De Soto	Max.	..	..	47	6	66	2	77	30	86	24	86	23	93	17	90	24	89	28	88	4	77	18	59	22
	Min.	..	..	-11	1	7	3	22	21	37	14	49	*14	51	* 2	44	8	37	15	22	27	10	30	-14	14
Dows	Max.	42	7	42	6	59	23	74	30	86	22	86	23	91	*16	89	24	87	28	79	4	69	* 1	50	8
	Min.	-27	*24	-21	1	1	3	18	16	32	15	42	7	48	* 1	40	8	34	15	20	27	8	30	-12	27
Dubuque	Max.	45	19	58	6	56	24	79	23	86	22	87	3	94	17	91	12	89	28	80	9	69	1	53	22
	Min.	-23	25	-11	1	8	3	24	16	39	16	47	7	47	2	45	8	39	15	29	27	15	30	-12	14
Earlham	Max.	49	7	46	28	63	2	73	30	84	24	85	23	90	*17	89	13	86	10	85	4	72	* 3	60	22
	Min.	-22	26	-14	1	5	3	18	3	31	15	41	14	43	* 2	35	8	30	15	16	27	7	30	-16	14
Elkader	Max.	42	19	47	28	57	23	79	30	90	22	89	23	99	17	94	12	93	28	82	17	75	4	48	31
	Min.	-32	27	-22	1	6	3	19	16	30	15	45	8	42	* 2	40	8	32	15	20	27	9	30	-19	14
Estherville	Max.	40	7	40	5	59	23	76	30	82	20	87	23	93	16	94	13	92	17	77	* 3	72	2	56	* 8
	Min.	-31	27	-20	11	- 2	3	20	* 3	32	15	42	7	44	15	44	*10	31	21	22	6	9	30	-10	13
Fayette	Max.	40	7	49	6	58	23	76	30	87	*20	88	23	93	*17	91	12	..	..	..	..	..	..	..	..
	Min.	-32	27	-26	1	2	3	18	*16	28	15	40	9	38	2	36	8	.	..	..	..	..	..	..	..
Forest City	Max.	40	7	40	* 5	59	23	86	23	89	22	85	23	91	16	89	12	90	28	88	3	71	3	47	8
	Min.	-29	24	-19	1	- 1	3	21	* 3	32	10	43	7	48	* 1	43	8	34	15	24	*23	8	30	-10	28
Fort Dodge	Max.	43	7	47	5	61	23	76	30	86	22	87	23	95	17	91	5	88	9	77	* 9	71	1	53	8
	Min.	-25	*24	-17	1	3	3	21	3	35	*14	46	7	49	23	42	8	40	15	22	27	10	30	- 6	28
Galva	Max.	42	8	54	5	60	2	75	*28	88	22	93	24	93	18	90	*12	89	28	..	..	68	18	56	8
	Min.	-27	24	-18	19	0	3	15	9	32	14	44	* 6	43	23	39	8	33	*15	19	27	7	30	-11	28
Glenwood	Max.	55	7	57	5	71	* 2	76	23	86	24	88	23	90	18	90	14	90	27	85	4	71	2	64	22
	Min.	-18	25	- 4	* 8	5	3	22	16	35	14	48	6	53	23	49	22	39	14	26	27	20	12	- 7	28
Grand Meadow	Max.	40	7	45	* 6	50	*23	73	30	86	22	84	18	92	17	86	12	85	28	76	9	66	* 1	46	23
	Min.	-29	25	-20	1	8	3	19	16	32	15	46	7	45	2	40	26	36	14	25	27	8	30	-16	15
Greene	Max.	..	..	..	..	..	..	..	..	88	22	88	23	94	16	91	24	88	28	78	4	70	* 2	47	8
	Min.	..	..	..	..	..	..	..	..	30	15	44	7	46	2	40	8	34	15	23	27	9	30	- 8	14
Greenfield	Max.	47	8	45	*22	68	9	75	30	86	24	90	19	92	*17	89	*12	87	* 1	83	4	70	* 3	59	22
	Min.	-20	*25	-10	1	5	3	21	* 3	33	14	47	7	48	* 1	45	22	37	14	24	27	8	30	- 9	28
Grinnell	Max.	46	7	49	6	58	23	73	23	84	22	.	..	..	..	..	..	..	..	81	4	68	* 1	55	22
	Min.	-20	24	-10	1	7	3	21	16	37	14	..	..	..	..	..	..	..	..	25	27	11	30	- 5	28
Grinnell [near]	Max.	..	..	..	..	..	..	..	..	..	..	89	*20	94	*17	91	13	91	10	82	17	74	* 2	..	..
	Min.	..	..	..	..	..	..	..	..	..	..	47	7	49	1	47	* 8	37	15	24	27	11	30	..	..
Grundy Center	Max.	43	7	48	6	60	2	75	30	88	22	87	23	93	*17	91	24	89	28	81	4	72	2	50	*22
	Min.	-26	*24	-23	1	5	3	18	16	34	15	41	7	48	* 1	41	8	35	15	23	27	6	30	-11	*13
Guthrie Center	Max.	59	7	60	6	77	2	81	30	88	24	90	19	94	18	91	13	88	28	84	4	71	18	60	22
	Min.	-23	29	-15	1	5	3	20	3	33	14	46	* 7	47	2	41	8	36	15	22	27	10	30	- 9	*13
Hampton	Max.	41	7	44	28	60	23	80	30	89	22	87	23	95	17	92	24	91	28	86	4	74	2	51	8
	Min.	-27	24	-19	1	1	3	21	* 3	34	15	45	7	48	2	44	8	37	15	23	27	9	30	-10	28
Hanlontown	Max.	41	7	39	* 5	57	23	72	29	88	22	84	23	90	16	88	24	88	28	79	17	72	3	48	* 8
	Min.	-31	27	-24	1	- 1	3	21	3	29	15	44	7	45	2	41	8	30	15	20	27	5	30	-10	* 4

MONTHLY MAXIMUM AND MINIMUM TEMPERATURES WITH DATES FOR 1904—CONTINUED.

STATIONS.		Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
		Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.
Harlan	Max.	49	7	51	5	68	* 2	74	30	87	24	93	19	98	*17	91	14	89	28	84	4	68	1	60	22
	Min	-20	25	- 8	11	4	3	20	* 3	34	14	44	14	47	1	41	*22	34	15	20	27	8	30	-11	28
Hopeville	Max.	51	7	52	6	68	21	75	*23	84	24	87	23	91	18	95	14	89	* 1	85	4	78	2	59	22
	Min	-20	29	-12	1	8	3	23	16	37	14	49	7	51	1	47	8	37	15	26	27	11	30	- 8	13
Humboldt	Max.	46	7	45	6	60	23	76	30	88	22	88	23	93	*16	89	12	87	28	77	9	72	2	54	8
	Min	-28	24	-21	1	3	3	18	3	34	15	44	7	50	* 1	45	8	37	15	22	27	10	30	- 8	13
Ida Grove	Max.	47	7	50	* 5	62	9	74	*29	86	22	91	22	95	16	93	14	88	28	80	4	67	* 2	..	..
	Min	-26	*24	-15	19	3	3	19	4	34	14	47	6	46	23	43	* 8	37	15	20	27	8	29	..	..
Independence	Max.	40	7	50	6	..	..	75	23	85	22	85	23	92	*17	92	24	90	28	80	4	70	2	45	8
	Min	-26	27	-20	1	..	..	19	16	30	15	44	* 7	45	2	41	8	31	15	23	27	8	30	-12	15
Indianola	Max.	51	7	48	6	63	23	74	30	85	24	89	23	94	*17	91	*12	88	28	80	* 4	72	18	60	22
	Min	-19	*26	-11	* 1	12	* 3	21	16	37	14	50	* 7	50	2	45	8	36	15	24	27	11	30	- 9	13
Inwood	Max.	38	7	48	5	59	*23	75	30	81	22	89	19	94	16	92	*14	90	9	80	3	65	19	58	8
	Min	-26	24	-17	8	1	3	22	3	33	14	45	6	40	14	45	22	34	21	26	*22	9	29	-15	28
Iowa City	Max.	47	20	63	6	62	23	82	23	85	22	90	23	96	*16	94	12	91	*10	81	* 4	73	19	55	22
	Min	-21	*29	-14	2	10	4	23	*16	36	15	48	7	46	2	46	8	35	15	24	27	10	30	- 7	15
Iowa Falls	Max.	38	8	43	5	59	23	74	30	87	22	88	23	93	*17	90	24	89	28	79	9	68	* 1	48	* 8
	Min	-26	* 3	-23	1	1	3	22	* 3	30	15	43	7	47	2	39	8	31	15	19	27	7	30	-11	14
Keokuk	Max.	47	19	67	6	74	21	81	23	85	24	86	23	93	30	91	21	89	28	82	9	73	19	60	22
	Min	-13	22	-11	1	4	3	28	16	43	14	54	7	54	2	53	23	42	15	32	27	16	30	- 1	28
Keosauqua	Max.	47	9	70	6	70	21	83	23	87	22	87	*13	94	30	94	12	90	10	82	9	73	19	59	22
	Min	-24	*29	-16	* 1	11	* 3	22	14	35	15	50	* 7	47	2	46	* 8	35	15	25	*27	12	30	- 4	*15
Knoxville	Max.	50	7	56	6	70	21	76	30	..	..	..	..	93	18	92	21	89	10	..	..	..	..	60	22
	Min	-17	25	-10	1	8	3	23	16	..	..	..	..	49	* 2	45	8	38	15	..	..	..	..	- 6	28
Larrabee	Max.	41	* 7	56	5	61	29	79	30	90	22	94	24	95	*16	92	24	89	9	81	* 3	69	* 1	58	8
	Min	-27	24	-17	8	- 1	3	17	16	32	14	42	7	45	1	45	22	35	21	24	27	8	30	-12	28
LeMars	Max.	48	* 7	54	5	63	9	76	30	87	22	..	..	93	16	93	14	91	9	82	3	68	1	57	8
	Min	-23	*24	-15	19	0	3	17	16	33	14	..	..	45	23	41	10	35	21	20	27	9	30	-12	28
Lenox	Max.	51	7	45	* 6	67	9	78	23	83	24	86	20	89	*17	90	*13	86	28	85	4	68	* 2	62	23
	Min	-21	25	- 7	1	6	3	22	16	35	14	48	* 6	51	* 1	47	* 8	38	15	25	27	11	30	-10	28
Leon	Max.	50	7	55	6	63	* 9	78	23	83	24	85	*19	90	*16	91	13	86	1	80	4	11	* 2	59	22
	Min	-17	26	- 3	4	8	3	24	* 3	37	14	50	7	50	2	47	8	38	15	25	27	14	*30	- 6	28
Logan	Max.	50	7	58	5	69	9	78	30	90	25	93	23	98	27	95	14	92	9	85	4	68	* 1	56	* 8
	Min	-17	25	- 8	11	5	3	22	* 3	32	10	43	27	40	23	43	*26	34	15	22	27	12	30	- 6	26
Maquoketa	Max.	45	20	59	6	58	24	80	23	86	22	87	*13	96	17	93	13	90	10	81	9	73	* 3	54	22
	Min	-22	8	-14	1	10	4	20	*16	32	15	43	* 1	39	2	38	8	30	15	20	27	10	*14	-17	14
Marshalltown	Max.	45	7	50	6	61	23	77	*23	90	22	91	23	100	17	95	24	91	10	85	4	72	* 1	52	22
	Min	-22	*26	-17	1	5	3	20	4	34	15	45	7	46	7	40	8	38	15	22	*27	10	30	- 9	* 4
Mason City	Max.	38	7	38	* 6	56	23	75	30	88	22	86	28	96	16	89	*12	87	28	75	9	67	* 1	44	8
	Min	-26	24	-14	1	2	3	23	3	35	15	46	7	50	* 1	48	* 8	37	15	27	6	10	30	- 8	28
Mount Ayr	Max.	53	7	50	23	72	21	78	30	88	24	89	23	93	*17	97	13	90	* 1	86	4	76	* 2	65	22
	Min	-18	26	- 7	1	7	3	23	16	36	14	50	* 6	51	2	48	8	40	14	26	27	13	30	- 8	28
Mount Pleasant	Max.	47	19	61	6	68	21	85	23	88	21	90	*20	97	17	92	13	89	10	82	9	72	19	57	*22
	Min	-20	29	-14	1	10	3	23	16	40	*10	49	7	50	2	47	8	38	15	26	27	11	30	- 3	28
Mount Vernon	Max.	43	7	59	6	61	23	84	30	91	20	92	*12	94	31	93	13	88	*10	80	17	73	* 8	53	23
	Min	-19	*25	-14	1	7	3	19	16	35	15	42	6	47	2	45	8	35	15	24	27	8	30	- 8	28
New Hampton	Max.	39	7	41	* 6	55	23	74	30	85	22	85	23	90	18	88	24	87	28	77	1	67	* 1	46	23
	Min	-29	24	-23	1	1	3	18	3	31	15	42	7	44	1	43	22	32	15	24	27	7	30	-11	28
Newton	Max.	47	7	47	6	58	2	76	30	..	..	..	..	..	..	..	..	..	..	..	..	68	2	52	22
	Min	-23	25	-15	1	5	3	21	* 3	..	..	..	..	..	..	..	..	..	..	..	..	10	30	- 7	28
Northwood	Max	..	..	46	28	56	23	77	27	85	22	88	23	91	17	87	4	..	..	..	..	67	19	44	9
	Min	-28	27	-19	1	0	3	22	* 3	34	15	44	7	47	2	43	22	..	..	..	..	9	30	-10	*28
Odebolt	Max.	44	7	53	5	65	* 2	79	30	89	24	92	23	96	*16	95	14	91	9	80	4	70	18	57	8
	Min	-25	24	-12	* 1	2	3	18	16	32	14	45	* 6	46	23	42	8	33	4	21	27	9	30	-11	28
Ogden	Max.	51	7	47	* 5	72	2	..	..	85	*22	86	23	92	17	91	24	88	28	83	4	70	2	58	22
	Min	-30	26	-22	1	1	3	..	..	30	14	47	6	49	* 1	46	* 8	40	15	25	*23	9	30	- 8	28
Olin	Max.	42	19	57	6	58	31	79	23	85	22	88	*24	94	16	91	13	87	28	79	9	70	19	53	23
	Min	-23	29	-14	1	9	3	22	16	33	15	45	1	47	2	42	8	32	15	26	23	10	30	-12	15
Omaha, Nebraska	Max.	54	7	60	5	74	2	73	30	88	24	90	23	93	18	93	14	89	28	87	4	70	18	61	22
	Min	-17	25	- 5	8	6	3	24	16	38	14	51	6	54	23	54	22	42	14	32	27	21	30	- 5	28
Onawa	Max.	50	7	58	5	66	9	81	30	88	24	92	23	95	16	96	*14	91	9	85	4	72	6	59	8
	Min	-16	25	- 7	8	4	3	19	16	35	14	48	6	52	* 1	49	22	41	14	29	27	12	30	- 9	28
Osage	Max.	39	7	38	* 6	51	23	76	30	87	22	86	*14	92	16	90	24	85	*17	76	9	66	* 1	41	* 8
	Min	-28	24	-20	1	1	3	21	* 3	31	15	48	8	44	2	42	8	34	15	24	27	9	30	-10	28
Osceola	Max.	42	19	55	6	70	20	80	23	87	*24	89	10	98	*17	95	14	90	1	86	4	..	..	..	..
	Min	-19	26	- 9	9	10	27	20	4	31	14	49	7	49	2	44	8	35	15	27	23	..	..	..	..
Oskaloosa	Max.	49	7	60	6	61	23	75	*23	84	22	88	23	92	17	90	*12	89	10	82	4	73	19	59	22
	Min	-23	29	-15	1	7	3	22	16	36	15	48	*14	48	2	45	* 8	35	15	25	*23	11	30	- 4	*14
Ottumwa	Max	..	..	66	6	78	23	84	23	87	*22	88	23	95	*16	95	*12	92	10	..	..	78	19	61	22
	Min	..	..	- 8	1	10	3	25	16	38	15	51	* 1	50	2	50	* 8	39	15	..	..	16	30	- 1	*14
Pacific Junction	Max.	52	7	58	5	71	9	74	*23	88	24	90	23	92	*17	93	14	91	28	87	4	69	1	63	22
	Min	-16	25	- 5	11	6	3	22	16	32	14	47	* 6	49	* 1	45	*22	38	14	22	27	12	30	- 6	28
Perry	Max.	48	7	46	5	64	2	78	30	89	24	89	*18	94	18	91	24	87	10	84	4	70	2	58	22
	Min	-23	24	-13	1	6	3	23	* 3	36	14	49	* 6	50	2	44	8	37	15	23	27	10	30	-10	13
Plover	Max.	42	9	44	5	62	23	77	30	90	22	88	23	94	16	90	*12	88	28	78	9	68	* 2	54	8
	Min	-30	25	-18	1	0	3	20	*16	33	14	44	7	47	23	41	8	34	15	24	*23	8	30	- 8	28
Primghar	Max	38	7	52	5	60	23	75	30	86	22	88	*14	90	16	89	*14	..	..	..	..	..	..	..	..
	Min	-25	24	-17	8	..	..	13	11	31	14	43	6	47	1	43	22	..	..	..	..	..	..	..	..
Red Oak	Max.	57	19	47	* 5	66	9	73	23	84	24	85	*18	89	18	88	*13	87	28	81	4	64	* 3	62	22
	Min	-14	25	- 1	11	10	3	27	16	40	*13	49	27	54	1	50	26	40	15	30	27	19	30	- 5	28
Ridgeway	Max.	41	7	46	28	59	23	83	30	93	22	94	23	99	16	94	24	90	17	80	*17	75	1	49	23
	Min	-28	*24	-20	1	0	3	19	3	35	15	48	7	48	1	50	* 8	38	15	25	27	7	30	- 8	28
Rock Rapids	Max.	40	* 7	49	5	60	*23	75	30	92	20	92	19	92	*16	90	14	88	* 9	78	* 4	70	* 3	58	8
	Min	-24	24	-15	* 8	0	3	18	17	34	14	40	7	45	23	40	20	30	21	25	6	9	30	-12	28
Rockwell City	Max.	43	* 7	47	5	60	* 2	78	*29	88	22	89	23	95	17	91	12	90	28	80	9	68	* 2	55	8
	Min	-28	24	-14	8	2	3	23	* 3	33	14	46	6	48	* 2	45	22	38	*14	25	*25	9	30	-10	28
Sac City	Max.	43	7	49	5	60	23	75	*29	86	22	89	28	94	16	91	14	89	9	78	4	70	18	64	23
	Min	-26	24	-12	* 1	3	3	21	16	34	14	46	* 6	49	* 2	44	8	37	15	24	27	10	30	-10	28
St. Charles	Max.	53	7	49	6	64	* 2	75	30	85	24	86	20	93	17	90	*13	89	28	89	4	79	18	61	22
	Min	-18	*25	- 8	1	7	3	22	16	37	14	51	7	52	2	49	8	41	15	24	27	12	30	- 6	*13
Sheldon	Max.	39	7	54	5	.	..	..	..	..	..	..	.	..	..	..	..	92	9	85	3	74	6	61	8
	Min	-27	24	-18	8	..	..	..	..	..	..	..	..	..	..	..	..	32	21	22	27	6	30	-13	28
Sibley	Max.	35	* 8	55	5	59	23	78	30	86	22	86	*19	90	*16	91	24	89	9	81	* 2	70	* 2	58	8
	Min	-28	24	-19	8	- 2	3	20	* 3	33	*10	39	7	44	23	38	22	31	21	22	*25	6	30	-12	28
Sigourney	Max.	48	7	57	6	65	21	86	24	86	28	92	20	94	17	95	13	91	10	80	4	70	* 1	..	..
	Min	-20	29	-14	1	8	3	22	16	36	15	42	7	46	2	46	8	36	15	25	27	10	30	..	..
Sioux City	Max.	46	7	58	5	67	9	75	30	88	22	88	23	94	16	96	14	92	9	84	3	70	1	60	8
	Min	-21	25	-13	8	2	3	20	16	37	14	49	6	50	* 1	46	10	40	21	30	23	15	30	-10	27
Sioux Center	Max.	40	* 7	51	5	59	9	76	30	86	22	89	*19	91	16	91	24	89	* 9	82	3	67	* 2	58	8
	Min	-25	24	-17	8	0	3	18	16	32	14	40	6	49	* 1	42	23	34	21	26	*25	9	30	-13	28
Spirit Lake	Max.	40	9	45	5	60	*23	80	30	..	..	..	..	..	..	89	24	89	9	78	16	..	..	..	..
	Min	-28	*24	-20	8	- 2	3	21	*13	..	..	..	..	..	..	44	*10	36	21	22	24	..	..	..	..
Stockport	Max.	..	..	..	..	..	..	..	..	92	7	84	*12	89	*17	89	13	88	10	81	9	75	18	59	23
	Min	..	..	..	..	..	..	..	..	38	15	54	7	56	*23	50	* 8	38	15	27	27	14	30	- 1	*15
Storm Lake	Max.	41	7	58	4	58	23	74	30	84	22	85	28	90	*16	88	14	86	9	79	4	69	2	56	8
	Min	-30	*24	-16	8	0	* 3	19	16	34	13	43	7	45	23	44	10	34	21	26	*25	10	30	-13	28

MONTHLY MAXIMUM AND MINIMUM TEMPERATURES WITH DATES FOR 1904—CONTINUED.

STATIONS.		Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
		Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp	Date.
Stuart	Max.	54	8	..	..	..	..	75	*23	88	24	93	*19	97	17	90	24	87	28	82	4	67	2	57	22
	Min.	-19	25	..	..	..	..	25	16	36	13	44	6	47	2	48	8	38	15	26	27	13	30	- 7	28
Thurman	Max.	53	7	54	5	68	9	76	23	89	24	91	23	94	18	93	14	89	28	86	4	69	1	65	23
	Min.	-20	29	- 8	4	2	14	23	14	35	14	46	14	52	* 1	44	26	37	14	22	27	10	30	- 5	*27
Tipton	Max.	45	19	59	6	60	23	78	23	88	22	89	20	96	17	94	13	90	10	80	* 9	70	* 1	54	*22
	Min.	-18	3	-10	1	11	* 3	23	16	38	15	48	7	50	2	51	* 8	39	15	27	23	12	30	- 4	28
Toledo	Max.	46	7	52	6	60	* 2	78	*23	86	22	87	23	95	17	92	*13	93	10	82	4	72	* 1	54	22
	Min.	-23	29	-18	1	7	3	20	*16	34	15	43	7	44	2	40	8	31	15	19	27	9	30	-13	15
Vinton	Max.	..	..	..	..	58	23	78	23	87	22	88	23	94	17	92	*13	91	28	81	* 4	72	* 1	50	23
	Min.	..	..	..	..	8	3	21	17	33	15	45	* 7	43	2	40	8	33	15	19	27	8	30	-18	14
Wapello	Max.	47	19	59	6	64	21	79	23	82	*20	86	*23	91	*17	88	*12	89	17	78	9	70	19	56	23
	Min.	-12	* 3	- 5	16	15	3	26	16	40	15	51	9	49	2	49	8	40	15	29	27	15	30	0	28
Washington	Max.	50	19	62	6	65	21	81	23	85	22	88	23	92	*16	92	*13	88	*10	82	9	73	3	56	22
	Min.	-20	29	-16	1	7	3	22	16	39	10	51	* 7	51	*23	48	* 8	38	15	26	27	12	30	- 4	28
Wate loo	Max.	42	7	49	29	58	23	74	30	89	22	89	23	98	17	93	24	93	28	81	* 4	75	* 2	49	* 8
	Min.	-25	29	-18	1	6	3	19	16	33	15	45	7	46	* 2	43	8	33	15	23	27	10	30	-14	14
Wankee	Max.	49	7	50	5	67	2	80	30	90	24	91	23	97	*17	97	13	93	10	96	4	80	18	59	7
	Min.	-19	26	- 7	19	6	3	21	*14	35	14	50	6	52	* 1	45	* 8	38	15	24	27	10	30	-12	13
Waverly	Max.	39	7	43	6	58	23	73	*23	87	22	86	23	93	17	90	24	89	28	79	9	70	1	47	22
	Min.	-27	27	-22	1	4	3	21	* 3	32	15	46	7	48	2	41	8	37	15	23	27	10	30	-11	14
West Bend	Max.	42	7	46	5	60	23	76	30	86	22	87	19	92	*16	88	*12	87	28	77	9	68	2	54	8
	Min.	-29	24	-19	1	0	3	20	16	33	14	42	7	44	23	42	8	34	21	22	27	7	30	- 8	28
Whitten	Max.	43	7	46	6	61	2	75	30	89	22	90	18	94	*16	90	*12	89	28	79	9	68	* 2	46	22
	Min.	-28	26	-22	1	2	3	19	16	34	*10	47	22	48	* 1	42	8	38	12	21	27	9	30	-10	13
Wilton Junction	Max.	47	18	60	6	61	21	75	29	87	22	90	*20	96	17	93	*12	94	11	84	9	70	* 3	55	23
	Min.	-18	* 3	-13	1	11	3	21	16	33	15	46	8	48	2	43	8	32	12	24	27	10	30	- 6	15
Winterset	Max.	52	* 8	45	23	68	9	79	29	90	20	..	..	95	18	95	13	90	28	90	4	79	6	..	..
	Min.	-19	25	- 7	11	7	3	21	4	38	14	.	..	48	1	46	8	41	15	20	27	9	30	..	..
Zearing	Max.	..	..	..	..	..	..	79	30	85	22	86	23	93	18	91	24	89	28	83	4	71	2	51	8
	Min.	..	..	..	..	..	..	20	16	34	10	46	7	47	2	42	8	38	15	21	27	7	30	- 8	15

*And Other dates.

MONTHLY AND ANNUAL MEAN TEMPERATURES FOR 1904, WITH DEPARTURES.

STATIONS.	Jan.		Feb.		March.		April.		May.		June.		July.		August.		Sept.		October.		Nov.		Dec.		Annual	
	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.
Afton	18.2	- 5.2	18.7	- 3.1	....	.....	45.4	- 5.9	61.2	- 1.9	69.5	- 2.1	72.6	- 3.5	71.0	- 2.9	65.2	* 0.1	....	.....	42.8	* 6.9	25 6	* 0.8	....	....
Albia	15.8	.....	16.2	.....	35.5	.....	43.3	. . .	59.1	.....	67.4	.....	70.2	.....	69.9	.....	65.2	.....	53.7	.	43.6	.....	23.5	.....	47.0	.
Algona	10.6	- 5.9	9.2	- 7.8	31.9	+ 1.9	42.9	- 5.4	58.7	- 0.8	65.6	- 4.1	69.4	- 4.3	67.5	- 3.6	61.6	- 0.9	50.4	- 0.2	38.5	* 6.6	19 6	- 0.7	43.8	- 2.1
Allerton	18.8	.....	19.8	.	37.6	.....	45 6	.....	60 0	. . .	68.4	. . .	71.1	.	71.2	.....	65.2	.....	55.4	.....	43.4	.	26.4	.	48.6	.....
Alta	11 1	- 5.7	11.6	- 7.6	31.9	+ 2.5	41.6	- 6.0	58.1	- 0.5	64.8	- 3.7	69.4	- 3.3	67.6	- 3.2	61.4	- 1.8	50.6	- 0 2	40.0	* 8.4	21.6	* 0.8	44 1	- 1.7
Amana	15.4	- 0.4	16.4	- 3.6	35.6	+ 4.2	45.0	- 3.7	60.2	- 0.2	67.8	- 1.9	70 8	- 3.2	68 8	- 2.0	64.5	* 1.8	52.6	* 3.0	40.2	* 7.0	23.4	* 1.4	46.7	* 0.2
Ames	14.0	- 3.1	14.9	- 6.7	35.0	+ 2.5	45 0	- 4.1	60.0	+ 0.4	67.4	- 2.6	70 2	- 4.8	69.0	- 3.2	64.5	* 1.1	53.6	* 2.7	41.3	* 8 1	22.2	* 0.4	46.4	- 0.8
Atlantic	17.6	- 2.6	17.9	- 2.8	36.4	+ 2.9	44.4	- 4.9	59.7	+ 0.1	67.1	- 2.6	70.5	- 3.2	69.8	- 1.1	64.0	* 4.9	52.4	* 0.4	40.4	* 5.9	24.8	* 2.3	47.1	- 0.0
Audubon	14.0	- 5.4	14.5	- 4.7	34.5	+ 1.9	43.7	- 6 2	59.2	- 1.1	65.6	- 3.2	69.8	- 3.1	69.8	- 2.1	63.6	* 0.2	53 0	* 1.8	39.6	* 5.1	23.2	* 0.1	45.9	- 1 4
Baxter	14.7	.....	15.4	....	35.4	.....	44.4	.....	59.8	....	67.2	.....	70.4	.....	68.5	.....	64.2	....	53.0	.....	40.7	.....	23.4	.....	46.4	.....
Bedford	19.0	.....	20.2	.	38.0	.....	45 0	.....	59.6	.....	67 0	.....	70 4	.....	70 2	.....	65.6	.....	55 9	.....	41.8	.....	26.4	.	48.3	.....
Belknap	....	... .	19.0	- 2 5	36.8	+ 0.5	45.6	- 7.0	61.9	- 1 0	68.4	- 2.6	71.9	- 3 6	71,8	- 2.2	68.6	* 1.9	58.4	* 2.8	....	.	...	.	....	.....
Belle Plaine	14.1	- 4.3	14 2	- 6 4	33.2	+ 0.7	42.9	- 2.8	58.4	- 0.9	67.3	- 2.5	69.4	- 4.2	68.4	- 2.2	63.4	- 0.3	52.3	* 1.7	39.3	* 4.9	21.4	- 2.6	45.4	- 1.6
Bonaparte	16.6	- 7.0	18.8	- 4.1	36.9	- 0.3	46.0	- 5.8	60.6	- 2.3	67.4	- 5 0	71.4	- 5.0	69.4	- 5.5	66.0	- 1.7	54.6	- 1.1	42.4	* 4.2	26.6	- 1.2	48.1	- 2.9
Britt	8.9	- 8.8	10.2	- 6.8	32.4	+ 3.6	42.2	- 4.6	57.6	- 1.5	66.4	- 1.4	69.4	- 3.5	66.6	- 3.4	61.4	- 0.2	50 9	- 0.8	37.8	* 4.7	19.8	* 2.7	43 6	- 1.7
Burlington	18.7	.....	21.0	.....	38.6	.....	47 2	....	62.4	.....	68.4	.....	73.4	.....	71.0	....	67.3	...	55.8	...	43.8	.	28.1	.	49.6	.....
Carroll	13.0	- 6.6	14.6	- 4.4	34.4	+ 2.9	43.0	- 6.0	58.7	- 0.8	65.6	- 3 9	70.6	- 3.3	68.8	- 2.4	63.4	* 0.3	52.7	* 1.4	41.6	* 8.4	22.9	- 0.1	45.8	- 1.2
Cedar Rapids	12.8	- 5.5	14.2	- 6.3	34 0	+ 1.2	44.5	- 3.9	60.9	+ 0.9	68 9	- 1.8	72 6	- 3 2	70.1	- 2.6	65.0	* 1.4	52.8	* 1.3	39.6	* 3.8	21.8	- 3.5	46.4	- 1.6
Chariton	17.4	- 8.0	19.2	- 3.0	36.4	+ 0.7	45.0	- 6.7	59.1	- 3.6	67.2	- 3.2	70.2	- 4.9	69.6	- 4 1	65.4	- 0.2	54.8	† 0.0	43.1	* 4.5	25 8	† 0.2	47.8	- 2.4
Charles City	6.6	- 9.9	8 2	- 9.6	31.2	- 0.1	42.0	- 6.7	57.6	- 2.3	65.2	- 4.3	68.2	- 5.8	65.4	- 6.6	60.6	- 3.5	49 4	- 2.2	38.2	* 5.2	18.6	- 2.4	42.6	- 4.0
Clarinda	17.8	- 4.9	19.3	- 3.7	36.0	+ 0.8	44.8	- 7.2	59 6	- 2.1	68.1	- 3.7	72.0	- 4.3	71.2	- 3.2	65.0	- 1.0	54.4	- 0.2	42.2	* 4 8	24.0	- 2.5	47.9	- 2.3
Clear Lake	9.8	.....	9.8	.....	31.8	.....	43.4	.....	60.8	.....	68.4	.....	71.2	.....	68 4	.....	62.8	.....	51.0	.....	38.4	.....	20.8	.....	44.7	.....
Clinton	15.0	- 4.2	16 2	- 5.8	36.2	+ 3.4	44.8	- 3.8	61.0	+ 0.1	69.2	- 0.7	71.4	- 2.6	68.0	- 3.2	64.0	* 0.9	51 8	* 1.4	38.9	* 3.4	24.1	- 1.0	46.7	- 1.0
College Springs	19.6	- 4.6	20.7	- 3.1	37.8	+ 1.7	46.8	- 3.9	62 0	+ 0.6	69.5	- 2 0	73 4	- 2.0	73.3	- 0.9	66.9	- 0.2	56.6	- 1.1	44.0	* 5.6	27.4	* 0.4	49.8	- 0.8
Columbus Junction	17.6	.....	19.0	.	36.0	.....	45 2	.....	60.6	.	68.3	.	71.6	.....	69.1	.....	65.2	.	53.1	.....	42.4	.	26.1	.....	47.8	.....
Corning	17.6	- 4.7	18.6	- 3.6	36.4	+ 0.7	44.2	- 6.5	59.2	- 1.3	66.7	- 3.7	70.1	- 4.4	69.4	- 3.4	64.8	- 0.3	54.6	* 0.6	....	.....	24.3	- 2.9	...	.....
Corydon	17.2	- 4.3	18.4	- 3.4	35.8	- 0.3	45.0	- 6.0	60.3	- 1.5	68.0	- 2.8	71.6	- 4.2	71 4	- 2.9	66.8	* 0.3	56.4	* 1.3	44.3	* 6.2	26.6	* 0.8	48.6	- 1.4
Cresco	10.0	- 1.0	11.2	- 3.9	27.0	+ 0.3	40.6	- 4.1	59.6	+ 2.9	65.4	+ 3.2	66 5	- 4.6	66 2	- 5.0	60 8	- 0.8	52.2	* 4.6	....	.	19.8	* 1.6	....	...
Davenport	16.4	- 3 6	17.2	- 8.1	36.0	+ 1.1	45 6	- 4.1	61.4	+ 0.7	69.0	- 1.9	72.9	- 2.1	70.0	- 2.8	65.6	* 0.9	54.4	* 2 3	42.3	+ 5.5	26.7	- 1.1	48.1	- 1.1
Decorah	8.4	- 8 4	10.7	- 4.3	31.6	+ 1.3	43.4	- 5 3	59.1	- 1.1	65 7	- 2.1	67.9	- 4.7	66.7	- 3.8	61.9	† 0.0	51.6	* 0.9	38.8	* 6.5	21.2	* 0.8	43.9	- 1.7
Delaware	11.2	- 4.6	11.6	- 4.6	32.0	† 1.7	42.4	- 3.6	58.6	- 0.1	66.0	- 2.6	69.0	- 3.6	66.9	- 2.9	62.6	* 1.2	50.4	* 1.4	38.2	* 6.2	20.1	- 1.1	44.1	- 1.0
Denison	14.6	- 6.5	16.8	- 1.8	35.0	+ 3.1	42.6	- 6.7	59.4	- 1.2	66.2	- 2.7	71.8	- 2.0	69.7	- 2.4	64 2	* 0.8	53 3	* 2.5	40.8	* 6.4	24.4	* 2.5	46.6	- 0.7
Des Moines	15.6	- 1.9	16.7	- 6.4	36.2	* 1.5	45.4	- 5.1	60.6	* 0.2	68.4	- 1.7	71.6	- 2.9	70 2	- 1.8	65.2	* 1 1	54.6	* 2.4	42.9	* 6.5	25.8	- 1.5	47.7	- 0.8
De Soto	.....		17.6	.....	36.8	.....	45.4	....	60.8	.....	67.2	.....	70.7	.....	70.0	. .	66.0	.	54 9	.....	43.8	....	25.2	.	...	.....
Dows	10.3	- 9.0	10 8	- 4.6	32.6	* 2.7	42.6	- 5.8	57.8	- 1.9	65.0	- 2.7	69.1	- 3.9	66 4	- 3.6	62.4	* 0.8	51.3	- 1.3	38.8	* 5.1	20.8	* 1.0	44.0	- 1.9
Dubuque	13.4	- 3.9	14.4	- 8.2	33.8	* 0.9	44.4	- 4.2	60.2	- 0.8	67.5	- 2.0	71.2	- 3.1	68.8	- 2.8	64.2	* 1.0	52.8	* 2.2	41.2	* 6.2	23.4	- 2,5	46.3	- 1.8
Earlham	14.0	.....	15.2	.....	34.3	.	41.4	.	56.8	.....	64.1	.....	67.9	.	67.2	.....	62.4	.....	52.8	.	40.2	.....	22.5	.....	44.9	.....
Elkader	10.2	- 4.2	12.0	- 6.1	33.0	* 2.2	43.8	- 4.4	60.2	- 0.7	67.2	- 2.3	71.0	- 3.0	68.5	- 2.3	64.5	† 2.5	51.8	* 2.3	38.7	* 6.1	20.6	- 1.0	45.1	- 0.9
Estherville	7.5	- 8.8	7.2	- 8.8	30.0	* 2.9	40.9	- 7.4	56.8	- 1.9	63.8	- 4.8	67.2	- 5.5	66.6	- 4.4	60.4	- 0.5	49.2	* 0.1	39.2	*10.1	18.8	* 2.4	42.3	- 2.2
.....	....	....	....	....	. .	. .	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Forest City	8.7	- 9.5	7.4	- 7.6	31.3	* 2 9	42.4	- 5.6	58 2	- 1.4	65.4	- 2.7	69.2	- 3.7	66.0	- 4.8	60.8	- 1.5	51.0	* 0.5	38.4	* 7.2	18 2	- 1.2	43.1	- 2 8
Fort Dodge	12.4	.....	13.4	.....	34.2	.....	42.4	....	59.0	.....	66.0	.	70 6	.....	67 9	.....	62.2	.....	51 5	.....	40.6	.	20.6	.....	45.1	.....
Galva	11.8	- 6.7	12.6	- 5.2	30.8	- 1.7	41.4	- 7.9	58.3	- 2.4	66.6	- 2.4	70.0	- 4.0	67.8	- 3.6	60.9	- 3.6	....	.....	36.7	* 4.5	22.8	* 1.2	....	.....
Glenwood	20.7	- 2.0	20.0	- 3.2	38.6	* 2.6	46.5	- 7.0	61.0	- 0.9	68.0	- 5.0	70.8	- 6.2	70.4	- 3.7	66.1	- 1.8	56.2	* 0.3	45.0	* 6.4	28.4	- 0.7	49.3	- 1.8
Grand Meadow	10.0	- 5.9	11.4	- 5.6	32.2	* 2.0	42.2	- 5.3	58.0	- 0.2	65.2	- 1.8	68.0	- 3.0	66.2	- 2.8	62.4	* 0.7	50.8	* 0.8	39.4	* 7.2	19.0	- 2.5	43.7	- 1.4
Greene	....	.....	....	....	....	.....	....	.....	59.2	- 1.4	66.6	- 2.8	70.0	- 5.1	67.8	- 4.6	62.7	- 1.4	51.6	- 2.0	39 6	* 4.4	20.3	* 1.5	...	.....
Greenfield	16.8	- 4.9	16.8	- 4.5	35.6	* 1.7	44.6	- 6.0	60.0	- 0.5	67.7	- 2.9	71.0	- 3.6	69.6	- 3.0	65.0	- 0.8	54.1	* 0 5	42 1	* 6 2	24.6	* 0.1	47.3	- 1.5
Grinnell	14.9	- 2.6	15.3	- 5.8	34.8	* 2.1	44.6	- 5.8	59.8	- 0.4	...	.....	.	....	.....		65 8	* 2.4	53.6	* 1.3	41.4	* 5.6	24.2	‡ 0.0	....	.....
Grundy Center	12.6	- 4.3	13.0	- 4.6	30.9	- 0.6	43.8	- 3.9	58.9	* 0.2	65.6	- 3.5	69.7	- 2.5	67 8	- 2,9	63.8	* 0.9	52.8	* 1.4	40.7	* 7.9	21.5	- 0.7	45.1	- 1.0
Guthrie Center	18.5	- 3.5	18.4	- 1.5	38.6	* 5.0	47.3	- 2.8	60.7	- 0.3	67.6	- 2.0	71.6	- 2.4	70.0	- 2.4	65.2	* 1.7	54.0	* 1.5	41.9	* 5.3	24.8	* 3.5	48.2	* 0.2
Hampton	10.8	- 4.7	11.9	- 5.6	33.1	* 4.5	44.2	- 3.4	59.6	* 1.2	66.2	- 2.0	71.0	- 1.7	69.4	- 0.8	64.2	* 1.9	53.2	* 2.6	41.4	* 9.3	21.4	* 0.5	45.5	* 0.1
Hanlontown	8.7	. . .	8.4	.....	30.9	.....	41.6	.....	56.8	.....	63.8	.....	67.5	.....	65.4	... .	60.9	.....	50.0	.....	38.5	... .	19.6	.....	42.7	.....
Harlan	16.5	.....	17.0	.....	35.8	.....	43.6	.....	59.9	.....	67.4	.....	71.0	... .	69 0	.....	63.6	....	53.0	.	39.4	.....	23.5	.....	46.6	.....
Hopeville	18.0	- 3.8	18.3	- 3.6	36.6	* 2.3	45.0	- 5.2	59.8	- 0.6	67.9	- 2.6	71.2	- 3.2	71.0	- 2.1	66.0	- 0.6	55.1	* 0.5	43.3	* 7.8	25.3	* 0.2	48.1	- 0.9
Humboldt	11 5	- 6.0	13.6	- 3.8	34.2	* 4.5	43.7	- 5.4	59.6	- 0.7	66.6	- 3.4	69.8	- 4.1	68.2	* 1.3	63.2	* 0,9	52.3	* 2.6	40.0	* 6.5	23.0	* 0.2	45.5	- 0.6
Ida Grove	14.5	. . .	13.7	.	33.8	. . .	43.2	.....	60.9	.....	68 4	. . .	72.2	....	69.6	.....	64.1	.....	52.2	. .	38.3	.....	....	....	...	.....
Independence	10.4	- 4.3	9.8	-12.0	....	.....	42.7	- 4.5	57.8	- 1.9	65.2	- 3.9	67.9	- 5.5	67.6	- 2.6	62.6	* 1.3	51.5	* 3.3	39.0	* 5.8	19.8	- 1.9	....	.....
Indianola	16.8	- 2.2	17.2	- 5.3	36.3	- 1.7	45.4	- 6.3	60.6	- 0.3	68.3	- 2.1	71.9	- 3.7	70 2	- 2.5	66.2	* 0.6	54.0	- 0.2	43.1	* 1.5	25.8	* 0.6	48.0	- 1.8
Inwood	11.2	.....	11.0	.	32.3	.....	42.3	.....	57.4	.....	65.5	.	69.4	.....	68.3	.....	60.5	.....	50.6	.....	38.4	.....	21.0	....	44.0	. ..
Iowa City	13.7	- 5.4	13.8	- 9.1	35.2	* 1.6	44.3	- 2.0	61.0	* 0.7	68.8	- 0.5	71.6	- 2.6	69.4	- 2,2	64.3	* 0.9	53.2	* 2.1	39.4	* 3.9	22.4	- 1.7	46.4	- 1.2
Iowa Falls	9.6	- 5.8	10.7	- 4.6	32.4	* 1.6	42.6	- 4.9	57.5	- 2.2	65.4	- 3.1	68.9	- 4.1	65.8	- 4.4	61.6	‡ 0.0	50.4	* 0.1	37.8	* 5.6	20.4	- 0.1	43.6	- 1.8
Keokuk	18.6	- 4.6	21.6	- 6.7	38.6	* 1.0	47.0	- 5.0	62.4	- 0.2	69.7	- 2.8	74 0	- 2.9	71.9	- 2.6	67 2	* 0.8	56.5	* 2.4	44.8	* 6.0	29.9	* 0.1	50.2	- 1.2
Keosauqua	14 8	- 9.0	17.3	- 6.8	36.8	- 1.2	45 4	- 7.4	61.2	- 2.0	69.0	- 4.0	72.2	- 4.6	70.2	- 4.7	65.2	- 2.2	53.5	- 2.6	39.8	* 0.5	24.7	- 2.8	47.5	- 3.9
Larrabee	11.9	- 6.0	11.9	- 6.3	33.4	* 4.2	42.6	- 5.5	58 9	* 0.4	67.2	- 1.7	71.8	- 1.2	69.0	- 2.2	62.0	- 1.1	51.8	* 1.3	38.8	* 6.9	21.6	- 0.3	45.1	- 1.0
Le Mars	14.3	- 6.7	13.6	- 3.7	34.2	* 2.4	42.7	- 7.0	58.7	- 1.9	....	.....	69.6	- 4.3	69.2	- 2.8	62.0	- 0.9	51.1	* 1.4	38.6	* 5.2	23.0	* 1.5	..	.....
Lenox	17.6	- 7.3	18.4	- 3.6	36.6	* 1.7	44.8	- 6.4	59.5	- 2.6	67.0	- 3.2	70.5	- 4 2	69.9	- 3.3	65.2	- 0.1	54.6	* 0.3	42.2	* 4.8	24.9	* 0.7	47.6	- 1.9
Leon	19.2	.....	20.0	.....	36.6	.....	45.6	.....	61.0	.....	68.4	.....	71.6	... .	71.2	.....	65.8	.....	54.4	.....	43.5	.	26.4	.....	48 6	.....
Logan	17.4	- 1.8	19.0	- 4.6	37.4	* 3.3	46.0	- 4.0	60.8	- 0.4	68.9	- 1.2	71.6	- 3.4	71.2	- 1.3	65.5	* 1.5	53.5	* 1.2	40.5	* 4.9	25.4	* 0.5	48 1	- 0.4
Maquoketa	11.8	- 8.3	12.1	- 9.5	36.3	* 2.3	43.3	- 5.6	58.8	- 2.3	66.2	- 3.8	69.6	- 5.5	66.8	- 5.1	62.0	- 1 8	51.0	- 3.4	37.4	- 3.4	21.3	- 3.8	44.7	- 4.2
Marshalltown	13.1	- 7.0	13.1	- 6.9	34.0	* 1.8	43.7	- 5.9	59.6	- 0.5	67.6	- 1.8	71.4	- 2.4	69.0	- 3.0	63.4	- 0.8	52.1	- 0.9	39.6	* 3.9	20.0	- 5.5	45.6	- 2.4
Mason City	11.2	- 4.0	11.5	- 3.4	32.8	* 4.9	43.2	- 6.2	59.3	* 0.3	66.3	- 1.3	70.4	- 1.0	68.2	- 1.4	62.6	- 0.4	51.0	* 1.6	39.8	*10.4	21.2	* 0.8	44.8	‡ 0.0
Mt. Ayr	19.4	- 4.5	20.2	- 1,6	38.0	* 2.5	46.2	- 5.3	61.2	- 1,2	69.0	- 1.7	72.2	- 3.5	72.8	- 1.0	67.0	* 0.3	56.8	* 1.5	45.4	* 7.5	26.8	* 2.2	49.6	- 0.4
Mt. Pleasant	17 4	- 0 6	19.4	- 4.4	37.4	* 2.9	46.0	- 5.1	61.8	* 0.4	69.2	- 1.9	73.8	- 1.5	70.6	- 1.8	66.1	* 2.5	54.0	* 3.4	41.8	* 7.1	26.3	* 0.5	48 6	- 0.1
Mt. Vernon	14.0	- 2.7	15.2	- 6.4	34.4	* 4.5	46.6	* 0.1	61 1	* 1.7	68.6	- 0.8	71.9	- 1.5	70.1	- 0 1	64.7	* 3.0	52.8	* 5.5	40.7	* 7.5	22.8	- 1 3	46.9	* 0.8
New Hampton	7.8	-12.5	9,9	- 4.0	30.4	- 0.2	41.5	- 7.1	57.0	- 2.3	64.0	- 4 6	66.8	- 6.6	65.0	- 5.7	60.2	- 2.4	50.6	- 2.9	39.0	* 4.2	20.6	* 2.7	42.7	- 3.4
Odebolt	13.8	- 8.8	15.1	- 2.5	34.8	* 1.8	43.5	- 6.2	60.4	- 1.5	67.4	- 3.4	78.0	- 3.1	70.0	- 4.6	63.8	* 0 7	52.5	- 2.9	40 2	* 4.2	24.3	* 2.7	46.5	-12.0
Ogden	11.8	- 9.7	11.5	- 7.9	33.8	* 0.1	.....		59.2	- 2.2	66.4	- 3.2	70.0	- 4.9	68 8	- 4,2	63.6	- 1.1	53.4	‡ 0.0	40.8	* 5.6	24.3	* 1.1	....	- 2.0
Olin	14.0	- 8.6	15.2	* 0.9	34.9	* 1.9	44.0	- 2.7	59.4	- 1.6	68.6	- 1.0	71.0	- 3.8	68.0	- 2.8	63.6	* 2.1	52.4	* 0.5	39.6	* 2.7	22.8	* 0.0	46.1	- 1.0
Omaha, Nebraska	19.8	* 0.6	19.8	- 5.2	38.2	* 2.7	45.8	- 5.2	62.0	* 0.3	69.1	- 2.4	73.1	- 3.1	72.4	- 1.3	66 3	* 1.5	56.6	* 3.7	44.8	* 8.2	27.5	* 0.8	49.6	‡ 0.0
Onawa	18.3	.....	19 0	.....	37.1	.....	45.8	.....	62.4	.....	69.4	.....	73.6	.....	72.8	.....	66.3	.....	55.7	.....	42.2	.....	25.3	.....	49.0	.....
Osage	9.6	- 4.4	10.0	- 4.4	31.6	* 4.2	42.3	- 3.2	58.0	* 0.9	65.4	- 1.0	68.6	- 2.4	67.6	* 0.1	61.1	* 1.7	49.8	* 2.9	38.4	* 9.2	19.4	* 0.3	43.5	* 0.8
Osceola	17.0	- 5.1	20.8	* 0.3	38.6	* 4.8	45.4	- 5.4	59.9	- 2.4	68.3	- 2.4	71.2	- 4.7	71.1	- 3.1	65.2	* 0.1	57.4	* 2.8	...	.....	....	.....	.....	.....
Oskaloosa	15.6	- 3.4	16.8	- 4.5	36.1	* 1.9	45.8	- 4.5	60.2	- 0.2	67.8	- 2.1	70.2	- 5.2	69.8	- 2.0	65 4	* 1.0	54.9	* 3.0	42.0	* 5.3	25.1	- 0.7	47.5	- 1.0
Ottumwa	....	.....	19.6	- 3.3	38.6	* 1.0	47.8	- 5.0	62.0	- 1.8	69.2	- 3.2	73.9	- 2.9	72 9	- 2.1	68.2	* 1.6	....	.....	44.6	* 5.4	27.2	- 0.2	....	.....
Pacific Junction	18.7	.....	19.5	.....	37 6	....	44.7	.....	60.9	.....	68.3	.....	71.5	.	70.6	.....	66.4	.....	55.2	.....	40.6	. .	25.6	.....	48.3	.....
Perry	14.4	.....	15.4	.....	35.4	. . .	45.0	.....	61.1	.....	68.4	.....	71.6	.....	70.0	.....	63.8	.....	53.4	.....	41.2	.....	24.0	.....	47.0	.....
Plover	9.9	-11.1	10.0	- 6.7	32.8	* 2.4	41.6	- 6.6	59.1	- 1.3	65.6	- 3.0	69.8	- 4.7	67.7	- 3.3	62.2	- 1.2	50.8	- 1.5	38.6	* 4.8	20.6	- 0.3	44.1	- 2.6
Red Oak	21.6	- 4.5	21.2	- 1.6	38.1	* 1.3	45.4	- 6.4	61.3	- 1.8	69.0	- 3.6	72 2	- 4.3	72 1	- 2.6	66.8	† 0.1	56.2	- 1.1	42.2	* 0.6	28.2	* 3.4	49.5	- 1.7
Ridgeway	11.3	-11.0	13.0	- 4.1	33.2	* 1.8	44.8	- 3.8	62.4	* 1.8	68 7	- 0.5	71.2	- 5.4	69 7	- 3.1	63.7	* 1 5	51.8	- 2.1	41.7	* 4.5	22.7	* 1.5	46.2	- 1.6
Rock Rapids	11.0	- 3.8	12.0	- 5 0	33.0	* 3.2	43.2	- 5 4	60.2	* 3.0	67.8	- 1.1	69.4	- 3.4	67.6	- 2.2	60.1	- 2.9	51.0	* 3.5	41.4	*13.4	21.2	* 1.5	44.8	* 0.1
Rockwell City	12.8	- 8.4	13.5	- 3.3	34 0	* 2.6	43.8	- 4,4	59.8	- 0.8	67.4	- 1.5	71.5	- 2.4	68 2	- 3.2	62.2	- 2.0	52.0	- 0.7	41.0	* 7.0	23.2	* 2.3	45.8	* 1.2
Sac City	13.2	- 3.3	13.7	- 3,9	33.4	* 3.6	43.2	- 5.0	59.8	* 2.1	66.4	- 2.2	70.4	- 2 9	69.3	- 0 7	63.7	* 2.1	52.8	* 2 4	41.4	* 8.9	27.5	* 4.1	46.2	* 0.4
St. Charles	17.7	.....	18.1	.....	36.8	.....	45.6	.....	60.4	.....	67.7	.	71.4	.....	70.8	.....	66.4	. .	56.2	....	45.8	....	26.9	.....	48.6	....
Sibley	7.5	- 9.1	8.6	- 6.8	30.4	* 0 8	40.2	- 7.8	56.4	- 2.2	63 7	- 3.4	66.8	- 4.5	65.0	- 4.1	59.0	- 2.2	51.1	* 0.2	38.0	† 7.1	18.4	- 0.7	42.1	- 2.7
Sigourney	16.8	- 7.3	18.4	- 3.0	37.8	* 1.9	46.6	- 5.6	61.6	- 2.6	68.7	- 3.6	71.7	- 5.9	70.8	- 3.4	65.6	* 0.5	54.0	- 1.4	41.4	* 2.6	....	.....

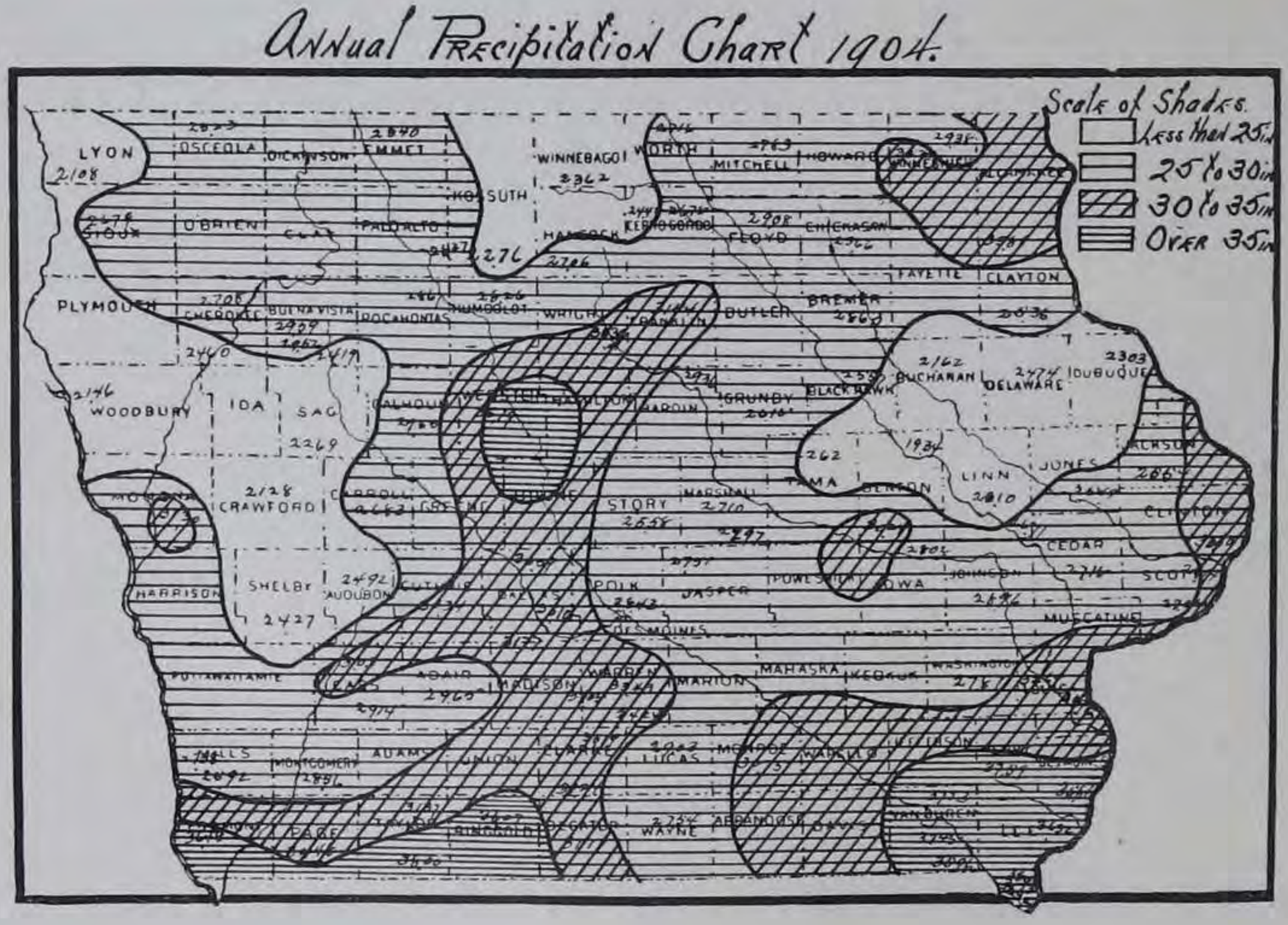
MONTHLY AND ANNUAL PRECIPITATION FOR 1904, WITH DEPARTURES FROM NORMAL.

STATIONS.	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Annual.	
	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.
Afton	2.02	+1.21	0.15	- .89	....	.....	5.61	+1.94	4.20	- .51	2.55	-1.75	4 22	- .58	4.66	*1.15	2.80	-1.07	.85	-2.11	T	-1.11	2.80	*1.02	.....	.....
Albia	3.01	.....	0.26	.....	2 55	.....	5.26	.....	2.61	.....	1.67	.....	4.65	.....	8.73	.....	5.55	.....	.21	.....	.08	.....	1.17	.....	30.75	.....
Algona	0.40	+ .10	0.28	-1.02	1.34	- .22	2.14	- .42	3.06	- .39	3.71	- .68	8.75	* .08	2.95	- .76	2.07	-1.09	1.47	- .63	.32	- .94	1.27	* .22	22.76	- 5.75
Allerton	2.60	.....	0.26	.....	3.13	.	4.74	.....	3.51	.....	2.30	.....	4.77	.....	3.90	.	.....	.....	.52	.....	.06	.....	1.23	.....	.....	.....
Alta	0.37	- .28	0.76	+ .01	1.50	- .32	4.44	+1.20	6.89	+2.17	3.63	-2.03	3.12	-1.59	4.92	*1.08	1.17	-1.50	2.46	* .29	.31	- .86	.52	- .51	29.59	- 2.34
Alta (near)	0 50	.....	0.55	.	1.31	.....	4.06	.....	6.34	.....	3.20	.	3.96	. .	4.96		1.69	.	2.45	.....	.10	.....	.40		29.52	.....
Amana	1.73	+ .29	0.70	- .57	2.83	+ .83	4.22	+1.34	3.88	- .58	0.59	-3.90	6.64	*2.44	2.88	- .70	1.74	-1.62	1.00	-1.74	.19	-1.56	1.62	* .13	28.02	- 5.64
Ames	0.50	- .47	0.40	- .44	1.63	+ .15	4.19	+1 44	3.69	- .54	3.45	-1.30	2 39	-2.19	3.37	- .17	3.37	- .16	1.78	- 74	.02	-1.08	.79	- .23	25.58	- 5.78
Atlantic	1.36	+ .60	0.19	- .77	2.23	+ .27	4 35	+1 31	4 20	+ .03	3.84	-1.84	5.47	*1.12	3.80	* .74	3.06	* .39	1.40	-1.24	08	- .78	1.05	- .33	31.03	- .50
Audubon	0.33	- .33	0.15	- 65	0.81	- .97	3.44	+1.52	3.42	- .50	4.02	+ .25	4.98	*1.06	3.11	- .84	2.22	- .84	1.82	- .41	.17	-1.31	.45	- .80	24.92	- 3.82
Baxter	1.35	.....	0.34	.....	1.91	.....	5.03	.....	3.37	.....	1.25	.....	6.70	.....	2.23	.....	2.45	.....	1.40	.....	.08	.....	1.40	.....	27.51	.....
Bedford	2.87	.....	0.22	.....	4.57	.....	5.62	.....	4.50	.....	2.71	.....	5.36	....	6.39	.....	4.40	.....	.58	.....	08	.....	.70	.....	38.00	.....
Belknap	2 57	+ .79	0.50	-1.05	3.72	+1.69	4.51	+1.53	3.59	- .37	4.80	+ .72	4.28	- .38	4 25	- .41	5 61	*1.47	.....	.....	.....	.....	.....	.....	.....	.....
Belle Plaine	3.42	+1.90	1.26	- .04	3 36	+ .76	3.14	- .47	3 41	-1.03	1.55	-2.68	3.99	* .35	2.68	-1.68	2.53	- .37	1.55	- .73	.20	-1.63	3.15	*1.66	30.24	- 3.96
Bonaparte	2.61	+1.04	0 23	-1.01	2.73	+ .05	3.36	+ .03	4.17	+ .14	4.41	+ .07	4.43	* .83	4.40	* .57	6.73	*2.72	.14	-1.68	.50	-1.50	2.25	* .80	35.96	* 2.06
Britt	0.46	- .13	0.55	- .42	1.63	+ .29	8 05	+ .98	3.62	- .07	4 69	+ .21	4.74	* .42	2 39	-1 28	3.19	- .86	1.65	- .53	.26	- .72	.83	.04	27.06	- 2.07
Buckingham	0.75	.....	0.47	...	2.46	.....	3.28	.....	2.74	.. .	0.80	.....	3 70	.....	2.30	.....	2.12	.....	1.83	.....	.18	.. .	1.99	....	22.62	.....
Burlington	3.10		0.34	.....	3.05		3.28	.....	3.70	.	4.05	.....	5.19	.....	6.08	.....	3 98	.....	.43	.....	.13	....	2.48	.....	35 81	.....
Carroll	0.50	- .36	0.70	- .38	0.96	-1.39	3 43	- .09	3.27	-1.14	5.61	+ .78	3.92	* .02	3.16	- .61	1 66	-1.46	1 99	- .27	.18	- .97	1.45	* .37	26.83	- 5.50
Cedar Rapids	1.01	- .43	0.11	-1.44	2.07	- .11	1.85	-1.13	3.36	-1.16	2.64	-1.28	5.62	*1.75	2.54	- .71	1.02	-1.87	1.04	-1.55	.09	-1 33	1.75	* .14	23.10	- 9.12
Chariton	2.15	+1.04	0.02	-1.02	3.23	+1.73	4.66	+1.17	2.80	-1.41	8.40	- .87	5.14	-1.10	3.32	* .42	2.66	-1.07	.45	-2.37	T	-1.41	1.20	- .32	29.03	- 5.27
Charles City	0.44	- .55	0.57	- .52	1.67	- .18	1.95	- .59	3.58	- .47	5.96	+ .83	4.75	* .83	2.42	- .42	3.31	* .12	1.94	- .45	.25	-1.25	2.24	* .88	29 08	- 1.77
Clarinda	2.12	+ .15	0.14	- .88	2.83	+ .93	4 89	+1.58	4.11	- .68	4.86	- .25	7.28	*2.60	4.17	* .46	1.39	-1.17	1.72	-1.07	.09	- .94	.88	- .36	34.48	* 1.37
Clear Lake	0.62	.....	0.60	. .	1.20	. ...	2.15	.....	1.50	.....	5.30	.....	4.70	.....	2.00	.....	2 05	.....	2.65	.....	.25	....	1.40	.....	24.42	.....
Clinton	2.25	+ .40	0.95	-1.16	4.01	+ .99	3.40	+ 47	2.50	-2.10	1.64	-3.04	3.78	- .31	5.36	*2.31	2.67	- .43	.59	-1.82	.10	-1.80	2.85	*1.04	30.10	- 5.45
College Springs	2.39	+1.83	.....	.....	2.16	+ .31	4.74	+1.07	3.00	-1.94	5.04	+ .61	6.88	*1.15	4 19	* .75	1.12	-1.84	1.34	-2.77	.10	- .94	.83	- .76	.....	.....
Columbus Junction	1.98	.	0.51	.....	2.68	.....	2.91	.....	3.16	.....	3.81	....	3.84	.	5.72	.....	4.61	.....	.74	.....	.16	.	2.54	.....	32.69	.....
Corning	2.29	+1.54	0 08	- .72	2.91	+1.16	5.15	+2.06	5.55	+ .82	2.83	-1.36	6.31	*1.84	3.35	- .05	2 23	- .25	2.13	- .43	.. .	.....	.....	.....	.....	.....
Corydon	2.33	+ .72	0.12	-1.30	3.24	+1.17	4.68	+1.56	3.06	-1.91	1 73	-2 60	5 25	* .85	2.82	-1.19	2.73	-1.13	.14	-2.78	.05	-1.45	1 39	- .23	27.54	- 8.24
Cresco	0.38	- .79	....	.....	.....	.....	2.95	+ .52	5.35	+1.59	2.45	-2 51	.....	.....	2.66	- .19	4.95	*1.28	2 25	- .12	... .	.....	1.26	- .03	.....	.....
Cumberland	2.10	.....	0.10	.....	3.20	.....	4.10	.....	3.42	.....	3.71	.....	4.71	.....	3.25	.....	2.03	... .	1.32	.....	T	.....	1.20	.....	29.14	.....
Davenport	2.20	+ .53	0.72	- .85	2.70	+ .54	2.05	- .73	2.64	-1.68	2.28	-2.11	3.84	- .32	3.60	* .02	3.98	* .80	1.15	-1.47	.18	-1.88	2.21	* .48	27.05	- 6.67
Decorah	0.64	- .44	0.48	- .50	2.22	+ .26	2.16	- .53	5.19	+ .82	2.34	-1.92	2 84	- .37	2.06	*0.38	5.44	*2.00	3.92	*1.58	.35	-1.24	1.74	* .38	29.38	* .42
Delaware	0.57	- .44	0 49	- .39	2.82	+ .99	1.93	-1.11	3.42	- .70	2.50	-1.78	3.38	- .30	2.50	- .36	2 65	- .59	2.62	* .40	.09	-1.52	1.77	* .25	24.74	- 5.55
Denison	0.53	- .03	0.30	- .34	0.83	- .80	2.20	-1.76	3.41	- .19	4.02	+ .44	3.33	- .99	2.95	- .43	1.53	-1.68	1.41	-1.00	.15	- .75	.62	* .02	21.28	- 7.51
Des Moines	1.22	- .12	0.22	-1.11	1.20	- .26	5.48	+2.69	3.16	-1.54	2.08	-3.28	6.94	*3.41	2.60	-0.66	1.95	-1.25	1.50	-1.54	.06	-1.65	2.02	* .56	28.43	- 5.68
De Soto	....	.....	0.25	....	1.64	... .	5.56	....	3.09	.....	2.14	.	9.98	.....	3.08	.....	1.78	.....	1.57	.....	.10	.....	2.30	.....	.....	... ..
Dows	0.70	+ .16	0.75	- .15	1.55	- .44	2 30	- .75	4.60	- .47	5.52	+ .44	3.65	- .70	2.57	-1.31	4.60	* .83	2.13	- .22	05	-2.29	1.97	*1.08	30.39	- 3.82
Dubuque	0.51	-1.17	0.73	- .73	2.86	+ .59	2.05	- .74	3.86	- .13	0.74	-4.46	1.86	-2.42	2.58	- .57	2.21	-1.88	3 18	* .47	.08	-2.02	2.37	* .56	23.03	-12 50
Earlham	1.37	.....	0.37	.....	1.69	.....	7.64	.....	2.78	.. .	2.41	.	6.33	... .	2.84	.....	3.37	.....	1.55	.....	.13	.	1.29	.....	31.77	.....
Elkader	0.51	- .84	0.65	- .47	2.75	+ .92	1.52	-1.33	3.50	- .55	2.75	-1.45	3.05	-1.29	2.06	- .74	4.39	* .57	1.74	-1.01	.14	-1.54	2.30	* .37	25.36	- 7.36
Estherville	0.43	+ .08	0.39	- .23	1.98	+ .57	3.34	+ .88	3.57	+ .44	5.27	+2.18	4.50	* .62	3.96	* .66	1.35	-1.75	2.85	*1.23	.14	-1.03	.62	* .03	28.40	* 3.68
Fayette	0.08	-1.15	1.02	- .14	3.64	+1.38	2.33	- .87	4.99	+ .15	2.02	-3.83	4.37	* .67	3 81	* .91	... .	... .	.....	.....	.....	.....	.....	.....	.....	.....
Florence	....	.....	.....	.....	.....	.....	2.51	.....	4.68	.....	7.59	.	4.00	.....	2 29	.....	3.69	.....	1.69	.....	.19	.....	.....	.....	.....	.....
Forest City	0.40	- .24	0.70	- .07	1.33	- .15	2.35	- .25	2.44	-1.36	4.09	- .97	4.76	*1.33	2.97	* .76	1.77	-2.05	1.89	- .48	.22	-1.14	.70	- .21	23.62	- 4.83
Fort Dodge	0.30	.....	0.60	.	1.08	.....	4.66	.	5.16	.	7.73	.....	2.21	... .	6.75	.....	4 02	.....	2.08	.....	.20	.....	1.00	....	35.79	.....
Fort Madison	3.15	+1.26	0.35	-1.61	3.73	+ .75	4.29	+1.00	3 58	-1.28	3.70	- 64	4.43	* .32	5.32	*1.66	5.04	*1.25	.52	-2.23	.43	-1.73	1.78	- .22	36.32	- 1.47
Galva	0.55	+ .20	0.50	+ .03	....	....	3.63	+ .87	7.81	+4.51	3 57	- .66	4.09	- .11	2.56	- .78	1.07	-2 93	2 93	*1.26	.09	-1.24	.32	- .52	.....	.....
Gilman	1.03	....	0.55	.....	1.74	.....	3.93	.....	2.05	.....	0.44	.	5.56	.....	2.92	.	1.67	.	.76	.....	.25	.....	2.07	.....	22.97	.....
Glenwood	0.55	- .30	0.02	- .66	0.75	- .51	3.50	+ .95	5.35	+ .86	3.03	- .88	5.20	*1.54	3.22	- .29	3.15	*1.02	.45	-2.13	.50	- .10	.20	- 58	25.92	- 1.08
Grand Meadow	0.60	- .58	0.83	- .29	3.01	+ .91	2.78	- .35	6.51	+1.36	1.99	-3.27	4 03	- .29	2.95	* .45	6.09	*2.92	3.09	* .52	.18	-1.41	1.75	* .19	33.81	* .16
Greene	.....	.....	.....	.	.....	.....	.....	.....	4.70	+ .56	4.30	+ .23	3.06	-1.13	2.59	- .56	3.39	* .05	2 34	* .20	.33	- .96	1.34	+ .36	.....	.....
Greenfield	1.71	+ .81	0.20	- .84	1.96	- .28	5 28	+2.15	4.16	- .44	2.61	-2.50	4.00	- .89	3.94	+1.12	2 80	- .48	1.49	- .81	.24	- .82	1.26	- .09	29.65	- 3.07
Grinnell	1.52	+ .36	0.7	- .14	2.80	+1.01	5.93	+2.41	3 61	-2.04	.....	.	.....	.....	.....	.....	.....	.....	.64	-1.81	.12	-1.40	2.68	*1.39	....	.....
Grinnell (near)											1.22	.	5.55	. .	2.56	. .	1.00	.....	83	.	.10	.....	.....	.....	.....	.....
Grundy Center	0.78	+ .07	0.58	- .14	2.24	+ .58	2 28	-1.10	3.55	-1.40	1.89	-3.95	5.88	*1.20	2.61	- .96	3.18	- .14	1.70	- .99	.23	-1.05	1.73	* .48	26.15	- 7.40
Guthrie Center	0.91	+ .38	0.30	- .37	1.54	+ .14	3.72	+1.25	3.20	-1.37	5 06	+1.00	6.90	*2.36	4.12	- .44	1.64	-1.82	2 68	* .46	.13	- .92	1.14	- .13	31.34	* .54
Hampton	0.80	- .30	0 95	- .16	2.00	- .26	2.59	- .85	4.55	+ .38	4 73	- .50	4.79	* .65	2.50	- .65	4.24	* .74	2 13	- .50	.40	-1.21	1.86	* .54	31.54	- 2.12
Hanlontown	.....	.....	0.53	.....	1 34	.....	4.48	.	2.95	.....	5.16	.....	5.53	.....	2 33	....	1.55	.....	2.23	.....	.13	.	1.40	.....	.....	.....
Harlan	0.93	+ .13	0.17	- .60	1.38	- .62	3.20	+ .86	3.07	+0.16	4.24	-1.90	5.20	- .80	1.91	-2.18	2.48	-2.12	.92	-2.26	.17	- .72	.60	- .82	24.27	-10.87
Hopeville	2.43	+1.53	0 04	- .73	2.74	+1.06	3.90	+ .48	5.04	+ .28	2.28	-2.07	5.24	* .62	4.97	*1.68	2.35	-1.18	.90	-1.53	.02	- .96	1.33	* .22	31.24	- .60
Humboldt	0.29	- .36	0.50	.20	1.19	- .26	3.45	+ .71	3.60	- .28	8.35	+3.68	2.65	-1.29	3.66	* .55	2.00	-1.44	1.59	- .14	.20	-1.26	.78	* .02	28.26	- .27
Ida Grove	0.46	.....	0.30	....	0.50	....	4 35	....	5.42	.....	2.57	.....	2.70	.....	2.28	.....	.09	.....	1.40	.....	.....	.....	.....	.....	.....	.....
Independence	0.68	- .74	0.40	- .65	2.51	+ .72	2.15	- .06	2.45	-1.72	2.05	-2.98	3.73	- .99	1.80	-1.63	1.86	-2.84	1.89	- .48	.05	-1.47	2.10	* .62	21.62	-12.22
Indianola	2.69	+1.54	0.61	- .14	2.55	+1.36	7.98	+4.70	3 08	-1.62	1.73	-2.35	5.37	*1.73	3.99	- .17	2.74	- .31	1.09	- .97	.03	-1.27	1.57	* .16	33.48	* 2.66
Inwood	0.40	.....	0.30	.	0.76		2.40	.....	2 27	.....	4.08	....	3.78	.....	1.99	.....	.41	.....	4.34	.....	T	.....	.85	.....	21.08	.....
Iowa City	1.74	+ .00	0.84	- .67	2.73	+ .25	5.49	+2.35	2.68	-1 66	2.14	-2.49	2.49	-2 01	3.93	- .33	3.12	- .71	1.59	- 95	.25	-2.07	1.96	* .30	28 96	- 7.99
Iowa Falls	0.67	- .17	1.03	+ .08	2.28	+ .67	2.40	- .75	5.29	+1.74	5.45	+ .68	3.86	* .02	2.14	-1.26	2.24	- .98	1 92	- .38	.23	-1.05	1.85	* .69	29.36	- .71
Jefferson	0.91	.....	0.83	.....	1.98	.....	3.45	....	2.76	....	3.94	.....	6.84	.....	4.07	..	....	....	....	....	....	....	....	....	....	....
Keokuk	2.70	+ .98	0.70	-1.01	3.46	+1.28	5.1	+1.98	3.94	- .13	3 62	- .92	4.48	* .38	4.63	*1.80	8.33	*4.81	0.30	-2.46	.21	-1 91	1.45	- .51	38.93	* 4.21
Keosauqua	2.64	+1.72	0 52	- .90	3.59	+1.01	3.86	+ .02	4.39	+ .05	4.85	+ .79	4.72	* .75	3.85	* .36	6.26	*1.78	.39	-1.51	.14	-1.49	2.24	* .70	37.45	* 3.38
Knoxville	2 15	+1.22	0 45	- .43	2.68	+1.18	5.54	+2.38	....	.....	.....	.. .	3.31	-1.15	4.85	* .83	4.00	* .49	.....	.....	.....	.....	2.00	.....	.....	.....
Lacona	3.68	.....	0.63	.....	3.37	.....	4.12	.....	4.32	.....	2.00	.....	6.47	.....	3.61	.....	3.20	.....	1.20	.....	.03	.....	1.61	.....	34.24	.....
Lansing	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Larrabee	0.16	- .41	0.46	- .29	1.18	- .47	3.12	+ .13	4.74	+ .79	5.39	- .51	3.58	-1.08	3.38	* .04	.97	-1.91	3.18	*1.34	.29	- .69	.63	- .44	27.08	- 3.50
Le Claire	1.48	.....	0.68	.....	2.99	.....	2.48	.	2.71	.....	1.02	.....	4.04	.....	4.29	.....	6.65	.....	.87	.....	.31	... .	1.67	....	26.14	.....
Le Mars	0 35	- .34	0 80	* .19	1.40	- .97	3.50	- .12	3.25	- .84	.....	.....	3 27	-1.63	1.92	- .79	.85	-2.34	.....	.....	.05	-1.01	.15	- .94	.....	.....
Lenox	1.82	*1.19	0 09	- .56	2.49	* .64	4.94	*1 92	4.28	- .43	3.45	- .68	4.76	- .46	5.16	*1.56	2.44	- .53	1.03	-1.96	.11	-1.02	.80	- .48	31.37	- .51
Leon	0.72		0.05	.....	3.58	.....	5.01	.....	4.47	.....	3.43	.....	5.34	....	4.45	.....	2.19	.	.74	.....	.09	.....	1.70	... .	31.77	.....
Maquoketa	1.31	- .01	0.74	- .76	2.36	* .07	2.99	* .46	2.42	-2.11	0.99	-4.73	2 48	-1.61	4.47	*1.64	3.99	* .78	1.83	-1 11	.22	-1 23	1 74	* .13	25.54	- 8.48
Marshalltown	1.04	* .10	0.50	- .28	1.75	- .18	3.60	* .49	3.45	-1.29	0.85	-4.09	4.50	* .05	3.24	- .33	3.68	*1.01	1.73	- .74	.17	-1.16	2.59	*1.11	27.10	- 5.31
Mason City	0.62	- .57	0 77	* .21	1.56	- .22	2.32	-1.02	3.55	- .40	6.60	- .44	3.01	* .22	2.10	- .56	2.55	* .70	1.85	- .16	.20	- 80	1.62	* .96	26.75	- 1.64
Marshalltown	2 91	*1.88	0 24	- .92	3.20	*1.27	4.52	*1.37	6.51	*1.12	2.94	-1.50	4.14	- .97	5.87	*2.55	2.28	- .89	1.08	-1.31	.41	- .87	1.97	* .65	36.07	* 2.38
Mt. Ayr	1.79	* .56	0.37	- .67	3.57	*1.24	4.14	*1.09	4 37	* .03	3.26	- .95	3.92	* .18	5.21	*1.30	6.97	*3.61	.43	-1.65	.22	-1.37	3.34	*2.13	37.59	* 5 50
Mt. Pleasant	1.20	- .11	0.80	- .27	2.34	* .31	2.97	- .06	2.93	-1.16	2.71	-1.04	3.19	-1.44	4.07	- .50	1 78	-1.03	2.49	* .09	.13	- .99	2.10	* .44	26.71	- 5.76
Mt. Vernon	0.50	- .33	0.70	- .37	2.18	* .53	1.90	- .03	3.31	-1.16	3 35	-1.13	2.47	-1.22	1.84	- .66	2 75	-1.00	2.34	- .21	.10	-1.69	2.22	*1.55	23.66	- 5.72
New Hampton	1.53	* .61	0.74	- .28	1.95	* .39	4.87	*1.49	.....	.....	1.68	-3.29	.....	.....	.....	.....	.....	.....	.....	.....	.08	-1.72	3.68	*2.35	.....	.....
Newton	0.80	* .15	0.88	- .28	1.45	- .15	2.15	- .16	3.11	-1.31	6.16	*1.35	5 00	*1.01	2.65	- .97	1.40	-2.09	2.30	- .33	.25	-1.31	1.01	* .10	27.16	- 3.99
Northwood	0.40	* .08	0.56	- .19	1.06	- .93	3.71	*1.00	3.41	* .64	4.07	- .24	2.82	-2.30	3.36	- .33	1.17	-1.98	1.24	- .97	.24	- .88	.65	- .45	22.69	- 6.55
Odeboldt	0.80	* .21	0.26	- .33	1.61	* .09		. .	2.63	-2 53	4.06	- .82	6.14	*2.02	2.51	-1.55	3.51	- .29	1.53	-1.13	.02	-1.09	1.20	- .09	... .	.....
Ogden	1.57	* .49	1.18	- .15	3.22	* .77	2.16	- .02	2.46	-2.06	1.42	-2.10	2.59	-1.01	3.54	- .04	1.56	-1.82	3.78	*1.86	.01	-1.19	2.00	* .54	25.49	- 5.23
Olin	.62	- .07	.10	- .69	1.32	- .18	3.20	* .07	4.86	* .49	3.11	-2.56	3.15	-1.60	4.45	*1.11	2.60	- .31	1.40	-1.07	.10	- .96	.57	- .44	25.48	- 6.21
Omaha, Nebraska	0.82	- .32	0.29	- .66	0.87	- .66	1.82	-1.17	8.15	*3 77	8.02	*2.82	3.83	-1.30	2 63	-1.26	2.58	- .19	2.07	- .32	.30	- .83	.42	- .66	31.30	- .78
Onawa	0.53	- .35	0.66	- .52	1.82	* .25	1.87	- .70	3.03	-1.20	6.10	*1.58	3.21	- .33	1.91	-1.09	4.16	* .66	2.08	- .35	.17	-1.28	2.29	*1.01	27.83	- 2.32
Osage	....	... .	0.05	-1.03	2.63	* .75	4.11	* .59	5.66	* .59	2.79	-1.49	4.35	- .79	5.67	*2.48	2.87	-1.31	.27	-2.80	.06	-1.43	.....	.....	.....	.....
Osceola	1.58	* .70	0 19	- .88	1.76	- .13	4.11	*1.33	1.96	-1.61	1.49	-2.64	5 89	*1.84	2.36	- .78	3.46	* .36	... .	.....	.03	-1.52	1.09	- .19	....	.....
Oskaloosa	2.40	* .81	0.25	- .99	3.93	*2.02	4.42	*1.34	3.09	-1.73	2.76	-1.03	3.70	- .59	2.72	- .92	4.58	* .26	.....	.....	.18	-1.55	1.52	* .15	... .	.....
Ottumwa	0.59	.....	0.07	.....	1.46	.....	5.86	.....	4.68	.....	2.72	.....	5.00	.....	3.24	.....	2.43	. .	1.07	.....	.18	.....	.58	.....	27.38	.....
Pacific Junction	0.66	.....	0.55	. .	2.10	.....	5.44	.....	2.28	....	3.22	.....	6.52	.....	4.21	.....	2.25	. .	2.01	.....	T	....	1.35	.	30.59	.....
Perry	0.60	* .09	0.66	* .01	0.97	- .41	3.79	*2.01	4.74	*1.48	4.42	* .39	1.28	-3.85	4.47	* .47	4.36	* .32	2.62	* .31	.20	-1.39	.69	- .06	28 80	- .65
Plover	0.97	* .25	0.05	- .73	1.88	- .38	4.67	*1.83	3.68	- .06	3.60	-1.56	6.66	*1.86	2.03	-1.06	2.01	- .95	2.00	-1.20	.07	- .97	.94	- .28	28.56	- 3.25
Red Oak	1.29	- .41	1.99	- .68	2.95	* .46	1.77	- .34	4.39	- .76	2.98	-1.54	3.65	-1.44	2.27	- .43	5.16	*1.03	2.71	-1.17	.29	-1.66	2.75	* .25	32.20	- 6.69
Ridgeway	0.30	- .33	0.65	* .51	0.80	- .79	1.11	-2.64	2.20	-1.19	2.80	-1.44	3.95	*1.43	2.40	* .64	.60	-1.70	2.65	* .90	T	- .99	.....	.....	.....	.....
Rock Rapids	0.80	* .17	0.45	- .06	1.75	- .55	4.35	*1.94	3.70	* .36	5.35	* .85	2.86	-1.14	5.95	*2.41	1.75	-1.32	1.88	- .70	.00	- .85	.71	- .59	29.55	* 0.52
Rockwell City																										

MONTHLY AND ANNUAL PRECIPITATION FOR 1904, WITH DEPARTURES FROM NORMAL.—CONTINUED.

STATIONS.	Jan.		Feb.		Mar.		April.		May.		June.		July.		August.		Sept.		Oct.		Nov.		Dec.		Annual.	
	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.
Sac City	0.67	- .28	0.57	- .25	0.89	- .76	3.00	* .01	4.06	* .43	4.77	- .12	3.15	- .66	5.48	*2.12	1.47	-1.82	1.18	-1.38	.24	- .87	.....	.....	.....	.....
St. Charles	2.31	.....	0.33	.....	1.00	.....	8.97	.....	3.80	.....	2.09	.....	4.92	.....	4.33	.....	2.27	.....	1.50	.....	.09	.....	2.44	.....	34.05	.....
Sibley	0.37	- .17	0.4	- .01	2.05	* .88	2.04	- .65	2.97	- .38	4.96	* .83	4.51	* .60	.66	-2 59	2.70	- .46	3.96	*2.29	.05	- .82	.50	- .36	25.23	- .84
Sigourney	2.21	* .97	0.29	-1.06	3.42	*1 53	3.92	* .32	3.09	- .89	1.53	-2.16	2.44	-2.23	3.62	- .11	2.99	* .0	.42	-2 60	T	-1.50	.....	.....	.....	.....
Sioux Center	0.50	* .23	0.28	- .50	1.85	* .60	2 32	- .81	2.21	-1.61	4.57	* .27	7.75	*2 37	1.47	-2.63	.71	-3.67	4 43	*2.87	.10	- .47	.60	- .23	26.79	- 3 58
Sioux City	0 09	- .54	0.33	- .22	0.50	- .74	2 32	- 70	8.09	- .58	3.46	- .34	5.49	*2.12	2.68	- .51	.86	-1 23	2.39	*0.69	.05	- .77	.20	- .68	21.46	- 3.50
Spirit Lake	0.55	* .04	0.55	† .00	1.39	* .59	2.07	* .35	.....	.....	.....	.....	3.90	- .50	3.08	- .93	1.03	-4.28	2.38	*1.03	.....	.....	.....	.....	.....	.....
Stockport	2.52		0.44	.....	3 61	.....	3.10	.....	4.32	.....	6.27	.....	3.65	.....	3.67	.....	7.08	.....	.34	.....	.15	.....	2.08	.....	37.23	.....
Storm Lake	0.02	- .68	0.08	- .57	1.54	* .16	3.26	* .16	3.74	* .22	3.66	-1.22	2.56	-1.72	5.16	*2 24	.99	-2.03	3.09	*1.33	.03	- .93	.06	- .87	24 19	- 3.11
Stuart	1.17	* .58	..	.....	1 65	-1.00	5.89	-2.68	2.56	-1.89	2 59	-1.38	8 30	*3.33	3.48	* .92	2 34	* .48	2.17	- .81	.10	- .78	.....	.....	.....	.....
Thurman	0.42	- .29	T	-1.32	1.85	* .07	6.10	*2 66	4.14	- .57	4.08	-3.46	11.97	*6.49	3.38	-2.05	1.52	-1.69	2.44	-1.60	.18	- .91	.40	-1.38	36.48	- 4.05
Tipton	1.89	.....	0.89	.....	2.83	.....	4.22	.....	2.37	.....	3.55	.....	2.25	.....	3.06	.....	3.02	.....	.89	.....	.12	.....	2.08	.....	27.15	.....
Toledo	0.97	* .16	0.53	- .16	2.85	*1.10	3.14	* .11	2.88	- .83	1.30	-2.30	3.71	* .48	3.00	- .82	1.65	-1 46	1.10	- .77	.15	-1.38	.....	.....	.....	.....
Vinton	1 04	- .11	0.64	- .37	2.86	*1.08	1.57	-1.35	2.39	-1.56	0.57	-3.41	3.51	* .12	2.41	- .20	1.30	-1.49	1 35	- .25	.10	-1.05	1 60	* .39	19.84	- 8.20
Wapello	1.71	*1.00	0.19	-1.27	3.68	*1.16	2.82	* .58	2.61	- .98	2.47	- .45	3.68	* .59	6 40	*1.15	4 24	*1.3	.77	-1.45	.12	1.34	2.27	* .93	30.96	* 1 24
Washington	2.28	* .83	0.53	- .63	2 70	* .53	2.74	* .12	3.01	- .42	1.22	-1.23	4.23	* .69	4.39	* .90	3.99	*1.37	.54	-1.59	.23	-1. 6	2.01	* .54	27.87	- .05
Washta	0.35	- .06	0.40	- .22	0 83	- .42	3.45	*1.72	6.08	*2.87	4.55	* .14	2.51	-2.59	1.42	-1 49	2.11	-1.80	2.50	* .53	.10	- .95	.30	- .87	24.60	- 3.14
Waterloo	0.71	- .24	0.48	- .50	2.84	*1.01	2.74	- .25	4.62	* .24	1.43	-3.07	3.56	- .68	2 93	- .67	2.15	-1.34	1.24	-1.08	.21	-1.19	2.66	*1.52	25.57	- 6.25
Waukee	2.25	.....	0.36	.	2.23	.....	4.71	.....	3 46	.	2 67	....	9.31	.....	3.25	.	1.79	....	1.07	....	.10	.....	1 90	.....	33.10	.....
Waverly	0.7	- .15	0.78	- .34	2.06	* .10	2.33	- .71	4.69	* .07	3 43	-1.05	4.07	* .23	2.42	- .11	3 78	* .58	1.68	- .96	21	-1.27	2.40	*1.32	2 .63	- 2.29
West Bend	0.59	- .03	0.72	- .09	1.76	* .12	3.64	* .83	3.55	* .71	6.93	*3.12	2.25	-1.59	3 18	- .45	2.69	- .49	1.58	- .18	.08	-1.31	1.30	* .31	28.27	* .95
Whitten	0.75	* .18	0 60	* .04	2.64	*1.70	2.71	* .65	3.49	- .2	.55	.....	6 05	*2 28	3 24	.....	.....	.....	1.50	-1.12	T	-1.29	2.30	*1.13	.....	.....
Wilton Junction	....	.	0.50	- .90	2.77	* .06	3.11	* 24	2.79	-1.53	1.40	-1.88	2.14	-3.13	5.15	* .94	1.91	-1.27	.94	-1.13	.35	-1.45	2.28	* .83	.....	.....
Winterset	0.12	- .82	....	.....	1 99	- .05	6.41	*2 75	2.32	-2 25	.....	.....	5.18	- .75	2 30	-1.24	2.72	- .63	1.00	-1.37	.30	- .91	....	.....	.....	.....
Woodburn	2.70	.....	0.22	.....	2.24	.....	4.64	.....	5.55	.....	1.61	.....	5.0	.....	4.33	.....	2.77	.....	.50	.....	.12	.....	1.50	.....	30.19	.....
Zearing							3.46	.....	3.09	.....	1.79	.....	4.73	.....	3.48	.....	2.35	.....	1.01	.....	.16	.....	1.60	.....	.....	.....

* or † signifies plus. * or † signifies above normal. - below normal. - Minus.



JANUARY, 1905. No. 1



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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XVI. JANUARY, 1905. No. 1.

JANUARY WEATHER AND CROPS.

The weather records for the state at large show but one colder January, and that was January, 1893, when the mean for the state was 9.3°. This year the mean was 11.2°, which is 7 0° below normal. Since the first day of the month there has been practically no temperature high enough to lessen the height of the massive snowdrifts, and the fields in all parts of the state have been well protected from damaging effects of the extreme cold. Winter grain and grasses have suffered no material damage as yet. Generally sleighing has been good in all parts of the state. This has been favorable for hauling produce to the markets, and usual farm work of the winter season. The snow has prevented grazing stock in the corn fields and winter pastures, but o 1 the whole the conditions have been favorable for the farmers.

ORIGIN OF COLD WAVES.

[New York Tribune.]

The cold waves which affect the United States generally enter this country from the northwest, appearing first in Montana and the Dakotas, but almost immediately being felt in Minnesota. They then push southward and eastward, their path following that of the last preceding barometric depression. When the low area travels along the Great Lakes eastward, the cold wave is not severely felt in the South. If the depression crosses Texas and Louisiana or moves up along the South Atlantic coast, the Gulf States suffer. The most intense cold, it should be added, is observed near the center and in the eastern half of an area of very high barometer which follows the low area or storm. All of this is an old story. Much less is known about the development of these visitors before they invade the United States.

Telegraphic reports from Edmonton, in British America, almost invaribly indicate the presence of extraordinary pressures and low temperatures about two days before the boundary is crossed, and Winnipeg, Manitoba, is affected almost simultaneously with North Dakota. Edmonton and Winnipeg are about fifteen hundred miles apart. What happens before Edmonton discovers a cold wave is a question that has been much discussed. Once it was thought that cold waves entered Canada from Hudson Bay. The impression has also prevailed th t they came down from regions north of the Arctic Circle. There can be no question, moreover, that Dawson, which is situated on the upper Yukon, occasionally has extremely cold as well as boisterous weather. *The Cœur d'Alene* (*Idaho*) *Sun* remarked a year or two ago that it had noticed that cold waves reached Havre, Mont., about three weeks after their appearance in the Klondike country (around Dawson).

Commenting on that statement, "The United States Weather Review" expressed the opinion that a cold wave might, and probably did very often, originate in the vicinity of Edmonton, independently of regions further north. It was suggested that the primary cause was radiation of the earth's heat through clear and nearly motionless air. That phenomenon would naturally occur near the centre of the continent. All oceans, including the polar sea, exercise a modifying influence on the cold experienced on adjacent coasts. The lowest temperatures are not recorded on the Artic Ocean, but in the interior. However, the editor of "The Weather Review," Professor Cleveland Abbe, wrote to Dr. Stupart, who is at the head of the Dominion service, and asked for an opinion regarding the statements of the Idaho paper.

In his reply, Dr. Stupart said that the matter needed further investigation and he was making a fresh study of the subject. Still, he had already discovered that some of the cold waves felt at Dawson never reach Edmonton and Winnipeg. It also happens now and then that Dawson and Edmonton are affected at the same time. The two places are so far apart that this fact would indicate that separate causes were occasionally at work. Again, other cold waves really did seem to travel from Dawson to Edmonton and Winnipeg, but the time required for the movement was only about five or six days, not three weeks. The third class of instances was numerous enough, Dr. Stupart thought, to warrant the expectation that a cold wave would be felt in Manitoba five days after it was reported from the Klondike. Considering its source, this verdict is not without value, but further study by meteorologists may lead to the conclusion that very few cold waves come to the United States from districts north of the Artic Circle, and that the majority develop in the neighborhood of Edmonton.

WHAT THE WEATHER BUREAU DOES.

[Marshalltown Times-Republican.]

When the weather bureau was created the results expected by the promoters of the bill were confined to warning the shipping interests of the seaboard and the Great Lakes of the approach of dangerous storms. The service has grown, however, as most good purposes grow, until its value and assistance touches and is appreciated by nearly all classes. It forecasts rain, snow and frost, and the information thus furnished is invaluable to crop raisers. The work of the bureau has become so closely allied with climate and agriculture that one can scarcely be considered apart from the other.

Statistics prove that one storm traversing our eastern coast in the absence of danger signals would leave not less than three million dollars' worth of wreckage. This is simply the money value of the property placed in a position of safety as a result of the

warnings furnished vessel owners and masters, but does not represent the value of property saved. A few years ago a severe storm from the west Indies swept up the Atlantic coast. Warnings of its approach were sent to every city along the Atlantic seaboard from Key West Fla., to Portland, Me., fully forty-eight hours before it reached the coast of Florida. After the passage of this storm it was estimated by the officials of the Savannah and Charlestown boards of trade that more than three million dollars' worth of property had been saved to those two cities alone, to say nothing of the loss of life which might have resulted, had the many vessels kept in harbor put to sea. This one forecast proved a saving to two cities alone of nearly as much money as is required to maintain the entire weather service for three years. The people of Georgia were given timely warning of the severe cold wave of Februrary, 1899, twenty-four to thirty-six hours before its arrival, and in and immediately around Atlanta fully a quarter of a million dollars' wo th of property was saved.

Sugar cane, the most important product of Louisiana, is peculiarly sensitive to low temperature, and is easily destroyed by frost. Whenever frost warnings are received from the weather bureau, all available labor is utilized in cutting the cane and placing it in a position of saf-ty. In this way heavy losses are averted by the planters annually. Some years ago it was estimated by the Governor of the state that nearly the entire crop would have been destroyed, but for the timely receipt of a frost warning issued by the weather bureau. Wisconsin tobacco raisers forewarned of frost saved their crop by huge bonfires a few years ago.

Hundreds of thousands of dollars are saved to the orange and truck growers of Florida and the raisin interests of California every year. The warnings are of untold value to the commerce on the Great Lakes, rivers and oceans, to say nothing of the overland transportation. The saving of perishable goods in transit benefits commerce, and these benefits revert directly to the producer. Any damage occurring to goods en route from the producer to the consumer is at the cost of the producer. In the early autumn and spring, timely warnings of frost are sent to the rural districts and disseminated as widely as conditions will permit, and the confidence of the people in these warnings is evidenced by the fact that hundreds of dollars are spent by individual owners in the various methods of protecting their plants or fruits against frost.

THE COLOR OF CORN.

Several days ago a prominent Chicago grain merchant remarked that the "prejudice relative to the color of corn is even more marked than that of the white against the black people of our country, and that while there was some cause for drawing the color line between the races, the question as applied to corn is purely one of sentiment."

The above statement started a discussion upon this ever-fruitful topic. It is a well-known fact that in the Southern States white corn is grown almost exclusively; the Southern farmers will not accept anything but white corn for feeding purposes, and their good wives must have the white corn meal for their old-fashioned "pones" and "butter-cakes." In the Northern and Eastern States, farmers, grain dealers and the queen of the kitchen insist on the yellow grain and the cornmeal made therefrom, claiming that it is stronger and more nutritious than the white varieties, but in the great corn belt of the West, where the bulk of the corn crop is produced, the farmer seeks to plant the varieties that will net him the largest returns from his investment.

At the Illinois experiment station, Iowa College of Agriculture, and other government institutions, the subject of corn breeding by selection and chemical analysis has been taught for the last ten years, the idea being to improve the varieties best adapted to the soil upon which they are to be grown. Some types of corn are bred to yield a high percentage of oil, some for high starch and low oil content, and others for high protein and low starch, etc. In this work of breeding, prolificacy and early-maturing qualities are an important consideration and the results are decidedly in favor of the white varieties.

The feeding value of corn is determined by its chemical analysis, and color does not have anything to do with it. If the farmer is feeding corn or cornmeal for meat or milk production, he wants in his grain all the protein he can get. White corn is equally as valuable for feeding purposes as yellow unless proven otherwise by chemical analysis.

The western farmer who feeds to his own livestock nearly 80 per cent of the corn produced on his farm, long ago ceased to regard the color question as an important factor. He is growing more white corn every year, because in several of the white varieties he has types that yield a larger number of bushels per acre than the yellow varieties, and, at the same time, produce more fodder. It is not a great while since that the farmer could sell his white corn at a premium, because the bulk of the crop of the country was yellow, and the demand from starch factories and hominy mills was for white corn, but today this condition is reversed and there is a scarcity of yellow corn. The demand for this yellow grain can not be supplied, and as a result, it is sold at a premium over white. This premium, however, does not justify the corn grower in switching back to the yellow, because the increased yield of the white varieties more than offsets any premium he might be able to obtain.

It is the belief of well posted farmers and grain dealers that it is only a question of time before the entire country is on a white corn basis. This will, undoubtedly, be the condition in the corn belt of the future unless the yellow varieties are bred up and otherwise improved to such an extent that they will yield just as many bushels per acre as the most prolific of the white varieties.

Some feeders contend that yellow corn is stronger than white; it would be equally as logical to claim that a yellow shelled egg contains more nutriment than that of the white shell. Our agricultural experiment stations, which have given this subject careful study, never make any distinction as regards color. These experts have had every opportunity to test this matter thoroughly, and thus far no experiment has ever been conducted, either in feeding livestock or by chemical analysis, to prove that yellow corn is more nutritious than white, or vice versa. It is wholly a question of chemical analysis, and the time may come when corn will be sold on this basis. It is false economy for eastern feed dealers and farmers to pay a premium for yellow corn on the theory that it is more valuable as a feed, just because it is yellow.—*Roy B. Simpson in Flour & Feed.*

EARLY YEARS AT RIDGEWAY, IOWA.

BY ARTHUR BETTS, VOLUNTEER OBSERVER.

1866—We had a snowy winter; huge drifts covered the fences. July was very arm. June and August rather cool. Crops good. Very mild October, with beautiful Indian summer. Nice corn crop. Very late fall.

1867—Another snowy winter, and much drifting. All crops good. Very late fall. October uncommonly warm, and much Indian summer. The summer season was warm.

1868—July was excessively warm. A good corn year. Delightful summer. All crops did well. Much drouth in July and August. 104° in July. October 2d first snow of the season, and earliest I ever saw in Iowa; nice Indian summer later. Warm March. Terrific thunderstorms from the north August 8th.

1869—Summer quite cool and wet. Crops generally good. In July a spot on the sun could be seen by the naked eye when near the horizon. October was uncommonly cold and unpleasant; so was November.

1870—October and November very mild; Indian summer long and delightful. Summer was warm, so was September, frost held off well. Crops fair to good.

1871—Spring opened very early. A warm March—mean about 40°—wonderfully mild and pleasant. Lilacs blossomed unusually early. Vegetation too forward, for in April and early May came damaging frosts in many localities. Lovely Indian summer in October. Very cold November.

1872—A good year. A fine summer. Plenty of everything. Seeding in April. March cold and wintry. The coming winter a hard one, and it commenced early.

1873—Awful snows in January and February. Terrible blockades. Winter very cold. Late spring. June uncommonly warm, and the summer was fine. Crops of all kinds bountiful.

1874—July and August warmer than usual. Coggie's Comet during those months a splendid sight, the tail at one time covering a large portion of the northern heavens. A good harvest of all crops. Indian summer from October 7th to the 28th, and the sky, atmosphere, and sun were gorgeous. October was wonderfully mild, with severe thundershower the 25th. First frost on the 28th of October—latest I ever saw—and it froze the ground. November came in warm; a thundergust on the 8th, and the wind tore up great oak trees. The spring of 1874 was very late. Mercury reached 102° in July. Ridgeway burned in May (27th).

1875—Very backward spring. January and February very cold. Good harvest of small grain. Known as the cold summer. Hard frost on the lowlands August 8th, and it made a good deal of soft corn, shortening the crop greatly. It was a splendid strawberry season. Lots of catching weather in harvest and stacking.

1876—This centennial year opened with a heavy all-day rain on New Years Day, and after it came an ice age, and many trees broke under the weight of ice. Lots of chinch bugs in the summer made havoc with wheat, and we had a general wheat failure—the first ever known here. Corn was a splendid crop. Seeding in April. The winter was not very cold, but a long one. The summer was delightful.

1877—February and December were spring months—unseasonably mild weather. Wheat sowed in February froze to death in March, for March was a cold winter month, making a late spring. Had an excellent wheat crop, and other crops bountiful. September very warm, like a June. November cold and snowy, and we husked corn in the snow. Farmers plowing all the month of December. Venus at greatest brilliancy could be seen in the daytime at all hours, it was so bright, and moonless evenings it cast starlight on the wall through the window. February mean about 33°, March about 24°, December about 38°.

1878—January very open and mild and no snow (mean about 30°). February a spring month, with a maximum temperature of 62° and a mean of about 34°. March was a record breaker—it was so warm, like an ordinary April, and April like May. It was like missing a winter, but there was lots of mud and flowers instead of snow. No damaging spring frosts, though vegetation started so very early. Seeding all done in February and March. Wheat was laid out for an immense crop. July 11 mercury 108° in the shade, and 140° in the sun, cooked the wheat which was in the dough, and made a terrible wheat failure. Lots of fields not harvested, and the grain looked like screenings. It sold for twenty-five cents per bushel. The hot summer made good corn. The year ending November 1878, is known as the year without a winter. Very late fall.

1879—Much snow in December, and it drifted terribly. Wheat no longer a staple—the country had been wheated to death. Very little wheat sowed. Crops were good. October a warm Indian summer month. Spring reasonably early. The winter months were very cold.

1880—Crops good. January had great mountains of snow, piled up in December, 1879. Summer was fine. Much snow. Wet May. Spring floods and washouts. June freshets. November a winter month.

1881—Summer warm. Good crops. Hay was an exceptionally good crop, and clover was beautiful. Mercury was 100° in August. Both September and October were very wet. January was very cold. December almost a spring month.

1882—January a good winter month. February was very mild. Early in May I started for Webster, South Dakota, where I spent fifteen years.

CLIMATOLOGY OF THE MONTH OF JANUARY, 1905.

BAROMETER.—Mean pressure, 30.33 inches; highest observed, 31.09 inches, at Sioux City, on the 25th; lowest observed, 29.12 inches, at Keokuk, on the 1st. The range for the state 1.97 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 118 stations, was 11.2°, which is 7.0° below normal. By sections the mean temperatures were as follows: Northern section 7.7°, which is 9.7° below normal; central section 11.2°, which is 7.3° below normal; southern section 14.6°, which is 8.2° below normal. The highest monthly mean was 19.6°, at Keokuk; lowest monthly mean, 4.2°, at Fayette. The highest temperature reported was 56°, at Keokuk, on the 1st; lowest temperature reported was 30°, at Inwood, on the 25th. The average monthly maximum was 43.8°; average monthly minimum, 18.9°. Greatest daily range, 48° at Audubon; average of greatest daily ranges, 35.4°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 125 stations, was .91 of an inch, which is .06 of an inch below normal. The averages by sections were as follows: Northern section, .70 inch, which is .11 inch below normal; central section, 1.07 inches, which is .04 inch above normal; southern section, .97 inch, which is .09 inch below normal. The largest amount reported was 1.82 inches at Lacona; least amount reported, .12 inch, at Storm Lake. The greatest daily rainfall reported was .90 inch, at Lacona, Ridgeway, Northwood, on the 11th and 12th respectively. Average number of days on which .01 of an inch or more was reported, 6.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 38 miles per hour, from the Northwest, at Sioux City, on the 5th. Average number of clear days, 13; partly cloudy, 8; cloudy, 10.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Charles City	30.32	30.99	25	29.75	1
Davenport	30.29	30.91	25	29.77	1
Des Moines	30.38	30.04	25	29.79	1
Dubuque	30.31	30.92	25	29.79	1
Omaha, Neb	30.37	30.07	25	29.73	1
Keokuk	30.31	30.95	25	29.12	1
Sioux City	30.36	30.09	25	29.71	1
Means	30.33	30.09	25	29.12	1

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Charles City	5.594	33	NW	9
Davenport	5.982	28	NW	9
Des Moines	6.056	32	NW	24
Dubuque	4.870	28	NW	9
Keokuk	6.431	30	NW	24
La Crosse, Wis	4.961	32	NW	9
Omaha, Neb	7 230	36	N	24
Sioux City	8.738	38	NW	5

OBSERVERS' NOTES.

ALTA—*David E. Hadden*. January, 1905, was very cold, the mean temperature being lowest in 15 years, with one exception, January, 1893, which was about half a degree colder. Ground well covered with snow.

ATLANTIC—*J. W. Love*. An ideal winter month; snow enough for good roads; brilliant sun dogs on 24th.

BONAPARTE—*B. R. Vale*. A pleasant and seasonable month; nine days temperature was below zero, the lowest being 11° below on 14th and 25th; frequent light snows.

BRITT—*Geo. P. Hardwick*. Second and fourth weeks were very cold; 7° lower than average of last nine Januaries.

CLINTON—*Luke Roberts*. The mean temperature of the month was 14.7°, being the same as in January 1904, and 3.5° below the normal for past 27 years. The warmest day was the 1st, with a mean of 41.2°; and the coldest day was the 24th, with a mean of 4.5° below zero. There was a stout wind of 26 miles an hour, and blizzard conditions. Precipitation of the month only .79 of an inch of water, coming mainly in form of snow.

GRAND MEADOW—*F. L. Williams*. Month extremely cold; 19 days at zero or below; the 24th was an extremely bad day.

GREENE—*J. L. Cole*. Ice in Shell Rock river 24 inches thick; no thaw in January.

INWOOD—*G. M. Larsen*. Coldest month of the winter; more snow than for many years.

OLIN—*N. Potter*. A real winter month with no general thaw; no loss of stock reported.

PACIFIC JUNCTION—*H. H. McCartney*. Brilliant parhelia near sunset on 24th; snowfall same as in January, 1902, but much colder.

RIDGEWAY—*Arthur Betts*. Coldest January in 7 years, but a very agreeable month; 200 hours of sunshine; no bad storms; sleighing all the month; thawing temperature on 3 days.

SHELDON—*A. W. Beach*. Best sleighing in years; some sunshine every day but 2; splendid winter weather.

WAUKEE—*E. J. Leonard*.—First day of January was above freezing all day; almost steady cold since; 13 days reached zero or lower.

BELATED REPORTS.

FAYETTE—September—Mean temperature 61.2°; highest 89° on the 28th; lowest 32° on the 12th; greatest daily range 43°; total precipitation 6.08 inches; greatest in 24 hours 2.33 inches; prevailing direction, southwest. Number of rainy days, 9.

FAYETTE—October—Mean temperature 50.2°; highest 78° on the 9th; lowest 17° on the 27th; greatest daily range 40°; total precipitation 2.03 inches; greatest in 24 hours 1.04 inches; prevailing direction, northwest; number of rainy days, 6.

FAYETTE—November—Mean temperature 35.9°; highest 70° on the 1st and 2d; lowest 7° on the 30th; greatest daily range 41°; total precipitation, trace; greatest in 24 hours, trace; prevailing direction, southwest; total snowfall, trace; number of rainy days, none.

FAYETTE—December—Mean temperature 18.5°; highest 45° on the 8th and 22d; lowest 20° below zero on the 14th; greatest daily range 37°; total precipitation 2.30 inches; greatest in 24 hours .95 inch; total snowfall 19.5 inches; prevailing direction, northwest; number of rainy days, 6.

ERRATA IN ANNUAL SUMMARY, 1904.

Mean temperature, under climatology of year, 1904, on page 11, recorded as 43.4°, should have been 46.3°. Departure from normal, recorded as 3.3° below normal, should have been 0.4° below normal.

Under Climate and Crop Review, 1904, mean temperature recorded as 43.4°, should have been 46.3°. Departure from normal, recorded 3.3° below normal, should have been 0.4° below normal.

Annual mean temperature recorded as 43.4° on page 16, should have been 46.3°.

ERRATA IN DECEMBER REVIEW.

COLLEGE SPRINGS.—Number of days missing, recorded [a] page 5, should have been [b].

KNOXVILLE.—Mean temperature recorded 26.2° on page 5, should have been 26 7°. Mean maximum temperature recorded 34 8° on page 8, should have been 35.9°.

NEW HAMPTON.—Precipitation on 2d, 3d, 18th and 26th, page 9, recorded as .00, should have been trace.

THURMAN.—Total snowfall not recorded on page 5, should have been 4 5 inches.

TOLEDO.—Total precipitation on page 6, not recorded, should have been 1.58 inches. Greatest amount in 24 hours should have been .80 inch, on page 6. Total snowfall on page 6, not recorded, should have been 20.5 inches.

ZEARING.—Total snowfall recorded 17.3 inches on page 6, should have been 21.8 inches.

IOWA WEATHER AND CROP SERVICE.

CLIMATOLOGICAL DATA FOR JANUARY, 1905.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	8.0	- 8.5	39	4	-20	25	33	1.03	† 73	.65	16.0	6	...	...	...	NW	
Alta	Buena Vista	1,513	14	7.9	- 8.9	44	4	-26	25	28	1.27	†.62	.60	13.7	12	10	14	7	NW	
Alta (near)	Buena Vista										1.25		.45	12.5	6	...	...	...	...	
Britt	Hancock	1,236	8	7 2	-10.5	39	1	-21	30	39	1.14	†.55	.50	11.8	9	8	16	7	NW	
Charles City	Floyd	1,012	18	4.6	-11.9	37	1	-24	30	37	.86	-.13	.45	10.6	9	10	12	9	NW	
Clear Lake	Cerro Gordo	1,241	...	7.6	.....	41	1	-20	25	32	.30	.....	.10	3.0	3	12	12	7	NW	
Cresco	Howard	.....	31	7.2	- 3.8	39	1	-17	10.30	31	60	-.57	33	6.7	6	15	8	8	NW	
Decorah	Winneshiek	857	12	6.6	- 9.9	34	1	-20	30	35	.91	- 18	.58	9.0	6	...	...	...	.....	
Dows	Wright	1,142	9	7.2	-12.1	40	1	-19	14,25	33	1.10	†.56	.40	12.0	5	14	2	15	NW	
Elkader	Clayton	727	21	10.2	- 4 2	38	1	-21	30	40	.81	-.54	.40	9.5	4	16	9	6	NW	
Estherville	Emmet	1,298	12	6.6	- 9.7	42	1	-21	25	33	.78	†.43	.30	11.0	8	15	0	16	NW	
Fayette (f)	Fayette	.....	15	4.2	-12.7	38	1	-24	30	33	.....	.....	.....	.....	...	...	...	...	.....	
Florence	Wright	1,226	..	.....	.....	.....	.....	.....	.....	....	.73	...	.31	11.5	7	4	20	7	N	
Forest City	Winnebago	1,226	11	6.4	-11.8	40	1	-19	25	33	.80	†.16	.40	8.0	4	19	3	9	NW	
Grand Meadow	Clayton	1,180	11	7.8	- 8.1	38	1	-18	10	31	.88	-.30	.30	8.8	7	11	10	10	NW	
Greene	Butler	924	8	8.3	-12.0	37	1	-18	13	34	.69	-.02	.23	8 0	6	12	7	12	W	
Hampton	Franklin	1,155	13	8.8	- 6.7	41	1	-17	25	31	.69	-.41	.25	11 7	6	11	18	2	NW	
Hanlontown	Worth	.....	...	6.8		39	1	-21	30	36	1.00	...	.50	10.0	6	13	6	12	NW	
Humboldt	Humboldt	1,095	16	9 0	- 8.5	45	2	-20	13,25	35	.60	-.05	.40	6.1	3	16	7	8	NW	
Inwood	Lyon	.....	...	7.7	.....	50	1	-30	25	33	1 00	....	.60	10.0	3	16	1	14	NW	
Larrabee (b)	Cherokee	1,266	12	8.6	- 9.3	45	1	-29	25	33	1.30	† 73	.65	13.0	6	12	9	10	NW	
LeMars	Plymouth	1,224	7	9.3	-11 7	45	1	-24	25	32	.88	†.19	.45	11.0	3	16	8	7	N	
Mason City	Cerro Gordo	1,132	8	8.6	- 6.6	38	1	-15	13,25	28	1.20	†.01	.60	12 0	5	13	10	8	NW	
New Hampton	Chickasaw	1,169	7	7.2	-13.1	38	1	-18	13,14	33	.47	-.36	.40	4.7	2	2	14	15	N	
Northwood	Worth	1,222	8	7 3	- 9.8	52	1	-19	13	38	1.55	†.90	.90	15.5	4	6	15	10	NW	
Osage	Mitchell	1,184	13	6.6	- 7.4	38	1	-19	13	32	1.03	† 15	.65	10 5	8	14	8	9	NW	
Pocahontas	Pocahontas	1,190		9.6	.....	43	4	-21	25	33	1.15	....	.60	11.5	7	14	11	6	NW	
Plover	Pocahontas	.....	8	7.8	-13.2	42	4	-22	13	40	1.45	†.94	.50	14.5	8	15	4	12	W	
Ridgeway	Winneshiek	1,215	7	10.2	-12.1	40	1	-18	10	35	1.33	-.33	.90	8.8	6	13	16	2	S	
Rock Rapids	Lyon	1,021	7	9.7	- 5.1	50	1	-22	15,25	44	.70	† 07	.60	7 0	2	...	...	...	.....	
Sheldon	O'Brien	1,422	4	8.2	-13.6	46	1	-27	25	38	1.34	†.95	.55	16.2	7	18	8	5	NW	
Sibley	Osceola	1,212	12	6.0	-10.6	42	1	-26	25	41	.88	†.34	.40	9 0	7	15	5	11	NW	
Sioux Center	Sioux	.....	6	8.9	-12.7	44	1	-27	25	34	1.30	†1.03	.70	13.0	4	10	6	15	NW	
Storm Lake	Buena Vista	1,440	8	6.2	-13.0	44	1,4,	-26	25	35	.12	-.58	.03	1.5	5	19	0	12	NW	
Washta	Cherokee	1,157	...	.....	.....	.....	.....	.....	.....	.....	1.15	†.71	.70	12.2	3	20	5	6	.....	
Waverly	Bremer	942	9	7.6	-12 1	36	1	-20	30	35	1.14	†.21	.50	11.4	8	9	12	10	NW	
West Bend	Palo Alto	1,197	12	8.6	- 9.0	42	4	-19	25	33	1.75	†.73	.80	17.5	5	10	8	13	NW	
Average				7.7	- 9.7	38.4		-21 4			34.4	.70	-.11		10.5	6	13	9	9	NW

SOUTHERN SECTION.

Afton	Union	1,212	11	14.5	-8.9	48	1	-17	25	36	1.35	† .54	.60	13.5	6	8	8	15	NW	
Albia	Monroe	957	..	12.3	.....	49	1	-14	24,25	39	1 04	....	.35	11.5	8	12	0	19	NW	
Allerton	Wayne	.....	...	15.2	.....	48	1	-15	25	36	1.01	.....	.40	10.1	7	17	3	11	NW	
Atlantic	Cass	1,164	14	11.8	-8.4	46	1	-26	14	40	1.55	† .79	.80	15.5	4	9	7	15	NW	
Bedford	Taylor	.....	...	14.2	.....	50	1	-19	25	36	.95	.....	.80	....	4	17	2	12	NW	
Bonaparte	Van Buren	.....	14	16.2	-7.4	51	1	-11	14,25	35	.79	- .78	.36	7.5	6	...	...	...	.....	
Burlington	Des Moines	544		18.2	.....	54	1	-10	14,25	34	1.00	.....	.60	....	6	17	4	10	NW	
Chariton	Lucas	1,042	10	13.5	-11.9	47	1	-15	25	35	1.15	† .04	.60	10.0	4	11	11	9	NW	
College Springs	Page	.....	14	15.4	-8.8	47	1	-20	25	34	.90	† .34	.50	9.0	4	18	5	8	NW	
Columbus Junct.	Louisa	586	..	16.4	.....	51	1	-11	14	33	.78	.....	.33	11.2	6	20	8	3	NW	
Corning	Adams	1,127	13	12.8	-9.5	45	1	-19	14,25	38	.97	† .22	.50	9.8	4	11	9	11	NW	
Corydon	Wayne	992	12	15.4	-6.1	48	1	-15	25	37	1.10	- .51	.67	8.0	8	13	7	11	NW	
Clarinda	Page	.....	15	12.8	-9.9	46	1	-19	25,26	45	.87	- .10	.77	11 2	4	9	9	13	NW	
Cumberland	Cass	.....	....	.....	.	....	.....	.....	.....	.....	1.00	.....	.60	10.0	3	19	6	6	NW	
Earlham (c)	Madison	.....	..	12.7	.....	44	1	-17	25,26	46	.91	.	.67	11.0	3	....	....	....	NW	
Ft. Madison	Lee	516	56	.....	.....	...	.....	.....	.....	.....	1.37	- .52	.52	10.5	6	9	7	15	N, NW	
Glenwood	Mills	.....	17	15.0	-7.7	54	1	-20	25	33	.75	- .10	.45	7.5	3	6	23	2	NW	
Greenfield	Adair	.....	14	12.4	-9.3	45	1	-20	25	38	.93	† .03	.37	11.5	7	14	9	8	NW	
Hopeville	Clarke	.....	13	13.4	-8.4	46	1	-16	25	35	.46	- .44	.25	....	8	9	11	11	NW	
Indianola	Warren	969		12.6	-6.4	49	1	-17	25	34	1.33	† .18	.58	13.5	9	9	2	20	NW	
Keokuk	Lee	619	34	19.6	-3.6	56	1	-10	24	34	.60	-1.12	.33	4.6	7	14	6	11	NW	
Keosauqua	Van Buren	644	13	15.4	-8.4	52	1	-10	10,14,15 25,26	38	.78	- .14	.23	7.5	7	9	8	14	.....	
Knoxville	Marion	920	12	14.0	-10.4	48	1	-14	25	33	1.65	† .72	.30	18.0	6	10	10	11	NW	
Lacona	Warren	.....	....	...	.....	.....	....	.....	.....	.....	1.82	.....	.90	18.2	11	5	17	9	.....	
Lenox	Taylor	1,250	10	12.4	-12.5	47	1	-22	25	40	.60	- .03	.30	6.0	3	16	5	10	NW	
Leon	Decatur	1,120	....	15.0	.....	47	1	-15	25	26	.91	.....	.30	9.2	7	12	0	19	N	
Massena	Cass	.....	....	13.2	.....	44	1	-19	25	36	.66	.....	.31	10.0	3	15	4	12	N	
Mt. Ayr	Ringgold	1,236	12	14.8	-9 1	50	1	-17	25	42	1.07	† .04	.65	16.8	6	9	6	16	NW	
Mt. Pleasant	Henry	729	24	15.6	-8.8	52	1	-12	14	36	.88	- .35	.40	9.9	7	17	4	10	NW	
Omaha, Neb.	Douglas	1,113	34	14.3	-4.9	50	4	-18	25	28	1.13	† .44	.77	14.2	10	8	10	13	N	
Oskaloosa	Mahaska	843	22	12.6	-6.4	48	1	-16	10,14	36	.73	- .15	.22	10.0	8	17	1	13	.....	
Ottumwa	Wapello	649	11	14.9	-9.9	51	1	-12	25	30	.85	- .74	.30	7.5	5	9	9	13	NW	
Pacific Junction	Mills	960	....	13.4	.....	44	1,4	-22	25	40	.96	.....	.55	9.3	6	11	13	7	N	
Red Oak	Montgomery	1,033	8	16.6	-9.5	45	4	-15	25	35	.65	- .07	.49	6.0	3	13	9	9	NW	
St. Charles	Madison	1,070	....	15.2	.. .	50	1	-16	25	35	1.24	.....	.65	13.4	11	14	4	13	NW	
Stockport	Van Buren	....	....	16.7	.....	51	1	-12	14	36	.94	.....	.45	9.5	7	12	5	14	NW	
Thurman	Fremont	.....	8	13.6	-12.6	49	1	-21	14	42	.91	† .21	.31	....	5	9	11	11	NW	
Wapello (a)	Louisa	588	7	18.4	-8.6	49	1	- 8	25	31	.72	† .01	.23	7.1	6	....	.	....	.....	
Washington	Washington	769	13	14.9	-6.3	47	1	-13	14	35	.82	- .63	.56	....	6	....	...	...	NW	
Winterset	Madison	1,121	14	13.6	-7.9	45	1	-17	25	35	.....	.....	.....	...	..	18	1	12	.....	
Woodburn	Clarke	961	....	.....	.....	.....	.....	.....	.....	...	1.15	.....	.40	11.5	7	16	3	12	NW	
What Cheer	Keokuk	....	....	14.9	.....	54	1	-17	10,14	42	.50	.....	.20	5.0	4	16	7	8	N	
Average				14.6	-8.2	48.6	.....	-16.0	.....	36.2	.97	- .09	.....	10.4	6	13	7	11	NW	
Average for State				11.2	-7.0	43.8	.....	-18.9	.....	35.4	.91	- .06	.....	11.1	6	13	8	10	NW	

CLIMATOLOGICAL DATA FOR JANUARY, 1905—Continued.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Amana	Iowa	721	27	12.0	-3.8	45	1	-15	26,30	33	.89	- .55	.55	7.0	6	12	12	7	NW	
Ames	Story	926	21	14.5	-2.6	47	1	-18	31	42	.64	- .33	.30	7.1	4	8	15	8	NW	
Audubon	Audubon	1,301	9	9.1	-10.3	44	1	-24	14	48	1.08	† .42	.48	10.8	7	13	6	12	NW	
Baxter	Jasper	998	....	10.4	.....	44	1	-17	10, 14, 25	34	1.40	.	.50	14.0	6	18	0	13	NW	
Belle Plaine	Benton	826	14	10.2	- 8.2	45	1	-18	14	34	1.65	† .13	.40	16.5	8	7	14	10	W	
Boone	Boone	....	....	12.2	....	44	1	-16	25	31	.90	.....	.42	14 5	7	17	4	10	NW	
Buckingham	Iowa	.....	....	.....	.....	.....	.....	.....	.....	.....	.91	.....	.20	10.5	8	11	19	1	.....	
Carroll	Carroll	1,265	13	10.6	- 9.0	46	1	-20	25	36	1 57	† .71	.60	15.5	7	18	1	12	.....	
Cedar Rapids	Linn	733	23	10.6	- 7.7	44	1	-12	14, 26, 31	36	.74	- .70	.20	13.1	8	14	7	10	NW	
Clinton	Clinton	609	38	14.8	- 4.4	48	1	-10	10	31	.69	-1.16	.16	7.2	7	11	11	9	.....	
Davenport	Scott	606	34	15.7	- 4.3	51	1	- 9	14	30	.63	-1.04	.41	7.2	7	12	7	12	NW	
Delaware	Delaware	1,083	12	9.0	- 6.8	42	1	-15	10, 26, 31	33	.74	- .27	.23	8.5	6	17	7	7	NW	
Denison	Crawford	1,180	9	11.0	-10.1	46	1, 4	-24	14	34	1.12	† .56	.38	11.2	7	22	3	6	N	
Des Moines	Polk	861	27	12.8	- 4.7	45	1	-15	25	32	1.08	- .26	.61	14.1	12	8	11	12	NW	
De Soto	Dallas	866	...	12.7	.....	43	1	-19	25	42	1.20	.....	.40	12 0	7	20	2	9	NW	
Dubuque	Dubuque	655	32	12.1	- 5.2	44	1	-12	30	30	.95	- .73	.51	9.6	7	15	6	10	NW	
Fort Dodge	Webster	1,126	....	8.4	.....	41	1, 4	-18	25, 26	37	.80	.....	.30	8.0	5	17	4	10	NW	
Galva	Ida	1,290	12	8.8	- 9.7	45	4	-27	25	36	1.53	†1.18	.60	16.8	9	19	4	8	NW	
Gilman	Marshall	1,052	..		.....	..	.....	.....	.....	.....	1 60	.....	.80	16.0	5	13	6	12	N	
Grinnell (*a*)	Poweshiek	1,023	10	11.3	- 6 2	45	1	-15	25	32	.....	.....		....	....	11	12	8	NW	
Grundy Center	Grundy	976	12	8.8	- 8 1	38	1	-17	26	38	1.50	† .79	.40	15.0	6	13	4	14	NW	
Guthrie Center	Guthrie	1,077	7	12.8	- 9.2	48	5	-20	25	37	.74	† .21	.44	....	8	16	8	7	NW	
Harlan	Shelby	1,192	....	10.8	.....	43	1, 4	-24	14	38	.87	.....	.50	10.5	7	9	8	14	NW	
Independence	Buchanan	921	40	8 2	- 6.5	36	1, 2	-19	30	33	1.39	† .02	.47	14.0	6	14	9	8	NW	
Iowa City	Johnson	683	47	11.2	- 7.9	48	1	-16	3	40	1.22	- .52	.47	17.5	5	8	5	18	N	
Iowa Falls	Hardin	1,170	10	6.5	- 8.9	32	4	-18	30	35	1 10	† .26	.50	13.5	7	18	3	10	NW	
Little Sioux	Harrison	.....	....	11.8	.....	52	4	-27	25	38	1.24	.....	.78	12.4	5	15	7	9	NW	
LeClaire	Scott	576	....	.....	.....	.....	.....	.....	.....	.....	.79	.....	.33	10.0	9	....	....		NW	
Logan	Harrison	928	36	13 7	- 5.5	47	4	-21	25	36	1.70	† .58	.60	17.0	7	6	15	10	NW	
Maquoketa	Jackson	688	12	11.7	- 8.4	43	1	-15	10, 30	39	.63	- .69	.33	13.0	5	15	5	11	NW	
Marshalltown	Marshall	947	10	9.4	-10 7	41	1	-16	14, 25	40	.92	- .02	.24	11.1	10	9	3	19	NW	
Muscatine	Muscatine		46	.....	.....	.....	.....	.....	.....	.....	.93	- .08	.24	10.0	7	....	....	...	S, NW	
Mt. Vernon	Linn	847	30	12.4	- 6.3	44	1	-17	15	33	1.21	- .10	.65	15.3	9	16	3	12	NW	
Newton	Jasper	944	15	11.4	- 6.3	43	1	-18	25	38	1.46	† .54	.65	17.5	6	11	11	9	NW	
Odebolt	Sac	1,356	8	10.2	-12.4	50	1	-25	25	35	.94	† .62	.60	11.5	5	18	4	9	.....	
Ogden	Boone	1,088	9	10.2	-11.3	43	1	-18	14, 25	33	.95	† .36	.45	9.5	5	12	5	14	NW	
Olin	Jones	760	7	12 3	-10.3	42	1	-17	30	32	.85	- .23	.30	11.0	7	15	7	9	NW	
Onawa	Monona	....	....	13.0	.....	47	1	-20	25	33	1.43	† .23	.85	14.6	7	20	4	7	NW	
Perry	Dallas	975	..	11.2	.....	42	1	-19	25	40	1.28	.....	.45	12.8	8	....	....		.....	
Rockwell City	Calhoun	.....	8	10.4	-10.8	45	1	-22	25	33	1.25	† .62	.60	12.5	4	18	4	9	.....	
Sac City	Sac	1,278	23	11.4	- 5.1	45	4	-23	25	39	1.17	† .22	.50	11.8	7	19	3	9	W	
Sioux City	Woodbury	1,165	16	10 0	- 6.3	47	1	-25	25	30	.67	† .04	.38	13.4	6	11	6	14	NW	
Tipton	Cedar	807	....	15.4	.....	46	1	-10	14, 15, 25	31	.....	.....	.....	.....	...	17	10	4	NW	
Toledo	Tama	856	9	10.8	- 8.9	44	1	-17	10, 26	40	.97	† .16	.50	15.5	8	13	6	12	NW	
Vinton	Benton	810	15	11.2	- 7.7	40	1	-19	30	36	.80	- .35	.40	8.0	3	18	0	13	NW	
Waterloo	Black Hawk	862	16	8.2	- 9.6	40	1	-16	13, 30	33	.87	- .08	.37	10.0	6	12	8	11	NW	
Waukee	Dallas	1,039	....	13.2	.....	46	1	-18	25	42	1.65	.....	.60	16.5	9	12	9	10	NW	
Wilton Junction	Muscatine	683	11	14.2	- 8.6	52	1	-14	10	34	.74	.....	.40	5.0	4	17	0	14	NW	
Whitten	Hardin	1,036	..	9.1	-11.2	49	1	-20	13	34	1.30	.....	.40	13 0	4	12	8	11	NW	
Zearing	Story	718	..	9.4	...	39	1	-23	25	35	.76	.....	.35	10.5	4	14	6	11	NW	
Average	.....	.....	... ..	....	11 2	- 7.3	44.4	.....	-18.2	.....	35.6	1.07	† .04	.....	12 3	7	14	7	10	NW

† Above normal. ‡ Received too late to be computed with means. *a*. One day missing; *b*. two days, etc. § Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JANUARY, 1905.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max	48	37	24	35	34	23	23	24	21	7	16	12	14	8	13	21	36	37	33	36	25	22	30	26	2	23	27	24	22	20	17	23.9
	Min	35	22	8	14	17	15	14	7	3	- 7	0	- 3	-12	-10	-10	- 1	13	24	17	18	7	8	13	-10	-17	-10	10	3	- 4	- 5	- 1	5.1
Albia	Max	49	32	20	32	33	22	19	27	9	9	17	10	5	11	17	24	36	36	37	42	18	26	- 2	6	25	26	26	13	12	15	..	21.7
	Min	38	32	2	5	19	12	16	0	0	-12	- 7	- 1	-13	-13	- 9	- 6	2	15	13	21	11	7	- 6	-14	-14	- 3	0	1	- 1	- 5	0	2.9
Algona	Max	38	34	22	39	30	21	18	16	16	8	7	5	3	1	11	21	27	30	31	26	18	20	22	14	0	19	18	11	11	10	11	18.0
	Min	24	6	- 6	7	15	15	7	- 5	- 5	-11	3	- 3	-15	-14	-13	-12	2	5	16	11	2	1	8	-15	-20	-14	2	-13	-14	-16	-14	-2.1
Allerton	Max	48	43	26	32	35	26	22	25	22	6	16	15	7	13	19	25	35	36	38	45	35	20	32	27	5	24	29	24	14	14	19	25.1
	Min	37	24	5	11	17	12	14	6	5	-10	1	- 2	-13	-13	-11	- 1	8	28	16	19	10	6	16	- 9	-15	-10	10	5	4	- 4	- 1	5.8
Alta	Max	43	33	26	44	30	21	18	22	20	6	7	3	0	3	8	18	26	28	30	25	16	12	22	6	- 4	16	19	8	10	10	7	17.2
	Min	29	8	5	16	18	13	6	- 5	- 6	-10	3	-12	-20	-16	-16	-10	7	5	14	9	2	4	6	-15	-26	-12	2	-10	- 4	-10	-14	-1.4
Amana	Max	45	37	19	28	33	27	21	14	26	5	23	19	3	6	16	16	29	38	31	39	35	20	26	23	4	23	22	17	12	13	14	22.1
	Min	28	19	6	4	25	8	12	- 2	1	-14	5	3	-11	-14	-13	- 5	- 2	24	11	11	9	1	13	-10	-13	-15	6	- 5	2	-15	- 7	2.0
Ames	Max	47	41	37	32	43	36	30	29	26	23	30	26	20	26	22	28	28	29	33	41	38	37	31	20	16	24	21	19	4	10	11	27.7
	Min	21	10	17	8	1	6	2	- 2	-13	2	4	- 8	-15	- 5	- 2	3	-15	16	13	26	2	18	16	-12	-17	-15	6	- 8	0	-11	-18	1.3
Atlantic	Max	46	38	29	41	35	25	24	29	25	7	13	10	7	8	15	23	35	30	34	32	26	18	24	23	- 2	22	35	21	16	17	13	23.2
	Min	24	18	5	14	17	15	13	3	2	- 9	3	- 5	-17	-26	-23	-17	3	22	14	8	6	9	14	-11	-21	-18	- 2	4	- 1	-14	-21	0.3
Audubon	Max	44	36	27	42	34	22	21	27	24	6	10	6	1	3	15	20	33	28	33	28	23	18	25	19	- 1	19	22	19	10	12	10	20.5
	Min	29	17	5	- 6	16	15	13	- 3	- 1	-10	2	- 6	-15	-24	-16	-15	- 3	-14	10	13	5	3	11	-13	-22	-19	- 2	- 5	- 2	-15	-19	-2.3
Baxter	Max	44	35	29	28	33	25	20	15	25	3	17	15	2	9	15	20	29	35	34	36	26	15	24	21	- 5	20	22	18	15	11	13	20.9
	Min	30	15	- 2	4	18	9	12	- 5	0	-17	1	- 5	-16	-17	-13	- 5	3	21	13	11	4	0	10	-12	-17	- 4	4	- 9	- 1	-12	-11	0.0
Bedford	Max	50	37	31	37	35	24	33	25	27	6	15	12	3	9	13	22	37	35	34	37	27	20	28	27	0	23	32	26	15	16	18	24.3
	Min	35	22	6	17	18	13	14	7	4	- 9	1	- 5	-16	-18	-16	- 7	1	24	14	15	7	10	15	- 8	-19	-13	4	10	2	- 3	0	4.0
Boone	Max	44	37	24	36	35	22	22	20	25	8	14	12	6	7	17	21	29	30	32	31	25	14	23	20	1	21	21	19	10	12	14	21.0
	Min	34	14	4	10	17	15	13	0	2	- 8	2	- 3	-13	-12	- 9	- 2	8	23	16	17	3	5	10	-11	-16	- 7	7	- 7	3	- 7	- 5	3.3
Belle Pl'e	Max	45	34	18	30	32	25	21	15	12	6	23	11	2	5	17	16	30	37	33	38	18	21	27	- 5	3	23	25	10	13	12	19	19.9
	Min	30	31	1	3	20	5	12	- 6	0	-17	0	0	-15	-18	-17	- 8	1	30	6	11	5	- 2	4	-11	-16	- 9	5	- 8	0	-12	-10	0.5
Bonapar'e	Max	51	40	25	27	36	29	24	24	28	5	23	20	9	11	21	26	34	36	35	44	36	21	28	26	7	26	28	21	15	13	15	25 3
	Min	39	25	10	16	22	14	16	5	- 1	- 9	4	5	- 6	-11	- 7	3	9	29	18	18	15	6	16	- 9	-11	- 7	14	1	3	- 6	4	7.0
Britt	Max	39	33	21	38	35	20	18	18	23	12	10	11	3	0	10	14	29	29	32	28	17	22	25	12	- 1	20	15	11	9	18	15	18.9
	Min	22	7	- 4	7	6	10	5	- 9	- 7	-12	3	- 9	-18	-14	-20	-18	- 6	1	11	8	0	- 3	3	-14	-20	-14	8	-13	- 5	-21	-20	-4.4
Burling'n	Max	54	48	29	29	39	29	27	25	29	7	27	24	18	15	24	29	33	37	40	44	35	23	30	25	12	23	32	22	29	15	18	28.1
	Min	40	25	12	14	26	14	15	5	1	- 7	- 7	9	- 2	-10	- 5	4	13	32	19	20	18	7	11	- 8	-10	- 6	15	4	7	- 3	8	8.4
Carroll	Max	46	39	44	45	24	24	15	21	10	8	9	5	9	8	18	27	36	31	35	27	17	22	25	- 7	5	19	25	9	14	12	..	20.7
	Min	32	21	5	14	17	14	12	- 5	- 2	- 8	2	- 9	-19	-17	-12	- 6	7	10	13	20	1	0	8	-13	-20	-17	1	- 9	0	-10	-12	0.6
Cedar R	Max	44	36	18	31	30	21	20	27	13	10	22	12	5	5	16	18	37	37	33	38	19	17	24	- 3	6	22	18	11	14	11	10	20.1
	Min	29	33	5	5	19	11	11	0	- 1	-10	-10	2	- 9	-12	-11	-11	- 3	1	15	12	17	2	3	- 4	-10	-12	-11	1	- 2	-10	-12	1.2
Chariton	Max	47	46	23	33	32	25	21	22	26	5	16	15	7	10	15	22	34	36	37	42	28	18	27	0	2	23	26	23	14	15	17	22.8
	Min	38	22	4	9	15	12	14	0	5	-11	0	- 1	-14	-13	-12	- 2	4	27	16	17	9	5	13	-10	-15	-12	11	2	2	- 6	0	4.2
Charles C	Max	37	34	15	29	25	20	19	16	23	3	15	13	- 1	- 2	11	15	22	25	30	26	10	11	19	2	3	18	15	8	9	5	6	15.5
	Min	19	0	- 6	1	12	11	9	- 8	-10	-14	2	-14	-21	-23	-12	-11	- 9	8	7	4	- 7	- 6	2	-13	-18	-19	- 1	14	-12	-24	-18	-6.3
Clarinda	Max	46	32	30	42	35	35	28	27	13	7	14	7	5	12	17	22	39	34	38	38	20	21	13	- 1	2	25	32	14	16	16	11	22.1
	Min	31	28	9	17	18	15	15	6	6	- 4	1	- 5	-15	-17	-16	-12	- 6	10	17	16	7	7	13	- 7	-19	-19	2	8	3	- 1	1	3.5
Clear L	Max	41	37	17	32	33	20	33	15	21	6	11	10	1	- 2	7	16	24	24	28	27	22	14	20	15	1	20	17	15	10	9	9	17.8
	Min	21	14	1	1	15	13	9	- 7	- 5	-13	2	- 4	-18	-17	-18	-13	2	7	11	11	0	- 2	6	-16	-20	-12	- 3	-10	- 5	-15	-15	-2.6
Clinton	Max	48	40	21	26	33	28	25	12	27	7	26	25	14	6	15	19	29	38	38	40	35	21	28	23	14	22	24	15	17	15	17	24.1
	Min	27	20	10	8	20	16	10	0	- 1	-10	6	8	- 2	- 4	- 9	0	3	26	16	16	24	5	13	- 8	- 9	- 8	11	- 2	3	- 8	- 6	5.6
Col. Sprgs	Max	47	40	31	40	36	26	27	27	27	7	16	11	2	7	15	18	36	36	36	36	21	23	32	26	3	23	32	23	13	21	20	24.5
	Min	33	10	10	19	19	14	12	7	4	- 3	3	- 6	-17	-14	-12	- 2	20	26	16	19	6	12	17	- 8	-20	10	10	7	3	1	2	6.4
Colum. J.	Max	51	41	25	30	34	28	29	18	28	7	23	24	10	9	19	29	32	38	36	44	39	20	29	25	6	25	25	21	15	19	17	25.7
	Min	37	24	10	13	25	11	12	2	2	- 9	5	6	- 4	-11	- 8	2	11	30	17	19	14	4	19	- 9	-10	- 8	13	- 1	4	- 5	1	7.0
Corning	Max	45	38	26	38	36	23	22	23	26	6	14	10	3	7	18	23	34	36	35	42	34	25	19	27	26	1	21	28	23	12	14	13	22.6
	Min	36	21	7	16	14	13	13	5	3	- 7	1	- 5	-18	-19	-16	- 7	4	24	11	17	7	8	10	-11	-19	-17	7	3	3	-10	- 5	2.9
Corydon	Max	48	46	28	34	33	26	22	24	27	9	17	16	6	11	19	27	34	36	38	44	35	35	28	28	9	25	28	26	19	14	17	26 1
	Min	37	24	3	9	17	11	12	3	5	-10	0	- 2	-13	-14	-10	- 0	8	28	15	18	9	5	14	- 9	-15	-10	9	3	4	- 5	- 2	4.6
Cresco	Max	39	35	16	30	27	19	18	9	22	1	14	16	4	- 1	9	15	23	24	27	25	25	9	17	10	5	17	17	10	8	7	7	16.3
	Min	19	15	- 4	3	13	13	9	- 9	- 7	-17	0	2	-16	-15	-10	- 5	0	17	12	5	2	- 5	5	-13	-15	-14	4	-11	- 5	-17	-11	-1.8
Davenpo't	Max	51	35	23	29	32	26	23	29	28	6	27	21	14	8	19	24	34	37	34	41	35	21	25	16	10	24	24	15	16	14	13	24.0
	Min	35	19	12	13	26	16	10	1	- 2	- 8	6	3	- 5	- 9	- 6	5	11	29	18	22	11	7	15	- 9	- 9	- 5	14	4	4	- 1	1	7 4
Decorah	Max	34	22	18	28	27	22	18	11	- 2	7	18	13	2	2	12	17	26	28	32	28	14	17	23	- 8	8	18	17	14	12	10	12	16.1
	Min	18	11	- 8	- 3	16	11	8	- 7	- 8	-17	1	4	-11	-14	-11	- 6	- 5	13	7	7	4	- 7	6	-12	-13	-17	- 1	-13	- 3	-20	-16	-2 8
Delaware	Max	42	34	14	25	29	21	18	10	3	5	20	20	5	0	11	15	26	38	30	31	28	16	24	17	6	16	17	10	10	10	18	18.4
	Min	30	12	- 1	- 1	19	11	9	- 7	- 5	-15	0	0	- 8	-14	-13	- 7	1	20	10	10	5	- 4	7	- 1	-13	-15	3	-10	- 2	-13	-15	-0.5
Denison	Max	46	40	28	46	38	23	22	26	25	8	9	7	3	6	16	21	30	29	34	31	26	14	25	20	- 1	19	24	19	11	11	11	21 8
	Min	30	17	5	16	16	15	11	- 4	- 1	-10	4	- 6	-18	-24	-15	-13	6	10	10	19	2	4	12	-12	-21	-17	0	- 5	1	- 5	-20	0.2
Des M	Max	45	35	21	35	33	24	20	24	27	4	19	10	6	10	18	22	32	35	34	34	20	16	27	15	3	22	23	16	14	13	13	21.6
	Min	35	11	6	16	17	17	15	2	2	- 7	3	- 1	-12	-12	-10	- 2	7	23	20	16	8	6	12	-10	-15	-10	11	- 2	- 3	- 7	- 4	4.1
De Soto	Max	43	36	28	37	35	24	22	25	27	4	16	10	3	10	18	28	32	35	35	35	26	19	27	21	1	24	24	19	17	16	16	23.0
	Min	35	17	6	12	18	16	15	0	2	-10	0	- 4	-15	-14	-10	- 3	4	20	19	16	3	3	12	-12	-19	-18	9	- 6	0	-14	- 8	2.4
Dows	Max	40	36	12	37	35	19	18	15	23	2	10	9	- 2	- 2	12	16	24	26	32	28	22	13	20	13	- 2	19	17	13	6	3	7	17.1
	Min	25	13	- 7	5	15	10	8	- 8	- 2	-13	2	- 4	-18	-19	-13	-10	0	10	8	10	0	- 5	8	-15	-19	-14	2	-12	- 4	-18	-16	- .6
Dubuque	Max	44	37	16	25	29	24	22	12	25	4	24	21	9	5	15	19	26	37	35	34	29	17	24	12	9	21	19	11	14	10	16	10.8
	Min	30	15	6	3	23	16	10	- 1	- 4	-11	4	7	- 6	11	6	0	0	22	16	12	8	2	11	-10	-10	- 9	7	- 6	1	-12	- 5	3.3
Earlham	Max	44	34	26	36	33	23	22	26	20	2	13	9	4	..	..	..	43	36	35	38	26	15	27	23	2	29	25	21	13	13	12	23 2
	Min	34	12	6	9	15	12	11	- 3	0	-14	-13	- 9	-14	..	..	..	9	18	14	16	6	4	11	-10	-17	-17	5	- 2	3	-13	-12	2.2
Elkader	Max	38	32	24	26	30	28	22	16	5	3	20	19	9	5	16	24	25	34	37	33	27	20	22	16	10	20	19	16	16	10	16	20.6
	Min	17	14	- 8	- 6	13	13	10	- 5	- 4	-16	1	5	-15	-18	-11	-10	-12	17	5	0	5	- 4	8	-10	-11	-20	7	-19	- 6	-21	-16	-0 3
Esthervil	Max	42	18	23	41	20	21	14	22	2	5	5	2	3	0	14	22	27	32	34	26	13	14	21	-11	5	13	18	18	10	5	7	15.7
	Min	21	17	0	7	18	13	10	- 5	- 5	-10	-10	- 9	-15	-14	- 9	- 5	- 3	7	14	8	2	0	7	-16	-21	-20	0	-12	-13	-18	-14	-2.4
Fayette	Max	38	..	..	..	..	..	..	..	0	4	15	10	2	- 3	10	20	24	33	29	31	26	13	21	10	7	17	14	13	7	9	11	15.0
	Min	22	..	..	..	..	..	..	-10	-10	-19	0	- 3	-16	-16	-16	- 8	- 8	17	5	2	0	- 5	5	-14	-15	-14	4	-17	- 6	-24	-16	-6.5
Forest C'y	Max	40	24	23	33	20	18	13	22	4	10	10	13	7	10	11	12	23	25	34	25	10	12	19	-10	3	18	13	12	10	8	7	15 5
	Min	25	23	- 2	2	17	14	10	- 8	- 5	-12	4	- 5	-17	-11	-17	-15	- 8	3	3	7	0	0	5	-14	-19	-17	3	-12	-10	16	-14	-2.8
Ft. Dodge	Max	41	25	21	41	21	22	15	25	5	4	9	4	2	2	10	18	27	28	31	25	20	13	22	-10	- 2	19	17	9	10	8	...	16.1
	Min	26	23	2	7	21	15	12	-2	0	- 8	- 8	- 3	-16	- 7	-10	- 8	- 5	10	10	12	3	8	10	-12	-18	-18	4	- 9	-11	- 5	- 4	0.6
Galva	Max	44	36	26	45	31	22	19	24	23	10	9	6	0	2	13	19	29	28	29	26	20	20	25	13	8	17	22	13	8	18	5	19.7
	Min	26	15	5	17	20	15	9	- 6	- 5	- 9	3	-10	-21	-23	-15	-10	4	3	2	11	1	- 3	10	-15	-27	-17	8	- 9	- 3	-18	-22	-2.1
Glenw'd	Max	54	44	30	47	45	25	22	25	29	10	12	7	5	10	17	24	29	35	33	27	16	25	24	- 4	10	23	31	27	14	14	13	23.4
	Min	33	22	10	18	19	12	10	7	2	- 4	3	- 3	-13	-12	-12	-18	20	19	27	16	10	15	13	- 9	-20	-10	10	5	4	- 1	- 2	6.7
Grand M.	Max	38	33	14	26	26	23	23	9	22	3	15	16	4	2	11	15	25	31	30	28	24	11	23	11	6	17	17	8	11	9	10	17.5
	Min	25	14	- 4	- 2	13	11	8	- 9	- 7	-18	- 1	0	-14	-16	-14	- 6	1	18	18	4	1	- 4	5	-14	-15	-14	4	-12	- 4	-16	-10	-1.9
Greene	Max	37	34	18	29	30	21	19	15	23	5	18	13	3	- 1	14	18	24	26	31	27	25	15	21	14	5	19	19	12	11	11	9	18.1
	Min	22	16	0	3	19	11	10	- 7	- 1	-12	4	- 2	-18	-13	-11	-10	- 3	12	9	8	2	- 5	6	-11	-15	-15	1	-13	- 3	-16	-13	-1.5
Greenfield	Max	45	38	28	35	33	25	20	27	25	11	14	10	4	6	15	20	38	35	34	35	25	23	29	24	2	23	30	21	12	20	17	23 3
	Min	32	18	4	10	12	12	12	- 2	- 2	- 4	- 2	- 7	-14	-15	-12	- 5	7	22	12	17	3	6	12	-14	-20	-15	- 6	- 4	0	- 7	- 7	1.4
Grinnell	Max	45	34	15	28	31	22	20	14	24	5	18	15	3	6	15	7	28	35	31	36	27	14	23	21	4	21	22	12	17	12	13	20 0
	Min	33	14	2	8	20	12	12	- 2	1	-13	3	0	-12	-13	-12	- 2	8	19	15	14	6	2	10	-11	-15	-10	8	- 7	7	- 7	- 5	2.6
Grundy C	Max	38	35	19	29	31	23	20	15	20	2	16	15	2	5	6	17	27	30	33	37	28	16	23	19	5	20	20	16	11	9	12	19.3
	Min	30	15	- 1	- 1	22	6	9	- 8	- 1	-16	1	- 2	-15	-16	-15	-11	-11	19	10	12	2	- 2	9	-12	-16	-17	1	-14	- 4	-14	-16	-1.8
Guthrie C	Max	45	39	27	39	48	24	23	25	26	7	12	12	2	6	10	14	38	32	32	32	27	28	26	25	2	22	23	20	10	15	15	22.8
	Min	37	27	5	14	18	16	14	- 1	1	- 8	1	- 4	-14	-15	- 9	- 7	7	20	17	17	3	3	11	-12	-20	-11	5	- 7	- 2	-11	-11	2.7
Hampton	Max	41	35	24	32	32	22	19	17	11	4	13	11	3	1	17	18	25	29	35	28	20	13	23	9	6	19	16	15	11	9	9	18.2
	Min	26	12	1	4	13	12	10	- 5	- 1	-12	1	- 4	-16	-12	-12	- 9	2	13	15	13	2	- 1	7	-13	-17	-12	4	-11	- 3	-13	-11	-0 5
Hanlontown	Max	37	36	26	31	31	20	20	15	22	4	10	10	0	- 6	-20	-14	-16	-13	- 3	5	11	2	- 2	- 4	1	-15	-19	-18	1	-14	- 7	-21	-19	-4.4
	Min	20	10	- 3	1	14	12	8	- 9	- 6	-14	1	- 6	-20	-14	-16	-13	- 3	5	11	2	- 2	- 4	1	-15	-19	-18	1	-14	- 7	-21	-19	-4.4
Harlan	Max	43	35	28	43	34	23	21	26	24	9	11	8	2	6	15	21	33	30	34	28	24	20	27	20	0	21	25	20	11	18	15	21.8
	Min	23	18	5	17	16	14	10	- 2	- 1	-11	2	- 7	-16	-24	-18	-16	3	10	7	14	4	9	12	-12	-22	-17	- 1	- 3	0	-12	-10	-0.3
Hopeville	Max	46	36	27	35	33	22	22	24	26	3	14	10	1	9	15	22	37	36	37	37	24	19	26	21	4	24	27	17	10	15	20	22.5
	Min	34	15	7	14	17	15	15	5	1	- 8	0	- 3	-13	-12	-13	- 2	5	22	17	18	8	7	14	-10	-16	-11	9	3	3	- 5	- 3	4.3
Humboldt	Max	40	45	20	40	36	22	20	30	25	6	10	7	4	2	- 4	18	29	29	30	27	23	15	24	20	0	20	20	14	9	12	10	19.5
	Min	24	10	- 2	10	18	15	12	- 5	0	-10	4	- 5	-20	-18	-13	-12	- 1	5	10	12	2	- 2	10	-12	-20	-14	0	-11	0	-16	-19	-1.5
Independ.	Max	36	36	20	25	27	22	18	11	23	0	16	16	4	- 1	11	11	23	33	28	33	29	12	18	4	17

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JANUARY, 1905—CONTINUED.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Iowa F ..	Max..	24	30	18	32	27	20	17	20	4	4	12	2	0	0	15	16	25	27	30	25	17	16	21	-10	4	19	16	5	8	10	9	14.9
	Min ..	23	18	- 1	3	17	8	10	- 5	0	-13	- 5	- 1	-17	-15	-12	-11	-10	16	11	7	1	-10	8	-10	-16	-15	3	-10	- 2	-18	-14	-1.9
Keokuk ..	Max..	56	51	27	33	34	31	24	24	30	7	27	20	13	11	21	27	38	40	38	45	33	22	28	27	11	28	32	26	16	15	18	27.7
	Min ..	46	27	13	18	27	16	18	14	6	- 2	4	9	- 2	- 8	- 3	6	18	32	23	23	21	9	18	- 7	-10	- 3	19	9	9	0	9	11.6
Keosauqua ..	Max..	52	35	23	31	34	24	24	29	17	13	21	18	13	13	20	25	36	37	40	44	25	22	24	7	8	28	29	15	14	15	18	24.8
	Min ..	37	33	10	10	20	15	18	5	17	-10	- 5	5	- 6	-10	-10	- 8	4	14	18	15	19	7	10	- 2	-10	-10	- 4	3	2	7	4	6.4
Knoxville	Max..	48	32	21	34	34	23	21	20	18	3	18	15	3	9	18	24	26	43	37	41	27	18	30	25	4	24	24	20	11	17	14	23 6
	Min ..	35	18	4	15	20	15	15	1	3	-10	0	- 1	-13	-12	- 9	1	7	25	18	19	8	5	14	- 8	-14	- 7	12	- 2	3	- 6	- 3	5.3
Larrabee.	Max..	45	35	26	44	32	23	18	24	22	10	..	5	0	1	12	20	28	..	31	27	18	17	24	9	- 4	21	23	10	11	15	10	19.2
	Min .	22	10	12	11	13	13	8	- 8	- 5	- 6	..	-12	-21	-18	-19	-13	8		13	13	4	0	9	-14	-29	-13	- 2	- 2	- 7	-10	-12	-1.9
Le Mars..	Max..	45	35	26	44	34	34	20	24	21	10	8	6	- 1	- 1	11	19	27	29	30	28	21	18	22	15	- 5	20	21	16	9	12	8	19.5
	Min ..	22	18	5	18	15	12	5	- 3	- 5	- 8	4	-11	-20	-20	-18	-13	8	5	15	12	5	2	11	-13	-24	-12	- 5	- 1	- 1	-14	-16	-0.9
Lenox....	Max..	47	38	25	36	34	23	22	24	26	5	14	11	3	6	12	19	36	35	32	39	25	19	28	13	-14	-22	-16	6	3	1	- 4	- 4	2.4
	Min ..	33	19	5	16	17	12	13	3	1	- 7	- 2	- 7	-21	-19	-17	- 6	4	24	13	17	6	8	13	-14	-22	-16	6	3	1	- 4	- 4	2.4
Leon.....	Max..	47	39	26	33	33	26	24	22	26	6	16	15	5	9	15	20	35	36	34	33	33	20	28	27	4	24	28	25	14	15	15	23.5
	Min ..	36	25	8	14	19	14	15	7	5	- 6	1	- 2	-12	-10	-10	1	9	29	18	20	10	9	14	- 8	-15	- 8	12	6	4	- 2	2	6.6
Lit. Sioux	Max..	47	45	32	52	40	25	22	26	25	7	9	8	0	6	16	19	34	35	38	28	24	19	29	22	0	22	24	21	14	15	11	23.1
	Min ..	27	22	7	22	18	13	10	- 2	- 1	-10	4	-12	-20	-26	-18	-19	12	9	3	18	2	12	14	-10	-27	-12	- 1	4	4	-10	-14	0.6
Logan....	Max..	46	44	30	47	37	36	23	27	22	11	13	10	4	- 6	18	23	35	36	35	30	36	26	33	23	- 1	27	29	21	17	22	26	25 2
	Min .	27	20	- 8	22	15	14	10	4	0	6	4	- 8	-16	-19	-15	-13	7	15	5	16	6	12	12	-11	-21	-12	5	4	5	- 9	-10	2.2
Maquoketa ..	Max..	43	33	23	29	31	29	25	26	19	12	24	19	17	9	11	18	35	35	40	39	28	21	25	2	13	20	23	17	18	12	16	23.0
	Min .	25	32	5	3	17	17	13	- 2	- 3	-15	-13	10	- 2	-12	-13	- 9	- 4	- 1	12	11	15	2	8	- 6	-11	-14	-12	- 6	- 6	-15	-13	0.4
Marshlt'n	Max..	41	33	21	31	30	23	19	25	8	8	18	11	4	7	17	18	35	35	33	36	18	17	23	- 6	7	22	22	11	15	12	14	19.6
	Min'..	29	30	0	4	19	10	12	- 4	- 3	-15	-14	- 1	-15	-16	-12	- 9	- 5	11	13	11	3	0	4	- 8	-16	-15	- 4	- 8	- 8	-11	- 8	-0.8
Mason C..	Max.	38	32	17	30	30	20	20	15	15	4	10	10	3	- 3	10	12	22	24	30	28	20	12	20	14	3	19	15	12	12	7	9	16.5
	Min .	25	15	3	10	17	15	10	- 5	0	-12	4	- 2	-15	-12	-11	- 7	3	10	15	8	5	2	8	-10	-15	- 9	5	- 9	- 2	-12	-12	0.7
Massena..	Max..	44	38	28	39	35	23	22	25	25	7	14	10	6	7	14	22	36	34	33	33	25	19	28	24	1	22	25	23	12	18	13	22.7
	Min ..	34	17	7	17	18	14	13	3	1	- 6	1	- 5	-16	- 4	-12	- 5	8	24	15	20	6	10	13	-12	-19	-14	6	- 1	- 1	- 8	-12	3.6
Mt. Ver'n	Max..	44	40	22	27	30	24	20	17	25	9	23	22	3	6	16	18	27	35	33	42	35	20	25	11	16	18	20	18	18	12	15	22 3
	Min ..	39	19	3	6	24	12	10	- 4	- 5	-14	3	3	-12	-15	-17	- 4	3	25	14	16	12	1	11	-14	-14	-14	6	- 6	3	-10	- 8	2 4
Mt. Ayr..	Max..	50	40	29	38	33	24	24	24	25	5	15	12	6	10	15	23	40	37	37	38	27	20	28	30	6	27	29	27	14	14	16	24.6
	Min ..	35	20	8	15	16	13	9	6	3	- 4	0	- 5	-13	-13	-14	- 3	5	25	17	19	9	10	14	-12	-17	-10	10	5	3	- 1	1	4.9
Mt. Pl'snt	Max..	52	42	27	31	32	28	24	20	29	8	24	22	11	11	20	25	32	38	35	42	36	24	30	26	8	26	26	21	16	17	19	25.9
	Min ..	36	25	10	12	24	10	10	2	0	- 9	- 9	5	- 6	-12	- 8	2	10	28	12	19	15	5	6	-10	-11	- 9	12	- 1	2	- 6	3	5.4
New H. ..	Max.	38	35	32	26	28	19	19	14	19	3	14	14	6	- 3	9	10	22	25	22	22	21	11	18	17	4	17	19	14	10	9	7	16.8
	Min .	22	13	8	- 2	13	10	8	- 9	- 6	-15	- 3	- 1	-18	-18	-16	- 8	- 3	14	8	8	2	- 4	7	-13	-16	-16	3	-10	- 5	-15	-14	-2 5
Newton..	Max..	43	37	21	28	32	26	21	16	25	6	18	18	5	6	16	18	29	34	30	34	30	17	25	26	12	22	21	20	11	12	13	25.7
	Min ..	32	18	- 1	4	18	11	12	- 4	1	-14	0	- 3	- 2	-17	-15	- 5	5	21	13	10	4	0	10	-12	-18	-14	5	- 7	1	- 4	-11	1 2
Northw'd	Max.	52	42	20	20	31	21	20	10	18	24	4	11	0	0	5	4	19	8	26	31	25	20	20	15	-10	5	20	15	10	10	- 2	15.9
	Min ..	22	20	- 1	4	15	13	10	- 7	- 3	-14	- 4	- 3	-19	-15	-10	- 2	0	22	12	7	6	- 2	0	-14	-18	-14	4	-11	- 6	-18	-14	-1.3
Odebolt ..	Max.	50	40	27	45	34	22	21	25	24	6	9	7	- 1	3	6	22	29	29	31	26	21	18	25	18	- 4	19	23	16	10	15	10	20 2
	Min ..	30	17	5	15	17	15	10	- 5	- 2	-10	4	-10	-20	-17	-14	- 8	6	9	12	15	3	0	10	-13	-25	-16	2	- 6	2	-11	-12	0.1
Ogden ...	Max..	43	37	23	36	34	21	21	20	20	4	4	11	5	5	15	20	30	29	30	29	27	14	24	22	- 1	20	21	19	14	10	10	19.9
	Min ..	30	14	3	10	18	15	12	- 3	2	-8	3	- 9	-16	-18	-15	- 6	5	17	12	14	3	0	0	-11	-18	-15	- 2	- 8	0	- 8	-10	0.4
Olin	Max	42	38	25	26	31	27	20	14	26	7	24	24	8	4	13	16	28	35	35	35	34	15	2	12	- 9	-11	-13	7	- 5	0	-17	-13	2.8
	Min ..	27	24	7	5	19	17	14	- 1	2	-13	3	7	- 6	-12	-13	- 5	- 4	25	11	11	15	2	12	- 9	-11	-13	7	- 5	0	-17	-13	2.8
Omaha, N	Max.	45	36	31	50	31	24	23	23	28	7	9	5	2	8	18	19	35	32	36	23	18	19	29	17	0	22	28	19	11	15	12	22.1
	Min ..	34	17	15	23	17	13	12	10	1	0	4	- 7	-12	- 8	- 7	- 2	11	20	19	16	7	13	16	-11	-18	- 2	14	6	2	2	- 2	6 5
Onawa ..	Max..	47	39	30	50	36	26	22	26	24	9	11	10	5	7	10	17	32	36	37	29	23	18	28	21	3	22	25	21	15	17	17	21.4
	Min ..	25	20	10	20	17	13	10	2	- 1	- 5	5	- 7	-16	-16	-16	-12	8	12	7	15	5	12	14	- 9	-20	- 8	1	5	5	- 5	- 7	2.7
Osage.....	Max..	38	33	14	27	29	20	19	12	11	4	11	13	0	- 2	11	13	22	24	29	26	24	11	17	15	-18	-16	6	3	1	- 8	-12	3.6
	Min ..	14	13	- 4	1	16	12	10	- 8	- 4	-15	2	- 3	-19	-15	-13	-10	- 3	11	14	7	1	- 1	6	-15	-18	-14	5	-13	- 5	-14	-15	2.4
Oskaloosa	Max..	48	36	21	31	32	24	22	20	27	4	19	16	4	- 5	17	26	36	38	30	43	29	20	29	25	5	24	24	20	11	15	15	22.9
	Min ..	36	17	2	4	18	16	16	- 2	- 2	-16	2	- 1	-15	-16	11	- 1	5	26	14	14	9	8	13	-11	-14	-12	9	- 2	2	-11	-15	2.4
Ottumwa.	Max..	51	32	23	30	33	28	22	24	24	8	19	13	2	12	20	27	32	39	35	47	20	20	27	5	3	26	26	16	8	15	14	22.5
	Min ..	45	12	7	20	25	17	4	4	- 2	- 4	3	3	- 9	-11	- 5	7	11	31	19	22	12	7	17	-10	-12	- 4	6	- 1	- 1	- 8	-12	3.6
Pacific J'n	Max..	44	40	32	44	37	25	23	27	27	10	12	5	1	8	14	21	37	30	35	28	25	25	32	19	- 2	27	33	23	14	19	13	23.5
	Min ..	28	20	16	19	18	11	10	6	2	- 5	4	- 9	-18	-20	-20	-12	5	21	9	15	5	14	17	-11	-22	-10	4	9	2	- 4	- 4	3.2
Perry.....	Max..	42	36	22	38	34	22	22	21	25	5	17	10	3	7	18	23	32	30	31	30	24	18	27	21	0	22	23	20	11	16	14	21.4
	Min ..	29	15	5	13	16	15	13	- 1	1	- 1	3	- 4	-17	-17	-13	-13	4	18	14	14	3	0	12	-10	-19	-18	4	- 9	0	-14	- 9	1.1
Plover....	Max..	41	34	21	42	35	25	20	20	18	5	9	8	4	0	10	17	30	28	30	25	18	24	26	12	0	17	20	10	9	15	7	18.7
	Min ..	24	12	0	10	15	17	12	- 7	- 4	-10	- 4	- 7	-22	-18	-15	-12	-10	2	7	8	3	1	10	-12	-21	-17	-15	-15	- 2	-15	- 7	-3.0
Pocah'tas	Max.	42	34	25	43	31	23	20	24	20	9	10	8	4	4	13	19	32	30	32	27	18	17	27	8	0	20	20	13	12	16	13	19.9
	Min .	24	10	5	13	11	9	12	- 4	- 2	- 7	3	- 7	-20	-15	-14	- 8	6	9	12	8	4	0	10	-13	-21	-13	1	-12	0	-11	-12	-0.7
Red Oak..	Max..	42	39	40	45	42	24	32	27	29	27	20	17	22	11	14	22	34	31	37	28	33	25	26	27	14	10	25	30	14	19	20	26.8
	Min ..	35	22	17	22	19	16	13	12	4	2	6	- 2	-13	- 8	- 5	- 6	11	6	10	11	9	9	14	- 4	-15	- 6	5	9	6	0	1	6.5
Ridgeway	Max..	40	38	23	30	30	30	20	12	9	8	18	20	12	8	13	21	26	31	34	30	22	21	23	10	17	20	21	21	20	9	16	21 1
	Min ..	24	10	0	2	15	13	9	-10	- 6	-18	0	2	-10	-13	-12	- 7	1	17	14	9	4	0	7	-12	-14	-15	5	- 9	- 1	-13	-10	-3.6
Rock R...	Max..	50	29	40	32	17	26	20	26	2	7	10	- 1	10	0	10	20	32	32	32	37	20	17	20	- 2	- 2	20	10	30	14	18	15	19 1
	Min ..	20	15	10	16	12	14	4	0	- 5	- 5	6	- 9	-20	-17	-22	5	10	15	10	7	8	5	5	-12	-22	- 2	- 2	-14	- 2	- 6	-15	0.3
R City...	Max..	45	35	25	35	30	25	23	23	21	8	8	9	5	5	13	20	32	33	33	32	25	18	23	13	- 2	20	23	13	10	13	12	20.3
	Min	26	18	6	13	13	14	13	- 2	- 2	- 8	3	- 9	-20	-18	-13	-13	5	12	13	13	2	3	9	-12	-22	-13	2	-11	2	-10	-12	0 1
Sac City..	Max..	44	29	25	45	40	28	25	25	30	11	14	17	3	3	11	19	28	32	31	26	29	21	25	25	2	22	26	20	14	13	12	22.4
	Min ..	28	20	5	15	15	10	12	2	- 1	- 9	3	- 8	-16	-15	-11	- 6	5	8	13	9	2	0	9	-13	-23	-17	3	- 9	2	-12	- 8	0.4
St. Cha'les	Max.	50	37	30	39	35	23	23	30	26	3	16	13	11	16	11	19	19	34	36	45	45	25	18	27	23	11	25	31	20	22	17	25.4
	Min ..	36	20	7	11	19	16	15	2	2	- 6	0	- 1	-13	-11	-10	0	7	26	20	19	6	6	12	-10	-16	-10	11	0	2	- 4	- 2	5 0
Sheldon..	Max..	46	36	36	43	31	25	19	24	22	8	9	4	3	- 1	12	22	30	30	34	27	21	13	23	12	- 3	18	19	12	13	10	6	19 2
	Min ..	24	12	3	14	16	14	9	- 6	- 6	- 9	- 3	-11	-19	-24	-20	-16	4	4	10	12	4	2	8	-13	-27	-17	0	-12	- 3	-16	-20	-2.8
Sibley	Max	42	19	27	41	22	21	13	23	1	7	5	—	3	0	11	19	28	29	32	23	15	14	21	-11	- 2	16	14	9	9	9	7	15.6
	Min ..	24	17	4	8	19	12	9	- 6	- 7	-10	- 6	- 8	-20	-20	-20	-14	-10	4	11	12	4	2	7	-14	-26	-25	- 1	-11	-11	-16	-19	-3.6
Sioux C'r.	Max..	44	34	25	43	32	23	18	23	22	10	6	7	0	- 3	10	18	25	28	30	25	17	5	6	10	-14	-27	-16	0	-12	- 3	-10	-13	-0.5
	Min ..	27	12	6	17	16	13	8	- 4	- 7	- 9	5	-11	-19	-16	-17	- 8	5	10	20	12	7	13	22	4	- 5	20	19	8	9	11	10	18.5
Sioux C'y.	Max..	47	31	28	47	20	24	20	25	24	8	10	0	0	- 2	14	20	28	31	32	20	10	7	13	4	-17	-25	- 5	8	- 2	- 2	- 7	- 7	1.4
	Min .	27	12	11	-22	-15	10	6	1	- 3	- 5	0	- 3	-18	-13	-16	- 8	12	11	20	10	7	13	4	-17	-25	- 5	8	- 2	- 2	- 7	19	26.8
Stockport	Max..	51	47	27	28	35	29	23	25	29	5	8	5	21	21	12	10	21	21	34	37	40	47	37	27	31	27	10	27	29	27	15	18	5	6.6
	Min ..	40	24	10	11	24	10	12	5	5	- 8	5	5	- 7	-12	- 6	5	11	29	18	25	8	5	18	- 8	-11	- 7	- 7	- 2	5	- 5	5	15.8
Storm L..	Max..	44	22	26	44	24	22	10	22	5	5	5	2	0	1	12	20	28	27	30	20	14	20	20	- 4	1	17	17	14	9	7	5	15.8
	Min ..	27	19	4	10	18	12	10	- 4	- 4	-10	- 6	-11	-21	-17	-15	-10	- 5	5	5	4	0	- 1	4	-15	-26	-25	- 3	-14	-12	-14	-13	-1.5
Thurman.	Max..	49	44	30	45	43	25	28	26	29	6	13	8	- 1	9	15	18	36	31	35	29	27	21	32	24	- 1	24	31	26	14	18	14	24.0
	Min	35	21	9	22	17	12	12	6	2	- 5	1	- 5	-16	-21	-17	-15	- 1	23	9	12	8	13	17	-18	-20	-14	2	9	3	- 2	0	3 2
Tipton	Max..	46	38	26	30	32	27	22	17	25	5	22	24	12	8	15	18	28	35	35	40	36	22	24	23	10	20	22	18	20	11	14	23.4
	Min ..	36	25	12	13	25	16	13	2	3	- 8	5	7	- 1	-10	-10	0	7	27	15	21	15	7	15	- 8	-10	- 8	10	1	6	- 1	1	7.3
Toledo....	Max	44	34	20	29	31	23	20	18	25	3	19	15	4	6	17	17	28	36	35	40	29	18	24	21	5	23	21	16	15	12	14	21.4
	Min ..	28	14	1	- 1	23	10	10	- 4	- 1	-17	2	- 1	-14	-16	-12	- 4	2	22	12	10	4	- 2	10	-11	-15	-17	6	- 8	- 1	-15	-10	0 2
Vinton. ..	Max..	40	37	23	28	30	27	20	13	25	5	20	19	5	5	18	19	26	36	35	35	35	19	24	12	- 6	20	20	16	15	10	14	21.5
	Min ..	28	22	1	- 1	24	9	12	- 4	1	-15	2	1	-15	-14	-10	- 6	2	21	14	11	5	1	10	-10	-14	-16	6	- 8	0	-19	-11	0.9
Wapello..	Max..	49	47	34	27	37	30	29	25	27	9	24	25	18	15	22	27	31	37	39	41	24	26	—	- 6	- 8	- 6	13	4	8	- 5	5	9.8
	Min .	39	27	21	15	27	16	16	5	4	- 5	7	11	- 2	- 3	- 4	4	11	30	36	36	44	32	20	23	23	8	25	25	18	16	14	14	24.4
Washi'ton	Max..	47	36	24	28	34	26	26	20	28	6	22	20	8	10	21	25	32	36	36	16	19	10	4	14	- 8	-11	-10	11	- 2	3	- 7	- 1	5.4
	Min ..	36	19	9	12	24	10	15	1	- 2	-10	4	4	- 7	-13	-12	1	9	30	32	34	36	16	15	23	- 8	8	21	21	16	15	9	11	18.7
Waterloo.	Max	40	35	21	30	30	23	20	15	13	4	18	11	6	5	18	17	25	16	11	11	3	- 1	8	-10	-15	-14	6	-10	0	-16	-12	-2.2
	Min .	23	25	0	0	20	11	12	- 4	0	-12	2	0	-16	-14	-10	- 6	- 3	34	34	39	36	25	17	27	20	5	27	25	25	18	17	14	24.2
Waukee..	Max.	46	35	34	40	34	22	22	24	26	7	17	12	8	9	22	29	34	34	39	36	25	17	4	3	11	-12	-18	-15	6	- 6	3	-10	- 8	2.3
	Min ..	34	9	5	10	19	15	13	- 1	2	-10	0	- 5	-14	-16	-12	- 5	5	23	23	22	17	4	3	11	-12	-18	-15	6	3	12	12	8	9	17.3
Waverly..	Max.	36	34	14	27	29	23	19	12	14	3	15	15	0	0	14	14	23	28	29	30	25	14	21	16	4	18	18	12	12	8	9	17.3
	Min ..	23	12	- 1	- 3	18	14	9	- 6	- 4	-13	3	- 1	-16	-15	-15	-14	- 6	14	8	7	3	- 2	8	-12	-16	-17	5	-11	- 1	-20	-13	-2.0
What Ch.	Max..	54	42	30	29	37	31	25	25	26	3	21	22	12	15	24	30	31	39	44	49	36	12	20	12	-10	-13	10	5	- 4	- 3	-13	-13	2.4
	Min ..	37	20	5	7	20	10	14	1	0	-17	- 2	1	-12	-17	-12	-12	1	21	13	11	2	2	8	-13	-27	-17	0	-12	- 3	-16	-20	-2.8
Whitten..	Max..	49	34	17	28	31	23	20	13

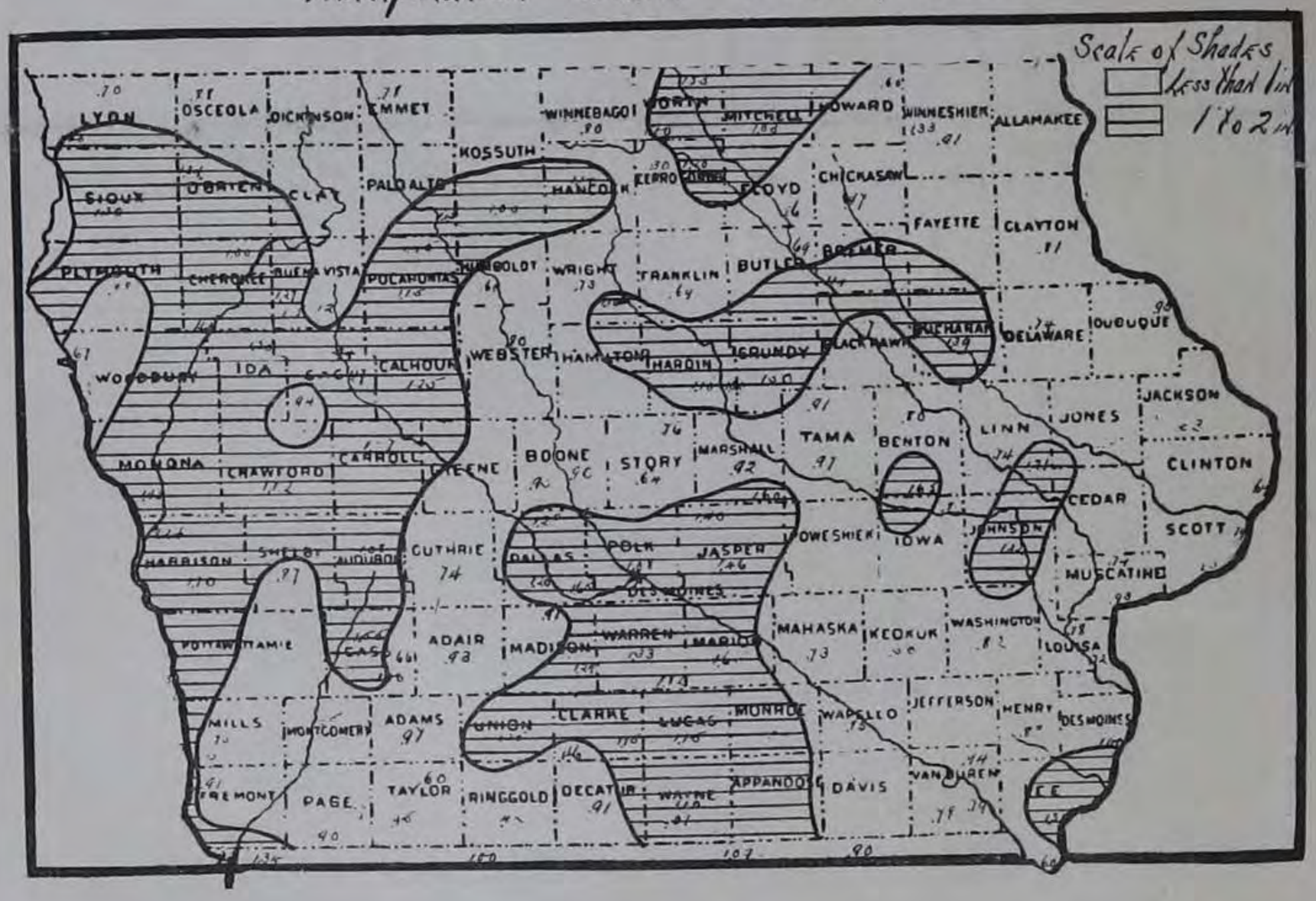
DAILY AND MONTHLY PRECIPITATION FOR JANUARY, 1905.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	....	....	....	T	T		...	T	.10	.6	...	..	...	....	....	....	....	...	...	....	.10	.10	....	....	....	....	.05		.40	....	1.35
Albia	....	T	.08	....	T	T	T	...	.10	...	.35	.17	....	....		....	....	....	....	....	..	.15	....	....	....		.05	....	.02	...	.12	1.04
Algona	....	.10	....	....	T	T	T	...	.03	.10	.40	....	..		....	....	....	....	....	....	..	.05	.10	....	..	....	....	.06	....	.07	....	1.03
Allerton	....	.04	..	..	.01	.02	.01	....	..	.10	.60	....	....	....	....	..	....	....	....	....	..	.01	.5	....	..	....	....	..	....	.28	..	1.01
Alta	..	.02	..	....	T	.05	....	....	.05	.10	.40	....	....	....	....	....	....	....	....	....	..	.30	.01	...	....	....	.02	....	.01	.17		1.27
Alta [near]	....	....	....	T	T	.01	....	....	.05	.10	.40	....	....	....	....	....	....	....	....	....	..	.45	....	..	..	....	....	....	.03	.20	.	1.25
Amana	....	.03	....	....	T	....	....	..	....	.30	.50	....	....	....	....	....	....	....	....	....	..	....	.19	....	....	....	....	T	....	.0	...	.89
Ames	....	....	....	....	....	....	....	....	..	....	.80	....	....	....	..	....	....	....	....	....	..	.06	.20	..	....	....	....	T	....	.0		.64
Atlantic	....	T	....	....	....	....	....	....	....	.02	.48	...	....	....	....	..	....	....	....	....	..	.20	....	....	....	....	....	.05	...	.50	....	1.55
Audubon	....	T	....		T	T	T	....	....	.02	.48	...	....	....	....	..	....	....	....	....	..	.11	.0	....	....	....	....	.07	.02	.37	T	1.08
Baxter	..	.10	..	.05	....	....	....	.05	....	.50	....		....	....	....	..	....	....	....	....	..	20	..	..	....	....	....		....	.50	..	1.40
Bedford	....	T	....	....	T	T	T		....	T	.80		....	....	....	....	....	....	....	....	..	T	.01	....	..	..	....	....	.02	.12		.95
Belle Plaine	....	.05	....	....	.10	.02		....	.20	.. ..	.40	....		....	....	....	....	....	....	....	..	....	.40	.	....	....	....	.08		.40	....	1 65
Bonaparte	....	.08	....	....	....	T	T	....	.10	....	.36		....	....	....	....	....	....	....	....	..	....	.10	....	....	....	....	.07	T	.08	..	.79
Boone	....	.10	....	....	T	.01	T	...	....	T	.42		....	....	....	....	....	T	.	...	....	.06	.11	....	....	....	....	.08	...	.12		.90
Britt	....	.08	...	....	.06	.03	T	....	....	....	.50	.02	....	....	.	.	....	...	....	....		.12	.18	....	....	....	T	.05		.10	....	1.14
Buckingham	....	07	..	....	.02	.02	T	....	....	.20	.19	...	....	.		..	....	....	....	....	....	.20	.10	....	....	....	....		....	.11	...	.91
Burlington	T	T	....	...	....	.02	....	....	.05	....	.6	....	....	....	....	..	....	T	....	....	....	....	.18	....	....	....	....	.08	....	.07	..	1.00
Carroll	....	.10	....	..	....	.02	....	....		...	.60	....	....	....	....	..	....	....	....	....	....	....	.30	..	.	....	.	.10	.05	.40	....	1.57
Cedar Rapids	...	T	.04	..	.05	.02	....	....	.10	....	.10	.20	...	....	....	..	....	....	....	....	....	....	.13	....	....	....	....	T	T	...	.10	.74
Chariton	....	T	...		T	T	T	....	T	.10	60	....	....	..	.	....	....	....	....	....	...	....	.15	.	....	....	...	T	T	.30	....	1.15
Charles City	...	.07	....	.04	.02	.04	T	T	T	.06	.40	T	....	...	...	....	T	....	..	T	..	.03	09	....	....	....	....	....	....	.11	....	.86
Clarinda	....	T	....	....	....	....	T	T	..	...	.77	..	T	....		....	....	....	....	....	....	....	T	....	.	....	....	..	.02	.02	.06	.87
Clear Lake	....	.10	....	T	T	T	T	....		....	T	.10	....	....			.01	....	....	....	....	....	....	....	....	....	....	....	....	.10	....	.30
Clinton	T	.15	....	.13	....	.05	....	....	T	.08	....	....	..	....	....	....	....	....	....	....	....	....	.16	....	....	....	....	....	....	.13	....	.69
College Springs	....	....	....	..	....	....	..	....	....	.20	.50	....	....	....	....	..	....	..	....	....	....	....	....	....	....	..	....	....	....	.05	.15	....	.90
Columbus Junct'n	....	T	....	....	....	.05	....	....	.10		33	....	....	....	....	..	....	....	....	....	..	....	.15	..	....	....	....	.10	..	.05	T	.78
Corning	....	....	....	....	T	T	T	..	T	.10	.5	....	..	T			....	....	....	....	....	T	....	....	....	..	..	....	.02	.35	T	.97
Corydon	....	04	....		..	.01	T	....	.04		.67	....	....	....	....	..			T	...	..	....	13	....	....	....	....	.10	05	.08	..	1,10
Cres o	.	T	..	.08	....	T	T	....	.03	....	.33	....	....	....	....	..	..	....	....	....	T	....	.06	....	....	....	....	....	....	.08	.02	.60
Cumberland	....	T	....		T	....	....	....	....	....	.60	....	....	....	....	..	..	....	....	....	....	.10	....	....	....	....	....	....	....	.30	....	1.00
Davenport	T	T	..	T	T	.06	T	....	.03	.08	.33		....	....	....	....	....	T	....	....	T	.03	.07	T	...	..	....	....	..	.03	T	.63
Delaware	....	....	....	.01	...	.14	....	....	.06	....	.23	..	....	....	....	....	....	....	....	....	.05	...	.20	....	..	....	....	....	....	.10	..	.74
Decorah	....	.02	....	.09	....	....	....	....	....	....	.58	....	....	....	....	....	....	....	....	....	....	....	.06	....	....	....	....	....	....	.11	....	.91
Denison	....	.02	....	....	T	T	T	....	....	.02	.38	....	....	....	....	....	....	....	....	....	....	.20	.10	....	....	....	....	.05	.05	.30	..	1.12
Des Moines	T	.09	...	....	.02	.01	.01	.03	T	.08	.55	T	..	..	..	....	....	....	....	....	....	.08	.05	T	....	..	.06	T	.01	.11	..	1.08
De Soto	....	T	....	....	T	T	T	....	T	.05	.40	....	..	..	..	....	....	....	....	....	....	.10	.20	....	....	..	....	.20	.05	.20	T	1.20
Dows	....	.05	....	....	.05	T	T	....	....	....	.40	....	....	....	....	....	....	....	....	....	....	....	.30	....	....	..	....	....	....	.30	....	1.10
Dubuque	T	.03		.08	.03	T	T	....	....	.12	....	.51	....	..	....	....	T	T	....	....	....	....	12	....	....	..	....	....	....	.06	T	.95
Eartham	....	T	....	....	T	T	T	....	T	T	.67	..	....	...	....	....	....	....	....	....	T	T	.15	T	T	....	..	T	T	.09	..	.91
Elkader	....	T	T	T	....	T	T	....	....	.19	.40	....	....	.	....	....	....	....	....	....	..	....	.10	T	....	....	....	T	....	.12	..	.81
Estherville	...	.06	.02	..	T	T	T	.02	..	....	10	.30	....	....	....	....	....	..	....	....	..	T	.10	T	....	....	....	....	....	.05	.13	.78
Florence	....	.10	....	....	.05			....	....	....	.31	....	....	....	....	....	....	....	....	....	...	.04	.09		....	..	....	.05	....	.09	....	.73
Forest City	....	....	.20	....	T	T	..	...	....	....	.40	..	....	....	....	....	....	..	....	....	....	....	.10	....	....	....	....	T	....	.10	....	.80
Fort Dodge	..	.10	..	...	....	.10	..	....	....	....	.30	...	....	....	....	....	....	..	....	....	....	....	.20	....	....	....	....	T	..	.10	....	.80
Fort Madison	..	T	....	....	...	....	....	..	.20	.20	.52	...	....	....	....	....	....	....	T	....	..	....	....	20	..	....	.15	....	....	....	.10	....	1.37
Galva			T	....	T	.02	....	....	....	.05	.60	.04	....		..	.	....	....	....	....	....	.20	.30	T	....	....	..	.(2	.05	.25		1.53
Gilman	T	.20	....	....	T	T	....	....	....	....	.80		....	....	....	....	....	....	T	....	T	....	.30	T	....	....	..	.10	....	.20	.	1.60
Glenwood	....	..	....	....	T	T	T	....		.45	...	..	...	T	.	....	....	..	....	....	....	....	T	....	....	....	..	T	.05	25	....	.75
Grand Meadow	..	.10	....	.12	....	....	T	..	20	....	.30	..	....	..	..	....	....	....	....	.02	....	....	.07	....	....	....	....	....	....	07	....	.88
Greene	....	.07	....	..	T	.08	....	....	....	....	.23	.07	....	....	....	....	....	....	....	....	....	....	.15	....	....	....	....	....	....	.11	..	.69
Greenfield	..	....	T	..	..	T	T	T	....	..	.04	.37	.06	....	....	....	....	....	T	....	....	03	.10	....	....	....	....	.02	.02	.27	T	.93
Grundy Center	..	....	T	..	..	T	T	T	....	..	.04	.37	.06	....	....	....	....	....	T	....	....	T	.40	....	..	....	....	2	....	.20	....	1,50
Guthrie Center	....	.20	....	....	.10	T	T	....	....	....	.40	..	....	....	....	....	....	....	....	....	....	.08	.10	....	....	....	....	.04	.02	.11	T	.74
Hampton	...	.0	....	....	....		T	..	....	.01	.44		....	....	....	....	....	....	....	....	....	.08	....	....	....	....	T	....	....	.11	..	.69
Hanlontown	.02	.08	..	....	....	T	T	....	....	.25	.15		....	....	....	....	....	....	....	....	....	....	.15	....	....	....	....	....	....	.10	...	1,00
Harlan	.05	..	..	....	T	T	T	.10	....	....	.50	.10	....	....	..	....	....	....	....	....	....	.10	.02	....	....	..	....	T	.02	.05	....	.87
Hopeville	....	T	..	....	T	T	T	....	....	.10	.50	.08	....	....	.	..	....	..	....	....	....	.05	.02	...	..	....	....	.01	.01	.07		.46
Humboldt	....	.10	....	....	T	....	....	.02	....	.03	25	...	....	....	....	....	....	....	....	....	....	....	.10	....	....	....	....	....	....	....	....	.60
Independence	..	.10	....	.04	.08	....	T	....	.30	....	.40		....	....	....	....	....	....	....	....	....	....	.20	....	....	....	....	....	....	.20	....	1,39
Indianola	..	.10	....	....	T	T	T	....	.05	.08	.47	...	....	..	..	....	....	T	T	....	....	.01	.20	....	....	....	....	....	.08	.20	T	1,33
Inwood	T	T	T	T	T	T		....	....	T	.5	....	..	..	....	....	....	....	....	....	T	.30	....	....	....	....	T	....	....	.10		1.00
Iowa City		T	T	...	T	T	....	...	.10		.23	47	..	....	..		....	....	T	....	....	....	.20	T	T	....	..	.02	....	....	.02	1.22
Iowa Falls	....	.10	....	T	T	.05	T	T	....	....	....	.50	....	....		....	....	....	....	....	....	....	2	.05	....	....	....	.07	....	....	.13	1,10
Keokuk	....	.01		..	....	.02	T	T	.08	T	.33	..	T	..	....	....	....	T	....	....	....	....	0	....	....	....	....	.02	T	.04	.02	.60
Keosauqua	....		.05	..	....	T	T	T	.08	....	.15	.23		....	..		....	....	....	....	....	....	.12	T	....	..	....	.04	T		.11	.78
Knoxville	.	.30	....	....	T	T	T	....	.10	T	.70	..	..		....	....	....	....	....	....	....	T	.20	....	....	....	....	.10	..	.25	....	1.65
Lacona	..	.15	....	....	.02	.06	.03	.07	....	.02	.9	..			....	....	....	....	....	....	....	.19	.12	....	..		....	.09	....	.17	...	1.82
Larrabee	....	T	....	....	....	T	T	....	..		.72	....	....	....	....	....	....	....	....	....	....	.42	T		....	....	.05	....	02	.09	...	1.30
Lenox	....	T	....	..	T	T	.	...	....	.05	80	....	....	....	....	....	....	....	....	....	....	T	....	....	....	....	....	....	....	.25	....	.60
Le Claire	T	.01	.01		T	.06	.03	....	.03	T	.18	.33	....	....	....	....	....	....	....	....	....	....	.09	T	....	....	....	....	....	.10	.	.79
Little Sioux		....	.	....	....	....	....	....	....	.07	.78	..	....	....	....	....	....	....	....	....	....	.09	....	..	....	....	....	....	.05	.25	...	1,24
Le Mars	....	....	....	....	T	....	....	....	....	....	.45	..	....	....	....	..	..	....	....	....	....	.18	....	....	....	....	....	....	....	.25	....	.88
Leon	T	.05	....		T	T	T	...	.10	.10	.30	..	....	....	....	....	....	....	....	....	....	.02	.08	....	....	..	....	T	T	.28	..	.91
Logan	....	....	....	..	....	....	....	...	.10	..	.10	60	.20	..	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.30	.20	1.70
Maquoketa	T	T	....	....	.07	.07	....	....	....	....	.01	....	....	....	..	....	....	....	....	....	....	....	....	.33	....	....	....	....	....	....	.08	.63
Marshalltown	....	.04	.05	....	....	.03	T	....	.05	.	.24	.22	T	....	....	....	....	....	....	....	....	.15	.03	....	....	....	....	.04	....	....	.07	.92
Mason City	...	.06	....	....	.06	T	T	....	....	....	.60	..	....	....	..	....	....	....	....	....	....	....	.33	....	....	....	....	....	....	.15	....	1 20
Massena	....	....	....	....	....	....	....	....	..	....	.22	....	....	....	.	....	....	....	....	....	....	T	.18	...	..	....	....	....	....	.31	...	.66
Muscatine	....	....	....	....	...	.15	.05	....	.15	....	.17	.24	....	....		....	....	....	....	....	....	....	.10	....	....	....	....	....	....	....	.07	.93
Mt. Vernon	..	.04	...	.05	...	.06	...		.07	....	65	....	....	....	..		....	....	....	....	....	....	.20	.06	....	....	....	....	....	.07	.01	1.21
Mount Ayr	....	T	....	....	T	T	T	....	.03	05	.65	..	....		....	....	....	....	....	....	....	T	.10	....	....	..	....	....	.04	.20		1,07
Mt. Pleasant	..	T	....		.05	T	T	....	.05	.03	.40	..	....		....	....	....	....	....	....	....	....	.19	....	....	....	....	.06	....	.10	T	.88
New Hampton	....	....	....	T	..	T	T		....	..	.40	....			....	....	....	..	....	....	....	....	.07	..	....	....	....		....	T	....	.47
Newton	....	.15	....	....	....	....	....	....	.17	....	.65	....	....	....	....	....	....	....	....	....	....	....	.21	....	..	....	....	.07	..	.21	..	1.46
Northwood	....		....	.10	T	T	T	..	....	...	.40	.90	...	....	T	....	..	....	....	....	....	....	T	....	....	....	....		....	.15	....	1.55
Odebolt	....	....	....	....	....	....	....	....	..	....	.60		....	....	....	....	..	....	....	....	....	.05	.10	....	....	....	....	....	....	.04	.15	.94
Ogden	....	....	....	..	T	.05	....	....	....	....	.45	....	....	....	....	....	....	....	....	....	....	.05	....	.05	....	..	....	T	....	.35		.95
Olin	....	.05	...	.05	T	.10	T	...	....	.28	50	....	....	.01	....		....	T	....	T	.01	03	.15	....	....	....	....	....	....	.12	....	.85
Omaha, Neb	T	T	....	....	.02	T	T	...	....	.10	.85	....	....	....	....	..	..	....	....	....	....	....	T	.05	T	....	....	....	....	.03	.19	.01	1.13
Onawa	....	....		....	.03	....	T	....	..	....	.65		....	....	....	....	....	....	....	....	.01	....	.15	....	....	....	....	....	....	.20	....	1.48
Osage	...	.04	..	.05	T	.05	.02		....	....	.65		....	....	....	....	....	....	....	....	....	....	.13	....	..	....	....	....	....	.10	....	1.03
Oskaloosa	.05	....		....	T	T	T	.12	....	.02	.20	....	....	....	....	....	....	....	....	....	....	.08	.13	....	....	....	.06	.	..	.12	....	.73
Ottumwa	....	.10	....	....		T	....		.05	....	.20	....	..	....	....	..	....	....	....	....	....	....	.30	....	....	....	....	....	....	.20	....	.85
Pacific Junction	....	T	....	....	T	T	T	....	....	.10	.55	...	....	....	....	..	....	.03	..	....	T	.01	....	T	....	....	....	....	.04	.20	T	.96
Perry	....	T	....	....	.05	.06	T	....	..	T	.45	T	.	....	..	....	....	T	..	....	....	.05	.20	....	T	....	....	.12	.05	.30	..	1.28
Plover	....	....	.10	....	.15	....	....	....	....	.10	.50	.10	....	....	....	....	....	....	....	....	....	.20	.20	....	....	....	....	....	....	.10	..	1.45
Pocahontas	....	.05	....	..	.05	T	T	T	....	.10		.60	....	....	....	....	....	....	....	....	....	....	20	....	....	....	.10	..	T	.05	....	1.15
Primgher	....	....	....	....	..	....	....	....	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Red Oak	....	T	....	....	T	T	T	....	....	T	.49	...	...	T	....	....	....	T	....	....	....	T	.01		..	....	....	....	....	.15	....	.65
Ridgeway	....	.03	..	04		..	T	...	....	T	.90	....	....	....	....	....	....	....	....	..	.04	....	.13	....	....	....	....	....	..	.19		1.33
Rock Rapids	..	T	....	T	T		T	.60	T	....		....	....	....	....	....	....	....	....	....	....	.10	T	....	..	....	....	....	..	....	....	.70
Rockwell City	....		..	..	.05	....	....	....	..		.60	...	..		....	....	....	....	....	....	....	.40	.	....	....	....	....	....	....	.20	....	1.25
Sac City	..	.02	....	..	.05	..	....	....	....	.05	.50	...	....	....	....	....	....	....	....	....	....	.20	.15	....	....	....	....	....	....	.20	....	1.17
St. Charles	....	.07	....	....	T	T	T	T	.04	.05	.65	....	....	....	..	....	....	....	....	....	....	.08	.10	.04	..	....	....	.06	.0	.10	.01	1.24
Sheldon	....	T	....	....	.04	T	T	....	..	....	.55	.05		...	..	....	....	....	....	....	....	.08	25	12	...	....	.02	T	T	.31	..	1.34
Sibley	....	T	....	....	T	.02	....	T	....	....	.12	.40	....	....	....	....	....	....	....	....	....	T	.20	T	T	....	....	.02	....	.02	.10	.88

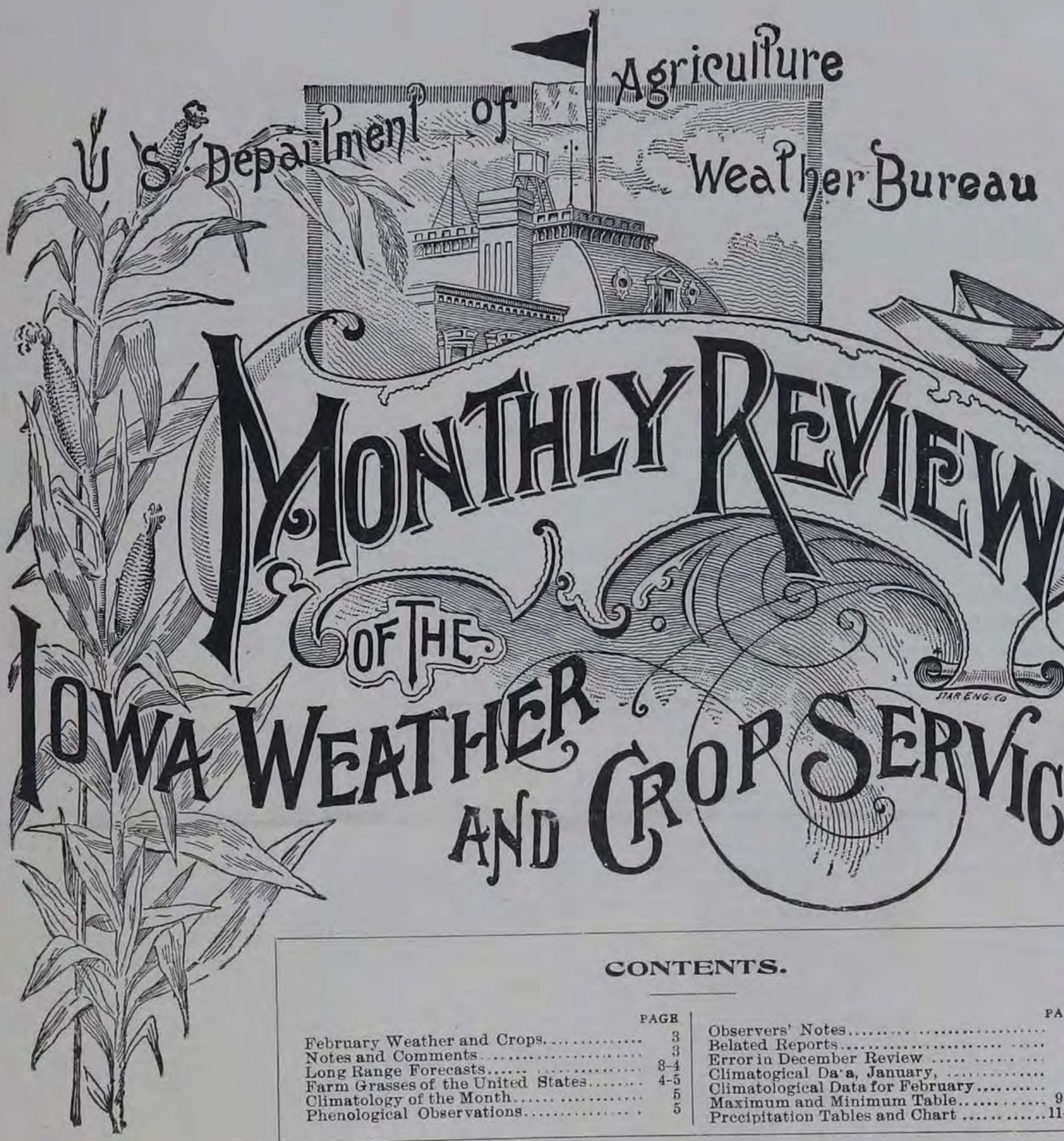
DAILY AND MONTHLY PRECIPITATION FOR JANUARY, 1905--CONTINUED.

STATIONS.	DAY OF MONTH																														TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sioux Center.	T	T	....	....	T	T	T	....	..	....	.40	....	....	....		....	....	..	..	..	T	.70	T	....	...	...	.10		T	.10	....	1.30
Sioux City	T	T	....	....	T	T	T			09	.31	T	....	T	....	....	....	....	....	....	T	.10	T	....	....	....	T	.05	.04	.08		.67
Stockport	T	.24	....	T	..	.02	T		.03	T	.45			..	....	....	....	....	....	....	....		.11	T	....	....	..	.02	T	.07	T	.94
Storm Lake	....	T	T	....		.01	T	T	....	..	.03	.03	....	..	....	....	....	....	....	....	....	T	.03	....	....	...	.	T	T	T	.02	.12
Stuart	....		..	....	....	....	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	..	..	....	....	....	....	....	.....
Thurman	....	T	..	....	T	T	T	....	....	.28	.08	....	....	T	..	..	....	T	....	T	..	.20	T	T	....	...	....	....	.04	.31	T	.91
Tipton	....	....	....	.	....	....	....	....	....	....	....	....	....	..	....	....	..	....	....	....	....		..	....	..	..	...	....	....	....	....	.....
Toledo	....	.03	..	...	.06	....	....	.03	....	..	.50	....	....	....	....	....	....	....	....		....	....	.20	....	....	....	....	....	....	.15	....	.97
Vinton	..	...	....	....	..	....	....	....	..	....	.40	....		....	....	....	....		..	..	....		.30	....	..	....	....	....	....	.10	..	.80
Wapello	..	....	....	....	....	.07	....	....	....	.20	.23	....	..	....	..	....	....	....	.	....	....	.16	....		....	....	....	.02	....	.04	....	.72
Washington	....	..	....	....	.01		..	....	.06	....	....	.56	....	....	....	....		....	..	....	....	....	.15		....	....	.01		....		.03	.82
Washta	...	T	..		T	T	T	....	....	T	.70	.	....	..	....	....	....	....	....		....	.25	.	...	....	....	T	....	....	.20	....	1.15
Waterloo	....	.06	..	T	.04	....	T	....	T	...	.37	....		....	....	....	....	....	....	....	....	.13	.13	...	....	....	....	....	....	.14	....	.87
Waukee	....	.05	....	....	T	.05	T	....	.05	.05	.60	....	....	....	..	....	....	....	....	....	....	.10	.20		....	....	....	.20	.05	.30	..	1.65
Waverly	....	.07	....	.02	.01	.01	T	....	.05	..	.50	....	....	....	....	....		....	....	..	T	...	.30	....	....	....	....	....	....	.18	....	1.14
Whitten	....	.10	....	....	T	T	T	....		....	.40	....	....		....	....	....	....	....	....	....	....	.40	....	....	....	..	T	....	.40	....	1.30
Wilton Junction	....	....	....	....	....	....	....	....	.20	....	.40	.	....	....	....	..	....	....	....	..	....	....	.08	....	....	....	....	....	....	.06	....	.74
West Bend	....	.10	....	....	T	T	T		....	T	.80	....	....	....	....	....	....	....	....	..	T	.60	T	.	..	....	.05	....	....	.20	....	1.75
Woodburn	...	.05	....	..	T	T	T	....	..	.15	.40	..	..	..	....	....	....	...	....	....	....	.20	....	...	....	....	....	.05	T	.20	.10	1.15
Zearing	....	T	....	....	.16	....		....		....	.35	....	....	....			....		....		...	T	.15	..	....	....			.10	....	.76

Precipitation Chart January 1905.



FEBRUARY, 1905. No. 2



MONTHLY REVIEW

OF THE

IOWA WEATHER AND CROP SERVICE

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DIRECTOR.

GEO. M. CHAPPEL,
LOCAL FORECASTER,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

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West Branch	Wrigley Smith
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Woodward	George Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XVI. FEBRUARY, 1905. No. 2.

FEBRUARY WEATHER AND CROPS.

The month was abnormally cold, the mean temperature for for the state being 12.8°, which is 6.8° below the normal, making it the coldest February since 1890. The first half was a continued period of intense cold weather with more than usual snowfall and strong drifting winds. This rendered ordinary farm work, and especially the care of stock, quite difficult. There was enough snow, however, to serve as a protection to winter grain and grasses. The latter half was milder and at the close of the month the snow had mostly disappeared in the larger part of the state. The frost did not penetrate the ground deeply, and there was but little remaining in the soil on March 1st in the southern districts.

NOTES AND COMMENTS.

Carl Fritz Henning, voluntary observer at Boone, writes that prairie chickens and quails have had a hard time to procure sufficient food to sustain life during the severe winter weather on account of the heavy snowfall. Farmers report finding these birds frozen to death at old strawstacks and in the high grass along prairie streams.

Irrigation is as useful in New York state farming as it is in many places where it is supposed to be more applicable to the conditions, says the *New York World*. The new census bulletin just issued states that artificial provision against drought is used in Maine, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Florida, Alabama and Mississippi. Exceptionally high yields of fruit are reported as made possible by its use.

Although the United States comprised only 5 per cent of the world's population, it produced in 1900, 22 per cent of the world's wheat, 30 per cent of its gold, 32 per cent of its coal, 33 per cent of its silver, 34 per cent of its manufactures, 35 per cent of its iron, 36 per cent of its cattle, 38 per cent of its steel, 50 per cent of its petroleum, 54 per cent of its copper, 75 per cent of its cotton and 84 per cent of its corn—*Exchange.*

The *Australasian Pastoralists' Review* of January 16, says: Rain is badly wanted in many parts of the commonwealth. The past month has been one of bush fires almost everywhere, and a good downpour would not alone remove the heavy anxiety off the shoulders of our stock owners and agriculturists but bring up a fine spring of good feed on the burnt-out country. Good thunderstorms have occurred in parts of Queensland and the country around Tambo, Blackall, Aramac, Longreach and south to the border is reported as looking splendid. Since the bounteous rain which fell over a large part of New South Wales in the middle of December very little has fallen in that state and the coastal district is experiencing a very serious drought indeed. Victoria has been very dry, and only scattered storms are reported. South Australia is also experiencing a dry time. The heat has been terrific almost everywhere and has discounted very largely all the good done by any showers we have had. Almost up to the last report we have received, heavy rains and severe weather have been experienced over a large portion of New Zealand.

On January 1, 1905, Iowa was credited with live stock in numbers and values as follows: Horses, 1,144,456, valued at $85,250,746; mules 44,096, value, $3,529,755; milch cows, 1,335,832, value, $37,269,713; other cattle, 3,467,507, value, $67,348,010; sheep, 698,316, value, $2,652,483; swine, 7,290,625, value, $48,920,094; total, $244,970,801. These figures do not include calves, colts and other young animals under six months old.

Arthur Betts, voluntary observer at Ridgeway, Iowa, considers the past winter very mild and agreeable in comparison with some of the winters he experienced a few years ago, while serving as observer in Webster, Day county, South Dakota. He forwarded a sheet from his record for the month of January, 1887, to sustain his statement, and the figures indicate that it was a "terrible month" in that section. The lowest temperature recorded was 44° below zero, on the 6th. The mean for the month was —12.6°, and the mean of the minimum was —23.6°. On every day but one the temperature fell below zero, and on fifteen days the maximum was below zero. The total snowfall was 17 inches, and there were blinding blizzards on eleven days. On the warmest day of the month the mean was 12°. It was a month to be remembered.

The first number of the *Weekly Crop Bulletin* of the Iowa section, series of 1905, will be issued Tuesday, April 11th.

LONG RANGE FORECASTS.

[From the New York Tribune.]

A comprehensive and judicious review of the most notable attempts to foresee meteorological conditions for weeks or months at a time has just been issued by the United States Weather Bureau. Its author, Professor E. B. Garriott, is a veteran in the government service, and is admirably qualified for the task of writing such a treatise. His essay is probably the safest

guide at present available in reaching conclusions on this subject.

What seems to be the most promising line of work just now is the effort to predict seasonal charecteristics from the behavior of certain semi-permanent tracts of high barometer that have long been familiar features of international charts. These have a curious way of shifting about, and such changes are attended with perceptible local effects on the paths of moving low and high pressure areas and upon temperature and rainfall. For instance, if the western extremity of the one which in summer usually overlies the Atlantic Ocean should extend into the southeastern part of the United States, particularly warm, and perhaps dry, weather would prevail in the northern part of the country. In winter one of these great high areas forms over the continent of Asia. Should the westernmost end cover northern Europe, some of the storms that cross the ocean from America would be deflected toward the Mediterranean, and the progress of others would be checked in such a way as to react on the United States; whereas, if the permanent high pressure covered only the southern part of Europe, the Atlantic storms would travel toward Scotland and Scandinavia. Again, it seems probable that a slight displacement of the high pressure area over the Indian Ocean might simultaneously cause abnormal rains over the upper Nile and drouth in Australia.

Partly because it may afford a premonition of such variations from the average distribution of air over the earth, but for other reasons also, there is an increasing demand for study of the sun. Marked fluctuations in the amount of heat thrown off by the body have been noticed, and it is in the highest degree essential that any connection which may exist between them and meteorological eccentricities shall be detected. Professor Garriott finds much testimony to justify a belief that sunspots are in some sense symptomatic of disturbances in terrestrial conditions; and, while the case is not yet complete enough to warrant forecasting on that basis, the wisdom of further inquiry by competent experts is apparent.

The government has given careful consideration to a number of suggestions and theories which have been supposed to have a bearing on the weather of the United States. One was the supposition that the Japan current dominated the rainfall of California, and that indications of drouth or precipitation might be obtained by watching the changes in the strength and course of the current along the Aleutian Islands. For this hypothesis the Weather Bureau has not been able to find a rational foundation. The time honored notion that the moon is a potent agent was also considered, and Professor Garriott presents a fine array of quotations from modern authorities regarding it. A rigid comparison of lunar phases with weather changes leads Buchan and other prominent meteorologists to declare that the moon has no discernible influence at all, while Von Bebber concedes that there may possibly be a trifling modification of air pressure, but not one which can be utilized practically. Again, there is a recognizable tendency toward a six or seven day period. Sometimes rain will fall on the same day of the week for several successive weeks. Here is a fact which has been turned to account by one group of amateur weather prophets who contribute to the newspapers, though they sometimes mask their plan under a pretense of faith in lunar control. According to Professor Garriott, however, the periodicity is not regular and continuous enough to be of value to official forecasters.

The Weather Bureau has given much attention to the so-called "planetary" meteorology, and finds it to be sadly vulnerable. One of its devotees makes everything hinge on the movements of Vulcan, a body to which he assigns an orbit inside that of Mercury, but whose existence no astronomer has been able to demonstrate. Another prophet who talks learnedly about the crises which attend the equinoxes of the planets proves to be unable to compute accurately the time when such astronomical phenomena occur. Moreover, there seems to be no reason to believe that even if the dates were properly calculated anything unusual would be observed on them. After all, the real test of this sort of prediction is the extent to which verification is possible. Those who indulge in it are usually so vague in their warnings that it is impossible to tell in advance where the trouble of which they give notice is to be expected. Hence, it is hard to discover whether they are right or wrong. A man who has won some notoriety in the West for such work was persuaded last year to accept the 90th meridan of longitude as representing the locality for which his forecasts were meant. It then proved that his guesses concerning the temperature were incorrect more frequently than they were correct. Professor Willis L. Moore, the present head of the Weather Bureau, in an introduction to Professor Garriott's pamphlet, says of these irresponsible utterances: "They may properly be classed with quack medicine. They are both harmful in the extreme."

FARM GRASSES OF THE UNITED STATES.

It is astonishing that so little in the way of popular treatises on grasses in the way of books have been published in the United States. Of the earlier works the books of Flint, Killebrew, Beal and shaw are valuable. Some of these books are, however, out of date. The Beal book is an excellent and authoritive work. The United States department of agriculture has, of course, published many valuable bulletins which have been of great service to the farmers of this country. Prof. Spillman, agrostologist of the United States department of agriculture is the author of a book on farm grasses of the United States. The book is divided into fifteen chapters, treating the following topics: The grass crop, meadows and pastures, the seed, timothy, blue grasses, millits, two prominent southern grasses, red top and orchard grass, brome grasses, grasses of minor importance, grasses for special conditions, lawns and lawn making. The chapter on lawns and lawn making was prepared by C. R. Ball. The chapter on seeds by Edgar Brown. A grass crop being so important, deserves much more consideration by the average farmer than is usually given it. One is, therefore astonished that so little attention has been given it by our experimental stations. Few of our northern and eastern stations have published anything on the subject. Prof. Spillman thinks it is safe to say that in the United States 120,000,000 acres are devoted to pasture purposes and 59,000,000 acres to hay. The value of the hay crop for 1899 is estimated at $484,256,846. The only crop exceeding this was maize. Prof. Spillman says:

"It is impossible to estimate the value of the feed obtained from the 120,000,000 acres of improved pasture land, but when we add the value of this and the pasture value of the remaining 82 per cent of the total area of the country classed as unimproved land, nearly all of which is grazed, it is probable that the grass crop surpasses in value any other crop. But since hay is too bulky and usually too cheap to bear long distance shipment, comparatively a small portion of it finds its way to the markets. It is fortunate that at least one important crop must, from its very nature, be largely consumed on the land where it is produced. Otherwise we should long ago have reduced the fertility of practically all the farm lands in this country to so low a point as to have rendered farming unprofitable, just as has been done in all the older parts of the country where live stock farming has been neglected. It is a notable fact that in those portions of the country which have enjoyed the most permanent prosperity the grasses and live stock have always occupied an important place. In the New England states, which have felt keenly the competition of the fertile lands of the central west, agriculture has been

able to maintain itself only by devoting the major portion of the improved land to grasses."

Prof. Spillman gives an interesting map on the percentage of improved land devoted to hay and forage.—*Prof. L. H. Pammell in Register and Leader.*

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 30.28 inches; highest observed, 30.85 inches, at Sioux City, on the 2d; lowest observed, 29.66 inches, at Charles City and Davenport, on the 8th; range for state, 1.19 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 115 stations, was 12.8°, which is 6.8° below normal. By sections the mean temperatures were as follows: Northern section 10.6°, which is 5.9° below normal; central section 12.7°, which is 7.6° below normal; southern section 15.1°, which is 6.4° below normal. The highest monthly mean was 18.0° at Keokuk; lowest monthly mean, 8.1° at Forest City. The highest temperature reported was 69° at Glenwood and Onawa on the 28th; lowest temperature reported, 41° below zero at Galva and Ida Grove on the 2d. The average monthly maximum was 57.2°; average monthly minimum—30.6°. Greatest daily range 57° at Sibley; average of greatest daily ranges, 40.0°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 125 stations, was 1.57 inches, which is 0.53 of an inch above normal. The averages by sections were as follows: Northern section, 1.35 inches, which is .46 of an inch above normal; central section, 1.68 inches, which is 0.62 of an inch above normal; southern section, 1 67 inches, which is 0.53 of an inch above normal. The largest amount reported was 2.97 inches at Belle Plaine; least amount reported, 0.44 of an inch, at Sioux City. The greatest daily rainfall reported was 1.10 inches at Ottumwa, on the 24th. Average number of days on which .01 of an inch or more was reported, 7.

WIND AND WEATHER.—Prevailing direction of the wind northwest; highest velocity reported, 49 miles per hour, from the northwest, at Sioux City, on the 14th. Average number of clear days, 14; partly cloudy, 7; cloudy, 7.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Charles City	30.26	30.76	2	29.66	8
Davenport	30.25	30.72	2	29.66	8
Des Moines	30.30	30.83	2	29.69	8
Dubuque	30.27	30.75	2	29.67	8
Omaha, Neb	30.31	30.89	1	29.67	8
Keokuk	30.27	30.75	2	29.71	8
Sioux City	30.31	30.85	2	29.87	8
Means	30.28	30.85	2	29.66	8

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Charles City	5.555	28	NW	9
Davenport	5.663	26	NW	14
Des Moines	5.857	33	NW	14
Dubuque	4.785	24	NW	14
Keokuk	5.725	28	W	9
La Crosse, Wis	4.664	27	N	14
Omaha, Neb	6 580	38	NW	14
Sioux City	8.356	49	NW	14

PHENOLOGICAL OBSERVATIONS. 1904.

By direction of the Chief of the Weather Bureau, blank forms were seut to a number of voluntary observers in the winter of 1904, with request that they would note thereon the progress of the season as indicated by the earliest appearance of foliage and flowers, the movement of migratory birds and the various stages of growth of cereals, staple farm crops, fruits, etc. At the close of the year reports were received from nine observers whose names and addresses are as follows: Arthur Betts, Ridgeway, Winneshiek county; Fred McCullough, Hartwick, Poweshiek county; M. F. Boyd, Madrid, Boone county, N. W. Rowell, Afton, Union county; H. L. Felter, Washta, Cherokee county; E. S. King, Grundy Center, Grundy county; N. M. Leonard, Waukee, Dallas county; John H. Ver Steeg, Pella, Marion county; Rex Shriver, Allerton, Wayne county.

The averages of the dates recorded at the several stations as to the foliage of forest and shade trees are shown in the following tables:

Kind of Trees.	First Leaves.	Woods Green.	Leaves Coloring.	Leaves Falling.	Woods Bare.
Soft Maple	May 2	May 10	Sept. 25	Sept. 25	Nov. 5.
Ash	May 6	May 12	Sept. 30	Sept. 30	Nov. 1.
Oak	May 5	May 20	Sept. 20	Sept. 25	Nov. 4.

FRUIT TREES AND VINES.

Kind.	Leaves Start.	First Bloom.	Harvest Begun.	Character of Yield.
Apple	May 1	May 6	Aug. 1	Good to fair.
Peach	May 1	May 5	Sept. 15	Small.
Plum	May 3	May 5	Aug. 20	Poor.
Cherry	May 2	May 7	June 22	Fair.
Strawberry	April 20	May 9	June 20	Good.
Blackberry	April 30	June 4	July 30	Fair.
Raspberry	April 30	June 1	July 3	Good.
Grape	May 10.	May 15.	Sept. 1.	Fair.

CEREALS AND OTHER FIELD CROPS.

Kind of Crop.	Preparation of Soil.		Planting.		Harvesting.		Character of Crop.
	Begins.	Ended.	Begins.	Ended.	Begins.	Ended.	
Corn	April 15	May 30	May 5	June 3	Oct. 15	Nov. 30	Fair in yield and quality.
Spring wheat	April 1	April 15	April 5	April 18	July 25	Aug. 10	Poor—blights and rust.
Oats	April 1	April 20	April 10	April 22	July 15	Aug. 5	Variable—yield and quality.
Barley	April 1	April 18	April 8	April 20	July 20	Aug. 2	Fair.
Hay crop	.....	.....	.....	.....	July 1	Aug. 10	Excellent in quality.
Potatoes	April 2	April 30	April 10	May 20	July 20	Oct. 15	Heavy yield—good.

NOTES.

Corn tassels and silk were quite general in the central section about July 15th to 20th. Roasting ears were noted as early as August 12th and earliest corn was dented about August 20th.

Feeding early corn began August 20th on account of scarcity of old corn in farmers cribs.

First croaking of frogs noted March 28th. Wild geese were observed flying northward April 2d and ducks as early as March 1st.

M. F. Boyd, near Madrid noted first appearance of robins March 24th, bluebirds April 3d, brown thrush April 17th, swallows April 28th and first butterfly April 17th.

The honey crop was excellent in quality.

The peach comes into bloom about the time when apple blossoms appear. The foliage and bloom of the pear also come about the same time. These are minor crops in Iowa.

OBSERVER'S NOTES.

AFTON—*N. W. Rowell.* Latter half of month lifted mean temperature toward normal. Notes of robins heard at close of month.

ALLERTON—*Rex Shriver.* At end of month snow was almost gone, and roads were drying up.

ALTA—*David E. Hadden.* First half of February was intensely cold, latter half pleasant, and closing days were quite springlike; snow thawed rapidly and none remained at end of month.

AMANA—*C. Schadt.* Mercury fell to -32° on 13th; snow fell to depth of 15.7 inches and drifted badly; but little left at close of month.

BOONE—*Carl Fritz Henning.* First robbin heard on 25th; geese flying northward on 26th.

BONAPARTE—*B. R. Vale.* First half incessantly cold, the lowest in many years; last week warm, and roads were muddy.

BRITT—*Geo. P. Hardwick.* First half very cold; snow drifted badly; much ground bare at end of month

CLINTON—*Luke Roberts.* The mean temperature of February was 14.6° which is 7° below normal. There has been one colder February and that was in 1885, with a mean of 8.3°. The coldest day was the 13th, with a mean of 13.7° below zero. The minimum for that day was 27° below zero. This was the coldest registered since February 9, 1899, on which day it was 28° below zero. The total snowfall during the month was 18 inches, giving some good sleighing. The aggregate precipitation was 2.44 inches. Total for the winter 5.98 inches, which is 0.41 of an inch above the normal for past 26 years.

ELKADER—*Chas. Reinecke.* Total snowfall for winter months, 46 inches. Lowest temperature, 30° below zero on February 15th.

FORREST CITY—*J. A. Peters.* Coldest weather of record on the 13th, temperature 31° below zero. Snow drifted badly; the railway traffic was abandoned 3 days; coldest February of record here.

POCAHONTAS—*F. E. Hronek.* First half of February coldest since 1888; muskrat prophet failed again.

RIDGEWAY—*Arthur Betts.* First two weeks quite cold; latter half mild; 210 hours of sunshine, nine days without a cloud.

WAUKEE—*E. J. Leonard.* First half very cold, with a maximum of only 23°, and minimum below zero on twelve days. Latter half much warmer and birds appeared on 27th.

BELATED REPORTS.

SPIRIT LAKE (*c*).—November. Mean temperature 39.8°; highest 74° on the 4th; greatest daily range 46°; total precipitation .10 of an inch; greatest in 24 hours .10 of an inch; total snow fall 1.0 inch. Number of rainy days, 1.

OSCEOLA.—December. Mean temperature 24.4°; highest 65° on the 23d; lowest -6° on the 28th; greatest daily range 55°; total precipitation 1.50 inches; greatest in 24 hours .60 of an inch; total snowfall 15.0 inches; prevailing direction, southwest. Number of rainy days, 4.

OSCEOLA.—January. Mean temperature 12.2°; highest 56° on the 11th; lowest—17° on the 25th; greatest daily range 63°; prevailing direction, northwest.

ERROR IN DECEMBER REVIEW.

ALGONA.—Total precipitation recorded 1.27 inches on pages 5 and 9, should have been 1.37 inches. Precipitation on 3d, blank, should have been .10 of an inch. Total snowfall recorded 11.0 inches on page 5, should have been 12.0 inches.

CLIMATOLOGICAL DATA FOR FEBRUARY, 1905.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	11.0	- 6.0	50	28	-31	13	33	1.60	†.30	.63	22.0	7	16	8	4	NW	
Alta	Buena Vista	1,513	14	11.2	- 8.0	59	28	-33	2	34	1.26	†.51	.40	14.0	8	15	8	5	NW	
Alta (near)	Buena Vista										1.00		.40	10.0	6					
Britt	Hancock	1,236	8	10.8	- 6.2	47	23	-34	13	41	1.84	†.87	.63	17.2	8	9	11	8	NW	
Charles City	Floyd	1,012	18	8.8	- 9.0	43	28	-31	2	41	1.16	†.07	.36	15.3	8	13	7	8	NW	
Clear Lake (c)	Cerro Gordo	1,241	7	8.6	- 4.7			-31	13	33	1.40		.50	14.0	4	15	5	8	NW	
Cresco	Howard		31	10.6	- 4.5	42	28	-27	2,13	33	1.03	†.10	.50	9.9	6	16	4	8	NW	
Decorah	Winneshiek	857	12	11.2	- 3.8	47	28	-26	2	44	1.18		.39	13.0	5					
Dows	Wright	1,142	9	9.8	- 5.6	49	28	-32	13	36	2.90	†2.00	.70	27.0	7	16	4	8	NW	
Elkader	Clayton	727	21	11.8	- 6.3	51	28	-30	15	45	1.12	†.00	.40	12.0	6	14	8	6	SE	
Estherville	Emmet	1,298	12	9.0	- 7.0	55	28	-28	2,3,13	51	1.18	†.56	.30	17.0	6	15	3	10	NW	
Fayette	Fayette		15	9.2	- 8.2	46	28	-30	13,15	44	1.43	†.27	.56	14.2	7	18	2	8	NW	
Florence	Wright	1,226									2.24		.78	17.5	6	7	12	9	N	
Forest City	Winnebago	1,226	11	8.1	- 6.9	46	23,25	-31	13	52	1.95	†1.18	.60	18.5	5	14	5	9		
Grand Meadow	Clayton	1,180	11	11.0	- 6.0	46	28	-29	13	33	1.33	†.21	.33	10.0	5	13	6	9	NW	
Greene	Butler	924	8	11.3	- 5.0	46	28	-29	13	36	.94	-.02	.25	16.0	7	12	5	11	W	
Hampton	Franklin	1,155	13	11.4	- 6.1	50	28	-30	13	35	1.48	†.37	.56	21.5	8	12	11	5	NW	
Hanlontown	Worth			9.6		47	21,28	-31	13	37	1.79		.50	7.5	6	14	7	7	NW	
Humboldt	Humboldt	1,095	16	12.8	- 4.6	54	28	-32	2	40	.75	†.05	.20	7.5	6	16	5	7	NW	
Inwood ‡	Lyon			10.8		62	28	-34	2	46	.70		.30	7.0	4	21	1	6	NW	
Larrabee	Cherokee	1,266	12	11.4	- 6.8	59	28	-36	2	37	1.40	†.65	.67	13 8	8	13	11	4	NW	
LeMars	Plymouth	1,224	7	11.8	- 5.5	61	28	-35	2	36	.60	-.01	.50	7.2	2	16	9	3	S	
Mason City	Cerro Gordo	1,132	8	11.6	- 3.3	45	28	-27	13	31	1.61	†1 05	.50	15.5	5	16	6	6	NW	
New Hampton	Chickasaw	1,169	7	10.5	- 3.4	41	28	-32	13	30	.97	-.10	.35		5	10	8	10	S	
Northwood	Worth	1,222	8	8.4	- 7.0	43	22	-28	2,3	40	1.47	†.31	.60	14 8	7	11	12	5	NW	
Osage	Mitchell	1,184	13	11.2	- 3.2	43	28	-28	2	33	1.18	‡.00	.38	11.2	7	13	7	8	NW	
Pocahontas	Pocahontas	1,190		12.2		53	28	-30	13	38	1.55		.60	15.5	5	16	4	8	NW	
Plover	Pocahontas		8	10.4	- 6.3	55	28	-35	13	47	1.35	†.70	.50	13.5	5	17	2	9	NW	
Ridgeway	Winneshiek	1,215	7	13.6	- 3.5	47	28	-28	13	32	2.00	-.67	.75	12.5	5	14	12	2	S	
Rock Rapids	Lyon	1,021	7	10.6	- 6.4	64	25	-33	2	40	.60	†.46	.20	6.0	5					
Sheldon	O'Brien	1,422	6	11.0	- 3.2	63	28	-35	2	43	1.30	†.62	.35	9.0	6	22	4	2	NW	
Sibley	Osceola	1,212	12	8.3	- 7.1	58	28	-36	2	57	.60	†.13	.15	6.0	7	14	7	7	NW	
Sioux Center	Sioux		6	11.8	- 3.8	60	28	-32	2	37	.60	-.18	.20	6.0	5	18	1	9	S, NW	
Storm Lake	BuenaVista	1,440	8	8.2	- 6.8	59	28	-34	2,3	56	1.31	†.66	.55	13.1	6	15	1	12	NW	
Washta	Cherokee	1,157									1.00	†.38	.60	10.0	6	17	7	4	S, NW	
Waverly	Bremer	942	9	10.6	- 7.4	44	28	-28	13,15	38	1.53	†.41	.50	17.1	7				NW	
West Bend	Palo Alto	1,197	12	12.0	- 4.5	52	28	-32	13	38	2.00	†1.19	.60	20.0	4	12	6	10	NW	
Average				10.6	- 5.9	50.8		-31.0		39.4	1.35	†.46		13.6	6	14	7	7	NW	

SOUTHERN SECTION.

Afton	Union	1,212	11	16.1	-5.7	62	28	-25	2,13	33	1.35	† .31	.60	13.5	6	10	7	11	SW	
Albia	Monroe	957		12.5	-7.2	64	28	-29	13	47	1.87		.52	23.0	7	15	0	13	NW	
Allerton	Wayne			15.7		64	28	-33	13	34	1.82		.60	14.6	6	15	8	5	SW	
Atlantic	Cass	1,164	14	12.8	-7.9	66	28	-36	2	44	2.10	†1.14	.80	21.0	4	11	6	11	NW	
Bedford	Taylor		5	15.4	-3.6	68	28	-32	13	39	1.56		.60	17.2	8	15	6	7	NW	
Bonaparte	Van Buren		14	15.2	-7.7	62	28	-31	13	35	1.42	† .18	.60	12.0	5					
Burlington	Des Moines	544		17.2		61	28	-27	13	32	2.40		.88		10	16	2	10	SW	
Chariton	Lucas	1,042	10	14.8	-7.4	64	28	-28	13	39	2.03	† .99	.60	15.0	6	16	7	5	NW	
Columbus Junct.	Louisa	586		16.0		55	28	-28	13	33	1.82	† .92	.50	19.0	10	15	9	4	NW	
Corning	Adams	1,127	13	13.3	-8.9	63	28	-32	13	43	2.00	†1.20	.70	20.0	5	12	10	6	SW	
Corydon	Wayne	992	12	15.8	-6.0	66	28	-31	13	37	1.71	† .29	.50	19.5	6	12	6	10	NW	
Clarinda	Page		15	12.4	-10.6	68	28	-29	13,14	55	1.18	† .16	.43	15.2	6	13	5	10	S	
Cumberland	Cass										2.25		.70	27.0	7	18	4	6	NE	
Earlham (a)	Madison			14.0		63	28	-29	2,13	40	1.88		.60	18.0	4				SW, NW	
Ft. Madison	Lee	516	56								2.13	† .17	.60	14.0	6	11	4	13	W	
Glenwood	Mills		17	16.1	-7.1	69	28	-29	13	31	1.60	† .92	.50	14.0	7	8	14	6	NW	
Greenfield	Adair		14	14.2	-7.1	63	28	-33	13	53	1.43	† .39	.47	17.4	7	17	6	5	SW	
Hopeville	Clarke		13	14.8	-7.1	64	28	-30	13	34	.68	- .09	.26		8	8	12	8	N, NW	
Indianola	Warren	969		15.2	-7.3	64	28	-28	2	35	1.68	† .93	.50	16.8	8	7	10	11	NW	
Keokuk	Lee	619	34	18.0	-10.8	62	28	-27	13	30	1.37	- .34	.36	13.8	12	14	4	10	SW	
Keosauqua	Van Buren	644	13	13.4	-10.7	62	28	-28	13,14	54	2.02	† .60	.74	12.3	12	9	4	15		
Lacona	Warren										2.58		.81		8	7	13	8		
Lenox	Taylor	1,250	10	13.6	-8.4	63	28	-37	13	35	1.41	† .76	.50	12.8	6	19	5	4	NW	
Leon	Decatur	1,120		16.0		62	28	-28	13	33	1.85		.70	18.5	5	8	11	9	N	
Massena	Cass			14.4		65	28	-31	2	38	1.08		.36	18.0	4	15	6	7	N, S	
Mt. Ayr	Ringgold	1,236	12	16.2	-5.6	68	28	-28	13	36	1.65	† .49	.40	15.0	7	11	6	11	SW, NW	
Mt. Pleasant (a)	Henry	729	24	15.2	-8.6	58	28	-27	13	40	1.68	† .64	.68	15.5	8	15	6	7	NW	
Omaha, Neb.	Douglas	1,113	34	17.0	-8.0	66	28	-25	2	30	1.36	† .57	.38	16.5	10	9	10	9	N	
Oskaloosa ‡	Mahaska	843	22	13.8	-7.5	60	28	-31	13	43	1.26	† .19	.30	14.8	8	16	0	12	NW	
Ottumwa	Wapello	649	11	16.2	-6.7	66	28	-24	2,13	38	2.83	†1.59	1.10	16.5	7	10	10	8	NW	
Pacific Junction	Mills	960	6	14.5	-4.5	67	28	-37	13	40	.98		.25	9.8	7	11	16	1	NW	
Red Oak	Montgomery	1,033	8	15.4	-7.4	60	27	-26	13	50	1.47	† .69	.60	18.8	8	17	4	7	NW	
St. Charles	Madison	1,070		16.4		67	28	-27	13	36	1.57		.57	18.8	7	13	8	7	NW	
Sigourney	Keokuk	887	9	15.2	-6.2	54	28	-30	13	42	2.11	† .76	.46	19.0	9	8	15	5	NW	
Stockport	Van Buren			16.8		62	28	-26	13	41	1.63		.62	13.0	9	11	8	9	NW	
Thurman	Fremont	588		14.4	-5.8	66	28	-37	13	55	1.14	- .18	.38	14.1	8	12	8	8	SW	
Wapello (c)	Louisa	769	7	13.3	-7.5			-22	13	44	2.06	† .60	.50	15.0	9				W	
Washington	Washington		13	14.7	-6.7	57	28	-29	13	34	2.14	† .98	.60	7.0	9				NW	
What Cheer (a)	Keokuk	1,129		17.4				-31	12	51	.75		.20	7.0	5				N	
Winterset	Madison	961	14	14.9	-6.7	59	28	-29	2	35	.85	- .04	.35	11.0	3	17	3	8	NW	
Woodburn	Clarke		6	14.8		61	28	-30	13,15	50	1.87		.66	18.0	5	14	5	9	NW	
Average				15.1	-6.4	65.1		-29.4		40.0	1.67	† .53		15.9	7	13	7	8	NW	
Average for Stat				12.8	-6.8	57.2		-30.6		40.0	1.57	† .53		15.5	7	14	7	7	NW	

†Above normal. ‡Received too late to be computed with means. a. One day missing; b. two days, etc. §Not supplied with self-registering instruments.

CLIMATOLOGICAL DATA FOR FEBRUARY, 1905—Continued.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Amana	Iowa	721	27	12.8	- 7.2	48	28	-32	13	44	1.93	† .66	.46	15.7	10	11	10	7	SW	
Audubon	Audubon	1,301	9	12.3	- 6.9	62	28	-35	2	44	1.79	† .99	.52	17.9	7	14	6	8	NW	
Baxter	Jasper	998	....	11.7	- 5.1	58	28	-32	13	36	1.40	.....	.60	14.0	3	19	0	9	NW	
Belle Plaine	Benton	826	14	10.8	- 9.8	47	28	-32	13	40	2.97	†1.67	1.00	22.8	8	11	8	9	NW	
Boone	Boone	....	....	14.7	.....	60	28	-27	2,13	28	1.37	.....	.32	16 8	10	14	3	11	NW	
Buckingham	Iowa	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.23	.....	.31	11.5	8	11	9	8	.....	
Carroll	Carroll	1,265	13	12.7	- 6.3	66	28	-33	2	53	1.75	† .67	.65	17.2	9	15	5	8	.....	
Cedar Rapids	Linn	733	23	10.6	- 9.9	50	28	-27	13	50	1.10	- .45	.41	18.8	7	9	12	7	NW	
Clinton	Clinton	609	38	13.6	- 8.4	49	28	-27	13	38	2.44	† .33	.70	18.0	9	10	10	8	W, NW	
Davenport	Scott	606	34	14.6	-10.7	52	28	-25	13	30	1.99	† .42	.54	15.1	8	13	6	9	W	
Delaware	Delaware	1,083	12	11.0	- 5.2	45	28	-31	13	31	1.34	† .46	.47	12.0	5	13	8	7	NW	
Denison	Crawford	1,180	9	13.2	- 5.4	64	28	-37	2	39	1.52	† .88	.60	12.8	6	19	4	5	N	
Des Moines	Polk	861	27	14.8	- 8.3	63	28	-26	13	38	1.06	† .22	.43	16.5	9	10	10	8	NW	
De Soto	Dallas	866	....	14.0	.....	64	28	-32	13	35	1.85	.....	1.00	18.0	6	17	4	7	SW	
Dubuque	Dubuque	655	32	13.3	- 9.3	49	28	-25	13	32	1.58	† .12	.50	16.6	7	12	8	8	NW	
Fort Dodge	Webster	1,126	....	10.5	.....	58	28	-28	13,14	50	1.50	.....	.40	13.0	7	17	1	10	N,S,W,NW	
Galva	Ida	1,290	12	12.5	- 5.3	59	28	-41	2	48	1.30	† .83	.45	13.0	5	....	....	....	.....	
Gilman	Marshall	1,052	..	....	.....	.....	.....	.....	.....	.....	1.75	.....	.60	15.0	6	13	4	11	N	
Grinnell	Poweshiek	1,023	10	13.5	- 7.6	53	28	-26	13	34	2.03	†1.16	.50	17.5	6	12	10	6	NW	
Grundy Center	Grundy	976	12	10.8	- 6.8	48	28	-34	13	36	2.55	†1.83	.60	27.0	8	13	8	7	NW	
GuthrieCenter	Guthrie	1,077	7	13.8	- 6.1	62	28	-32	2	39	1.15	† .48	.41	....	11	20	4	4	NW	
Harlan	Shelby	1,192	....	12.6	- 3.9	63	28	-37	2, 13, 15	52	1.16	.....	.45	14.5	7	11	11	6	NW	
Ida Grove†	Ida	1,220	....	12.9	.....	60	27	-41	2	45	1.10	.....	.50	11.0	3	15	8	5	W	
Independence	Buchanan	921	40	10.3	-11.5	48	28	-29	13	38	2.00	† .95	.60	20.0	5	17	4	7	SW	
Iowa City	Johnson	683	47	10.4	-12.5	55	28	-32	13	52	1.90	† .39	.50	21.0	8	14	3	11	N, S	
Iowa Falls	Hardin	1,170	10	10.0	- 5.3	48	28	-32	13	47	1.54	† .59	.50	19.5	9	14	4	10	NW	
Little Sioux	Harrison	.....	....	14.2	.....	66	28	-38	2	40	.89	.....	.22	9.2	6	17	7	4	SW	
LeClaire	Scott	576	....	.....	.....	.....	.....	.....	.....	.....	1.56	.....	.58	15.5	7	...	....	....	NW	
Logan	Harrison	928	36	15.2	- 8.4	63	28	-34	2	40	1.40	† .20	.30	14.0	8	11	14	3	NW	
Maquoketa	Jackson	688	12	10.2	-11.4	48	28	-31	13	53	1.61	† .11	.50	21.0	5	13	2	13	NE	
Marshalltown	Marshall	947	10	10.1	- 9.9	57	28	-30	13	52	1.49	† .71	.54	15.2	10	11	3	14	NW	
Muscatine	Muscatine	....	46	.....	.....	.....	.....	.....	.....	.....	1.37	- .71	.43	13.4	10	....	....	...	NW	
Mt. Vernon	Linn	847	30	13.0	- 8.6	52	28	-30	13	32	2.37	†1.30	.60	25.2	9	15	4	9	NW	
Newton	Jasper	944	15	12.8	- 7.6	55	28	-34	13	39	2.00	† .98	.67	22 0	7	15	7	6	S	
Odebolt	Sac	1,356	8	13.2	- 4.4	60	28	-34	2	38	.88	† .13	.40	12.0	4	18	7	3	.....	
Ogden (a)	Boone	1,088	9	13.6	- 5.8	62	28	-32	2	31	1.67	†1.08	.65	16.5	5	16	4	8	NW	
Olin	Jones	760	7	12.4	- 1.9	43	28	-28	13	41	2.20	† .87	.70	21.5	7	14	7	7	NW	
Onawa	Monona	.....	....	15.9	- 3.6	69	28	-30	2	42	1.10	† .15	.30	10.5	9	18	6	4	NW	
Perry	Dallas	975	....	13.8	.....	61	28	-33	13	37	1.85	.....	.60	18.5	6	6	14	8	.....	
Rockwell City	Calhoun	.....	8	12.8	- 4.0	58	28	-32	12, 13	38	1.30	† .79	.60	13.0	3	14	3	11	.....	
Sioux City	Woodbury	1,165	16	13.6	- 5.4	64	28	-30	2	43	.44	† .11	.25	8.9	8	13	9	6	NW	
Tipton	Cedar	807	....	15.2	- 6.2	49	28	-24	13	37	2.60	.....	.80	23.7	8	19	4	5	NW	
Toledo	Tama	856	9	12.2	- 7.4	53	28	-28	2, 13	42	1.51	† .82	.50	25.0	5	14	5	9	SW, NW	
Vinton (a)	Benton	810	15	11.3	- 8.6	46	28	-30	13	43	2.10	†1.09	.60	21.0	5	...	...	....	NW	
Waterloo	Black Hawk	862	16	12.0	- 6.2	45	21, 25, 28	-27	13	39	1.46	† .48	.48	13.0	7	13	5	10	NW	
Waukee	Dallas	1,039	....	15.7	.....	66	28	-32	2	40	2.38	.....	.90	23.5	7	14	8	6	NW	
Wilton Junction	Muscatine	683	11	13.7	- 6.1	49	28	-33	13	47	2.67	.....	.68	21 0	5	18	0	10	W	
Whitten	Hardin	1,036	...	10.7	- 4.4	48	28	-33	13	43	2.10	.....	.50	21.0	6	14	6	8	SW	
Zearing	Story	718	...	11.8	....	55	28	-35	13	36	2.18	.....	.95	18.5	4	17	1	10	NW	
Average		.....	....	12.7	- 7.6	55.6	....	-31.4	.....	40.7	1.68	† .62	.....	17.0	7	14	6	8	NW	

† Above normal. ‡ Received too late to be computed with means. *a*. One day missing; *b*. two days, etc. § Not supplied with self-registering instruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR FEBRUARY, 1905.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max..	10	- 8	3	14	28	14	23	22	21	10	7	2	5	25	12	35	24	36	36	36	43	40	54	44	49	57	47	62	..	..	..	26.8
	Min ..	-12	-25	-13	-18	5	- 7	-16	14	8	-14	- 3	-18	-25	- 8	-16	7	13	4	12	28	25	25	31	36	30	28	27	38	..	..	..	5.4
Albia*	Max..	- 1	-11	0	14	16	13	20	22	24	4	7	- 6	11	20	16	32	26	34	34	35	46	40	48	34	34	40	48	64	..	..	..	23.7
	Min ..	- 1	-26	-26	-17	-14	- 7	-16	-10	15	-13	-13	-10	-29	-28	-17	-15	15	2	8	16	25	26	30	34	30	28	22	27	..	..	..	1.3
Algona	Max..	0	-10	1	10	17	7	14	19	17	0	0	- 5	- 4	21	9	33	23	32	32	35	43	36	46	43	46	36	43	50	..	..	..	21.2
	Min ..	-20	-28	-20	-21	4	- 9	-21	9	0	-19	- 5	-22	-31	- 9	-25	5	4	1	16	27	25	26	21	31	26	26	11	22	..	..	..	0.8
Allerton	Max..	11	- 8	5	16	16	15	20	25	21	15	8	4	1	21	10	35	29	36	35	35	43	43	50	40	50	50	48	64	..	..	..	26.4
	Min ..	-10	-26	-12	-16	9	- 8	-14	14	12	-17	- 1	-13	-33	-11	-20	4	13	3	9	27	21	27	29	36	29	29	28	32	..	..	..	5.0
Alta	Max..	-12	-12	- 5	4	10	6	15	23	15	- 2	- 1	-12	0	24	12	30	22	32	30	37	42	37	47	45	50	36	51	59	..	..	..	20.8
	Min ..	-27	-33	-17	-17	- 3	- 7	-13	9	- 7	-20	-12	-26	-30	- 8	-18	10	7	4	20	20	26	24	26	32	27	25	17	32	..	..	..	1.5
Amana	Max..	6	- 9	2	14	20	19	20	22	21	7	11	7	- 4	20	5	31	23	31	36	36	42	38	37	37	41	37	40	48	..	.	..	22.8
	Min ..	-14	-26	-16	-22	12	0	-24	13	7	-11	- 2	-14	-32	-12	-22	1	14	- 3	8	29	23	29	19	32	30	24	13	24	..	..	..	2.9
Atlantic	Max..	- 6	-10	- 3	6	16	16	17	26	20	5	2	- 3	- 4	27	13	33	26	34	33	38	46	41	41	50	53	49	53	66	..	..	..	24.5
	Min ..	-17	-36	-14	-30	4	-19	-30	13	4	-24	- 3	-21	-30	- 4	-31	12	13	- 6	22	30	25	19	22	34	25	24	24	21	..	..	..	1.0
Audubon	Max..	4	-13	- 4	5	15	10	14	22	16	3	2	- 4	0	26	13	28	25	33	32	37	44	45	48	46	52	33	52	62	..	..	..	23.1
	Min ..	-18	-35	-15	-28	2	-12	-26	12	3	-22	- 5	-19	-30	- 6	-31	10	10	- 1	20	28	26	19	27	33	26	26	24	25	..	..	..	1.5
Baxter	Max..	- 5	- 8	1	9	19	16	15	18	22	8	7	3	-5	- 2	3	30	26	32*	35	33	45	39	43	38	45	35	44	58	..	..	..	21.6
	Min ..	-15	-29	-17	-18	7	-10	-21	12	5	-16	- 4	-20	-32	-20	-20	3	11	0	9	28	21	28	23	30	25	27	14	28	..	..	..	1.8
Bedford	Max..	10	-10	- 3	8	18	11	17	23	20	9	5	2	- 1	28	14	34	26	35	35	37	46	56	55	47	53	57	56	68	..	..	..	27.0
	Min ..	-11	-27	-12	-19	4	-14	-10	11	5	-20	0	-20	-32	- 6	-23	11	10	- 1	10	28	27	22	31	36	26	27	26	29	..	..	..	3.9
Belle Pl'e	Max..	-12	-10	2	10	22	12	10	24	24	10	9	2	- 5	23	10	33	23	31	38	35	37	39	39	36	41	35	40	47	..	..	..	21.0
	Min ..	-16	-30	-20	-20	- 9	-15	-20	12	16	-15	- 5	-19	-32	-15	-23	0	12	- 2	- 2	27	21	30	20	32	28	27	11	23	..	..	..	0.6
Bonapar'e	Max..	8	- 8	2	17	17	17	18	24	25	12	16	8	0	22	9	31	28	32	34	35	42	38	47	36	43	41	45	62	..	..	..	25.0
	Min ..	-10	-25	-11	-13	-13	0	-17	14	12	-10	0	-13	-31	-12	-20	0	14	0	9	27	22	29	25	33	31	26	28	31	..	..	..	5.4
Boone	Max..	9	- 5	- 1	7	15	15	12	21	22	9	3	0	- 2	21	10	29	29	34	35	34	45	41	44	43	48	44	49	60	..	..	..	24.0
	Min ..	-16	-27	-15	-15	5	- 6	-15	12	5	-15	- 5	-19	-27	- 6	-18	5	13	10	22	29	23	29	31	32	30	28	25	32	..	..	..	5.4
Britt	Max..	- 5	-12	- 2	14	17	9	18	28	17	1	3	- 3	- 6	19	8	34	24	32	35	39	43	39	47	42	45	36	40	46	..	..	..	21.7
	Min ..	-20	-31	-22	-18	6	-10	-23	14	- 2	-17	- 6	-23	-34	-11	-27	2	7	- 3	10	27	21	26	18	30	23	26	4	27	..	..	..	-0.2
Burling'n	Max..	11	3	9	21	19	24	22	23	20	14	17	12	1	21	10	28	32	32	34	33	46	38	49	40	50	40	50	50	48	64	..	26.8
	Min ..	-10	-22	-10	- 9	13	5	-10	14	14	- 9	1	- 9	-27	- 9	15	2	15	7	14	27	24	30	27	32	31	26	27	31	..	..	..	7.5
Carroll*	Max..	12	-10	- 4	10	- 2	12	15	17	20	0	4	-12	24	8	20	34	26	34	31	40	47	44	52	49	53	37	56	66	..	..	..	24.5
	Min ..	-17	-33	-27	-25	-10	-13	-24	- 3	7	-21	- 7	-20	-29	- 6	-25	10	10	0	20	26	27	23	27	32	25	30	21	28	..	..	..	0.9
Cedar R*	Max..	3	- 5	2	17	19	17	22	20	20	3	11	0	9	15	10	29	23	32	35	34	42	36	35	39	42	38	41	50	..	..	..	22.8
	Min ..	- 9	-22	-22	-18	-18	1	-22	-23	13	-10	-11	- 2	-26	-27	-19	-21	9	- 6	- 5	14	26	25	25	24	31	23	15	13	..	..	..	-1 5
Chariton	Max..	10	- 9	1	14	9	14	17	21	21	13	5	0	- 3	21	8	32	32	33	32	34	45	41	48	43	50	47	45	64	..	..	..	24.6
	Min ..	-10	-26	-12	-19	15	-11	-22	14	8	-14	- 1	-10	-28	- 9	-20	4	14	1	9	28	24	27	36	35	29	25	28	29	..	..	..	5.1
Charles C.	Max..	2	-12	2	9	19	12	14	17	18	- 2	3	- 5	- 2	15	3	30	21	30	33	32	42	35	33	36	41	32	40	43	..	..	..	19 3
	Min ..	-23	-31	-21	-25	1	-23	-27	11	- 6	-15	- 6	-25	-30	-14	-31	3	8	- 3	13	28	27	27	26	29	23	15	6	19	..	.	..	-1.6
Clarinda*	Max..	- 5	-12	2	10	19	12	10	25	20	6	5	- 9	22	26	18	35	29	35	33	39	49	51	54	49	56	56	57	68	..	..	..	27.1
	Min ..	- 5	-27	-25	-22	-22	-10	-22	-12	-12	-16	-16	-14	-19	-29	-20	-20	10	2	3	15	25	24	25	30	27	27	27	23	..	..	..	-2.2
Clear L	Max..	3	-10	4	4	19	11	16	21	17	7	4	- 1	- 5	15	7	30	30	82	33	36	39	36	..	..	..	..	..	..	..	..	..	15.9
	Min ..	-22	-29	-20	-12	5	- 8	-17	10	1	-15	- 7	-21	-31	-10	-25	1	8	10	14	27	27	26	20	29	27	27	4	17	..	..	..	1.3
Clinton	Max..	5	- 3	6	17	22	22	21	23	25	5	18	15	- 6	24	8	33	24	31	39	34	38	43	34	38	40	39	38	49	..	..	..	24.4
	Min ..	-14	-22	-12	-14	12	0	-17	4	4	-12	0	-13	-27	-11	-17	- 3	8	- 3	2	26	27	25	22	31	26	21	15	20	..	..	..	2.8
Colum. J.	Max..	10	- 6	5	20	20	19	25	28	27	11	17	10	- 3	24	9	34	28	39	40	38	42	40	44	39	41	42	41	55	..	..	..	26.4
	Min ..	-11	-24	-12	-15	12	4	-13	13	10	-11	- 1	-11	-28	-11	-16	1	9	8	13	27	24	29	26	32	29	27	20	30	..	..	..	5 6
Corning	Max..	10	-10	0	6	12	12	15	23	19	7	5	1	- 3	25	13	31	25	32	32	34	42	42	47	46	49	51	49	63	..	..	..	24.2
	Min ..	-13	-30	-15	-26	4	-13	-26	10	5	-19	- 2	-20	-32	- 7	-30	9	10	3	13	28	27	18	28	34	25	30	26	30	..	..	..	2.4
Corydon	Max..	13	- 4	7	13	17	17	18	23	22	19	8	6	1	22	9	33	31	34	33	36	44	45	50	42	51	46	49	66	..	..	..	26.8
	Min ..	-10	-26	-12	-17	9	19	-19	12	10	-15	- 1	-11	-31	-10	-19	4	12	4	11	27	22	26	30	35	29	28	28	30	..	..	..	4.9
Cresco	Max..	3	-11	0	8	17	16	14	17	18	3	6	3	- 7	11	1	26	25	26	32	34	38	36	33	35	38	35	38	42	..	..	..	19.2
	Min ..	-20	-27	-22	-15	6	- 2	-19	10	2	-14	-10	-13	-27	-12	-20	- 2	11	0	16	27	25	26	24	28	24	18	16	28	..	..	..	2.1
Davenpo't	Max..	6	- 6	5	17	19	19	18	21	23	2	- 9	- 2	-18	-25	- 8	14	4	14	6	17	27	28	27	27	31	31	28	20	30	..	..	..	22.9
	Min ..	-16	-22	-12	- 7	13	0	-12	13	2	- 9	- 2	-18	-25	- 8	-14	11	8	32	25	32	31	37	40	37	34	35	40	37	39	47	..	..	..	6.2
Decorah	Max..	-12	- 8	8	15	22	12	21	22	20	2	8	- 4	- 8	11	8	32	25	32	31	37	40	37	34	35	40	37	39	47	..	..	..	21.0
	Min ..	-18	-26	-24	-21	7	- 7	23	12	0	-12	- 7	-17	-25	- 9	-24	0	13	12	- 4	17	28	25	29	30	27	18	18	20	.	..	..	1.4
Delaware	Max..	3	- 9	3	10	19	17	17	19	20	4	7	6	- 1	10	6	28	22	30	35	35	37	36	34	38	37	33	39	45	..	..	..	20.5
	Min ..	-19	-28	-18	-11	7	0	- 9	9	0	-14	- 6	-12	-31	-15	-22	- 2	6	1	10	25	25	26	20	27	21	20	8	20	..	..	..	1.4
Denison	Max..	5	-12	- 4	4	13	10	14	20	19	6	0	- 4	0	26	13	30	28	34	30	37	48	46	53	49	55	48	57	64	..	..	..	24.6
	Min ..	-17	-37	-15	-29	0	-12	-25	12	5	-21	- 6	-22	-28	- 5	-26	11	11	4	21	23	27	21	26	28	29	28	23	26	..	..	..	1.7
Des M	Max..	7	- 7	2	12	19	12	17	20	22	4	8	- 4	2	25	10	31	25	33	34	34	48	39	47	51	37	50	63	..	..	..	24 5
	Min ..	-18	-26	-12	-19	7	-10	-21	15	- 1	-13	- 4	-21	-26	- 3	-17	9	12	4	15	29	26	31	31	34	32	29	28	32	..	..	..	5.1
De Soto	Max..	5	-10	0	9	17	10	13	23	20	6	4	- 2	0	24	12	30	24	33	35	35	49	42	56	44	55	40	48	64	..	.	..	24.5
	Min ..	-18	-31	-14	-27	6	- 9	-25	13	5	-16	- 4	-20	-32	- 9	-23	5	12	4	13	28	26	30	32	34	30	29	26	30	..	..	..	3 4
Dows	Max..	0	15	- 2	5	14	12	12	16	15	3	0	- 2	- 6	19	4	28	25	31	32	32	42	37	42	38	45	40	42	49	..	..	..	19.9
	Min ..	-20	-29	-23	-19	4	-12	-24	11	0	-20	- 6	-20	-32	-12	-25	2	9	- 1	15	27	22	26	19	29	25	25	7	16	..	..	..	-0 2
Dubuque	Max..	3	- 7	3	13	20	18	19	20	23	6	11	7	- 5	16	8	28	22	30	34	34	39	41	33	39	41	35	40	49	..	..	..	22.1
	Min ..	-14	-21	-17	-14	11	0	-13	11	0	- 9	- 4	-17	-23	-11	-15	- 1	14	4	17	28	28	26	24	30	32	23	18	23	..	..	..	4.5
Earlham	Max..	9	-12	0	6	16	14	13	19	0	8	4	1	- 1	24	10	33	25	32	31	33	43	45	48	43	52	42	48	63	..	..	..	24.4
	Min ..	-14	-29	-15	-26	4	- 8	-27	13	0	-20	- 4	-17	-29	- 7	-26	7	13	7	21	26	31	24	31	33	27	26	26	27	..	.	..	3.5
Elkader	Max..	- 6	- 4	10	15	21	24	22	22	24	4	10	3	0	14	10	27	25	36	36	34	38	42	33	35	44	37	39	51	..	..	..	23.1
	Min ..	-15	-28	-25	-25	9	-11	-25	14	4	-12	- 6	-14	-29	-14	-30	0	14	- 6	12	29	27	28	21	30	23	14	9	19	..	.	..	0.5
Esthervil*	Max..	-12	-13	- 3	9	10	10	13	18	14	- 3	- 2	-12	23	1	15	32	23	32	31	37	47	34	50	47	49	31	46	55	..	.	..	20.8
	Min ..	-23	-28	-28	-26	-18	-10	-23	-13	12	-19	-18	-25	-28	-25	-22	-19	10	6	5	20	23	27	25	27	28	26	11	24	..	..	..	-2.9
Fayette	Max..	-12	- 8	5	13	20	17	17	18	20	- 2	12	- 5	- 6	14	5	27	24	30	35	35	40	34	34	37	39	35	39	46	..	..	..	20.1
	Min ..	-20	-29	-23	-25	7	-10	-27	11	- 3	-12	- 8	-21	-30	-15	-30	- 5	- 1	- 5	11	23	24	24	20	28	29	20	7	16	..	..	..	-1.8
ForestCy*	Max..	-15	-12	- 2	13	17	8	12	20	15	- 4	2	-15	15	3	17	30	21	30	32	33	42	32	46	41	46	31	42	45	..	..	..	19.5
	Min ..	-21	-29	-26	-17	- 9	- 7	-22	-17	8	-16	-14	-22	-31	-26	-24	-22	10	- 1	4	27	23	24	18	22	26	27	6	16	..	..	..	-3.3
F. Dodge*	Max..	-10	-11	- 8	11	15	5	15	19	16	- 2	2	-14	22	10	19	30	22	33	32	36	42	44	47	42	48	33	49	58	..	..	..	21.6
	Min ..	-18	-27	-27	-21	-16	- 7	-24	-24	12	-18	-18	-18	-28	-28	-22	7	12	6	8	25	27	29	24	25	29	28	19	27	..	..	..	-0.6
Galva	Max..	3	-13	..	8	12	5	22	28	19	3	1	- 6	5	30	14	32	26	33	35	40	43	41	48	45	49	43	58	59	..	.	..	25.1
	Min ..	-22	-41	-17	-31	1	-13	-25	11	3	-20	- 6	-25	-30	-18	-29	9	8	0	21	20	27	20	21	33	26	30	19	25	..	..	..	-0,1
Glenw'd	Max..	10	-12	- 4	0	15	17	14	22	19	9	1	- 1	- 1	28	17	34	29	33	32	38	50	50	48	49	55	56	55	69	..	..	..	26.2
	Min ..	-14	-26	-13	-21	0	- 4	-10	12	9	-17	- 3	-17	-29	- 8	-11	10	13	12	10	25	28	28	33	35	28	33	26	33	..	..	..	6.0
Grand M.	Max..	- 1	- 8	3	11	20	16	16	21	21	0	-16	- 9	-18	-29	-14	-21	- 3	10	0	15	26	25	26	22	28	23	20	14	28	..	..	20.7
	Min ..	-19	-28	-23	-14	6	- 4	-15	10	0	-16	- 9	-18	-29	-14	-21	- 3	10	0	15	26	25	26	22	28	23	20	14	28	..	..	..	1.4
Greene	Max..	3	- 9	3	13	18	16	15	21	17	3	5	1	- 2	15	8	30	26	34	35	34	41	37	37	37	42	37	40	46	..	..	..	21.5
	Min ..	-17	-27	-20	-19	7	-10	-21	13	- 1	-14	- 4	-14	-29	-10	-24	0	10	- 1	16	26	27	27	24	30	24	23	8	18	..	..	..	1.1
Greenfield	Max..	7	-15	- 1	11	18	14	22	28	22	12	4	- 2	- 2	25	14	35	25	34	38	39	42	40	51	47	48	47	48	63	..	..	..	25.5
	Min ..	-17	-31	-16	-19	2	-10	-15	12	1	-20	- 4	-18	-33	- 9	-20	6	9	5	15	27	25	21	30	32	27	29	22	29	..	..	..	2.9
Grinnell	Max..	11	-11	- 2	10	16	16	16	20	22	10	5	2	- 5	19	7	31	29	32	34	33	42	39	41	36	42	38	41	53	..	..	..	22.4
	Min ..	-14	-25	-15	-13	- 2	- 3	-14	13	8	-13	- 3	-17	-26	- 9	-17	- 3	8	8	14	28	23	29	27	31	32	32	18	32	..	..	..	4.6
Grundy C	Max..	5	-10	...	10	17	16	14	19	20	5	7	2	- 3	18	7	27	25	31	35	33	41	33	33	35	43	39	40	48	..	..	..	21.1
	Min ..	-17	-30	-22	-18	- 7	- 8	-22	12	4	-18	- 5	-15	-34	-11	-25	1	11	0	14	28	24	29	19	29	26	26	6	17	..	..	..	0.5
Guthrie C	Max..	6	- 8	- 7	9	16	13	15	24	21	5	5	0	- 1	24	13	29	27	32	34	36	44	40	49	45	49	45	50	62	..	..	..	24.2
	Min ..	-18	-32	-16	-26	3	- 6	-23	10	4	-18	- 5	-20	-29	- 7	-26	9	11	6	21	28	29	26	31	34	29	29	24	29	..	..	..	3 5
Hampton	Max..	- 2	-10	4	11	19	12	15	18	18	1	5	- 3	0	17	9	32	25	32	35	33	43	36	39	38	44	36	42	50	..	.	..	21.4
	Min ..	-19	-28	-20	-18	5	- 9	-20	4	0	-17	- 5	-20	-30	-11	-21	2	10	5	12	25	26	27	21	29	28	26	10	26	..	..	..	1.4
Hanlontown	Max..	1	-12	2	7	14	12	10	16	16	2	0	- 2	- 5	16	2	35	26	31	32	33	47	38	36	40	45	35	43	47	..	..	..	20.2
	Min ..	-21	-29	-23	-19	3	-10	-27	- 9	- 1	-16	-10	-22	-31	-10	-26	2	9	- 2	17	27	26	25	17	28	26	25	3	20	..	..	..	-1.0
Harlan	Max..	5	-12	- 4	7	14	10	16	28	18	5	4	- 4	1	26	15	33	25	33	38	39	46	44	49	47	53	47	54	63	..	..	..	24.8
	Min ..	-19	-37	-15	-27	1	-15	-24	11	2	-21	- 6	-26	-37	- 7	-37	5	8	- 1	15	22	22	20	26	34	27	27	24	26	..	..	..	0.1
Hopeville	Max..	7	-10	- 1	11	16	9	18	22	20	11	4	- 2	- 2	24	11	32	23	35	36	35	44	45	54	43	52	49	49	64	..	..	..	25.0
	Min ..	-13	-26	-13	-17	6	- 9	-16	14	5	-15	- 2	-21	-30	- 7	-17	5	10	5	9	28	25	25	31	37	29	29	27	32	..	..	..	4.7
Humboldt	Max..	4	-13	- 2	10	16	10	15	40	18	5	- 2	- 3	2	20	10	31	26	34	33	46	42	39	44	42	47	38	47	54	..	..	..	23.7
	Min ..	-19	-32	-20	-24	5	-13	-25	10	5	-21	-21	-30	- 6	- 8	-29	7	10	0	18	30	34	29	20	32	28	30	16	26	..	..	..	1.9
Ida Grove	Max..	6	-14	-14	5	15	14	18	24	22	6	3	- 3	0	26	16	29	26	34	33	39	44	42	45	47	50	50	60	57	..	..	..	24.2
	Min ..	-19	-41	-19	-31	- 4	-19	-25	10	5	-19	- 5	-23	-29	- 5	-30	10	10	5	22	29	26	22	35	32	26	29	27	26	..	..	..	1.6
Independ.	Max..	6	-10	0	10	17	16	14	15	17	12	5	- 6	-10	15	1	24	23	28	33	34	38	34	32	33	38	37	37	48	..	..	..	20.4
	Min ..	-16	-27	-20	-15	7	- 1	-20	12	2	-12	- 6	-10	-28	-18	-24	- 4	- 4	- 5	5	26	24	23	22	28	26	19	9	14	..	..	..	0.2
Indianola	Max..	8	- 7	3	8	20	14	16	22	22	7	8	3	- 1	23	12	32	25	34	36	35	47	43	50	52	51	40	48	64	..	..	..	25.2
	Min ..	-14	-28	-12	-18	7	-10	-19	14	6	-14	- 2	-19	-27	- 8	-18	5	15	6	13	29	25	31	31	34	30	30	28	31	..	..	..	5.2
Inwood	Max..	-17	-10	10	1	9	6

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR FEBRUARY, 1905—CONTINUED.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Keokuk ..	Max.	13	- 4	4	18	18	18	21	25	26	18	16	16	- 2	22	12	28	27	29	35	35	44	38	50	42	46	47	45	62	..	..	..	26.8
	Min ..	- 3	-20	- 9	- 7	12	6	- 7	15	18	- 5	1	- 8	-27	- 8	-12	3	18	6	21	27	25	31	26	38	33	29	30	36	..	..	..	9.3
Keosauqua *.	Max..	10	- 7	4	20	20	17	21	25	26	14	17	0	10	26	10	32	27	34	34	36	43	40	50	38	45	45	46	62	..	..	..	26.6
	Min ..	6	-24	-23	-20	-20	0	-24	-22	15	-10	-10	- 5	-28	-28	-17	-17	17	- 7	- 7	21	23	24	25	25	31	23	29	29	..	..	..	0.2
Larrabee.	Max..	-11	-10	- 5	11	11	6	19	26	18	1	- 2	- 8	- 2	10	15	34	23	31	38	42	43	41	48	46	50	38	53	59	..	..	..	22.3
	Min ..	-24	-36	-19	-24	- 6	-20	-16	8	- 2	-24	- 8	-27	-29	- 3	-22	12	8	3	17	20	26	23	28	33	26	29	18	27	..	..	..	0.5
Le Mars..	Max..	5	-13	- 5	5	10	5	15	22	18	2	- 4	- 6	0	27	15	31	27	33	35	36	44	43	43	49	51	45	51	61	..	..	..	23.0
	Min ..	-22	-35	-16	-28	- 1	-15	-25	11	2	-19	-17	-27	-28	- 4	-22	4	8	3	19	19	28	19	24	39	25	31	19	25	..	..	..	0.6
Lenox....	Max..	9	-12	- 3	8	15	11	15	24	18	6	3	0	- 3	2	12	34	22	35	34	38	42	43	49	45	50	52	48	63	..	..	..	24.4
	Min ..	-16	-33	-16	-20	2	-10	-13	12	4	-22	- 9	-24	-37	- 8	-23	3	9	3	11	27	25	25	34	35	26	32	26	29	..	..	..	2.8
Leon.....	Max..	13	- 9	1	13	18	15	20	24	22	12	7	4	- 3	23	10	34	30	35	34	34	43	40	48	44	48	50	47	62	..	..	..	25.7
	Min ..	-10	-24	-12	-13	9	- 6	-13	12	10	-13	- 1	-13	-28	- 8	-16	5	14	5	13	28	23	27	31	36	30	29	28	32	..	..	..	6.2
Lit. Sioux	Max..	9	-12	- 3	2	15	6	14	23	19	6	4	- 4	0	22	17	31	28	38	34	39	42	49	54	44	57	52	59	66	..	..	..	25.9
	Min ..	-16	-38	-13	-28	0	-10	-26	13	5	-23	- 4	-20	-37	-12	-22	12	6	11	23	21	23	18	31	35	24	32	24	30	..	..	..	2.5
Logan....	Max..	8	- 4	6	10	20	14	21	30	21	12	7	4	3	28	18	32	29	38	34	42	48	45	50	48	50	48	53	63	..	..	..	27.8
	Min ..	-15	-34	-13	-26	6	-21	- 4	14	3	-16	-16	-19	-31	- 2	-22	11	11	5	23	20	25	20	20	28	24	29	36	26	..	..	..	2.6
Maquoketa *.	Max..	3	4	10	17	20	25	21	19	20	10	12	5	5	20	7	27	26	31	35	32	40	43	34	32	44	32	38	48	..	..	..	23.6
	Min ..	-14	-23	-22	-20	- 2	0	-20	-20	12	-11	-11	- 1	-31	-28	-26	-26	- 7	- 4	- 5	15	27	27	19	27	28	19	6	4	.	..	..	-3.1
Marshlt'n	Max..	- 6	- 7	1	14	19	15	17	19	21	3	8	- 5	13	20	16	30	24	34	37	33	46	35	45	38	47	34	44	57	..	..	..	23.3
	Min ..	-14	-27	-27	-21	-21	- 6	-23	-20	13	16	-16	-12	-30	-29	-22	-22	13	2	6	15	22	23	21	21	28	26	14	15	..	..	..	-3.1
Mason C..	Max..	5	- 9	3	9	18	14	11	18	15	0	3	0	- 9	15	8	29	25	32	33	33	41	35	33	38	44	35	40	45	..	..	..	20.1
	Min ..	-18	-24	-17	-13	7	- 8	-26	10	0	-12	- 5	-18	-27	- 9	-20	2	12	7	17	25	27	27	22	28	27	27	17	25	..	..	..	3.2
Massena..	Max..	9	-11	- 1	7	17	12	16	25	20	7	4	0	16	25	16	31	26	33	34	38	44	43	50	47	51	51	51	65	..	..	..	25.9
	Min ..	-14	-31	-13	-24	- 5	- 6	-22	14	5	-16	- 3	-16	-30	- 5	-27	10	12	3	18	28	20	21	22	28	25	28	26	30	..	..	..	2.8
Mt. Ayr..	Max..	12	- 7	2	10	17	14	18	22	22	7	6	0	- 1	28	15	32	27	34	37	38	50	52	53	48	58	58	50	68	..	..	..	27.5
	Min ..	-14	-26	-13	-13	6	- 6	- 8	13	5	-15	- 2	-20	-28	- 8	-17	7	11	3	11	25	22	28	30	35	29	30	27	29	..	..	.	5.0
Mt. Pl'snt	Max..	10	- 4	7	20	22	18	23	27	27	13	18	10	- 2	20	8	35	27	34	37	38	42	40	47	39	42	41	44	58	..	..	..	26.5
	Min ..	-11	-26	-11	-12	-12	0	-17	14	11	-11	- 1	-11	-27	-11	-18	0	14	2	11	27	27	28	24	31	29	26	..	..	..	..	..	3.8
Mt. Ver'n	Max..	8	- 3	8	16	20	16	20	19	21	9	11	3	- 2	17	7	27	23	32	34	32	48	41	34	34	46	36	41	52	..	..	..	23.0
	Min ..	-15	-26	-17	-10	10	1	- 9	10	5	-13	- 5	-17	-30	-13	-18	- 2	12	0	7	26	23	23	21	20	27	24	16	28	..	..	..	3.1
New H. ..	Max..	2	-12	1	10	20	17	15	18	18	3	4	1	- 5	14	2	27	26	27	34	34	38	37	35	35	38	37	38	41	..	..	..	19.8
	Min ..	-20	-28	-21	-12	- 2	- 1	-14	11	0	-15	- 7	-16	-32	-15	-24	- 3	12	- 2	10	27	26	27	25	28	24	23	10	22	..	..	..	1.2
Newton..	Max ..	10	-10	- 1	10	18	16	16	21	22	10	8	6	5	20	7	29	27	32	35	33	41	40	42	37	43	42	43	55	..	..	..	23.5
	Min ..	-16	-31	-17	-17	7	- 7	-17	13	8	-18	- 4	-16	-34	-13	-22	0	11	2	2	27	20	29	24	31	27	28	17	28	..	..	..	2.2
Odebolt ..	Max..	4	-12	- 3	7	15	6	19	25	19	4	- 2	- 4	- 1	25	13	29	26	35	32	49	44	43	49	45	50	45	48	60	..	..	..	24.3
	Min ..	-20	-34	-15	-25	1	-13	-19	10	4	-20	- 5	-21	-27	- 4	-24	10	10	4	19	23	29	20	21	33	26	30	20	30	..	..	..	2.2
Ogden....	Max..	3	- 8	3	- 5	17	11	11	18	..	..	4	0	- 9	21	10	25	29	33	35	36	45	38	47	45	49	44	50	62	..	..	..	23.5
	Min ..	-17	-32	-16	-18	5	-11	-21	10	- 8	-18	- 4	-19	-31	-10	- 4	3	15	19	19	28	29	30	21	30	26	29	21	30	..	..	..	3.8
Olin	Max.	12	- 6	3	12	21	19	16	20	22	10	10	10	- 7	21	4	30	25	28	35	35	37	39	34	37	39	36	40	43	..	..	..	22.3
	Min ..	-10	-23	-15	-20	11	1	-25	12	10	-12	- 4	- 7	-28	-17	-24	- 2	15	- 6	5	25	27	27	22	30	29	21	9	19	..	..	..	2.5
Omaha, N	Max.	7	-11	- 4	6	14	10	16	22	18	1	2	- 9	8	29	18	30	28	37	32	39	49	52	50	50	56	53	58	66	..	..	..	26.0
	Min ..	-18	-25	-12	-16	0	- 4	- 8	15	- 2	-12	- 9	-17	-22	0	- 6	13	16	12	26	24	31	32	35	37	33	32	29	38	..	..	..	7.9
Onawa ...	Max..	9	-12	1	3	15	9	14	25	19	7	3	- 3	5	26	19	35	33	40	35	40	55	49	49	50	59	54	63	69	..	..	..	27.5
	Min ..	-12	-30	-11	-21	1	- 9	-18	11	7	-15	- 3	-20	-25	- 2	-15	9	10	5	20	20	25	23	29	34	25	30	25	27	.	..	..	4.3
Osage.....	Max..	3	-12	4	9	19	13	14	18	17	2	5	- 1	- 5	14	5	30	27	30	33	33	42	38	34	37	42	38	41	43	..	..	..	20.5
	Min ..	-20	-28	-20	-16	6	- 9	-19	11	2	-13	- 7	-16	-26	-13	-23	- 1	12	- 1	11	24	27	27	25	29	27	23	13	25	..	..	..	1.8
Oskaloosa	Max..	9	-12	0	12	17	14	20	25	23	9	8	4	- 1	10	12	33	26	36	37	37	43	38	48	38	46	37	45	60	..	..	..	24.1
	Min ..	-12	-29	-12	-22	9	- 9	-23	13	9	-14	- 2	-17	..	-10	-22	2	15	2	9	28	24	29	23	33	28	25	21	30	..	..	..	4.5
Ottumwa.	Max..	2	- 9	0	18	16	16	20	24	26	3	12	- 5	- 2	12	9	32	27	36	38	38	42	37	44	38	45	45	46	60	..	..	..	23.9
	Min ..	-11	-24	- 8	-18	14	0	-18	19	6	- 8	2	-16	-24	0	-16	18	16	10	16	31	27	32	30	33	32	32	30	32	..	..	..	8.5
Pacific J'n	Max..	- 6	-10	1	7	16	10	16	28	16	4	3	- 5	3	28	18	36	26	37	36	39	45	48	51	47	54	57	55	67	..	..	..	26.0
	Min ..	-14	-30	-12	-25	4	- 5	-23	14	3	-22	- 5	-22	-37	- 5	-22	10	9	5	20	22	23	20	30	37	24	30	27	28	..	..	..	3.0
Perry.....	Max..	5	-10	0	8	19	12	14	24	21	5	9	- 1	- 1	24	12	31	25	34	34	37	44	39	47	44	49	42	50	61	..	..	..	24.2
	Min ..	-17	-32	-14	-25	5	-13	-23	11	4	-18	- 3	-23	-33	-10	-13	8	13	3	18	29	23	31	24	33	31	31	22	29	..	..	..	3.5
Plover....	Max..	0	-13	0	10	7	7	15	33	17	- 2	1	- 9	- 2	23	13	33	23	33	35	38	42	39	47	44	45	33	47	55	..	..	..	21.9
	Min ..	-22	-31	-22	-21	-10	- 7	-25	-14	- 2	-22	- 9	-23	-35	- 8	-24	- 3	8	- 2	16	22	22	28	26	32	27	26	13	28	..	..	..	-1.1
Pocah'tas	Max..	-10	- 9	0	10	15	10	16	26	20	2	4	- 7	0	18	14	33	23	35	34	38	43	38	49	45	48	37	47	53	..	..	..	22.6
	Min ..	-20	-28	-17	-20	3	-10	-22	11	2	-21	- 7	-23	-30	- 5	-21	8	9	2	19	25	25	25	24	32	23	26	12	29	..	..	..	1.8
Red Oak..	Max..	17	0	- 5	- 4	10	20	15	19	23	25	12	17	- 9	19	29	19	36	32	38	37	46	56	53	55	52	57	60	57	..	..	..	28.0
	Min ..	- 5	-24	-16	-18	-18	- 3	-13	-12	14	13	-12	-11	-26	-23	-21	-18	14	5	7	20	29	24	25	36	29	29	28	29	..	..	..	2.9
Ridgeway	Max..	- 1	0	12	15	23	25	22	20	23	18	10	3	- 3	18	9	30	26	30	35	36	40	40	36	37	45	34	42	47	..	..	..	24.0
	Min ..	-19	-26	-20	-10	6	0	- 8	14	0	-13	- 7	-17	-28	-14	-20	- 2	12	3	14	28	27	28	24	30	25	21	13	27	..	..	..	3.1
Rock R...	Max..	-14	-20	0	- 6	10	10	18	20	2	0	-10	-18	15	0	7	30	30	25	34	45	49	46	44	54	64	34	55	60	..	..	..	20.9
	Min ..	-24	-33	-20	-24	-14	-16	-18	- 2	-10	-18	-13	-26	-25	- 2	-20	- 7	10	0	25	18	28	28	26	30	28	28	30	28	..	..	..	0.2
R. City...	Max..	-12	-16	0	10	18	10	12	25	20	5	5	0	1	20	20	31	36	34	34	38	43	40	46	46	48	41	50	58	..	..	..	23.7
	Min ..	-19	-32	-19	-20	- 3	-15	-22	8	3	- 4	-22	-32	-32	- 7	-18	7	15	4	20	28	28	29	27	25	26	29	18	29	..	..	..	1.8
St. Cha'les	Max..	- 2	- 3	6	9	18	18	18	23	25	7	6	4	2	23	17	32	30	36	39	36	49	43	55	55	58	42	50	67	..	..	..	27.2
	Min ..	-22	-26	-12	-16	8	- 7	-18	13	5	-13	- 3	-19	-27	- 5	-15	8	14	8	14	28	27	31	31	30	31	29	28	33	..	..	..	5.5
Sheldon..	Max..	0	-11	1	3	12	10	12	23	16	3	0	-12	- 2	7	15	33	28	36	35	38	45	40	48	52	55	48	58	63	..	..	..	23.2
	Min ..	-28	-35	-20	-22	0	-14	-21	-11	0	-25	- 9	-28	-34	- 7	-24	2	8	- 1	16	17	25	27	25	30	26	28	15	29	..	..	..	-1.1
Sibley *...	Max..	-13	-12	- 3	3	7	15	13	18	13	- 1	5	13	25	2	16	31	24	32	28	39	48	41	50	48	54	30	54	58	..	..	..	21.5
	Min	-27	-36	-34	-20	-17	-15	-15	- 7	12	25	-21	-29	-32	-31	-25	-18	- 1	- 1	4	18	20	26	24	25	25	26	9	27	..	..	..	-4.9
Sigourn'y	Max..	12	- 7	5	16	21	19	24	25	25	16	12	8	0	22	10	37	31	35	38	38	42	40	45	39	41	40	44	54	..	..	..	26.1
	Min ..	-10	-28	-14	-17	11	- 1	-18	14	15	-14	- 1	-10	-30	-11	-20	1	13	1	9	28	21	27	22	31	27	25	19	29	..	..	..	4.2
Sioux C'r.	Max..	4	-10	- 5	4	8	2	14	21	16	- 3	- 3	- 8	0	27	12	32	23	32	34	36	44	41	46	48	51	43	55	60	..	..	..	22.3
	Min ..	-26	-32	-18	-18	- 2	-16	-12	11	- 3	-21	- 8	-28	-27	- 5	-17	5	7	0	16	17	26	22	27	32	28	27	18	30	..	..	..	1.2
Sioux C'y.	Max..	4	-13	- 6	1	10	1	13	19	16	- 2	- 2	-12	19	29	17	31	26	35	36	37	50	47	51	50	56	44	59	64	..	..	..	24.3
	Min ..	-21	-30	-20	-25	- 7	-17	-24	13	- 7	-17	-12	-25	-24	- 4	-13	11	14	7	23	20	32	28	29	35	30	28	26	32	..	..	..	2.9
Stockport	Max..	10	- 7	8	20	18	20	24	24	27	16	12	11	- 1	24	10	30	30	34	33	35	48	42	53	38	47	44	49	62	..	..	..	27.1
	Min ..	- 8	-23	-11	-14	13	1	-17	15	15	- 9	1	- 6	-26	- 8	-15	3	16	1	10	27	23	30	25	33	26	24	28	30	..	..	..	6.6
Storm L*.	Max..	-10	-12	- 4	9	10	6	13	19	6	- 2	- 1	-17	25	6	20	29	22	33	30	36	40	36	45	45	50	33	51	59	..	..	..	20.6
	Min ..	-24	-34	-34	-25	-23	-10	-24	-13	11	-23	-23	-28	-31	-30	-22	-20	6	5	9	20	20	25	26	27	27	28	18	22	..	..	..	-4.3
Thurman.	Max..	10	- 9	- 1	4	17	12	15	25	16	8	4	- 4	3	29	28	34	28	36	34	38	45	46	51	49	53	53	55	66	..	..	..	26.6
	Min ..	-13	-26	-12	-26	3	- 5	-22	- 8	4	-21	- 4	-20	-37	- 5	-27	11	8	- 6	21	28	25	19	30	36	25	28	26	28	..	..	..	2.1
Tipton....	Max..	8	16	5	15	18	23	17	19	22	8	11	11	- 5	17	6	27	25	30	43	32	40	40	34	36	44	37	40	49	..	..	..	23.9
	Min ..	-11	-21	-12	- 6	12	5	- 3	13	7	-10	0	-11	-24	-10	-15	0	14	3	12	27	25	30	25	31	29	29	18	29	..	..	..	6.6
Toledo....	Max..	2	- 8	2	10	19	16	18	19	20	5	8	4	- 4	19	7	29	24	35	36	33	46	39	39	37	44	36	42	53	..	..	..	22 5
	Min ..	-15	-28	-19	-22	9	- 7	-24	13	5	-15	- 4	-16	-28	-10	-24	3	13	- 1	12	28	22	29	17	30	29	26	12	22	..	..	..	2.0
Vinton. ..	Max..	10	-14	3	14	19	16	17	18	20	8	8	7	- 5	18	5	28	26	32	35	33	43	39	33	35	..	40	40	46	..	..	..	21.3
	Min ..	-14	-26	-18	-14	9	- 4	-26	12	8	-13	- 4	-12	-30	-12	-23	0	13	1	11	28	22	30	18	30	..	21	7	20	..	..	..	1.3
Wapello..	Max..	12	20	8	18	19	22	24	22	32	23	8	15	15	20	9	28	37	33	1	38	23	26	30	..	31	30	25	..	..	..	..	25.1
	Min ..	- 7	- 1	- 8	-12	-13	- 9	-18	-12	-12	- 9	0	- 5	-22	- 7	-16	- 2	11	1	13	23	26	30	..	42	43	37	..	..	..	..	..	1.5
Washi'ton	Max..	7	- 7	4	17	20	20	20	22	25	8	11	7	5	21	11	34	27	35	35	34	44	37	42	37	44	38	44	57	..	..	..	25 0
	Min ..	-14	-26	-11	-14	12	- 2	-14	18	8	-12	- 1	-15	-29	-10	-18	2	12	2	12	18	23	29	24	32	29	26	19	29	..	..	..	4.4
Waterloo*	Max..	- 3	- 5	4	11	20	17	18	19	22	4	6	- 2	- 2	20	7	27	25	32	35	35	45	36	32	35	45	37	41	45	..	..	..	21.6
	Min ..	-15	-26	-19	-19	8	- 5	-21	13	6	-12	- 3	-12	-27	- 7	-21	0	18	- 3	11	28	25	28	21	29	26	23	7	18	..	..	..	2.4
Waukee..	Max..	8	- 5	9	9	18	14	14	23	21	7	6	2	7	24	20	32	26	39	44	37	49	53	52	45	55	40	52	66	..	..	..	27.4
	Min ..	-14	-32	-14	-20	5	-11	-23	11	7	-18	- 3	-19	-30	- 8	-20	6	13	6	14	29	25	30	31	33	28	30	26	30	..	..	..	4.0
Waverly..	Max..	- 1	-10	1	11	19	16	16	19	19	2	5	1	- 4	16	5	28	24	30	34	34	41	36	35	34	41	35	40	44	..	..	..	20.4
	Min ..	-17	-27	-20	-22	6	- 8	-24	12	2	-13	- 5	-18	-28	-13	-28	- 1	12	- 5	13	28	27	28	23	29	26	20	2	19	..	..	..	0.8
What Ch.	Max..	- 1	7	12	20	25	19	23	27	14	10	9	15	- 2	15	34	32	38	..	3	20	19	32	27	19	34	25	30	29	..	..	..	29.8
	Min .	-28	-12	-21	1	- 2	-24	12	11	-14	- 1	-16	-31	-10	-25	2	12	- 8	..	3	20	19	32	27	19	34	25	30	29	..	..	..	3.1
Whitten..	Max..	7	-14	- 5	7	18	14	20	24	20	7	7	0	- 8	- 1	3	31	25	31	34	36	42	37	39	38	43	40	41	48	..	..	..	20.9
	Min ..	- 9	-31	-22	-19	5	- 9	-23	11	5	-18	- 6	-18	-33	-13	-26	0	10	- 1	10	25	31	26	19	29	25	27	8	22	..	..	..	0.5
Wilton J.	Max..	9	- 4	5	17	21	18	22	24	24	13	15	12	- 4	24	6	34	28	33	39	38	40	46	38	39	40	38	40	49	..	..	..	25.1
	Min ..	-13	-28	-18	-18	11	1	-25	12	12	-13	- 5	- 7	-33	-14	-22	- 3	12	- 3	8	27	24	22	22	32	27	22	14	21	..	..	..	2.3
Wint'rset	Max..	11	-10	- 1	9	18	15	17	24	21	10	6	2	- 3	23	10	36	28	34	34	34	43	39	47	42	47	46	47	59	..	..	..	24.6
	Min ..	-13	-29	-13	-18	4	-10	-18	-13	10	-17	- 3	-16	-28	- 8	-18	3	13	7	18	23	26	27	31	3	23	34	43	29	..	..	..	5.2
W. Bend.	Max..	0	- 9	1	10	14	7	16	25	17	5	0	- 5	- 5	22	10	33	25	32	34	37	40	41	48	45	46	39	44	52	..	..	..	22.3
	Min ..	-20	-30	-19	-16	6	- 9	-22	11	5	-22	- 5	-21	-32	- 7	-22	6	9	2	19	23	24	23	25	32	25	28	11	27	..	..	..	1.6
Zearing ..	Max.	5	-10	0	10	15	15	14	17	19	7	4	1	- 5	20	6	27	22	32	32	32	43	38	45	38	47	40	43	55	..	..	..	21.9
	Min ..	-16	-27	-19	-18	6	- 8	-22	12	6	-16	- 5	-20	-35	-12	-24	2	12	0	15	25	22	27

DAILY AND MONTHLY PRECIPITATION FOR FEBRUARY, 1905.

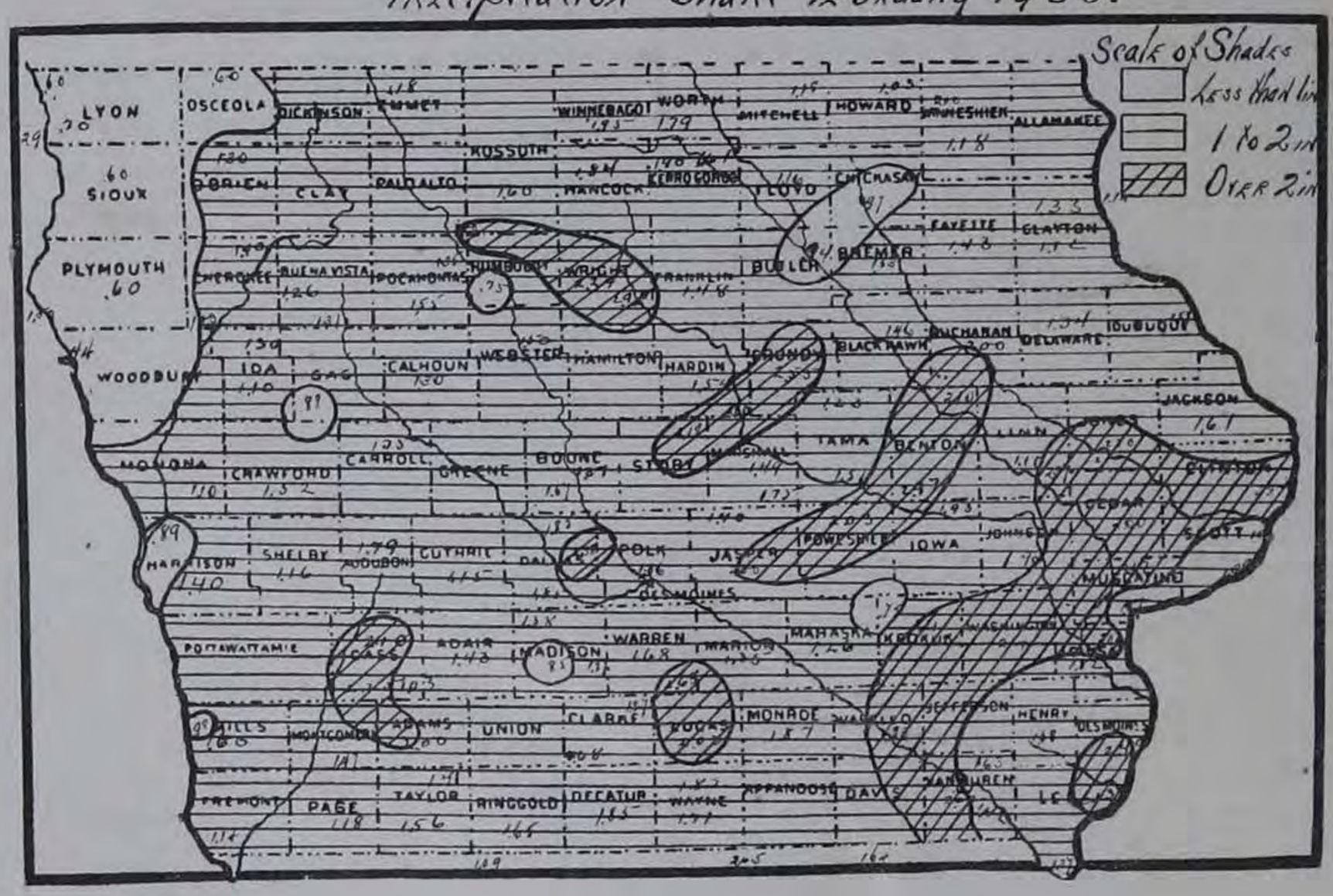
STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	.10	....	....	....	.60	.	....	.20	.10	....	.30	....	....	.05	....	....	....	....	....	....	....	....	....	....	....	....	T	....	....	....	....	1.85
Albia	.05	....	....	..	.52	.04	....	.45	T	.05	T	.26	....		....	....	....	....	..	....	....	....	....	..	....	....	T	..		....	....	1.87
Algona	...	..		.06	.24	....	....	.26	.11	....	.20	....	....	.10	....	....	..	....	....	....	....	....	....	....	..	.63		....	....	....	....	1.60
Allerton	.10	....	T	....	.60	T		.42	.09		.25	....	..	T	....	....	....	....	....	....	....	....	....	.36	....	T	T	....	..	....	....	1.82
Alta	....	....	....	.40	.02		.10	.25	.09	.05	.23	...	....	T	....	....	....	....	....	....	....	....	..	..	....	.12	....	....	....	....	....	1.26
Alta [near]	....	....	....	.40	.10		.10	.20		....	.15	...	....	....	....	..	....	....	....	....	....	....	..	....	....	.05	....	....	....	....	....	1.00
Amana	.01		..	....	.46	T	....	.44	.04	....	.15	.08	....	.02	....	....	..	....	....	....	....	....	....	.36	..	.28	.16	..	....	....	....	1.93
Atlantic	.10	....	..	....	.60	....	....	.60	..	..	.80	..	..	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.10
Audubon	..		....	.15	.31	....	.17	.38	....	....	.52	....	..	.25	....	....	....	....	....	....	....	..	....	....	....	....	.01	....	....	....	....	1.79
Baxter	....	....	....	....	.60	....		....	....	....	.60	....	....	....	....	....	....	....	....	....	....	..	....	....	....	.20	..	....	....	....	....	1.40
Bedford	.12	....	.03	....	.60	....	T	.35	.05	....	.20	....	..	.06	..	...	....	....	....	....	....	..	....	.15	....	T	....	....	....	....	....	1.53
Belle Plaine	.05		....	....	.55	....	....	.50	.02	....	.45	.	....	.10	....	...	....	....	....	....	....	....	....	.30	....	1.00	....	..	....	....	....	2.97
Bonaparte	...	....	....	.36	....	....	....	.27	.07	..	....	....	....	T	....	T	....	....	....	....	....	....	....	.60	....	.12	....	....	....	....	....	1.42
Boone	....	....	....	.06	.15	..	.03	.32	.18	....	.19	....	....	.23	....	....	..	....	....	....	....	....	....	.03	....	.10	.08	....	....	....	....	1.37
Britt	....	....	....	.02	.45	..	....	.40	.05	....	.10	..	....	.05	....	....	..	....	....	....	....	..	....	....	....	.63	.14	....	..	....	....	1.84
Buckingham	....	....	....	.10	.14	....	....	.31	.03	....	.17	....	....	.10	....	....	....	....	....	....	....	....	....	.08	....	.30		....	....	....	....	1.23
Burlington	.05	....	..	....	.88	....	.	.32	.20	....	.07	.04	....	.07	....	T	....	....	....	....	....	..	..	.55	.09	.13	....	....	....	....	....	2.40
Carroll	T	....	....	....	.65		....	.50	....	....	.40	....	....	.17	....	....	....	....	....	....	....	....	....	....	....	T	.03	....	....	....	....	1.75
Cedar Rapids	....	....	....	....	.10	.11	....	.11	.10	T	02	.10	....	....	....	....	....	....	....	....	....	..	....	.15	....	....	.41	....	....	....	....	1.10
Chariton	.30	....	T	...	.60	..	....		T	....	.40	.10	..	.10	....	....	....	....	....	....	....	....	....	.53	....	T	....	....	....	....	....	2.03
Charles City	....	..	..	.12	.20	....	T	.36	.03	T	.16	....	T	.05	....	T	T	....	T	....	..	....	....	.04	..	.20	....	....	....	....	....	1.16
Clarinda	.02	....	.02	....	.30	...	....	.43	....	....	.21	....	T	T	...	....	....	....	....	....	....	....	....	.20	....	....	T	....	....	....	....	1.18
Clear Lake	...	....	....	....	....	....	....	.50	....	....	.10	....	....	....	....	....	....	....	....	....	....	....	....	T	..	.50	.30	....	....	....	..	1.40
Clinton	....	....	....	....	.59	....	....	.35	.11	..	.14	.20	....	.05	..	....	..	..	....	....	....	....	....	.70	..	.30		....	....	....	....	2 44
Columbus Junct'n	.10	....	....	....	.35	.05	....	.31	.05	....	.12	.04	....	.02	..	..	....	....	....	....	....	....	....	.50	....	....	.28	....	....	....	....	1.82
Corning	.10	....	T	.15	.70	....	....	.60	....	....	.75	..	....	....	....	....	....	....	....	....	....	....	....	T	....	T		....	....	....	....	2.00
Corydon	.07	....	T	....	.50	....	....	.33	.05	....	....	.34	..	T	..	....	....	....	....	....	....	....	....	.42	....	T		....	....	....	....	1.71
Cresco	....	....	....	..	.17	..	...	.50	.07	..	.13	....	...	.04	....	T	T	....	T	..	....	....	....	.12	..	....		....	....	....	....	1.03
Cumberland	....	....	....	.60	....	....	...	.70	.10	.30	.50	....	.02	.03	....	....	..	....	..	....	....	....	....	.53	....	T		....	....	....	....	2 25
Davenport	T	..	....	.06	.48	T	....	.33	.07	..	.04	.02	....	T	....	....	....	....	....	....	....	....	....	.11	....	.46		....	....	....	....	1.99
Delaware	....	....	....	..	.28	....	....	.47	....	....	.11	...	....	....	....	....	....	....	....	....	....	..	....	.14	....	.37		....	....	....	....	1.84
Decorah	....	....	....	....	.39	....	....	.38	....	....	.12	....	....	.15	..	....	..	....	....	....	....	....	....	....	....	...		....	....	....	....	1.18
Denison	....	....	....	....	.60	....	....	.40	....	....	.25	....	....	.02	....	....	....	....	....	....	....	....	....	....	....	.25		....	....	....	....	1.52
Des Moines	T	....	....	.39	.05	T	.04	.20	.01	T	.22	....	T	03	....	....	..	....	....	....	....	....	....	.01	....	.11		....	....	....	....	1.06
De Soto	....	....	....	.10	1 00	....	....	.20	.10	...	.40	....	..	T	....	....	....	....	....	....	....	....	....	T	....	.05		....	....	....	....	1.85
Dows	..	....	..	....	.50	....	....	.40		....	.40	.40	...	.30	....	....	....	....	....	....	....	....	....	.20	....	.70		....	....	....	....	2.90
Dubuque	....	..	....	.04	.37	T	....	.50	.04	..	.36	....	....	T	....	..	T	....	....	....	....	....	....	.25	....	.02		....	....	....	....	1.58
Earlham	....	....	T	....	.60	T	....	.30	....	....	.41		..	.07	....	....	..	....	....	....	....	T	....	T	....	T	T	....	....	....	....	1.38
Elkader	....	....	....	....	.16	....	..	.40	.08	....	.18	....	....	.08	....	....	....	....	....	....	....	..	....	.22	....	....		....	....	....	..	1.12
Estherville	....	...	....	....	.28	T	....	.18	.20	T	.12	.10	....	T	T	....	....	....	....	....	....	....	....	....	....	....	.30	....	....	....	....	1.18
Fayette	....	..	..	....	.30	....	...	.56	....	....	.22	....	....	.16	....	..	....	....	....	....	....	....	....	.15	....	.04		....	....	....	....	1.43
Florence	....	..	....	..	.45	....	....	.40	.30	....	.23	....	....	....	....	....	....	....	....	....	....	....	....	.08	....	.78		....	....	....	....	2.24
Forest City	....	....	....	....	.45	....	....	....	.60	....	....	.20	..	T	....	....	....	....	....	....	....	....	....	.10	....	....	.60	....	....	....	....	1 95
Fort Dodge	....	....	....	....	.30	.10	....	....	.40	....	.10	.30	..	....	....	....	....	....	....	....	....	....	....	....	.20	....	.10	....	....	....	....	1.50
Fort Madison	.10	....	..	....	T	....	....	.60	.60	....	T	.10	....	....	....	....	....	....	....	T	....	....	....	.50	....	.23		....	....	....	....	2.13
Galva	...	....	....	.10	.45	....	T	.40	.15	....	.20	..	T	....	....	....	....	....	....	....	....	....	....	....	....	....	..	T	....	....	....	1.30
Gilman	....	..	....	....	.60	..	..		.10		.30		..	.20	....	....	....	....	....	....	....	....	....	.25	..	.30		....	....	....	....	1.75
Glenwood	....	....	....	.25	.15	T	.15	.25	....	....	.50	....	....	.10	..	....	....	....	....	....	....	....	.20	....	....	T		....	....	....	....	1.60
Grand Meadow	....	...	....	....	.30	....		.30	....	....	.30	....	....	.10	..	..	....	....	....	....	....	....	....	.33	...	....	..	....	..	....	....	1.33
Greene	....	....	....	....	.18	....	....	.15	.08		.13	..	....	T	...	....	....	....	....	....	....	....	....	.11	....	.25	.05	....	..	....	....	.94
Greenfield	.04	....	....	.04	.47	....	....	.37	...	T	.47	T	....	.02	....	....	....	....	....	....	....	....	....	T	....	T	.02	....	....	....		1.43
Grinnell	..	....	..	....	.50	....	....	.50	.10	....	.45	....	..	....	....	....	....	....	....	....	....	....	....	.06	....	.42		....	....	....	....	2.03
Grundy Center	....	....	....	....	.40	T		.60	.20	....	.60	....	....	.10	....	....	....	....	....	....	....	....	....	.05	....	.40	.20	..	....	....	....	2.55
Guthrie Center	.02	....	T	.05	.25	....	.02	.41	.03	....	.24	....	....	.06	....	....	....	....	....	....	....	....	....	.02	....	.03	.02	....	....	....	....	1.15
Hampton	....	....	....	.25	.02	....	.12	.27		.12	.07	....	.04	..	....	....	....	....	....	....	....	....	....	.03	....	.56		....	....	....	....	1.48
Hanlontown	..	....	....	..	.50	....	....	.50	.20	..	.20	....	....	T	....	..	T	....	....	....	....	....	....	.04	...	.35		....	....	....	....	1.79
Harlan	..	...	T	.10	.28	....	.10	.19	.02	....	.45	..	.	.02	....	....	....	....	....	....	T	....	....	....	....	T	T	....	..	....	..	1.16
Hopeville	.02	....	.01	....	.15	....	....	.26	.02	....	.09	....	....	.02	....	....	..	..	....	..	....	..	....	.11	....	T		....	....	....	....	.68
Humboldt	....	....	....	....	.18	....	T	.20	.01	.12	....	....	.12	....	....	....	..	....	....	....	....	....	....	....	....	.12		....	....	....	....	.75
Ida Grove	..	....	....	....	.50	....	....	.50	..		.10	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....		....	....	....	....	1.10
Independence	....	....	....	....	.30	....	....	.50	..	....	.30	....	....	.30	....	....	....	....	....	....	....	..	....	T	....	.60		....	....	....	....	2 00
Indianola	.05	...	T	.10	.45	.05	T	.45	.03		.50	T	...	.05	....	....	....	....	....	....	....	....	....	T	....	....		....	....	....	....	1.68
Inwood	....	....	....	.10	..	....	....	.10	.30	T	.20	....	....	T	..	..	....	....	....	....	....	..	....	....	....	....	T		....	....	....	.70
Iowa City	.06	....	..		.50	.12	....	.34	.1		.04	T	..	T	T	....	..	....	....	....	....	....	....	T	.29	....	.40		....	....	....	1.90
Iowa Falls	....	....	....	....	.30	.03	....	.07	30	....	.07	.15	....	.10	....	....	....	....	....	....	....	....	....	....	.02	....	.50		....	..	....	....	1.54
Keokuk	.03	....	.03	.06	.31	.	...	.28	.02		.07	.02	...	.02	..	....	....	....	....	T	....	....	....	.31	..	.14	.08	..	....	....	..	1.37
Keosauqua	.05	....	T	....	.40	.04	....	.30	.14	.05	.05	.15	....	.03	....	.	..	....	....	T	....	....	....	.17	.57	....	.07	....	....	..	....	2.03
Lacona	..	....	.03	.08	.70	..		.81	.01	....	.80	....	....	.16	..	....	....	....	....	....	....	....	....	....	....	.04		....	....	....	....	2.63
Larrabee	....	....	....	....	.67	....	.09	.12	.20	T	.19	....	....	.05	....	....	....	....	....	....	....	....	....	....	....	.08		....	....	....	....	1.40
Lenox	.05	....	..	.03	.50	....	....	.40	....	....	.30	....	....	....	....	....	....	....	....	....	....	....	....	.13	....	....		....	....	....	....	1.41
Le Claire	T	....	....	....	.30	.12	....	.03	.28	T	T	.05	T	T	T	....	....	....	....	....	....	....	....	....	.58	....	.20	....	....	....	....	1.56
Little Sioux	....	....	....	.17	.15	..	.21	.07	.07	....	.22	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....		....	....	....	....	.89
Le Mars	....		....	....	.50	....	....	.10	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T		....	....	....	....	.60
Leon	....	T	....	T	.70	....	....	.60	.10	....	.40	....	....	.05	....	....	....	....	....	....	....	..	....	T	....	T		....	....	....	....	1.85
Logan	.20	....	.10	.20	.10	....	.20	.20	..	..	.30		....	.10	....	....	..	..	....	....	....	....	....	....	....	..		....	....	....	....	1.40
Maquoketa	...	....	....	..	....	.35	....	.	.33	....	....	.18	....	....	....	....	....	..	....	..	....	....	....	....	.50	....	.25	....	....	....	....	1.61
Marshalltown	..	....	....	....	.23	.0	..	.25	.09	....	.13	.09	..	.05	.03	....	..	....	....	....	....	..	....	....	.03	....	.54	....	....	..	....	1.49
Mason City	....	....	....	....	.28	....	....	.47	....	....	.20	..	..	.10	....	....	....	....	....	....	....	....	....	.06	....	.50		....	....	....	....	1.61
Massena	.11	....	T	....	.31	....	T	.25	T	..	.36	....	....	....	....	....	....	....	....	....	....	....	....	T	.43	....	.18	....	....	....	....	1.03
Muscatine	.01	..	....	....	.25	.06	....	.04	.22	.05	T	.10	..	....	.03	....	....	....	....	....	....	....	....	.45	....	.35	.15	....	....	....	....	1.37
Mt. Vernon	....	....		....	.40	.15	..	.60	.05	.02	.20	....	....	....	....	..	....	....	....	....	....	....	....	.40	....	T		....	....	....	....	2.37
Mount Ayr	.05	....	.05	.15	.35	....	.25	....	T	....	.40	....	..	T	....	..	....	....	....	....	....	....	....	.68	..	T	.27	....	....	....	....	1.65
Mt. Pleasant	.05	....	..	....	.30	T	....	.21	.07	..	.08	T	....	.02	....	....	....	....	....	....	....	....	....	.12	....	T		....	....	....	....	1.68
New Hampton	....	....	....	....	.25	T	....	.85	....	....	.18	....	....	.07	....	....	....	....	....	....	....	....	....	....	....	.21		....	....	....	....	.97
Newton	....	....	....	....	.67	..	....	.31	.10	.	.35	.19	....	.17	..	....	..	....	....	....	....	....	....	....	....	.03		....	....	....	....	2.00
Odebolt	....	....	....	.35	....	....	....	.40	....	....	.10	....	....		....	....	....	....	....	T	....	....	....	....	....	T		....	....	....	....	.88
Ogden	....	....	....	....	.40	....	....	.45	....	....	.65	..		.15	....	....	....	....	....	....	....	....	....	.02	....	.35		....	....	....	....	1.67
Olin	....	....	..		.30	....	....	.70	.12	....	.15		....	.08	..	....	....	....	....	....	....	....	....	.50	....	T		....	....	....	....	2.20
Omaha, Neb	.16	T	.06	.17	.11	T	.16	.18	.03	.19	.20	T	....	.10	....	....	....	....	....	....	....	....	T	....	....	....		....	....	....	....	1.36
Onawa	T	....	.02	.10	.30	T	.15	.15	.05	....	.25	..	..	.05	....	....	....	....	....	....	....	....	....	....	....	....	.03		....	....	....	....	1.10
Osage	....	....	....	....	.33	....	....	.38	.16	....	.12	....	..	.10	....	....	....	....	....	....	....	..	..	.06	....	.03		....	....	....	....	1.18
Oskaloosa	.08	....	....	T	.25	....	..	.25	.02	..	.27	....	..	.02	....	..	....	....	....	....	....	....	....	.30	....	.07		....	....	....	....	1.26
Ottumwa	....	....	....	....	.65	....	....	.60	.05	....	....	.32	....	.02	....	....	....	....	....	....	....	....	....	1.10	..	.09		....	....	....	....	2.83
Pacific Junction	....	....	.04	.15	.08	..	.15	.25	T	T	.21	....	....	.10	....	....	....	....	....	....	....	....	T	T	....	....	T	....	..	....	....	.98
Perry	....	....	....	..	.60	....	T	.40	.10	....	.55	....	....	.15	....	....	....	....	....	....	....	....	....	T	....	T	.05	....	....	....	....	1.85
Plover	....	..	....	....	.50	....	.20	.30	.	....	.15	....	..	....	....	....	....	....	....	....	....	....	....	T	....	.20		....	....	....	....	1.35
Pocahontas	....	....	....	....	.60	....	....	.40	.10	....	.20	....	....		....	....	....	....	....	....	....	....	....	....	....	.25		....	....	....	....	1.55
Red Oak	.03	...	.01	02	.60	.07	....	.38	....	..	.10	.26	....	T	..	...	....	....	....	....	....	....	....	....	....	....		....	....	....	....	1.47
Ridgeway	..	....	...	....	.70	....	....	.75	....	..	.32	....	....	.15	....	....	....	....	....	....	....	....	....	.08	....	....		....	....	....	....	2.00
Rock Rapids	....	....	....	....	....	....	....	.10	.20	.10	.10	....	T	T	T	....	....	....	....	....	....	....	....	....	.10	....	....		....	....	....	.60
Rockwell City	....	....	....	....	.60	..	..	.40	....	....	.30	....	....	....	....	....	....	....	....	....	....	....	....	....	..	T		....	....	....	....	1.30
St. Charles	....	....	....	.03	.57	..	....	.35	T	....	.32	....	....	.25	..	....	....	....	....	T	..	....	....	T	....	.02	.03	....	....	..	....	1.57
Sheldon	....	....	....	.02	.25	....	T	.27	.11	..	.30	....	....	....	....	..	....	....	....	....	....	....	....	....	....	.85		....	....	....	....	1.30
Sibley	.10	....	....	....	.10	....	....	.05	10	....	.05	.05	....	T	....	....	....	....	....	....	....	....	....	....	....	....	.15	....	....	..	....	.60
Sigourney	.07	....	....	....	.46	T	....	.40	.07	....	.20	.10	..	.07	..	....	....	....	....	....	....	..	..	.41	....	....	.83	....	....	....	....	2.11
Sioux Center	....	....		..	.20	....	.10	T	.10	....	.15	....	....	T	....	....	....	....	....	....	....	....	....	.	....	T	.05	....	..	....	....	.60
Sioux City	....	....	T	.18	.07	....	.05	.02	.01	.02	.08	....	....	T	....	....	....	....	....	....	....	....	....	....	....	.01		....	....	....	....	.44

DAILY AND MONTHLY PRECIPITATION FOR FEBRUARY, 1905--CONTINUED.

STATIONS.	DAY OF MONTH																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Stockport	.01	....	T	....	.26	T	....	.22	.03	....	.10	.02	....	.02	....	T	....	....	T	....	....	....	....	.62	....	....	.35	..	....	....	....	1.63
Storm Lake	....	....	....	....	.55	T	....	.31	.15	....	.11	.14	..	....	....	....	....	....	....	T	....	....	....	....	....	....	.05	....	....	....	....	1.31
Thurman	.01	T	T	.14	.12	.02	.10	.82	T	T	.38	T	....	.05	....	....	....	....	T	....	....	....	T	T	..	T	T	....	....	....	....	1.14
Tipton	..	....	....	....	.55	.20	....	.80	.10	....	.20	....	....	....	....	....	....	....	....	....	....	....	....	.23	....	.40	.12	....	....	....	....	2.60
Toledo	....	....	....	....	.40	....	....	.30	....	....	.25	....	....	.06	..	....	....	....	..	....	....	....	....	T	....	.50	....	..	....	....	....	1.51
Vinton	....	....	....	....	.40	....	..	.40	....	....	.50	....	....	.20	....	....	....	....	....	....	....	....	..	....	....	..	.60	....	....	....	....	2.10
Wapello	.07	....	....	....	.50	..	....	.36	.14	....	.07	..	....	.02	..	....	....	..	....	....	....	....	....	.46	.44	....	....	....	....	....	....	2.06
Washington	.03	....	....	....	.60	....	....	.40	.07	....	.03	.02	....	.18	....	....	....	....	....	....	....	....	....	.38	..	.43	....	....	....	....	....	2.14
Washta	....	....	....	.	.60	....	.10	.05	.10	....	.10	....	....	....	..	..	....	....	....	....	....	..	..	....	....	.05	..	....	..	....	....	1.00
Waterloo	....	....	....	....	.21	..	....	.32	.03	..	.20	....	....	.07	....	....	....	....	....	....	....	....	....	.15	....	.48	....	....	....	....	....	1.46
Waukee	T	....	....	....	.90	....	....	.40	.10	..	.80	....	....	.15	....	....	....	....	....	....	..	....	....	.01	....	.02	....	....	....	....	....	2.38
Waverly	....	..	....	....	.20	....	....	.30	.05	...	.20	....	....	.16	.	....	....	....	....	....	....	....	....	.12	....	.50	....	....	....	....	....	1.53
Whitten	....	....	....	....	.40	....	....	50	.10	....	.40	...	....	.20	....	....	....	....	....	....	....	....	....	T	....	.50	....	.	....	....	....	2.10
Wilton Junction	....	....	....	....	.58	....	....	.55		....	.26	....	..	....	....	....	....	....	....	....	....	....	..	.60	....	.68	....	....	....	....	....	2.67
Winterset	....	....	T	..	....	.30	....	.35	T	....	.20	....	....	T	....	....	....	....	....	....	....	....	..	....	....	T	....	..	..	....	....	.85
West Bend	....	....	....	....	.60	....	....	.60	..		.30	....	....	....	....	....	....	....	....	....	....	....	....	T	....	....	.50	....	....	....	..	2.00
What Cheer	....	....		.20	....	....	.15	.15	....	T	.20	....	....	.	....	....	....	....	....	..	....	.05	..	....	....	....	....	....	....	....	....	.75
Woodburn	...	....	T	..	.66	....	....	.43	T		.56	..	...	.05	...	...	....	....	....	....	....	....	....	.17	....	T	....	....	....	....	....	1.87
Zearing	...	...			.52	....	....	.95	..	T	.10	....	...	T	....		....	....	....		....		....	T	....	.61	....	....	....	....	....	2.18

T. Amount too small to measure

Precipitation Chart February 1905.



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MARCH WEATHER AND CROPS

March 1905 was phenomenally warm, breaking all previous records of high average temperature for the state at large. The mean for the month was 41.5°, which is 9.1° above the normal. The spring like conditions were continuous, with the exception of about six days in the second decade. The frost disappeared and the surface dried off with unusual rapidity. Conditions were favorable for much preparatory work the first half of the month, and during the last ten days the bulk of the spring wheat area was seeded, with soil in fine tilth. Considerable oats and barley were also sown during the closing days of the month. A good start was made in plowing for corn, the most of it being in fields recently in meadow or pasture. The reports show some reduction in the acreage of spring wheat. Winter wheat, rye and clover came through the winter in fine condition. There were no indications of injury to fruit buds. The season opened fully a week earlier than the average, and over two weeks in advance of 1904.

BEFORE AND AFTER TAKING.

About the 1st of March the *Cedar Rapids Republican* published in condensed form the prognosis of March weather, issued by a noted long range weather profit as follows:

The irrepressible prophet who made a bad blunder with his predictions for February, is out again with dire predictions for March. According to his lurid dreams there will be one storm close upon another all through the month. He says that the probable result of conditions obtaining on the 3d, 4th and 5th will be a low barometer, warmer weather and southerly winds, culminating in rain, sleet and snowstorm within forty-eight hours of the 5th. Destructive sleet storms will be characteristic of this and the storm period immediately following. He does not anticipate a cold wave.

The second storm period will be from the 7th to the 12th with a low barometer and furious storms of rain, turning to sleet and later to blizzards. Equinoctial tempests are slated to do many and varied stunts.

The third storm period will be from the 15th to the 17th, with reactionary storms, and more decided rain and snowstorms.

The fourth period will be from the 19th to the 24th, at which time the moon will be full, and will be characterized by electrical displays, snow and sleet, winding up progressively with a great cold wave.

The fifth period will be from the 27th to the 29th with snow and rainstorms passing eastwardly.

These conditions are slated to bring high water and local floods of great danger in many localities.

On April 1st the same paper contained the following editorial paragraph relating to the local weather conditions during the past month:

The month of March, which ended at midnight, will go down in the records of the weather bureau as a remarkable month. It has been a great deal more like April than like March. Meantime just for the benefit of common sense it might be well to remember that the Rev. —— prophesied that March, 1905, would be a month characterized by severe atmospheric disturbances, sleet storms and blizzards.

The editor of the *Republican* should take note of the fact that the long range prophet does not make forecasts for any specified locality or date. His range is broad as to latitude and longitude, as well as time. Give him scope and he can verify everything. The March sleet storms and blizzards may have occurred in Siberia, Finland, Labrador or the Klondike. Wait till the returns are in from all the back districts. The astrologist gave warning that Mercury would pull off a sleet storm during its period of "perturbation"; but he couldn't tell exactly where the sleet would strike the earth. It's difficult to hit a small spot on a revolving target. Give the almanac-maker a square deal.

Of course such prophecies are worthless; but how much exact science can you expect to buy for 25 cents?

NOTES AND COMMENTS.

According to the *Modern Miller* the condition of winter wheat is quite favorable, except in a few localities.

A co-operative meteorological station has been established in Creston, Union county, in charge of Rev. W. L. Gaston, who is much interested in the service and well qualified to render accurate reports. The elevation of Creston is 1,312 feet above sea level, at the C., B. & Q. R'y track. We hope to maintain a permanent station at that important point.

Secretary Wilson is reported to have said in a recent interview: "The development of the beet sugar industry in this country has been so rapid and attended with such striking success, that it is only a matter of time when the millions of dollars we are now paying for imported sugar will be spent among our own people for American beet sugar."

The fluctuations in the snowfall of the past eight years seem to have affected particular regions with a certain uniformity,

according to figures compiled by the Street Railway *Journal*. New England had less snow in the season of 1904-5 than in the previous year and also less than the average for the six years ending June 30, 1903. The middle states had more snow in 1904-5 than the average for the six years ending 1903 and more than in 1903-4 with the exception of central and western New York, where the fall in 1903-4 was phenomenal. In the middle west, again, the fall was less than the average for the six years ending 1903 and less than the fall in 1903-4. Owing to the steady cold weather the past winter the snow in cities was beaten down until it became solid as a rock and was with difficulty removed.

The provinces of Andalusia, Valencia and Arragon, Spain, are suffering from a serious drought, causing almost total suspension of field work, with much suffering among the poorest classes.

If the season should be dry the value of loose, dry mulch will be appreciated. This method of keeping moisture in the ground is slowly becoming understood. The Department of Agriculture gives the following explanation of its advantages:

"As the moisture from the surface evaporates it is replaced by moisture drawn from greater depths by capillary attraction, just as oil is drawn through the wick of a lamp to replace that which is consumed by the flame. The rapidity with which moisture will evaporate from the ground depends upon the condition of the capillary tubes, or pores, that connect the surface with the deeper soil. Any dry blanket that can be placed between the atmosphere and the damp soil will check this evaporation. The most practical protection is a covering of finely pulverized dry soil two or three inches deep. By thoroughly loosening the surface layer the soil particles are disarranged so that the capillary tubes are not continuous. In this condition the surface soil becomes quite dry, and remains so without absorbing moisture from below, thus acting as a mulch and retaining the moisture within reach of the plant roots. It is necessary that this soil mulch be fine, for if it is composed of clods, air circulates between them and causes evaporation to take place from the soil below the surface. A rain, however, will wet the surface, causing the soil to run together and crust, thus restoring capillarity. This makes another cultivation necessary in order to renew the blanket of fine, loose soil."

THE VERNAL EQUINOX.

[Chicago Chronicle, March 21.]

As announced by the United States branch hydrographic office in this city, the sun will cross the equator and the vernal equinox will occur today at forty-nine minutes and thirty-six seconds past noon.

When we speak of the sun crossing the equator we are using, of course, impressionist language. The sun, it is true, is moving through the universe at an incredible speed around a more glorious sun, perhaps Alcyone, and is at the same time revolving on its axis once in twenty-five days, but with reference to the solar system it is stationary and all the vicissitudes of our little world result from its own tantrums and not from any movement of the sun.

The vernal and autumnal equinoxes and the summer and winter solstices result from the inclination of the earth's axis to the plane of its orbit at an angle of twenty-three and one-half degrees and always practically in the same direction. This causes the equator to cut the plane of the earth's orbit at the same angle. Consequently the sun can not be vertical over the equator except when and where the equator and the plane of the earth's orbit coincide. This happens on March 21st and September 23d.

As long ago as the time of Hipparchus it was discovered that the vernal equinox occurred a few minutes earlier every year and the acceleration of time is now ascertained to be twenty minutes and twenty-three seconds. The inference is that the inclination of the earth's axis to the plane of its orbit is changing slightly from year to year. Indeed, it is established that the earth is wabbling. It can not be said that it is exactly dancing a jig, but we know that its poles describe a circle once in 26,000 years. The consequence is that the vernal equinox will occur at a different hour and minute and second of the day every year for the next 26,000 years and then return to the hour, minute and second at which it will occur today. At present the north pole points to the north star, and poets have made great use of that fact in their business, but the truth is it is only a temporary arrangement

This wabbling or nodding propensity of our earth is credited with being the cause of the glacial epoch. Many thousands of years ago, the theory is, the north pole leaned away from the sun in the winter and toward the sun in the summer much more than at present. The result was that both the cold of winter and the heat of summer were intensified, and this produced immense glaciers in the winter and terrific thaws and floods in the summer.

The vernal equinox has always been celebrated by human beings as a time of great rejoicing, but not always according to knowledge. The church has appropriated it and called it Easter, but having glued it to a shifting calendar Easter and the vernal equinox have now drifted far apart. Some years ago the equinox was celebrated in an amusing dramatical performance in every ship on the ocean. Apparently the more we know about the equinox astronomically the less notice it attracts.

This day should by rights be New Year's day. The equinox is a world wide phenomenon. The day and the night this day are of equal length all over the globe and that never occurs except at the equinoxes. The autumnal equinox is a sad and dreary season and the vernal equinox is the time of birds and flowers and reviving nature.

Everything animate takes a fresh start today and this ought to be the beginning of a new year.

MARCH WEATHER.

Extracts from Weather Crop Bulletin of United States Weather Bureau for March, 1905.

WASHINGTON, D. C., April 1, 1905.

As a whole, March, 1905, was very mild throughout nearly the entire country, the temperature averaging above the normal everywhere, except in extreme northeastern New England and over a limited area in the southern Plateau, where a very slight deficiency is shown. Throughout the northern Rocky Mountain districts, the central valleys, Lake region, and Southern States the temperature excess was marked, the departures from normal ranging from 3° to 12° per day, being greatest in the Missouri and Red River of the North valleys. The first half of the month was decidedly cold in New England and the Middle Atlantic States and over a large part of the Lake region, but over these districts the latter part of the month was very mild. The temperature was above the normal throughout the rest of the country during nearly the whole of the month.

From Texas northward to the central Missouri valley and throughout the southern Rocky Mountain region and California the precipitation during March exceeded the average. There was also more than the average in the northern portion of the upper Lake region, and in portions of the Middle Atlantic States, upper Ohio Valley and portions of the South Atlantic and East Gulf States. In the lower Ohio and central Mississippi valleys, the interior of the central and east Gulf States, and in

the Carolinas, Virginia, and New England the precipitation was below the average, marked deficiencies occurring in the western portion of the Carolinas, Tennessee, and over the northern portion of the east Gulf States. The rainfall in Arizona and southern California was unusually heavy, from 2 to 3 inches more than the monthly average being reported from that region.

Nearly the entire country has experienced exceptionally favorable conditions for farming operations during the month of March. The temperatures were mild throughout the month, with the exception of the Lake region, Middle Atlantic States, and New England, where it was cold during the first half, but mild and favorable during the second half. Portions of the Gulf States suffered from too much rain, and farm work has been considerably delayed in the central and western portions. Throughout the central valleys and generally on the Pacific coast farm work is unusually well advanced, and, while slow progress was made in the Middle Atlantic States and New England during the forepart of the month, operations were active during the latter part.

Winter wheat is very promising, practically all reports indicating that this crop has come through the winter in unusually fine condition in the principal winter wheat states. The outlook on the Pacific coast is also promising, except in portions of southeastern Washington, where considerable was winter-killed.

Good progress was made with seeding of spring wheat and oats, the seeding of oats being nearly completed in Illinois and Missouri, and in the more southerly states the early sown is coming up to good stands. Spring wheat seeding is unusually well advanced over the southern portion of the spring wheat region, and was in progress at the close of the month in the extreme north portion.

Throughout the central valleys the soil was in fine condition for plowing during most of the month and this work is well advanced. Some corn has been planted as far north as Kansas, Missouri, Tennessee and North Carolina, while farther south a considerable part of the crop has been planted and some is up.

Reports indicate that peach buds have been extensively killed in the central valleys and central Gulf States, but in the Atlantic coast districts peaches have been but little injured so far. The reports respecting other fruits are generally encouraging.

CLIMATOLOGY OF THE MONTH OF MARCH, 1905.

BAROMETER.—Mean pressure, 30.03 inches; highest observed, 30.57 inches, at Dubuque, on the 12th; lowest observed, 29.39 inches, at Charles City and Des Moines on the 27th; range for state, 1.18 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 122 stations, was 41.5 degrees, which is 9.1° above normal.

By sections the mean temperatures were as follows; Northern section 38.3°, which is 8.7° above normal; central section 41.3°, which is 9.1° above normal; southern section 44.9°, which is 9.0° above normal. The highest monthly mean was 47.2° at College Springs and Sidney; lowest monthly mean, 35.9° at Cresco. The highest temperature reported was 84° at Onawa on the 27th; lowest temperature reported 1°, at Fayette, Grand Meadow, Osage and Ridgeway on the 11th. The average monthly maximum was 75.6°; average monthly minimum, 8.6°. Greatest daily range, 52° at Monticello; average of greatest daily ranges, 38.2°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 132 stations, was 2.04 inches, which is .20 of an inch above normal. The averages by sections were as follows: Northern section, 1.97 inches, which is .31 of an inch above normal; central section, 2.23 inches, which is .35 of an inch above normal; southern section, 1.93 inches, which is .04 of an inch below normal. The largest amount reported was 3.70 inches at Inwood; least amount reported, .39 of an inch, at Glenwood. The greatest daily rainfall reported was 3.00 inches at Inwood on the 18th. Average number of days on which .01 of an inch or more was reported, 8.

WIND AND WEATHER.—Prevailing direction of the wind, south; highest velocity reported, 52 miles per hour, from the south, at Sioux City, on the 27th. Average number of clear days, 8; partly cloudy, 8; cloudy, 15.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Charles City	30.03	30.56	12	29.39	27
Davenport	30.04	30.53	12	29.51	25
Des Moines	30.03	30.55	12	29.39	27
Dubuque	30.07	30.57	12	29.51	25
Omaha, Neb	29.99	30.52	12	29.22	27
Keokuk	30.04	30.51	12	29.46	18
Sioux City	30.00	30.55	12	29.40	27
Means	30.03	30.57	12	29.39	27

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Charles City	6.216	35	SE	27
Davenport	5.721	25	E	19
Des Moines	6.999	47	S	27
Dubuque	5.486	42	SW	27
Keokuk	6.211	36	SW	25
La Crosse, Wis	5.491	30	SE	27
Omaha, Neb	6.893	38	NW	25
Sioux City	9.972	52	S	27

OBSERVERS' NOTES.

AFTON. *N. W. Rowell.* Season is fully 30 days in advance of last year; nothing like it in years.

ALLERTON. *Rex Shriver.* Pastures and meadows starting nicely; month very mild.

ALTA. *David E. Hadden.* About all precipitation of month fell in the middle decade; balance of month, spring like.

AMANA. *C. Schadt.* Season about three weeks early; seeding wheat and oats well advanced.

ATLANTIC. *J. W. Love.* A very good month for farmers, and well improved; grass growing nicely.

BAXTER. *W. T. Thorp.* Seeding begun on 27th; ground very dry.

BONAPARTE. *B. R. Vale.* Rain 2.03 inches; all fell the last half of month; some sod plowing and very little oats sown last week of the month.

BOONE. *Carl Fritz Henning.* Ice went out of Des Moines river March 2d; seeding spring wheat and oats begun the last week.

BRITT. *Geo. P. Hardwick.* Latter half of March was like April weather with advanced growth of grass and soft maple in bloom. English sparrows devoured buds of apple, plum and cherry trees which will lessen crop.

CHARITON. *C C. Burr.* More than average amount of farm work was done in March; soil in good tilth.

CLINTON. *Luke Roberts.* March temperature 6.5° above normal; rainfall slightly in excess of normal; frost out of ground by the 20th and much plowing was done.

CRESCO. *L. G. Krumm.* Seeding began on the 29th—two weeks earlier than last year.

ELKADER. *Chas. Reinecke.* Ice went out of the Turkey river March 4th.

ELLIOTT. *Henry Barnes.* On 3d, farmers began plowing sod; on 10th, they were seeding wheat; more farm work done in March than in preceding years.

FOREST CITY. *J. A. Peters.* Wheat seeding began on 26th; some oats sown in last week. Robins heard on 20th; frogs on 27th.

POSTVILLE. *F. L. Williams.* Month was warm; snow went off gradually; grass well started; plowing began on 28th; first seeding on 31st.

GRUNDY CENTER. *E. S. King.* Warm month; 8-foot snowdrifts entirely gone on 31st; sod plowing began on 20th; oats seeding on 29th.

HANLONTOWN. *Miss G. M. Paschen.* Wheat seeding on 28th; oats seeding on 31st; pussy willows and lilac bushes in bud; blue grass quite green.

IDA GROVE. *J E. Conn.* An exceptionally fine March; a great deal of plowing and some seeding done.

INDIANOLA. *J. L. Tilton.* Last of the heavy drifts disappeared on 26th.

LITTLE SIOUX. *Geo. H. Gibson.* Wheat sowing began on 6th.

MASSENA. *F. T. Knott.* Wheat seeding was nearly all done the last ten days, and some oats were sown.

POCAHONTAS. *F. E. Hronek* Old proverb failed; March came and went out like a lamb; seeding begun, and ground in fine condition.

RIDGEWAY. *Arthur Betts.* One of the warmest of Marches; 156 hours of sunshine; spring work began on 27th; snow on 13th and 14th.

SHELDON. *A. W. Beach.* Seeding commenced on the 20th, and wheat, about 75 per cent sown on 31st; soil condition good.

WAUKEE. *E. J. Leonard.* Month unusually fair; seeding done earliest in years.

ERRATA.

STORM LAKE—November, 1903. Total precipitation recorded .52 inch on pages 8 and 12, should have been .61 inch.

Total snowfall recorded 0.1 inch on page 8, should have been 1.0 inch.

STORM LAKE—December, 1903. Total precipitation recorded Trace on pages 4, 6 and 10, should have been 1.3 inch.

Total snowfall recorded 0.1 inch on page 6, should have been 1.3 inches.

STORM LAKE—January, 1904. Total precipitation recorded .02 inch on pages 7 and 11, should have been .41 inch.

Total snowfall recorded 0.4 inch on page 7, should have been 4.1 inches.

STORM LAKE—February, 1904. Total precipitation recorded .08 inch on pages 6 and 11, should have been .86 inch.

Total snowfall recorded 0.9 inch on page 6, should have been 8.6 inches.

STORM LAKE—March, 1904. Total precipitation recorded 1.54 inches on pages 7 and 12, should have been 1.63 inches.

Total snowfall recorded 0.1 inch on page 7, should have been 1.0 inch.

STORM LAKE—November, 1904. Total precipitation recorded 03 inch on pages 9 and 13, should have been .30 inch.

Total snowfall recorded 0.3 inch on page 9, should have been 3.0 inches.

STORM LAKE—December, 1904. Total precipitation recorded .06 inch on pages 5 and 9, should have been .80 inch.

Total snowfall recorded .8 inch on page 5, should have been 8.0 inches.

STORM LAKE—January, 1905. Total precipitation recorded .12 inch on pages 5, 7 and 12, should have been 1.48 inches.

Total snowfall recorded 1.5 inches on page 7, should have been 14.8 inches.

BELATED REPORT.

AMES—February. Mean temperature, 13.5°; highest, 61°, on the 28th; lowest, -31°, on the 13th; greatest daily range, 36°. Total precipitation, .67 inch; greatest in 24 hours, .27 inch; prevailing direction, north and southwest; total snowfall, 11.0 inches. Number of clear days, 17; partly cloudy, 6; cloudy, 5; rainy, 4.

COLLEGE SPRINGS—February. Mean temperature, 14 1°; highest, 62°, on the 28th; lowest, -30°, on the 14th; greatest daily range, 32°. Total precipitation, 1 58 inches; greatest in 24 hours, .35 inch, on the 6th; prevailing direction, northwest; total snowfall, 13.8 inches. Number of clear days, 13; partly cloudy, 7; cloudy, 8; rainy, 8.

KNOXVILLE—March. Mean temper ture, 43.9°; highest, 79°, on the 27th; lowest, -10°, on the 11th; greatest daily range 44°. Total precipitation, 1.40 inches; greatest in 24 hours, .75 inch, on the 23d; total snowfall, 1.0 inch; prevailing direction, northeast. Number of clear days, 8; partly cloudy, 9; cloudy, 14; rainy, 6.

KNOXVILLE—February. Mean temperature, 16.6°; highest, 69°, on the 20th; lowest, -26°, on the 13th; greatest daily range, 33°. Total precipitation, .40 inch; greatest in 24 hours, .20 inch, on the 27th; total snowfall, 2.0 inches; prevailing direction, southwest, northwest. Number of clear days, 15; partly cloudy, 4; cloudy, 9; rainy, 3.

ERRATA IN JANUARY REVIEW.

FAYETIE—Number of days missing recorded [f] should have been [g], on page 7.

ROCKWELL CITY—Mean temperature recorded, 10.4°, on page 8, should have been 10.2°.

WATERLOO—Total precipitation recorded .87 inch, on page 8, should have been .74 inch.

Total snowfall recorded 10.0 inches, on page 8, should have been 8.0 inches.

COLUMBUS JUNCTION—Total snowfall recorded 11.2 inches, on page 7, should have been 10.2 inches.

CLIMATOLOGICAL DATA FOR MARCH, 1905.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	38 4	† 8.4	76	31	2	11	34	2.01	† .45	.53	6.7	8	10	8	13	S	22
Alta	Buena Vista	1,513	14	39.6	‡10.2	78	27	7	11	38	1.51	- .31	.54	6.0	12	7	12	12	S	
Alta (near)	Buena Vista										1.47		.50	6.4	12					
Britt	Hancock	1,236	8	38.4	† 9.6	75	31	2	11	38	1.58	† .24	.47	3.6	7	4	15	12	SW, NW	22
Charles City	Floyd	1,015	18	36.2	† 4.9	70	31	4	11	32	1.78	- .07	.42	8.0	14	3	9	19	SE	
Clear Lake	Cerro Gordo	1,241	7	37.2	† 6.0	66	27	5	11	30	1.60	† .38	.50	4.5	6	5	12	14	SE	
Cresco	Howard		31	35.9	† 9.2	67	31	2	11	29	2.12	† .43	.67	9.6	10	5	8	18	SE	22
Decorah	Winneshiek	857	12	36.8	† 6.5	72	31	4	11	38	2.09	† .13	.56	11.5	10					
Dows	Wright	1,142	9	38 4	‡ 8.5	72	27	5	11	38	1.94	- .05	.40	6.5	11	9	6	16	SE	21, 22
Elkader	Clayton	727	21	38 2	† 7.3	70	27	2	11	32	1 70	- .13	.65	10.0	8	4	12	15	SE	
Estherville	Emmet	1,298	12	37.1	†10.0	74	27, 31	2	11	49	2.20	† 79	1.00	3.5	10	9	2	20	SE	
Fayette	Fayette		15	36.8	† 6.6	70	27, 31	1	11	42	1.75	- .51	.66	10.0	10	8	7	16	NW	22
Florence	Wright	1,220									1.87		.37	6.2	12	5	18	8	S	22
Forest City	Winnebago	1,226	11	36.6	† 8.2	74	31	3	11	36	1.97	† .49	.70	7.0	6	9	4	18	SW	
Grand Meadow	Clayton	1,180	11	36.6	† 6.4	70	28, 31	1	11	24	1.50	- .60	.80	10.0	9	4	8	19	SW, NW	
Greene	Butler	924	8	38 2	† 7.3	70	31	6	11	33	2.06	† .42	.47	12.0	11	4	6	21	NE	
Hampton	Franklin	1,155	13	38.8	†10.2	72	31	4	11	36	2.06	- .20	.65	7.5	7	3	17	11	S, SE	
Hanlontown	Worth			36.8		73	31	2	11	36	2.35		.58	9.0	9	7	2	22	NW	23
Humboldt	Humboldt	1,095	16	40.6	†10.9	75	27	5	11	39	3.40	†1.95	1.10		7	14	5	12	SE	
Inwood	Lyon			33.6		80	27	12	11, 12	40	3.70		3 00	4.0	5	10	1	20	S	
Larrabee	Cherokee	1,266	12	39 7	†10.5	80	27	3	11	43	1.61	- .04	1.12	4.0	6	8	9	14	SE, SW, NW	
Lansing	Allamakee			38.8		76	28	2	11	40	1.77		.66		7	9	6	16		
LeMars	Plymouth	1,224	7	40.4	† 8.6	80	27	10	11	40	2.20	† .83	1.20	4.5	4	8	11	12	S	
Mason City	Cerro Gordo	1,132	8	37.2	† 9.3	69	31	8	11	29	1.75	† .41	.52	5.2	6	4	15	12	S	
New Hampton	Chickasaw	1,169	7	37.2	† 6.6	70	31	2	11	33	1.69	† .04	.42		10	8	5	18	E	
Osage	Mitchell	1,184	13	37.0	† 9.6	69	31	1	11	30	2.35	† .78	.58	7.5	14	4	6	21	SE	
Pocahontas	Pocahontas	1,190		40.6		74	27, 31	9	11	37	1.75		.44	7.8	12	7	8	16	S	22
Plover	Pocahontas		8	39.4	† 9.0	75	27	5	11	37	1.30	- .08	.23	4.8	10	11	2	18	W	
Ridgeway	Winneshiek	1,215	7	38.0	† 6.4	71	27, 31	1	11	35	3.38	† .89	1.27	10.6	13	8	10	13	S	22
Rock Rapids	Lyon	1,021	7	40.8	†11.0	78	27	10	11	35	2.15	† .56	.60	5.5	7	10	6	15	S	31
Sheldon	O'Brien	1,422	6	39.9	†11.1	80	27	7	11	43	2.15	†1.19	.95	6.0	12	9	7	15	S	27
Sibley (b)	Osceola	1,212	12	36.4	† 6.8	75	31	2	11	39	2.58	†1.41	1.25	4.3	9	9	4	18	SW	
Sioux Center	Sioux		6	39 7	† 6.7	78	27	16	10, 11, 12	35	2.20	† .95	1.02	4.5	6	9	5	17	S	
Storm Lake	Buena Vista	1,440	8	37.6	† 9.5	74	27	7	11	40	1.18	- .20	.36	4.6	7	9	2	20	SW	
Washta	Cherokee	1,157		41.2		82	27	8	11	45	.73	- .52	.30	4 0	4	13	5	13	NE	
Waverly	Bremer	942	9	37.9	† 6 9	69	31	6	11	32	1.83	- .13	.40	9.0	11	3	9	19	S	22
West Bend	Palo Alto	1,197	12	39.4	†10.2	75	27	4	11	37	1.71	† .07	.63	3.7	9	7	4	20	S	13
Average				38.3	† 8.7	73 4		4.9		36.4	1.37	† .31		6.7	9	7	8	16	S	

SOUTHERN SECTION.

Afton	Union	1,212	11	44 8	† 9.6	78	27	10	11	37	1,87	- .43	.50	.5	7	9	8	14	SW	18
Albia	Monroe	957		43.0	† 5.5	80	27	10	11	45	2.41	† .53	.58	1.0	7	13	0	18	SE	
Allerton	Wayne			45.2		79	27	9	11	43	3.38		1.32	.3	9	14	4	18	SW	17,18,19,23, 25,28
Atlantic	Cass	1,164	14	42.8	† 9.3	78	3	11	11	50	.50	-1.46	.20	1.0	4	6	6	19	S	22
Bedford	Taylor		5	45.4	†10.1	77	27	12	11	43	1.62	- .91	.64	T	7	10	2	19	SW	
Bonaparte	Van Buren		14	44.8	† 7.6	77	27	13	11	42	2.03	- .65	.70		7					
Burlington	Des Moines	544		45.2		75	27	12	11	42	1.82		.49		10	9	9	13	S	19,23
Chariton	Lucas	1,042	10	44.2	† 8.5	77	3, 27	9	11	42	3.34	†1.84	.90		6	11	9	11	SE	
College Spr'gs (g)	Page		14	47.2	†11.1	79	27				2.10	† .25	1.12		3					
Columbus Junct.	Louisa	586		44.0		76	31	11	11	33	1.79		.90	1.2	6	13	11	7	NE	19, 23, 25, 27
Corning	Adams	1,127	13	44.8	† 9.1	76	26	11	11	35	1.06	- .69	.47	T	5	8	12	11	SE	18, 22, 27
Corydon	Wayne	992	12	46.2	†10.1	80	27	9	11	43	2.78	† .71	1 03	.5	9	11	5	15	SW	27
Clarinda	Page		15	44 5	† 9.3	79	3, 27	14	11, 12	48	1.76	- .14	.75	T	10	9	6	16	SE	
Cumberland	Cass										.90	-1.56	.48	1.0	3	16	5	10	SW	
Earlham	Madison			43.9		78	3	13	10	40	1.78		.52	2.5	6	9	7	15	S	18, 23
Elliott	Montgomery			45.8		81	3	13	11	46	.84		.29	0.6	5	4	19	8	SW	17, 22
Ft. Madison	Lee	516	56								.94	-2.04	.28		4	8	5	18	SW	
Glenwood	Mills		17	46.6	†10.6	81	27	13	11	37	.39	- .87	.20	T	3	2	18	11	SW	
Greenfield	Adair		14	44.2	†10.3	78	27	7	11	38	1.71	- .53	.48	1.5	10	11	8	12	SW	18, 22, 28
Hopeville	Clarke		13	44.5	†10.2	77	27	10	11	34	2.63	† .95	.60		11	3	14	14	S, NW	17,18,25,27, 31
Indianola (a)	Warren	969		44.4	† 6.4	79	27	8	11	40	1.90	† .71	1.08	2.4	9	3	9	19	NW	18, 23, 28
Keokuk	Lee	619	34	46.8	† 9 2	78	27	14	11	33	1.78	- .40	.44	T	10	10	8	13	N	23, 25, 26, 27
Keosauqua	Van Buren	644	13	43.4	† 5.4	79	27	12	11	43	2.15	- .33	.46	T	8	4	7	20		
Lacona	Warren										2.92	† .23	.60		11	7	19	5		21, 27
Lenox	Taylor	1,250	10	44.5	† 9.6	77	27	9	11	38	1.40	- .45	.63	0.4	9	11	9	11	S	18, 22, 27
Leon	Decatur	1,120		45.3		77	27	29	13	37	3.22		.93	3	8	12	2	17	S	16
Massena	Cass			44.6		78	27	10	11	43	1.67		.63	2.0	7	9	6	16	E	
Mt. Ayr	Ringgold	1,236	12	46.6	†11.1	78	3, 27	10	11	43	2.26	† .33	.60	0.2	11	6	10	15	SW	18
Mt. Pleasant (a)	Henry	729	24	44.2	† 9.7	75	27	11	11	41	2.31	- .02	.80	0.7	10	8	9	14	SE	19, 25, 28
Omaha, Neb.	Douglas	1,113	84	45.7		82	27	17	11	36	.70		.34	1.5	11	4	6	21	S	27
Oskaloosa	Mahaska	843	22	45.2	†11.0	79	27	10	11	41	3.49	†1.60	1.00	1.0	8	14	1	16	W	22, 27
Ottumwa	Wapello	649	11	45.2	† 7.5	74	3	13	11	40	3 38	†1.48	1.85		4	9	7	15	NE	
Pacific Junction	Mills	960	6	45.2	† 9.1	82	27	15	11	45	.77	- .66	.28	0.7	8	6	16	9	S	22
Red Oak	Montgomery	1,033	8	46.3	† 9.5	81	4	15	11	45	1.28	- .98	.39	T	6	10	7	14	SW	
St. Charles	Madison	1,070		45.1		80	3	9	11	42	1.50		.54	.5	9	8	8	15	NE, SE	
Sidney	Fremont			47.2		83	27	16	11	40	1.02		.59	T	5	12	6	13	S	
Sigourney	Keokuk	887	9	43.8	† 7.9	76	27	9	11	37	3.33	†1.44	1.52	2.8	7	2	20	9	NE, SW, NW	19, 27, 28
Stockport	Van Buren										2.00		.82	T	6	7	7	17	NE, S	18, 25, 27
Thurman	Fremont	588		46.4	† 9.5	82	27	15	11	41	1 39	- .39	.62		7	8	9	14	NW	22, 27
Wapello (b)	Louisa	769	7	42.3		72	26	22	13	32	2.03		.77		6					
Washington	Washington	1,129	13	43.4	† 8.8	76	27	11	11	36	1.79	- .38	.88		6				SW	
Winterset	Madison	961	14	43.6	† 9.5	74	3, 27	9	11	37	1.55	- .49	1.10	1.5	3	15	7	9	NE	18
Woodburn	Clarke		6								3.67	+2.15	1.75	0.5	11	11	8	12	SW	19, 27
Average				44.9	† 9.0	78.1		12.2		39.9	1.93	- .04		0.8	7	9	8	14	SW	
Average for State				41.5	† 9.1	75.6		8.6		38.2	2.04	+ .20		4.1	8	8	8	15	S	

†Above normal. ‡Received too late to be computed with means. *a*. One day missing; *b*. two days, etc. §Not supplied with self-registering instruments.

CLIMATOLOGICAL DATA FOR MARCH, 1905—Continued.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Amana	Iowa	721	27	41.9	†10.5	70	27	9	11	33	2 88	† .88	1.30	5.1	10	5	12	14	SE, NW	18, 27, 28
Ames (c)	Story	926	21	44.0	†11.5	76	27	7	11	46	2.30	† .82	1.30	7 0	8	9	10	12	NE	
Audubon	Audubon	1,301	9	42.7	†10.1	78	27	9	11	43	3.54	†1.76	1.75	3.0	7	6	7	18	E, SE	8, 22
Baxter	Jasper	998	....	42.0	† 5.6	76	27	6	11	44	2.25	† .00	1.10	4.0	6	7	8	16	SE	
Belle Plaine	Benton	826	14	39.9	† 7.4	67	22, 27, 28, 30	8	11	30	2.14	- .46	.45	6.8	12	7	9	15	SE	
Boone	Boone	....	....	41.6	.....	74	27	9	11	38	2.65	.....	.76	4.3	10	9	6	16	SE	18, 21
Buckingham	Iowa	.....	....								3 05	† .86	1.60	5.9	11	5	16	10	.....	
Carroll	Carroll	1,265	13	41.2	† 9.7	80	27	7	11	40	1 87	- .48	.42	5.0	8	11	6	14	.....	18, 22
Cedar Rapids	Linn	733	23	39.9	† 7.1	71	27	10	12	37	2.23	† .05	1.15	....	11	7	11	13	SW	
Clinton	Clinton	609	38	40.3	† 7 5	78	28	10	11	39	3.09	† .07	1.25	7.0	11	7	4	20	SW	18
Davenport	Scott	606	34	42.0	† 7.1	73	31	14	11	32	2.21	† .05	.93	3.6	10	6	9	16	E	18, 19, 27
Delaware	Delaware	1,083	12	37.0	† 6.7	68	28, 31	4	11	34	1.87	† .04	.58	6.0	8	6	12	13	S	
Denison	Crawford	1,180	9	42.2	†10.3	81	27	3	11	47	58	-1.05	.27	2.0	9	9	13	9	S	18, 21
Des Moines	Polk	861	27	43.5	† 8.8	77	27	11	11	44	2.16	† .70	1.32	2.6	10	4	12	15	S	18, 28
De Soto	Dallas	866	....	43 8	.....	77	3, 27	10	11	41	1 90	....	.54	2.0	7	9	6	16	SW	
Dubuque	Dubuque	655	32	39 0	† 6.1	73	28	8	11	29	2.27	† .00	73	9.3	11	7	6	18	S	19, 28
Fort Dodge	Webster	1,126	....	39 3		75	27	8	11	36	1.65	.....	.60	4.8	7	10	5	16	S	22
Galva (a)	Ida	1,290	12	41.4	† 8.9	80	27	8	11	37	.99	- .40	.30	3.5	7	....	....	....	.....	
Gilman	Marshall	1,052	..	....	.....	.....	.....	.....	.....	.....	3.35	†1.40	1.60	2.0	7	4	13	14	S	
Grinnell	Poweshiek	1,023	10	41.5	† 8.8	74	27	7	11	36	3.38	†1.59	.96	6.5	10	6	10	15	NE	18, 27
Grundy Center	Grundy	976	12	39.3	† 7.8	74	27	5	11	35	2.71	†1.05	1.46	6.3	11	5	5	21	NE, SE, S	18, 19
GuthrieCenter	Guthrie	1,077	7	43.0	† 9.4	78	27	8	11	34	1.99	† .59	.52		11	10	9	12	NW	18, 22
Harlan	Shelby	1,192	....	42.9	† 8.7	79	27	10	11	44	1.43	- .27	.65	2.0	8	4	9	18	NE, S, SW	19, 22, 27
Ida Grove	Ida	1,220		.....	.....	.....	.....	16	10	.....	1.30	.....	.80	2 0	5	10	11	10	W	22
Independence	Buchanan	921	40	38.2	† 8.3	68	27, 30	5	11	34	1.97	† .28	.60	8.0	8	8	9	14	W	22
Iowa City	Johnson	683	47	39.8	† 6 2	73	27, 31	10	11	39	2 28	- .20	.92	2.0	8	7	1	23	S	
Iowa Falls	Hardin	1,170	10	37.8	† 7.0	73	27	6	11	38	1.47	- .14	.25	5.5	13	7	2	22	SE	22, 23
Little Sioux	Harrison	.....	....	45.0	.....	83	27	14	11	44	.69	.....	.18	1.7	7	9	7	15	NE	18
LeClaire	Scott	576	....	.....	.....	.....	.....	.....	.....	.....	2.53	.....	1.10	4.0	8	....	....	....	N, NE, S	
Logan	Harrison	928	36	43.2	† 9.1	80	27	13	11	43	1 20	- .70	.57	2 0	4	6	14	11	NE	
Maquoketa	Jackson	688	12	37.9	† 3.9	73	28	7	11	40	2.94	† .65	1.26	5 0	13	10	5	16	NE	
Marshalltown	Marshall	947	10	39 8	† 7.6	76	27	7	11	41	3 11	†1.18	1.55	6.6	12	9	2	20	SE	
Monticello	Jones	925	....	41.3	† 9.4	79	27	6	11	52	2.71	† .32	1.03	7.2	9	10	3	18	NW	15, 19
Muscatine	Muscatine		46	...	....	.....	.....	.....	.....		2.20	- .59	.78	1 5	11	....	....	....	S	
Mt. Vernon	Linn	847	30	41.0	†11.1	72	27	6	11	39	2 20	† .17	.61	5.9	11	5	9	17	S	18
Newton	Jasper	944	15	41.2	† 8.0	71	27, 28	7	11	34	2.76	†1 20	1.20	4.0	7	9	11	11	E, S	
Odebolt	Sac	1,356	8	42.0	† 9.0	79	27	8	11	41	1.43	- .56	.40	7.0	7	13	8	10	.....	
Ogden	Boone	1,088	9	41 8	† 8.6	75	27	12	11	42	2 43	† .91	.96	3 5	8	9	7	15	S	17, 19
Olin (b)	Jones	760	7	39.8	† 6.8	69	28, 31	10	11	34	2.52	† .07	1.00	7.0	9	6	12	13	NW	20, 27
Onawa	Monona	.....	....	43.8	† 6.6	84	27	14	11	47	1.09	- .44	.30	7.0	9	15	7	9	SE	
Perry	Dallas	975	.. .	42.8	.....	77	27	10	11	35	2.49	† .19	1.05	4.0	6	8	5	18	.....	18, 23
Rockwell City	Calhoun	.....	8	40.6	† 9.2	80	3	8	12	36	2.75	†1.10	1.00	8.0	6	9	6	16	.....	
Sac City (f)	Sac	1278	23	41.0	†11.2	77	27	7	11	36	...	.....	.....	...	..	....	....	....	.....	
Stuart (c)	Guthrie	.....	....	43.3	†11.6	76	27	10	11	41		.....	.....	..	....	....	....	....	.....	
Sioux City	Woodbury	1,165	16	41.8	†10.2	82	27	13	11	34	1.41	† .17	.68	4.1	8	4	8	19	SE	22
Tipton (a)	Cedar	807	....	41.8	† 5.9	68	27, 30, 31	13	11	31	2.63	- .47	1.30	4.0	7	..	....	....	SW	
Toledo	Tama	856	9	41.7	† 9.4	75	27	7	11	38	3.30	†1.55	1.75	4.0	10	5	12	14	NE	17
Vinton (a)	Benton	810	15	41.2	† 9.1	70	22, 27	8	11	36	2.40	† .62	1.60	3 8	6	..	....	...	SW	
Waterloo	Black Hawk	862	16	39.0	† 8.8	72	27	7	11	37	1.96	† .13	.52	6.0	10	1	16	14	.....	
Waukee	Dallas	1,039	....	44.9	....	82	27	9	11	44	2.16	.....	.75	3.0	8	7	13	11	SW	18, 23
Webster City	Hamilton	.....	....	41.7	.....	74	26	5	11	38	1.24	.....	.45	3.0	6	11	0	20	SE	
Wilton Junction	Muscatine	683	11	42 0	† 7.7	74	31	9	11	34	3.40	† .69	1.65	6.5	6	13	3	15	NE, NW	18
Whitten	Hardin	1,036	...	39.4	† 8.4	73	27	5	11	34	1.70	† .76	.75	8.0	5	8	10	13	SE	18, 19, 22
Zearing	Story	718	..	40.7	....	75	27	7	11	36	3.20	.....	1.10	4.5	8	9	7	15	NE	18, 22
Average				41.3	† 9.1	75.3		8.6		38.3	2.23	† .35		4.8	7	8	8	15	S	

† Above normal. ‡ Received too late to be computed with means. *a*. One day missing; *b*. two days, etc. § Not supplied with self-registering. nstruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MARCH, 1905.

STATIONS.		DATE.																														MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max.	59	64	74	67	57	39	42	49	51	42	37	31	28	38	64	67	64	68	50	35	45	66	55	68	63	69	78	71	61	71	66	55.9
	Min.	32	32	37	33	30	38	32	27	31	19	10	24	21	23	28	41	50	48	33	28	31	37	36	34	43	36	47	46	37	37	46	33.6
Albia*	Max.	46	60	77	51	52	33	40	51	53	41	32	29	28	30	58	69	61	67	36	38	44	68	58	68	69	70	80	63	60	70	60	53.6
	Min.	32	30	32	34	29	29	30	25	27	16	10	13	22	22	24	40	46	50	36	27	28	33	39	36	37	39	40	52	41	39	43	32.8
Algona	Max.	45	52	66	55	41	36	35	48	42	26	29	27	24	30	38	45	50	49	37	37	42	62	52	63	59	67	72	67	56	64	76	48.1
	Min.	29	29	32	29	29	25	28	22	25	11	2	12	20	17	23	33	33	35	25	27	31	37	35	30	40	33	48	44	33	32	45	28.8
Allerton	Max.	56	65	78	66	58	40	41	52	55	45	34	31	28	34	67	70	60	67	54	37	44	68	61	69	64	70	79	71	61	69	62	56.6
	Min.	32	30	35	34	27	32	30	24	31	19	9	24	22	24	29	40	50	50	33	27	32	36	48	34	48	35	50	47	38	37	49	33.9
Alta	Max.	55	64	71	48	43	35	36	51	39	28	31	26	24	29	38	47	49	55	33	35	53	59	49	65	57	69	78	65	60	67	74	49.5
	Min.	31	34	38	31	31	26	30	23	22	12	7	16	16	17	24	34	35	33	25	26	30	40	35	30	41	31	51	38	31	37	47	29.7
Amana	Max.	46	37	55	55	41	38	36	46	46	34	30	32	30	31	42	59	63	66	57	34	45	67	58	63	65	66	70	67	57	68	69	50.7
	Min.	31	31	30	33	30	30	31	27	30	21	9	23	22	22	27	30	41	48	28	26	32	34	44	33	47	41	48	53	42	35	48	33.1
Ames	Max.	49	60	75	58	41	37	36	50	46	..	..	..	..	..	42	53	63	63	46	35	43	69	60	67	58	69	76	71	59	68	70	56.3
	Min.	27	30	29	32	28	25	29	26	28	17	7	21	19	20	27	42	42	45	30	27	31	37	40	34	43	34	46	48	38	35	48	31.8
Atlantic	Max.	58	69	78	51	35	35	41	51	40	40	36	31	27	30	66	60	64	66	60	44	68	69	49	70	69	71	71	60	63	72	68	55.2
	Min.	24	24	28	33	26	25	32	27	30	17	11	24	21	20	28	36	40	49	30	30	32	41	36	30	28	29	28	47	35	35	49	30.5
Audubon	Max.	58	73	75	75	42	36	37	50	45	37	34	26	23	28	53	62	64	62	44	37	46	62	58	68	60	70	78	72	61	70	71	54.2
	Min.	28	30	32	32	25	28	32	25	29	15	9	21	18	20	26	33	43	42	29	28	31	40	37	33	40	33	51	41	34	32	49	31.2
Baxter	Max.	50	54	72	60	45	37	38	48	47	32	30	28	26	29	40	60	64	65	55	35	43	70	59	66	63	69	76	70	60	70	64	52.4
	Min.	30	30	28	30	29	27	28	24	27	15	6	20	20	20	25	34	40	48	29	26	30	36	41	33	45	36	44	49	38	40	47	31.5
Bedford	Max.	58	70	76	64	59	39	43	51	57	45	33	30	31	40	68	71	61	64	54	37	47	65	60	64	67	71	77	72	62	71	66	57.2
	Min.	26	27	33	34	28	33	34	24	28	20	12	26	23	26	32	46	50	51	34	30	32	39	41	28	45	33	50	44	35	35	44	33.6
Belle Pl'e	Max.	37	42	54	42	42	33	37	36	41	37	29	32	34	33	46	55	63	65	35	35	42	67	56	62	64	66	67	67	58	67	66	48.7
	Min.	25	30	30	31	29	28	30	25	27	18	8	23	20	20	25	29	40	47	30	25	30	32	38	32	40	38	42	53	40	35	44	31.1
Bonapar'e	Max.	38	53	71	57	51	39	37	49	53	44	33	33	31	30	57	71	65	70	60	35	46	71	59	68	69	68	77	70	59	69	70	54.9
	Min.	32	31	29	32	28	30	30	29	28	23	13	27	24	27	29	45	49	52	29	27	31	34	46	35	48	40	49	53	43	36	46	34.7
Boone	Max.	53	58	71	62	40	37	35	48	44	33	29	25	24	23	38	52	60	60	45	34	43	65	60	65	63	68	74	71	57	67	70	50.8
	Min.	33	31	36	31	31	27	29	27	27	18	9	21	18	19	26	36	37	44	29	26	29	37	40	36	45	37	48	49	39	40	48	32.4
Britt	Max.	47	45	62	47	53	37	35	47	41	32	31	26	29	32	42	44	54	40	39	43	41	63	53	62	53	68	70	65	57	64	75	48.3
	Min.	28	29	30	29	28	24	29	22	26	11	2	17	18	18	25	33	34	35	25	25	31	36	34	29	39	30	46	44	32	32	45	28.6
Burling'n	Max.	50	46	72	58	51	39	40	51	55	46	35	31	31	31	60	72	68	70	60	36	50	69	60	70	69	71	75	70	58	69	78	56.0
	Min.	33	26	30	32	27	30	31	29	31	22	12	26	26	27	29	42	48	53	29	27	31	36	47	36	49	41	50	56	45	40	47	34.5
Carroll*	Max.	60	71	78	40	40	35	39	52	49	33	32	31	30	32	40	51	61	65	34	35	46	67	66	59	60	72	80	55	63	70	71	52.2
	Min.	29	32	36	31	28	25	30	21	30	15	7	21	20	16	25	30	32	47	27	26	30	38	35	30	41	32	41	46	31	37	45	30.1
Cedar R*	Max.	40	38	55	42	39	33	37	48	46	33	30	31	28	30	42	60	63	66	35	35	44	68	57	65	64	67	71	66	57	69	69	49.3
	Min.	22	31	30	30	29	30	29	27	26	23	11	10	23	22	21	27	30	41	34	27	27	31	36	35	36	40	41	51	43	41	43	30.5
Chariton	Max.	48	63	77	55	53	34	40	52	54	43	38	32	29	32	64	68	62	66	50	36	45	66	60	68	68	69	77	68	61	68	62	55.1
	Min.	30	30	35	34	27	31	27	24	30	17	9	23	21	23	28	39	49	50	32	27	32	37	42	33	48	36	48	46	38	36	49	33.3
Charles C.	Max.	35	36	49	41	39	31	33	44	39	27	24	24	23	27	34	42	50	45	36	35	40	65	50	60	48	65	66	64	54	65	70	43.9
	Min.	25	30	29	28	28	24	25	23	23	7	4	16	18	17	24	33	36	36	27	27	30	36	34	31	39	34	46	41	34	33	44	28.5
Clarinda*	Max.	57	70	79	58	56	39	42	54	56	46	33	29	32	42	70	70	63	67	37	39	50	67	55	70	65	74	79	57	64	73	66	56.7
	Min.	32	29	31	34	28	32	34	26	29	22	14	14	23	23	27	34	45	49	34	31	32	34	40	33	33	37	42	45	33	36	44	32.3
Clear L	Max.	38	39	51	48	40	39	35	45	41	28	28	26	27	29	35	43	50	46	41	38	39	60	56	60	57	58	66	64	53	60	61	45.4
	Min.	28	30	29	27	30	24	28	22	25	13	5	16	18	18	24	33	34	33	25	28	31	35	33	30	42	33	46	45	35	38	43	29.1
Clinton	Max.	40	40	47	39	40	39	36	45	50	36	31	35	30	31	41	56	55	66	49	33	44	67	55	62	63	65	66	78	58	69	75	49.7
	Min.	30	27	30	27	28	28	31	27	27	19	20	22	23	20	25	29	33	43	27	25	30	33	43	31	39	40	42	55	41	30	43	30.9
Col. Spgs.	Max.	..	..	80	..	..	..	..	59	51	44	34	32	33	44	68	70	60	59	48	40	50	66	56	68	65	71	79	68	64	71	61	57.6
	Min.	..	..	..	..	..	..	..	28	30	26	15	26	25	28	35	45	47	47	40	32	35	41	45	34	46	35	50	47	35	39	51	30.8
Colum. J.	Max.	48	41	64	51	44	38	36	48	51	40	33	32	32	32	52	67	64	69	58	35	49	62	58	65	68	67	74	69	58	69	76	53.4
	Min.	32	30	31	35	30	30	31	28	30	16	11	29	28	28	28	38	46	51	28	26	30	33	44	34	47	40	49	56	48	39	45	34.5
Corning	Max.	55	66	74	60	51	39	41	49	52	42	34	31	28	35	64	65	62	63	51	35	65	59	67	63	68	76	70	60	69	70	69	55.9
	Min.	29	32	36	33	31	33	33	27	30	22	11	24	21	24	30	39	50	50	33	29	33	40	32	45	33	41	45	34	38	39	47	33.7
Corydon	Max.	57	66	79	72	59	40	42	54	57	57	34	32	29	32	65	69	62	68	61	38	44	67	64	71	72	71	80	75	64	70	64	58.5
	Min.	31	29	36	34	26	30	30	24	30	19	9	24	22	24	29	43	50	50	33	27	32	36	43	34	49	36	51	47	38	38	50	34.0
Cresco	Max.	40	35	44	46	36	34	31	41	39	26	21	24	23	27	34	39	44	44	39	34	37	60	56	56	55	62	66	64	52	64	67	43.2
	Min.	27	29	28	27	27	21	26	23	25	15	2	15	16	15	22	33	31	35	25	24	29	35	37	32	42	34	47	49	36	35	45	28.6
Davenpo't	Max.	40	37	56	45	40	36	38	46	50	35	32	33	29	29	40	65	62	66	48	33	42	66	55	63	64	65	69	72	55	67	73	50.0
	Min.	33	30	31	29	29	27	32	30	32	20	14	25	25	23	25	33	36	48	27	27	31	35	45	37	48	42	52	50	43	41	50	33.9
Decorah	Max.	40	37	43	42	38	33	33	42	43	28	25	28	27	35	37	45	46	47	33	38	41	61	53	54	53	63	71	54	59	68	72	44.8
	Min.	29	32	30	29	28	22	28	22	23	15	4	17	19	18	23	24	33	35	26	26	31	35	39	30	41	35	42	37	39	30	50	28.8
Delaware	Max.	39	37	40	41	37	34	31	40	41	30	27	30	25	25	39	46	52	56	48	31	42	60	54	58	60	63	67	68	56	66	68	45.5
	Min.	27	28	28	25	25	22	27	20	26	16	4	20	20	16	21	22	33	38	26	21	28	31	40	31	40	36	44	52	38	32	45	28.5
Denison	Max.	60	68	78	67	40	38	38	52	46	38	34	25	22	28	44	55	60	64	42	38	52	66	53	69	62	72	81	74	62	72	71	53.9
	Min.	27	34	36	32	30	22	31	25	29	16	3	20	18	19	26	33	40	41	28	28	22	42	35	32	44	34	34	45	33	38	52	30.6
Des M.	Max.	50	62	77	62	47	35	39	48	47	36	30	27	26	28	49	65	63	66	44	37	44	67	55	67	62	69	77	67	60	69	68	52.7
	Min.	32	31	33	34	30	30	31	30	29	17	11	22	22	22	27	40	48	44	30	28	33	38	43	37	48	39	54	45	41	42	51	34.3
De Soto	Max.	50	65	77	60	46	36	39	50	49	38	32	27	26	28	49	63	67	68	49	35	44	60	60	69	60	70	77	71	64	70	71	54.2
	Min.	32	31	36	33	29	30	31	26	30	17	10	22	20	21	27	35	46	49	32	28	32	39	41	37	47	31	51	48	39	37	50	33.5
Dows	Max.	44	47	66	55	37	35	34	48	40	27	27	25	23	25	35	45	54	60	43	35	41	66	58	64	60	68	72	69	56	65	68	48.1
	Min.	25	29	28	28	28	24	27	24	26	14	5	18	13	12	23	32	34	41	26	25	30	35	34	31	40	32	45	48	35	35	45	28.8
Dubuque	Max.	38	37	43	38	38	37	33	44	46	30	27	34	23	27	39	50	56	59	35	33	41	64	52	60	59	65	68	73	55	66	71	46.5
	Min.	29	29	30	26	26	27	29	27	29	18	8	21	20	19	24	29	37	35	24	25	31	35	41	36	47	42	51	55	44	39	45	31.5
Earlham	Max.	56	66	78	66	47	37	39	52	49	37	36	31	26	50	60	66	65	66	48	34	44	68	59	69	52	70	77	70	62	69	68	55.4
	Min.	27	30	35	32	26	32	30	26	31	13	22	22	20	29	27	26	47	47	32	26	30	38	40	34	45	34	50	34	35	36	48	32.4
Elkader	Max.	36	38	43	41	38	35	33	46	44	29	25	34	25	32	37	47	48	46	41	36	39	64	56	62	60	65	70	68	57	68	68	46.2
	Min.	29	30	30	32	26	25	29	20	29	19	2	20	21	19	24	31	34	36	26	24	30	35	42	30	42	38	40	54	40	29	50	30.2
Elliott	Max.	60	76	81	72	49	42	47	49	52	44	42	35	28	36	65	67	66	66	49	40	51	67	52	67	62	68	78	70	59	70	69	57.4
	Min.	29	30	34	34	29	30	34	25	29	21	13	25	21	23	31	39	51	51	32	31	34	42	38	29	44	33	50	57	32	37	50	34.3
Esthervil*	Max.	58	63	69	45	44	35	38	50	42	38	28	25	22	29	35	40	49	42	32	33	45	60	52	64	58	68	74	52	56	66	74	47.8
	Min.	27	23	20	23	32	26	25	22	24	13	2	8	17	17	18	28	32	36	23	25	28	37	35	32	35	32	42	46	32	27	34	26.4
Fayette	Max.	39	37	43	42	40	35	32	42	36	25	24	28	34	37	38	47	47	50	45	36	49	66	50	59	60	64	70	67	55	69	70	46.3
	Min.	24	27	26	26	24	21	26	18	25	14	1	18	18	17	25	30	33	32	29	24	28	34	40	28	28	33	45	48	36	27	41	27.3
ForestCy*	Max.	44	44	65	36	40	31	30	39	38	27	25	24	22	28	35	43	50	46	34	38	45	62	49	62	52	68	68	57	63	64	74	45.3
	Min.	23	30	29	26	26	23	25	22	21	14	3	10	17	17	18	28	34	37	25	26	26	33	33	31	40	34	45	53	35	33	44	27.8
F. Dodge*	Max.	51	59	71	38	37	34	35	50	40	28	31	26	24	29	39	50	55	57	33	34	43	63	50	65	54	69	75	56	57	68	70	48.1
	Min.	30	31	35	31	28	26	29	26	26	18	8	12	19	19	20	29	35	44	29	28	28	33	36	35	38	35	43	53	40	36	45	30.5
Galva	Max.	54	67	70	50	42	39	39	51	41	30	36	28	25	30	44	48	53	64	39	42	59	62	52	66	60	..	80	75	59	70	75	51.7
	Min.	25	32	46	32	30	23	31	23	26	14	8	18	17	18	25	34	36	39	33	27	32	39	34	30	39	..	48	44	31	33	62	31.0
Glenw'd	Max.	66	70	80	70	50	40	39	51	54	43	31	30	28	35	68	68	64	63	51	38	55	68	54	69	63	71	81	76	62	75	70	57.5
	Min.	33	34	41	34	36	29	35	28	32	24	18	25	23	24	31	43	48	29	31	31	35	45	39	36	47	35	59	43	36	51	54	35.6
Grand M.	Max.	36	38	40	43	38	32	33	40	41	30	25	28	25	32	37	45	47	47	40	35	38	60	50	55	57	62	67	70	54	65	70	44.5
	Min.	27	28	28	27	25	22	26	23	26	15	1	18	18	16	21	29	32	36	25	22	30	34	39	30	40	35	47	50	36	35	47	28.6
Greene	Max.	40	38	57	48	38	34	33	45	38	30	27	27	27	29	39	44	53	50	42	36	42	65	58	63	60	66	67	63	53	61	70	46.6
	Min.	32	30	28	28	30	24	28	23	27	18	6	18	20	18	24	32	33	38	28	27	30	36	37	31	40	33	44	49	37	33	44	29.9
Greenfield	Max.	57	66	75	64	50	38	41	48	50	41	37	30	32	30	63	66	66	68	50	35	45	68	59	68	64	68	78	71	64	72	71	56.0
	Min.	29	30	37	31	30	31	30	25	27	14	7	20	19	21	27	47	48	48	31	28	30	36	39	32	43	32	48	46	34	38	47	32.4
Grinnell	Max.	48	48	65	58	41	33	36	46	45	33	29	27	26	28	40	59	63	64	47	34	42	67	58	63	59	66	74	70	56	66	60	50.0
	Min.	31	30	29	33	32	30	30	27	28	19	7	21	21	20	26	37	43	47	29	26	31	36	42	35	48	38	48	49	41	39	49	33.0
Grundy C	Max.	42	42	56	44	39	35	34	45	42	30	26	27	25	27	36	46	58	60	49	35	41	68	59	65	65	69	74	72	57	67	64	48.4
	Min.	26	30	29	32	28	25	28	23	28	16	5	21	19	19	25	32	35	41	29	22	29	36	39	30	42	34	46	51	35	35	46	30.2
Guthrie C	Max.	54	68	75	65	42	38	39	48	46	31	31	29	25	29	49	61	63	64	53	33	45	67	61	64	61	69	78	73	60	70	64	53.4
	Min.	32	33	39	32	29	27	31	24	31	15	8	21	20	20	26	26	43	49	31	28	31	40	38	34	45	35	53	47	35	39	50	32.6
Hampton	Max.	43	39	65	52	38	31	33	50	38	28	30	28	26	28	36	48	54	59	40	38	41	67	55	65	53	70	69	67	57	66	72	47.9
	Min.	30	30	29	29	28	23	28	26	26	12	4	18	19	17	23	32	34	40	27	25	27	35	35	32	44	36	47	47	36	37	44	29.7
Hanlontown	Max.	42	38	65	51	39	33	33	47	40	27	25	25	24	24	35	40	50	45	38	35	39	63	54	60	48	66	66	65	55	68	73	45.4
	Min.	28	30	29	26	30	23	27	23	27	10	2	13	16	16	22	32	32	33	25	27	30	35	33	30	35	32	48	45	35	35	45	28.2
Harlan	Max.	57	66	77	62	43	36	38	50	48	36	35	28	25	30	57	66	62	64	44	40	52	67	51	67	61	69	79	72	61	72	69	54.3
	Min.	26	30	33	34	27	26	32	26	28	16	10	21	18	20	27	38	47	44	29	29	32	40	36	28	39	33	48	45	33	33	49	31.5
Hopeville	Max.	56	63	76	55	54	37	41	51	53	43	33	30	28	32	63	69	63	66	50	33	44	66	56	68	68	69	77	69	61	69	64	55.1
	Min.	32	31	36	34	29	32	31	25	30	20	10	24	21	23	29	43	50	50	32	28	31	36	42	36	45	36	46	47	38	37	47	33.9
Humboldt	Max.	52	56	69	62	38	36	36	50	44	30	32	30	26	30	38	48	67	56	42	30	44	57	57	65	54	68	75	70	58	68	73	50.5
	Min.	28	30	30	30	30	24	30	25	28	15	5	20	20	20	26	34	35	42	28	30	32	37	36	32	41	34	43	49	36	34	40	30.6
Ida Grove	Max.	52	63	73	67	42	32	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MARCH, 1905—CONTINUED.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Iowa F.	Max.	37	45	64	38	39	32	34	45	45	29	28	26	28	29	48	46	56	60	31	37	41	67	52	63	54	68	73	59	56	66	67	47.9
	Min.	25	27	29	30	28	25	26	24	28	15	6	20	18	18	24	27	33	44	29	26	30	31	36	31	35	33	35	47	37	32	34	28.5
Keokuk	Max.	53	56	73	65	57	40	39	47	53	44	34	34	34	33	64	71	68	69	62	35	56	70	61	68	69	67	78	72	58	68	73	56 9
	Min.	33	27	30	32	30	31	31	31	31	26	14	28	28	20	30	46	50	54	30	28	32	37	52	39	53	43	50	56	46	44	47	36.8
Keosauqua *	Max.	42	56	73	56	54	34	39	50	54	46	35	33	31	32	58	71	66	71	37	37	28	28	33	38	25	37	45	40	50	42	36	54.8
	Min.	32	32	30	31	27	27	31	29	29	21	12	14	25	25	28	31	44	51	37	28	28	33	38	25	37	45	40	50	42	36	38	32.1
Lansing	Max.	48	40	44	43	40	34	36	45	47	31	25	31	27	36	34	44	41	48	45	37	40	61	58	60	60	67	74	76	62	69	69	47.6
	Min.	30	32	30	28	25	23	28	20	30	20	2	17	11	18	24	32	34	35	26	25	30	36	43	31	38	40	48	60	38	29	51	30.1
Larrabee	Max.	56	65	70	50	45	40	39	52	42	31	35	37	27	30	39	45	53	46	36	40	48	64	52	68	63	70	80	69	59	69	77	51.5
	Min.	26	30	31	32	33	25	32	23	22	12	3	15	15	16	22	31	34	34	24	26	28	36	32	28	37	27	47	39	29	33	44	27.9
Le Mars	Max.	53	64	70	60	45	37	38	53	48	29	30	25	25	27	38	47	51	48	38	37	61	57	53	67	61	70	80	78	61	70	73	51.5
	Min.	26	32	30	31	26	24	31	23	28	15	10	16	18	19	25	33	33	35	27	28	33	43	29	27	29	31	50	42	30	36	48	29.3
Lenox	Max.	56	66	75	63	53	38	41	49	53	42	34	31	28	35	65	67	63	64	52	34	47	66	59	68	66	69	77	70	62	70	63	55.7
	Min.	32	31	38	33	30	32	32	25	30	19	9	24	20	26	30	42	49	50	31	28	31	37	40	33	42	31	48	45	32	38	46	33.3
Leon	Max.	57	63	74	65	55	40	41	48	53	43	34	32	29	35	66	68	61	65	55	35	45	67	63	66	66	66	77	74	59	69	68	56.1
	Min.	34	31	37	35	28	32	31	25	30	21	10	25	22	24	30	42	50	50	33	28	32	37	43	36	47	38	48	47	38	39	48	34.5
Lit. Sioux	Max.	60	72	81	69	43	41	38	54	51	35	32	29	23	31	53	67	60	65	43	30	61	62	55	72	65	73	83	81	64	76	73	56.5
	Min.	27	29	37	37	35	23	34	24	31	20	14	23	20	22	30	34	41	43	31	32	36	41	34	32	47	31	55	44	30	45	55	33.5
Logan	Max.	55	65	75	55	38	40	46	50	40	33	26	29	26	38	60	64	65	57	38	37	57	70	64	70	60	72	80	76	60	75	70	54.5
	Min.	29	30	35	37	30	25	34	36	29	19	13	22	20	20	21	30	44	31	31	30	35	40	38	29	41	32	46	44	32	32	52	31.8
Maquoketa *	Max.	37	38	43	37	39	32	35	47	51	37	32	35	27	28	40	57	60	66	30	33	42	67	50	63	62	67	67	73	58	68	72	48.2
	Min.	16	26	29	29	26	27	26	23	26	21	7	8	21	19	19	26	27	36	27	23	25	30	37	32	34	41	42	49	43	28	34	27.6
Marshlt'n	Max.	41	50	70	45	41	32	35	50	48	31	30	28	28	30	40	54	64	65	33	37	48	70	57	67	66	70	76	62	60	69	66	50.3
	Min.	25	30	29	31	29	26	28	25	28	17	7	10	19	19	20	27	35	44	30	25	26	31	30	34	39	35	40	52	38	35	43	29.3
Mason C.	Max.	37	38	57	45	39	35	34	46	37	30	25	25	23	27	33	41	49	44	38	41	37	58	54	58	50	64	65	60	56	61	69	44.4
	Min.	30	30	30	28	30	25	27	25	30	17	8	17	18	17	23	32	34	37	26	28	31	35	35	32	40	35	45	45	36	37	44	29.9
Massena	Max.	56	67	76	74	50	46	50	41	50	39	34	31	31	31	65	67	65	67	51	39	46	67	53	68	60	70	78	70	62	72	68	56.3
	Min.	29	31	33	31	32	28	24	32	30	19	10	23	20	22	28	41	49	49	32	29	32	40	39	32	48	30	50	45	33	38	41	32.9
Monticelo	Max.	59	42	50	55	48	42	35	38	65	56	40	41	45	30	32	41	63	61	77	35	36	45	75	55	78	65	79	75	74	75	73	54.4
	Min.	22	29	27	32	26	21	30	21	28	18	6	18	20	17	21	26	34	38	25	22	24	30	43	29	33	37	39	43	30	41	44	28.2
Mt. Ayr.	Max.	68	70	78	68	56	56	45	53	57	45	33	33	30	39	72	71	63	68	54	37	48	69	62	72	68	74	78	73	64	70	62	59.1
	Min.	34	28	35	34	29	31	31	25	27	21	10	25	21	23	30	44	49	50	32	28	30	38	42	33	46	35	56	45	25	39	47	34.0
Mt. Pl'snt	Max.	50	50	68	49	49	39	38	51	52	42	33	35	32	31	55	70	66	69	60	37	50	69	60	65	69	66	75	71	59	68	74	54.9
	Min.	..	38	29	33	28	30	31	29	28	22	11	25	24	25	27	29	48	51	28	26	30	31	44	33	47	39	47	51	48	37	45	33.5
Mt. Ver'n	Max.	44	36	56	52	39	33	35	50	46	30	35	31	29	29	47	60	61	70	65	34	42	67	58	67	62	69	72	64	61	67	65	50.8
	Min.	28	29	28	29	26	28	28	23	30	20	6	20	21	19	24	32	41	46	26	24	29	31	42	32	45	38	45	53	41	34	45	31.1
New H.	Max.	41	37	48	47	39	38	34	42	40	29	24	26	24	27	35	41	48	46	43	35	49	62	58	58	55	63	69	65	53	65	70	45.5
	Min.	22	30	32	28	27	23	27	22	22	17	2	16	18	17	22	33	36	38	26	25	30	35	38	30	40	35	45	52	36	32	44	29.0
Newton	Max.	44	52	63	63	48	41	38	46	47	35	31	30	28	29	42	62	59	61	61	35	42	67	59	57	60	59	71	71	65	61	61	51.1
	Min.	31	30	29	32	29	28	29	25	29	17	7	21	20	20	25	35	44	49	30	26	30	35	41	33	33	35	35	49	43	35	47	31.4
Odebolt	Max.	55	64	73	62	41	38	38	51	47	30	33	29	26	33	42	49	55	62	43	38	52	59	52	73	64	71	79	75	61	72	74	52.9
	Min.	28	34	33	34	30	24	31	25	27	16	8	20	18	19	26	34	37	40	22	26	31	41	35	32	42	31	50	46	33	36	48	31.0
Ogden	Max.	52	62	74	61	40	39	36	50	45	32	31	28	25	27	39	54	62	64	50	35	44	66	60	67	61	68	75	74	60	68	71	52.3
	Min.	30	29	32	30	28	25	26	24	28	16	12	21	18	19	26	35	38	48	30	26	30	37	36	31	41	32	50	50	35	36	49	31.2
Olin	Max.	42	39	45	44	39	37	35	46	46	34	28	33	31	30	42	54	60	..	..	33	44	65	57	65	62	64	66	69	56	66	69	48.3
	Min.	30	30	30	32	28	28	30	24	29	22	10	21	23	20	24	29	37	..	..	25	30	32	44	31	44	40	43	55	43	32	46	31.4
Omaha, N	Max.	60	71	79	57	45	40	38	51	51	38	32	31	28	34	63	64	62	62	37	39	56	64	53	69	58	70	82	66	62	74	69	55.0
	Min.	33	38	43	39	34	31	36	31	28	22	17	22	22	25	32	37	46	37	33	32	36	44	42	38	47	40	56	44	39	46	55	36.4
Onawa	Max.	65	72	79	67	45	30	37	56	49	34	32	28	24	34	47	59	59	62	43	39	58	58	52	70	64	74	84	78	67	74	74	55.6
	Min.	29	28	32	36	29	25	33	25	32	20	14	24	20	20	27	33	37	43	30	31	34	42	32	28	42	30	50	43	33	38	51	32.0
Osage	Max.	42	37	51	50	37	35	32	45	40	27	25	24	27	28	35	43	47	45	40	37	40	62	57	59	49	65	66	61	53	66	69	45.0
	Min.	26	31	29	27	28	22	27	24	27	15	1	14	17	16	23	32	34	37	27	27	30	35	36	31	40	35	47	49	36	31	44	29.0
Oskaloosa	Max.	47	54	73	60	48	38	39	49	52	40	33	30	29	30	49	61	65	69	55	37	46	70	59	68	68	69	79	70	58	68	60	57.2
	Min.	30	30	32	35	31	29	30	25	30	19	10	22	21	22	27	34	43	40	31	27	33	37	44	35	52	37	49	50	41	38	48	33.3
Ottumwa	Max.	..	56	74	50	44	37	40	44	52	44	52	32	32	33	54	63	62	68	..	40	45	..	63	57	64	65	70	62	64	70	63	53.4
	Min.	31	33	34	36	32	34	34	30	31	24	13	27	26	27	31	38	53	48	32	30	33	38	50	55	44	48	52	52	45	42	48	37.1
Pacific J'n	Max.	59	67	76	57	46	42	38	50	53	41	34	31	30	35	67	68	66	65	48	39	58	69	54	68	59	72	82	73	62	72	70	56.5
	Min.	28	24	35	35	30	30	35	25	26	21	15	26	28	25	34	40	50	48	33	33	36	42	37	30	45	29	48	44	31	36	55	33.8
Perry.	Max.	52	61	74	57	40	36	38	50	45	37	31	28	27	30	44	59	63	65	49	37	45	68	61	68	60	70	77	73	60	70	71	53.1
	Min.	30	34	31	32	28	27	30	25	30	18	10	23	19	20	28	33	41	49	32	29	32	39	39	33	45	34	51	43	30	35	47	32.4
Plover	Max.	50	59	69	56	36	40	37	47	40	38	35	34	33	36	40	44	52	49	38	45	37	63	50	58	57	67	75	66	58	67	74	49.8
	Min.	27	28	30	28	29	25	29	23	25	18	5	18	17	20	25	35	25	37	25	26	32	35	32	32	37	30	45	42	30	30	55	28.9
Pocah'tas	Max.	51	59	70	53	41	36	37	50	41	30	34	28	28	33	40	46	56	55	40	36	48	68	52	66	57	70	74	68	69	68	74	50.9
	Min.	30	32	34	30	29	26	30	24	25	14	9	19	19	18	26	34	36	38	20	28	32	36	35	32	49	33	41	43	33	37	44	30.2
Red Oak.	Max.	72	62	72	81	55	58	43	46	55	57	49	39	32	33	38	72	71	68	71	40	42	50	70	56	70	67	73	80	58	62	71	58.5
	Min.	31	32	32	36	32	34	35	28	30	26	15	16	23	23	26	36	44	52	34	33	33	39	41	34	36	37	41	49	38	39	52	34.1
Ridgeway	Max.	38	39	47	50	41	33	38	48	46	31	30	34	30	31	37	42	46	47	38	39	40	62	51	59	53	66	71	67	60	69	71	46.9
	Min.	29	29	30	29	27	21	23	23	25	14	1	16	19	17	22	34	33	36	27	25	30	35	39	31	40	35	44	48	36	34	45	29.1
Rock R.	Max.	46	65	70	56	42	40	40	48	42	30	30	32	28	34	34	36	50	55	40	38	58	60	54	64	65	68	78	66	70	68	70	50.9
	Min.	30	34	35	30	30	28	32	24	26	16	10	16	20	18	28	32	34	34	28	30	32	32	32	32	30	34	45	46	42	44	42	30.6
R. City	Max.	50	60	80	65	39	36	37	50	46	30	30	31	28	30	40	50	55	63	42	35	45	65	55	65	67	68	75	72	58	68	70	51.0
	Min.	28	30	52	45	29	26	29	23	28	16	10	8	15	18	25	32	32	40	26	27	30	36	32	35	33	32	48	40	34	34	41	30.1
Sac City.	Max.	52	62	72	57	50	38	37	50	41	37	32	27	27	28	40	47	53	..	..	..	..	..	..	66	58	69	77	74	69	69	70	52.1
	Min.	31	35	36	33	30	25	29	23	26	15	7	19	37	18	25	33	35	..	..	..	..	..	..	34	43	34	52	38	32	35	43	29.9
St. Cha'les	Max.	60	70	80	61	53	38	39	54	50	39	31	30	26	28	55	67	65	68	51	35	44	67	60	70	66	71	78	71	64	71	72	55.9
	Min.	34	31	38	33	29	29	31	27	30	19	9	22	20	22	27	41	50	50	31	27	31	38	42	37	49	38	51	48	39	40	50	34.3
Sheldon	Max.	61	60	74	60	47	36	37	54	43	27	28	28	22	26	37	42	48	45	36	38	58	52	55	68	62	72	80	72	60	67	75	50.9
	Min.	26	33	33	34	29	26	32	22	21	10	7	15	17	18	24	34	35	35	26	29	29	39	32	29	39	29	45	41	30	32	45	28.9
Sibley *	Max.	..	65	70	39	43	31	34	52	31	23	27	25	22	30	40	37	46	39	31	34	53	57	51	64	60	69	77	46	..	67	75	46.1
	Min.	28	..	31	33	30	26	33	23	25	14	2	10	15	17	18	29	33	34	25	25	29	33	31	28	32	30	39	41	31	30	..	26.7
Sidney	Max.	60	69	78	66	53	43	41	50	42	36	34	31	34	44	69	68	64	66	51	40	57	68	51	71	62	71	83	73	64	75	69	57.5
	Min.	36	38	45	34	34	34	35	29	26	28	16	27	23	27	34	48	49	50	33	32	36	43	46	37	42	31	52	44	43	41	50	36.9
Sigourn'y	Max.	52	49	66	59	45	39	39	49	50	40	36	33	33	32	51	65	60	68	60	38	45	68	61	66	69	68	76	71	60	69	65	54.3
	Min.	32	30	29	34	30	29	30	25	29	20	9	23	22	23	28	35	45	54	30	27	31	33	44	32	46	37	47	58	40	37	46	33.2
Sioux C'r.	Max.	54	63	70	61	42	37	36	51	44	26	27	24	25	28	38	41	49	43	35	37	59	58	52	64	59	68	78	64	57	66	73	49.3
	Min.	29	35	39	29	26	27	33	23	26	16	16	16	18	18	25	34	35	22	28	30	33	40	31	31	41	33	48	41	32	34	45	30.1
Sioux C'y.	Max.	58	68	74	49	40	36	38	54	44	31	26	25	23	28	40	48	54	51	36	38	60	56	52	68	62	71	82	66	61	72	70	51.0
	Min.	32	37	42	34	29	27	32	52	24	15	13	18	19	21	28	34	35	36	30	31	37	38	34	34	43	38	53	42	36	44	52	32.7
Storm L*	Max.	55	64	72	37	44	34	37	51	34	28	31	24	21	29	37	46	49	54	32	34	49	59	50	64	56	64	74	48	58	66	70	47.5
	Min.	30	30	34	34	30	27	27	23	24	16	7	8	16	16	17	26	38	36	26	25	26	32	34	32	33	33	31	45	33	33	42	27.8
Stuart	Max.	..	..	72	68	45	39	41	51	46	38	34	30	28	50	50	60	63	61	54	35	45	67	61	62	62	..	76	73	59	70	70	53.9
	Min.	..	..	39	32	32	27	35	27	32	19	10	21	20	20	21	36	46	50	32	28	31	38	40	34	43	..	35	48	36	26	48	32.7
Thurman	Max.	56	68	76	60	49	43	40	49	55	40	32	32	32	41	66	67	72	63	50	39	55	67	55	70	63	70	82	75	62	74	69	57.2
	Min.	28	30	35	35	29	34	35	29	31	25	15	27	23	26	34	44	49	50	34	33	36	45	39	29	48	32	57	45	34	36	56	35.6
Tipton	Max.	45	37	50	48	39	37	35	48	50	35	34	33	31	29	43	57	57	65	53	34	48	65	58	64	63	67	68	67	..	68	68	49.9
	Min.	32	30	30	32	28	29	31	28	32	24	13	25	24	22	26	34	39	49	30	27	32	34	44	35	47	40	49	56	-	38	47	33.6
Toledo.	Max.	47	47	67	59	41	33	36	48	51	37	30	29	27	28	41	53	64	67	51	35	43	70	60	66	66	69	75	71	59	69	63	51.7
	Min.	29	30	29	31	28	28	29	24	29	17	7	21	21	19	26	32	39	47	29	24	30	37	42	32	46	38	48	49	39	35	49	31.7
Vinton	Max.	45	37	52	57	46	38	..	45	45	33	28	30	28	28	40	55	62	65	59	34	41	70	65	65	64	52	70	66	57	68	68	50.4
	Min.	29	30	26	33	29	26		25	32	19	8	21	21	20	25	29	38	45	29	25	30	34	43	33	37	38	40	54	40	37	48	31.9
Washi'ton	Max.	44	46	66	50	44	37	36	50	52	48	33	32	29	30	53	68	61	70	52	36	46	69	56	67	67	69	76	68	59	70	72	55.4
	Min.	30	31	30	31	29	29	30	27	31	22	11	24	23	23	27	38	39	51	30	26	30	33	44	34	48	39	59	50	42	39	45	33.4
Wa-hta	Max.	60	68	75	56	42	38	40	55	46	36	34	37	24	31	40	48	52	56	40	38	60	66	52	70	61	73	82	75	64	72	70	53.4
	Min.	23	27	30	34	28	23	22	20	27	14	8	18	18	19	25	33	25	38	28	28	32	42	32	28	42	30	51	44	30	32	48	29.0
Waterloo*	Max.	41	38	52	49	42	38	39	47	45	32	32	39	26	30	45	49	59	62	33	34	43	67	55	64	64	67	72	63	60	68	68	49.0
	Min.	27	29	29	32	27	23	27	24	33	19	7	8	20	18	19	28	35	38	28	25	29	30	40	32	34	36	39	47	39	32	41	28.9
Waukee	Max.	60	72	80	64	48	38	39	55	49	38	32	28	26	28	53	66	66	72	50	35	43	70	61	75	64	77	82	71	66	72	73	56.5
	Min.	32	30	36	32	28	29	29	26	30	16	9	22	20	20	27	38	46	49	32	27	32	38	41	36	48	46	36	49	39	38	50	33.8
Waverly	Max.	42	38	47	47	37	35	34	45	39	30	25	27	23	28	36	45	54	54	42	34	40	65	56	61	60	65	67	63	55	66	69	46.1
	Min.	26	30	29	30	27	24	28	31	27	16	6	7	19	18	24	31	35	39	28	25	30	36	39	30	42	35	41	49	38	34	47	29.7
Web'ter C	Max.	47	55	68	64	40	48	46	48	47	32	32	39	32	29	40	51	57	65	46	38	67	63	64	61	66	74	72	59	67	63	70	53.3
	Min.	30	29	30	30	28	12	30	25	28	15	5	20	22	19	25	32	36	36	28	26	36	37	33	38	33	43	50	31	36	36	45	30.1
Whitten	Max.	47	46	61	55	40	37	34	45	42	30	30	29	30	32	41	48	58	62	53	34	42

DAILY AND MONTHLY PRECIPITATION FOR MARCH, 1905.

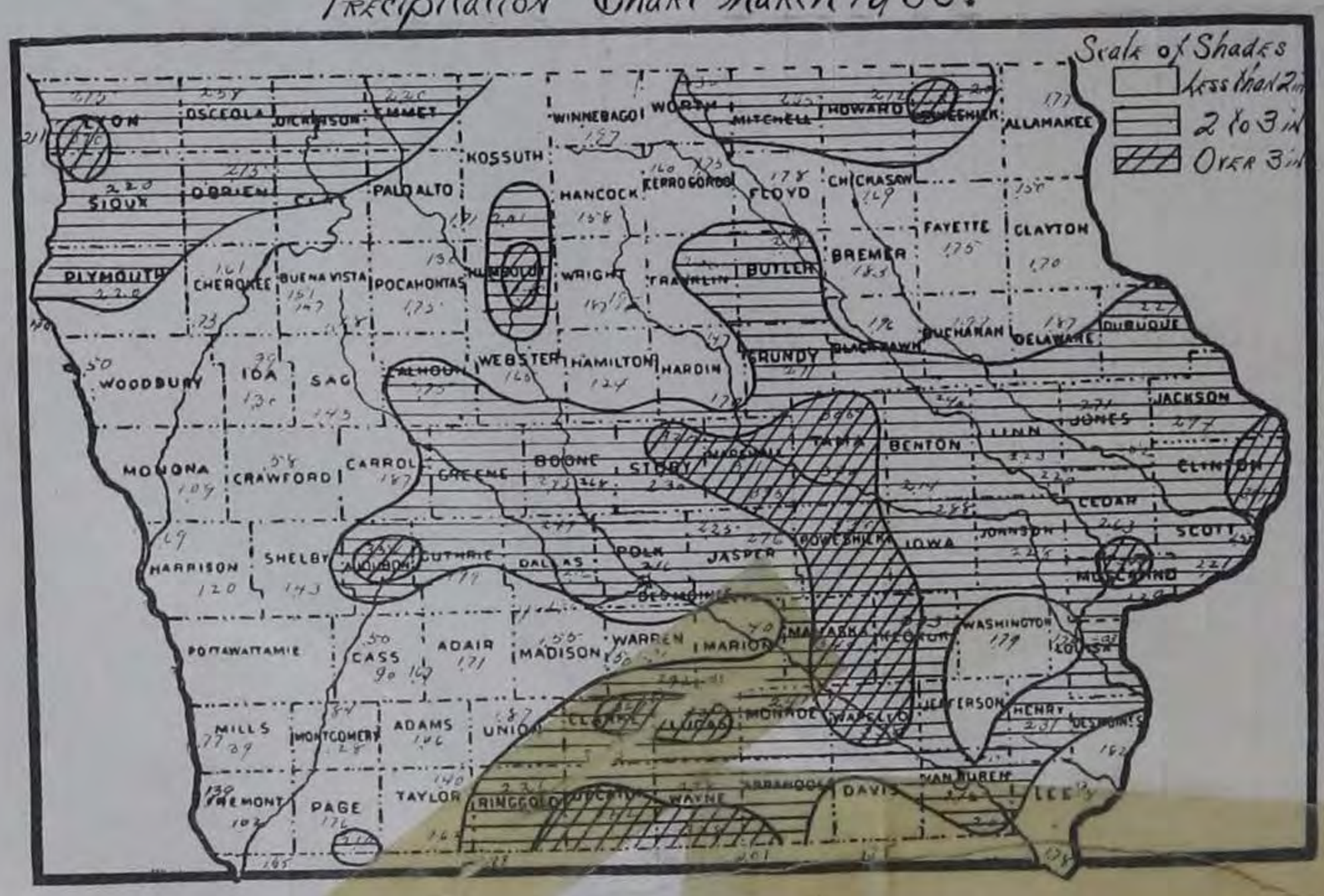
STATIONS.	DAY OF MONTH. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL.
Afton	....	....	....	....	....	....	T	....	....	....	....	....	.05	.10	....	....	.48	.47	.50	....	....	....	.13	....	..	....	....	.14	....	...	T	1.87
Albia	....	....	....	....	....	....	....	T	....	....	....	T	.08	....	....	....	.43	.07	.58	....	....	....	.44	.07	T	....	....	.74	....	...	....	2.41
Algona	....	....	....	....	....	....	T	....	....	.01	T	..	.24	.22	T	....	.43	.53	....	..	T	.12	.36	....	....	....	....	.10	....	....	....	2.01
Allerton	....	....	....	....	....	....	T	T	....	....	....	.03	T	.09	T	T	.36	.20	.51	....	....	....	.53	....	.22	....	T	1.32	....	....	.12	3.38
Alta	....	....	....	....	....	....	.03	....	....	T	.05	.05	.32	.22	.08	....	.08	.54	.05	.02	....	.05	.02	....	T	....	....	T	....	....	....	1.51
Alta [near]	....	....	....	....	....	....	.03	....	....	T	.05	.05	.32	.22	.08	...	.08	.50	.05	.02	..	.05	.02	....	T	....	....	T	....	....	....	1.47
Amana	....	....	....	....	....	....	....	....	....	....	....	.04	.13	.34	....	..	.18	.07	1.30	....	....	.07	.50	....	....	....	.03	.22	....	....	T	2.88
Ames	....	....	....	....	....	....	....	....	T	....	T	.04	.13	.33	....	....	.16	....	1.30	....	....	.26	.03	...	.05	....	...	..	....	....	....	2.30
Atlantic	....	....	....	....	....	....	....	....	....	....	....	.10	...	....	....	.13	....	.07	....	T	....	.20	....	....	....	....	....	.18	....	....	T	.50
Audubon	....	....	....	....	....	....	....	....	....	....	T	.10	.15	.05	..	....	.47	1.75	.84	....	....	....	.25	....	....	....	....	....	....	....	.10	3.54
Baxter	...	...	....	....	....	....	....	....	....	....	.10	.30	....	....	....	....	.40	....	1.10	....	....	....	.32	....	T	....	....	.12	....	...	T	2.25
Bedford	....	....	....	....	....	....	T	....	....	....	....	T	....	.07	....	.10	.37	.06	.58	T	T	....	.32	....	T	....	....	.12	....	...	T	1.62
Belle Plaine	....	....	....	....	....	.02	.03	T	....	.02	....	.10	.25	.10	....	..	.30	....	.45	T	....	.25	.30	...	....	....	.25	.06	..	..	.01	2.14
Bonaparte	....	....	....	....	....	....	....	....	....	....	....	....	.03	....	....	....	.37	.05	.40	....	....	....	.70	....	.38	....	.10	....	....	....	....	2.03
Boone	....	....	....	....	....	T	.01	..	....	T	T	.08	.19	.28	....	....	.41	.21	.76	....	....	.32	.25	....	.14	....	....	....	..	....	....	2.65
Britt	....	....	....	....	..	....	....	....	....	.04	....	.03	.12	.25	T	....	.25	.42	....	....	T	....	.47	....	....	....	....	....	....	....	....	1.58
Buckingham	....	....	....	....	....	....	....	....	....	.04	.04	.10	.21	.20	....	....	.40	.10	1.60	T	T	.27	.05	....	T	....	....	....	....	....	.04	3.05
Burlington	....	....	....	....	....	....	T	....	....	....	..	T	.01	.09	....	....	.18	.15	.46	T	..	....	.49	....	.04	.09	.18	T	.13	...	....	1.82
Carroll	....	....	....	....	..	....	....	....	....	....	....	....	....	.60	....	..	.31	.12	.33	T	....	.09	.42	....	....	..	....	....	....	....	....	1.87
Cedar Rapids	....	....	....	....	....	....	....	....	....	....	T	.02	T	.26	.05	....	.10	....	1.15	.06	....	.06	.35	.08	....	.02	....	.08	T	....	....	2.23
Chariton	....	....	....	....	....	....	T	....	....	....	....	.10	T	T	....	T	.82	.22	.75	....	....	....	.55	....	T	T	.90	....	....	....	T	3.34
Charles City	....	....	....	....	....	.09	.04	....	....	.03	.05	.01	.26	.20	.03	..	.15	.42	.03	T	T	.18	.02	....	.27	....	T	....	....	....	....	1.78
Clarinda	....	....	..	....	....	....	T	....	....	....	....	T	....	.07	.10	....	.75	.06	.49	T	....	....	.24	....	T	....	.05	....	....	....	T	1.76
Clear Lake	....	....	....	....	....	....	T	....	....	T	....	....	.20	.25	..	....	.25	.50	....	....	T	T	.35	.05	....	....	....	....	....	....	....	1.60
Clinton	....	....	....	....	....	.01	....	....	....	.01	..	.01	.	.70	T	....	.24	.05	1.25	....	....	....	.59	....	.02	....	.10	.11	....	....	....	3.09
College Springs	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	.78	T	1.12	....	....	....	.20	....	T	....	T	....	....	....	T	2.10
Columbus Junct'n	...	....	..	....	....	....	..	....	....	....	....	T	.08	.12	....	....	T	T	.58	T	....	....	.90	....	.01	....	.10	T	..	....	....	1.79
Corning	....	....	....	....	....	....	T	....	...	T	....	T	T	.03	....	....	.47	.10	.24	T	.22	....	....	T	....	T	T	....	....	....	....	1.06
Corydon	....	....	....	....	....	....	....	....	....	....	....	....	.04	.06	....	..	.38	.04	75	....	....	....	.89	....	.04	....	....	1.03	....	....	.05	2.78
Cresco	..	....	....	....	....	....	.06	....	....	T	T	.01	.09	.62	.05	....	.15	.67	....	T	T	T	.20	....	.23	.04	..	....	....	....	....	2.12
Cumberland	....	....	....	....	....	....	....	....	....	....	....	.10	....	....	....	....	.32	.45	....	....	....	T	....	....	T	....	....	....	....	....	T	.90
Davenport	....	....	....	....	....	T	T	....	....	T	....	T	.20	.30	....	....	.13	.30	.66	T	....	....	.45	....	.01	....	.11	.02	.03	....	....	2.21
Delaware	..	....	....	....	....	....	T	....	....	T	....	....	.17	.30	....	....	.20	.14	.40	....	....	....	.58	....	.04	....	....	.04	....	....	T	1.87
Decorah	....	....	....	....	....	....	.22	....	....	T	T	.04	.20	.56	T	.10	.26	.53	T	T	.03	T	.06	....	.09	....	....	....	....	....	....	2.09
Denison	....	....	....	....	....	T	.04	....	....	....	.10	.05	.02	.02	....	T	....	....	.27	....	....	.04	.04	....	....	....	....	....	....	....	....	.58
Des Moines	....	....	....	....	....	T	T	....	....	T	.08	.08	.09	.04	.02	..	.30	1.32	T	T	T	.23	T	..	T	....	....	.01	....	....	.04	2.16
De Soto	....	....	....	....	....	....	....	....	....	....	....	.10	.10	T	.22	.40	....	.38	.54	....	..	....	.16	....	....	....	....	....	....	....	T	1.90
Dows	....	....	....	....	....	T	.03	..	....	.03	....	.05	.30	.20	T	....	.08	.27	.23	....	....	.05	.40	....	.30	....	....	....	....	....	T	1.94
Dubuque	....	....	....	....	....	T	....	....	....	.01	.02	.02	.33	.39	.02	....	.10	.26	.54	T	....	....	.57	....	T	....	T	.01	....	....	T	2.27
Earlham	....	....	....	....	....	....	....	....	....	....	....	.10	.16	....	....	....	.52	.34	.48	..	....	....	.18	....	T	....	....	....	....	....	T	1.78
Elkader	....	....	....	....	....	....	.05	....	....	T	..	.08	....	.65	T	....	.17	.22	.15	..	T	....	.30	....	....	....	....	....	....	....	.08	1.70
Elliott	....	....	....	....	....	....	....	....	....	....	....	T	.01	T	T	....	.29	.28	.19	T	....	.07	T	....	T	....	....	....	....	....	....	.84
Estherville	....	....	....	....	....	....	T	....	....	T	T	.08	.03	.20	.10	.28	.08	1.00	.28	..	....	.05	.10	....	....	....	....	....	T	....	....	2.20
Fayette	....	....	....	....	....	T	.11	....	....	T	T	.12	....	.66	.03	..	.28	.06	.18	....	....	T	.12	....	.17	....	....	.02	....	....	T	1.75
Florence	....	....	....	....	....	....	.10	....	..	.13	....	.06	.14	.16	.20	....	.37	.19	.12	....	....	.12	.10	....	.18	....	....	....	....	....	....	1.87
Forest City	T	....	....	....	....	....	..	....	....	T	....	.10	....	.60	T	..	.20	.50	.10	....	....	....	.47	....	....	....	....	....	....	....	....	1.97
Fort Dodge	....	....	....	....	....	....	....	T	....	....	..	.05	.10	.30	T	....	.60	.30	.02	....	....	T	.28	....	....	..	....	....	....	....	....	1.65
Fort Madison	....	....	....	....	....	....	T	T	....	T	T	.05	.30	T	.28	....	.28	....	.20	....	....	....	.27	....	....	....	T	.19	....	....	....	.94
Galva	....	....	....	....	....	....	....	T	....	T	T	T	.20	T	T	....	.52	T	1.60	.55	....	.19	.26	..	T	....	.03	T	..	....	T	.99
Gilman	T	T	T	....	....	....	T	....	....	....	T	T	T	....	T	T	.20	.09	T	T	....	.10	....	....	T	....	....	....	....	....	T	3.35
Glenwood	....	....	....	....	....	....	....	....	....	.05	....	.03	..	.80	....	....	.03	....	.06	....	.03	T	.13	....	.09	....	....	T	....	....	T	.39
Grand Meadow	....	....	....	....	....	.18	....	....	....	T	T	.03	.12	.31	....	....	.18	.47	.20	..	.02	.13	.20	....	.20	....	....	....	....	....	....	1.50
Greene	....	....	....	....	....	....	.20	....	....	....	....	.06	.10	.09	.15	....	.48	.11	.39	T	....	....	.24	....	T	....	....	.09	....	....	T	2.06
Greenfield	....	....	....	....	....	T	....	....	....	....	....	.04	.18	.50	....	....	.52	.96	.54	....	T	....	.44	....	T	....	.06	.13	....	....	.01	1.71
Grinnell	....	....	....	....	....	....	....	....	....	T	T	.10	.20	.30	.04	....	.28	.12	1.46	....	.01	.07	.11	..	.02	....	....	....	....	....	T	3.98
Grundy Center	....	....	....	....	....	....	....	....	....	T	T	.10	.20	.30	.04	....	.28	.12	.52	T	....	.01	.15	....	.09	....	....	....	....	....	....	2.71
Guthrie Center	....	....	....	....	....	T	T	....	....	....	T	.12	.28	.12	.04	.01	.50	.15	.52	T	....	.01	.15	....	.09	....	....	....	....	....	....	1.99
Hampton	....	....	....	....	....	.08	....	....	T	....	.07	....	.40	....	....	.12	....	.65	....	T	....	.40	....	....	.34	....	....	....	....	....	T	2.06
Hanlontown	....	....	....	....	....	T	T	....	....	T	....	.40	.40	.10	.05	..	.29	.58	....	....	T	.03	.42	....	.08	..	....	....	....	....	....	2.35
Harlan	....	....	....	....	....	T	T	....	....	..	T	.10	.12	.03	....	....	.28	.03	.65	T	....	.20	.02	....	T	....	T	....	....	....	....	1.43
Hopeville	....	....	....	..	....	....	....	....	....	....	.01	.02	.10	..	.02	....	.60	.30	.45	....	....	....	.58	...	.01	....	....	.41	....	....	.13	2.63
Humboldt	....	....	....	....	....	....	....	....	....	1.10	....	1.10	....	....	....	....	.40	.25	.04	....	....	.05	.46	..	....	....	....	....	....	....	....	3.40
Ida Grove	...	...	....	....	....	....	....	....	....	....	....	....	.20	....	....	....	....	....	....	....	....	.80	....	..	....	....	.30	..	....	....	....	1.30
Independence	....	....	....	....	....	....	.01	....	....	T	....	.10	....	.60	T	....	.25	.30	.20	..	..	T	.50	....	T	....	....	....	....	....	.01	1.97
Indianola	...	....	....	....	....	....	T	....	....	T	....	.06	.16	T	.05	....	.04	.06	1.08	....	....	....	.23	....	T	....	....	.13	....	....	.10	1.90
Inwood	....	....	....	....	....	T	....	....	....	....	.10	....	.30	....	T	....	.05	3.00	....	T	....	.25	....	....	....	....	....	T	....	....	....	3.70
Iowa City	....	..	....	....	....	T	T	....	....	....	T	T	T	.12	....	....	.38	.05	.92	..	....	.04	.42	.26	..	T	....	T	.09	....	....	2.28
Iowa Falls	....	....	....	..	....	....	T	T	....	....	.02	.04	.03	.15	.20	T	.17	.23	.25	.02	.01	.03	.17	....	....	.15	....	....	....	....	....	1.47
Keokuk	....	....	....	....	....	T	T	....	....	....	....	T	....	.06	....	....	.36	.05	.21	.04	....	....	.44	..	.22	....	.19	.20	.01	....	....	1.78
Keosauqua	....	....	....	....	....	....	....	....	....	....	....	....	T	T	.03	....	.27	.27	.46	T	T	....	.41	....	....	.56	....	.27	.31	....	....	.08	2.15
Lacona	....	....	....	....	....	....	....	....	....	..	....	.07	.06	.13	....	....	.42	.38	.03	.57	....	.60	....	....	....	....	....	....	....	....	....	2.92
Lansing	....	....	....	....	....	....	.10	....	....	....	....	....	T	.40	.25	....	.13	.66	.05	....	T	....	....	....	.18	..	....	....	....	....	....	1.77
Larrabee	....	....	....	....	....	T	T	....	....	T	.07	.12	.20	T	.02	....	....	1.12	....	T	T	T	T	....	.08	....	....	T	....	....	....	1.61
Lenox	....	....	....	....	....	....	....	....	..	....	....	.03	.01	.13	..	.03	.60	.07	.18	....	....	....	.28	....	....	....	....	.07	....	....	T	1.40
Le Claire	....	....	....	....	....	....	T	T	....	....	....	T	....	.41	....	....	T	.19	1.10	.02	....	..	.21	.19	....	.12	....	.15	T	....	....	2.53
Little Sioux	....	....	....	....	....	....	.08	....	....	....	T	.05	.12	.12	.04	....	.10	.18	T	....	....	....	....	....	....	....	....	....	....	....	....	.69
Le Mars	....	....	..	....	....	....	....	....	....	....	T	T	.30	.15	.55	....	....	1.20	....	T	....	....	....	....	....	....	....	T	....	....	....	2.20
Leon	....	T	....	....	....	..	....	....	....	....	....	.03	....	....	....	....	.85	.18	.31	....	T	....	.60	....	.25	....	....	.93	....	....	.07	3.22
Logan	....	....	....	....	....	....	T	....	....	....	....	T	.20	T	T	.57	.10	.27	.04	....	....	....	....	....	.02	....	....	....	....	....	....	1.20
Maquoketa	....	....	....	....	....	T	....	T	....	T	.01	.01	....	.50	.15	....	.05	.08	1.26	.08	....	....	.39	.23	....	.09	....	.07	.02	....	....	2.94
Marshalltown	....	....	..	....	....	....	....	T	....	T	....	.07	....	.54	.08	.03	.32	.07	1.55	....	T	.10	.21	....	....	.02	....	.04	....	....	....	3.11
Mason City	....	....	....	....	....	....	T	....	....	....	T	T	....	....	....	..	.22	.28	....	....	....	.15	.35	....	.23	....	....	....	....	....	....	1.75
Massena	....	....	....	....	....	....	..	....	....	....	....	.10	.10	....	....	....	.63	.15	.45	T	....	....	.20	....	.04	....	....	....	....	....	....	1.67
Muscatine	....	....	....	....	....	....	....	....	....	....	....	T	T	.15	....	T	.02	.04	.78	.08	....	....	.47	.44	....	.05	....	.12	.04	....	....	2.20
Monticelo	...	....	..	....	....	....	.03	....	....	.04	....	....	....	.62	....	..	....	.20	1.03	....	....	....	.55	.16	....	....	.08	....	....	....	....	2.71
Mt. Vernon	....	....	....	....	T	T	T	....	....	.02	....	.05	.06	.45	....	....	....	.15	.07	.75	....	.02	.61	....	.01	....	.01	T	....	....	....	2.20
Mount Ayr	....	....	....	....	....	....	T	....	....	....	....	.02	T	.08	....	.03	.20	.30	.03	.08	....	....	.30	..	T	....	....	.56	....	....	.14	2.26
Mt. Pleasant	....	....	....	....	....	....	....	....	....	....	....	T	.07	.08	....	....	.20	.01	.73	T	....	....	.80	.03	.15	.10	....	....	.11	..	....	2.31
New Hampton	....	....	....	....	....	....	.14	....	....	T	T	.05	.10	.42	....	....	.17	.42	.12	....	T	....	.10	....	.15	.02	....	....	....	....	....	1.69
Newton	....	....	....	....	....	....	....	....	....	....	....	.09	.11	.21	....	..	.70	...	.20	....	....	....	.35	....	....	....	....	.10	....	....	T	2.76
Odebolt	....	....	....	....	....	....	....	....	....	....	....	.15	.32	.25	....	.20	...	.40	....	....	....	.08	.03	....	....	....	....	....	....	....	....	1.43
Ogden	....	....	....	....	....	....	....	....	....	....	....	.07	.18	.15	....	....	.96	.11	.01	....	....	.20	....	....	.20	....	....	....	....	....	....	2.48
Olin	....	....	....	....	T	.01	.02	....	....	T	....	.08	.20	.35	....	....	....	.35	.50	....	....	....	1.00	....	T	....	.01	....	....	T	....	2.52
Omaha, Neb	....	....	....	....	....	T	.01	....	....	T	T	.10	.06	.02	.01	.32	.02	.08	.02	.01	T	T	..	....	.05	....	T	T	....	....	T	.70
Onawa	....	....	....	....	....	....	.08	....	....	....	.05	.10	.30	.25	.08	....	.10	.16	T	....	....	.02	....	....	T	....	....	....	....	....	....	1.09
Osage	....	....	....	....	....	....	.04	....	....	.03	.02	.03	.11	.56	.04	.01	.19	.58	....	....	.02	.02	.31	...	.39	....	....	....	....	....	....	3.35
Oskaloosa	....	....	....	....	....	....	....	....	....	....	....	.50	.50	T	....	.39	....	.35	.65	....	....	....	.50	....	....	....	.05	.49	....	....	.06	3.49
Ottumwa	....	....	....	..	....	....	....	....	....	....	....	T	....	....	....	....	.45	....	1.85	....	....	....	T	....	....	....	.04	1.04	....	....	....	3.38
Pacific Junction	....	....	....	....	....	....	T	....	....	T	....	.04	.03	.10	....	.28	....	.12	.04	....	....	.12	....	....	.04	....	....	....	....	....	....	.77
Perry	....	....	....	....	....	....	T	....	....	....	T	.10	.25	.05	....	....	.83	1.05	....	....	....	T	.21	..	T	....	....	....	....	....	....	2.49
Plover	....	....	....	....	....	....	....	....	..	.10	....	.10	.12	.15	.08	....	.17	.23	....	....	....	.08	.19	....	....	....	....	.08	....	....	....	1.30
Pocahontas	....	....	....	....	....	.30	.02	....	....	.05	....	.09	.18	.21	.02	....	.40	.44	....	T	....	.08	....	.10	T	....	....	.18	....	....	....	1.75
Red Oak	....	....	....	....	....	....	....	T	....	....	....	T	.10	T	.15	....	.39	.06	.36	T	....	....	.22	....	....	T	....	....	....	....	....	1.28
Ridgeway	....	....	....	....	....	.20	.30	....	....	.01	.08	....	.28	1.27	.05	....	.26	.55	....	....	.01	.18	....	....	.28	....	....	.01	....	....	....	3.38
Rock Rapids	....	....	....	....	....	T	T	....	....	.15	.10	.10	.20	....	T	.50	T	.50	T	....	T	.60	....	....	....	....	....	....	T	....	T	2.15
Rockwell City	....	...	....	....	...	....	....	....	....	....	....	T	.30	.50	....	....	1.00	.25	....	....	....	.45	.25	....	....	....	....	....	....	....	....	2.75
St. Charles	....	....	....	....	....	....	....	....	....	....	T	....	.08	.16	.15	.12	....	T	.54	.37	.02	....	....	....	T	....	....	.07	....	....	.02	1.50

DAILY AND MONTHLY PRECIPITATION FOR MARCH, 1905--CONTINUED.

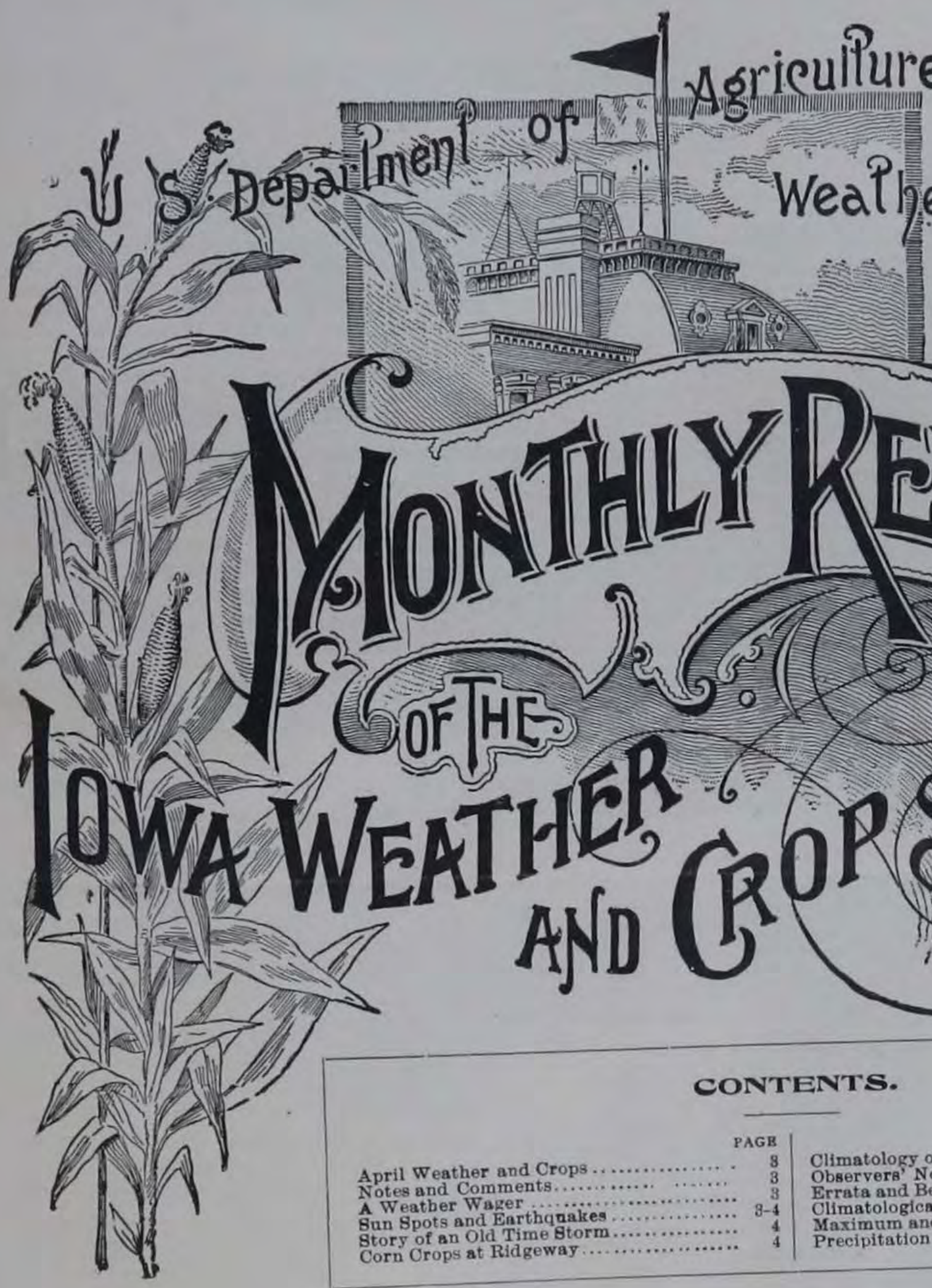
STATIONS.	DAY OF MONTH																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sheldon	...	...	....	....	....	....	T	....	....	.05	....	.12	....	.45	.25	.13	.09	.95	....	....	.02	.04	....	....	....	....	....	.05	....	....	...	2.15
Sibley	....	....	....	....	....	....	T	....	....	.01	....	.08	.05	.20	....	....	.54	1.25	.36	....	.01	....	.08	....	....	....	....	....	....	....	....	2.58
Sidney	....	....	....	....	....	....	....	....	....	....	....	T	....	....	....	.59	.28	.07	....	....	....	.04	....	....	.04	..	....	....	....	....	....	1.02
Sigourney	....	....	....	....	....	....	....	....	....	....	....	....	.16	.14	....	....	.55	T	1.52	....	....	....	.56	....	T	....	.05	.35	....	....	....	3.33
Sioux Center	...	....	....	....	....	T	....	....	....	.05	.20	T	.20	....	.65	....	....	1.02	....	T	....	.08	....	....	T	....	....	T	....	....	....	2.20
Sioux City	....	....	....	....	....	....	T	....	....	....	.08	.14	.21	.05	.23	..	.04	.65	.01	....	....	T	T	....	T	....	....	T	....	....	....	.50
Stockport	....	....	....	....	....	....	....	....	....	....	....	....	....	T	....	....	....	.30	.52	....	....	....	.71	....	.27	..	.17	T	.03	....	....	2.00
Storm Lake	....	....	....	....	....	....	....	....	....	....	T	.05	.18	.23	.06	....	.13	.36	.09	T	T	....	T	....	....	T	....	.08	....	....	....	1.18
Thurman	....	..	....	....	....	..	.15	....	....	T	....	T	T	.02	T	.08	.40	.62	T	T	....	.04	....	....	.08	....	....	T	....	....	T	1.39
Tipton	....	....	....	....	....	....	....	....	....	....	....	T	...	.40	....	....	.05	.14	1.30	....	....	.06	.64	..	.04	....	....	....	....	....	....	2.63
Toledo	....	....	....	....	....	....	....	....	....	T	....	T	....	.30	....	....	.30	.10	1.75	....	....	.10	.40	....	T	....	.20	.10	...	....	.05	3.30
Vinton	...	....	....	....	....	....	....	....	....	....	....	....	.30	.06	....	..	.13	.06	1.60	....	....	....	.25	....	....	....	....	....	....	....	....	2.40
Washington	....	....	....	....	....	....	....	....	....	....	....	....	....	.22	....	....	.09	....	.88	....	....	....	.55	....	....	....	.05	....	....	....	....	1.79
Washta	...	....	....	....	....	....	....	....	....	T	T	.10	.30	T	T	T	.08	.25	T	...	....	....	....	....	....	....	....	T	....	....	....	.78
Waterloo	....	....	....	....	....	....	.10	....	...	T	....	.07	.13	.46	..	....	.37	.13	.52	....	.06	...	.10	....	....	.02	T	....	....	....	T	1.96
Waukee	....	....	....	....	....	....	....	....	....	....	....	.05	.15	.10	.10	....	.27	.59	.75	....	....	....	.15	....	T	....	....	....	....	....	T	2.16
Waverly	....	....	....	....	....	....	.07	....	....	T	....	.10	.20	.40	.10	....	.17	.29	.28	. .	....	.07	.08	....	.07	....	....	....	....	....	....	1.85
Webster City	....	....	....	....	....	....	....	....	....	T	....	....	.30	...	T	....	.45	.11	....	....	.10	.24	..	.04	....	....	....	....	....	....	....	1.24
Whitten	....	....	....	....	....	T	....	....	....	T	....	.10	.10	.60	T	....	..	T	.75	....	....	.15	....	....	T	....	....	T	....	....	....	1.70
Wilton Junction	....	....	. ..	....	....	....	....	....	....	....	....	.10	.20	.35	....	....	....	....	1.65	....	....	....	.90	....	....	....	.20	T	....	....	....	3.40
Winterset	....	....	....	....	..	....	....	....	....	....	....	....	.20	T	T	....	T	T	1.10	..	....	....	.25	..	T	....	....	T	....	....	T	1.55
West Bend	....	....	...	....	..	T	T	....	....	.05	.08	T	.30	T	.04	.43	....	.63	....	....	T	.10	.12	....	T	....	....	.02	....	....	....	1.71
Woodburn	....	..	....	....	....	....	T	....	....	....	....	....	.05	.02	.03	....	.64	....	1.75	....	....	....	.54	....	.03	....	.07	.48	....	....	.06	3.67
Zearing	....	....	....	....	....	....	T	....	....	T	....	.05	.31	.41	....	....	.30	.65	1.10	....	T	.15	.23	....	T	....	....	....	....	....	....	3.20

T. Amount too small to measure.

Precipitation Chart March 1905.



APRIL, 1905. No. 4



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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XVI. APRIL, 1905. No. 4.

APRIL WEATHER AND CROPS.

April was characterized by unusually variable temperature, the maximum for the state being 90° at Clarinda on the 9th, and the minimum 10° at Inwood and Sibley, on the 14th. The mean for the state was 47.5°, which is 1.8° below the April average. Severe frosts occurred in every week of the month, causing much apprehension for the safety of fruit buds; but they were generally not far enough advanced to suffer damage, except the earliest varieties in the southern section, which were injured slightly. The rainfall was below normal in the northern section, and somewhat above normal in the central and southern sections. In portions of the southern section excessive moisture retarded plowing for corn and general field work in the latter half of the month.

In the larger part of the state conditions were favorable for early seeding of wheat, oats and barley, and these crops were mostly sown before April 15th. Germination was retarded by cool weather. There was little hindrance to field work, except in localities where the rainfall was heaviest, and clay subsoil retained the moisture. At the close of April the season was still somewhat earlier than the average of recent years in respect to the growth of grasses and foilage, and much more than the usual amount of plowing and harrowing had been done preparatory to planting corn. Reports have been received of the beginning of corn planting during the last three days of the month. The soil was never in better tilth for planting than it was on May 1st, though the cool weather served to delay that work.

NOTES AND COMMENTS.

In New York May day was ushered in with snow and hail at various places, and the temperature was near the freezing point.

March was relatively much warmer than April. The temperature was 9.1° above normal in the former, and 1.8° below normal in the latter month. So irregularity is the regular thing in the weather, sometimes.

Consul-General Williams, of Singapore, states that the Philippines contain 400,000,000 acres of valuable woods, there being 450 varieties. Mr. Williams declares that in ten years we will be able to get all the gutta-percha and rubber we can use from the Philippines.

Given a wheat crop of 748,000,000 bushels, an amount equal to that gathered in 1901, and 200,000,000 bushels larger than that of 1904, it would seem possible that a good share of this country's export trade in wheat and flour would be regained. It seems reasonable, in fact, to expect that with present crop prospects the United States will contribute largely to the world's breadstuffs supply in 1905-06; if not in the form of wheat, then in the form of flour, which allows of the American miller getting a profit from the wheat, which some years ago went abroad largely in the form of grain.—*Bradstreet's.*

The next fifty years will mark a return to canal building and river and harbor improvement as a necessary means of conserving the national wealth. The appropriation of $100,000,000 in New York to enlarge the Erie Canal betokens the public interest in securing adequate facilities of water transportation. The appropriation of $375,000 by Pennsylvania for the improvement of the Delaware river to hasten the completion of the work of the general government in deepening the channel is an intelligent and encouraging indication of the trend of popular opinion. Our great rivers are great natural opportunities. They offer a willing service. It is stupidity not to avail ourselves of the offer.—*Philadelphia Record.*

A WEATHER WAGER.

A Los Angeles, California, dispatch dated May 3, 1905, says:

Charles Hatfield, a "rainmaker," who has been working since December 15th last to produce eighteen inches of rain for southern California by May 1st, on the pledge of a number of merchants to pay him $1,000 if he succeeded, has completed his demonstration and been paid a large proportion of the sum promised.

Those merchants of Los Angeles are extremely "easy." They wagered $1,000 against nothing, and the fakir who put up no stake won their pile. It is to be hoped that those liberal merchants will use some of that eighteen inches of rainfall in getting their heads soaked. Their craniums certainly need tightning up a little.

SUN SPOTS AND EARTHQUAKES.

[New York Tribune.]

A French astronomer, Abbe Moureux, believes that such terrestrial phenomena as earthquakes and volcanic eruptions are caused by those solar disturbances of which the sun spot is a manifestation. He is supposed to attribute the severe shock

which involved the loss of fifteen thousand lives in India a few weeks ago and minor tremblings elsewhere since the close of January to the exceptional solar activity which has been observed during the past three months. Indeed, so convinced was he that trouble was impending that he published predictions as long ago as February 9th.

If this theory should be well founded it should be possible to find corroboration by comparing records for thirty or forty years. At the maximum stages of three or four eleven-year sun spot cycles there should be a greater number of shocks and eruptions than usual, and at the minimum stages less than the average. A reasonably close correspondence of that sort should be discovered before much faith is placed in the supposed relationship. A few coincidences such as may have been noted since the opening of 1905 hardly count for much. They might be accidental and without real significance.

After a prima facie case had been established by statistics it would still be necessary to indicate the method by which solar influence was exerted. Perhaps the most plausible guess would be that magnetism or electricity was the agent; but to demonstrate conclusively how that force operated would be difficult. A temporary derangement of telegraphic service by the generation of earth currents, a curious trembling of obser atory magnets which are lightly poised and a display of the aurora borealis are common accompaniments of great solar outbreaks, but none of them involve the exercise of anything but an infinitesimal amount of mechanical force. It taxes the imagination severely to suggest a magnetic explanation of the displacement of millions of tons of solid material. Although the notion that lunar attraction might distort the earth's crust at the times when it raises the highest ocean tides is now pretty well discredited, it certainly had more to recommend it than a belief that there is any connection between the disturbances of which sun spots are symptoms and the shaking of thousands of cubic miles of rock.

One is not tied down to magnetism in the search for the intermediate mechanism, to be sure, and if anybody can propose a better hypothesis he can anticipate a respectful hearing. Until it is found, and until Abbe Moreaux is able to reinforce his interesting conjectures with at least a quarter of a century of history, he will find few followers.

STORY OF AN OLD TIME TORNADO.

The following article describing the tornado which destroyed the town of Camanche, Iowa, and caused desolation in its track for scores of miles across this state, on June 3, 1860, has been copied from the files of the Clinton Herald of June 9, 1860:

The storm, which occurred on Sunday, June 3d, will be remembered as long as there is a settler left of that date, as the great tornado. A strip of ground varying in width from twenty rods to a mile and extending from Cedar Rapids to Lake Michigan, leaving not a fence, nor tree, nor dwelling house, nor scarcely a living thing as withstanding its fury was the scene.

The storm had passed by Clinton, although far to the east the skies were black and threatening. The air was soft and balmy and the stars were beginning to shine, when a horseman dashed into the Main street and without scarcely drawing rein, cried: "Camanche is destroyed by a tornado and half the inhabitants are buried in the ruins; send down all your doctors and materials to dress the wounded." Immediately every vehicle in Clinton and Lyons was put in use and all available cars in the railroad yards were filled with supplies for the stricken people.

It was with great difficulty that the doctors could pick their way through the scattered debris, the crie of the wounded, the lamentations of those who were bereaved adding horror to the scene. All night the work continued, the dead, twenty-six in number, being tenderly laid at one side and special care being given to the wounded of whom there were more than 150.

There were in the beginning two storms starting west of the Cedar River and about twelve miles apart. Proceeding in separate and well defined courses until they reached the Wapsipincion river they united twenty-three miles west of the Mississippi and advanced with great rapidity. To those who watched its on-coming it was at first in appearance a threatening cloud which gradually assumed the form of a writhing serpent accompained by a roar greater than of a mighty Niagara. Beginning just west of the Cedar River the work of destruction spread over the farm house and field and through the towns of Lisbon, Onion Grove, Louden, Wheatland, Rogers Settlement, Mt. Vernon and De Witt, the latter place being not three miles from the center of the storm.

Albany, Illinois, had at that time about seven hundred inhabitants and although the loss of life was smaller than at Camanche, nearly every home was wrecked.

Instances of the storm which lasted but two or three minutes in one section, are replete with gruesome details, for during that period a village of nearly twelve hundred inhabitants was destroyed. All that remained of the contents of many houses could be put into one room twelve feet square, the rest of the furniture, clothes and bedding must have been blown into the river. A plank two inches thick effectually closed the door of Waldorf's new hotel by being driven through the door and the floor of the building in a slanting direction and sticking out, one end through the door, the other through the floor.

The first story of a building was blown out and the second story set down upon the foundation almost uninjured. Horses and cows were carried through the air at a height of twenty feet and for a distance of 200 rods.

A raft was passing down the river with twenty six persons upon it. But three of those survived and they found themselves upon the Illinois shore, not knowing how they reached there, whether through the air or the water. Near Bertram, Linn county, a man was seen carried in the vortex of the storm and afterwards a mutilated body was found three miles and a half from Bertram.

NOTES ON THE CORN CROP AT RIDGEWAY, IOWA.

BY ARTHUR BETTS, CROP REPORTER.

Year.	In Tassels.	Silks.	Crop Safe.	First Killing Frost.
1898	July 8	July 22	September 2	October 6
1899	July 14	July 28	September 8	September 29
1900	July 13	July 27	September 7	October 8
1901	July 19	August 2	September 13	October 4
1902	July 25	August 1	September 19	October 14
1903	July 17	July 31	*September 18	September 18
1904	July 22	July 29	September 23	October 6
Average	July 17	July 29	September 13	October 4

* 20 per cent needed another week.

CLIMATOLOGY OF THE MONTH OF APRIL, 1905.

BAROMETER.—Mean pressure, 29.95 inches; highest observed, 30.47 inches, at Sioux City and Dubuque, on the 16th and 23d; lowest observed, 29.47 inches, at Keokuk on the 20th; range for state, 1 00 inch.

TEMPERATURE.—The monthly mean temperature of the state as shown by records of 123 stations, was 47.5°, which is 1.8° below normal. By sections the mean temperatures were as follows: Northern section, 45.3°, which is 2.0° below normal; central section, 47.5°, which is 1.3° below normal; southern section, 49.6°, which is 2.6° below normal. The highest monthly mean was 52.6° at Keokuk; lowest monthly mean, 42.9° at Sibley. The highest temperature reported was 90°, at Clarinda on the 9th; lowest temperature reported, 10°, at Inwood and Sibley on the 14th. The average monthly maximum was 79.3°; average monthly minimum, 19.5°. Greatest daily range, 58°, at Iowa City; average of greatest daily ranges, 40.7°.

PRECIPITATION.—Average precipitation for the state, as nown by records of 135 stations, was 3.03 inches, which is 0.14 f an inch above normal. The averages by sections were as ollows: Northern section, 2.09 inches, which is 0.53 of an ch below normal; central section, 3.07 inches, which is 0.17 f an inch above normal; southern section, 3.94 inches, which is .83 of an inch above normal. The largest amount reported was .49 inches at Leon; least amount reported, 0.63 of an inch, at ibley. The greatest daily rainfall reported was 3.25 inches at ttumwa on the 20th. Average number of days on which .01 f an inch or more was reported, 8.

WIND AND WEATHER.—Prevailing direction of the wind, orthwest; highest velocity reported, 54 miles per hour, from the orth, at Sioux City, on the 3d. Average number of clear ays, 12; partly cloudy, 8; cloudy, 10.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Charles City	29.94	30.41	23	29.58	28
Davenport	29.92	30.43	23	29.49	28
Des Moines	29.95	30.40	23	29.55	9
Dubuque	29.94	30.47	23	29.49	28
Omaha, Neb	29.95	30.47	16	29.40	20
Keokuk	29.93	30.42	23	29.47	10
Sioux City	29.99	30.47	16	29.62	26
Means	29.95	30.47	16.23	29.47	20

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Charles City	6,474	32	NW	4
Davenport	6,109	36	NW	29
Des Moines	6,554	31	NE	13
Dubuque	5,685	32	NE	20
Keokuk	6,390	36	W	10
La Crosse, Wis	6,075	28	N	3
Omaha, Neb	7,456	44	N	13
Sioux City	9,689	54	N	3

OBSERVERS' NOTES.

AMANA—*C. Schadt.* Weather was favorable for farm work, and the season about two weeks early; at close of month plums and cherries were in full bloom.

BONAPARTE—*B. R. Vale.* A cool wet and backward month; no preparation for corn planting except plowing sod; grass started nicely in March. Rainfall, 4.60 inches.

BRITT—*Geo. P. Hardwick.* Vegetation started early but was checked by cool weather; grain was put in in fine condition; pastures good at end of month.

CHARITON—*C. C. Burr.* Season is ten days earlier than average; fruit trees covered with bloom; plums and strawberries badly injured by frost.

CLINTON—*Luke Roberts.* April temperature was normal and rainfall .75 of an inch in excess; low temperature on the 5th, 6th, 7th, 15th, 16th and 17th checked growth of vegetation; month lost some of the advantages it had at outset, but the season is not discouraging.

CRESCO—*L. G. Krumm.* Considerable snow fell on night of 3d; also on afternoon of 13th. Early sown oats made thin stand.

CRESTON—*W. L. Gaston* Robins were with us from the first of month; box elder trees showed leaves on 5th; hail did some damage to fruit trees and gardens.

ELLIOTT—*Henry Barnes.* April 30th, apples cherries and plums in bloom; recent rains started growth of grass and grain.

FLORENCE—*J. H. DuBois.* Some corn planted April 28th and 29th; good stand wheat and oats.

FOREST CITY—*J. A. Peters.* Heavy frost and ice on 29th; small grain and grass looking good.

GRAND MEADOW—*F L. Williams.* Montn favorable for farm work and much ground ready for planting at end of month; pastures good.

HANLONTOWN—*Miss G. M. Paschen.* Early sown oats up the 20th; grass made rapid growth last few days of month.

HUMBOLDT—*H. S. Wells.* About the usual acreage of corn will be planted as last year; a little more wheat sown than recently.

IDA GROVE—*Dr. J. E. Conn.* An unusually cool April, but small grain and pastures made good progress.

INWOOD—*G. M. Larson.* All seeding done and plowing for corn commenced; too cool for growth of crops.

LITTLE SIOUX—*Geo. H. Gibson.* Fruit suffered but little from freezing on the 14th; moisture sufficient, but warmer weather is needed for grain and grass.

MONTICELLO—*A Mattheisen.* Grass and grain coming finely; farmers are two weeks ahead in work compared with last year.

NORTHWOOD.—*C. H. Dwelle.* Some early sown grain has been reseeded; rain needed.

OLIN.—*N. Potter.* All fruit safe from frost; pastures more than an average.

RIDGEWAY—*Arthur Betts.* A nice month; 264 hours sunshine, or 65 per cent; crops are looking fine; soil did not freeze over 8 inches in depth last winter.

SHELDON—*A. W. Beach.* Farm work well advanced; early gardens damaged by freezing on morning of 30th.

WAUKEE—*E. J. Leonard.* Month generally backward; frost hindered growth of small grain; fall wheat is looking well.

ERRATA IN FEBRUARY REVIEW.

HANLONTOWN.—Total snowfall recorded 7.5 inches on page 7, should have been 17.5 inches.

HARLAN.—Mean temperature recorded 12.6° on page 8, should have been 12.4°.

BELATED REPORTS.

NORTHWOOD.—March; mean temperature 37.0°; highest 65° on the 27th, 28th and 31st; lowest, 1° on the 11th; greatest daily range, 35°; total precipitation, 2.35 inches; greatest in twenty-four hours, .70 of an inch; total snowfall, 8.5 inches; prevailing direction, southeast; number of clear days, 4; partly cloudy, 10; cloudy, 17; rainy, 6.

CEDAR RAPIDS.—February; daily precipitation on 14th, page 11, recorded blank, should have been .22 of an inch; total precipitation recorded, 1.10 inches on pages 8 and 11 should have been 1.32 inches; total snowfall recorded 18.8 inches on page 8, should have been 21.5 inches; number of rainy days recorded, 7 on page 8, should have been 9.

CLIMATOLOGICAL DATA FOR APRIL, 1905.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	45.7	- 2.6	76	1,8	14	14	33	2.08	- .48	.92	1.5	7	7	14	9	NW	20
Alta	Buena Vista	1,513	14	44.8	- 2.8	79	8	17	14	40	2.52	- .72	1.48	1.0	10	7	12	11	NW	20, 30
Alta (near)	Buena Vista										2.69		1.51	1.5	9					
Britt	Hancock	1,236	8	44.8	- 2.0	75	1,8	13	14	39	2.21	† .14	.82	0.7	8	2	21	7	NW	1
Charles City	Floyd	1,015	18	44.6	- 4.1	72	1	18	14	33	1.99	- .55	1.38	1.0	7	8	11	11	NW	3, 9, 20
Clear Lake	Cerro Gordo	1,241	7	46.2	- 1.5	72	1,8	18	14	37	1.15	- .76	.60	1.0	4	10	11	9	NW	
Cresco	Howard		31	44.4	- 0.3	67	24	19	14	31	2.01	- .42	.96	1.5	8	11	9	10	NW	3
Decorah	Winneshiek	857	12	46.1	- 2.6	72	24	20	14	35	1.74	- .95	.65	2.0	8					
Dows	Wright	1,142	9	45.0	- 3.4	75	1	14	14	37	3.16	† .11	1.08	0.5	8	14	4	12	NW	4, 20
Elkader	Clayton	727	21	47.8	- 0.4	76	9	20	14	44	2 40	- .45	1.25	0.5	7	12	15	3	NW	3, 9, 20, 28
Estherville	Emmet	1,298	12	43.6	- 4.7	76	1	15	14	52	1.50	- .96	.91	2.0	6	16	3	11	NW	
Florence	Wright	1,226									2.16		1.15	0.5	7	5	17	8	NW	1, 19
Forest City	Winnebago	1,226	11	44.4	- 3.6	78	8	15	14	54	1.72	- .88	.90	0	6	14	3	13	W	
Grand Meadow	Clayton	1,180	11	45.8	- 1.7	70	9, 22, 24	18	14	31	2.19	- .94	1.35	1.0	6	5	13	12	NW	3
Greene	Butler	924	8	46.4	- 1.9	74	1	14	14	38	2.81	† .93	.94	1.0	8	7	7	16	W	
Hampton	Franklin	1,155	13	46,8	- 0.8	78	1	19	14	41	3 36	- .08	1.25	1.5	9	7	17	6	NW	
Hanlontown	Worth			44.0		74	8	12	14	41	2.70		1.25	1.2	8	14	7	9	NW	1
Humboldt	Humboldt	1,095	16	46.8	- 2.3	76	1,8	15	14	38	.94	-1.80	.45	0	6	12	10	8	NW	
Inwood	Lyon			44.4		76	1,8	10	14	42	.93		.42	1.5	4	15	1	14	NW	
Larrabee	Cherokee	1,266	12																	
Lansing(a)	Allamakee			47.4		73	9, 24	22	15	40	2.15		.60	1.0	9	12	7	11		3, 10
LeMars	Plymouth	1,224	7	45.5	- 4.2	78	8	14	14	43	1.25	-2.37	.50	T	3	11	9	10	N	
Mason City	Cerro Gordo	1,132	8	45.8	- 3.6	71	1	20	14	34	1.68	-1.66	.55	1.0	6	7	13	10	N	3, 20
New Hampton	Chickasaw	1,169	7	45.8	- 2.8	72	1	19	14	34	2.33	† .40	.55	1.0	8	8	12	10	NW	3
Northwood	Worth	1,222	8	44.2	- 3.5	73	24	16	14	36	.92	-1.39	.45	2.0	7	11	10	9	NW	
Osage	Mitchell	1,184	13	45.3	- 0.2	72	1	16	14	34	1.77	- .80	.45	1.0	8	8	12	10	NW	20
Pocahontas	Pocahontas	1,190		45.6		78	1,8	13	14	40	4.29		2.27	1.2	5	13	8	9	NW	
Plover	Pocahontas		8	44.9	- 3.3	78	1	14	14	41	2.93	†1.15	1.30	1.0	5	17	6	7	NW	2, 20, 26, 30
Ridgeway	Winneshiek	1,215	7	47.6	- 1.0	73	24	20	14	36	2.81	† .70	.90	2.8	12	16	10	4	S	3, 4, 9
Rock Rapids	Lyon	1,021	7	43.2	- 5.4	70	1, 8, 27	12	14	40	1.10	-2.65	.75	3.5	3	9	11	10		
Sheldon	O'Brien	1,422	6	45.6	- 2.6	79	1	12	14	43	1.11	- .37	.25	3.2	8	13	8	9	S	
Sibley	Osceola	1,212	12	42.9	- 5.1	77	1	10	14	54	.63	-2.03	.17	2.1	8	15	3	12	NE	
Sioux Center	Sioux		6	45.0	- 3.3	75	1,8	16	14	39	1.01	-2.12	.30	2.0	6	10	3	17	NW	
Storm Lake	Buena Vista	1,440	8	43.7	- 2.7	78	8	14	14	57	2.43	† .13	1.46	0.9	8	14	6	10	NW	
Washta	Cherokee	1,157		46.2		81	2	13	15, 18	45	2.27	† .54	1.35	T	4	12	8	10	NW	
Waverly	Bremer	942	9	45.8	- 1.7	75	9	20	14	40	2.66	- .38	1.00	1.0	11	4	15	11	NW	2, 3
West Bend	Palo Alto	1,197	12	45 2	- 1.6	76	1	12	14	33	3.48	† .67	2 26	1.0	5	7	13	10	NW	2
Average				45.3	- 2.0	74.9		15.7		39.9	2.09	- .53		1.2	7	10	10	10	NW	

SOUTHERN SECTION.

Afton	Union	1,212	11	49.6	- 1.7	84	9	23	16	36	4.17	† .50	2.11	1.6	8	13	3	14	SW	
Albia	Monroe	957		49.0	- 1.4	84	9	25	7, 8, 16	49	4.72	†1.77	1.50	2.0	12	15	1	14	SW	
Allerton	Wayne			50.0		84	9	20	15	41	3.31		1.10	2.6	10	17	5	8	NW	10, 21
Atlantic	Cass	1,164	14	47.0	- 2.3	85	9	15	17	47	3.72	† .68	1.36	1.8	8	8	7	15	NW	20
Bedford	Taylor		5	49.8	- 0.2	86	9	19	17	43	2 84	† .00	1.03	1.8	9	14	4	12	NW	
Bonaparte	Van Buren		14	50.4	- 1.4	84	9	25	15	40	4.60	† .27	2.15	3 0	6					
Burlington	Des Moines	544		52.3		88	9	26	7	39	3.68		2.24	2.5	6	16	9	5	NW	10, 19, 20, 28
Chariton	Lucas	1,042	10	49.2	- 2.5	83	9	24	7, 16	38	4.33	† .84	1.88	1.0	6	14	9	7	NW	
College Springs	Page		14	50.2	- 0.5	87	9	22	17	40	1.49	-2.18	.50	2.0	6	19	2	9	NW	
Columbus Junct.	Louisa	586		47.8		78	1	24	16	35	3 83		1.80	0.5	8	19	6	5	SE	3, 10, 20
Corning	Adams	1,127	13	48.0	- 2.7	83	9	18	17	39	3.31	† .22	1.16	2.0	7	12	8	10	NW	5, 20
Corydon	Wayne	992	12	50.6	- 1.2	84	9, 10	22	15	42	4.60	†1.48	1 59	3.5	8	14	7	9	NW	20, 25
Clarinda	Page		15	48.6	- 3.4	90	9	18	16	56	2.91	- .40	.75	1.5	13	22	2	6	NE	
Creston	Union			47.0		82	9	23	15	47	3.69		.90	1.5	12	16	8	6	W	19
Cumberland	Cass										3.52	†1.58	1.21	1.0	8	19	3	8	SE	
Earlham	Madison			46.7		80	9	19	17	43	4.48		1.48	2.0	6	11	11	8	NW	20, 21
Elliott	Montgomery			49.1		87	9	18	17	44	2.80		1.02	1.5	7	10	15	5	NW	20
Ft. Madison	Lee	516	56								4.22	† .93	1.87	1.0	6	11	7	12	N	5, 10, 19, 20
Glenwood	Mills		17	50.4	- 3.1	85	9	22	17	39	1.80	- .75	1.15	2.0	3	1	21	8	NW	19
Greenfield	Adair		14	48.4	- 2.2	85	9	19	15	43	4.21	†1.08	1.42	1.4	9	16	4	10	NW	19, 20
Hopeville	Clarke		13	49.2	- 1.0	85	9	24	16	24	4.20	† .78	2.10	0	11	8	18	4	NW	
Indianola	Warren			49.2	- 2.5	85	9	24	7, 14, 16, 17	39	3.26	- .02	1 40	1.0	11	8	8	14	NW	20, 27
Keokuk	Lee	619	34	52.6	† 0.6	86	9	28	16	42	3.32	† .11	1.45	1.0	8	16	8	6	NW	9, 10, 19, 20, 28
Keosauqua	Van Buren	644	13	50.4	- 2.4	86	9	25	7	49	3.98	† .14	1.74	2.2	11	10	9	11		
Knoxville	Marion	920	12	50.3	- 2.2	84	9	25	16	40	3.58	† .42	1.30	1.8	9	11	7	12	NW	
Lacona	Warren										5.43	†2.59	2.11	0	11	6	17	7		
Lenox	Taylor	1,250	10	48.8	- 2.4	85	9	21	15, 16	40	3 68	† .66	1.38	1.2	9	16	7	7	NW	20
Leon	Decatur	1,120		50.3		82	9	24	16	39	5.49		1.49	2.5	9	14	6	10	N, S	20
Massena	Cass			50.0		84	9	22	7, 14, 15, 18	42	4.04		1.30	2.0	6	15	2	13	S	20
Mt. Ayr	Ringgold	1,236	12	51 6	† 0.1	88	9	22	16	47	4.83	†1 68	1.70	3.2	9	10	11	9	NW	
Mt. Pleasant	Henry	729	24	50.0	- 1.1	82	9	25	7	40	4.59	†1.54	2.73	2.5	8	14	11	5	SW, NW	20, 26
Omaha, Neb.	Douglas	1,113	34	49.7	- 1 3	80	9	24	14	33	3.43	† .30	2.11	1.3	8	9	9	12	N	20
Oskaloosa	Mahaska	843	22	49.6	- 0.7	84	9	25	7, 16, 17	42	3.34	† .58	2.00	1.8	9	17	1	12	NW	
Ottumwa	Wapello	649	11			85	9				5.44	†2.36	3.25	0	5	11	9	10	SW	20, 25, 26
Pacific Junction	Mills	960	6	49.2	- 1.2	84	9	19	17	47	2.31	- .30	1.06	1.5	8	15	8	7	N	
Red Oak (e)	Montgomery	1,033	8	49.0	- 2.8			22	17	34	2.41	- .43	.72	T	10	18	2	10	NW	
St. Charles	Madison	1,070		49.8		86	9	24	16	41	2.25		1.42	0.3	10	15	9	6	NW	
Sidney	Fremont			50.8		85	9	24	16	39	1.99		.96	1.0	7	15	5	10	NW	20
Sigourney	Keokuk	887	9	50.4	- 1.8	84	9	24	16	43	3.60	† .00	2.00	1.0	11	3	23	4	NW	3, 9, 20, 21
Stockport	Van Buren			50 6		83	9	25	7, 16, 17	42	4.14		1.52	3 0	9	11	7	12	NW	19
Thurman	Fremont			50.0	- 1 8	84	8	19	17	43	2.34	-1.10	1.20		8	14	6	10	SW, NW	
Wapello (a)	Louisa	588	7	52.0	† 0.1	80	9	28	7, 16	37	3.84	†1.60	2.00	0	6				W	
Washington	Washington	769	13	49.5	- 1.4	84	9	24	7	41	4.06	†1.44	2.65	0	7				NW	3
Winterset	Madison	1,129	14	48.3	- 2.9	82	9	22	16	37	4.10	† .44	1.34	T	10	15	9	6	NW	20
Woodburn	Clarke	961	6								5.33	†2.74	2.05	2.1	11	15	8	7	NW	4, 5, 20
Average				49.6	- 2.6	84.0		22.6		41.0	3.94	† .83		1 5	8	13	8	9	NW	
Average for State				47.5	- 1.8	79.8		19.5		40.7	3.03	† .14		1.2	8	12	8	10	NW	

CLIMATOLOGICAL DATA FOR MARCH, 1905—CONTINUED.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Amana	Iowa	721	27	48.8	† 0.1	80	9	25	6	40	3.22	† .34	1.20	0.1	9	13	9	8	NW	3, 20
Ames (c)	Story	926	21	47.4	- 1.7	77	1	20	14	38	1.33	-1.42	.57	?	11	12	7	11	NE, SE, NW	
Audubon	Audubon	1,301	9	46.7	- 3.2	81	8	11	15	43	3.54	†1.62	1.00	2.8	11	10	8	12	NW	9, 20
Baxter	Jasper	998	....	47.5	- 1.8	78	9	20	14	40	3.00	- .28	1.30	1.0	7	10	5	15	NW	
Belle Plaine	Benton	826	14	48.3	† 2.6	72	1	21	14	35	2.77	- .84	1.25	2.0	9	8	15	7	SE, S, NW	
Boone	Boone	....	....	46.2	.....	77	8	20	14	50	3.23	.....	1.46	T	8	15	7	8	.....	20
Buckingham	Iowa	.....	.....	.....	.....	.....	.....	..	.....	.....	2.40	- .08	1.44	0.2	7	5	20	5	....	
Carroll	Carroll	1,265	13	46.0	- 3.0	83	8	13	14	48	2.99	- .53	1.02	T	8	19	2	9	.....	
Cedar Rapids	Linn	733	23	48.8	† 0.4	81	9	28	7, 14, 17	43	2.34	- .64	.88	....	8	11	13	6	NW	
Clinton	Clinton	609	38	49.0	† 0.4	80	28	25	7	39	3.69	† .76	2.04	..	11	13	10	7	NW	9, 20
Davenport	Scott	606	34	49.8	† 0.1	82	9	28	16	36	3.45	† .67	1.96	T	12	12	11	7	NW	3, 5, 9, 20, 28
Delaware	Delaware	1,083	12	45.6	- 0.4	71	1, 9	21	7, 14	36	2.06	- .98	.73	0.4	10	12	13	5	NW	3, 10
Denison	Crawford	1,180	9	46.6	- 2.7	81	8	13	14, 18	46	2.20	-1.76	.75	1.0	10	16	7	7	N	
Des Moines	Polk	861	27	48.7	- 1.8	82	9	21	16	36	3.29	† .50	1.35	2.2	11	8	13	9	NW	20
De Soto	Dallas	866	....	48.5	.....	84	9	23	14	42	4.34	.....	1.38	..	9	14	6	10	NW	
Dubuque	Dubuque	655	32	48.2	- 0.4	73	9	29	7	32	3.07	† .28	1.37	0.2	12	9	8	13	NW	3, 4, 10, 20, 21, 26
Fort Dodge	Webster	1,126	....	45.6	.....	78	8	14	14	54	2.93	.....	1.35	1.0	6	18	3	9	NW	
Galva	Ida	1,290	12	46.1	- 3.2	80	1	14	14	40	1.98	- .78	1.20	T	5	15	0	15	.....	
Gilman	Marshall	1,052	..	....	.....	.....	.....	.....	.....	.....	2.40	- .10	1.65	....	4	9	14	7	S	
Grinnell	Poweshiek	1,023	10	47.7	- 2.7	77	9	22	14, 17	33	3.48	- .04	2.00	0.5	9	12	9	9	NW	4, 20
Grundy Center	Grundy	976	12	46.7	- 1.0	76	1	18	14	35	4.26	† .88	2.05	T	7	11	6	13	NW	
GuthrieCenter	Guthrie	1,077	7	47.9	- 2.2	78	1, 8	21	14	44	4.55	†2.08	1.64	3.5	12	16	4	10	NW	
Harlan	Shelby	1,192	....	46.8	- 2.0	79	8	19	14, 17	40	2.98	† .50	1.12	2.2	11	7	12	11	NW	20, 30
Ida Grove(c)	Ida	1,220	....	45.2	.....	71	27	12	14	43	1.44	.....	.88	T	5	13	8	9	W	
Independence	Buchanan	921	40	46.5	- 0.7	73	1, 9	19	14	38	3.90	†1.69	1.95	1.5	8	11	10	9	NW	3
Iowa City	Johnson	683	47	48.0	† 1.7	85	9	24	7	58	3.36	† .22	1.15	0.5	11	16	1	13	N	
Iowa Falls	Hardin	1,170	10	45.5	- 2.0	77	1	19	14	42	2.83	- .32	1.26	0.3	7	14	5	11	NW	3, 20
Little Sioux	Harrison	.....	....	48.6	.....	84	8	14	15	43	3.13	.....	1.07	4.4	10	12	8	10	NW	20
LeClaire	Scott	576	....	.....	.....	.....	.....	.....	.....	.....	3.41	.....	1.07	T	9	17	3	10	SW	
Logan	Harrison	928	36	48.6	- 1.4	81	8	20	14, 15, 17	40	4.23	†1.36	1.98	4.0	10	10	12	8	SE, NW	
Maquoketa	Jackson	688	12	47.4	- 1.5	80	9	24	6	48	3.30	† .77	1.10	0.8	8	20	6	4	NE	
Marshalltown	Marshall	947	10	47.0	- 2.6	79	1	21	14	47	3.39	† .28	1.62	?	10	15	5	10	NW	
Muscatine	Muscatine	....	46	.....	.....	.....	.....	.....	.....	.....	3.41	‡ .00	1.34	T	13	13	7	10	N	
Mt. Vernon	Linn	847	30	49.0	† 2.5	83	9	23	17	41	2.40	- .63	1.30	T	8	14	5	11	NW	20, 21
Montezuma	Poweshiek	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.79	.....	1.70	0.5	3	....	.....	.....	.....	
Newton	Jasper	944	15	47.8	- 1.1	80	9	22	14	36	3.38	‡ .00	1.05	1.0	8	14	7	9	.....	
Odebolt	Sac	1,356	8	47.0	- 2.7	81	8	17	14	40	2.83	† .12	1.45		8	16	4	10	.....	
Ogden	Boone	1,058	9	47.4	- 3.1	79	8	19	14	41	2.53	- .42	1.03	0.1	9	16	4	10	NW	
Olin (c)	Jones	760	7	47.6	† 0.9	76	9	25	6, 7, 12, 17, 18	41	2.88	† .70	1.37	0.5	6	14	9	7	NW	3, 20
Onawa	Monona	.....	....	49.0	- 1.6	84	8	18	14	42	4.24	†1.25	2.15	0.9	12	16	4	10	NE	20, 30
Perry	Dallas	975	....	47.9	.....	79	8	21	14	45	4.13	.....	1.63	0.8	8	5	11	14	.....	20
Rockwell City	Calhoun	.....	8	46.0	- 2.2	80	8	19	14	44	4.68	†2.27	1.95	1.0	6	12	6	12	....	
Sac City (a)	Sac	1,278	23	46.4	- 1.8	78	8	19	14	41	3.42	† .43	2.01	0.5	10	15	3	12	NW	
Stuart	Guthrie	.....	....	48.8	- 0.4	84	9	22	14	38	3.15	- .06	1.31	T	7	....	....	....	N, NW	
Sioux City	Woodbury	1,165	16	46.2	- 4.4	78	8	20	14	38	2.44	- .58	1.01	0.6	12	11	5	14	N	20, 30
Tipton	Cedar	807	....	50.7	† 2.2	81	9	28	16, 17	37	3.28	- .49	1.70	T	5	17	8	5	NW	
Toledo	Tama	856	9	47.9	- 2.7	78	1, 9	21	14	40	2.40	- .63	1.10	0.5	9	9	14	7	NW	
Vinton	Benton	810	15	47.6	- 1.6	77	9	22	14	45	2.22	- .70	1.24	?	4	17	0	13	NW	
Waterloo	Black Hawk	862	16	47.0	- 0.2	76	9	19	14	41	2.60	- .39	1.63	0.5	9	11	11	8	NW	3, 20
Waukee	Dallas	1,039	....	49.4	...	87	9	21	14	47	3.60	.....	1.17	2.5	12	10	11	9	NW	3, 19, 20
Wilton Junction	Muscatine	683	11	49.9	- 1.0	82	9	25	6, 17	41	4.11	†1.24	2.00	2.0	10	12	2	16	NW	3, 20
Webster City	Hamilton	.....	..	47.6	.....	77	1	16	14	40	1.87	.....	.97	T	4	17	0	13	NW	
Whitten	Hardin	1,036	....	46.0	- 2.1	72	1	21	17	35	3.19	†1.13	1.00	1.0	7	11	9	10	NW	3, 20
Zearing	Story	718	..	46.8	....	79	2	19	14	37	2.64	.....	1.20	T	8	13	9	8	NW	
Average	....	...	....	47.5	- 1.3	79.0	.....	20.3	.....	41.1	3.07	† .17		0.8	9	13	7	10	NW	

† Above normal. ‡ Received too late to be computed with means. *a*. One day missing; *b*. two days, etc. § Not supplied with self-registering nstruments.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR APRIL, 1905.

STATIONS.		DATE.																														MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max..	78	68	61	52	47	54	59	76	84	70	53	65	64	55	46	46	51	60	59	67	60	64	65	59	59	59	75	72	61	63	..	61.9
	Min ..	42	57	41	35	30	28	25	39	48	39	32	28	29	26	25	23	25	29	35	50	36	35	40	48	47	51	46	50	41	36	..	37.2
Albia*....	Max..	78	66	65	54	49	53	57	74	84	48	64	54	59	48	45	46	51	59	61	68	56	62	62	63	60	63	74	72	63	58	..	60.5
	Min ..	45	45	53	37	31	27	25	25	41	45	36	33	35	28	37	25	26	28	30	42	38	38	38	46	48	48	54	53	42	37	..	37.5
Algona. ..	Max..	76	65	56	48	49	47	58	76	65	50	52	58	44	41	45	47	52	58	66	55	56	61	63	69	65	59	71	65	52	57	..	57.4
	Min .	42	51	35	34	29	27	22	38	42	38	25	33	25	14	23	24	23	25	35	38	30	28	36	47	48	48	53	44	36	28	..	34.0
Allerton .	Max..	77	71	63	54	50	54	57	76	84	69	55	64	62	52	47	46	51	59	58	68	63	62	65	60	67	61	74	73	63	61	..	62.2
	Min ..	45	57	42	34	30	25	24	38	43	42	34	30	32	30	20	24	25	28	34	52	38	35	40	47	48	52	54	51	41	39	..	37.8
Alta.	Max..	76	60	53	48	45	50	57	79	61	47	54	60	47	44	43	48	51	59	57	49	57	60	60	63	54	61	69	59	58	54	..	56.1
	Min ..	42	53	38	32	27	27	22	39	41	38	22	30	18	17	22	21	19	25	37	39	32	35	37	46	47	48	48	41	35	28	..	38.5
Amana...	Max..	75	71	65	51	47	49	51	68	80	67	54	64	57	45	47	46	51	57	66	58	55	62	63	64	60	65	69	68	60	58	..	59.8
	Min ..	42	50	45	36	31	25	26	34	40	46	38	30	32	26	29	26	28	31	34	51	35	31	36	48	50	54	53	53	41	36	..	37.9
Ames	Max..	77	67	59	50	49	50	55	74	72	55	55	66	53	45	49	50	53	58	63	55	57	61	60	62	58	62	72	67	59	52	..	58.8
	Min ..	44	54	38	34	30	28	24	36	39	41	31	33	27	20	26	25	24	26	27	47	34	31	37	47	48	51	54	46	42	33	..	35.9
Atlantic..	Max..	77	65	57	55	51	58	63	82	85	65	58	67	60	46	48	50	55	60	58	60	57	61	59	60	53	59	74	68	63	60	..	61.1
	Min ..	36	37	40	32	28	21	20	40	38	40	29	25	29	21	22	21	15	17	30	49	33	28	41	46	48	51	44	41	37	30	..	33.0
Audubon.	Max..	78	63	56	51	49	55	62	81	73	55	55	66	54	42	42	48	52	60	58	62	65	61	58	58	60	61	74	66	61	55	..	59.4
	Min ..	36	55	41	33	28	26	22	38	37	40	28	59	30	21	11	22	20	20	36	46	34	29	38	48	47	50	42	44	37	32	..	34.0
Baxter. ..	Max..	77	65	62	50	49	50	54	74	78	53	55	66	57	46	46	49	52	60	62	55	56	62	60	64	57	63	72	67	62	54	..	59.2
	Min ..	48	53	45	34	29	25	23	34	42	40	32	30	26	20	25	25	22	25	34	45	35	33	38	45	47	52	54	48	37	32	..	35.8
Bedford ..	Max..	77	68	68	53	51	59	61	79	86	68	56	66	66	55	49	48	53	60	58	70	58	62	64	61	62	62	74	71	65	65	..	63.2
	Min ..	45	56	42	34	29	28	22	41	43	38	33	24	34	27	22	23	19	21	34	50	36	31	45	49	49	52	44	47	38	35	..	36.3
Belle Pl'e	Max..	72	70	65	50	49	50	56	70	70	50	53	65	60	45	48	48	54	60	67	60	55	65	64	65	55	69	70	65	60	60	..	59 7
	Min ..	40	43	51	35	29	25	24	35	50	43	35	30	32	21	28	25	28	27	34	45	35	32	38	48	48	50	53	52	38	34	..	36.9
Bonapar'e	Max..	78	76	68	55	52	54	54	70	84	70	55	63	59	53	46	45	52	58	65	63	56	61	64	64	59	61	70	77	67	61	..	62.0
	Min ..	45	54	48	38	29	27	26	33	40	43	40	28	35	34	25	27	27	29	33	52	38	32	39	48	52	54	53	54	41	38	..	38.7
Boone . ..	Max..	76	66	51	50	48	50	54	77	70	48	53	65	52	44	47	48	52	58	62	51	56	60	59	61	52	59	71	64	58	51	..	57 0
	Min .	45	46	47	34	30	29	25	27	38	41	30	31	29	20	24	24	25	27	30	43	33	35	41	42	49	48	51	47	41	34	..	35.5
Britt. ..	Max..	75	64	56	47	46	45	55	75	62	49	52	60	43	40	42	46	50	57	62	52	55	63	65	71	57	61	72	64	66	58	..	57.0
	Min ..	41	49	34	32	28	24	21	36	38	39	27	28	21	13	21	24	21	20	32	40	29	29	35	46	47	48	50	45	33	25	..	32.5
Burling'n	Max .	80	77	71	59	60	55	54	69	83	75	60	65	62	55	47	47	54	59	66	61	59	62	66	67	61	63	69	81	69	63	..	64 0
	Min ..	52	54	50	37	30	27	26	38	44	43	42	37	38	35	29	27	27	31	39	51	38	38	44	50	50	55	51	54	43	39	..	40.6
Carroll*..	Max..	78	62	48	52	51	57	62	83	69	48	69	67	52	45	45	51	54	60	61	51	59	61	60	59	52	59	73	61	60	50	..	58.6
	Min ..	39	54	45	32	26	25	23	35	42	25	25	27	29	13	21	21	24	21	38	41	32	33	35	46	47	47	42	44	37	30	..	33 3
Cedar R*.	Max..	76	71	67	51	47	48	51	68	81	52	57	65	58	46	45	47	51	57	67	55	58	64	63	68	57	65	68	69	58	61	..	59.7
	Min ..	41	42	53	36	33	30	28	29	38	43	40	32	32	28	31	29	28	29	31	43	37	34	39	45	52	50	52	54	43	37	..	38.0
Chariton .	Max..	77	67	63	53	50	54	55	75	83	70	54	64	62	53	45	47	51	58	59	69	56	60	62	61	62	60	73	71	62	58	..	61.1
	Min ..	43	55	42	35	30	27	24	38	45	42	33	29	30	28	25	24	25	28	34	50	38	33	39	46	48	52	52	50	40	36	..	37.4
Charles C.	Max.	72	60	56	47	45	43	47	67	66	50	51	59	42	40	41	44	49	54	62	54	54	62	62	68	57	59	67	64	52	56	..	55.0
	Min ..	39	47	34	33	27	26	23	34	35	39	31	32	21	18	26	26	26	25	38	40	33	30	34	47	47	50	52	43	38	30	..	34.1
Clarinda*.	Max..	81	62	55	53	59	63	59	81	90	48	57	69	58	50	48	50	55	63	60	70	59	69	64	59	59	60	75	70	67	68	..	62.7
	Min ..	44	45	46	34	28	25	28	25	42	43	32	25	31	27	20	18	22	25	25	33	36	31	34	48	48	49	45	47	40	37	..	34,4
Clear L ..	Max..	72	65	56	46	46	44	52	72	64	53	53	56	46	40	41	45	50	56	61	58	59	62	62	70	61	59	67	64	54	61	..	56.5
	Min ..	45	46	36	33	29	32	24	35	45	39	28	31	25	18	25	29	25	27	40	42	32	38	39	48	48	48	52	47	40	30	..	35.9
Clinton....	Max..	76	73	69	55	51	52	48	63	70	62	57	62	56	47	48	46	53	57	69	62	55	63	68	70	59	70	73	80	63	60	..	61.2
	Min ..	38	42	48	36	28	25	26	30	33	42	36	33	36	31	30	26	28	30	30	41	36	31	35	47	51	55	52	54	42	35	..	36,9
Col. Spgs.	Max..	78	65	58	55	51	60	61	78	87	67	53	56	65	49	47	47	53	58	58	71	57	63	64	59	59	62	75	70	66	67	..	62.0
	Min ..	50	54	47	34	31	28	27	43	47	39	33	26	33	28	26	24	22	26	35	45	37	34	47	50	49	53	46	50	40	48	..	38.4
Colum. J.	Max..	78	76	63	49	43	41	46	59	72	72	49	53	52	52	41	41	47	48	57	57	55	55	59	60	60	57	64	77	64	54	..	56.7
	Min ..	43	53	49	35	29	26	25	35	44	42	40	31	33	32	29	24	27	30	36	51	37	36	42	47	51	55	52	53	41	37	..	38.8
Corning ..	Max..	76	63	58	53	50	55	58	75	83	60	52	86	66	47	46	47	52	59	58	69	55	59	61	57	59	59	72	68	62	63	..	60.3
	Min ..	45	46	41	33	29	25	22	41	44	38	32	29	33	27	22	22	18	21	35	50	31	34	44	48	48	50	44	48	38	34	..	35.7
Corydon..	Max.	77	71	64	57	52	57	57	76	84	84	57	66	62	57	49	50	55	60	57	68	60	61	62	60	69	59	74	72	64	60	..	63.4
	Min ..	49	56	42	35	29	25	25	33	47	42	34	30	30	29	22	23	24	28	35	50	38	36	42	47	44	53	54	51	40	38	..	37.9
Cresco ...	Max..	66	60	58	45	43	41	44	64	63	52	50	57	43	40	39	43	48	52	59	56	54	61	63	67	61	57	65	63	53	55	..	54,1
	Min ..	37	42	40	32	29	29	22	33	40	40	31	33	27	19	24	25	24	26	38	42	32	33	36	47	43	48	51	50	39	31	..	34.8
Creston...	Max..	76	65	56	51	47	47	56	75	82	47	52	63	59	45	46	45	51	57	56	66	55	58	61	57	58	57	70	66	61	59	..	58,1
	Min ..	48	49	49	34	30	27	27	28	41	42	32	32	33	26	23	23	25	27	29	38	36	37	37	45	48	48	46	40	41	37	..	35.9
Davenpo't	Max..	77	76	68	52	47	49	48	61	82	57	55	62	56	46	44	44	51	55	64	58	54	61	63	64	59	66	68	75	61	58	..	59.4
	Min ..	43	49	39	37	32	31	29	37	46	43	42	40	36	34	31	28	30	31	41	42	37	40	44	51	50	55	53	53	46	40	..	40.3
Decorah. .	Max..	71	62	59	48	46	45	48	66	67	53	53	60	43	43	42	43	50	57	62	55	57	62	68	72	59	58	69	67	65	58	..	56.9
	Min ..	39	42	38	35	29	25	24	34	34	43	34	33	28	20	27	27	29	29	30	42	33	29	33	47	44	50	52	50	42	38	..	35.3
Delaware.	Max..	71	65	60	48	44	44	45	61	71	60	52	68	54	42	43	44	49	55	65	54	53	63	64	68	59	59	68	62	57	55	..	56.6
	Min ..	35	45	44	31	34	24	21	29	35	41	36	30	27	21	25	27	22	24	32	46	31	32	33	46	47	50	50	50	39	31	..	34.6
Denison..	Max.	78	68	66	51	50	54	61	81	71	56	55	64	52	43	45	47	52	59	59	55	57	60	59	58	55	62	72	67	61	54		58,7
	Min ..	40	55	39	34	29	26	20	43	42	41	25	33	28	18	23	21	18	13	38	34	32	32	40	48	47	49	47	42	53	30	..	34,5
Des M....	Max..	77	65	61	51	49	52	56	75	82	50	54	66	56	45	45	45	51	57	57	59	58	60	60	63	57	63	72	65	59	54	..	58,7
	Min .	47	55	38	37	33	28	29	41	46	44	33	34	31	25	29	21	30	29	40	45	38	36	42	50	48	53	53	45	43	37	..	38,7
De Soto ..	Max..	79	68	57	53	50	54	62	81	84	58	56	69	57	46	46	50	54	61	59	58	58	61	60	62	57	59	73	68	60	53	..	59.8
	Min ..	43	57	41	36	31	27	24	39	43	42	31	30	31	23	25	24	25	26	38	50	35	32	41	49	48	52	46	49	42	35	..	37.2
Dows. ...	Max..	75	68	57	49	45	46	52	74	68	52	51	62	46	41	44	46	50	57	64	58	55	60	62	65	70	63	70	66	57	67	..	57.4
	Min ..	40	49	36	32	28	26	22	37	38	40	29	30	28	14	22	23	21	23	35	30	32	33	37	38	40	41	42	46	38	29	..	32.6
Dubuque.	Max.	64	66	64	49	44	46	46	59	73	54	54	63	51	43	42	44	50	55	64	55	57	63	64	68	56	60	68	69	57	57	..	57,0
	Min .	41	44	42	35	35	31	29	37	41	46	38	37	32	29	33	31	33	34	42	39	37	37	41	50	49	52	53	51	45	37	..	39.4
Earlham.	Max..	77	66	56	52	52	52	57	78	80	59	53	65	58	46	45	48	52	59	57	61	65	59	58	60	55	57	73	66	61	54	..	59.4
	Min ..	34	56	34	34	28	22	22	25	38	41	29	27	34	21	23	23	19	21	35	48	34	28	38	45	47	51	44	47	39	32	..	34,0
Elkader ..	Max..	78	66	67	49	46	47	50	65	76	57	58	69	51	46	45	46	52	59	67	60	60	66	68	72	61	59	69	65	57	57	..	59,4
	Min ..	39	41	49	34	28	24	24	32	32	45	48	30	28	20	27	27	26	26	35	44	33	28	33	48	44	51	50	54	40	34	..	36.1
Elliott....	Max..	77	65	58	56	47	64	65	77	87	52	58	67	66	51	46	47	53	60	63	63	60	67	63	59	56	60	73	65	63	66	..	62 0
	Min ..	43	57	47	33	28	25	24	47	43	41	32	24	31	25	23	23	18	21	33	50	35	31	45	49	48	52	46	44	36	33	..	36,2
Esthervil*	Max..	76	59	41	48	47	47	53	74	60	49	54	52	36	40	48	47	51	58	63	52	58	64	64	69	59	60	69	52	56	58	..	55,5
	Min ..	43	43	40	33	29	28	20	22	41	35	23	25	28	15	17	24	22	26	30	39	28	25	29	47	45	47	45	42	33	26	..	31,8
ForestCy*	Max.	75	71	48	46	47	44	50	78	65	40	52	56	40	39	40	47	50	58	63	53	58	63	63	69	57	59	68	59	58	58	..	55,8
	Min ..	40	40	47	34	28	28	22	24	40	39	27	28	28	15	19	22	28	24	28	40	30	32	36	48	49	48	49	46	35	25	..	33,1
F. Dodge*	Max..	72	65	49	48	47	48	56	78	66	47	53	61	49	42	43	48	58	58	62	53	55	61	60	64	53	59	71	63	57	54	..	56,5
	Min .	45	45	47	35	30	28	24	24	41	42	29	29	31	14	21	24	25	28	29	43	33	32	33	47	49	49	50	45	41	32	..	34,8
Galva	Max.	80	65	59	50	48	51	60	77	71	55	58	60	51	43	45	48	51	60	64	63	56	62	60	62	58	63	70	65	59	56	..	59,0
	Min ..	41	54	38	32	24	25	19	39	40	39	23	30	22	14	22	19	15	40	33	37	31	29	35	46	47	48	47	41	37	28	..	33 2
Glenw'd .	Max..	79	73	61	55	52	64	65	81	85	61	54	68	65	45	48	47	52	60	60	61	57	63	63	61	52	62	74	67	67	68	..	62,3
	Min .	46	56	42	43	28	29	26	44	59	39	32	33	36	23	24	23	22	28	39	46	36	38	47	49	48	51	42	48	42	39	..	38,6
Grand M.	Max..	67	62	61	49	44	46	45	64	70	56	52	64	41	42	44	44	48	54	64	56	54	70	65	70	59	57	65	64	54	56	..	56,2
	Min ..	37	42	41	32	24	27	27	32	37	42	35	35	28	18	24	24	25	25	37	45	36	35	37	47	45	49	51	51	39	32	..	35,3
Greene...	Max..	74	65	57	49	48	44	52	71	67	54	54	62	48	41	45	47	51	58	65	57	57	63	67	69	58	61	70	65	55	59	..	57,8
	Min ..	39	46	40	34	30	27	23	33	36	41	30	33	27	14	25	25	25	24	36	48	32	30	35	47	49	50	51	51	49	30	..	34,9
Greenfield. ..	Max..	79	68	60	55	50	57	62	79	85	53	54	67	64	45	48	50	53	63	66	63	55	65	62	60	54	59	76	78	62	62	..	64.8
	Min ..	41	56	40	30	28	23	22	38	42	38	28	28	30	20	19	21	21	22	34	49	33	35	42	47	47	48	46	48	36	35	..	34.9
Grinnell .	Max..	73	67	62	49	46	48	50	67	77	54	53	62	54	43	47	46	48	58	64	56	62	63	60	61	57	68	69	66	57	54	..	58,0
	Min ..	43	54	43	35	30	29	26	36	53	43	35	35	29	22	27	25	22	25	35	36	34	35	41	46	48	49	54	53	42	35	..	37.4
Grundy C	Max..	76	67	61	51	46	47	51	68	73	58	55	65	53	44	47	49	53	57	65	55	55	62	64	64	56	62	69	69	58	57	..	58,6
	Min ..	41	49	41	34	28	25	22	38	38	40	32	30	25	18	23	24	22	24	35	47	33	33	40	38	49	52	50	49	33	31	..	34,8
Guthrie C	Max..	78	71	59	51	47	52	58	78	75	61	52	59	56	43	42	56	51	58	59	56	55	60	60	59	68	58	74	72	59	57	..	59,5
	Min ..	38	57	40	35	28	28	23	41	41	41	29	32	30	21	22	24	23	24	38	50	34	31	40	49	47	51	57	44	40	32	..	36,3
Hampton.	Max..	78	63	58	47	48	46	55	72	72	51	53	63	47	45	44	45	51	58	64	52	59	66	64	69	59	60	71	69	57	61	..	58,2
	Min ..	39	47	36	32	30	28	24	35	43	41	30	34	27	19	25	24	26	26	36	44	32	39	36	47	49	49	52	49	40	30	..	35,5
Hanlontown .	Max..	72	68	58	45	44	44	50	74	61	48	53	57	41	37	41	44	48	56	64	52	55	63	64	67	57	58	63	63	53	56	..	55,4
	Min ..	38	45	35	32	29	26	22	33	37	38	27	31	21	12	24	24	23	22	34	40	29	28	32	45	45	48	49	45	38	27	..	32,6
Harlan....	Max.	77	68	58	51	49	53	61	79	78	56	55	65	57	44	44	47	52	62	58	64	59	53	58	60	52	65	74	66	62	58	..	59,3
	Min .	40	55	39	33	27	24	20	40	45	40	27	25	29	19	21	21	19	20	32	45	31	30	42	47	47	50	46	43	38	33	..	34,4
Hopeville.	Max..	77	64	61	51	50	54	59	79	85	62	53	64	61	43	48	46	51	60	57	67	55	62	63	59	62	58	72	67	61	61	..	60,4
	Min ..	45	56	41	36	32	28	25	39	48	41	32	30	32	28	25	24	25	28	34	47	38	37	41	53	48	51	49	49	41	38	..	38,1
Humboldt	Max	76	66	57	43	43	30	26	22	38	42	42	28	34	28	15	24	23	24	24	37	43	39	31	39	47	50	50	53-	44	40	30	..	35,5
	Min ..	45	54	36	35	30	26	22	38	42	42	28	34	28	15	24	23	24	24	37	43	39	31	39	47	50	50	53-	44	40	30	..	35,5
Ida Grove

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR APRIL, 1905—CONTINUED.

STATIONS.		DATE.																															MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Iowa F*	Max	77	65	64	48	45	47	53	71	69	47	52	63	47	42	45	46	51	57	64	55	55	61	63	66	53	62	70	63	57	57	..	57.2
	Min	35	40	47	32	29	25	22	35	35	38	30	33	27	19	24	24	23	25	36	40	32	29	32	41	45	49	50	48	40	30	..	33.8
Keokuk	Max	78	70	70	59	50	54	53	68	86	81	56	62	62	57	45	44	52	58	66	68	61	61	66	65	61	64	72	78	68	62	..	63.1
	Min	48	55	50	39	33	30	29	36	44	44	44	38	39	36	30	28	32	34	41	52	40	39	42	50	52	55	55	60	45	44	..	42.1
Keosauqua *	Max	80	77	69	58	55	58	57	72	86	50	57	65	61	51	49	48	55	61	65	64	57	63	66	65	60	64	73	78	68	63	..	63.2
	Min	39	47	51	38	29	26	25	27	37	49	40	27	36	34	26	27	27	28	34	39	40	30	33	48	51	51	55	55	42	38	..	37.6
Knoxv'lle	Max	76	72	66	53	49	51	57	75	84	75	54	67	60	52	45	45	52	59	61	68	60	55	62	65	60	63	73	70	60	56	..	61.5
	Min	45	55	41	36	31	29	27	39	44	43	34	31	32	32	29	25	27	30	40	50	37	35	41	48	49	54	56	52	43	37	..	39.1
Lansing	Max	69	62	64	60	49	48	49	64	73	62	58	64	49	48	48	47	48	57	52	58	62	69	68	73	65	68	67	66	60	..	..	59.6
	Min	45	39	52	34	30	25	27	34	34	45	39	36	29	24	22	29	27	25	27	35	34	29	29	38	42	45	53	54	35	..	..	35.1
Le Mars	Max	77	68	59	51	50	53	63	78	68	49	56	59	50	40	44	47	53	63	59	52	60	64	62	66	58	62	70	58	61	62	..	58.7
	Min	43	43	37	30	26	26	20	35	44	30	21	30	24	14	24	21	18	19	39	37	28	26	38	46	48	46	44	46	35	31	..	32.3
Lenox	Max	78	65	58	52	48	56	59	78	85	59	53	66	64	47	46	47	52	60	59	68	55	61	62	58	60	59	73	67	62	64	..	60.7
	Min	47	55	41	33	28	25	26	38	48	38	31	30	32	27	21	21	23	25	36	47	36	36	42	47	47	51	45	50	39	39	..	36.8
Leon	Max	75	71	61	57	47	53	56	72	82	75	52	64	62	57	45	46	50	57	58	68	63	61	64	62	68	67	74	72	62	62	..	62.1
	Min	45	56	42	36	32	28	27	40	43	41	33	32	33	30	25	24	28	30	36	50	39	36	42	47	48	51	50	52	40	40	..	38.5
Lit. Sioux	Max	81	73	62	55	51	58	65	84	73	61	57	67	59	45	44	47	54	62	59	55	58	62	59	59	52	62	72	68	64	60	..	60.9
	Min	44	58	41	32	24	24	22	41	49	41	25	33	32	17	14	23	21	21	41	44	32	40	48	51	49	51	48	48	35	37	..	36.2
Logan	Max	80	70	58	55	50	58	64	81	75	55	57	68	60	49	49	48	54	65	60	55	60	64	67	61	54	61	75	69	65	62	..	61.6
	Min	40	55	41	34	26	24	23	41	45	45	28	30	30	20	20	23	20	23	37	42	35	34	44	44	47	51	45	45	37	35	..	35.5
Maquoketa *	Max	74	68	64	52	50	49	49	61	80	49	59	63	56	47	48	45	53	56	66	55	57	63	65	68	57	67	68	76	61	59	..	59.5
	Min	37	41	48	35	27	24	26	29	32	43	38	25	28	30	29	28	27	28	27	41	34	28	32	44	50	50	52	51	41	35	..	35.3
Marshaltown*	Max	79	62	64	51	49	49	54	72	77	51	56	66	58	47	48	47	52	59	65	53	57	64	62	63	54	63	72	65	59	57	..	59.2
	Min	42	42	49	33	29	26	22	25	38	41	32	33	27	21	25	25	24	26	29	40	34	30	35	45	48	48	51	48	41	32	..	34.7
Mason C.	Max	71	62	52	46	47	45	49	70	60	53	53	56	45	40	42	46	50	56	61	56	57	60	62	68	60	59	68	60	50	60	..	55.5
	Min	40	46	37	36	31	31	25	36	43	41	32	35	28	20	27	25	27	27	37	45	32	32	35	47	50	48	52	50	40	30	..	36.2
Massena	Max	78	69	68	52	43	55	64	81	84	68	56	65	64	47	45	60	61	64	59	65	57	64	63	60	60	58	75	77	60	60	..	62.7
	Min	45	56	40	33	28	25	22	40	45	40	30	30	31	22	22	47	30	22	36	59	84	34	43	42	47	51	46	47	38	35	..	37.3
Monticelo	Max	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
	Min	38	35	45	32	26	22	23	27	32	43	36	25	28	24	22	24	24	25	30	45	32	28	33	43	50	48	37	49	38	32	..	33.2
Mt. Ayr.	Max	79	70	60	51	49	59	64	85	88	68	57	65	66	58	51	50	57	66	60	76	63	72	67	59	69	62	80	76	66	66	..	65.3
	Min	46	56	41	35	30	27	28	38	48	39	31	31	32	28	24	22	25	29	35	49	38	37	42	48	47	50	47	51	40	40	..	37.8
Mt. Pl'snt	Max	78	77	71	55	52	53	51	68	82	71	56	62	58	54	46	46	50	58	65	60	60	63	65	67	61	60	70	80	67	62	..	62.3
	Min	43	54	41	36	29	26	25	34	42	41	39	31	34	32	27	26	26	26	29	52	37	35	36	39	49	54	51	41	54	38	..	37.6
Mt. Ver'n	Max	80	71	65	48	46	46	57	65	83	65	62	66	63	51	45	46	53	61	65	58	65	70	63	65	58	69	68	68	60	61	..	61.4
	Min	42	47	48	33	29	26	23	31	42	44	36	30	29	26	25	25	25	27	34	48	33	33	40	46	48	51	52	53	40	33	..	36.6
New H.	Max	72	65	60	47	45	42	47	64	67	55	52	61	47	41	42	44	50	55	65	61	56	63	64	68	66	61	69	65	55	55	..	56.8
	Min	38	45	40	32	30	26	23	32	38	41	30	31	28	19	25	25	25	25	34	43	32	31	38	48	48	49	52	52	38	30	..	34.9
Newton	Max	67	67	61	52	48	50	50	68	80	65	54	65	58	48	47	48	53	58	63	57	54	61	61	62	59	60	68	69	60	55	..	58 9
	Min	44	53	41	34	29	27	24	35	44	42	33	29	31	22	26	24	25	27	34	49	34	34	39	47	47	52	53	51	39	34	..	36 8
N'thwood	Max	72	62	51	40	45	48	52	58	52	50	43	49	44	39	40	42	45	54	65	59	56	65	65	73	60	61	71	63	53	58	..	54.5
	Min	40	40	38	34	32	27	22	32	38	36	33	30	28	16	29	25	28	24	31	39	29	29	33	45	45	49	50	49	38	26	..	33.8
Odebolt	Max	79	74	58	50	48	52	61	81	71	56	60	64	53	46	45	48	53	60	63	55	57	62	59	61	65	64	73	69	62	62	..	59.8
	Min	41	55	39	32	25	26	21	41	43	24	32	34	27	17	22	20	20	40	31	40	33	35	32	47	49	47	42	43	38	30	..	34.2
Ogden	Max	77	70	58	52	50	52	56	79	72	57	55	65	57	46	48	50	53	57	62	55	57	61	65	62	59	60	72	70	58	57	..	59.7
	Min	44	58	36	30	28	28	24	36	43	39	26	34	26	19	21	22	21	24	25	35	33	35	36	46	46	48	45	42	38	31	..	35 2
Olin	Max	72	69	66	55	46	48	47	62	76	..	..	..	..	42	45	48	50	56	65	56	54	61	62	66	61	64	66	72	63	60	..	58.7
	Min	77	55	41	34	26	24	23	41	45	45	28	30	30	20	20	23	20	23	37	42	35	34	44	44	47	51	45	45	37	35	..	35.5
Omaha, N	Max	79	64	54	51	48	58	65	80	80	48	54	66	60	43	44	46	53	56	66	55	57	63	65	68	57	67	68	76	61	59	..	59.5
	Min	47	54	42	37	31	32	32	48	48	42	32	37	30	24	25	26	29	32	42	42	36	43	50	51	49	52	49	50	44	42	..	39.9
Onawa	Max	80	71	64	54	53	60	69	84	78	60	63	69	57	46	48	52	57	62	60	55	63	63	60	57	56	63	75	71	67	64	..	62.7
	Min	42	57	40	32	25	26	25	42	44	38	26	31	31	18	24	22	20	22	39	41	31	34	42	47	47	49	45	45	38	36	..	35.3
Osage	Max	72	63	55	47	45	42	49	68	64	50	52	57	44	41	42	44	49	55	62	57	57	64	64	70	61	58	68	63	51	59	..	55.8
	Min	38	45	36	33	30	29	23	34	40	39	39	32	27	16	26	25	26	26	32	44	31	32	34	47	46	49	50	49	38	28	..	34,8
Oskaloosa	Max	77	68	66	54	50	52	54	72	84	68	55	65	60	45	46	47	52	59	65	65	57	64	63	64	58	65	75	70	63	57	..	61.3
	Min	45	54	42	36	28	27	25	36	42	45	36	28	34	26	29	25	25	27	37	50	37	32	40	41	49	54	54	53	42	37	..	37 9
Ottumwa	Max	74	68	65	55	51	55	53	74	85	73	54	62	60	49	52	45	52	58	65	76	57	64	65	78	68	65	75	78	72	60	..	63.6
	Min	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Pacific J'n	Max	79	72	55	52	50	60	65	80	84	60	54	74	68	49	47	48	53	62	65	55	60	64	57	55	63	75	68	67	71	70	..	62.7
	Min	45	55	40	32	26	21	24	42	44	37	32	27	34	26	22	22	19	22	35	48	35	35	47	48	53	43	45	35	36	42	..	35.7
Perry	Max	77	67	59	51	49	51	68	79	75	56	54	67	55	45	46	48	52	61	62	54	56	62	61	60	57	60	74	66	60	52	..	59.5
	Min	44	55	40	35	30	26	23	39	40	42	30	30	31	21	26	24	23	25	36	49	34	33	38	48	49	52	47	45	40	39	..	36.3
Plover	Max	78	65	55	47	48	46	55	77	62	50	53	56	43	41	43	46	51	57	70	55	55	63	65	69	57	58	74	60	57	60	..	57 2
	Min	42	50	32	30	27	26	20	36	42	38	25	30	29	14	23	20	20	22	33	35	30	30	35	45	48	48	47	42	30	28	..	32.6
Pocah'tas	Max	78	64	58	49	48	48	58	78	64	49	55	50	46	43	44	48	52	60	67	60	57	63	63	66	59	59	72	62	57	59	..	57.9
	Min	42	42	36	34	29	28	22	38	44	39	25	33	25	13	22	21	22	23	37	38	32	34	33	40	39	49	47	43	38	29	..	33.2
Red Oak	Max	79	..	..	..	..	..	..	..	..	49	56	68	63	49	52	51	56	64	61	65	61	63	64	59	57	53	75	69	68	..	..	61.0
	Min	46	50	50	34	30	28	27	30	30	43	34	29	35	30	27	26	22	25	30	42	36	36	42	50	50	50	46	48	42	38	.	36.9
Ridgeway	Max	70	63	65	47	49	45	48	69	72	57	57	64	47	46	47	46	55	61	66	57	62	70	70	73	61	62	72	70	59	66	..	59.9
	Min	37	44	38	33	30	28	22	33	40	41	32	33	28	20	25	25	25	26	35	42	31	35	40	48	44	50	51	51	39	33	..	35.3
Rock R.	Max	70	66	60	50	50	45	60	70	50	40	38	46	36	36	30	45	50	50	60	48	60	68	60	68	58	64	70	68	60	62	..	54.6
	Min	40	38	36	36	30	26	30	30	34	21	22	28	26	12	14	20	26	24	38	34	36	26	36	40	45	48	45	44	38	30	..	31 8
R. City	Max	78	66	58	50	48	50	50	80	73	53	53	58	48	44	46	48	53	58	65	58	55	64	65	68	60	58	72	64	58	54	..	58.3
	Min	41	53	36	30	28	28	24	36	43	39	26	34	26	19	21	22	21	24	25	35	33	35	36	46	46	48	45	42	38	31	..	33.7
Sac City	Max	75	69	59	51	47	50	57	78	71	..	56	60	51	42	44	47	50	57	61	54	55	60	59	63	58	59	71	66	58	57	..	58.1
	Min	41	54	38	33	29	28	24	37	43	..	26	34	26	19	24	22	25	25	31	41	32	34	37	47	47	49	48	44	38	30	..	34.7
St. Cha'les	Max	79	80	65	55	50	55	60	80	86	61	57	66	59	48	47	50	54	61	58	63	58	63	63	65	60	59	74	69	61	58	..	61.8
	Min	43	43	40	35	30	28	25	39	48	42	32	33	31	25	26	24	26	30	37	50	37	38	41	47	47	53	50	52	42	36	..	37.7
Sheldon	Max	79	67	58	52	50	53	61	78	62	52	57	56	34	43	43	49	53	61	56	53	64	63	65	67	59	68	72	63	60	62	..	58.7
	Min	44	53	35	31	26	26	21	38	42	34	20	34	25	12	22	22	21	18	34	38	28	28	38	46	47	42	44	41	35	28	..	32.4
Sibley *	Max	77	64	43	49	48	49	58	75	59	46	55	50	38	27	10	19	22	19	19	21	37	29	28	32	43	46	46	43	41	35	27	30.3
	Min	43	45	39	31	20	25	19	21	41	36	22	23	27	10	19	22	19	19	21	37	29	28	32	43	46	46	43	41	35	27	..	30.3
Sidney	Max	81	72	55	54	52	62	62	81	85	65	55	69	69	50	49	49	55	59	64	61	61	61	62	59	53	62	72	70	62	74	..	62.8
	Min	45	54	44	35	31	30	29	43	46	40	33	35	33	26	26	24	31	31	37	51	37	37	47	42	42	51	51	50	43	42	..	38.9
Sigourn'y	Max	77	73	68	54	51	52	55	71	84	75	56	65	61	54	47	47	52	60	66	62	60	65	65	69	59	70	74	75	64	63	..	63.1
	Min	43	52	47	36	28	26	26	34	41	45	37	29	32	28	29	23	25	27	35	50	37	32	39	47	50	50	53	53	41	36	..	37.7
Sioux C'r.	Max	75	68	59	49	46	49	59	75	65	52	57	53	44	40	40	45	50	58	57	53	59	63	65	67	59	62	70	62	57	60	..	57.3
	Min	42	52	31	30	28	28	21	36	38	34	20	32	23	16	24	22	22	27	34	38	30	29	34	47	47	46	43	45	35	29	..	32.8
Stockport	Max	80	76	67	54	51	54	56	71	83	70	54	63	62	48	46	44	51	60	65	63	59	64	65	66	60	61	70	76	65	60	..	62.1
	Min	44	53	48	38	31	28	25	33	41	43	39	29	36	34	30	25	25	30	34	52	39	32	39	47	50	54	54	54	45	40	..	30.1
Storm L*	Max	74	60	44	50	47	50	57	78	63	48	53	60	45	41	42	47	51	58	59	47	57	59	58	62	52	61	68	57	58	51	..	55.2
	Min	43	44	42	32	27	28	20	21	43	37	22	23	28	14	19	21	20	24	28	40	30	32	36	45	47	47	47	42	37	28	..	22.2
Thurman	Max	80	72	59	54	49	60	66	84	82	61	53	66	65	53	47	47	54	60	64	65	58	64	61	60	56	61	74	70	66	72	..	62.8
	Min	42	58	44	35	29	23	24	41	50	40	34	25	35	26	25	25	19	22	40	51	37	32	49	49	49	51	42	47	39	37	..	37.3
Tipton	Max	76	75	66	54	51	51	58	65	81	67	60	64	61	52	45	45	53	59	67	59	61	64	64	63	60	64	66	74	62	62	..	61.5
	Min	42	50	50	37	33	30	29	29	44	46	40	37	36	33	32	28	28	29	36	50	38	36	43	50	49	53	54	55	43	38	..	39.9
Toledo	Max	78	68	64	52	51	51	53	70	78	55	56	65	57	46	47	47	52	59	65	55	56	63	62	64	57	64	71	69	57	57	..	59.7
	Min	40	50	40	35	30	25	23	36	38	42	35	31	27	21	26	25	25	27	37	49	34	30	36	45	47	52	52	51	40	33	..	36.1
Vinton	Max	75	74	68	51	47	47	49	66	77	71	55	65	32	29	22	28	26	26	26	34	49	34	32	36	46	50	32	48	31	40	33	..
	Min	41	49	51	34	31	27	23	34	32	45	70	57	67	67	65	45	45	..	61	68	59	55	60	61	64	69	59	64	72	69	58	..	63.1
Wapello	Max	78	75	70	59	55	55	57	65	80	65	54	65	58	48	47	46	55	61	66	57	62	70	70	73	61	62	72	70	59	66	..	59.9
	Min	49	57	50	39	33	30	28	35	43	45	41	33	38	35	33	28	..	29	39	50	39	37	42	48	51	43	54	53	45	40	..	40.9
Washi'ton	Max	80	74	69	55	51	52	52	69	84	61	58	64	59	50	45	46	52	58	65	57	57	63	63	68	57	61	67	73	63	58	..	61.0
	Min	42	52	41	36	29	25	24	35	43	45	39	31	32	32	31	26	26	29	36	43	37	33	41	46	50	53	52	53	41	36	..	38 0
Washta	Max	80	81	60	62	54	50	56	62	80	71	55	58	62	44	46	44	50	54	60	54	60	64	64	72	60	60	60	60	60	60	..	59.8
	Min	42	55	36	42	24	24	20	17	22	38	35	21	32	30	13	22	18	13	38	38	31	28	36	46	48	48	44	40	35	28	..	32.5
Waterloo*	Max	75	65	63	52	48	49	50	69	76	54	57	66	52	44	46	47	53	57	67	56	55	64	65	68	54	63	68	64	57	58	..	58.7
	Min	40	40	50	33	30	27	22	35	35	43	32	34	29	19	27	25	25	26	36	44	34	31	36	46	48	50	46	47	40	32	..	35.4
Waukee	Max	81	68	58	51	51	54	65	83	87	58	60	69	60	46	46	52	55	65	62	60	64	64	61	62	58	59	71	69	61	56	..	61.9
	Min	44	57	39	34	29	28	25	39	44	41	30	31	29	21	24	24	23	26	39	50	35	36	40	48	48	52	48	48	40	34	..	36.9
Waverly	Max	73	62	59	48	46	45	48	67	75	55	51	63	48	41	43	43	44	50	65	55	58	62	64	69	61	61	69	63	54	56	..	56.5
	Min	40	48	40	33	30	25	25	34	35	42	32	33	29	20	26	25	21	26	34	44	34	30	34	42	50	50	49	50	40	31	..	35.1
Web'ter C	Max	77	71	59	56	48	49	54	76	69	56	53	65	63	44	54	48	52	53	67	52	55	61	66	66	62	65	71	71	60	60	..	60.1
	Min	43	51	39	34	29	24	21	36	38	42	30	35	29	16	24	23	22	23	34	46	32	28	38	46	48	50	52	45	40	31	..	35.0
Whitten	Max	72	69	59	48	46	47	52	69	71	55	52	65	54	42	45	46	50	57	67	55	54	61	63

DAILY AND MONTHLY PRECIPITATION FOR APRIL, 1905.

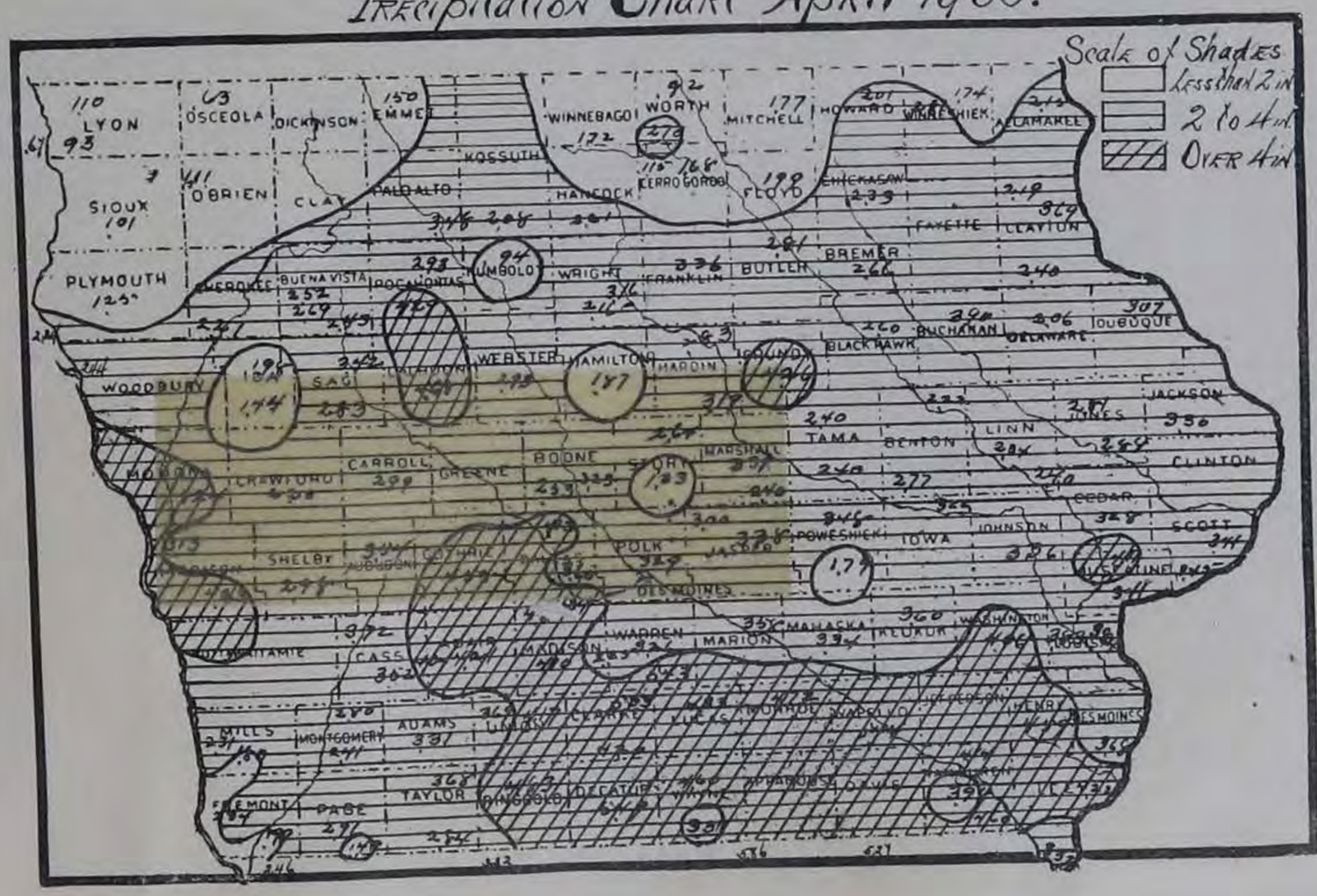
STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	.53	.04	....	....	....	.04	....	....	.09	....	....	....	....	.12	....	....	....	....	2.11	....	....	....	T	1.19	.05	T	T	....	....	....	4.17
Albia	.13	....	.63	.05	....	....	....	....	..	.08	.30	..	....	....	.13	.02	....	....	..	1.50	.58	....	....	....	.20	1.03	.07	....	....	....	....	4 72
Algona	.92	.25	.10	....	....	....	....	....	....	....	....	....	.10	....	T	....	..	..	....	.48	.02	....	....	....	.21	....	....	....	....	....	....	2.08
Allerton	....	.30	.07	....	.06	....	....	....	....	.58	....	....	....	....	.18	.02	....	....	....	.64	.26	....	....	T	1.10	.10	T	....	....	T	....	3.31
Alta	....	.23	.20	T	.01	....	....	....	....	....	....	....	.05	.03	T	....	....	....	....	1.48	....	....	.02	.02	.43	....	..	.05	..	T	....	2.52
Alta [near]	....	.25	.26	....	T	....	....	....	....	....	....	....	.10	.05	....	....	....	..	....	1.51	....	....	.02	T	.40	T	....	.07	....	.03	....	2.69
Amana	....	.05	.20	.08	.01	....	....	T	....	T	.	..	..	....	.04	....	....	....	....	1.20	.66	....	..	T	.76	.22	....	....	....	....	....	3.22
Ames	....	.05	.57	.02	....	....	....	..	....	....	..	..	....	02	.01	....	....	....	....	.12	....	....	....	.01	.39	.12	.01	.01	....	T	....	1.83
Atlantic	T	.63	.12	....	.02	..	..	....	....	....	....	....	T	13	.05	....	....		....	1.34		....	....	....	1.36	..	.	.07	....	T	...	3.72
Audubon		.78	.07	....	T	....	....	....	....	....	....	....	....	.18	.10	....	....	....	....	1.00	.47	....	....	.03	.72	.05	....	.03	....	.11	....	3.54
Baxter	....	.30	.50	...	....	....	....	....	....	....	....	....	..	10	..	....	....	....	....	1.30	.20	....	....	....	.50	.10	..	T	....	..	....	3.01
Bedford		.51	.04	....	.03		....	....	....	.22	....	..	..	T	.19	....	....	....	T	.79	....	....	....	.01	1.03	.02	T	....	....	....	....	2.84
Belle Plaine	....	.15	.02	.10	....	....	....	....	....	....	....	....	..	.02	.08	....	....	....	...	1.25	.75	....		...	.30	.10	..	T	....	....	....	2.77
Bonaparte	....	..	.25	....	....	....	....	....	....	.70	....	....	....	....	.25		....		...	2.15		....		....	.58	.67	..	....	....	T	....	4.60
Boone	....	....	.75	.10	T	T	....	....		....	..	....	T	T	T	T	....	....	....	.14	1.82	....	....	T	.02	.80	.08	....	.02	....	.	3 23
Britt	T	.52	.40	.12	T	....	....	..	..	....	....	....	.10	T	T	....	....	....	T	.82	.08	..	....	....	.13	.04	T	..	....	....	....	2.21
Buckingham	....	.13	08	.13	T	T	....	....	....	T	....	....	.02	T	....	....	....	....	....	1 44	..	....	....	T	.20	.40	....	....	....	T	....	2.40
Burlington	....	.04	....	..	.	....	....	....	....	.60	....	..	....	TT	.25	....	..	....	....	2.24	..	....	....		.40	.15	T	....	....	....	....	3.68
Carroll	...	.05	.54	.10	....	..	....	....		....	....	..	..	TT	T	T	....	..	....	.51	1.02	....	....	....	.15	.52	.10	....	T	....	....	2.99
Cedar Rapids	T	...	.07	.48	.02	.01	....	....	....	....	T			TT	T	....	..	....	....	.26	.88	....	....	....	T	.58	.04	T	....	....	....	2.34
Chariton	...	.38	..	....	....	....	....	....	....	.42	....	.	....	T	.10	T	....	..	T	1.88	..	....	....	T	1.25	.30	T	....	..	T	....	4.33
Charles City		14	.18	03	T	T	....	T	....	....	....	....	06		T	....	....	....	T	1.38	.	....	....	T	.18	.02	T	T	T	....	....	1.99
Clarinda	T	.12	.28	T	.08	....	....	....	....	....	.15		..	..	.15	....	....	....	....	.51	.61	....	....	....	.99	.02	T	....	....	....	..	2.91
Clear Lake		....	....	T	T	....	....	....	....	....	....	..	.10	....	....	....	....	....	....	.60	..	....	....	....	.35	.10	...	T	....	T	....	1.15
Clinton	...	.13	.38	.04	.06	.01	....	....	.05	.5	....	....	....	.05	....	....	....	..	....	1.94	.10	...	...	....	....	.37	....	.10	....	....	....	3.69
College Springs	..	.25		....		.04	....	....	....	10	....	....	....	..	.20	....	....	....	....		....	....	....	T	.59	.40	....	....		....	..	1.49
Columbus Junct'n	....	T	.16	.04	....	..	....	T	..	.46	..	..			.11	....	....	....		1.80	.07	....	....		.84	.85		T	....		...	3.83
Corning	....	.52	T	..	.15	....	....	..	....	.19	....	....	....		.13	.02	....	..	....	1.14	....		T	T	1.16	T	T	T	....	T	....	3.31
Corydon		.21	.08	T	.03	....	....	....	....	.56	....	..	....	....	.29	T	....	....	..	1.59	....	....	..	T	1.44	.45	T	...	.	..	....	4 60
Cres o	....	T	.96	.28	T	T	....	..	....		....	....	.15	.01	.	T	....	..	.	.40	.20	...	..	....	.03	.03	T		....		....	2.01
Creston	T	.13	.55	.01	T	.06	....	..	....	....	.08	....	..	....	.25	.05	...	....	....	.90	52	....	..	....	.74	.36	.04	....	....	....	.	3.69
Cumberland	...	.42	.17	....	....	....	....	....	....	....	....	..	....	.10	.01	..	....		.41	1.19	....	....	....		1.21	.01	....	....	....	T	....	3.52
Davenport	...	.04	.11	.01	.10	T	....	T	.05	.50	....	....	....	.02	.01	T	....		T	1.96		....	....	T	.61	.05	T	.01	....	T	..	3.45
Delaware	..	....	.21	.10	05	....	.02	....	....	.10	....	....	....	.04	....	....	....	....	....	.73		..	....	....	.65	.11	T	.05	....	....	....	2.06
Decorah	....		.43	.16	T	T	T	....	....	..	.	....	.15	10	....	....	....	....	....	.65	.15	....	....	....	.06	.04	....	....	....	....	....	1.74
Denison	T	44		.06	T	..	..	....		..	....	..	T	.05	.06	.01	T	....	....	.61	.02	....	..	.75	T	....	....	06	....	.14	....	2.20
Des Moines	..	35	.25	.04	T	....	..	....	...	T	....	.	.01	.11	.07	....	....	....	.05	1.31	....	....	....	T	.79	.20	....	T	....	.11	....	3.29
De Soto	....	.6	.02	.07	....	....	....	....	....	....	....	.	....	T	.14	....	....	....	....	1.38	.48	....		T	1.34	.20	T	....		.05	....	4.34
Dows		55	.40	.13	....	....	....	....	....	....	....	....	....	.05	....	....	....	....	....	1.08	.05	....	....	....	.40	T	.50		....		....	3.16
Dubuque	....	.02	1.01	.05	.02	T	..	T	.01	.27	....	....	.04	....	....	T	....	....	....	1.36	.01	...		....	.25	.02	.01	T	....	....	....	3 07
Earlham	..	.75	T	T	T	....	....		....	T	....	....	....	T	.21	....	..	....	....	1.48	1.10	....	T	T	.82	.12	...	T	....	T	....	4 48
Elkader	....	....	.44	.15	....	....	..	.	...	.02	....	....	....	.03	....	....	..	....	....	1.25		....		....	.46	.	..	.05	....	....	....	2.40
Elliott		.43	T	....	T	....	....	....	....	T	..	..	....	T	.18	..	....	....	....	.98	.05	....	....	04	1.02	.10	.	T	....	....	....	2.80
Estherville	....	T	.91	.20	....	....	....	....	....	....	....	....	....	.08	....	T	....	....	....	T	..	..	....	....	....	.21	.08	T	T	....	....	....	1.50
Florence	T	.15	.35	.19	..	..	....	....	....	....	....	....	.05	...	....	....	....	..	1.15	....	....	....	....	....	....	.24	.06	....	....	....	....	2.16
Forest City	....	...	.60	.30	T	....		....	....	..	....	....	....	.20	....	.	..	....	....	....	.32	....	....	..	....	.40	.08	T	T	....	....	1.72
Fort Dodge	...	T	.75	.25	T	....	....	....	....	....	....	....	....	10	....	....	....	....	....	..	1.35	....	....	.	T	.40	.08	T	T	....	....	2.93
Fort Madison	....		T	..	T	T	....	..	....	.95	....	.	....	....	.10	....	..	....	1.87	.45	....	....	....	....	.70	....	.15	....	....	T	....	4.22
Galva	....	.02	.21	....	T	.	....	..	....	....	....	....	T	T	T	....	....	..	....	1.20	....	....	T	.13	.32	.10	T	T	....	T	....	1.98
Gilman	....	....	..	..	..	....	....	T	.	....	....	....	..	....	....	....	....	....	T	1.65	.31	..	T	T	.40	.04	....	....	....	....	....	2.40
Glenwood	....	T	T	....	T	....	..	....	...	T	....	....	....	.20	T	..	....	....	T	.45	....	....	T	T	1.15	....	....	....	....	....	....	1.80
Grand Meadow	..	..	.40	....	.03	....	....	....	....	....	....	..	..	.08	....	....	....	....	..	....	1.35	..	....	....	....	.18	....	.15	....	....	....	2.19
Greene	....	.06	.47	.10	..	....	....	..	..	....	....	....	....	.05	....	....	....	....	....	.78	.94	..	....	....	.27	.14	..	..	....	....	....	2.81
Greenfield	....	.68	.16	T	.06	....	....	....	.	.06	T	....	....	.04	.15	..	....	....	....	1.42	.37	....	T	T	1.06	.10	T	.11	....	T	..	4.21
Grinnell	....	.24	.32	.01	T	....	....	....	.	.01	....	....	....	.32	....	....	....	....	T	2.00	....	....	..	T	.50	.06	T	.02	....	..	....	3.48
Grundy Center		.24	.62	.31		....	....	..	....		....	....	....	.07	....	....	....	....	....	2.05	....	....	....	....	.42	.55	....	....	....	....	....	4.26
Guthrie Center	...	.68	.05	.02	T	....	....	....	....	....	....	....	....	.01	.84	....	....	....	....	1.64	.42	...	T	T	1.00	.20	.01	.06	....	.12	....	4.55
Hampton	..	.72	.37	.05		....	....	....	....	....	....	....	.10	..	..	....	....	....	....	1.25	....	....	.02	...	.49	.08			....	.28	....	3.36
Hanlontown	..	.50	.24	.25	T	....	....	....	....	....	....	....	1 25	.	T	....	....	..	....	.28	....	...		...	.10	.05	T	.03	....	....	....	2.70
Harlan	....	.28	.07		T	....	....	....	....	....	..	....	T	.10	.15	.02	....	.	....	1.10	.08	....	T	.01	1.12	.04	T	.01	.	T	....	2.98
Hopeville	...	.44	.16	T	.01	....	....	....	..	.18	....	....		.03	.06	....	..	.10	T	2.10	....	....	....	T	.97	.08	.07	....	....	T	....	4.20
Humboldt	.04	.45	.15	..	..	....	....	....	....	..	....	..	.03	..	..	....	..		....	....	.05	....	....	....	.22	....	....	....	....	....	....	.94
Ida Grove		....	.18	....	....	....	....	....	....	....	....	....	T	T	T	..	....	....	....	.88	....	....	.05	....	29	....	....	....	....	.04		1.44
Independence	....	.20	.50	T	.05	T	....	....	..	T	....	....	....	.15	....	....	....	.	....	1.00	.95	....		....	....	1.00	T	.05	..	....	....	3.90
Indianola	....	.35	.09	.06	....		....	....	....	.17	....	....	....	.01	.08	.01	....	..	.	1.40	.09	....	...	T	.96	T	T	..	....	.05	..	3.26
Inwood	T		.42	....	T	....	....	....	....	....	....	....	.15	T	....	....	....	....	....	....	....	....	....	....	.18	....	....	.18	....	....	..	.93
Iowa City		..	.05	.20	.03	.02	....	....	..	....	.06	..	....	T	.04	....	....	..	....	.88	1.15	..	..	....	.09	.81	.03		....	....	....	3.36
Iowa Falls	T	....	.55	.34	.03	T	....	....	T	T	....	....	....	.03	T	T	...	..	....	T	1.26	....	....	....	....	.51	.11	T	T	....	....	2.83
Keokuk		.07	T	....	....	T	....	..	T	.45	....	....	....	T	.08	..	....	..	.08	1.37	....	...	....		.59	.05	T	.63	..	T	....	3.32
Keosauqua		....	.16	.12	T	T	....	....	..	.18	.57	....	....	....	.22	.03	..	....	....	1.20	.54		....		.07	.63	.26	....	....	....	....	3.98
Knoxville	..	.40	.10	.05	....	..	....	....	....	.08	....	....	....	T	.17	T	....	..	....	1.30	...	..	....	T	.68	.70	....		....	.10	....	3.58
Lacona	..	..	.03	.48	.02	....	....	....	....	.00	....	....	....	.04	.01	....	....	....	....	2.11	...	..	...	.01	1.97	.62	....	....	....	.05	....	5.43
Lansing	...	....	.38	.22	.05	T	..	.	....	.20	....	....	20	.20	..	....			....	..	.60	...	..		.20	.10	...		....	....	....	2.15
Lenox		.75	....	....	.03	....	....	....	....	.16	....	....	....	.01	.11	....			T	1.12	.05	....	....	T	1.38	.07	T	..	....	....	....	3 68
Le Claire	..	....	.21	.11	T	T	.02	....	.	.07	.61	....	.		....	....	T	...	....	1.07	.91	....		....	T	.39	T	....	.02	....	....	3.41
Little Sioux	....	.04	.31	....	....	....	....	....	....	....	....	....	....	.37	.15	....	....	....	....	1.07	.11	....	T	.03	1 01	.01	....	.03	....	....	....	3.13
Le Mars		T	..	T	....	....	....		....	....	....	....	T	T	T	....	....	....	....	.40	....	....		T	.50	....	....	..	.35	...	....	1.25
Leon		.63	.06	.	.01	....	....	....	....	.62	....	....	....	...	1.25	....	....	..	....	1.49	.08	....	...	T	1.13	22	....	....	....	....	....	5.49
Logan	....	....	.06	.02	.10	....	....	....	....	....	....	....	....	.20	.10	....	....	....	....	1.98	...	.	...	.05	1.67		.03	.02	....	....	....	4.23
Maquoketa	....	....	.05	.10	..	....	....	....	....	....	.10	....	..	.08		....	....	....	....	.27	1.07	....	....	..		.46	.17	..	....	....	....	3.30
Marshalltown	05	....	.55	.35	.01	..	....	....	....	....	....	....	....	.05	T	....	....	....	....	.29	1.62	....	....	....	.02	38	.07	....	....	....	....	3.39
Mason City	.10	.50	.20	T	....	....	....	....	...	....	....	....	.10	....	T	....	....	....	....	.55	....	....	....		.23	T	...	T	....	..	....	1,68
Massena	....	.01	.04	....	....	....	....	....	....	....	....	....	....	....	.20	....	....	....	....	1.30	.56	....	....		1.23	...	....	....	....	....	....	4.04
Montezuma	....	....	.02	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	1.70	..	....	....	....	.07	....	....	....	....	....	....	1.79
Muscatine	....	....	.03	.05	.01	T	..	..	.06	.35	....	....	....	.01	.05	..	....	....	....	1.34	.98	....	....	....	.02	.37	.06	....	.08	....	....	3.41
Monticelo	....	....	.17	.50		.15	....	....	....	....	....	....	..	....	....	.	..	..	....	.25	1.00	..	....	....	....	.74	....	....	....	....	....	2.81
Mt. Vernon	....	T	.14	.06	.01	T	....	....	.	.01	....	.. .	..	T	T	....	....	....	T	1.30	30	....	....	T	.50	08	T	T	....	..	..	2.40
Mount Ayr	....	.60	.15	....	.05		....	....	....	.59	....	....	....	T	.30	....	....	....	....	1.30		..	...	T	1.70	.10	T	.15	....	T	....	4.83
Mt. Pleasant	....	.04	.11	....	....	T		..	.70	....	....	....	....	T	.31	....	....	....	....	2.73		....	....	....	.46	.23	....	....	..	.01	....	4.59
New Hampton	T	.18	.52	.20	....	T		....	....	....	....	....	....	.05	....	..			....	.48	.55	....	....	....	.20	.15	....	....	....	....	....	2.33
Newton	....	.40	.14	.10	....	....	....	....	....	T	....	....	....	T	.11	....			....	1.05	.85	..		....	.52	.21	....	T	....	T	....	3.38
Northwood	....	.05	.30	.05	T	..	....	..	....	....	....	....	.45	....	....	....		..	T	.03	...	....	....	....	.03	T	...	T	.01	....	....	.92
Odebolt	...	.35	.20	....	T	....	....	....	.	....	....	....	T	T	....	....	....	....	....	1.45		....	....	.05	.52	.15	....	.06	.05	....	..	2.83
Ogden	....	.55	.10	..	..	..	..	..	....	....	....	....	....	.05	....	....	....	....	....	1.03	.06	....	....	.03	.52	.14	....	....	....	.65	....	2.53
Olin	T	T	.70	.01	T	T	....	....	....	.02	....	....	....	.05	....	....	....	....	....	1.37	....	....	....	....	.73	T	T	T	....	....	....	2.88
Omaha, Neb	....	.08	.12	....	T	..	..	....	....	....	....	....	..	.13	T	....		....	.02	2.09	....	....	T	.12	.85	T	T	.02	....	....	....	3.43
Onawa	....	.02	.20	...	T			....	....	....	....	....	..	.05	.02	..	..	....	...	2.15	.22		.02	.02	1.40	.06	T	.02	....	.06	..	4.24
Osage	....	.44	.44	.17	T	....	....	....	....	....	....	....	.10	....	....	....	....	....	....	.45	.08		....	T	.07	.02	....	T	T	....	....	1.77
Oskaloosa	....	.25	.06	....	....	..	T	T	.10	....	....	....	....	.10	.02	....	....	....	T	2.00	..	....	....	T	.23	.52	....	....	....	.06	....	3.34
Ottumwa	....	.27	T	....	....	..	....	....	.30	....	....	....	....	....	....	....	....	....	....	3.25	....	....	....	....	1.17	.45	....	....	....	....	..	5.44
Pacific Junction	...	.06	.05	....	T	....	..	....	....	.02	....	....	....	.04	.11	...	....	....	....	.95	..	T	T	1.06	02	T	....	....	....	....	..	2.31
Perry	....	.85	.17	T	....	....	..	....	....	....	....	....	..	T	.08		....	....	....	1.63	....		T	T	.83	.40	....	.08	....	.09	....	4.13
Plover	....	1.05	.18	....	....	....	..	....	....	....	....	....	.10	....	....	....	....	..	....	1.30	....				30	..	....	T	....	....	....	2.93
Pocahontas	....	....	1.21	....	T	....	....	....	....	....	..	....	.13	T	T	....	....	....	....	....	2.27		T		.63	....	....	.05	....	....	....	4 29
Red Oak	....	.02	.34	....	T	T	....	..	....	....	.02	....	....	T	.17	.02	....	....	....	.44	.15	....	.02	T	72	.51	....	....	....	....	....	2.41
Ridgeway	....	.23	.48	.09	.01	T	...	.01	.01	....	....	....	.30	....	....	....	....	....	.66	.90	....	....	.01	....	.05	.06	....	T	T	....	....	2.81
Rock Rapids	....	....	..	....	.05	....	....	....	....	....	....	....	.30	T	T	..	....	....	....	....	....	....	....	T	T	....	....	.75	....	....	....	1.10

DAILY AND MONTHLY PRECIPITATION FOR APRIL, 1905--CONTINUED.

STATIONS.	DAY OF MONTH																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Rockwell City	....	1.45	.52	T	..	....	....	....	....	....	....	....	.10	....	....	....	..	..	....	1.95	....	....	....	....	.51	....	....	....	....	.15	....	4.68
Sac City	....	.46	.20	T	T	....	....	....	....	..	....	....	05	.03	.02	....	....	....	....	2.01	....	....	....	.01	.46	.17	..	.01	....	....	....	3.42
St. Charles	....	....	.10	.04	.02	....	....	....	....	....	....	....	....	.03	.21	..	....	....	....	....	....	....	....	.08	1.42	.28	....	.03	..	.04	....	2.25
Sheldon	....	.04	.18	....	.09	....	....	....	....	....	....	....	.20	.10	.05	....	....	..	....	T	....	....	....	....	.20	....	....	.25	....	....	....	1.11
Sibley	....	.03	.04	.17	....	....	....	....	....	....	....	....	.09	....	....	.01	....	....	....	....	..	....	....	....	....	.10	..	.03	.16	....	....	.63
Sidney	....	.10	.08	....	T	....	....	....	....	.11	....	..	....	T	.10	..	....	..	....	.60	....	....	....	.04	.96	....	....	....	....	....	....	1.99
Sigourney	....	.13	.15	.08	T	....	....	....	....	.11	....	....	....	.02	.15	....	....	..	....	2.00	.30	..	....	....	.40	.18	....	....	....	.10	....	3.60
Sioux Center	....	T	.27	T	.05	....	....	T	....	....	....	.10	.05	T	....	....	....	..	..	T	....	...	T	....	.24	....	....	.30	....	....	....	1.01
Stockport	....	.03	.17	.08	T	T	....	....	....	.85	....	....	....	....	.15	.18	....	....	....	1.52	....	....	....	T	.41	.75	T	T	....	T	....	4.14
Storm Lake	....	..	.21	.14	T	....	....	....	....	....	....	....	....	.02	T	....	....	....	..	.12	1 46	..	....	.01	T	.45	T	....	.02	....	....	2.43
Stuart	....	.20	.10	T	T	....	....	....	....	....	....	....	....	....	T	....	....	....	....	1.31	.52	....	....	....	.86	.10	....	....	....	.06	....	3.15
Thurman	....	.04	.12	....	T	....	....	....	..	.21	....	....	....	.02	T	....	....	....	....	.67	T	..	T	.06	1.20	.02	T	T	..	T	....	2.34
Tipton	....	..	.45	....	.07	....	....	....	....	.08	....	..	....	....	....	....	....	....	....	1.70	....	....	....	..	....	.98	....	....	....	....	....	3.28
Toledo	....	..	.50	.20	T	....	....	....	....	T	....	..	....	T	.03	....	..	....	....	1.10	.10	....	..	....	.30	.15	....	.02	....	....	....	2.40
Vinton	....	....	....	.16	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.24	.10	....	....	..	.72	....	....	....	....	....	....	2.22
Wapello	..	....	....	.45	....	....	....	....	....	....	....	....	....	....	.14	....	..	....	....	2.00	.42	....	....	..	.50	.33	....	T	..	....	....	3.84
Washington	..	....	.14	....	....	....	....	....	....	.13	.12	..	....	.06	....	....	....	....	....	2.65	....	....	..	....	....	.80	.16	....	..	....	..	4.06
Washta	....	T	.20	....	....	T	....	....	....	....	....	....	....	T	..	T	....	....	....	1.35	....	....	....	T	.50	....	....	.22	....	T	....	2.27
Waterloo	....	T	.13	.14	.01	T	....	....	....	....	....	....	....	.05	....	....	....	....	.	.08	1.63	....	....	....	.21	.34	.02	.04	....	....	....	2.60
Waukee	....	.48	.14	.09	.03	....	....	..	....	T	....	....	....	.05	.18	..	....	....	....	1.17	.39	....	....	T	.79	.14	T	.01	....	.18	....	3.60
Waverly	T	.03	.33	.09	.01	T	....	....	....	.02	....	....	.10	....	....	....	..	....	....	1.00	.40	....	....	....	.39	.24	T	.05	....	....	....	2.66
Webster City	....	.47	T	T	....	....	....	....	..	....	....	....	T	....	....	....	....	....	.97	....	....	..	....	....	.25	.18	....	....	....	....	....	1.87
Whitten	....	.35	.36	.20	T	....	..	....	....	....	....	....	....	.10	T	....	....	....	..	1.00	....	....	....	T	.50	.68	T	T	....	....	....	3.19
Wilton Junction	....	.10	.45	.10	.10	.12	....	....	..	.33	....	....	....	....	.10	..	....	....	....	2.00	..	....	T	....	.40	.41	....	T	....	....	....	4.11
Winterset	...	....	.38	.20	T	....	....	....	....	.12	....	....	.	T	.08	....	....	....	....	1.00	1.34	....	....	T	.90	.07	....	.01	....	T	....	4.10
West Bend	....	2.06	.20	T	T	....	....	....	....	....	....	....	.10	....	T	....	....	....	....	.87	....	....	....	....	.25	T	....	T	....	T	..	3.48
Woodburn		.30	.05	.02	.02	....	..	..	T	.14	....	..	....	T	.20	.01	....	....	....	2 05	.07	...	....	T	2.00	.47	T	....	....	T	....	5.33
Zearing	.05	.16	.41	.37	.01	...	....		..			....	....	T	T	....				1.20	...		....	....	.21	.23		T			....	2.64

T. Amount too small to measure.

Precipitation Chart April 1905.



MAY, 1905 No. 5



MONTHLY REVIEW OF THE IOWA WEATHER AND CROP SERVICE

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CENTRAL STATION, DES MOINES, IOWA.

J. R. SAGE,
DIRECTOR

GEO. M. CHAPPEL,
LOCAL FORECASTER,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

THE IOWA WEATHER AND CROP SERVICE

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STATE BOARD OF AGRICULTURE,

CONSTITUTED AS FOLLOWS:

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Allerton	Rex Shriver
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Osage	G. D. Pattingill
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West Union	A. B. Blackman
Wilton	Thos. Boot
Wiota	I. S. Coomes
Woodward	George Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XVI. MAY, 1905. No. 5.

IOWA CROP REPORT, JUNE 1, 1905.

Following is a summary of the June 1st reports, received from county and township correspondents of the Iowa Weather and Crop Service.

CORN.—The reports show an increase in the acreage in more than half the counties, and a slight decrease in some of the others wherein a portion of the acreage prepared for corn was too wet to plant prior to June 1st. The average increase for the State is about three per cent. The number of acres by counties can not be given until after the completion of the State census, now in process of tabulation.

The average condition of the corn crop was estimated about ninety per cent, or about the same as last year on corresponding date. A considerable portion of the crop, however, was scarcely visible above ground on June 1st.

The other staple farm crops are rated as follows, in condition:

Winter wheat, 102 per cent; spring wheat, 99; oats, 95; barley, 96; rye, 98; flax, 94; potatoes, 97; meadews, 100; pastures, 97.

CONDITION OF FRUIT.—Apples, 80 per cent, plums, 70, peaches, 35; cherries, 65; grapes, 90; strawberries, 103; raspberries, 96; blackberries, 94.

CONDITION OF LIVE STOCK.—Cattle, 100 per cent; sheep, 99; hogs, 99; spring pigs, 90; horses, 99; foals, 95.

Condition of crops June 1, 1904.—Corn, 90 per cent; winter wheat, 85; spring wheat, 94; oats, 92; barley, 93; rye, 91; flax, 85; potatoes, 95; meadows, 96; pastures, 97.

The area of spring wheat sown this year has been reduced probably 10 per cent below the area harvested last year. The oats acreage about the same as last year. Barley acreage has been reduced 7 to 10 per cent.

MAY WEATHER AND CROPS.

May was below normal in temperature and above the average in precipitation. The mean temperature for the state was 58.3° which is 2.1° below the May average. The northern section showed a deficiency of 3.3°; the central section, 1.6° and the southern section, 1.6°. Light frosts were noted in all districts on several mornings, but the damage to vegetation was quite small and mainly confined to low lands in the northern section. The average precipitation for the state, as shown by records of one hundred and thirty-two stations, was 5.95 inches which is 1.82 inches above normal. The greatest excess was 3.68 inches above normal in the northern section. There was more than the normal amount of cloudiness in all districts. During the first week in May the temperature was slightly above normal, and the rainfall generally light. This was favorable for preparing corn ground with soil in fine tilth, and a good beginning was made in planting that most important cereal. The second week brought excessively wet and cold weather, with numerous severe windstorms, which delayed planting and other field work, though the pastures, meadows and small grain received benefit from the moisture. The third week was also cool and cloudy, but the rainfall was not generally excessive.

Field work was resumed on driest ground about the 17th, and considerable progress was made in planting corn, and on the warmest land germination was fairly good. The latter part of the month afforded about the usual alternation of heat and cold, with some more than the average amount of coolness and moisture. The conditions were not generally favorable for germination of corn and much more than the usual amount of replanting was done. In numerous localities, where sufficient care was not taken in selecting and testing seed, the farmers replanted their entire acreage of corn. At the close of the month a fair start had been made in cleaning out the cornfields, and reports indicated a more promising condition of the corn crop than had been deemed possible at an earlier date. Wheat, oats, barley, rye and flax made good growth, with promise of fair yield. The pastures and meadows were extra good. The apple crop appeared to be very good, cherries and plums light. Strawberries were extra fine, ripening earlier than usual.

NOTES AND COMMENTS.

In the beginning this old earth was thickly sown with interrogation points. And some of these are continually cropping out to perplex mankind, somewhat like weeds and fungi. Happily we are not compelled to solve offhand all the complex problems relating to the mysteries of life and the universe. One by one, men are finding out some things heretofore inexplicable; but each step in advance opens out a new field of inquiry, and brings new zest to activity.

Some men are continually stating and restating great problems, while wiser men are intent on solving those questions that most deeply concern human welfare day by day, here and now. The best solvent to apply to all problems is plain common sense.

On a farm near Hawarden, Sioux county, during the first week in May, lightning struck a barbwire fence and gave a fatal shock to a boy named Bert Liston, who was standing near the fence. This is a warning as to the danger of constructing wire fences without protection by ground wires.

And another warning comes from the Belle Fourche district in South Dakota, where a stroke of lightning caused the death

of one hundred horses in a herd of one hundred and three, that were in contact with a wire fence. In thunderstorms keep away from live wires.

Fifty years ago Livingstone carved his name on a tree standing in view of the marvels of the Victoria Falls, in what was then "Darkest Africa." After Livingstone came Stanley and it was only thirty years ago that this great explorer explored the boundaries of Lake Victoria Nyanza, and it is less than twenty years ago when he made his last and in many respects most memorable trip through the then unknown regions of Central Africa, yet we have before us now a two-page advertisement of a fast railway train running through the very region explored by Livingstone and Stanley. A train de luxe leaves Cape Town every Wednesday for Kimberly, Mafeking and Bulawayo, connecting with parlor car service and sleeping accommodations to Gwelo, Salisbury and Victoria Falls. These trains are lighted by electricity and provided with dining and buffet accommodations. The Cape to Cairo Railroad indeed reaches nearly every important point, which only a few years ago we were reading about in the wonderful narratives of Livingstone's and Stanley's explorations. Nothing could illustrate more vividly the rapidity with which modern civilization is moving and the speed with which Darkest Africa is being opened, not only to the commerce but to the tourists of the world. Not only have the Victoria Falls thus been brought within the easy reach of travelers, but this stupendous wonder of the world, like Niagara, is about to be utilized to provide power to conduct electric energy for use in transportation and industry.—*Wall Street Journal*.

ALMOST IDEAL.

(Selected)

I know a spot where a brook spreads out and forms a limpid pool;
The elms and alders shade the place and keep it nice and cool.
A mossy bank slopes down on which one may rest all day long,
And many a bird is there to cheer the angler with its song.

A flattened rock on which to put your creel is near at hand;
In short, accommodations there may fitly be termed "grand."
There's everything about the spot the fisherman could wish,
And the only drawback seems to be the total lack of fish.

WEATHER BUREAU SAVING.

[The Prairie Farmer.]

In connection with what Chief Willis L. Moore of the United States Weather Bureau says in another column on the matter of "long range forecasts", it is timely that something should be said relative to the actual value that weather forecasts are to the farmer. Obviously, it is impossible to secure definite information as to the amounts annually saved through the agency of the weather bureau, but as the farmer becomes so situated that he can take advantage of its forecasts he is enabled to increase its benefit to himself and curtail losses that would otherwise occur. However, some interesting information on this point is published in the June issue of the Century magazine on the authority of Gilbert H. Grosvenor, who says:

"Some time ago a skeptical insurance company determined to investigate the amount of property saved in one year by the warnings of the weather bureau. It was a company of conservative men whose estimate would be under rather than above the truth, but it found that on an average the people of the United States saved every year $30,000,000 because of their weather service. As the people contribute $1,500,000 every year to its support, this means that they get annually a dividend of 2,000 per cent on the investment. An investment in which the original capital is paid back twenty times over in twelve months is extraordinarily profitable and well worth investigation.

Men are willing as a rule to invest money when they are able to secure a nominal return. If it be a fact that the investment of the cost of the government weather service pays a dividend of 2,000 per cent, it is certainly worthy of support. Thus the attacks that are occasionally made upon the service are illy advised, indeed, and worthy of little consideration.

Our readers are familiar with the bulletins that are issued in every State each Monday night for the week preceding. While these largely cover the conditions of the crops and the climate for that week, they are none the less valuable to every progressive farmer anxious to keep in touch with conditions in neighboring counties and States.

CHIEF MOORE ON LONG RANGE WEATHER FORECASTS.

(From the Prairie Farmer.)

From time to time our attention has been called to the claims of the long range weather forecaster, and his attacks upon the United States government service. While we have only words of commendation for the weather bureau, *The Prairie Farmer* has no sympathy for the weather fakir who seems to be content to work the public for what money there is in the business. Some time since we received a letter from a certain "long range forecaster" who desired to sell his "forecasts" to this publication. Ordinarily his communication would have been consigned immediately to the waste paper basket without further thought, but having seen the service offered to us in a number of our "country dailies" and observing a direct attack in this circular upon the Weather Bureau of the United States Bureau of Agriculture at Washington, we were prompted to forward the communication to chief Willis L. Moore of the Weather Bureau. We received from him the following reply, which we take the liberty of reproducing:

"I have just received your letter inclosing the pamphlet of a certain long range weather forecaster, and his personal letter to 'The Editor,' in which he asks for editoral comment that will advertise the forecasts that he has to sell. He calls attention to his oft-repeated warnings to the public that unusually destructive tornadoes, and other radical weather changes, would occur in April and May, *notwithstanding the fact that these are the most quiet months of the year*. He thinks that the fact that these warnings were verified is worthy of editoral comment by you. In answer, permit me to say that his statements are not founded upon fact, for April and May are the two months in which tornadoes always occur. Any one who uses long range predictions can make just as good a guess of tornadoes for April and May as the long range forecaster. It is ridiculous for any one to claim that a prediction of 'April and May will be the dangerous storm months this year, expect tornadoes and other dangerous storms' bears any definite relation to any definite storm occurring at any definite time at any definite place. Any faker can gain fame with the ignorant by predicting tornadoes for April any May, and at times he may include the latter part of March and all of June, because tornadoes occur every year during those months. I know of no April, May or June in which tornadoes have not occurred.

"The Weather Bureau is able to foresee from the morning map, when conditions are favorable over a large area, such, for instance, as that of a state, for the development of tornadoes, and very often it has predicted them and they have occurred inside of the area defined; but several years ago I prohibited the forecasting of tornadoes, for the reason that they only touch an infinitesimal part of the region over which the conditions were

favorable for their development, and it was not considered advisable to alarm millions of people, in hundreds of towns in order that a few persons in one city, or in two or three adjacent towns, might take the necessary precautions. We have contented ourselves with saying to the public that, whenever, in the spring or early summer months, the forecast contains the statement that there is a likelihood of severe thunderstorms, there is a possibility that some of them may develop into tornadic whirls.

"I believe it to be the function of an institution supported at public expense to do its best to expose deception, and those who would prey upon the credulity of the ignorant for the purpose of deriving personal profit. With this thought in mind, I have persistently attacked the long range forecasters, no one of whom, I believe, has any scientific principle back of his prediction. Some of them believe that, because of a few coincidences between the conjunction of certain planets and their forecasts, they have the ability to make predictions that have value; but the majority know that they are charlatans and that they are perpetrating fraud upon the public in selling their forecasts. I have adopted the policy of never mentioning the name of any of these long range forcasters in my opposition of them. This would be to their profit, as it would bring him into the limelight, enable him to talk back and attract attention to himself, which would only create curiosity in the public mind as to what predictions he was making, and so inure to his personal profit.

"I thank you for calling my attention to the matter. I am sure that *The Prairie Farmer* will never disseminate ignorance or untruth, but that in the future, as in the past, it will be found giving out correct information that will benefit its readers and educate and instruct them."

THE FUNNEL AND THE TORNADO.

[Kansas City Star.]

A feature of the tornado that enhances its terror is the mystery of its operation. There is something uncanny about the power of the funnel-shaped cloud that expends its force on a comparatively narrow swath and leaves the surrounding territory untouched. People instinctively inquire how such an enormous source of energy is developed and why it displays itself only in certain portions of the country.

Perhaps the simplest explanation of the tornado's formation can be based on the analogy of the escape of water from the opening of a funnel. The particles of water all tend to slide down the funnel's sides in straight lines to the mouth. But the opening is narrow, the particles jostle against one another, and in their effort to escape a swirling motion is set up. This is slow about the edges, but increases in rapidity toward the center in accordance with a well known law of physics. If the funnel is large the escaping water may attain an extreme velocity at the center. A familiar illustration is the miniature whirlpool produced when the plug is withdrawn from a washbowl.

The tornado is simply the washbowl inverted; that is, the suction is upward, not downward. There is a sudden rarefaction of air. A partial vacuum is created and air is sucked in from all sides to fill it. The particles crowd against each other in rushing toward the center, a vortex motion is produced and about the core of the storm the air is supposed to revolve frequently at the rate of four hundred or five hundred miles an hour.

The partial vacuum results from the contact of moist air masses of different temperatures. This occurs most frequently in the spring when the earth is heating rapidly, but when the upper atmosphere is still abnormally chilly. When such conditions exist a mass of warm, humid, light air may be isolated and hemmed in between colder, heavier masses. Suddenly it may happen to be released and so may shoot upward, releasing its moisture in rain and being helped in its ascent by the latent heat liberated by the condensation of the vapor. The colder, heavier air rushes in from all sides and the tornado vortex is the outcome.

Experience has shown that for this result there must be usually a temperature of at least 70 degrees with great humidity at a time of year when there may be much colder atmospheric strata near the earth. California is not visited by tornadoes because the whole atmospheric mass there is subject to the ameliorating influences of the ocean climate, and no large bodies of air at sharply diverse temperatures come in contact with each other. Similarly, tornadoes do not occur north of the fiftieth parallel, because the necessary heat is lacking. But they develop in the central and eastern parts of the United States, in Southern Europe and Africa.

CLIMATOLOGY OF THE MONTH OF MAY 1904.

BAROMETER.—Mean pressure, 29.90 inches; highest observed, 30.28 inches, at Dubuque, on the 23d; lowest observed, 29.31 inches, at Des Moines, on the 3d; range for state, 0.97 of an inch.

TEMPERATURE.—The monthly mean temperature for the State, as shown by records of 123 stations, was 58.3°, which is 2.1° below normal. By sections the mean temperatures were as follows: Northern section, 56.0°, which is 3.3° below normal; central section, 58.6°, which is 1.6° below normal; southern section, 60.4°, which is 1.6° below normal. The highest monthly mean was 63.6°, at Keokuk; lowest monthly mean, 53.2°, at Sibley. The highest temperature reported was 88°, at Glenwood and Welton Junction on the 3d and 29th; lowest temperature reported, 28°, at Washta on the 26th. The average monthly maximum was 82.2°; average monthly minimum, 34.3°. Greatest daily range, 49°, at Carroll; average of greatest daily ranges, 36.9°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 132 stations, was 5.95 inches, which is 1.82 inches above normal. The averages by sections were as follows: Northern section, 7.60 inches, which is 3.68 inches above normal; central section, 5.88 inches, which is 1.79 inches above normal; southern section, 4.38 inches, which is .03 of an inch above normal. The largest amount reported was 10.83 inches at Hanlontown; least amount reported, 2.57 inches at Bonaparte. The greatest daily rainfall reported was 3.48 inches at Onawa on the 11th. Average number of days on which .01 of an inch or more was reported, 14.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 59 miles per hour, from the south, at Sioux City, on the 3d. Average number of clear days, 12; partly cloudy, 11; cloudy, 8.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Charles City	29.90	30.25	23	29.38	3
Davenport	29.90	30.24	23	29.50	14
Des Moines	29.90	30.23	23	29.31	3
Dubuque	29.92	30.28	23	29.49	3
Omaha, Neb	29.87	30.26	31	29.19	3
Keokuk	29.90	30.19	31	29.49	3
Sioux City	29.88	30.23	31	29.35	3
Means	29.90	30 28	23	29.31	3

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Charles City	6.621	39	SW	7
Davenport	6.101	32	SE	9
Des Moines	7.462	38	SW	1
Dubuque	5.619	27	NW	14
Keokuk	6.323	34	SW	11
La Crosse, Wis	5.825	28	SE	1
Omaha, Neb	7.541	44	N	14
Sioux City	11.444	59	S	3

CLIMATOLOGICAL DATA FOR MAY, 1905.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	56.1	- 3.4	80	3	32	26	38	7.95	†4.50	2.05	....	16	10	8	13	NW	3, 11, 24, 27
Alta	Buena Vista	1,513	14	55.6	- 3.0	80	1	32	8, 26	38	8.74	†4.52	2.04	....	17	9	14	8	S	2, 3, 7, 9, 11, 24, 28
Alta (near)	Buena Vista	.....	....	.....	.....	.....	.....	.....	.....	.....	8.22	....	1.52	....	16	....	....	....	.....	
Alton	Sioux	.....	....	55.4	.....	80	1	33	5, 8	37	8.80	.....	1.98	....	17	12	10	9	NW	1, 2, 3, 7, 9, 10, 11, 18, 25, 28, 29
Britt	Hancock	1,236	8	55.8	- 3.3	80	3	31	26	38	8.10	†4.41	2.44	..	21	2	23	6	SW	2, 4, 29
Charles City	Floyd	1,015	18	55.1	- 4.8	78	3	34	26	37	7.07	†3.02	1.52		17	6	11	14	NW	2, 3, 7, 9, 10, 11, 18, 29
Clear Lake	Cerro Gordo	1,241	7	57.4	- 3.9	84	31	37	5, 8, 26, 27	37		.....	2.40	..	....	10	15	6	NW	
Cresco	Howard	.....	31	55.0	- 1.7	78	3	34	26	32	6.60	†2.84	1.59	T	18	10	9	12	S	2, 3, 4, 7, 9, 11, 15, 29
Decorah	Winneshiek	857	12	56 4	- 4.8	83	3	33	7	39	6.48	†2.11	1.86	....	15	....		....	....	
Dows	Wright	1,142	9	55.8	- 3.9	79	1	31	26	36	8.15	†3.08	1.65	....	17	16	7	8	NE, SW	1, 2, 3, 9, 11
Elkader	Clayton	727	21	58.4	- 2.5	84	3	33	7	41	6 35	†2.30	1.98		15	12	14	5	SE, NW	4, 9, 10, 11, 15, 29
Estherville	Emmet	1,298	12	54.6	- 4.1	79	1, 3	31	26	41	9.15	†6.02	2.20	....	18	17	3	11	SE, NW	
Fayette(a)	Fayette	.....	15	55.1	- 2.6	80	3	31	7	40	6.45	†1.61	1.64	....	18	....	....	....	.....	3, 4, 7, 9, 11, 29
Florence	Wright	1,226	...	.....	.....	.....	.....	.....	.....	.....	6.96	.....	1.50	....	19	5	21	5	E	3, 4, 6, 9, 10, 11, 25, 28
Forest City	Winnebago	1,226	11	55.8	- 3.8	80	3	34	5, 26	34	7.89	†4.09	2 26	....	14	15	1	15	E	
Grand Meadow	Clayton	1,180	11	56.1	- 2.1	77	31	36	5, 7, 8, 26	34	8.60	†3.45	2.34	....	15	7	9	15	SE, NW	
Greene	Butler	924	8	57.3	- 3.3	81	3	33	26	40	7.51	†3.37	1.75	....	18	6	11	14	W	
Hampton	Franklin	1,155	13	57.6	- 0.8	80	1, 3, 20	35	5, 8, 26	39	8.50	†4.33	2.45	....	14	5	20	6	SW	
Hanlontown	Worth	.....	....	55.2	.....	79	1, 3	32	26	40	10.83	.....	3.26	....	15	15	9	7	SE	3, 4, 10, 11, 15, 26
Humboldt	Humboldt	1,095	16	55.4	- 4.9	82	1	33	26	37	7.04	†3.16	1.60	....	17	15	7	9	SW	11
Inwood(j)	Lyon	.....	....	56.5	.....	82	1	29	4	38	6.29		1.40		13	16	2	13	NW	4
LeMars	Plymouth	1,224	7	56.3	- 4.3	82	1	32	5, 8, 26	41	8.87	†5.28	2.32		11	7	16	8	S	28, 29
Mason City	Cerro Gordo	1,132	8	56.6	- 2.4	81	3	33	26	38	8.19	†4.24	2.35	....	15	8	17	6	N	9, 10, 11, 13, 25, 29
New Hampton	Chickasaw	1,169	7	56.6	- 2.7	79	3	34	7	39	7.35	†2.88	1,71	....	20	6	16	9	NW	15
Northwood	Worth	1,222	8	56.2	- 2.7	80	3	34	26	40	7.89	†3.47	1.35	....	21	7	15	9	NW	4, 7, 10, 11, 15, 25
Osage	Mitchell	1,184	13	56.4	- 0.7	81	3	34	26	37	7.42	†3.19	2.39	...	18	9	5	17	S	7, 9, 11, 13, 15, 29
Pocahontas	Pocahontas	1,190	...	56.6		81	1	33	8, 26	40	8.04	.....	2.05	....	11	14	11	6	SW, NW	3, 11
Plover	Pocahontas	.....	8	56.7	- 3.7	82	2	32	26	39	6.60	†3 32	1.75	....	10	16	5	10	S	2, 3, 4, 6, 29
Ridgeway	Winneshiek	1,215	7	57.4	- 3 2	82	3	36	5, 7, 8	36	6.88	†1.73	1.88	....	21	10	16	5	S	2, 3, 4, 7, 9, 10, 11, 13, 14, 15, 29
Rock Rapids	Lyon	1,021	7	55.4	- 1.8	80	1	30	8	38	5.35	†1.96	.75	....	10	7	10	14	NE	
Sheldon	O'Brien	1,422	6	55.3	- 8.7	82	1	31	8	40	8.60	†4.93	2.90	T	14	14	6	11	S	1, 2, 3, 4, 9, 15, 16, 24, 26, 28, 29, 30
Sibley	Osceola	1,212	12	53.2	- 5.4	81	1	31	26	48	7.96	†4.61	2.09	....	18	16	1	14	SE	1, 3, 4, 10, 25
Sioux Center	Sioux	.....	6	54.6	- 604	79	1	30	8	36	6.94	†3.12	1.12	....	14	11	8	12	S, SW, NW	1, 9
Storm Lake	Buena Vista	1,440	8	54.6	- 3.4	79	1	32	8, 26	41	7.50	†3.98	2.03	..	15	15	4	12	SE	
Washta	Cherokee	1,157	....	56 6	...	85	25	28	26	40	6.83	†3.67	1.92	..	12	14	8	9	N, S	9
Waverly(a)	Bremer	942	9	57.0	- 4.4	79	3	35	7	38	6.80	†2.18	1.84	....	19	8	15	8	E	1, 2, 3, 7, 9, 10, 11, 14, 29
West Bend	Palo Alto	1,197	12	55 9	- 3.4	80	1	32	8	38	6.60	†3.76	1.44	....	16	....	....	....	N, SE, S	1, 4, 11
Average		.....	...	56.0	- 3.3	80.5	.....	32.6	.....	38 4	7.60	†3.68	.....	T	16	11	11	9	NW	

CENTRAL SECTION.

Amana	Iowa	721	27	59.8	- 0.2	83	29	36	7	35	7.87	†3.41	3.48	...	16	10	14	7	SW	3, 6, 9, 10, 11, 15, 24, 25, 28
Ames	Story	926	21	58.4	- 1.2	80	1	35	5	35	5.51	†1.28	1.65	....	16	13	13	5	NW	
Audubon	Audubon	1,301	9	57.8	- 2.5	83	1	31	26	44	6.19	†2.27	1.95	..	17	6	17	8	.....	4, 10, 11, 13, 15
Baxter	Jasper	998	....	58.2	- 3.9	82	29	35	5	38	6.31	.....	1.40	..	12	11	11	9	SE	
Belle Plaine	Benton	826	14	59.2	- 0.1	83	29	37	5	38	8.28	†3.84	2.90	....	15	10	10	11	E	
Boone	Boone	....	....	57.6	.....	80	1	36	5	43	7.43	.....	2.67	....	15	13	11	7	.....	3, 9, 10, 11
Buckingham	Iowa	.....	....	.....	.....	.....	.....	..	.....		5 50	.....	1.53	..	15	....	....	....	.....	
Carroll	Carroll	1,265	13	57.2	- 2.3	83	1	31	26	49	6.29	†1.88	1 98	....	14	22	3	6	.....	2, 3, 7, 8, 9, 10, 11, 13, 14
Cedar Rapids	Linn	735	23	60.2	† 0.2	82	3, 10	38	1	42	8.31	†3.79	2.80	..	17	7	16	8	SW	
Clinton	Clinton	609	38	60.6	- 0.3	87	3	35	7	39	5.95	†1.85	1.88	....	12	13	5	13	SW. W	10, 11, 29
Davenport	Scott	606	34	61.0	- 0.7	84	29	43	26	35	3.12	-1.20	1.69	....	13	10	10	11	NW	9, 10, 11, 15, 28, 29
Delaware	Delaware	1,083	12	57.2	- 1.5	80	3	36	5, 7, 26	33	6.18	†2.01	1.63	....	14	12	14	5	S	9, 10, 11, 15, 28, 29
Denison	Crawford	1.180	9	57.1	- 3.5	83	1	26	4	48	5.53	†1.93	1.03	..	17	16	11	4	N	
Des Moines	Polk	861	27	59.1	- 1.3	80	29	38	5	36	4 44	- .26	1.87	....	15	4	20	7	SW	3, 9, 10, 11, 13, 15, 24, 28, 29
De Soto (a)	Dallas	866	...	59.5	.....	82	10	35	5	33	3.97	.....	1.29	..	13		....	....	SW	
Dubuque	Dubuque	655	32	59.0	- 0.9	80	3	40	9	27	4.06	† .07	1 29	....	16	11	8	12	S	6, 10, 11, 15, 16
Fort Dodge (c)	Webster	1,126	....	56 5		82	1	35	1, 26	47	4.82	.....	1.00	....	17	18	2	11	SE	
Galva	Ida	1,290	12	55.6	- 5.1	81	1	30	26	40	8.05	†4.75	1.53		14	18	6	7	S	
Gilman	Marshall	1,052		.....	.....	.....	.....	.....	.....	.....	5.52	†1.52	1.17	....	13	14	9	8	S	
Grinnell	Poweshiek	1,023	10	59.1	- 1.1	82	29	38	26	32	6.35	†1.70	2 28	....	15	11	11	9	NW	4, 9, 10, 11, 14, 15, 28, 29
Grundy Center	Grundy	976	12	57.3	- 1.4	80	3	33	26	37	82	†1.87	1.14	....	16	11	9	11	S	7, 8, 9, 10, 11, 13, 14, 15, 16, 27, 28, 30

CLIMATOLOGICAL DATA FOR MAY, 1905—CONTINUED.

CENTRAL SECTION—CONTINUED.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	PRECIP., IN INCHES. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days	SKY. Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.	DATES OF THUNDER STORMS.
Guthrie Center..	Guthrie	1,077	7	59.2	- 1.8	82	1	33	26	44	4.79	† .22	1.22	....	14	21	5	5	SW, NW	3, 7, 9, 11, 15, 28
Harlan.....	Shelby ..	1,192	....	58.0	- 3.7	82	1	32	26	41	4.29	- .07	.89		13	4	22	5	E	1, 2, 8, 9, 10, 11, 13, 14, 15, 28
Ida Grove.....	Ida.....	1,220		57.1	.....	83	1, 2	32	7, 26	41	6.36	.....	1.28	....	11	15	13	3	W	
Independence ...	Buchanan. ..	921	40	57.4	- 2.3	78	3	35	7, 26	38	7.44	†3.27	2.55	...	14	14	8	9	SE, W, NW	3, 7, 10, 15, 28, 29
Iowa City	Johnson.....	683	47	60.0	- 0.3	85	10, 29	37	7	42	5.37	†1.03	1.09	....	15	13	2	16	N	
Iowa Falls....	Hardin	1,170	10	55.9	- 3.8	79	3	33	26	38	7.73	†4.18	1.65	....	17	11	10	10	NW	2, 3, 4, 7, 9, 10, 11, 15, 28
Little Sioux.....	Harrison	.....	....	60.0	.....	85	1	36	8	38	4.25	.....	.82	....	15	12	12	7	SE	8, 9, 10, 13, 28, 29
LeClaire..	Scott	576	....	.....	.....	.....	.....	.....	.....	.....	3.96	.....	.69	....	14	...	...	.	S	
Logan.	Harrison	928	36	58.7	- 2.5	84	1	32	5	38	4.26	† .07	1.02	....	14	7	20	4	NW	
Maquoketa.....	Jackson.	688	12	58.4	- 2.7	81	3	34	7	37	5.78	†1.26	1.23	.. .	16	14	3	14	NE	
Marshalltown ...	Marshall	947	10	58.3	- 1.8	82	3	35	26	39	6.11	†1.37	1.15		11	15	5	11	NW	9
Monticello (a)....	Jones.....	925	....	58.6	- 0.9	87	24	32	26	47	5.57	†1.66	1.04	....	14	12	12	7	SE, NW	29
Muscatine.....	Muscatine		46	.....	.....	.....	.....	.....	.....	.....	3.20	-1.18	.64		14	...	...	....	N, S	
Mt. Vernon	Linn.....	847	30	59.8	† 0.4	87	10	35	5	47	5.41	†1.32	1.06	....	17	13	6	12	NW	8, 9, 10, 11, 15, 16, 28, 29
Montezuma	Powe hiek	.....	...	.....	.....	.....	.....	.....	.....	.....	4.35	.	.70	....	11	...	...	...	.....	
Newton.....	Jasper..... .	944	15	58.1	- 2.8	80	6	37	5, 7	38	8.25	†4.79	2.52	....	14	13	12	6	SE, S	
Odebolt.	Sac	1,356	8	56.8	- 5.1	83	1	29	8	42	6.92	†4.15	1.75	.	13	17	6	8	.. ..	
Ogden	Boone	1,058	9	58 9	- 2.5	80	1, 3	34	5, 26	37	5 40	† .24	1.94	...	12	14	14	3	S	
Olin	Jones	760	7	59.0	- 2.0	82	29	35	7	33	6.37	†1.85	2.90	..	13	14	9	8	NW	9, 10, 11, 15, 27, 29
Perry.....	Dallas..... ...	975	....	59.4	.....	82	1	34	5	40	6.06	.....	2.20		12	4	23	4	.....	
Onawa..	Monona	.....	....	61.5	- 2.2	87	1	35	5	43	7.57	†3.19	2.05		15	20	6	5	NW	3, 7, 9, 11, 29
Rockwell City....	Calhoun.	.....	8	57.0	- 3.6	83	1	31	5, 8	41	7 05	†3.71	2 05		12	15	8	8	.....	
Stuart	Guthrie	.....	8	59.8	- 2.3	81	1, 22	31	13	37	3.99	- .46	1.05	....	11	2	17	12	.....	
Sioux City	Woodbury.....	1,165	16	56.9	- 1.5	83	1	35	5	37	8.41	†4.74	3.18	....	17	2	18	11	N	2, 3, 7, 9, 11, 13, 24, 28, 29
Tipton.....	Cedar	807	....	61.8	†1.1	82	29	40	12	37	4.08	-1.23	1.53	..	6	18	9	4	SW	
Toledo..... ...	Tama.....	856	9	58.6	- 3.2	81	3	34	26	36	5.90	†2.19	1.50	....	16	9	17	5	NW	
Waterloo.	Black Hawk. ..	862	16	57.6	- 2.4	80	3	35	26	37	5.66	†1.28	1.29	T	17	7	14	10	.....	3, 4, 10, 14, 15, 29
Waukee	Dallas.... .	1,039	....	60.4	..	85	10, 31	35	5	40	5.01	.....	1.23	..	13	10	15	6	SW, NW	3, 8, 9, 10, 11 13, 15, 24
Wilton Junction.	Muscatine.	683	11	61.2	- 1.2	88	29	36	7	34	4.72	† .40	.98	...	10	13	5	13	NW	
Webster City	Hamilton	.....	..	58.2	.....	82	20	31	26	38	6.98	.....	1.49	...	10	22	0	9	SE	
Whitten (a)	Hardin	1,036	....	57.8	- 2.0	81	3	33	5, 26	39	6.66	.....	1.90		11	9	16	6	SW	1, 4, 7, 8, 9, 10, 11, 12, 13, 14, 15, 28, 29
Zearing	Story	718	..	56.7	...	79	1, 3	31	3, 7	48	6.75	.....	1.32	...	14	12	12	7	SW	8, 9, 10, 11, 15
Average ...	..... .	... ..	....	58.6	- 1.6	82.3	.....	34.6	.....	34.7	5.88	†1.79	.....	T	14	12	11	8	NW	

†Above normal. ‡Received too late to be computed with means. *a*. One day missing; *b*. two days, etc. §Not supplied with self-registering instruments.

SOUTHERN SECTION.

Afton	Union.	1,212	11	60.4	- 2.7	87	29	34	5	37	4.76	†0.05	1.28	....	10	4	20	7	SW	
Albia.....	Monroe.....	957	.	60.0	- 2.2	85	29	38	1, 5, 26	41	4.76	† 54	2.50	....	12	18	1	12	SE	
Allerton.....	Wayne	.....	....	60.3		84	29	36	5	35	3 81	.....	1.14	....	13	19	8	4	NW	9, 10, 27
Atlantic	Cass	1,164	14	58.4	- 1.2	84	1	31	26	46	3.03	-1.14	.70	...	9	6	6	19	S, SE, W	2, 9, 11, 13, 28
Bedford	Taylor		5	59.1	- 3.7	79	1	33	5	40	6 28	† .16	1.09		14	12	5	14	SE, NW	
Bonaparte	Van Buren....	.....	14	61.6	- 1.3	85	29	38	7, 12	34	2.57	-1.46	.93	....	8	....	....	....	....	
Burlington.....	Des Moines....	544		62.8	.....	85	4, 29	40	12	32	3.07	.....	.61	....	12	16	9	6	S	11, 13, 29
Chariton	Lucas	1,042	10	59.2	- 3.5	83	29	35	5	38	5.51	†1.24	1.35	....	11	17	7	7	SE	3
College Springs..	Page.....	.....	14	59.2	- 2.2	82	1	35	5	38	4.32	- .62	1.87	...	11	21	3	7	NW	
Columbus Junct.	Louisa	586	...	60.8	.....	84	29	35	18	33	3.18	.....	.74	...	13	21	7	3	SE	9, 10, 11, 15, 16, 28, 29
Corydon(d)	Wayne.....	992	12	60.5	- 1.3	84	29	36	5	33	8.84	-1.13	1.15		14	11	14	6	S	11, 15
Corning	Adams..... ..	1,127	13	59.4	- 1.6	81	1	34	5, 26	38	4.31	-0.42	.75	....	12	13	13	5	SW, NW	9, 11, 13, 29
Clarinda	Page..... ..	.....	15	59.7	- 2.0	84	1	33	5	44	6.32	†1.53	1.68	....	12	20	1	10	NE	24, 27, 28
Creston.....	Union	.....	....	57.9	....	79	1	35	5	37	4.32	.....	1.32	....	12	16	9	6	E, SE, S	10
Cumberland	Cass	.....	....	.....	..	.....	.....	.....	.....	....	4.94	† .93	1.23	....	8	17	6	8	NE, SW	9, 14
Earlham	Madison.	.....	....	57.2	.....	80	29	31	5	39	4.01	.....	1.27	....	12	18	8	5	SW	4, 10, 11, 13, 15, 29
Elliott	Montgomery ..	.....	..	59.6	...	87	31	32	5	47	3.55	.....	.78	....	11	11	20	0	SE	3, 10, 11, 13
Ft. Madison.....	Lee	516	56	.....		.....	.....	.....	.....	.....	3 92	- .94	1.35	....	6	7	11	13	S	
Glenwood.....	Mills	.....	17	59.8	- 2.1	88	3	32	28	37	3.09	-1.40	1.00	....	9	1	25	5	SW	
Greenfield	Adair.....	.....	14	60.4	- 0.1	84	10	32	5	44	4.94	† .34	1.31	T	14	20	6	5	SW, NW	3, 8, 10, 12, 13, 15, 16, 24, 28
Hopeville.....	Clarke.....	.....	13	59.0	- 1.4	80	10, 29	35	5	36	4.76	†0.00	1.67	....	12	5	20	6	S	10
Indianola.....	Warren	....	..	59.5	- 1.4	82	29	36	26	36	4.02	- .68	1.42	....	11	2	14	15	SW	2, 3, 6, 8, 9, 11, 12, 28
Keokuk	Lee.....	619	34	63.6	† 1.0	86	29	43	26	31	3.01	-1.06	1.04	....	9	11	12	8	SW	10, 12, 13, 15 25, 28, 29
Keosauqua	Van Buren .	644	13	61.5	- 1.7	87	10, 29	38	7	42	3.77	- .57	1.33	....	15	10	10	11	....	
Knoxville	Marion.....	920	12	60 8	- 2.3	85	29	37	5	35	5.57	†2.21	1.50	....	13	8	14	9	SE	
Lacona.....	Warren.....	.....	....	.....	.....	.....	.....	.....	.....	.....	5.43	- .49	1.98	....	11	7	17	7	.....	
Lenox	Taylor	1,250	10	59.8	- 2.8	80	1, 10	33	5	35	5.42	† .71	1.20	...	12	19	9	3	S, NW	9, 11, 28
Leon.....	Decatur	1,120	....	60.9	.....	81	29	37	5	36	5.39	.....	.91	...	16	18	5	8	S	
Massena.....	Cass	.....	....	60.0	.....	82	1, 22	33	5	43	4.40		1.52	....	14	19	4	8	E, S	3, 9, 10, 13
Mt. Ayr	Ringgold.....	1,236	12	61.3	- 1.1	87	10	35	5	41	6.74	†1.35	1.70	....	15	8	17	6	E	
Mt. Pleasant.....	Henry.....	729	24	62.4	† 1.0	87	29	40	12, 26	33	4.01	- .33	.91	....	12	16	11	4	SW	9, 10, 11
Omaha, Neb.	Douglas.....	1,113	34	60.1	- 1.6	84	1	38	5	32	3.40	- .97	.79	....	11	3	16	12	S	1, 2, 3, 9, 11, 13, 28
Oskaloosa.....	Mahaska ...	843	22	60.4	† 0.0	83	29	39	7, 26	35	3.34	- .23	.90	....	13	16	1	14	SW	
Pacific Junction..	Mills	960	6	60.6	- 2.0	84	1, 10	33	5	42	2 83	-2.16	.73	....	14	12	13	6	S	15, 29
Red Oak	Montgomery ..	1,033	8	63.1	† 0.0	86	21, 23	35	26	41	3.86	† .12	1.07	....	11	18	8	5	SW	
St. Charles.	Madison	1,070	...	59.2	...	82	29	36	5	36	5.05	.....	1.00	....	15	16	10	5	NW	
Sidney	Fremont	.....	....	62.0	....	86	1	36	5	39	5.96	.....	2.00	....	9	18	4	9	NW	24, 29
Sigourney.....	Keokuk	887	9	61.4	- 2.8	87	29	38	5, 12, 26	36	3.83	- .15	.55	....	15	1	29	1	NW	4, 10, 15
Stockport.....	Van Buren....	.....		61.6	.....	83	29	40	7	33	3.45	.....	.71	...	15	10	6	15	NW	10, 11, 15
Tharman	Fremont	.....	....	61.1	- 2.2	85	1	34	5	45	6.20	†1.49	2.28	....	11	13	9	9	NW	
Wapello	Louisa	588	7	61.4	- 3.0	82	4	41	12	31	4.23	† .64	1.30	...	10	16	12	3	W	
Washington.....	Washington...	769	13	60.6	- 0.8	84	28	39	5, 7, 12	35	4.05	† .62	.77	....	13	....	....		SW	
Winterset.....	Madison	1,129	14	59.8	- 2.5	81	29	35	5, 26	40	3.63	- .94	.98	....	12	21	4	6	NW	11, 13
Woodburn	Clarke.....	961	6	59.4	.....	82	29	34	7	38	6.06	† .67	2.53	....	14	14	11	6	SW	11, 15
Average	....	.....	....	60.4	- 1.6	83.7	.....	35.7	.....	37.7	4 38	† .03	.....	....	12	13	10	8	SW, NW	
Average for State	.....	.....	....	58.3	- 2.1	82.2	.....	34.3		36.9	5.95	†1.82	.....	...	14	12	11	8	NW	

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MAY, 1905.

STATIONS.		DATE																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max	79	77	80	73	65	63	75	73	58	81	80	71	64	69	76	60	67	69	77	78	80	79	77	80	64	71	67	74	81	74	79	73.1
	Min	42	57	60	46	34	46	33	43	46	52	54	38	40	51	50	43	45	42	41	47	50	51	47	50	53	36	57	55	60	53	47	47.8
Albia*	Max	79	79	83	69	76	67	74	64	64	84	79	72	69	63	76	60	66	66	71	75	78	78	74	78	68	68	67	78	85	65	77	72.8
	Min	38	45	57	53	38	40	42	47	41	44	62	40	42	59	59	50	40	43	42	43	53	54	43	47	56	38	42	52	61	55	47	47.2
Algona	Max	79	76	80	71	53	52	73	59	49	69	73	70	70	68	72	55	64	61	74	76	72	75	70	75	68	64	55	67	61	70	74	67.7
	Min	44	47	62	45	35	42	35	35	37	40	43	37	47	50	47	43	44	41	41	45	48	50	43	51	44	32	47	49	55	48	48	44.5
Allerton	Max	78	77	80	74	65	66	73	65	60	82	80	71	65	68	76	60	65	69	72	75	75	78	74	77	67	68	67	78	84	67	80	72.1
	Min	44	51	62	50	36	48	38	43	47	57	57	37	52	53	48	43	41	42	43	42	33	54	41	48	56	37	51	57	62	55	45	48.5
Alta	Max	80	75	78	63	59	53	72	55	45	67	75	69	66	64	65	53	65	62	72	74	77	77	76	77	58	63	52	65	62	67	73	66.6
	Min	42	56	55	37	33	42	40	32	42	42	39	36	47	53	48	48	41	40	42	52	51	52	50	55	41	32	47	48	49	47	46	44.7
Alton	Max	80	73	79	70	56	55	71	59	55	64	71	71	65	69	67	57	65	63	73	75	76	78	76	78	61	62	59	65	61	68	73	67.6
	Min	43	44	50	42	33	43	33	34	42	42	40	33	44	50	46	47	43	40	39	39	41	51	49	57	44	34	48	35	53	46	45	43.1
Amana	Max	77	79	80	74	65	61	71	66	53	79	74	69	70	63	74	60	62	60	72	77	76	78	71	80	68	64	71	76	83	69	77	70.9
	Min	47	55	63	60	39	47	36	44	44	44	57	40	55	56	47	47	43	45	44	45	51	53	45	45	55	39	40	57	62	53	47	48.8
Ames	Max	80	77	78	75	64	60	75	67	53	77	77	69	64	78	69	57	63	64	72	74	76	74	71	72	66	64	68	65	79	69	75	70.2
	Min	45	54	60	50	35	44	40	38	43	44	46	40	51	53	48	44	45	43	41	44	49	51	46	47	52	36	47	53	59	52	46	46.6
Atlantic	Max	84	77	80	71	64	60	78	71	55	79	80	72	67	72	72	58	68	70	76	78	78	78	77	74	65	67	63	65	77	65	77	71.5
	Min	45	55	62	45	33	41	32	38	43	50	45	36	49	51	50	48	41	35	33	40	45	45	50	54	53	31	50	53	54	53	37	45.2
Audubon	Max	83	78	79	72	61	53	78	62	53	78	78	69	65	69	70	55	66	67	74	79	78	77	77	75	65	67	64	62	75	67	77	70.3
	Min	41	52	61	42	36	43	34	36	44	47	44	37	50	50	49	47	43	37	38	44	44	52	50	48	53	31	50	51	58	52	40	45.3
Baxter	Max	79	76	80	76	65	63	74	69	53	78	74	67	65	67	70	56	66	65	74	78	78	76	73	78	64	57	72	67	82	70	79	70.2
	Min	43	56	59	50	35	43	36	39	43	44	47	38	53	54	45	45	43	41	40	48	48	51	41	47	43	37	45	53	60	51	48	46.2
Bedford	Max	79	75	76	68	65	64	74	72	66	78	78	68	64	70	72	59	68	69	71	75	75	76	75	75	66	67	65	78	77	69	75	71.1
	Min	47	52	61	45	33	46	34	41	47	50	48	31	53	54	43	47	43	33	42	42	43	53	50	52	53	35	50	56	61	54	41	47.1
Belle Pl'e	Max	77	78	79	70	65	64	72	60	45	80	70	70	67	65	75	60	64	68	72	76	72	70	72	81	70	68	72	70	83	73	78	70.7
	Min	40	54	60	55	37	43	38	43	43	42	55	39	53	55	47	45	43	43	44	46	53	44	45	48	56	38	50	55	62	53	48	47.6
Bonapar'e	Max	78	79	82	76	69	68	72	65	58	84	79	70	69	63	76	63	62	64	72	75	77	76	72	78	70	67	72	77	85	79	77	72.8
	Min	45	55	64	63	41	51	38	50	45	51	61	38	53	57	49	48	45	45	48	48	50	55	42	48	60	39	52	57	64	54	49	50.3
Boone*	Max	80	75	78	63	62	59	74	53	57	77	75	68	68	68	71	55	65	64	72	75	78	75	71	71	61	63	69	63	77	69	75	68.7
	Min	37	47	59	47	36	41	40	38	41	48	55	39	44	48	50	48	44	43	43	50	53	54	48	52	55	37	39	52	55	52	52	46.5
Britt	Max	79	78	80	70	57	55	74	58	48	75	74	70	69	67	73	58	63	59	74	79	79	73	74	77	64	66	54	70	67	70	76	68.5
	Min	46	50	50	45	33	40	32	34	40	37	43	35	41	48	45	41	42	39	39	44	48	50	46	51	45	31	47	50	49	47	45	43.0
Burling'n	Max	78	80	83	85	70	69	70	63	58	83	79	71	78	65	77	64	60	64	70	75	78	77	73	78	70	67	73	80	85	79	78	73.5
	Min	49	59	64	66	41	54	42	53	44	51	61	40	55	55	50	49	45	48	44	49	53	55	47	52	60	42	53	58	64	58	49	52.1
Carroll*	Max	83	73	76	60	60	62	76	58	57	77	77	66	65	71	72	66	69	67	77	76	77	72	75	78	67	63	58	62	73	69	76	69.7
	Min	34	55	60	48	34	39	38	34	41	42	50	37	50	49	50	43	42	38	40	44	48	49	46	53	49	31	48	48	55	51	43	44.6
Cedar R*	Max	80	80	82	76	66	62	74	63	51	82	72	71	76	65	75	59	61	61	74	79	79	73	73	80	68	66	72	72	80	72	78	71.5
	Min	38	48	62	63	40	43	40	45	44	41	51	42	46	53	50	43	44	45	47	49	52	58	45	50	58	42	46	56	58	54	52	48.8
Chariton	Max	78	76	80	63	64	65	73	60	80	79	70	65	67	75	58	65	61	72	77	75	76	72	78	70	65	66	64	75	83	68	77	71.1
	Min	44	50	62	48	35	47	37	45	52	57	37	37	52	47	45	44	42	42	44	52	53	45	48	50	52	33	50	55	60	53	45	47.4
Charles C.	Max	76	77	78	64	59	52	72	54	45	75	70	68	66	62	74	54	59	57	72	75	75	73	71	69	53	63	62	64	59	71	75	66.1
	Min	43	55	59	40	36	40	35	36	39	40	40	33	49	47	45	42	42	43	40	42	48	50	42	43	40	34	51	53	53	50	46	44.1
Clarinda*	Max	84	79	80	69	67	68	80	67	69	81	80	72	64	72	74	61	70	71	72	75	78	81	78	76	66	68	65	76	80	65	78	73.1
	Min	47	52	54	48	33	39	36	44	43	51	52	36	44	51	50	45	45	40	43	44	48	54	51	50	54	38	43	55	57	53	43	46.3
Clear L	Max	75	75	80	72	57	53	70	57	54	74	71	70	68	67	70	54	61	59	74	79	77	76	72	77	69	65	58	67	62	71	84	68.4
	Min	43	54	61	44	37	41	42	37	40	38	47	39	50	51	51	42	42	44	44	52	54	53	49	51	48	37	37	51	54	47	52	46.4
Clinton	Max	74	84	87	85	70	64	72	65	55	79	75	71	76	69	79	64	61	64	75	81	82	72	74	80	75	69	76	82	84	71	80	74.0
	Min	41	61	63	59	41	41	35	42	42	42	57	39	42	54	46	46	46	43	44	42	49	53	42	44	54	43	40	56	57	51	44	47.1
Col. Spgs.	Max	82	78	67	63	65	64	75	63	68	78	70	70	65	72	72	61	67	69	76	78	76	77	74	78	65	67	63	77	78	64	73	71.8
	Min	49	51	44	45	35	45	37	40	48	53	47	37	51	50	48	45	47	41	41	45	46	50	53	52	52	37	54	50	60	55	46	47.1
Colum. J.	Max	79	80	82	78	64	60	62	62	56	82	74	70	75	66	78	59	62	62	73	77	73	80	77	78	74	68	76	80	84	72	71	72.2
	Min	46	57	64	62	39	49	40	47	44	49	60	39	53	55	47	47	43	35	43	49	51	44	42	50	59	38	50	53	63	53	49	49.4
Corning	Max	81	76	78	74	62	63	76	71	62	78	72	68	63	70	71	60	64	67	72	73	75	76	74	75	61	66	63	72	77	68	74	70.5
	Min	57	52	60	54	34	45	33	43	53	57	41	33	51	51	51	47	45	38	42	44	49	52	48	56	54	34	50	54	61	53	41	48.2
Corydon	Max	78	76	80	74	65	68	73	70	57	80	79	70	64	..	76	60	68	68	78	74	73	75	72	76	69	68	66	77	84	74	76	72.0
	Min	45	53	58	50	33	..	..	..	..	..	..	..	..	52	49	48	44	42	43	43	51	51	44	50	58	37	51	55	61	54	47	49.0
Cresco	Max	65	73	78	73	53	50	69	57	48	65	63	66	65	60	70	54	54	58	71	74	74	70	70	70	64	62	59	61	58	68	73	64.5
	Min	38	54	60	55	36	40	37	35	37	38	50	31	51	52	44	44	40	42	42	46	49	49	44	49	52	34	49	51	52	47	51	45.4
Creston	Max	79	75	77	64	60	63	74	61	62	78	77	68	62	67	72	53	64	66	68	71	74	70	72	72	63	64	62	70	78	63	71	68.7
	Min	42	48	55	46	35	40	41	42	43	48	56	40	45	51	53	49	46	41	41	47	50	51	49	52	57	37	44	54	56	53	46	47.1
Davenpo't	Max	76	79	82	80	67	63	69	64	51	82	75	69	72	65	75	58	60	59	70	76	76	73	69	76	70	63	71	78	84	68	76	70.9
	Min	48	60	65	60	44	48	44	49	45	47	49	43	55	57	51	50	43	45	49	51	51	52	46	51	53	43	51	60	57	54	53	51.1
Decorah	Max	67	76	83	74	61	52	72	58	48	68	63	70	63	60	75	61	55	58	73	78	78	75	75	72	63	67	61	62	58	72	78	67.3
	Min	38	55	63	55	39	42	33	34	33	40	43	42	53	52	43	42	42	43	40	42	48	52	40	45	48	35	51	52	53	50	51	45.4
Delaware	Max	71	77	80	73	65	58	69	64	43	70	69	68	69	64	73	60	57	54	70	78	75	67	70	76	72	65	73	64	74	68	77	68.5
	Min	40	55	60	59	36	41	36	38	34	39	53	37	52	53	43	41	40	42	42	47	50	52	40	45	50	36	51	51	55	50	49	46.0
Des M	Max	79	76	80	66	64	61	73	60	50	79	78	68	64	69	72	58	64	69	71	73	75	77	71	76	62	63	68	66	80	69	75	69.4
	Min	45	58	64	45	33	47	41	42	45	50	42	40	51	54	52	46	46	44	43	47	53	56	49	52	48	40	51	57	61	53	49	48.8
De Soto	Max	80	76	78	74	64	64	74	67	55	82	73	69	65	70	78	57	68	74	..	79	78	76	74	75	64	64	67	66	78	70	75	71.1
	Min	44	56	63	48	35	46	36	41	45	49	48	39	55	52	51	45	45	41	..	45	43	54	48	49	53	38	49	53	60	53	46	47.9
Dows	Max	79	76	77	73	60	54	73	60	47	73	72	68	63	65	70	53	63	53	71	74	73	72	70	73	70	61	60	63	63	65	75	66.9
	Min	43	52	59	47	34	41	37	34	40	33	43	32	48	42	47	42	42	41	41	46	50	50	46	49	47	31	42	50	55	50	48	44.6
Dubuque	Max	69	76	80	77	64	57	68	53	48	63	69	69	71	65	75	53	53	53	72	76	76	67	70	76	68	62	69	66	73	72	76	68.1
	Min	44	64	66	55	43	44	41	46	40	42	46	43	55	54	43	43	42	40	45	49	58	52	49	52	56	44	54	51	58	54	54	49.8
Earlham	Max	79	76	79	72	62	63	74	65	51	77	77	67	69	67	74	58	63	65	71	73	74	76	71	74	61	64	63	68	80	68	74	69.8
	Min	42	52	60	45	31	44	35	39	45	43	45	37	49	50	50	44	44	33	37	40	43	47	40	45	53	32	47	53	58	51	42	44.6
Elkader	Max	73	79	84	77	66	58	74	63	51	70	73	73	70	65	78	62	62	60	78	82	80	76	77	73	65	69	70	62	64	76	79	70.6
	Min	38	59	63	62	39	42	33	39	40	39	54	39	53	54	43	49	42	41	38	41	47	52	39	40	54	35	50	53	54	52	45	46.2
Elliott	Max	80	80	80	69	63	63	80	63	64	75	78	75	72	70	72	60	70	69	80	80	85	78	79	79	63	62	64	66	66	67	87	72.4
	Min	46	56	63	44	32	42	31	41	43	49	49	35	52	52	49	47	45	38	40	44	47	53	52	53	55	33	52	54	57	53	40	46.9
Esthervil*	Max	79	73	79	54	52	53	73	55	50	65	70	70	68	67	63	52	63	59	74	76	75	74	75	77	58	61	64	63	58	71	73	66.2
	Min	38	44	43	43	35	36	38	33	33	38	46	37	41	49	48	47	43	42	42	46	48	48	41	53	40	31	45	44	53	46	48	42.9
ForestCy*	Max	70	77	80	60	56	60	76	51	57	71	77	69	69	66	73	52	61	53	74	77	76	75	72	73	58	58	61	69	60	73	73	67.2
	Min	34	44	49	47	34	38	35	33	40	47	47	33	45	54	48	44	42	42	42	47	52	54	46	51	47	34	42	48	53	47	49	44.5
F. Dodge*	Max	82	75	79	60	61	54	73	57	55	75	74	70	64	67	69	55	61	60	72	76	75	77	75	75	62	65	58	64	65	68	76	67.7
	Min	35	47	53	47	33	40	40	33	40	42	53	39	44	52	50	49	44	43	42	47	50	50	48	51	52	35	52	..	..	..	..	45.8
Galva	Max	81	76	78	65	58	55	73	53	52	68	75	69	67	69	65	55	65	62	73	75	75	76	74	75	69	66	56	67	65	70	77	68.0
	Min	41	53	55	41	32	41	38	32	41	42	41	35	45	50	47	48	41	35	37	45	41	41	49	53	45	30	48	46	55	48	41	43.2
Glenw'd	Max	84	79	83	74	62	60	78	60	70	80	78	72	65	71	70	59	67	67	70	74	75	77	76	72	64	64	63	69	74	66	73	71.0
	Min	53	61	67	43	34	43	42	41	48	50	47	39	51	52	50	47	54	44	44	49	52	53	52	54	52	39	51	32	59	53	45	48.5
Grand M.	Max	68	76	80	72	62	55	70	56	43	65	70	67	67	61	73	60	56	59	72	77	76	71	71	73	63	63	68	58	58	70	77	66.0
	Min	39	56	61	55	36	40	33	36	37	37	52	40	57	53	43	48	40	42	43	50	50	51	42	49	47	36	49	51	52	49	50	46.2
Greene	Max	79	79	81	74	63	58	78	57	49	79	75	71	69	65	71	55	62	59	74	78	80	75	77	76	70	66	61	64	61	73	78	69.4
	Min	43	55	60	51	35	43	35	34	40	39	48	33	48	52	46	44	42	43	40	44	48	50	42	46	53	33	49	50	55	49	47	45.2
Greenfield	Max	83	78	90	77	65	65	79	68	57	84	80	72	65	71	75	62	69	78	82	83	80	79	77	82	68	69	67	67	82	72	82	74.1
	Min	39	53	55	43	32	43	39	49	44	50	49	37	48	49	50	43	43	42	48	50	53	50	49	45	54	35	48	53	58	48	54	48.8
Grinnell	Max	76	76	77	74	64	61	71	67	52	76	72	67	66	65	73	58	63	63	69	74	74	73	70	77	65	68	68	69	82	69	74	69.2
	Min	45	54	61	54	39	43	42	42	44	44	51	41	54	55	50	46	43	45	45	50	53	57	45	50	55	33	50	56	61	52	53	49.0
Grundy C	Max	78	76	80	74	65	60	78	59	47	77	78	69	66	65	72	58	64	60	73	75	74	73	70	73	64	65	70	65	78	71	75	69.0
	Min	41	52	60	50	35	42	36	37	42	40	45	37	52	53	47	45	42	40	42	45	51	52	42	47	49	33	47	54	58	51	47	45.6
Guthrie C	Max	82	80	79	75	62	58	76	72	55	79	78	69	68	69	72	53	65	65	74	78	75	77	75	75	74	77	66	64	76	70	76	71.5
	Min	43	56	61	45	35	44	38	38	45	47	48	38	53	51	51	48	45	39	38	45	47	51	46	48	54	33	51	53	60	53	48	46.8
Hampton	Max	80	78	80	72	65	59	74	62	48	77	77	67	69	67	74	58	63	65	71	73	74	76	71	74	67	67	61	63	62	76	79	69.5
	Min	43	53	57	50	35	42	33	35	30	33	48	38	59	51	49	43	43	40	43	47	51	50	43	50	51	35	50	50	53	50	51	45.6
Hanlontown	Max	79	77	79	72	56	52	73	54	47	70	70	63	65	64	71	52	59	56	71	74	74	69	70	72	65	61	58	64	61	68	73	65.9
	Min	39	52	62	47	34	40	35	33	39	37	45	37	46	51	47	42	41	41	42	45	50	50	42	56	47	33	47	50	53	47	46	44.5
Harlan	Max	82	80	80	67	62	61	77	59	57	80	77	71	65	70	70	57	66	63	74	79	77	77	78	76	72	67	64	64	75	67	77	70.8
	Min	43	50	57	42	34	41	36	36	45	47	45	36	51	51	46	47	43	38	39	46	46	53	49	52	52	32	50	50	57	52	40	45.3

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MAY, 1905—CONTINUED.

STATIONS.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Hopeville.	Max..	79	79	79	61	63	64	74	62	57	80	75	69	64	67	78	57	66	69	69	75	76	77	73	76	64	67	64	76	80	65	76	70.2
	Min ..	44	51	61	47	35	46	38	43	45	55	47	38	50	52	51	45	45	42	44	48	52	54	48	48	51	36	51	56	61	53	46	47.8
Humboldt	Max..	82	77	79	72	60	55	70	56	53	73	74	62	62	59	58	57	55	55	60	70	69	71	67	69	69	56	56	65	61	68	74	65.0
	Min ..	45	57	60	46	35	42	39	35	42	41	45	40	48	50	50	45	45	40	40	45	49	49	46	52	46	33	50	51	57	50	48	45.8
Ida Grove	Max..	83	83	80	67	58	57	70	55	53	71	75	70	68	71	60	56	64	64	72	78	76	75	78	80	70	64	55	62	65	65	76	68.4
	Min ..	42	55	56	42	35	42	32	42	43	44	48	53	46	50	45	46	43	43	43	48	48	52	50	50	46	32	49	49	50	48	48	45.8
Independ.	Max..	76	75	78	77	62	60	69	58	50	77	68	68	68	66	73	59	59	57	71	75	74	72	71	74	70	64	69	66	74	71	75	68.6
	Min ..	43	53	58	57	37	41	35	39	38	39	54	37	52	53	44	46	41	42	44	44	49	53	41	45	54	35	50	58	57	50	50	46.3
Indianola.	Max..	79	78	80	72	63	63	75	66	55	81	69	69	63	68	75	57	66	66	71	77	78	77	74	77	64	64	63	69	82	72	76	70.7
	Min ..	45	57	62	50	37	45	39	44	44	49	49	39	53	54	50	45	45	42	42	47	53	54	47	51	50	36	50	56	62	53	48	48.3
IowaCity*	Max..	80	82	84	76	68	64	73	63	54	85	75	72	75	65	79	58	62	62	73	79	80	76	77	80	70	69	73	79	85	73	78	73.2
	Min ..	40	45	44	61	40	43	37	48	45	43	53	40	45	56	46	48	44	44	44	44	43	53	48	46	56	41	45	53	63	54	48	46.9
Iowa F*..	Max..	78	76	79	63	62	56	74	56	49	78	72	69	66	65	71	53	64	59	72	76	78	73	74	75	60	63	64	64	72	69	75	67.9
	Min ..	40	46	53	50	34	37	36	35	37	40	50	38	42	53	38	46	43	40	40	44	48	50	41	46	53	33	45	51	54	51	46	43.9
Keokuk ..	Max..	79	80	82	79	71	70	71	67	61	85	84	70	71	68	76	62	63	64	69	74	76	77	73	78	72	67	72	80	86	81	77	73.7
	Min ..	48	58	67	67	46	59	45	57	44	54	65	43	56	58	53	50	46	48	47	54	53	58	46	51	61	43	54	58	64	58	53	53.5
Keosauqua *.	Max..	79	80	84	76	73	71	74	65	65	87	80	72	72	70	73	63	67	65	74	76	78	78	75	80	71	70	73	79	87	63	81	74.2
	Min ..	45	51	57	60	40	47	38	49	47	45	61	39	47	57	49	49	45	45	41	42	46	54	44	45	57	39	48	55	64	58	48	48.8
Le Mars..	Max..	82	78	80	66	59	58	74	59	53	69	59	71	65	71	69	56	66	66	74	78	78	80	79	81	72	61	55	65	61	70	75	68.8
	Min ..	41	55	46	40	32	42	42	32	41	43	41	35	48	49	48	47	42	38	38	44	52	48	50	56	42	32	48	45	53	45	43	43.8
Lenox....	Max..	80	77	78	72	65	64	70	65	63	80	77	69	63	70	73	58	67	68	72	73	75	75	78	76	64	65	64	75	77	66	76	70.8
	Min ..	45	50	59	45	33	46	39	43	45	54	48	38	51	50	52	47	46	42	43	46	52	53	48	51	55	35	49	55	61	53	47	47.8
Leon	Max..	78	76	79	74	66	65	74	73	61	80	78	71	79	69	74	59	68	67	71	74	75	76	74	75	65	68	68	80	81	78	75	72.6
	Min ..	43	52	61	48	37	48	38	46	47	56	57	39	52	52	49	48	45	45	44	47	51	53	47	50	57	39	50	57	62	54	50	49.2
Lit. Sioux	Max..	85	83	82	72	62	59	76	62	58	71	75	70	68	73	71	62	68	71	73	77	77	80	77	78	72	65	62	64	74	70	76	71.4
	Min ..	47	60	57	44	37	44	55	36	52	49	47	39	53	52	51	48	42	39	41	48	56	51	54	58	50	37	51	53	59	53	44	48.6
Logan....	Max..	84	80	82	70	61	60	80	62	60	74	79	70	69	73	70	57	68	70	76	78	80	80	81	78	66	70	60	65	72	70	76	71.6
	Min ..	46	50	63	45	32	34	40	38	46	49	44	36	50	51	49	46	44	39	41	45	47	54	52	55	53	34	34	49	58	54	42	45.8
Maquoketa *.	Max..	74	78	81	79	66	63	68	64	49	75	72	70	71	66	75	60	61	62	74	77	76	71	72	76	71	65	70	76	79	72	78	70.7
	Min ..	40	43	61	63	40	44	34	45	43	40	47	39	47	55	44	45	43	44	40	41	48	54	36	39	56	37	48	53	56	51	49	46.0
Marshaltown*	Max..	80	78	82	69	66	62	75	61	56	80	75	71	66	67	75	56	67	66	74	78	77	78	74	77	67	66	75	68	62	72	78	70.9
	Min ..	41	48	55	51	36	41	37	39	42	41	53	39	48	52	49	46	43	43	43	45	48	50	41	44	54	35	45	53	56	51	47	45.7
Mason C..	Max..	76	77	81	72	55	50	72	54	50	76	66	71	66	65	68	50	60	56	73	76	76	75	76	76	65	63	55	64	60	68	76	66.7
	Min ..	43	55	62	54	37	42	40	37	40	38	50	38	50	53	48	44	42	43	43	49	49	53	48	52	52	33	50	50	53	48	50	46.6
Massena..	Max..	82	78	80	74	65	60	80	70	60	81	80	72	65	70	72	62	67	70	75	79	81	82	77	75	74	72	67	70	79	72	81	73.3
	Min ..	44	53	60	44	33	44	37	39	46	51	50	38	51	51	50	46	45	39	40	44	46	53	49	51	54	34	51	54	58	53	41	46 7
Monticelo	Max..	..	71	79	82	80	77	64	70	69	47	78	67	79	65	69	61	57	59	63	81	85	86	68	87	83	72	74	65	69	77	80	72.1
	Min ..	39	52	54	58	33	42	33	42	42	41	47	37	53	53	44	43	42	43	40	42	48	52	40	42	62	32	45	53	54	49	45	45.2
Mt. Ayr..	Max..	84	83	82	75	73	69	78	69	67	87	77	73	65	73	75	58	71	74	74	76	76	80	78	79	70	70	67	79	81	72	79	74.6
	Min ..	43	53	59	45	35	45	40	44	46	53	49	38	50	50	49	45	45	42	45	49	51	54	48	51	56	38	40	55	60	53	48	48.0
Mt. Pl'snt	Max..	78	81	84	81	75	66	72	67	58	88	79	70	72	65	78	60	62	66	72	80	80	79	74	79	72	68	74	81	87	79	78	74.2
	Min ..	45	55	63	71	41	49	41	50	43	51	59	40	54	56	48	47	44	44	42	48	55	54	42	50	57	40	50	58	64	55	49	50.5
Mt. Ver'n	Max..	78	79	83	74	68	63	71	69	53	87	71	71	69	62	76	56	60	60	77	81	77	76	81	80	65	66	71	71	82	78	81	72.1
	Min ..	42	53	60	55	35	43	38	42	41	40	53	48	53	53	45	45	40	44	44	52	52	55	41	48	54	39	55	55	56	51	51	47.5
New H. ..	Max..	73	78	79	77	60	54	73	59	52	71	73	67	69	63	73	56	59	58	70	75	76	72	71	73	68	62	64	62	62	70	74	67.5
	Min ..	41	55	62	54	35	41	34	35	40	38	54	38	50	52	45	46	50	42	42	40	50	52	45	47	53	35	50	52	53	49	50	45.8
Newton..	Max	78	77	80	75	65	63	75	68	56	78	72	67	65	63	72	55	65	61	71	75	70	69	74	78	64	62	71	66	79	68	68	69.4
	Min ..	43	50	42	50	37	44	37	41	43	44	49	39	52	54	47	45	43	43	44	48	51	55	45	49	54	38	48	55	59	52	50	46.8
N'thwood	Max..	78	77	80	72	53	53	73	56	46	75	74	70	72	66	75	53	62	60	72	78	77	71	70	73	65	65	56	70	68	71	75	67.8
	Min ..	38	52	59	50	35	42	36	36	39	38	47	37	42	51	45	42	41	45	44	46	45	50	42	47	49	34	48	50	54	46	50	44.5
Odebolt ..	Max..	83	79	80	72	62	50	71	59	53	76	72	67	70	67	55	61	78	67	71	81	79	82	77	82	65	68	55	61	66	71	79	69.5
	Min ..	41	44	57	42	30	42	39	29	42	42	38	45	50	49	46	41	44	40	40	41	49	49	48	55	46	33	49	49	56	49	44	44.2
Ogden....	Max.	80	77	80	75	62	59	75	68	55	76	77	70	73	69	71	56	64	66	73	76	77	78	76	73	69	64	70	63	75	70	75	70.7
	Min ..	43	54	61	46	34	43	38	35	43	44	45	39	53	51	49	44	44	41	42	49	50	42	54	51	51	34	48	53	57	61	60	47.1
Olin	Max.	75	77	80	73	65	62	68	64	55	73	70	66	70	65	73	60	60	60	70	75	75	70	67	74	69	64	72	75	82	68	73	69 4
	Min ..	45	56	64	62	40	45	35	45	43	40	55	39	53	56	45	47	44	45	43	44	55	54	41	46	57	39	50	57	58	53	47	48.5
Omaha, N	Max..	84	80	81	62	60	58	78	60	71	73	75	70	65	72	67	58	67	67	70	74	75	78	76	72	63	66	59	66	74	66	73	69.7
	Min ..	54	60	58	43	38	45	46	41	48	53	45	43	54	52	51	48	48	48	47	53	56	58	55	57	50	45	53	53	59	55	51	50 5
Onawa...	Max..	87	86	82	70	61	66	73	63	55	78	78	72	69	76	75	62	72	75	77	80	78	80	82	82	78	63	59	61	74	70	76	76.0
	Min ..	44	56	56	42	35	44	41	37	44	48	45	37	47	50	49	47	44	42	42	48	50	54	54	59	51	37	50	51	57	50	46	47.0
Osage.....	Max..	76	78	81	72	58	53	72	56	48	75	70	69	67	63	73	51	59	56	74	77	78	75	74	73	64	66	59	66	59	73	77	67.5
	Min ..	40	52	61	51	35	41	35	36	39	38	48	37	47	50	45	42	39	44	44	45	49	50	43	47	49	34	50	51	53	46	65	45.4
Oskaloosa	Max..	78	79	82	75	65	66	74	67	56	81	75	71	69	66	77	60	65	64	71	76	78	77	74	80	66	64	65	75	83	72	76	71.8
	Min ..	45	55	63	55	40	46	39	45	45	49	55	41	49	56	49	47	45	45	42	44	52	54	45	47	55	39	49	58	63	54	47	49.0
Pacific J'n	Max..	84	80	82	75	60	61	81	72	74	84	73	74	66	73	73	60	68	70	73	78	78	78	77	72	65	68	67	71	79	67	74	72.7
	Min ..	52	54	62	44	38	41	39	42	48	49	49	39	52	52	50	47	48	39	45	52	52	57	55	55	55	37	50	54	57	54	42	48.4
Perry.....	Max..	82	78	80	74	64	60	78	60	54	78	77	70	65	68	75	57	67	67	73	78	79	77	76	73	66	67	69	64	79	70	78	71.5
	Min ..	43	51	63	47	34	45	38	39	45	46	47	38	54	52	50	45	45	43	42	47	48	51	47	51	52	36	50	54	60	54	47	47.2
Plover....	Max..	80	82	78	80	72	60	74	57	52	75	67	73	67	70	67	55	64	60	74	80	79	75	73	77	67	67	54	65	55	69	74	69.1
	Min ..	45	44	50	60	40	33	36	33	40	51	40	36	45	50	46	38	43	42	38	47	46	50	45	50	50	32	47	50	53	49	45	44.8
Pocah'tas	Max..	81	76	78	71	61	55	70	58	50	71	75	71	69	69	68	54	65	60	74	77	78	77	74	77	68	67	54	66	61	71	75	68.4
	Min ..	41	54	61	44	34	42	37	38	40	40	42	38	47	51	48	44	42	42	41	49	49	50	47	50	45	33	48	44	55	49	48	44.8
Red Oak..	Max..	66	84	78	80	67	67	79	75	65	79	80	78	71	72	77	64	72	77	79	83	86	85	86	82	75	76	70	78	82	75	78	76.3
	Min ..	45	57	63	51	37	45	39	44	49	52	52	37	52	52	51	52	45	40	42	48	59	56	52	54	57	35	53	56	56	55	60	49.9
Ridgeway	Max..	70	78	82	76	63	57	71	61	47	69	70	73	72	59	72	59	61	63	77	81	80	77	76	72	65	72	65	66	60	71	79	69.2
	Min ..	39	55	60	51	36	40	36	36	39	38	50	40	50	51	44	45	40	43	41	49	52	51	45	47	48	38	51	52	52	46	51	45.7
Rock R...	Max..	80	60	75	68	60	70	65	60	58	60	55	70	65	70	65	70	68	65	74	78	78	78	78	68	60	68	66	70	70	70	78	68.4
	Min ..	42	38	48	42	35	38	32	30	34	40	38	35	40	50	45	40	42	38	46	50	50	54	50	40	36	40	40	54	52	54	42	42.4
R. City...	Max..	83	71	80	72	51	56	78	64	53	72	73	71	67	68	70	60	65	64	75	78	81	78	74	75	73	66	51	60	70	76	76	69.4
	Min ..	42	51	60	44	31	41	41	31	40	42	43	38	46	50	50	44	42	46	41	49	48	58	45	50	43	35	44	45	50	50	46	44.7
St. Cha'les	Max..	79	76	79	74	64	63	75	64	54	79	77	69	65	67	75	58	64	66	70	74	76	76	73	75	62	62	63	69	82	68	75	70.1
	Min ..	43	57	63	49	36	46	40	42	45	50	45	40	51	52	52	45	45	43	44	49	53	54	46	52	50	38	50	55	61	53	48	48.3
Sheldon..	Max..	82	72	78	70	56	58	73	57	48	65	72	72	66	73	64	55	68	65	75	75	78	80	76	80	71	58	56	67	62	74	75	68.4
	Min ..	42	42	46	34	34	40	38	31	32	38	39	34	46	50	46	46	40	42	38	48	47	51	49	54	41	32	47	42	53	44	43	42.2
Sibley *...	Max..	81	62	74	46	53	55	72	54	50	61	71	70	65	70	61	54	63	60	73	75	78	76	75	76	55	60	56	67	59	70	73	65.0
	Min	33	45	45	41	33	35	35	32	37	39	44	34	39	48	44	46	40	41	38	45	49	51	47	52	40	31	40	44	54	43	42	41.5
Sidney...	Max..	86	81	84	72	59	65	82	73	73	85	79	71	64	74	73	61	69	73	75	79	78	80	81	74	66	72	68	76	79	69	79	74.2
	Min ..	50	53	63	49	36	44	43	42	48	52	51	40	53	52	53	48	46	46	45	49	51	57	52	54	55	40	52	54	61	53	49	49.7
Sigourn'y	Max..	78	80	83	78	68	67	74	69	59	83	78	73	73	68	78	60	67	68	75	80	80	79	76	83	68	69	72	80	87	75	78	74.4
	Min ..	44	53	60	56	38	47	39	46	44	48	58	38	52	56	48	46	43	43	41	45	51	54	42	47	56	38	48	59	62	54	47	48.5
Sioux C'r.	Max..	79	74	77	68	57	57	72	53	50	63	68	68	69	70	65	58	63	63	71	74	77	77	76	77	62	60	57	64	59	69	73	66.8
	Min ..	43	49	42	39	32	41	38	30	40	42	36	35	43	48	44	46	42	42	42	42	48	52	46	55	40	34	47	41	53	43	44	42.5
Sioux C'y	Max..	83	76	79	57	57	59	75	55	50	67	64	69	63	72	64	58	65	65	71	74	74	77	75	78	61	59	55	63	65	68	74	66.8
	Min ..	46	58	52	37	35	43	46	35	45	48	40	42	51	50	47	49	45	42	43	48	54	51	54	58	46	41	49	48	54	48	50	47.0
Stockport	Max..	78	79	80	76	68	66	71	61	56	81	77	79	72	65	74	59	61	63	70	75	75	77	72	76	69	65	72	79	83	71	75	71.8
	Min ..	45	56	66	60	42	51	40	51	45	52	56	51	54	57	50	49	45	47	44	46	51	57	45	50	56	41	52	50	65	56	54	51.4
Storm L*.	Max..	79	73	75	55	56	54	71	55	67	55	73	68	64	68	68	54	64	60	70	72	72	74	72	75	59	61	58	64	61	68	72	65.7
	Min ..	38	44	55	42	34	37	41	32	35	43	41	38	42	49	50	45	42	40	39	46	54	48	48	52	44	32	44	46	55	46	49	43.6
Stuart ...	Max..	81	78	80	76	65	61	72	79	58	79	78	71	65	69	73	60	67	68	79	80	80	81	77	76	67	68	67	63	80	78	79	72.7
	Min ..	42	53	60	46	36	45	40	40	44	47	52	40	31	50	50	45	44	42	42	49	52	54	48	52	54	37	49	53	57	53	48	46.9
Thurman.	Max..	85	77	83	70	62	62	80	71	73	82	79	74	69	74	73	68	69	71	75	77	75	79	78	73	67	69	65	75	70	70	77	73.1
	Min ..	57	59	80	43	34	42	85	43	48	50	50	40	53	53	52	46	46	41	45	44	49	55	54	55	56	38	54	56	61	55	44	49.1
Tipton....	Max..	77	78	81	78	69	65	70	68	58	80	78	71	71	65	74	61	61	61	74	79	77	76	76	78	71	69	70	79	82	74	80	72.5
	Min ..	47	58	65	63	43	48	42	48	45	43	57	40	54	55	47	49	45	46	48	50	54	58	46	51	57	43	51	60	61	56	51	51.1
Toledo....	Max..	79	78	81	76	64	62	72	60	51	78	74	68	68	65	73	55	68	63	72	76	78	77	72	77	67	63	74	70	80	69	75	70.8
	Min ..	45	55	60	54	37	44	36	39	48	42	58	39	54	55	47	46	43	41	[illegible]	48	43	51	41	45	55	34	45	55	61	52	46	40.8
Wapello .	Max..	76	75	79	82	74	67	70	70	72	77	79	67	69	69	68	57	57	60	[illegible]	[illegible]	78	76	78	76	70	66	69	77	81	74	75	71.5
	Min ..	45	48	57	64	45	56	42	51	53	46	62	41	59	56	49	50	45	46	[illegible]	48	53	58	42	51	52	43	58	59	64	52	51	51.8

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR MAY 1905—CONTINUED.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Washi'ton	Max..	78	81	82	77	67	66	73	64	53	83	73	70	72	65	76	58	63	64	71	76	78	78	74	78	65	72	78	84	66	66	76	71.8
	Min ..	46	56	64	57	39	48	39	47	44	48	51	39	53	55	47	47	44	43	43	48	51	55	43	49	54	50	59	62	64	48	48	49.4
Washta ..	Max..	82	78	80	68	60	57	77	58	50	70	76	72	63	71	66	56	66	66	76	77	76	79	77	80	85	67	56	67	65	71	75	70.0
	Min ..	42	44	45	43	33	42	38	31	42	43	42	35	44	50	46	48	43	35	38	44	44	45	50	53	55	28	44	44	56	45	40	43.1
Waterloo*	Max..	78	77	80	71	65	63	73	61	50	78	73	69	65	64	75	57	54	58	74	77	77	74	74	75	68	66	71	65	75	73	78	69.6
	Min ..	43	46	57	55	38	42	37	39	41	41	49	40	45	55	46	46	42	42	41	45	50	50	42	45	51	35	43	53	55	51	47	45.5
Waukee..	Max..	83	80	81	75	66	63	79	69	54	85	78	71	63	72	75	58	69	69	81	81	79	79	77	78	67	67	67	66	80	75	85	73.3
	Min .	43	56	63	47	35	45	39	40	45	46	48	38	52	52	50	45	44	41	43	46	51	53	46	51	51	36	47	54	60	52	49	47.4
Waverly..	Max..	76	77	79	74	62	52	72	58	50	78	69	68	65	63	74	56	61	59	72	75	75	70	70	70	65	62	66	60	66	68	75	67.3
	Min ..	44	56	62	55	37	42	35	38	41	40	49	39	51	53	46	47	43	44	42	44	49	51	43	47	52	36	.	52	55	51	57	46.7
Web'ter C	Max.	81	79	78	74	64	60	76	65	53	73	73	71	70	67	78	55	58	70	75	82	80	76	72	74	72	69	72	61	75	65	80	70.9
	Min ..	46	51	60	53	35	43	38	35	43	41	46	39	50	52	46	44	40	43	37	44	48	47	44	47	49	31	49	51	58	52	43	45.4
Whitten..	Max..	78	77	81	77	64	59	74	62	56	79	77	68	66	66	73	54	64	61	78	80	75	76	76	70	..	67	73	62	75	70	78	70 3
	Min ..	44	52	59	49	33	41	35	36	41	40	52	37	52	52	46	43	41	40	41	46	50	42	46	52	..	33	48	50	57	50	47	45.2
Wilton J.	Max..	76	80	85	78	73	64	70	63	59	81	77	71	77	69	80	65	63	66	75	78	80	76	71	79	70	68	70	82	88	74	77	73.7
	Min ..	46	57	63	66	39	47	36	47	43	48	47	38	52	57	50	47	43	42	43	52	50	42	46	51	46	47	50	52	62	54	47	48.7
Wint'rset	Max.	80	77	80	73	67	64	77	73	58	80	77	69	65	69	74	58	68	63	73	76	76	78	75	80	65	67	65	71	81	77	77	72.1
	Min ..	43	55	60	46	35	44	37	40	45	48	52	38	51	51	50	45	44	40	40	47	50	52	47	51	55	35	59	60	60	52	45	47.6
W. Bend.	Max..	80	77	79	71	56	54	73	55	47	71	73	70	68	68	67	53	63	58	72	76	77	74	73	74	64	67	54	68	60	70	78	67.3
	Min ..	44	49	62	44	33	41	35	32	40	40	43	37	47	49	47	44	42	41	40	47	49	52	44	52	44	33	49	50	55	49	45	44.5
Zearing ..	Max..	79	75	79	76	68	59	74	60	60	76	74	67	62	65	68	55	64	61	70	73	74	74	70	72	67	64	68	64	77	68	74	68.6
	Min ..	38	42	31	36	33	39	31	49	42	41	51	39	52	53	47	45	44	42	44	46	51	52	43	50	53	36	47	53	59	51	50	44.8

* At those stations thermometers are read in the morning; the maximum temperature then observed appears in the maximum column for the preceding day, on which it nearly always occurs.

OBSERVERS' NOTES.

ALTA—*David E. Hadden.* May was cloudy, cool and wet; rainfall about double the normal amount; only exceeded once in last 16 years, and that was in May, 1892; temperature about 3° below normal.

ALTON—*W. S. Slagle.* Very hard wind on 10th; frost on 26th killed some garden truck on low ground.

AMANA—*Conrad Schadt.* Though May had 16 rainy days, the farmers found ample time to plant corn, which was mostly finished by close of month; fruits promising.

BONAPARTE—*B. R. Vale.* First half of month very wet, and month was unusually cold; no severe storms; precipitation 2.27 inches, while last year we had 4.17 inches.

BOONE—*Carl Fritz Henning.* On May 1st apple blossoms were observed. May 4th plums, apples, wild plums, violets and sweet williams were in bloom; corn planting started. May 10th to 12th many small birds were killed during hailstorm.

BRITT—*Geo. P. Hardwick.* Rain 8 10 inches, with exessive cloudiness; corn planting retarded. On night of 10th a small tornado passed through southeast part of county and destroyed a few buildings. Plum crop disappointing; apple prospects good.

CHARITON—*C. C. Burr.* Nights cool and sunshine below normal; prospects for a large corn crop not flattering; grasses and oats rank; fruit fairly good.

CLINTON—*Luke Roberts.* Mean temperature for May was 60.6°; rainfall, 5.95 inches; per cent of sushine only 50. The central portion of the month was cooler than the commencing or ending. There were 12 stormy days.

CRESCO—*W. L. Gaston.* About 1 P. M. on the 22d, a solar halo of unusual size and brilliancy was observed and created much comment.

ELLIOTT—*Henry Barnes.* By the 13th most of the corn had been planted; about 25 per cent has been replanted; grasses and small grain doing well.

FOREST CITY—*J. A. Peters.* Rain 7.89; low lands too wet to plant; hay crop promising.

GRUNDY CENTER—*E. S King.* Wet soil retarded planting, and but little corn plowing had been done at close of month; grass and small grain promising.

HANLONTOWN—*G. M. Paschen.* Severe thunder, wind and hailstorm on 11th did much damage to crops. First corn planted on 18th, and finished on 24th; acreage about same as last year; fruit promising where it was not cut short by hail.

HUMBOLDT—*H. S. Wells.* Corn coming good; small grain all right; stock doing well.

IOWA FALLS—*J. B. Parmalee.* Rainfall in May 7.73 inches, has been exceeded but once in thirteen years, and that was in 1896, when the amount was 7.76 inches.

LITTLE SIOUX—*Geo. H. Gibson.* Nearly 50 per cent of corn replanted on account of cold and excessive moisture; small grain and pastures good.

MASSENA—*Fred L. Knott.* Corn planting commenced on 5th, and replanting was done 20th to 25th.

MONTICELLO—*A. Matthiessen.* Corn slow in growth; hay and small grain extra fine.

NORTHWOOD—*Chas. H. Dwelle.* Storm on 11th damaged buildings and windmills; corn backward.

OLIN—*N. Potter.* Some early planted corn was replanted on account of wet and cool weather; the crop is ten days late; grasses and oats fine; heavy hail on 29th.

POCAHONTAS—*F. E. Hronek.* Excess of rain damaged crops on low ground; yet the grain looks fine.

RIDGEWAY—*A. Betts.* Coldest May on record here. No frost since April 21; sunshine 253 hours, or 55 per cent; 8 days were perfect; some severe thunderstorms but no gales.

STOCKPORT—*C. L. Beswick.* On 10th hail fell nearly 8 inches in circumference; corn planting mostly finished at close of May.

WAUKEE—*E. J. Leonard.* Corn made slow growth; small grain doing well; meadows, average crop; strawberries ripened earlier than usual.

BELATED REPORT.

LARRABEE.—April. Mean temperature 42.6; highest 80° on the 1st; lowest 10° on the 14 h; greatest daily range 41°; total precipitation 1.29 inches; greatest in 24 hours .43 inch; total snowfall 2.2 inches; prevailing direction, north and northeast. Number of clear days, 11; partly cloudy, 10; cloudy, 9; rainy, 7.

ERRATA IN MARCH REVIEW.

COLLEGE SPRINGS.—Maximum temperature recorded 79 on the 27th, page 6, should have been 80° on the 3d.

POCAHONTAS.—Total snowfall recorded 7.8 inches on page 7, should have been 4.5 inches.

ERROR IN APRIL REVIEW.

RIDGEWAY—Total snowfall recorded 2.8 inches on page 6, should have been 1.8 inches.

DAILY AND MONTHLY PRECIPITATION FOR MAY, 1905.

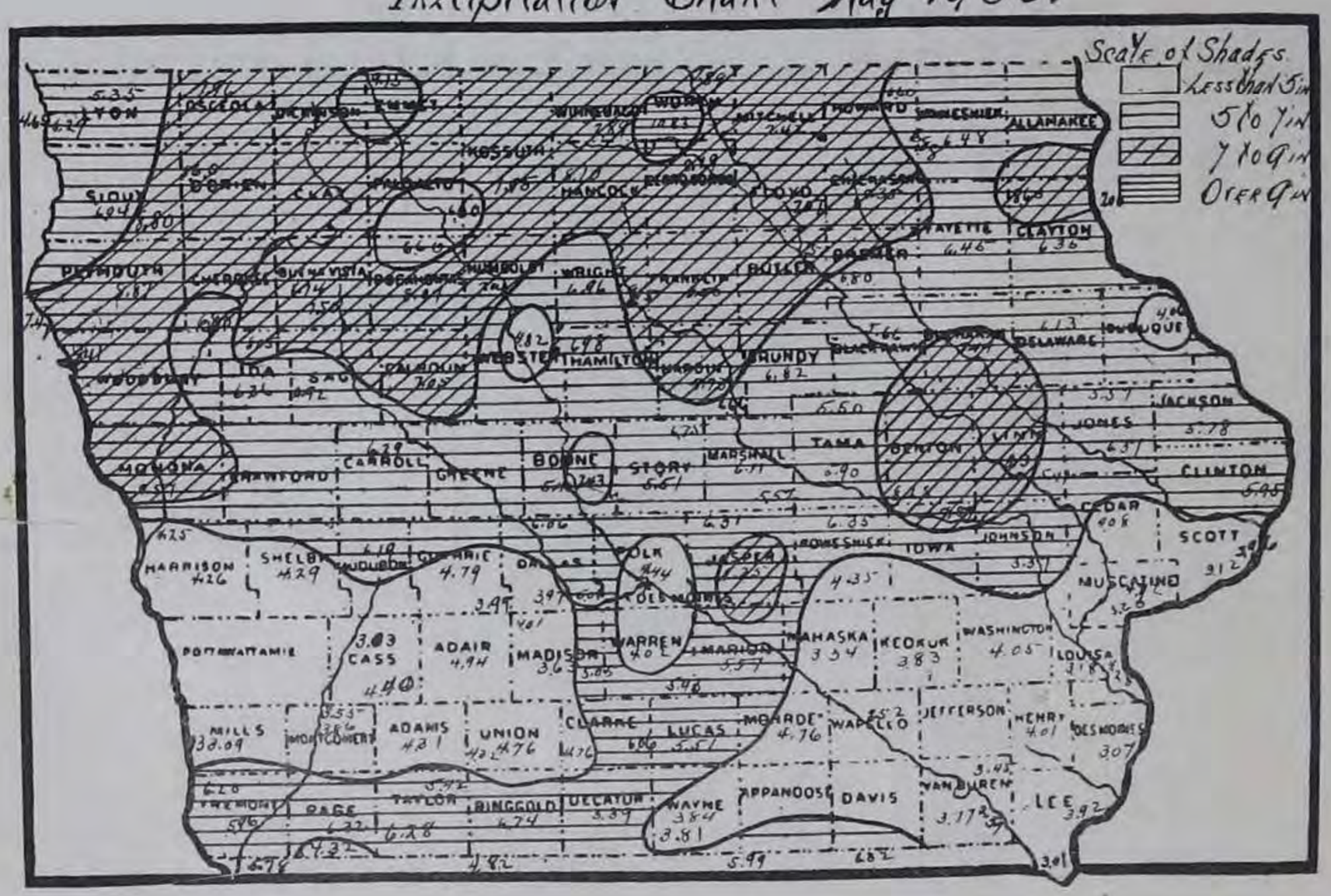
STATIONS.	DAY OF MONTH.																													TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	....	....	.26	....	.04	....	T	.83	.78	1.28	....	.46	....	....	.19	....	....	....	....	....	....	....	.10	....	....	.22	....	.60	....	....	4.76
Albia	.10	....	....	.10	....	....	....	....	.24	2.50	....	.60	.03	.07	....	.22	.19	....	..	....	....	....	....	....	.05	....	....	.22	.44	....	....	4.76
Algona	.29	T	.39	....	....	.15	T	...	1.00	.22	.75	....	.20	1.77	.06	.20	T	.04	....	....	....	....	....	T	.32	T	.43	.06	2.05	.02	....	7.95
Allerton	....	T	....	.16	..	T	....	...	1.06	1.14	.07	....	.14	.08	.10	.12	.01	....	....	....	....	..	....	.07	.07	....	.25	T	.54	T	..	3.81
Alta	..	T	.73	....	.10	.40	.10	....	.95	.61	.64	....	.92	.98	.03	.27	....	....	....	....	....	....	....	.04	....	.29	.55	.35	1.78	....	....	8.74
Alta [near]	....	.02	1.00	....	.26	.11	.24	....	1.51	....	.72	....	.60	1.20	.08	.24	....	....	....	....	....	....	....	.04	....	.17	.49	1.52	.02	....	....	8.22
Alton	.09	.05	.39	.04	....	.39	T	...	.51	1.42	.48	....	.99	1.12	.05	.24	....	....	....	....	....	..	....	....	.26	.19	.25	.35	1.98	....	....	8.80
Amana	.11	....	....	.15	....	.24	....	.05	.78	.62	3.48	....	.03	.07	.53	.26	.03	....	....	....	....	....	....	.15	.22	..	T	.90	.25	T	.	7.87
Ames	.11	....	....	.03	T	....	.02	.04	.71	.18	1.65	....	.27	.84	.59	.27	.01	..	....	....	....	....	....	....	....	....	.12	.22	.44	.01	....	5.51
Atlantic	..	T	....	....	.14	....	T	.09	.28	.	.42	....	.70	.30	T	.36	.	....	....	....	....	....	....	....	....	....	.04	.70	....	....	..	3.03
Audubon	..	...	.13	.03	.08	.07	..	.03	.28	.63	.96	....	.65	1.95	.07	.28	.07	....	....	....	....	....	....	....	....	....	.16	.31	.48	.01	....	6.19
Baxter	....	....	..	.35	....	....	....	....	1.15	.70	1.40	....	.28	.38	.53	.20	....	....	..	....	....	....	....	.20	....	....	.12	.55	.45	....	....	6.31
Bedford	....	....	.08	....	T	.11	....	T	.66	.42	1.09	....	1.07	06	.04	.10	.20	....	....	....	....	..	....	1.09	..	....	.45	.09	.82	....	....	6.28
Belle Plaine	.06	....	....	.15	....	.12	....	.20	.85	.40	2.90	..	.12	.20	.60	.42	....	....	....	....	....	....	....	.08	....	....	....	1.75	.40	.03	....	8.28
Bonaparte	....	....	....	.03	....	.02	....	....	.59	.25	.93	....	....	....	.35	.23	..	....	....	....	....	....	....	.10	....	.17	....	....	....	....	....	2.57
Boone	.10	....	T	.09	....	.02	....	.30	.49	1.12	2.67	.35	.06	.92	T	.07	.24	....	..	....	....	....	....	.03	.26	.04	.44	.06	1.24	.02	....	7.43
Britt	.28	.03	....	.19	....	.14	.04	T	.70	.63	1.04	....	.22	2.44	.05	.22	.04	.01	....	....	....	....	....	.10	....	....	.15	.24	.70	....	....	8.10
Buckingham	.15	....	.10	.10	.07	....	.03	....	1.53	T	1.14	.04	.69	....	.19	.18	....	....	....	....	....	....	....	....	.43	....	T	.04	.38	....	....	5.50
Burlington	....	....	....	....	....	.04	....	....	.51	.10	.6	....	.24	.07	.09	.25	.21	....	....	....	....	....	....	....	....	....	T	.15	.90	....	....	3.07
Carroll	T	....	.75	.12	....	.15	....	.27	.37	.62	.50	....	....	1.98	T	.15	.33	....	....	....	....	....	....	....	.29	.14	....	.05	.68	.71	....	6 29
Cedar Rapids	.18	....	....	.07	.	.18	....	.10	.22	.67	.65	2.80	05	.07	T	1.35	.15	....	....	....	....	....	T	.26	....	....	.45	.10	.65	....	....	8.31
Chariton	....	....	....	T	..	T	....	.60	1.35	.75	..	.40	.55	.20	.20	T	....	....	....	....	....	....	....	.02	....	.02	.43	.56	1.04	....	....	5.51
Charles City	.11	.10	.60	....	T	.01	.08	....	.94	.25	1.32	....	.67	.63	.18	.11	T	....	....	....	....	....	....	.96	....	....	....	.77	1.68	....	....	7.07
Clarinda	....	....	.11	....	....	T	..	T	.74	.26	.88	.16	....	.51	.13	.12	....	....	....	....	....	....	....	....	....	T	.50	....	1.20	....	....	6.32
Clear Lake	....	....	....	....	....	....	....	....	.65	1.00	.85	....	....	2.40	T	.30	T	....	..	....	....	....	....	....	.24	....	.01	....	1.20	....	....	7.53
Clinton	.10	....	....	....	....	.10	....	....	....	.80	1.88	..	.15	....	.65	.82	..	....	....	....	....	....	....	.60	....	....	.06	.10	1.87	....	....	5.95
College Springs	..	....	....	....	....	T	T	T	.20	.25	.50	T	.50	.15	.04	.05	....	..	....	....	....	....	....	....	.19	..	.05	.17	.35	T	....	4.32
Columbus Junct'n	....	....	....	.02	....	.05	....	....	.55	.18	.49	....	....	.15	.10	.74	.14	....	..	....	....	....	....	.18	....	....	.32	T	.70	....	..	3.18
Corning	..	..	....	.58	....	....	....	T	.23	.50	.75	T	.52	.11	.10	.22	.15	....	....	....	....	....	....	.10	.08	....	.23	.02	.48	....	....	4.31
Corydon	..	..	....	.03	....	T	....	....	1.15	1.12	.21	..	.11	.12	.06	.16	.02	....	....	....	....	....	....	.04	....	....	.24	.03	1.19	....	....	3.84
Cres o	.11	.07	.01	.02	....	.02	.15	.10	.39	.67	1.59	....	.05	1.52	.28	.12	....	.	....	....	....	....	....	....	.39	....	T	.29	.38	T	....	6.60
Creston	....	....	....	.01	....	T	....	.08	.06	1.00	1.32	.07	T	.54	....	.02	.16	....	....	....	....	....	....	.31	....	....	.24	T	....	....	....	4.32
Cumberland	....	....	.48	....	....	....	....	.02	1.23	....	....	T	.82	1.00	.	.84	....	....	....	....	....	....	....	T	.22	....	.02	.03	.29	T	....	4.94
Davenport	.03	....	....	.01	T	.08	.	T	.15	.78	.99	....	.08	T	.04	.40	T	T	....	....	....	....	....	....	T	.03	.28	.03	1.13	....	....	3.12
Decorah	.10	.12	T	.10	T	T	.06	....	.54	.56	1.86	....	..	1.10	.25	.26	.06	....	..	....	....	..	....	....	....	....	....	.38	1.02	....	....	6.48
Delaware	.18	.04	....	.11	....	....	....	.36	.18	.77	1.63	T	.10	.50	.50	.35	.01	....	....	....	....	....	....	.08	....	....	.26	.84	.14	T	....	6.13
Des Moines	....	T	.03	....	T	T	.01	.05	.76	.39	.98	.08	.45	.09	.14	.14	T	....	....	....	....	....	....	.06	....	....	.21	.49	.57	....	....	4.44
De Soto	....	....	....	....	....	T	....	.03	.22	.56	1.29	....	.15	.06	.15	.15	.03	....	....	....	....	....	....	.06	....	....	.50	.31	1.18	....	....	3.97
Dows	.30	.15	.25	.12	....	T	.29	.24	.85	.87	.83	....	.20	1.65	.04	.34	.03	....	....	....	....	....	....	T	....	....	.50	.31	1.18	....	....	8.15
Dubuque	.13	..	....	.08	....	.16	.29	....	.27	.75	1.21	....	.20	.01	.41	.05	T	....	....	....	....	....	....	.01	.04	T	.07	.14	.33	....	....	4.06
Earlham	.	....	....	T	....	....	....	....	.15	.58	1.27	....	.28	.12	.39	.11	.06	....	....	....	....	....	....	.09	....	....	.18	.38	.40	T	....	4.01
Elkader	.08	....	....	.04	..	.04	.40	....	.25	.80	1.95	.03	.15	.32	.20	.48	....	....	....	....	....	....	....	....	....	.05	.66	....	.90	....	....	6.35
Elliott	....	....	T	....	....	.15	....	....	.08	.09	.78	....	.74	.41	.10	.13	..	....	....	....	....	....	....	T	....	....	.14	.38	.55	....	....	3.55
Estherville	.06	.08	T	.15	..	.23	.11	....	.20	2.20	.31	.11	T	2 18	.07	.10	.18	....	....	....	....	....	....	.03	1.27	....	.05	.26	1.50	.14	....	9.15
Florence	.11	.07	.05	.25	....	.08	.33	.06	.35	1.00	.60	....	.20	1.50	.02	.47	....	....	....	....	....	....	....	.03	....	.02	.64	.08	1.10	....	..	6.96
Forest City	.10	....	....	.03	....	.15	....	.11	....	1.47	.75	.12	....	2.21	.05	T	.25	....	..	....	....	....	....	....	82	....	.18	.38	1.25	.05	....	7.89
Fort Dodge	.09	....	.06	.11	....	.10	....	.28	.62	.25	.52	.10	....	.90	T	.08	.16	....	....	....	....	....	....	....	.01	....	.04	.53	1.00	.02	....	4.82
Fort Madison	....	T	....	....	....	T	....	....	T	.65	.65	....	.30	....	T	.57	....	....	....	....	....	....	....	....	.40	....	T	.53	1.35	T	....	3.92
Galva	....	....	.92	.17	..	.24	.48	....	.47	.43	.86	....	.13	1.53	.05	.24	..	....	..	....	....	....	....	.03	....	T	.03	.60	1.40	T	....	8.05
Gilman	....	....	....	.05	....	.20	....	....	.85	1.15	1.17	T	.13	.50	.10	.30	....	....	....	....	....	....	....	T	....	T	.03	.61	.40	..	T	5.52
Glenwood	....	....	.09	....	.10	....	..	....	T	....	.45	....	.78	.35	.09	T	....	....	....	....	....	....	....	T	....	T	.08	.15	1.00	....	....	3.09
Grand Meadow	.06	....	.02	.20	....	.06	....	.22	....	1.60	2.34	..	.03	.63	.25	.50	....	....	....	....	....	....	....	.03	....	.05	....	....	....	....	....	8.60
Greene	.23	.08	.09	.26	....	.04	.10	.03	.77	.73	1.10	....	.20	1 75	.24	.19	....	....	....	....	....	....	....	.08	....	....	.43	.14	1.05	....	....	7.51
Greenfield	....	....	....	.41	....	.04	T	T	.16	.95	1.31	....	.35	.09	.06	.20	.04	....	....	....	....	T	T	.21	....	....	.26	.35	.51	....	....	4.94
Grinnell	.06	....	....	.07	....	.15	....	.06	.78	.62	2.28	....	.18	.29	.45	.31	....	....	....	....	....	....	....	.03	....	....	.13	.49	.45	....	....	6.35
Grundy Center	.12	....	....	.82	....	....	.21	.61	.90	.76	1.14	.01	.18	.76	.26	.27	.01	....	....	....	....	....	....	....	....	T	.09	.44	.74	....	....	6.82
Guthrie Center	....	....	....	.09	.02	....	....	.08	.30	.40	1.22	....	.41	.30	.13	.28	.05	....	....	....	....	....	....	....	....	....	.09	.95	.52	..	....	4.79
Hampton	....	.28	.03	....	.10	....	.45	....	1.58	1.40	.05	....	2.45	....	.20	.25	....	....	....	....	....	....	....	.06	..	.03	.69	.93	....	....	....	8.50
Hanlontown	.10	T	.08	.30	....	T	.10	....	.60	1.20	2.00	....	.56	3.26	.15	.17	T	....	....	....	....	....	....	.04	.75	T	.52	....	1.00	....	....	10.83
Harlan	T	T	.68	....	.15	.01	T	....	.16	.55	.89	....	.55	.29	.20	.16	....	....	....	....	....	....	....	T	....	....	03	.17	.45	....	..	4.29
Hopeville	....	T	....	.08	....	.16	....	....	.28	.77	1.67	T	.53	T	.06	.13	..	....	....	....	....	....	....	.11	....	....	.24	.11	.62	....	....	4.76
Humboldt	....	.12	.12	.18	....	.15	.30	....	.85	.15	1.60	....	.03	1.00	.04	.27	....	....	....	....	....	....	....	....	....	.04	.48	.10	1.59	.02	....	7.04
Ida Grove	....	....	1.02	....	.25	....	.15	....	1.03	.50	....	....	1.28	....	.28	.17	....	....	....	....	....	....	....	....	....	....	.63	1.00	.05	....	..	6.36
Independence	.03	....	.30	....	.01	....	.50	.25	.55	1.00	1.55	....	.10	.30	.65	.75	T	....	....	....	....	....	....	T	....	T	.05	1.40	....	....	....	7.44
Indianola	....	T	....	.28	T	.13	....	....	.83	T	1.42	T	.38	.12	.03	.13	T	..	....	....	....	....	.23	....	....	....	....	.02	.50	T	..	4.02
Iowa City	....	....	....	.37	..	.12	....	.03	.16	.73	40	.93	....	.07	.03	.52	.55	....	....	....	....	....	....	....	.20	.15	T	.02	1.09	....	....	5.37
Iowa Falls	.08	.02	.53	.02	....	T	....	.38	.07	1.50	.94	.36	.01	1.65	.01	.66	.36	T	....	..	....	....	....	....	.06	....	T	.39	.69	T	....	7.73
Keokuk	....	....	....	....	.01	T	....	.01	.76	.04	....	T	.20	....	.16	.27	....	....	....	....	....	....	....	....	.52	....	T	....	1.04	....	....	3 01
Keosauqua	.02	....	..	.18	....	.04	....	..	.14	.95	.48	.33	T	.07	.06	.42	.10	T	....	....	....	....	....	....	.03	.10	....	.03	.82	T	T	3.77
Lacona	....	....	....	....	.06	....	....	....	.48	.62	1.98	....	..	.48	.22	.52	....	....	....	....	....	....	....	.20	....	....	.18	.36	.93	....	....	5.43
Lenox	....	....	.02	....	....	....	....	....	.90	.70	1.20	....	.52	.02	04	.22	.07	....	....	....	....	....	....	.35	....	....	.38	....	1.06	....	....	5.42
Le Claire	.03	T	....	....	....	.03	.05	T	....	.65	.69	.49	.03	.21	T	.62	.46	....	..	....	....	....	....	....	T	.31	....	.02	.35	.02	....	8 06
Little Sioux	..	....	.27	....	.14	.23	....	....	.12	.41	.32	....	.32	.82	.10	.22	..	....	....	....	....	....	....	.02	....	....	....	.28	....	.67	.03	....	4.26
Le Mars	..	.12	.80	....	....	.50	T	.	1.15	....	....	....	T	2.82	.10	.22	....	....	....	....	....	....	....	.40	....	.20	....	1.10	1.06	....	....	8 87
Leon	..	....	....	11	....	....	....	....	.75	.91	1.16	.05	.66	.69	.05	.05	.08	....	....	....	....	....	....	.07	.19	....	.35	.02	.80	.05	....	5.39
Logan	.02	.02	.38	.31	....	....	....	....	.30	.54	.51	....	1.02	....	.14	.25	.01	....	....	....	....	....	....	.05	....	....	.30	.41	....	....	....	4.26
Maquoketa	.15	....	....	....	....	.32	.06	....	....	.80	.92	.90	.02	.10	.03	.80	.27	....	....	....	....	....	....	....	....	.08	....	.10	.95	.25	.03	5.78
Marshalltown	.13	.01	....	.15	....	.03	....	.30	.56	.88	.68	.70	.08	.52	....	.24	.58	....	....	....	....	....	....	....	.02	....	....	.07	1.15	.01	....	6.11
Mason City	.03	....	....	.03	....	.03	.25	....	.60	.70	1.01	....	.65	2.35	.04	.14	....	....	....	....	....	....	....	T	.10	.08	.25	....	1.93	....	....	8.19
Massena	....	....	....	.30	....	....	.03	.05	.09	.50	1.52	....	.46	.21	.04	.30	....	....	....	....	....	....	....	.28	....	....	....	.32	.28	.02	....	4.40
Montezuma	....	....	....	.05	....	.15	....	..	.30	.70	.70	.25	....	....	.50	....	.60	....	....	....	....	....	....	....	.40	....	....	....	.70	....	....	4 35
Muscatine	....	....	....	....	....	.12	.01	....	.21	.42	.40	.36	.03	.23	T	.11	.46	....	....	....	....	....	....	....	....	.02	.16	....	.03	.64	T	....	3.20
Monticello	....	....	....	.23	....	.30	....	....	....	.96	.70	1.04	.08	.49	.04	.62	.14	....	....	....	....	....	....	....	.21	....	.22	.49	.05	....	....	5.57
Mt. Vernon	.09	....	....	.25	T	.33	....	.07	.65	.37	1.06	....	.12	.06	.40	.50	.01	T	....	..	....	....	....	.08	.22	....	T	.22	.97	.01	....	5.41
Mount Ayr	....	....	....	.25	T	.10	....	.01	.58	.85	1.70	T	.50	.15	.05	.40	.10	....	....	....	....	....	....	.40	....	....	.55	.15	.95	....	....	6.74
Mt. Pleasant	....	....	....	....	....	.09	....	....	.73	.83	.91	....	T	.09	.14	.41	.17	....	....	....	....	....	....	....	.15	....	.06	.14	.29	....	....	4.01
New Hampton	.10	.03	.03	.10	....	.06	.04	.04	.35	.87	1.71	....	.08	.92	.75	.18	.03	.07	....	....	....	....	....	.03	....	....	.28	.18	1.55	....	....	7.35
Newton	....	....	..	.26	....	.07	....	.05	.90	.77	2.52	....	.14	.37	.73	.17	....	....	....	....	....	....	....	.17	....	.05	1.30	.75	....	....	....	8.25
Northwood	.17	.02	.02	.17	....	.05	.46	T	.78	.85	1.21	T	.40	1.35	.18	.24	.02	....	....	....	....	....	....	.02	.22	.01	.46	.06	1.12	.08	....	7.89
Odebolt	....	....	20	....	....	....	.27	....	.44	.62	.60	....	.15	1.62	.08	.20	.05	....	....	....	....	....	....	T	....	T	.74	.20	1.75	....	....	6.92
Ogden	....	..	....	....	.16	.04	....	.66	....	.61	1.94	....	.20	.80	.04	.13	..	....	....	....	....	....	....	....	....	....	.15	.32	.35	....	....	5.40
Olin	.12	....	....	.13	....	.10	....	.05	.32	.40	2.90	....	....	.39	.40	.33	....	....	....	....	....	....	....	....	....	....	....	T	1.00	.09	....	6.37
Omaha, Neb	T	T	.44	....	.87	T	T	T	.16	....	.44	T	.55	.12	.05	.02	....	....	....	....	....	....	....	.80	....	T	.16	.79	....	....	....	3.40
Onawa	....	T	.22	....	.05	.38	.02	....	.22	.42	.41	....	.50	2.05	T	.15	....	....	....	....	....	....	....	.01	....	.02	1.15	.37	1.60	....	..	7.57
Osage	.15	.03	....	.07	....	.10	.12	.04	.60	.85	1.19	....	.20	2.19	.31	.11	....	....	....	....	....	....	....	.04	....	T	.85	.04	1.02	.01	....	7.42
Oskaloosa	....	....	.03	....	.11	....	....	.37	.69	.90	....	....	.02	....	.07	.15	T	....	....	....	....	....	....	.37	.11	....	.13	.05	.31	....	....	3.34
Pacific Junction	....	....	.16	....	.05	.12	....	.02	.01	.03	.2?	....	.64	.34	.11	.04	....	..	..	..	....	....	....	T	..	T	.22	.09	.73	....	....	2.83
Perry	....	....	..	.20	T	.02	....	.10	.51	.75	2.20	....	.25	.94	.09	.10	....	....	....	....	....	....	....	....	....	....	T	.34	.56	....	....	6.06
Plover	....	....	....	.18	....	.36	T	....	1.20	.75	....	....	1.75	....	T	....	.20	....	....	....	....	....	....	.11	....	.14	.34	.37	1.40	....	....	6.60
Pocahontas	.12	T	...	.42	....	.31	....	....	....	2.05	1.27	....	....	1.71	T	.20	....	.	....	....	....	....	....	T	....	.04	.58	1.28	.06	....	....	8.04
Red Oak	....	....	....	.15	....	T	..	.03	....	.20	1.07	....	.50	.50	.17	....	....	....	....	....	....	....	....	.01	....	....	.20	.13	.90	....	....	3.86
Ridgeway	.13	.08	.22	.05	.01	.04	.11	T	.57	.48	1.88	.02	.23	.80	.31	.15	.03	.02	..	....	....	....	....	.05	....	T	.29	.04	1.42	....	....	6.88
Rock Rapids	....	.40	.07	....	.30	.14	.42	.75	T	.75	.35	T	T	.60	T	.60	....	....	..	....	....	....	....	....	T	T	.02	.36	.59	....	....	5.35
Rockwell City	....	....	.20	....	....	.25	....	....	.95	.45	.65	....	.45	2.05	.05	.15	....	....	....	....	....	....	....	....	....	....	.50	.15	1.20	....	....	7 05
St. Charles	....	....	....	.02	....	.37	....	....	.76	.96	1.00	.07	.51	.11	.15	.19	.02	....	....	....	....	....	....	.16	....	....	.13	.07	.53	T	....	5.05
Sheldon	.11	.33	.15	....	....	.50	....	....	2.90	....	.43	....	1.55	....	.08	.30	....	....	....	....	....	....	....	.42	....	.08	.30	1.30	.15	....	....	8.60
Sibley	.07	.14	1.56	.18	...	.42	.09	....	.44	2.09	.30	T	....	.98	.02	.15	.16	....	....	....	....	....	....	.08	.22	....	T	.22	.97	.01	...	7.96

DAILY AND MONTHLY PRECIPITATION FOR MAY, 1905--CONTINUED.

STATIONS.	DAY OF MONTH																														TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sidney	....	....	....	....	....	....	.02	....	....	..	1.20	....	.62	....	.28	.09	....	....	...	...	....	..	....	1.30	....	....	.42	.08	2.00	....	....	5.96
Sigourney	.02	....	....	.35	....	.05	....	....	.55	.45	.36	...	T	.04	.27	.36	.02	....	....	....	....	....	....	.27	.28	....	.10	.37	.34	....	....	3.83
Sioux Center	.20	....	.21	....	....	.44	....	....	.90	1.12	.38	....	1.10	.91	.10	.18	....	...	..	..	....	....	....	..	.09	.10	.23	..	.98	....	....	6.94
Sioux City	..	.14	.01	....	.25	.10	.04	T	.87	.24	.54	....	1.50	.26	.05	.12	....	....	....	....	....	....	....	.22	....	.54	.32	1.91	1.30	....	....	8.41
Stockport	....	....	....	.15	....	.03	....	....	.57	.71	.54	....	.02	.12	.30	.26	.03	....	....	....	....	....	....	.02	.15	....	.10	.20	.25	T	....	3.45
Storm Lake	.03	....	....	.15	....	.25	.10	.20	1.12	.67	.75	....	....	2.03	....	.03	.23	....	....	....	....	....	....	.01	....	....	.21	.47	1.27	T	....	7.50
Stuart	...	....	.15	....	....	....	....	....	.17	.87	1.05	....	.18	.32	.05	.07	....	....	....	..	....	....	....	.15	....	....	.08	.90	....	....	....	3.99
Thurman	....	...	.10	....	T	T	T	....	.42	T	1.30	T	1.08	.21	.05	.15	....	....	....	....	....	....	....	.35	....	....	.18	.08	....	2.28	....	6.20
Tipton	.10	....	....	....	....	....	....	....	....	.90	1.53	...	....	.15	....	....	....	....	....	....	....	....	....	....	.22	....	....	1.18	....	....	..	4.08
Toledo	.10	....	..	.35	....	....	....	.35	.90	.70	.70	.10	.10	....	.15	.60	....	....	....	..	....	....	....	.25	....	....	.05	.05	1.50	....	....	5.90
Wapello	T	....	....	....	....	....	....	....	.86	..	1.30	..	.20	.10	....	.51	.20	....	....	....	..	....	....	....	.17	....	.06	.47	.36	....	....	4.23
Washington	...	....	....	.15	.06	....	....	....	.27	.72	.49	....	.03	....	68	.77	....	....	...	..	....	....	..	.10	.05	.08	.05	.65	....	....	....	4.05
Washta	....	.08	.36	....	....	.37	.20	....	1.20	....	....	....	1.92	....	T	.20	....	....	....	....	....	....	....	.05	....	.22	.48	.38	1.42	....	....	6.88
Waterloo	.17	....	....	.14	....	.07	.15	.38	.06	1.29	.88		.06	.54	.37	....	.21	T	....	....	....	....	....	T	....	....	T	.37	.94	.03	....	5.66
Waukee	....	T	....	.07	T	T	..	...	.28	.70	1.01	T	.18	.13	.04	.08	.03	....	....	....	....	....	....	.05	T	....	.21	1.23	1.00	T	....	5.01
Waverly	.26	.04	.01	.15	....	.03	.20	.27	.50	77	1.84	....	.20	.40	.23	.25	....	....	...	....	..	....	....	.03	....	.02	.15	.21	1.24	....	....	6.80
Webster City	T	....	.54	.18	T	....	.25	....	1.49	...	1.00	....	1.27	....	.08	.50	T	...	.	..	....	....	....	....	....	T	.69	1.07	T	....	....	6.98
Whitten	.15	...	....	.44	T	....	T	.50	.72	.43	1.90	T	.14	.80	.17	.50	....	....	....	....	....	....	T	....	....	..	T	....	.91	....	....	6.66
Wilton Junction	....	...	....	....	..	.83	....	....	.98	.20	.42	....	T	....	.40	.58	.10	....	....	....	....	....	..	....	.60	....	..	.96	.15	....	....	4.72
Winterset	...	....	...	....	.03	T	....	.02	.33	.73	.98	....	.47	.12	.07	.08	....	....	....	....	....	....	....	.15	....	....	.24	....	.41	....	....	3.68
West Bend	.14	T	....	.02	T	.20	.20	....	1.25	....	1.06	....	.	1.44	.09	.27	....	.	....	....	..	....	..	.01	.02	.02	.38	.08	1.16	.26	....	6.60
Woodburn	...	....	....	....	....	.34	....	.05	.31	.91	2.53	T	....	.80	.06	....	.32	....	....	....	....	....	....	.05	..	T	.19	.02	.44	.04	....	6.06
Zearing	....	.10		.04	....	.01	T	.54	.69	.64	1.32	....	.13	.94	.98	.42	....	....	....	....	....		....		....	....	.06	.38	.55	T	....	6.75

T. Amount too small to measure.

Precipitation Chart May 1905.



JUNE, 1905 No. 6



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MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XVI. JUNE, 1905. No. 6.

IOWA CROP CONDITIONS, JULY 1, 1905.

Reports of crop correspondents showed the following averages of condition of staple crops, July 1, 1905: Winter wheat, 99; spring wheat, 94; corn 92; oats, 96; rye, 96; barley, 98; flax, 95; hay crop, 101; pastures, 105; potatoes, 98; apples, 65; grapes, 88; plums, 68 per cent.

On July, 1, 1904, spring wheat was rated 91; corn, 90; oats, 91; barley, 93; flax, 89; hay, 90; pastures, 94; potatoes, 101; apples, 85 per cent.

JUNE WEATHER AND CROPS.

June was about normal in temperature, the average for the state being 69.9°, which is .3° above normal. The average rainfall was 5.53 inches, or about 1.00 inch above the state normal. The distribution of rainfall was very unequal, ranging from 1.80 inches at Forest City, to 14.89 inches at Keosauqua. The greatest excess occurred in the southeast, and in a portion of the northwest districts. The central section received the lowest average. The first week was warm and generally dry, affording ideal conditions for the growth of crops and the cultivation of corn, potatoes, etc. A fair stand of corn was secured on well drained lands, and the fields were mainly well cultivated. Copious showers fell on the 9th and 10th, which were timely and beneficial in three-fourths of the state; but portions of the southeast district suffered much damage from excessive downpours, materially injuring crops in that region by flooding the bottoms and washing the cultivated slopes. The third week was normal in temperature and amount of sunshine, affording conditions favorable for growth and cleaning out the weedy fields. The last ten days of the month brought intermittent temperature, and closed with copious showers in all districts, and considerable excess in extensive areas in the northern section. At the close of the month the corn crop was materially better in stand and condition than at the corresponding date in three preceding years. Haying was begun, but the first cutting of clover suffered material damage by showery weather. The pastures were excellent, and the old meadows were improved by the rains. Small grain crops were not affected by rust, except in limited areas.

NOTES AND COMMENTS.

Numerous people express the belief that rain may be shaken out of the air by means of high explosives and a general bombardment of the sky. To sustain this notion they assert that there is generally a greater amount of rainfall on or closely following the Fourth of July, as a result of the wild, air-splitting celebration of that day. Records of past years do not sustain this view. In Iowa, for the period of fifteen consecutive years, the rainfall tables for the state show heavier rainfall on the 1st, 2d and 3d than on the 4th, 5th and 6th of July. June brings the heaviest rainfall, though at times the culmination of our rainy season is reached the first week in July. The idea of producing rainfall by jarring the air, or any other artificial means, may be termed a factless theory.

If everything went well with the farmer all the time—perfect weather conditions, no insect pests, no blight or rust, cheap and docile hired help, no summer hailstorms or untimely frosts, no floods or drouths—there would still be trouble, for so many would want to farm and so much would be produced that the business would not pay. So it is just as well to regard the calamities which beset the business as really essential to its best interests. It is only the disagreeable features, the slavery connected with dairying, which makes it the most profitable business on the farm.—*J. S. Trigg.*

In comparing the average annual temperatures of the past 16 years in Honolulu, it will be seen the lowest was 63.07 degrees and the highest 74.49 degrees. The maximum in the same period was 90 degrees and the minimum was 53 degrees. This is a remarkable exhibit of equability of temperature. Probably in no other place under the American flag will be found so little disparity between the extremes of heat and cold. The rainfall, except during the months of May, June, July, August and September, was somewhat erratic and wholly out of comparison with that of Southern California, whose temperature is not nearly so equable as Hawaii's. Last February there was heavier precipitation than in some whole years and not very far from the average annual fall of 20 years.—*Ex.*

WASHINGTON SPECIAL: Excluding the two reserves in Alaska, which cover nearly 5,000,000 acres, there are now in the United States fifty-one forest reserves, with a combined area of 57,833,974 acres. These reserves are divided among thirteen states and territories of the west. The people of the United States, as a whole, have little idea of the enormous magnitude of the interests affected by the government's forest reserve policy. Timber supply, important as this is, is a relatively small part of the whole purpose. The reclamation of millions of acres of arid land, a sustained or heightened fertility for other millions of acres of farm lands, and, finally, the safeguarding for the future of pasturage of millions of head of sheep and cattle are already certain results of that policy. It contemplates furnishing the present and thousand prospective settlers wood, water, tillable lands, and prosperous homes. Roundly stated, the purpose is to give these forests reserves their highest utility to all who use them now or will use them hereafter.

When you get up in the morning from your superheated couch
With a brain all hot and addled and a temper full of grouch,
When you wander to your office with a dull and fishy eye
'Neath a sun that's gayly blazing like a furnace in the sky,
Oh it's hot, but don't you mind it, though you're wilted and forlorn;
It's a little tough for mortals, but its mighty good for corn.
—*Council Bluffs Nonpareil.*

Mr. F. H. Newell, U. S. Hydrographer, says: "Not only are trees of great importance in maintaining favorable conditions for the perennial supply of water, but the forest has peculiar value in preventing erosion of the soil and the washing of silt into the reservoirs. The soil on many of the upland mountain parks is extremely light and easily moved by the beating of the rain. This is shown where cattle have traveled through the denuded areas. Each trail serves to collect the water from the occasional rains. A few sharp showers quickly cut out these trails into gulleys, and a few years suffice to convert them into miniature canyons and bad lands. About twenty years ago, when I first visited Colorado, there were to be found throughout the mountains little valleys with smooth fertile bottoms. On my last trip through this same country, I was dismayed by the appalling changes that had taken place. Each of these valleys was traversed by a deep-walled gulley, which in places widened out and left no room even for a wagon road. All the rich, light soil had been carried down the streams. This rapid erosion had been due to the cutting away of the timber and the burning of the brush and by over-grazing."

THE BLESSED RAIN.

The Rain came down on the brown
Rich furrows of mountain farms
And rivers with silver arms:
The cornblades rustled in merriment:
The cutworm made him a leafy tent;
The hemlock tassels were pearled.
Then, soft through fillets, of vapor spun,
The drops fell lazily, one by one,
A bluebird fluted to greet the sun;
A bow bent over the world.

The Rain came down on the town;
In floods, in torrents, in sheets
It swept the feverish streets.
A million lances of silver gray
It broke on steeples in stern array;
It veiled the cornice with wreaths of spray;
The big drops spattered the pane,
Then ceased. But gardens that late had been
So parched and thirsty, were fresh and green;
And all was wholesome and cool and clean;
For blest is ever the Rain.

—*By Arthur Guiterman.*

A SAD AND HEROIC DEATH.

By press dispatches we have received the details of the tragic ending of the life of Mr. Louis A. Hatten, formerly an assistant observer in the U. S. Weather Bureau office in Des Moines, who was drowned in the Arkansas river near Little Rock, Arkansas, on the evening of July 4th. Mr. Hatten served in this office from March 1903 to October 1903, during which period he won the high esteem of all who were associated with him in official and social relations. He was a competent observer, faithful in his work, and possessed of estimable qualities of character. The manner in which he came to his death gives the highest attestation of the noble spirit of the man. He was drowned while making a heroic attempt to save the life of a young friend with whom he was enjoying a holiday's outing on the river. Though failing in the effort to save the friend's life, he won for himself the imperishable crown of heroism. Mr. Hatten was born in Carrollton, Missouri, September 24, 1877, and was reared and educated at Carthage, Missouri. He was appointed assistant observer in the Weather Bureau in July 1902, and his first assignment to duty was at Evansville, Indiana, from which place he was transferred to Des Moines, in March 1903. He leaves a wife and a little son ten months old to grieve for his untimely taking off.

WEATHER MEDICINE.

The element of Superstition continues to be predominent in human nature, and the faker that can employ it successfully is always sure of an audience. The people still have faith in the imposter who claims to be able to foretell the weather a year in advance. The weather medicine man is only one in a legion of imposters, but he is the most exasperating one of the lot for reason of his lengthy staying powers. He keeps right on predicting cold weather for Winter and warm weather in Summer, with variable temperatures and occasional storms in the Spring and Fall, and a large section of the newspaper reading public accepts his fulminations as the conclusions of researches in what they fondly believe to be a new and mysterious science. The weather faker does not even have to exercise the virtue of keeping a close mouth in order to be esteemed wise; the more extensive his prognostications, so-called, the wider their range, the more profound is the awe in which he is held by the vast multitude of the unsophisticated. It is a pity that the gullible section of the public can not know the volunteer weather prophets for what they are—can not know what is the truth, that they know as little about the science of meteorology as do the medicine men of the Indian tribes about the healing art. It is a serious reflection, also, upon the press, that it should render space that could be made valuable, to such puerile and misleading vagaries as —— and —— and other such cheap mountebanks promulgate. Without the gullible newspaper through which to communicate with the gullible public, the weather medicine would soon give place in the public mind to a higher plane of thinking
—*Saturday Evening Post, Burlington, Iowa*

TRANSPORTATION ON THE GREAT LAKES.

The *Marine Review* states that never before in the history of the lakes had the shipyards been blessed with such a prodigality of orders; never before have all available berths been practically taken a year ahead. There are sixteen ships under order for 1906 delivery. This is in striking contrast with the condition of a year ago, when the ship building berths were practically vacant and no orders in sight. Indeed, the summer of 1904 was well advanced before the shipyards received a single order, but after that they came fast. But such a condition as now confronts the great lake shipbuilders is a new experience altogether. What with the orders for new ships, the lengthening of old ones and the inevitable repairs to the existing fleet, the shipbuilders of the great lakes can look forward to eighteen months of exceedingly active work. Since the beginning of the present year the great lakes' shipbuilders are working upon or have under order forty ships for the ore trade. These forty ships have a carrying capacity of 360,500 tons, or an average of a trifle over 9,000 tons each. Ten years ago the average carrying capacity of vesels under construction was only 3,000 tons. These forty ships for delivery during this year and next, carrying 360,500 tons on a single trip, will in an average season of twenty trips move 7,210,900 gross tons of ore. It was not until 1884 that the shipments of iron ore exceeded 1,000,000 tons per annum. These forty ships could therefore carry in a single season the combined movement of all the years from 1855 to 1870, and their capacity is in excess of even so recent a year as 1893, when 6,065,716 tons were moved. A ship has been pushed overboard on the great lakes every ten days during the past spring. The independent vesel owner as well as the ore owning steel companies have faith in the continued expansion of the iron business of the United States, for the greater part of the tonnage under order is for interests that must be called independent—that is to say, vessel owners without furnace or steel-making connections.

CLIMATOLOGY OF THE MONTH, JUNE, 1905.

BAROMETER.—Mean pressure, 29.91 inches, highest observed, 30.23 inches, at Dubuque, on the 27th; lowest observed, 29.49 inches, at Charles City, on the 5th; range for state, 0.74 of an inch.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 121 stations, was 69.9°, which is 0.3° above normal. By sections the mean temperatures were as follows: Northern section, 67.9°, which is 0.2° below normal; central section, 70.2°, which is 0.7° above normal; southern section, 71.7°, which is 0.5° above normal. The highest monthly mean was 74.5° at Red Oak; lowest monthly mean, 64.5° at Sibley. The highest temperature reported was 100° at Red Oak on the 9th; lowest temperature reported, 36°, at Washta on the 22d. The average monthly maximum was 92.1°; average monthly minimum, 45.7°. Greatest daily range, 48° at Washta; average of greatest daily ranges, 33.9°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 131 stations, was 5.53 inches, which is 1.00 inch above normal. The averages by sections were as follows: Northern section, 5.39 inches which is .71 of an inch above normal; central section, 4.78 inches, which is .22 of an inch above normal; southern section, 6.43 inches, which is 2.07 inches above normal. The largest amount reported was 14.89 inches at Keosauqua; least amount reported, 1.80 inches at Forest City. The greatest daily rainfall reported was 12.10 inches at Bonaparte on the 10th. Average number of days on which .01 of an inch or more was reported, 10.

WIND AND WEATHER.—Prevailing direction of the wind, south, southeast, southwest; highest velocity reported, 49 miles per hour, from the northwest, at Sioux City, on the 18th. Average number of clear days, 12; partly cloudy, 11; cloudy, 7.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Charles City	29.92	30.19	27	29.49	5
Davenport	29.93	30.20	27	29.58	5
Des Moines	29.92	30.15	27	29.54	5
Dubuque	29.94	30.23	27	29.54	5
Omaha, Neb	29.88	30.14	7	29.49	5
Keokuk	29.93	30.16	27	29.65	5
Sioux City	29.88	30.13	7	29.50	5
Means	29.91	30.23	27	29.49	5

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Charles City	4.946	36	SW	5
Davenport	5.207	34	N	18
Des Moines	6.269	47	W	5
Dubuque	4.798	29	SW	5
Keokuk	5.043	34	W	9
La Crosse, Wis	4.714	26	W	18
Omaha, Neb	6.502	33	NE	27
Sioux City	9.579	49	NW	18

OBSERVERS' NOTES.

ALTA—*David E. Hadden.* Temperature and rainfall in June were above normal; heaviest rainfall occurred during closing days of the month.

ALTON—*W. S. Slagle.* Altitude of this station is 1,308 feet. Light frost observed on 22d, causing no damage. Some rust on small grain.

AMANA—*Conrad Schadt.* Weather generally favorable for crops; no destructive storms during the month. Rye harvest begun on 30th.

BAXTER—*W. T. Thorp.* Fifty per cent of corn crop laid by at close of June. Hay crop, wheat and oats look good.

BONAPARTE—*B. R. Vale.* A normal June, except the phenomenal downpour of 12.10 inches of rain on the 10th, causing much damage to crops, soil and bridges.

BRITT—*Geo. P. Hardwick.* On the 18th a tornado passed from southwest to northeast, through center of county, causing loss of a few buildings in its track.

CHARITON—*C. C Burr.* Excessive moisture hindered cultivation of corn; early planted corn doing well

CLINTON—*Luke Roberts.* The mean temperature of June was 1.5° above normal; rainfall, 4.02 inches, was .41 of an inch below normal; conditions good for crops and a fine harvest is promised.

CRESTON—*W. L. Gaston.* Heavy rainfall interfered somewhat with corn plowing

ELLIOTT—*Henry Barnes.* A very growing month and crops are doing finely; heavy crop of clover and nearly all cut.

FOREST CITY—*J. A. Peters.* Height of corn June 30th about same as last year same date; rainfall 2.83 inches below normal.

GRAND MEADOW—*F. L. Williams.* Month wet; hay crop large; pastures extra; corn good but small; largest butter yield on record for this section.

GRINNELL—*A. O. Price.* Generally fair weather for field work and crops; small fruit abundant.

GRUNDY CENTER—*E. S. King.* Small grain uneven; corn best in years, fully knee high on 30th, hay and pastures good.

HANCOCK—*W. Armstrong.* All crops in fair condition at close of month; commenced to plow corn last time on the 26th.

HANLONTOWN—*Mrs. G. M. Paschen.* Corn made good progress in June; hay crop heavy and some hay made the last week of month; oats heading out and heavy; lightning did considerable damage to stock and buildings.

HUMBOLDT—*H. S Wells.* Rain 2.44 inches—not too much for all crops; showers the last week hindered hay making.

IDA GROVE—*Dr. J. E. Conn.* An unusually fine month for the crops; everything looking well, especially corn.

INDIANOLA—*Prof. John L. Tilton.* On June 1st, John Legget, of Lathrop, was killed by lightning; on the 19th a barn was burned by lightning two miles northeast; on 27th a chimney was struck.

INWOOD—*G. M. Larsen.* Greatest rain for many years fell on 28th; much hay spoiled and some other crops injured.

KEOSAUQUA—*J. H. Landes.* The rainfall, 11.23 inches, on night of 9th breaks the record for this place; much damage was done to crops on low lands by overflow, and on high lands by washing the soil; eighty-nine county bridges were taken out.

OLIN—*N. Potter* June was an ideal month for cultivating corn, which is a high average; oats and hay above average.

RIDGEWAY—*Arthur Betts.* Warmest June since 1901; 285 hours of sunshine, or 62 per cent; copious rainfall.

SHELDON—*A. W. Beach.* Conditions fine until 23d; since then too much rain for good progress of crops.

STOCKPORT—*C. L. Beswick.* On the 9th about 8 P. M. a gentle rain began and by morning the amount was 10.63 inches, —the heaviest ever recorded here.

WAUKEE—*E. J. Leonard.* Month favorable the first half, but very wet the latter part; all grain doing well.

WAVERLY—*H. S. Hoover.* A wet, cool month; too wet for making clover hay, and for corn and oats; apples not promising.

CLIMATOLOGICAL DATA FOR JUNE, 1905.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	68.0	- 1.7	91	4	42	22	31	5.55	†1.16	1.12	....	10	15	8	7	S	
Alta	Buena Vista	1,513	14	67.6	- 0.9	90	4,5	42	22	30	5 73	† .07	3.55	....	11	9	14	7	S	
Alta (near)	Buena Vista	.....	....	.....	.....	.....	.....	.....	.....	.....	7.23	.....	5.30	....	11	...	....	....	.....	
Alton	Sioux	.....	....	67.8	.....	92	4	39	22	38	7.20	.....	2.34	....	11	8	13	9	SE	
Britt	Hancock	1,236	8	69.4	† 0 6	92	4	42	22	32	3.56	- .92	1.00	....	14	1	27	2	SE	
Charles City	Floyd	1,015	18	67.0	- 2.5	91	4	45	22	29	5.29	† .16	1.22	....	13	4	16	10	SE	
Clear Lake	Cerro Gordo	1,241	7	69.4	† 0.9	91	4,5	45	22	30	4.25	- .14	1.50	....	6	4	20	6	NW	
Cresco	Howard	.....	31	66.3	† 4.1	88	4	44	22	29	4.67	- .29	1 27	....	10	9	14	7	SE	
Decorah	Winneshiek	857	12	68.6	† 0.8	89	5	45	8	31	6.31	†2.05	1.52	....	10	....	....	....	.....	
Dows	Wright	1,142	9	67.8	† 0.1	91	4	39	23	30	5.64	† .56	1.32	....	12	9	9	12	S	
Elkader	Clayton	727	21	70.4	† 0.9	95	4	45	8,27	37	4.49	† .29	1.50	....	11	12	15	3	SE	
Estherville	Emmet	1,298	12	66.6	- 2.0	91	4	40	22	36	3.48	† .39	.80	....	9	15	3	12	S, NW	
Florence	Wright	1,226	..	.....	.....	.....	.....	.....	...	.....	5.01	.....	2.68	....	8	3	25	2	S	
Forest City	Winnebago	1,226	11	67.2	- 0.9	91	4	43	22	34	1.80	-3.26	.78	....	9	14	1	15	SW	
Grand Meadow	Clayton	1,180	11	67.6	† 0.6	89	4,18	46	22	30	5.36	† .10	1.49	....	11	5	15	10	SE	
Greene	Butler	924	8	69.4	† 0.0	93	4	44	22	32	4.68	† .61	1.00	....	10	3	16	11	S	
Hampton	Franklin	1,155	13	69.5	† 1.3	95	4	45	22	32	4.99	- .24	1.58	.	9	3	24	3	SW	
Hanlontown	Worth	.....	...	65.6	.....	88	4	42	3,21	31	4.55	.....	1.55	....	11	14	11	5	SE	
Humboldt	Humboldt	1,095	16	67.2	- 2.8	88	13	43	22	29	2.44	-2.23	.84	....	7	13	11	6	SW	
Inwood	Lyon	.....	...	67.3	.....	92	3,4	38	21	38	9.92	.....	4.89	....	8	16	1	13	S	
Larrabee (a)	Cherokee	1,266	12	69.8	† 0.9	98	5	39	22	38	3 90	-2.00	1.47	....	12	5	20	5	.....	
LeMars	Plymouth	1,224	7	71.2	† 2.3	95	5	41	22	40	4.31	† .29	1.65	....	12	11	14	5	S	
Mason City	Cerro Gordo	1,132	8	68.8	† 1.2	91	4	45	22	30	4.80	-2.24	1.15	....	8	7	19	4	S	
New Hampton	Chickasaw	1,169	7	68.4	- 0.2	90	4	47	23	33	4.65	† .17	1.30	....	14	3	21	6	SE	
Northwood	Worth	1,222	8	67.3	† 0.5	90	4	43	22,23	30	3.89	- .92	.96	...	10	8	17	5	S	
Osage	Mitchell	1,184	13	67.4	† 1.0	92	4	42	22	33	5.52	†1.00	1.27	....	8	5	13	12	S	
Pocahontas	Pocahontas	1,190	...	68.2	.....	93	4	41	22	33	4.25	.....	1.19	....	9	11	13	6	SE	
Plover	Pocahontas	.....	8	68 1	- 0.5	93	9	42	22	35	4.42	† .39	1.22	....	7	9	11	10	S	
Ridgeway	Winneshiek	1,215	7	69 7	† 0.5	90	4,5	48	22	33	5.26	† .74	2.01		10	10	18	2	S	
Rock Rapids	Lyon	.....	....	67.6	- 0.8	93	4	46	2,22	34	9.17	†5.43	4.15	..	6	....	....	....	S	
Sheldon	O'Brien	1,422	6	69.1	† 2.6	94	5	47	27	40	6.79	†2.62	2.52	....	12	9	18	8	S	
Sibley	Osceola	1,212	12	64.5	- 2.6	92	5	40	22	37	7.19	†3.06	1.80	..	14	12	3	15	S	
Sioux Center	Sioux	.....	6	66.1	- 2.9	91	5	38	22	37	8.87	†4.57	4.05	....	12	9	9	12	S	
Storm Lake	Buena Vista	1,440	8	66.1	- 1.9	88	4	39	22	30	5.20	† .32	3.30	....	10	9	3	18	SE	
Washta	Cherokee	1,157	....	68.3	.....	93	5	36	22	48	5.75	†1.34	3.35	....	12	13	9	8	W	
Waverly	Bremer	942	9	68.1	- 0.7	90	4	48	22	30	6.76	†2.28	1,67	....	14	6	15	9	S	
West Bend (a)	Palo Alto	1,197	12	68.2	† 0.4	90	4	42	22	33	5.23	†1.42	1.77	..	10	....	....	....	.....	
Average		.....	....	67.9	- 0.2	91.2	.....	42.8	.....	33.4	5.39	† .72	.....	..	10	9	13	8	S	

CENTRAL SECTION.

Amana	Iowa	721	27	70.8	† 1.1	91	4,5	49	27	34	7.52	†3.03	2.54	....	10	14	12	4	SE	
Ames	Story	926	21	70.4	† 0.4	91	4,5	46	22	35	4.23	- .52	2.20	....	12	16	11	3	SE	
Audubon	Audubon	1,301	9	70.2	† 1.4	93	4,5	41	8	35	5.95	†2.18	2.63	....	9	5	14	11	.....	
Baxter	Jasper	998	....	70.2	† 2.7	90	4,19	42	23	33	4.50	† .08	1.40	....	12	11	10	9	SE	
Belle Plaine	Benton	826	14	69.8	1 0 0	95	4	48	22	34	4.49	† .26	1.65		11	13	8	9	SE	
Boone	Boone	....	....	69.1	.....	92	4	47	22	38	6.59	....	3.49	....	10	11	5	14	S	
Buckingham	Iowa	.....	....	.....	.....	.....	.....	.....	.....	.....	5.83	† .67	1.40	....	13	3	24	3	.....	
Carroll	Carroll	1,265	13	69.6	† 0.1	93	4	43	22	34	3.59	-1.24	1.95	....	8	16	6	8	.....	
Cedar Rapids	Linn	733	23	71.0	† 0.3	94	4	49	27	39	3.70	- .22	.92	..	18	12	15	3	S W	
Clinton	Clinton	609	38	71.6	† 1.7	94	5	43	1	40	4.02	- .66	2.74	....	6	12	15	3	NW	
Davenport	Scott	606	34	71.4	† 0.5	91	4	49	27	32	7.68	†3.29	5.06	....	10	11	15	4	E	
Delaware	Delaware	1,083	12	68.8	† 0.2	91	4	42	27	36	5.35	†1.07	1.29	....	12	6	20	4	S	
Des Moines	Polk	861	27	70.6	† 0.5	90	4	51	27	30	5.73	† .87	1.93	....	12	3	20	7	SW	
De Soto	Dallas	866	..	70.4	.....	90	18	49	22	32	5.94	.....	1.40	.	8	20	6	4	SW	
Dubuque	Dubuque	655	32	70.1	† 0.6	91	4	49	3	33	4.33	- .87	1.16	....	15	10	17	3	S	
Fort Dodge	Webster	1,126	....	69.0	.....	92	4	44	22	37	3 07	.....	1.10	...	8	16	4	10	.....	
Galva	Ida	1,290	12	67.6	- 1.4	88	4,5	38	22	44	5 00	† .77	2.80	....	11	15	4	11	S	
Gilman	Marshall	1,052	..	.....	.....	.....	.....	.....	.....	.....	5.24	† .34	1.65	....	10	9	17	4	W	
Grinnell	Poweshiek	1,023	10	70.7	† 0.4	91	4,5,15	47	22	35	5.95	†1.06	2.45	....	9	9	14	7	SW	
Grundy Center	Grundy	976	12	69.0	- 0.1	91	4	45	22	33	4.24	-1.60	.93	....	12	13	9	8	SE	
Guthrie Center	Guthrie	1,077	7	71.2	† 1.6	92	4,5	46	8,22	34	5.61	†1.55	1 92	....	10	18	6	6	NW	
Harlan (a)	Shelby	1,192	....	70.6	† 1.9	92	4,5,9	44	22	34	8.80	-1.48	1.54	..	10	5	19	6	SE	
Ida Grove	Ida	1,220		70.0	.....	93	4,5	46	27	36	3.13	.....	2.25	....	6	19	8	3	S	
Independence	Buchanan	921	40	68.8	- 0.3	90	4	45	22	33	4.33	- .70	1.80	....	8	17	6	7	SW	
Iowa City	Johnson	683	47	70.8	† 1.5	94	18	47	27	40	6.68	†2.05	4.85	....	9	14	0	16	N, S	
Iowa Falls	Hardin	1,170	10	68.1	- 0.4	92	4	46	8,22	36	3.52	-1.25	1.14	....	10	9	12	9	SW	
Little Sioux (a)	Harrison	.....	....	71.6	.....	94	4,5	45	22	32	3.18	.....	2.07	....	10	11	10	9	SE	
LeClaire	Scott	576	....	....	....	....	.....	.....	.....	.....	6.37	.....	4.41	....	6	22	2	6	SE	
Logan	Harrison	928	36	72.0	† 1,9	95	4	44	22	33	2.53	-3.17	1 00	....	7	5	22	3	NW	
Maquoketa	Jackson	688	12	68.4	- 1.6	91	4	41	27	40	3.13	-2.59	1.19	....	10	20	2	8	NE	
Marshalltown	Marshall	947	10	69.6	† 0.2	94	4	45	22	37	4.69	- .25	2.22	....	10	12	4	14	SE	
Monticello	Jones	925	....	70.7	† 2.2	96	17	44	8	38	3.80	- .69	1.22	....	8	16	5	9	E	
Muscatine‡	Muscatine		46	.....	.....	.....	.....	.....	.....	.....	4.36	- .50	2.57	....	9	3	19	8	N, S	
Mt. Vernon	Linn	847	30	70.2	† 0.8	92	4,15	46	27	35	4.07	† .32	1.47	....	14	13	12	5	NW	
Mountezuma	Poweshiek	.....	....	.....	.....	.....	.....	.....	.....	.....	6.90	.....	3.10	....	8	....	....	..	.....	
Nevada	Story	.....		.....	.....	.....	.....	.....	.....	.....	4.92	.....	2.25	....	8	....	....	....	.....	
Newton	Jasper	944	15	69.8	- 0.4	91	8	50	23,27	33	5.82	† .85	1.20	....	10	18	8	4	S	
Odebolt	Sac	1,356	8	71.4	† 0.6	94	4	43	22	36	3.64	- .67	2.04	....	7	21	6	3	.....	
Ogden	Boone	1,058	9	.....	.....	92	18	.....	.....	.....	6.35	†1.87	1.99	....	9	16	12	2	SE, SW	
Olin (a)	Jones	760	7	69.8	† 0.2	90	5	46	27	33	5 06	†1.54	3.10	....	7	....	....	....	SE	
Perry	Dallas	975	....	70.6	.....	92	4,18	47	22	34	6.97	.....	2.76	....	9	8	14	8	.....	
Onawa	Monona	.....	....	72.6	† 2.9	95	5,14	46	22	37	2.86	-2.34	1.18	....	14	20	5	5	SE	
Rockwell City	Calhoun	.....	8	70.6	† 1.7	93	4	46	23,27,28	35	2.05	-2.45	.85	....	4	22	7	1	.....	
Sac City	Sac	1,278	23	68.2	- 0.4	90	3	43	22	32	2 07	-2 82	1.45	....	6	21	7	2	SW	
Sioux City	Woodbury	1,165	16	69.0	- 1.3	95	5	44	22	34	2.55	-1.25	1.09	....	11	4	12	14	S	
Tipton	Cedar	807	....	72.6	† 3.3	93	4	51	27	29	5.92	†2.19	3.15	....	7	23	6	1	SE	
Toledo	Tama	856	9	69.8	- 0.9	90	4	47	22	35	4.45	† .85	2.00	..	10	11	14	5	SW	
Vinton (a)	Benton	810	15	69.0	- 0.7	90	4,5	48	27	34	.....	.....	....	....	....	....	....	....	.....	
Waterloo	Black Hawk	862	16	69.0	† 0.3	94	4	47	22	42	5.53	†1.03	1.73	....	11	6	20	4	SE	
Waukee	Dallas	1,039	....	71.7	.....	96	4,5	47	22	36	7.31	.....	2 50	....	12	7	16	7	SE	
Wilton Junction	Muscatine	683	11	72.7	† 1.6	95	4,18	45	27	38	6.57	†3.29	3.60	..	7	14	11	5	NW	
Webster City	Hamilton	.....	....	70 8	.....	95	4	43	22	36	3.06	.....	.90	....	7	18	7	5	SE	
Whitten	Hardin	1,036	....	70.2	† 1.9	93	4	44	22	34	4.16	-2.10	1.00	....	11	12	14	4	SE	
Zearing	Story	718	....	69.4	.....	90	4	47	22	29	4.62	.....	1.04	....	9	15	9	6	SW	
Average		.....	....	70.2	† 0.7	92.3	.....	45.6	.....	35.0	4.78	† .22	.....	....	10	13	11	6	SE	

†Above normal. ‡ Received too late to be computed with means. *a*. One day missing; *b*, two days, etc. §Not supplied with self-registering instruments.

CLIMATOLOGICAL DATA FOR JUNE, 1905—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	11	71.4	- 0.2	93	18	48	1, 22, 27	35	6.12	+ 1.82	2.07	....	9	16	10	4	SW	
Albia	Monroe	957	...	70.6	† 0.5	92	18	50	1	34	9.06	+ 5.49	3.44	....	12	19	0	11	SW	
Allerton	Wayne	.....	....	71.6	....	91	18	50	1	32	5.17	.....	1.30	....	11	22	4	4	NW	
Atlantic	Cass	1,184	14	71.8	† 2.1	94	4, 18	44	22	41	5.59	- .09	2.29	....	7	2	13	15	S	
Bedford	Taylor	...	5	71.4	† 3.8	90	15, 18	49	22	30	2.96	- 1.27	.69	..	10	13	9	8	S	
Bonaparte	Van Buren	.....	14	71.4	- 1.0	94	18	50	1, 27	35	14.50	+10.16	12.10	....	7	....	....	....	.....	
Burlington	Des Moines	544		73.2	.....	93	6, 18	52	3, 27	29	7.67	.....	6.04	....	8	19	10	1	S	
Chariton	Lucas	1,042	10	70.4	‡ 0.0	90	5, 18	50	1, 8, 22, 27	30	9.70	+ 5.43	4.22	....	8	15	8	7	SE	
College Springs(a	Page	.....	14	72.5	† 1.0	92	9	50	22	28	2.56	- 1.87	1.30	....	9	....	....	....	S	
Columbus Junct.	Louisa	586	...	71.4	.....	92	4, 18	50	3, 27	34	6.05	.....	1.94	....	10	21	9	0	SE	
Corydon	Wayne	992	12	71.4	† 0.6	89	5, 18	51	8, 22	30	9.07	+ 4.74	3.56	..	9	12	11	7	S	
Corning	Adams	1,127	13	70.8	† 0.4	92	5	43	27	30	5.07	+ .88	1.75	....	6	9	17	4	SW	
Clarinda	Page	.....	15	72.3	† 0.5	96	18	48	22	36	3.80	- 1.31	1.58	....	12	15	4	11	NE	
Creston	Union	.....	....	68.8	....	90	5, 18	48	28	31	6.22	.....	1.59	....	6	12	10	8	SE, W	
Cumberland	Cass	.....	....	.....	.....	.....	.....	.....	.....	....	5.81	+ 1.75	2.23	....	9	20	5	5	S	
Earlham (a)	Madison	.....	....	68.5	.....	90	18	43	8	36	6.96	.....	2.18	....	6	13	10	7	SE	
Elliott	Montgomery	.....	..	73.7	...	95	2, 4, 9, 14	46	22	40	3.27	.....	1.06	...	8	12	18	0	E	
Ft. Madison	Lee	516	56	.....	.....	.....	.....	.....	.....	....	8.26	+ 3.92	6.40	....	7	12	8	10	S	
Glenwood	Mills	.....	17	71.2	- 1.8	92	4, 9	44	22	29	2.72	- 1.19	1.40	....	4	1	25	4	SW	
Greenfield (a)	Adair	.....	14	72.4	† 1.8	97	4	45	21	46	8.74	+ 3.63	3.27	....	8	22	5	3	S	
Hancock	Pottawatt'mie	.....	....	70.8	.....	93	1, 5, 9	47	22	39	2.72	.....	1.10	....	5	16	9	5	E, SW	
Hopeville ‡	Clarke	.....	13	70.9	† 0.4	91	18	49	22, 27	32	4.64	+ 0.29	1 28	....	9	5	19	6	S	
Indianola	Warren	.....	....	71.0	† 0.6	92	18	48	22	34	6.98	+ 2.90	1.72	....	11	9	10	11	SW	
Keokuk	Lee	619	34	74.2	† 1.7	94	18	52	27	30	6.57	+ 2.03	4.80	....	9	14	13	3	SE	
Keosauqua	Van Buren	644	13	71 8	- 1.2	95	18	50	1	38	14.89	+10.83	11.23	....	10	3	18	9	.....	
Lacona	Warren	.....	....	.....	.....	.....	.....	.....	.....	.....	8.85	+ 4.51	2.50	....	10	7	18	5	.....	
Lenox	Taylor	1,250	10	71.2	† 1.0	92	5	48	22, 27	31	5.93	+ 1.80	2.50	...	8	19	7	4	S	
Leon	Decatur	1,120	....	72.1	.....	92	18	50	22	33	5.08	.....	1.85	...	10	21	5	4	S	
Massena	Cass	.....	....	72.0	....	94	14, 18	47	22, 27	38	5.74		1.80	....	7	21	5	4	S	
Mt. Ayr	Ringgold	1,236	12	72.2	† 1.5	93	15	48	22	32	7.00	+ 2.56	3.00	....	9	7	20	3	SW	
Mt. Pleasant	Henry	729	24	72.7	† 1.6	94	4, 6, 25	48	27	34	10.06	+ 5.85	7.20	....	9	16	12	2	SW	
Omaha, Neb.	Douglas	1,113	34	72.2	† 0.7	93	4	51	22	26	1.70	- 3.97	.76	....	12	5	12	13	N	
Oskaloosa	Mahaska	843	22	71.6	† 1.7	92	5	52	22	32	6.72	+ 2.59	2.12	....	11	16	2	12	SW	
Pacific Junction	Mills	960	6	71.8	† 2.3	94	5	50	22, 27	34	3 40	- 1.03	1.07	....	10	14	12	4	S	
Red Oak	Montgomery	1,033	8	74.5	† 1.9	100	9	51	22	39	3.87	- 1.29	2.18	....	8	17	7	6	NW	
St. Charles	Madison	1,070	...	70.4	....	90	4, 5, 18	50	7, 22	30	4.19	.....	1.62	....	12	16	9	5	SW	
Sidney	Fremont	.....	....	74.0	....	96	9	50	22	34	2.50	.....	.80	....	8	24	5	1	SE	
Sigourney	Keokuk	887	9	72.5	† 0.2	93	4, 18	50	27	35	7.48	+ 3.79	2.73	....	12	0	28	2	SW, NW	
Stockport	Van Buren	.....		71.4	.....	90	18	52	27	29	14.57	.....	10.63	...	8	16	4	10	NW	
Thurman	Fremont	.....	....	73.4	† 1.2	96	9	49	11	34	5.98	- 1.56	2.20	....	10	10	14	6	SW	
Wapello (a)	Louisa	588	7	70.6	- 0.9	90	4, 5	52	3, 22, 27	27	4.67	+ 1.75	2.00		8	18	11	1	SE	
Washington	Washington	769	13	70.6	- 2.6	91	4, 18	49	27	31	5.36	+ 2.91	2.15	....	6	....	....		SW	
Winterset	Madison	1,129	14	71.8	† 1.5	92	4, 5, 18	48	22	34	6.24	+ .40	3.10	....	7	13	12	5	SE	
Woodburn	Clarke	961	6	71.1	.....	92	16	46	8	33	6.80	+ 2.81	2.00	....	8	17	9	4	SW	
Average		.....	....	71.7	† 0.5	92.8	.....	48.7	.....	33.3	6 43	† 2.07	.....	....	9	12	10	6	SW	
Average for State		.....	....	69.9	† 0.3	92.1	.....	45.7	....	33.9	5.53	† 1.00	.....		10	12	11	7	S,SE,SW	

DATES OF THUNDERSTORMS.

NORTHERN SECTION.

Algona, 9, 18, 24, 27, 30.
Alta, 1, 3, 5, 8, 14, 15, 18, 24, 27, 29, 30.
Alton, 1, 15, 18, 24, 27, 30.
Britt, 9, 18, 29, 30.
Charles City, 1, 5, 9, 14, 16, 17, 18, 21, 28, 29, 30.
Cresco, 9, 14, 17, 18, 29, 30.
Dows, 6, 15, 16, 18, 29, 30.
Elkader, 1, 5, 9, 14, 17, 18, 25, 29, 30.
Estherville, 10. 16, 25, 30.
Florence, 3, 5, 9, 15, 18, 27, 28, 30.
Hampton, 5, 14.
Hanlontown, 1, 9, 16, 17, 18, 29, 30.
Humboldt, 27, 30.
Inwood, 28.
Larrabee, 9, 15, 27.
Mason City, 16, 17, 18, 29, 30.
New Hampton, 1, 5, 14, 18, 21, 29, 30.
Northwood, 10, 16, 17, 18, 29.
Osage, 9, 14, 16, 18, 28, 30.
Pocahontas, 18, 27, 29, 30.
Plover, 5, 9, 19, 27, 29, 30.
Rock Rapids, 1, 15, 18, 24, 30.
Ridgeway, 1, 3, 5, 9, 13, 14, 15, 16, 17, 18, 21, 25, 28, 29, 30.
Sheldon, 9, 15, 18, 24, 25, 26, 27, 28, 30.
Sibley, 2, 16, 19, 27, 30.
Sioux Center, 15, 16, 24, 27, 28, 30.
Storm Lake, 18, 23, 27, 28, 29.
Washta, 1, 3, 27, 28.
Waverly, 1, 5, 9, 11, 14, 16, 17, 18, 21, 27, 29, 30.
West Bend, 5, 9, 15, 18, 27, 29.

CENTRAL SECTION.

Amana, 1, 5, 9, 18, 21, 25, 29.
Baxter, 9, 19.
Boone, 1, 9, 18.
Carroll, 3, 9, 10, 20, 27, 28, 29, 30.
Clinton, 4.
Delaware, 1, 2, 9, 10, 19, 25.
Davenport, 9, 10, 15, 18, 19, 25, 30.
Des Moines, 1, 5, 9, 10, 14, 16, 18, 19, 20, 25, 27, 28, 29, 30.
Dubuque, 1, 5, 6, 14, 15, 18, 19, 25, 29, 30.
Grinnell, 1, 6, 9, 10, 14, 18, 19, 20, 25, 27, 29, 30.
Grundy Center, 2, 6, 9, 10, 15, 16, 17, 19, 27.
Guthrie Center, 5, 9, 16, 18, 19, 27, 30.
Harlan, 3, 5, 9, 10, 11, 20, 27, 30.
Independence, 1, 5, 9, 18, 21, 25, 30.
Iowa Falls, 5, 9, 12, 14, 16, 18, 28, 29.
Jefferson, 18, 27, 29.
Little Sioux, 11, 30.
Marshalltown, 9, 16, 18.
Monticello, 18.
Mt. Vernon, 6, 18, 19, 20, 25, 29, 30.
Montezuma, 10.
Nevada, 1, 9, 16, 19, 27.
Olin, 2, 9, 14, 18, 30.
Onawa, 3, 8, 13, 21.
Perry, 1, 6, 9, 28.
Sioux City, 5, 11, 12, 13, 15, 18, 20, 24, 27, 30.
Waukee, 1, 5, 9, 16, 18, 19, 25, 27, 29, 30.
Wilton Junction, 9, 10,
Whitten, 6, 9, 10, 16, 17, 18, 19, 20, 26, 29, 30.
Zearing, 9, 17, 19.

SOUTHERN SECTION.

Allerton, 1, 10, 14, 19, 20, 27, 28, 29, 30.
Atlantic, 5, 9, 18, 19, 27.
Burlington, 9, 10, 19.
Columbus Junction, 9, 10, 14, 19, 25, 26, 30.
Corydon, 10, 14, 27.
Corning, 6, 9, 10, 11, 16, 18, 20, 27.
Creston, 19, 20, 28.
Cumberland, 9, 18, 30.
Earlham, 1, 2, 9, 10, 14, 18, 20, 27, 30.
Elliott, 6, 16, 18, 20, 27, 30.
Greenfield, 1, 2. 3, 5, 9, 10, 14, 16, 18, 25, 27, 28, 29, 30.
Hancock, 4, 9, 30.
Indianola, 1, 5, 9, 16, 18, 19, 27, 29.
Keokuk, 9, 10, 14, 18, 29, 30.
Keosauqua, 9.
Lenox, 5, 9, 18, 20.
Massena, 6, 9, 16, 18, 20, 30.
Mt. Pleasant, 10, 18, 19, 20, 28.
Oskaloosa, 9, 27, 30.
Pacific Junction, 6, 10, 20.
Omaha, 1, 3, 5, 9, 11, 13, 15, 16, 19, 21, 23, 28, 30.
Red Oak, 18.
Sidney, 6, 16, 18, 20, 27, 28, 30.
Sigourney, 6, 10, 14, 17, 19, 30.
Stockport, 10, 20, 27, 29.
Woodburn, 9, 19, 27.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JUNE, 1905.

STATIONS.		DATE																															MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max.	81	86	89	92	92	82	77	81	91	75	81	86	90	92	92	92	81	93	84	81	80	77	85	91	92	86	71	85	83	84	..	85.2
	Min	48	57	60	67	69	65	54	57	65	66	61	56	59	61	61	67	63	58	55	58	58	48	56	62	68	62	48	52	52	57	..	57.7
Albia*	Max.	80	82	86	91	91	85	75	76	84	84	75	80	88	88	89	90	76	92	80	77	82	74	80	88	90	80	67	77	81	77	..	82.2
	Min	50	56	54	57	71	70	56	52	57	62	62	56	60	64	64	58	68	58	62	61	58	51	52	54	67	67	58	53	56	64	..	59.1
Algona	Max.	81	79	85	91	88	84	69	74	88	70	72	82	86	86	82	85	74	80	73	79	70	71	72	83	80	78	67	75	80	75	..	78.5
	Min	54	53	56	66	71	60	53	47	58	60	57	51	59	61	64	66	53	56	49	55	59	42	52	64	69	58	48	55	64	60	..	57.5
Allerton	Max.	80	83	85	90	90	85	75	75	87	86	80	82	87	90	90	88	82	91	82	76	83	75	81	86	89	85	75	79	85	80	..	83.4
	Min	50	55	56	68	71	66	52	51	65	67	57	60	57	60	63	67	66	59	60	59	57	51	53	62	66	66	51	52	63	66	..	59.9
Alta	Max.	84	80	86	90	90	75	70	71	87	70	72	83	88	87	82	80	72	83	74	79	65	66	75	85	77	76	61	70	80	74	..	77.8
	Min	55	55	60	67	72	58	53	49	62	57	52	53	62	61	64	63	57	57	49	55	50	42	55	65	67	58	45	52	64	60	..	57.3
Alton	Max.	84	79	87	92	91	84	69	72	89	78	74	87	90	88	79	78	71	77	74	78	74	68	75	83	78	71	67	72	79	76	..	78.8
	Min	55	53	62	62	72	56	55	52	61	55	52	49	63	62	63	62	56	58	49	55	55	39	56	56	66	50	48	53	64	53	..	56.8
Amana	Max.	81	75	82	91	91	84	73	75	82	77	73	79	86	88	89	89	81	89	77	78	81	72	79	86	90	77	70	78	84	79	..	81.2
	Min	50	55	52	70	72	68	59	52	59	67	60	58	61	64	63	66	68	65	63	60	58	51	52	64	66	65	49	55	63	65	..	60.3
Ames	Max.	81	80	85	91	91	86	73	78	85	71	76	80	86	86	87	88	77	90	76	79	78	73	75	86	88	80	69	74	82	79	..	81.0
	Min	50	53	56	71	73	65	58	48	62	64	59	55	60	62	64	68	62	55	55	59	57	46	55	63	68	62	51	55	64	67	..	59.8
Atlantic	Max.	85	89	90	94	92	80	72	77	94	72	78	85	91	90	88	86	77	94	77	80	80	76	83	88	88	76	70	72	88	81	..	83.1
	Min	55	48	63	68	72	63	56	46	67	65	60	69	70	65	65	62	61	59	53	59	59	44	57	65	68	59	56	54	64	67	..	60.6
Audubon	Max.	86	82	90	93	93	83	73	75	92	73	75	85	88	89	86	84	75	92	76	79	75	76	84	89	87	87	71	74	85	81	..	82.6
	Min	53	51	61	67	71	62	57	41	68	63	63	50	60	58	62	62	61	57	50	57	57	45	55	60	64	58	47	53	64	63	..	57.8
Baxter	Max.	82	81	84	90	89	83	74	75	80	76	75	81	84	88	88	85	80	85	90	82	81	74	75	84	89	77	67	75	85	78	..	81.2
	Min	52	52	53	69	71	65	57	52	60	65	59	54	58	61	62	72	62	65	60	62	55	46	42	64	65	63	50	53	63	65	..	59.2
Bedford	Max.	81	86	85	88	89	82	76	78	86	80	80	83	86	88	90	85	79	90	84	78	77	74	78	84	88	82	74	79	88	81	..	82.6
	Min	53	56	62	68	72	62	52	53	66	66	57	53	59	61	62	66	62	61	56	59	53	49	60	64	65	65	50	55	66	67	..	60.2
Belle Pl'e	Max.	72	76	80	95	93	83	72	71	84	78	75	80	84	91	90	89	78	70	75	81	80	73	87	89	86	76	68	77	84	75	..	80.4
	Min	52	55	62	68	71	65	58	57	58	63	58	57	59	61	65	65	67	55	60	60	57	48	53	55	65	62	50	52	59	65	..	59.1
Bonapar'e	Max.	79	82	81	89	89	89	76	75	84	86	73	80	85	88	90	88	80	94	79	78	81	73	78	87	90	82	78	77	79	79	..	82.1
	Min	50	53	51	68	69	71	58	57	64	62	60	57	61	63	65	66	68	59	66	61	61	55	52	60	65	69	50	55	62	61	..	60.6
Boone*	Max.	82	80	85	92	90	80	71	73	85	67	74	81	82	88	85	87	71	90	74	79	77	72	73	86	88	75	60	71	79	77	..	79.1
	Min	56	57	56	57	72	65	59	53	58	62	59	56	61	65	66	68	62	57	55	59	60	47	52	56	66	62	55	51	56	65	..	59.1
Britt	Max.	83	76	87	92	91	83	68	77	88	69	75	83	87	90	88	87	73	81	75	81	74	73	76	86	85	72	64	78	85	76	..	80.1
	Min	51	52	57	64	71	58	51	46	58	61	57	49	57	61	60	62	59	55	45	56	58	42	53	63	68	58	52	55	63	61	..	56.8
Burling'n	Max.	79	83	81	92	91	93	76	78	80	86	75	80	86	88	90	90	89	93	79	77	84	73	84	87	90	83	75	73	79	81	..	83.3
	Min	52	64	52	69	71	73	60	56	67	67	63	58	63	66	67	67	73	64	64	62	62	56	56	63	67	67	52	54	72	62	..	63.0
Carroll*	Max.	84	83	88	93	92	78	73	77	84	76	79	84	88	89	84	83	78	90	78	80	76	73	79	87	82	77	58	71	80	82	..	80.9
	Min	55	57	58	79	71	60	52	47	61	60	55	51	64	59	63	63	60	56	50	55	58	43	55	65	67	57	55	45	61	64	..	58.2
Cedar R*	Max.	82	74	84	94	93	83	70	77	83	79	74	79	89	91	91	92	78	91	79	79	81	72	78	89	92	76	71	79	84	80	..	82.1
	Min	54	58	51	55	75	70	61	53	58	60	61	60	62	57	61	69	72	59	63	62	61	53	54	55	67	66	49	54	58	65	..	60.0
Chariton	Max.	80	81	83	89	90	81	78	75	87	82	75	80	86	87	81	88	81	90	80	75	79	72	80	86	88	84	70	74	83	78	..	81.4
	Min	50	54	56	69	70	67	53	50	64	66	60	57	58	56	64	66	65	57	59	60	55	50	53	63	66	64	50	53	62	65	..	59.4
Charles C.	Max.	80	74	81	91	88	77	64	74	83	73	73	77	86	88	83	84	68	81	74	77	72	70	78	82	83	72	61	76	79	71	..	77.2
	Min	52	52	52	70	67	62	50	46	58	60	56	51	58	62	60	66	61	55	54	59	51	45	53	62	65	53	50	55	61	58	..	56.8
Clarinda*	Max.	86	89	92	95	95	87	79	80	94	76	80	87	93	93	91	90	78	96	76	79	78	77	83	90	94	82	74	80	86	83	..	85.4
	Min	53	56	59	69	70	63	53	53	58	67	56	54	60	61	61	63	61	62	56	53	60	48	50	62	64	64	63	50	65	67	..	59.2
Clear L	Max.	88	85	81	91	91	82	67	72	84	71	72	85	86	88	87	86	77	79	82	84	72	72	71	83	81	74	68	73	88	77	.	79.9
	Min	56	54	53	68	72	64	49	51	57	60	57	55	64	65	64	67	60	59	56	59	59	45	52	62	68	68	53	55	64	61	..	58.9
Clinton	Max.	82	75	86	93	94	90	75	80	72	84	81	80	88	81	92	93	91	93	81	83	85	75	83	90	93	79	75	83	84	87	..	84.6
	Min	43	54	46	64	71	66	57	46	57	63	61	58	58	63	64	66	68	63	61	60	56	51	50	56	65	62	48	55	61	57	..	58.5
Col. Spgs.	Max.	81	85	87	90	90	85	73	80	92	82	78	82	88	90	89	88	86	88	75	75	77	77	79	86	89	80	74	82	82	87	..	83.2
	Min	..	60	63	70	70	65	63	55	70	62	56	54	62	65	65	66	64	65	63	58	62	50	62	63	68	65	52	52	56	66	..	61.8
Colum. J.	Max.	79	80	83	92	91	85	74	78	77	80	74	79	86	89	90	89	84	92	78	78	82	79	81	87	90	80	73	78	81	83	..	82.4
	Min	52	55	50	68	70	70	58	54	63	66	63	57	59	64	65	66	60	58	63	69	59	52	51	61	65	63	50	53	64	61	..	60.4
Corning	Max.	83	84	87	91	92	83	77	73	90	75	78	83	87	88	87	87	78	74	73	77	76	73	81	85	89	83	71	75	83	82	..	81.5
	Min	54	54	63	68	71	61	55	52	66	63	60	53	63	61	64	65	61	60	55	58	58	48	59	63	65	64	48	68	65	68	..	60.1
Corydon	Max.	80	81	84	88	89	84	77	73	85	81	78	83	85	86	86	87	81	89	88	76	81	72	79	85	87	83	70	75	83	77	..	81.8
	Min	53	56	56	69	71	67	58	51	65	66	61	58	60	62	65	67	66	59	60	60	58	51	54	63	67	67	52	55	63	66	..	60.9
Cresco	Max.	79	70	79	88	87	81	66	73	74	71	69	76	83	85	83	84	78	77	72	76	70	69	70	80	82	72	61	75	78	71	..	76.0
	Min	54	52	50	69	72	61	50	48	57	61	56	53	57	64	60	64	62	52	54	59	57	44	53	62	65	46	47	51	61	58	..	56.6
Creston	Max.	73	81	84	89	90	78	72	74	85	71	73	79	85	85	85	84	75	90	75	75	75	71	78	84	87	77	62	73	82	77	..	79.0
	Min	54	54	61	63	71	66	54	54	59	68	61	57	62	64	64	66	62	60	57	59	60	49	52	56	64	63	58	48	51	61	..	58.6
Davenpo't	Max.	78	75	82	91	90	89	70	76	74	77	75	79	86	87	89	89	86	90	78	80	82	71	80	85	90	75	73	80	79	83	..	81.3
	Min	57	56	50	71	73	68	58	52	60	65	62	60	65	68	70	67	68	63	65	63	62	56	52	60	70	57	49	54	64	63	..	61.6
Decorah	Max.	82	76	81	88	89	85	68	77	73	75	73	78	87	88	88	87	82	86	76	78	78	72	76	76	87	73	67	78	78	68	..	79.0
	Min	51	52	50	70	75	64	58	45	58	64	58	53	57	65	60	65	61	55	57	58	57	48	55	64	69	58	50	53	62	60	..	58.2
Delaware	Max.	80	69	81	91	89	85	70	76	73	80	75	77	88	88	90	88	80	87	77	76	83	68	76	85	88	71	67	76	76	77	..	79.6
	Min	57	55	45	68	70	62	55	48	56	64	58	56	58	64	62	65	67	55	59	57	56	47	49	72	64	58	42	54	59	63	..	58.0
Des M	Max.	80	80	85	90	90	81	71	72	84	73	76	80	86	88	86	88	73	90	77	80	78	71	77	86	89	74	64	73	82	78	..	80.1
	Min	57	58	57	73	70	62	59	54	64	64	61	58	62	64	66	71	63	60	59	61	57	52	56	66	68	64	51	56	61	64	..	61.2
De Soto	Max.	81	79	84	89	89	84	72	72	85	70	75	80	85	87	84	86	76	90	75	77	76	76	78	85	88	78	71	72	80	78	..	80.1
	Min	54	54	58	70	73	66	58	51	65	65	60	55	62	63	64	68	68	58	58	60	60	49	53	65	68	63	50	54	64	67	..	60.7
Dows	Max.	81	76	85	91	88	81	68	73	86	71	71	80	83	88	82	85	75	86	76	76	72	70	71	87	82	74	67	75	78	78	..	78.5
	Min	54	53	54	67	72	63	53	45	57	62	57	50	58	61	60	63	59	56	58	58	58	44	39	61	65	59	51	53	62	62	..	57.0
Dubuque	Max.	78	72	82	91	90	82	70	75	71	78	78	78	86	87	87	86	79	87	78	80	78	80	70	77	84	90	72	69	78	76	78	..	79.4
	Min	56	55	49	78	64	65	60	54	56	64	62	61	63	69	67	68	66	62	63	61	59	55	53	60	70	57	52	53	64	64	..	60.8
Earlham	Max.	81	80	83	87	88	81	80	71	85	70	75	81	85	85	85	86	75	90	76	79	76	71	69	85	87	75	69	..	81	79	..	79.8
	Min	50	51	57	68	70	63	55	48	63	64	59	50	58	57	58	62	61	54	54	59	54	45	53	61	65	60	47	..	59	65	..	57.2
Elkader	Max.	84	76	75	95	93	84	78	78	74	79	75	83	91	93	92	92	80	92	81	88	81	76	80	88	91	78	76	83	73	83	..	82.7
	Min	47	52	46	60	77	64	57	45	68	65	59	56	58	68	61	65	67	56	59	60	55	47	54	60	65	60	45	53	61	60	..	58.0
Elliott	Max.	88	95	93	95	94	84	79	82	95	83	79	93	92	95	89	91	90	94	79	85	77	80	87	91	93	84	74	79	91	92	..	87.4
	Min	54	58	63	67	72	62	54	53	66	64	57	53	63	61	63	64	60	61	55	57	60	46	60	64	69	61	49	55	61	68	..	60.0
Esthervil*	Max.	83	78	88	91	90	78	72	79	88	72	73	85	90	85	79	83	77	73	76	79	68	70	83	83	74	68	58	73	80	72	..	78.3
	Min	52	51	56	59	65	59	55	47	59	55	58	49	55	63	64	62	58	53	47	58	58	40	53	55	63	57	53	47	53	55	..	55.0
ForestCy*	Max.	84	75	83	91	87	79	66	74	87	65	71	80	88	88	83	86	75	82	78	81	69	78	73	86	85	78	61	76	84	75	..	78.6
	Min	53	54	53	57	71	60	49	47	57	63	56	52	58	62	63	61	59	55	49	55	59	43	50	54	65	57	51	51	56	58	..	55.9
F. Dodge*	Max.	80	81	88	92	91	76	71	73	87	67	75	84	89	89	86	86	75	90	80	89	75	76	75	88	82	77	59	73	83	78	..	80.3
	Min	56	50	58	60	59	64	57	48	60	64	57	52	57	65	67	66	60	61	51	58	58	44	46	51	66	60	57	50	57	64	..	57.6
Galva	Max.	84	79	85	88	88	73	70	72	85	72	73	82	85	85	82	82	72	85	75	79	79	71	77	86	83	75	74	72	82	78	..	79.1
	Min	40	54	60	62	69	63	55	49	62	52	52	50	62	59	57	60	59	56	51	58	57	38	56	64	69	56	45	52	62	63	..	56.2
Glenw'd	Max.	88	84	89	92	91	82	90	77	92	81	75	82	90	88	84	79	74	91	74	74	73	71	79	87	84	78	73	78	87	84	..	81.8
	Min	59	57	64	71	73	56	63	55	67	60	56	56	64	64	66	63	59	62	56	59	62	44	59	64	68	62	50	54	61	64	..	60.6
Grand M.	Max.	79	72	78	89	87	78	68	75	74	77	74	77	89	86	85	86	75	85	74	74	77	70	75	81	86	71	65	77	73	71	..	77.6
	Min	54	54	48	69	71	54	55	50	57	55	57	55	59	66	60	65	65	60	56	56	56	46	56	60	66	58	47	54	60	58	.	57.6
Greene	Max.	85	77	85	93	90	89	73	78	85	77	77	82	90	91	87	88	78	86	76	83	77	75	77	87	86	75	63	80	79	77	..	81.5
	Min	53	52	51	70	70	63	50	50	57	64	58	52	58	62	59	64	61	56	54	58	58	44	45	60	67	58	51	55	62	59	..	57.3
Greenfield	Max.	92	85	89	97	96	90	77	78	92	76	80	84	92	93	90	89	82	98	80	82	75	87	92	93	96	87	72	71	86	85	..	86.0
	Min	54	56	53	..	70	68	58	51	58	65	60	54	60	62	61	65	60	57	55	57	45	56	63	65	66	60	56	46	65	66		58.9
Grinnell	Max.	82	80	82	91	91	88	75	75	88	78	76	81	86	90	91	88	79	90	84	78	84	70	75	85	89	80	70	74	87	78	..	82.0
	Min	52	54	52	72	70	70	54	55	60	66	59	55	60	63	63	68	60	55	58	59	57	47	52	63	66	63	50	53	62	63	..	59.4
Grundy C	Max.	80	74	82	91	89	80	74	72	83	79	74	78	85	87	85	85	76	88	75	79	78	71	72	84	87	75	65	75	80	74	..	79.2
	Min	54	55	52	69	71	64	54	54	60	64	59	52	60	63	60	66	62	55	55	59	56	45	52	64	67	62	49	53	62	64	..	58.7
Guthrie C	Max.	84	82	89	92	92	90	79	75	89	71	76	85	88	90	88	87	78	91	78	80	80	69	81	88	88	81	75	75	83	82	..	82.9
	Min	50	53	60	70	73	62	58	46	68	64	60	52	62	62	62	67	61	58	55	59	59	46	56	65	69	60	48	58	66	66	..	59.5
Hampton	Max.	84	76	82	95	90	83	70	74	86	71	75	83	89	81	88	87	75	89	73	83	78	77	71	87	84	75	65	80	85	74	..	80.5
	Min	54	55	52	68	72	65	52	49	57	64	58	54	61	61	62	65	60	58	53	59	58	45	52	62	67	59	52	55	63	62	..	58.5
Hancock	Max.	93	92	91	90	93	85	72	72	93	80	70	84	89	87	85	83	74	92	75	76	76	75	81	87	89	78	71	75	87	81	..	82.5
	Min	57	56	62	62	72	63	55	53	54	62	58	56	64	62	65	65	60	60	55	50	62	47	59	59	68	60	48	55	54	66	..	59.0
Hanlontown	Max.	82	72	80	88	86	82	67	71	84	68	69	77	83	85	82	82	73	76	72	75	70	66	69	81	80	71	62	73	78	73	..	76.0
	Min	51	57	42	62	71	58	48	45	55	62	46	50	58	62	60	64	58	54	50	49	42	51	50	62	67	56	50	52	63	57	..	55.2

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JUNE, 1905—CONTINUED.

Stations.		Date. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mean.
Harlan	Max.	85	86	89	92	92	86	70	74	92	75	78	85	89	89	86	81	77	91	..	81	77	75	84	88	85	77	74	74	83	83	..	82.7
	Min.	53	52	62	66	70	61	50	50	64	61	56	51	61	58	68	64	59	59	..	57	60	44	56	64	67	58	46	53	64	66	..	58.6
Humboldt	Max.	74	74	80	82	83	73	69	72	73	72	68	73	83	82	81	80	72	68	72	78	74	72	72	86	80	76	68	74	79	77	..	75.7
	Min.	56	54	58	69	73	64	56	46	60	62	58	51	60	63	66	66	59	55	51	58	60	43	56	65	70	58	50	55	63	60	..	58.8
Ida Grove	Max.	82	81	90	93	93	80	72	75	89	80	83	87	91	92	90	79	78	87	77	82	73	71	82	90	83	76	70	71	80	79	..	81.9
	Min.	56	52	63	70	73	59	61	50	63	58	53	60	55	62	60	61	56	56	56	54	59	53	54	66	63	60	46	52	52	62	..	58.1
Independ.	Max.	79	73	80	90	89	87	74	73	79	77	73	77	84	86	86	85	84	86	83	84	77	72	74	88	87	78	69	75	77	78	..	80.1
	Min.	49	54	47	69	71	61	60	47	55	64	57	58	56	63	60	64	64	55	57	59	55	45	50	61	64	60	46	53	61	64	..	57.6
Indianola	Max.	81	80	85	91	90	88	74	74	85	72	75	82	83	89	88	89	80	92	72	78	78	72	79	88	89	82	71	73	83	78	..	81.4
	Min.	52	57	56	70	72	65	57	51	64	66	61	57	60	62	64	69	65	58	65	61	58	48	54	64	67	63	51	54	64	67	..	60.7
Inwood	Max.	80	90	92	92	81	73	69	82	78	74	81	89	90	87	86	72	74	73	76	79	68	73	80	78	70	66	68	82	73	76	..	78.4
	Min.	54	63	65	71	51	52	51	66	49	59	49	51	61	62	59	64	53	45	54	55	38	55	63	62	53	49	52	61	59	61	..	56.2
Iowa City*	Max.	76	80	85	91	90	84	74	75	82	78	73	81	89	90	92	92	79	94	80	81	84	76	83	89	90	81	75	83	84	82	..	83.1
	Min.	50	55	50	51	73	68	60	51	56	58	62	58	60	62	63	65	67	53	62	60	59	52	50	57	65	67	47	51	58	62	..	58.6
Iowa F*	Max.	82	76	84	92	90	76	67	74	85	73	75	81	85	89	85	87	70	89	77	80	78	73	74	86	86	75	64	78	88	77	..	79.7
	Min.	57	55	53	56	71	64	56	46	52	63	59	50	53	61	60	63	62	56	54	55	56	46	48	54	63	60	52	53	55	61	..	56.5
Keokuk	Max.	80	82	84	91	92	93	86	77	83	88	76	80	88	88	90	90	86	94	79	78	82	74	82	89	92	86	77	78	80	82	..	84.2
	Min.	57	60	54	71	78	75	61	60	66	67	64	60	66	67	70	68	73	64	66	66	66	58	53	63	70	72	52	57	66	63	..	64.3
Keosauqua*	Max.	82	84	87	93	92	93	77	77	85	87	77	84	90	89	90	88	83	95	81	79	84	75	81	88	92	80	72	79	84	84	..	84.4
	Min.	50	53	53	59	54	71	57	54	62	67	63	55	60	63	63	66	64	58	66	61	54	55	51	58	65	70	52	52	62	62	..	59.8
Le Mars	Max.	86	82	89	93	95	85	74	73	89	75	73	88	92	89	80	72	78	76	79	78	75	65	72	84	82	71	69	74	82	75	..	79.7
	Min.	54	52	60	67	71	55	54	53	62	52	48	48	62	61	62	52	53	56	48	56	56	41	54	63	66	56	47	49	62	62	..	62.7
Lenox	Max.	82	83	87	90	92	83	74	78	89	76	77	85	86	87	87	85	79	91	82	75	76	71	81	86	90	82	74	75	82	82	..	82.2
	Min.	52	57	62	68	72	65	54	52	65	64	60	56	62	63	63	65	62	60	56	58	60	48	57	62	67	63	48	53	65	66	..	60.2
Leon	Max.	80	83	86	89	89	87	78	76	87	82	77	83	91	88	87	90	85	92	86	79	79	75	82	87	89	83	75	79	85	83	..	83.7
	Min.	53	57	58	67	70	67	54	52	65	69	61	56	60	60	62	67	66	59	59	58	59	50	55	62	68	65	51	52	64	68	..	60.5
Lit. Sioux	Max.	87	82	91	94	94	90	77	74	90	79	77	85	91	89	89	76	77	90	79	83	78	74	81	82	81	..	76	74	83	84	..	83.0
	Min.	60	58	62	71	74	58	55	55	69	59	53	56	66	62	69	62	57	63	51	57	60	45	61	70	58	..	51	54	65	68	..	60.1
Logan	Max.	85	87	89	95	94	89	77	76	92	94	78	88	89	91	89	80	76	93	78	81	75	78	88	90	85	80	81	75	84	86	..	84.8
	Min.	54	54	64	67	71	61	51	51	65	61	63	53	55	60	64	62	57	60	50	57	57	44	55	65	66	66	50	55	64	65	..	59.2
Maquoketa*	Max.	79	73	83	91	90	86	74	76	70	80	78	80	86	87	90	88	87	88	79	80	84	72	79	85	90	75	72	80	81	80	..	81.4
	Min.	45	52	43	56	70	65	57	43	58	56	62	57	57	58	63	60	70	57	63	52	55	49	46	52	62	59	41	53	50	51	..	55.4
Marshaltown*	Max.	83	81	84	94	91	83	71	78	86	79	75	81	89	93	91	90	72	91	78	86	82	75	76	88	91	77	69	77	80	73	..	82.1
	Min.	52	53	52	57	71	65	56	52	59	52	60	53	59	63	60	65	62	49	56	58	52	45	52	55	66	64	51	51	57	65	..	57.1
Mason C.	Max.	83	76	82	91	90	80	70	73	84	72	69	81	89	87	86	86	78	76	73	78	72	72	72	85	80	74	67	77	82	77	..	78.7
	Min.	55	58	52	68	70	65	52	50	57	62	58	54	60	66	63	66	61	60	58	59	61	45	53	62	68	59	53	54	64	60	..	58.8
Massena	Max.	87	88	91	93	93	90	79	78	89	76	80	91	90	94	90	89	83	94	81	85	79	80	83	85	90	80	73	78	88	83	..	85.3
	Min.	54	52	55	67	71	61	52	50	67	65	60	53	63	61	62	64	60	59	56	59	60	47	56	62	63	60	47	54	55	64	..	58.6
Monticelo	Max.	84	82	73	84	90	91	90	69	75	74	72	79	87	95	91	95	96	87	93	88	86	82	88	87	86	95	89	75	88	89	..	85.3
	Min.	46	52	45	55	70	71	56	44	54	54	58	54	57	59	64	63	67	54	64	55	50	46	49	59	61	59	48	51	58	60	..	56.1
Mt. Ayr.	Max.	81	85	88	91	91	85	80	79	88	82	82	87	90	91	93	90	84	92	81	81	81	75	83	84	89	83	72	79	88	82	..	84.7
	Min.	54	60	60	65	68	64	52	52	63	67	60	56	59	61	61	65	63	60	56	56	69	48	56	62	67	64	49	52	65	66	..	59.7
Mt. Pl'snt	Max.	83	85	82	94	92	94	76	80	83	86	78	82	87	89	92	90	88	93	81	79	86	73	81	87	94	85	76	79	80	80	..	84.5
	Min.	53	56	51	68	70	72	59	57	63	67	63	58	62	65	66	67	71	59	64	60	60	56	50	62	66	66	48	52	61	61	..	60.9
Mt. Ver'n	Max.	81	81	82	92	91	84	69	74	81	77	73	84	89	88	92	88	80	90	88	78	77	75	81	89	90	81	74	82	81	76	..	82.3
	Min.	51	56	47	68	72	65	57	51	51	56	59	55	58	63	63	66	69	56	60	58	56	48	50	60	65	61	46	52	61	62	..	58.1
New H.	Max.	80	77	81	90	88	87	74	70	80	81	73	75	85	88	87	85	83	84	73	78	81	70	74	81	85	72	68	75	76	76	..	79.2
	Min.	49	54	50	67	70	62	51	50	57	64	64	54	58	61	60	65	63	55	55	58	56	52	47	61	67	57	50	52	62	58	..	57.6
Newton	Max.	71	84	91	90	85	80	75	70	81	74	72	80	80	89	87	88	81	90	78	78	73	68	73	87	89	79	68	71	81	77	..	79.7
	Min.	52	54	65	71	74	67	58	54	61	65	59	52	55	63	63	68	62	57	57	59	56	51	50	63	67	65	50	52	62	66	..	59.9
N'thwood	Max.	81	74	80	90	88	87	66	75	87	76	73	79	84	86	83	85	71	79	75	78	72	71	73	82	84	76	64	76	80	78	..	78.4
	Min.	51	52	52	68	70	59	49	46	57	62	57	51	55	61	60	64	60	53	51	56	58	43	43	61	67	56	51	52	62	58	..	56.2
Odebolt	Max.	87	87	88	94	93	85	76	88	77	76	75	87	92	93	86	82	78	91	81	85	76	76	82	90	89	81	72	84	82	80	..	83.8
	Min.	55	55	61	69	72	59	50	63	66	65	53	54	64	61	65	63	60	57	49	55	59	43	55	61	68	45	52	63	60	65	..	59.1
Ogden	Max.	82	81	86	91	91	86	73	73	85	69	76	81	87	87	85	88	80	92	85	79	76	73	75	85	86	77	75	71	80	78	..	81.2
	Min.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Olin	Max.	79	71	81	88	90	86	71	..	77	78	74	77	84	86	89	89	87	87	75	75	82	69	76	85	88	78	70	77	82	80	..	80.4
	Min.	48	55	48	64	70	59	64	..	47	66	63	57	59	60	66	65	72	58	64	58	57	51	50	65	65	62	46	55	62	62	..	59.2
Omaha, N	Max.	85	86	90	93	92	79	75	76	92	69	76	85	91	90	87	74	76	90	78	78	71	74	81	88	83	80	71	77	83	84	..	81.8
	Min.	61	60	66	74	75	60	56	59	69	59	57	59	68	69	70	64	59	64	57	61	58	51	62	68	66	63	52	57	68	68	..	62.7
Onawa	Max.	88	83	92	94	95	89	81	77	89	84	78	90	94	95	93	75	78	86	79	84	74	74	85	91	91	80	78	75	82	83	..	84.6
	Min.	51	57	65	70	73	61	55	55	66	59	54	56	65	65	67	63	57	61	53	58	62	46	60	67	70	60	50	53	64	67	..	60.7
Osage	Max.	82	76	82	92	88	80	68	75	83	74	72	80	87	90	84	86	76	78	74	80	70	75	74	84	82	73	64	78	82	75	..	78.8
	Min.	50	51	50	69	71	61	48	46	57	61	57	52	56	64	60	63	61	53	51	52	56	42	43	60	67	57	49	53	61	58	..	56.0
Oskaloosa	Max.	83	80	83	91	92	84	75	78	85	76	70	78	86	87	88	89	82	90	83	76	81	73	79	87	90	77	71	74	80	76	..	81.5
	Min.	56	54	55	72	73	70	56	53	65	67	62	57	60	64	64	70	67	58	63	61	59	52	54	64	67	67	55	53	63	66	..	61.6
Pacific J'n	Max.	86	85	89	93	94	88	76	78	93	82	79	85	89	89	86	78	78	93	75	76	74	75	81	87	89	80	75	80	84	83	..	83.3
	Min.	58	59	64	70	72	59	54	54	67	59	54	57	61	60	64	61	59	59	55	59	59	50	60	67	67	63	50	55	67	63	..	60.2
Perry	Max.	84	82	87	92	91	84	72	76	87	69	78	84	88	88	88	89	76	92	77	72	77	76	79	89	90	77	71	75	83	80	..	81.8
	Min.	54	55	58	58	74	62	59	50	64	64	60	56	60	64	65	68	62	57	51	60	61	47	51	65	68	60	51	55	64	62	..	59.5
Plover	Max.	84	79	88	92	91	76	71	74	93	72	73	84	89	84	82	85	72	84	75	79	69	73	73	85	82	74	65	75	80	73	..	79.2
	Min.	55	56	59	65	75	57	47	48	62	59	55	57	54	64	63	64	58	54	48	55	57	42	53	65	67	57	47	51	64	58	..	57.0
Pocah'tas	Max.	85	81	87	93	91	77	71	73	88	70	72	83	89	90	82	82	73	85	80	82	70	74	74	87	80	72	67	74	82	72	..	79.5
	Min.	55	54	58	67	72	61	54	48	60	59	56	53	61	61	64	64	59	55	51	55	54	41	53	53	68	58	48	53	53	62	..	57.0
Red Oak	Max.	89	95	94	98	97	92	81	88	100	82	87	89	94	98	87	86	77	93	78	74	80	75	81	87	91	83	78	79	87	83	..	86.8
	Min.	56	56	64	69	72	64	55	55	76	68	57	53	63	62	65	66	62	62	59	60	63	51	62	66	70	65	53	56	67	70	..	62.2
Ridgeway	Max.	85	75	84	90	90	85	70	77	78	77	76	79	89	88	85	88	77	82	75	77	81	78	76	82	85	82	69	79	83	75	..	80.6
	Min.	53	53	51	71	73	63	53	52	58	65	58	55	61	65	62	65	64	55	55	60	59	48	53	62	69	57	50	53	63	59	..	58.8
Rock R.	Max.	86	80	88	93	80	73	69	82	80	78	88	88	85	90	85	80	74	75	78	83	70	68	75	88	72	74	62	74	83	72	..	79.1
	Min.	54	46	62	65	61	52	51	66	50	48	70	68	63	50	65	56	56	57	52	58	48	46	53	62	64	55	50	52	60	56	..	56.2
R. City	Max.	86	86	89	93	92	80	78	75	90	85	78	80	90	91	89	84	89	90	78	80	70	80	78	90	86	76	65	76	86	80	..	83.0
	Min.	56	57	57	68	70	68	57	49	60	63	50	60	65	60	61	60	58	55	52	55	53	50	46	62	66	65	46	46	66	65	..	58.2
Sac City	Max.	83	79	90	89	81	74	73	72	88	77	78	82	87	87	84	81	78	88	76	78	71	72	78	86	82	75	65	71	80	76	..	79.2
	Min.	55	55	68	69	60	55	52	50	61	53	54	51	62	60	63	60	55	56	50	55	59	43	55	65	68	58	46	53	63	61	..	57.2
St. Cha'les	Max.	80	80	84	90	90	81	80	72	80	84	75	79	85	86	86	87	87	90	76	77	77	70	78	85	87	77	68	72	81	75	..	80.6
	Min.	55	58	58	70	72	66	50	51	62	54	60	58	53	62	62	68	64	59	58	61	60	50	55	65	69	63	50	53	64	67	..	60.2
Sheldon	Max.	84	82	89	92	94	82	75	70	86	76	78	89	91	91	80	78	74	78	78	80	70	76	75	83	79	70	72	78	83	82	..	80.5
	Min.	55	52	61	63	72	53	53	50	62	54	48	49	60	61	63	62	52	50	62	69	59	57	58	64	65	60	47	53	60	57	..	57.7
Sibley*	Max.	84	79	86	90	92	75	67	70	82	65	71	85	88	85	79	77	70	76	72	78	63	66	73	80	73	68	56	71	80	70	..	75.7
	Min.	47	52	53	63	71	53	53	47	54	53	46	49	55	55	56	62	56	54	45	50	56	40	44	55	61	56	55	44	56	58	..	53.3
Sidney	Max.	88	89	92	93	93	86	80	82	96	89	85	90	92	95	90	86	85	96	77	82	76	80	86	90	92	83	75	85	86	87	..	86.9
	Min.	56	59	63	70	72	69	55	54	67	64	58	56	61	62	64	64	60	64	58	59	61	50	59	63	68	64	52	56	61	62	..	61.0
Sigourn'y	Max.	83	84	85	93	92	86	79	81	85	79	76	83	87	90	90	89	83	93	88	80	84	77	82	88	91	85	74	80	84	81	..	84.4
	Min.	51	55	52	71	71	69	56	57	64	67	60	57	60	63	63	69	68	58	63	61	58	51	52	63	65	67	50	53	62	63	..	60.6
Sioux C'r.	Max.	83	80	86	89	91	82	72	71	86	73	76	86	88	86	77	76	74	78	73	78	73	67	75	81	77	70	65	71	79	72	..	77.8
	Min.	54	53	52	62	71	51	52	49	58	53	49	51	61	61	61	60	55	57	42	47	40	38	53	63	64	54	48	52	64	56	..	54.4
Sioux C'y	Max.	85	82	91	93	95	72	72	69	85	71	71	86	91	88	79	74	71	85	74	80	67	68	77	84	76	74	66	72	81	78	..	78.6
	Min.	58	57	67	72	72	56	55	56	68	54	52	52	67	63	65	60	56	58	54	58	52	44	61	68	64	59	49	54	66	63	..	59.3
Stockport	Max.	77	81	81	89	89	87	73	74	83	82	72	77	83	84	85	85	83	90	77	75	80	72	78	78	88	80	74	75	77	78	..	80.1
	Min.	53	56	54	70	72	71	60	58	65	68	62	57	63	65	66	68	64	61	68	62	62	56	54	67	70	72	52	56	62	63		62.6
Storm L*.	Max.	83	77	84	88	87	74	69	72	84	68	72	82	86	87	82	79	75	81	72	76	65	67	73	84	78	73	58	70	80	73	..	76.6
	Min.	53	52	56	60	70	58	53	51	54	56	51	53	60	60	64	62	58	56	49	53	60	39	45	55	64	56	57	44	55	68	..	55.6
Thurman	Max.	86	87	91	93	95	88	80	89	96	83	83	86	91	91	88	81	82	93	77	79	78	78	83	89	88	81	77	83	84	85	..	85.5
	Min.	59	59	65	68	72	64	55	56	69	63	49	55	62	61	66	62	60	64	60	59	61	51	60	67	69	64	53	56	68	66	..	61.4
Tipton	Max.	81	79	83	93	92	88	74	78	76	76	75	80	87	87	91	90	89	92	82	81	85	78	81	86	91	80	77	79	82	80	..	83.1
	Min.	54	59	52	70	73	70	62	55	56	65	63	60	62	66	68	69	78	63	64	62	62	55	55	62	67	65	51	56	63	64	..	62.2
Toledo	Max.	80	77	81	90	89	84	72	76	83	77	72	78	85	89	87	87	79	88	75	80	79	72	75	85	87	80	69	75	82	75	..	80.3
	Min.	53	53	52	71	71	66	57	59	60	65	60	55	59	65	60	67	64	53	58	59	54	47	52	62	67	65	49	53	62	63	..	59.4

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JUNE 1905—CONTINUED.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Vinton ...	Max..	80	78	80	90	90	86	86	73	80	76	75	76	85	87	86	86	89	81	83	77	80	71	85	..	87	75	70	74	89	88	..	81.5
	Min ..	52	55	50	70	73	56	56	52	50	56	56	56	52	55	52	67	56	53	60	54	55	50	63	..	66	64	48	53	53	56	..	56.5
Wapello .	Max..	77	77	79	90	90	88	78	73	78	74	73	74	80	82	81	83	82	88	78	76	78	70	76	..	89	80	70	76	78	79	..	79.3
	Min ..	54	53	52	71	73	74	63	57	64	67	63	60	62	65	66	62	73	61	65	64	63	52	53	..	63	62	52	53	65	64	..	62.0
Washi'ton	Max..	80	79	82	91	90	87	73	76	78	76	71	78	83	86	87	88	79	91	78	77	81	73	79	85	89	78	72	77	79	78	..	80.7
	Min ..	53	56	51	79	71	68	58	58	63	67	62	57	57	65	64	66	64	58	64	61	59	52	51	63	67	63	49	53	63	62	..	60.5
Washta ..	Max..	88	83	88	92	93	85	73	70	90	73	76	86	90	91	82	80	72	80	77	80	76	72	78	88	80	75	65	72	82	76	..	80.4
	Min ..	40	50	62	67	70	55	55	50	63	57	50	48	60	70	64	58	62	47	54	57	44	36	56	66	66	56	45	53	64	60	..	56.2
Waterloo*	Max..	81	74	82	94	91	82	70	76	85	78	76	80	89	91	89	87	73	88	76	81	81	72	76	86	91	76	67	76	81	73	..	80.7
	Min ..	53	55	50	52	72	65	55	51	55	60	57	53	53	65	60	65	63	55	57	58	56	47	52	55	65	63	50	52	58	63	..	57.3
Waukee..	Max..	87	83	90	96	96	83	79	72	87	70	79	88	87	92	89	88	85	92	77	85	76	78	79	87	90	89	71	75	87	83	..	84.0
	Min ..	55	55	57	70	73	63	57	51	63	64	59	55	51	61	65	68	63	57	57	59	59	47	54	64	68	61	50	52	63	62	..	59.4
Waverly..	Max..	81	72	80	90	88	83	71	73	81	73	72	77	84	87	83	84	78	84	73	75	75	68	72	82	83	78	65	73	74	73	..	77.7
	Min ..	51	54	52	70	72	64	53	51	57	65	57	54	59	61	61	65	63	55	56	60	56	48	53	63	67	60	50	55	62	61	..	58.5
Web'ter C	Max..	86	82	85	95	93	84	76	76	93	71	80	85	78	94	91	91	79	90	78	82	88	79	75	87	91	79	70	78	82	78	..	83.2
	Min ..	51	53	55	70	73	62	57	46	60	63	58	50	73	61	62	65	61	54	53	58	57	43	54	63	69	61	52	55	63	62	..	58.5
W. Bend.	Max..	83	78	84	90	88	76	68	73	78	72	74	84	85	87	82	86	..	84	79	83	72	73	75	85	81	72	62	77	85	75	..	79.0
	Min ..	56	56	57	66	72	60	55	48	59	59	56	51	60	59	64	64	57	53	48	55	58	42	51	61	68	58	48	..	64	60	..	57.4
Whitten..	Max..	83	78	86	93	92	89	75	77	87	77	76	85	88	90	90	90	75	90	77	80	81	75	78	88	90	77	67	80	83	74	..	82.4
	Min ..	50	55	52	67	70	62	54	50	60	64	58	51	58	60	59	67	60	55	53	59	57	44	51	61	62	62	50	58	68	65	..	57.9
Wilton J.	Max.	83	79	85	95	92	87	89	81	83	85	79	82	87	90	92	92	94	95	84	82	85	81	78	88	93	78	74	84	87	89	..	85.8
	Min ..	51	55	47	68	71	69	57	59	47	65	61	57	61	63	64	65	71	63	57	62	58	53	43	66	65	64	45	52	61	63	..	59.6
Wint'rset	Max..	84	83	87	92	92	88	79	75	88	70	78	84	88	88	87	88	80	92	84	81	79	78	82	87	90	85	77	73	83	81	..	83.4
	Min ..	57	56	58	69	71	65	55	62	65	65	60	54	60	61	63	67	63	58	58	60	59	48	54	63	67	69	52	52	63	66	..	60.3
Woodb'n.	Max..	81	83	85	89	90	84	76	79	89	83	77	80	85	89	90	92	80	89	80	78	82	72	85	85	88	84	67	79	86	81	..	82.9
	Min ..	49	59	57	57	71	66	56	46	65	67	62	54	59	59	61	67	65	60	55	59	55	49	54	60	68	65	51	54	64	64	..	59.8
Zearing ..	Max..	80	75	82	90	88	86	68	71	84	72	74	79	85	85	85	86	81	86	82	77	76	70	72	84	86	80	69	74	79	76	..	79.4
	Min ..	55	55	53	69	72	64	57	49	61	65	59	53	61	61	62	65	62	65	55	59	56	47	52	63	68	63	52	54	64	65	..	59.5

* At those stations thermometers are read in the morning; the maximum temperature then observed appears in the maximum column for the preceding day, on which it nearly always occurs.

TORRENTIAL RAINS, JUNE 9TH AND 10TH.

On the afternoon and night of June 9th and morning of the 10th, copious showers visited all districts, and in a considerable portion of the southeast and east-central districts the downpour can only be described by the term "torrential." The heaviest amounts reported at stations in the submerged section were as follows: Bonaparte, 12.10 inches; Keosauqua, 11.09; Stockport, 10 63 (three co-operative stations in Van Buren county); Mt. Pleasant, 7.20; Burlington, 6.10; Fort Madison, 6.40; Keokuk, 4.80; Charitòn, 4.22; Albia, 3.44; Iowa City, 4.87; Amana, 3.65; Davenport, 5.67; Wilton, 4.17; LeClaire, 4.41 inches. The larger part of this heavy precipitation fell in the twelve hours from 8:30 P. M. of the 9th to 8:30 A. M. of the 10th; and in Bonaparte the average downpour was about an inch an hour. This was phenomenal and record-breaking in that region. The result of such a shower may be imagined but can not be fully described in detail. Not many buildings were sufficiently well roofed to keep the occupants dry, and but few streams and water courses were adequate to carry off the surplus moisture. Those who were driven out into the wet say it came down in sheets and hi so hard it was difficult to stand though there was no wind. One of the Van Buren county reporters states that eighty-five county bridges were swept away. The aggregate damage to crops by erosion of soil on the slopes, and flooding the bottoms was altogether beyond estimation in all the area swept over by that unprecedented storm. Happily such storms are not usual visitations.

Hon. B. R. Vale, observer at Bonaparte, writes that the storm came up gradually on the evening of the 9th, with great electrical display in the southwest, the barometer being not extremely low, and rainfall began about 8:30. About 11 inches fell in 8 hours. There was a strong steady rain through the night, with no let up till 5:30 A. M. There was a dry subsoil, which took up a vast amount of the surplus. This helped to avert disaster. The *Keosauqua Republican* published over four columns concerning the storm and its effects, and boastfully added that "Van Buren county beat the record by pulling more water from the clouds in the same length of time than was ever done by any county in Iowa." One man lost his life during the night in trying to rescue his cattle from the floods.

DAILY AND MONTHLY PRECIPITATION FOR JUNE, 1905.

STATIONS.	DAY OF MONTH.																													TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	..	.18	....	..	....	.04	....	....	.22	1.25	....	....	....	....	....	.03	.33	T	1.35	....	....	..	..	....	....	....	2.07	....	....	.65	....	6.12
Albia	....	.82	....	....	T	.01	....	....	....	3.44	.03	....	....	....	....	....	....	..	.17	.58	....	.26	....	....	....	.02	....	.66	2.60	.08	..	9.06
Algona	....	....	....	....	T	T	....	....	1.00	.72	....	T	.06	....	....	T	.28	1.00	....	....	....	....	T	.30	T	....	.67	.20	.20	1.12	....	5.55
Allerton	.55	....	....	..	....	..	....	..	.01	1.30	....	....	....	.65	....	....	T	....	.23	.76	....	..	....	T	.01	....	3.55	T	.47	.50	....	5.73
Alta	.09	....	.02	....	....	..	....	.01	....	.34	....	....	....	.07	.05	T	....	.62	....	....	....	....	....	.11	....	....	5.30	.	.09	.48	....	7.23
Alta [near]	.06	....	.11	....	T	....	....	T	..	.39	....	....	....	.11	.07	.01	....	.50	....	....	....	..	..	2.31	.05	....	2.34	.13	....	.95	....	7.20
Alton	.05	....	....	....	....	....	....	T	....	.11	....	....	....	....	.90	T	....	.25	....	....	.06	.05	....	2.31	.05	....	2.34	.13	....	.95	....	7.20
Amana	....	..	....	....	.16	....	....	..	1.57	2.05	..	....	.01	T	....	....	....	....	.83	.11	.10	....	....	..	.11	..	T	....	.14	2.54	....	7.52
Ames	....	....	.03	....	....	..	....	....	1.79	.41	....	....	....	....	....	.04	.03	.04	.01	.16	....	....	.01	....	....	....	.43	....	.54	.74	....	4.23
Atlantic	....	....	....	....	.40	....	....	....	1.66	.16	....	....	T	....	....	....	....	.05	.66	....	....	....	....	....	....	..	2.29	....	....	.87	....	5.59
Audubon	....	....	....	....	....	.43	....	....	.67	1.17	T	.01	....	....	....	.05	T	.03	....	.19	....	....	....	....	....	....	2.63	....	....	.77	....	5.95
Baxter	.15	....	.	....	..	.05	..	....	1.40	.45	....	....	..	.05	....	.14	.80	....	.60	....	....	....	....	....	.10	....	.36	..	.60	.30	....	4.50
Bedford	....	....	....	....	....	....	..	..	.25	.17	.06	....	....	....	....	....	.05	.69	.08	.95	....	....	....	....	....	.01	.35	....	..	.35	....	2.96
Belle Plaine	....	..	....	....	....	.17	....	....	1.65	.65	..	....	....	.14	....	....	.04	.70	....	.15	....	....	....	....	.04	....	.05	....	.20	.70	....	4.49
Bonaparte	....	....	....	....	....	....	....	..	....	*	..	....	....	....	....	..	....	....	.07	.53	....	....	..	....	....	.33	....	.65	.52	.30	....	14.50
Boone	..	.62	....	....	....	.05	....	....	.01	3.49	T	....	....	....	....	....	.15	....	1.09	.10	....	....	....	T	....	....	.02	.52	.54	T	....	6.59
Britt	....	....	....	....	....	....	....	....	.72	.13	.01	..	....	.07	....	.04	.09	.77	.02	....	....	....	.03	.08	T	....	.31	.13	.16	1.00	....	3.56
Buckingham	.05	....	....	....	.86	....	....	.39	.86	....	....	..	....	.25	....	..	.61	.72	....	.06	.27	....	T	....	.22	T	.04	.10	....	1.40	....	5.83
Burlington	..	....	....	....	....	....	....	....	.06	6.04	..	....	....	....	....	....	..	T	.78	.22	....	....	....	....	....	.10	....	.31	.08	.08	....	7.67
Carroll	....	....	.10	..	....	....	....	....	.07	1.95	....	....	....	....	....	....	T	T	..	.08	....	....	....	....	....	....	.25	.90	.04	.20	.	3.59
Cedar Rapids	....	.27	....	....	....	.14	....	..	....	.41	.83	.03	....	....	.10	....	T	....	.92	.04	....	.72	....	....	....	.07	....	.05	.04	.08	....	3.70
Chariton	....	.85	..	....	....	.	....	....	4.22	....	....	....	....	.35	..	....	....	.30	....	1.00	....	....	....	....	....	....	.88	..	1.10	1.00	....	9.70
Charles City	....	....	....	....	.05	.	....	T	48	.05	T	....	....	1.22	T	.78	.01	.94	T	T	.24	.02	T	....	T	....	.01	.42	.19	.88	....	5.29
Clarinda	....	....	....	....	.	.04	....	....	T	.60	....	.09	....	....	....	....	.21	....	.77	1.58	....	....	....	T	....	T	....	.38	.03	.10	....	3.80
Clear Lake	....	....	T	..	....	....	....	....	.35	.50	....	....	....	....	....	1.05	.35	1.50	T	....	....	....	T	....	....	....	T	....	T	.50	..	4.25
Clinton	....	..	....	....	....	....	....	....	....	2.99	....	..	....	..	T	....	T	.08	.68	.07	....	....	....	..	....	....	T	....	....	.20	....	4.02
College Springs	....	....	....	....	....	....	....	....	.10	.20	.02	....	....	....	....	.25	.26	.25	....	1.30	....	....	T	....	....	....	.12	....	....	.06	....	2.56
Columbus Junct'n	....	....	....	....	....	....	....	....	.10	1.44	....	....	..	.17	.03	....	....	T	.82	.55	....	....	....	....	....	57	.17	.26	....	1.94	..	6.05
Corning	T	....	..	....	....	T	....	....	.23	1.04	T	....	....	....	....	T	....	.46	T	1.75	....	....	....	....	T	..	1.09	....	....	.50	....	5.07
Corydon	....	.37	....	..	....	....	....	....	T	3.56	....	....	....	1.49	....	....	....	....	.45	.89	....	....	....	..	....	....	.21	.04	1.00	.36	....	9.07
Cresco	..	....	....	....	.02	....	T	..	.61	.42	....	....	....	.06	.05	....	.67	1.27	.04	....	....	....	....	....	....	....	....	....	.55	.98	..	4.67
Creston	..	....	....	....	..	.66	....	....	....	1.60	....	T	..	....	....	....	T	....	.78	1.59	....	....	....	....	....	....	....	1.57	....	.07	....	6.22
Cumberland	..	....	....	....	....	.34	....	....	1.42	.81	....	....	....	....	....	.01	..	.64	....	.58	..	..	....	....	....	....	1.20	....	....	.81	....	5.81
Davenport	....	....	....	....	....	....	....	....	3.98	1.69	....	....	....	....	T	....	....	.94	.19	.10	T	....	....	....	.01	..	.01	.07	.08	.61	....	7.68
Decorah	....	....	....	....	T	....	....	..	.82	.48	.04	....	....	.05	.04	..	.90	1.48	....	....	.02	....	T	T	....	....	....	....	.96	1.52	....	6.31
Delaware	.34	.26	....	....	T	.42	....	....	.92	.21	.04	....	....	....	.23	....	.03	....	1.29	....	.37	....	....	....	.49	....	....	....	....	.75	....	5.85
Des Moines	11	....	....	....	.02	....	....	....	1.54	.53	....	....	....	T	....	.02	T	.05	.03	.46	....	..	T	....	.02	T	1.00	T	1.11	.84	....	5.73
De Soto	.55	....	....	....	....	.12	....	....	.82	1.40	....	....	....	....	....	T	T	T	....	.57	....	..	....	....	....	....	1.00	....	.60	.88	....	5.94
Dows	....	....	....	....	....	.23	....	....	.18	.12	....	....	.22	1.32	.04	.48	1.30	....	.08	....	....	....	T	....	....	....	.39	....	.11	1.17	....	5.64
Dubuque	.06	....	....	....	.28	T	....	....	1.16	.01	T	....	.12	.04	.10	T	....	.83	.01	.02	.03	....	....	....	.17	....	....	.16	.90	.44	....	4.33
Earlham	....	.96	T	....	....	....	....	....	1.40	.90	T	....	....	....	....	T	..	.81	....	....	....	....	....	....	T	..	2.18	T	....	.71	....	6.96
Elkader	..	.05	....	....	T	.05	....	....	.60	.34	....	....	....	....	.15	....	.65	1.50	..	..	T	....	....	....	.09	....	....	.03	.50	.53	....	4.49
Elliott	....	....	..	....	....	20	....	T	.18	.59	....	....	....	....	....	.12	....	.22	....	1.06	....	....	....	T	.10	.80	....	....	.45	....	....	3.27
Estherville	....	T	..	....	....	T	....	....	....	.25	T	....	....	....	.30	.70	T	....	.20	....	....	....	....	T	.10	.80	....	....	.8	.08	.25	....	3.48
Florence	....	....	T	....	T	....	....	T	.24	.20	.01	....	....	T	....	T	....	1.00	....	....	....	....	....	T	....	....	.5	.22	.08	2.68	....	5.01
Forest City	....	.06	....	....	....	....	T	.	.20	.58	.12	....	..	....	....	....	.15	....	.48	....	....	....	....	T	.03	....	....	.08	.10	....	....	1.80
Fort Dodge	....	....	..	....	....	.03	....	....	.08	.30	....	....	....	..	T	....	.12	..	.60	1.10	....	....	....	T	....	T	....	.46	38	T	....	8.07
Fort Madison	....	....	..	....	....	....	....	....	....	6.40	....	....	....	..	....	....	....	.45	....	.22	....	....	....	..	....	.05	....	....	.80	.34	....	8.26
Galva	....	....	.61	..	.18	....	....	T	.13	.70	....	....	....	.10	.05	T	....	.24	..	....	....	....	....	....	.09	....	2.80	.02	....	.08	....	5.00
Gilman	T	....	....	....	.	T	....	....	1.65	.45	T	....	....	.30	....	....	.80	....	.25	.14	T	....	....	..	.05	.21	....	....	.34	1.05	....	5.24
Glenwood	....	T	....	....	....	..	....	T	T	1.15	T	....	....	T	T	....	....	....	1.40	....	....	T	....	....	....	....	....	....	.05	....	.12	....	2.72
Grand Meadow	....	....	.33	....	.03	....	....	..	.50	.22	....	....	....	..	.15	....	1.17	....	1.49	....	.03	....	....	....	.08	....	....	....	.42	.93	....	5.36
Greene	....	....	....	....	....	.06	....	....	.75	.05	....	....	....	.86	....	....	.90	.75	....	....	.14	....	..	....	T	....	.07	....	.10	1.00	....	4.68
Greenfield	....	....	....	....	....	.26	....	....	2.20	.92	....	....	....	....	....	T	.14	T	T	1.04	....	....	..	....	....	....	3.27	.31	T	.60	..	8.74
Grinnell	....	....	....	....	....	.03	....	....	1.00	1.45	....	....	....	T	....	..	..	....	.40	.25	..	....	..	....	.22	....	.35	..	.70	1.55	....	5.95
Grundy Center	....	.15	....	....	....	.93	..	....	.39	.10	....	....	....	....	.06	....	.72	..	.70	.05	.07	....	....	....	....	....	.07	....	.16	.84	....	4.24
Guthrie Center	....	T	T	....	..	.13	....	....	1.92	.68	....	....	....	....	....	.04	....	.15	.01	.30	....	....	.	..	T	....	1.65	....	.05	.68	....	5.61
Hampton	....	....	....	....	.02	....	....	.45	.03	T	....	..	....	.85	....	1.15	..	.56	....	..	T	....	....	....	....	....	.20	.15	....	1.58	....	4.99
Hancock	....	....	....	....	....	.13	....	....	.17	....	....	....	..	..	....	....	....	.77	....	....	....	....	T	....	....	....	.55	T	....	1.10	....	2.72
Hanlontown	.05	....	....	....	....	....	....	....	1.55	.34	....	....	....	....	....	.03	.25	1.15	....	....	....	....	....	.12	.03	....	.03	....	.11	.89	....	4.55
Harlan	....	....	.03	....	T	..	....	T	.38	.74	....	.08	T	T	....	.01	.17	..	T	.18	....	....	.01	....	....	....	1.54	T	T	.66	....	3.80
Humboldt	..	....	....	....	..	....	....	....	.13	.13	....	....	....	....	....	.20	....	.36	....	....	....	....	....	....	....	....	.84	..	.12	.66	....	2.44
Ida Grove	....	....	.05	T	T	....	....	....	.06	.04	.63	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.25	.10	....	....	....	3.13
Independence	T	....	....	....	.03	....	....	....	.70	....	....	....	....	....	.20	....	1.80	....	.60	....	.20	....	..	....	.30	....	....	....	....	.50	..	4.33
Indianola	.01	.67	....	....	....	.02	..	....	1.72	1.27	....	....	....	....	....	T	T	.50	.55	.61	....	..	....	....	T	....	.80	....	.13	.70	....	6.98
Inwood	....	.	..	....	....	....	.15	....	....	....	....	....	....	....	....	.05	....	.80	....	.05	1.29	....	1.22	....	....	1.47	....	4.89	....	....	....	9.92
Iowa City	....	T	....	....	....	....	....	..	.52	4.35	.28	....	....	....	T	..	....	....	.86	.16	..	.11	....	....	....	.19	....	.04	T	.17	..	6.68
Iowa Falls	....	....	....	....	....	.25	....	....	.03	.10	T	T	.27	....	.69	....	1.14	....	.82	.03	....	T	....	T	....	....	....	.14	.05	T	....	3.52
Keokuk	....	....	....	....	....	....	....	..	2.18	2.62	....	....	....	....	....	....	....	.18	.18	.11	....	....	..	....	....	....	.08	.06	.06	1.10	....	6.57
Keosauqua	....	.03	....	....	....	....	....	....	....	†	.14	....	....	....	....	....	....	....	.33	1.05	.11	....	.	....	....	.10	....	.32	.42	1.80	....	14.89
Lacona	....	.68	....	....	....	.35	....	....	.05	2.23	....	....	....	....	....	.47	....	....	.57	....	.18	....	....	....	....	....	....	.82	1.00	2.50	..	8.85
Lenox	....	....	....	....	....	....	....	....	.05	1.25	..	....	....	....	....	....	....	.63	.04	.86	....	....	....	....	....	....	.84	1.66	....	.64	....	5.93
Le Claire	....	....	....	....	T	....	....	....	T	4.41	.26	....	.02	....	....	....	....	....	1.61	.04	.03	....	....	....	....	....	....	....	....	T	....	6.37
Little Sioux	....	....	....	....	....	.07	....	.04	....	....	.07	....	.04	.14	....	.03	....	....	....	....	.10	....	.10	....	....	....	.41	....	.01	.17	....	3.18
Le Mars	.13	....	.13	....	....	....	....	.09	....	.13	T	....	....	T	.06	....	..	.40	..	....	.02	....	....	1.25	.08	....	1.65	....	.05	.32	....	4.31
Leon	....	.55	....	..	....	....	....	....	.11	.87	....	....	....	.02	T	....	....	....	.78	.75	....	....	....	....	....	....	1.67	.18	.	.15	....	5.08
Logan	....	..	....	....	....	....	....	....	.54	1.00	....	..	....	....	T	.30	....	..	....	.04	....	....	.18	....	....	....	.45	....	.02	....	....	2.53
Maquoketa	....	.12	....	....	....	.13	....	....	.08	1.19	.14	....	..	....	T	.39	....	....	.87	.06	.08	....	....	....	....	....	....	....	....	.07	....	3.13
Marshalltown	....	T	....	....	....	....	....	....	.08	2.14	.01	....	....	....	....	....	.70	....	.46	.17	....	....	T	....	....	.68	.22	....	.16	.07	....	4.69
Mason City	.08	....	T	....	....	....	....	....	.50	.46	....	....	....	....	....	1.15	.56	1.00	....	....	....	T	T	....	....	....	T	....	.35	.70	....	4.80
Massena	....	....	....	....	....	.13	....	....	.45	.75	....	....	....	....	....	....	....	.16	....	1.00	....	....	....	....	....	....	1.80	....	....	1.45	....	5.74
Montezuma	....	....	....	....	....	....	....	..	....	3.10	.50	....	....	....	....	....	.50	....	.50	.20	....	....	....	....	....	....	....	.40	.30	1.40	....	6.90
Muscatine	....	....	....	....	....	....	....	....	T	2.57	.57	....	....	....	T	....	....	....	.92	.19	.02	.01	....	....	....	.04	....	.03	....	.01	....	4.36
Monticello	.22	....	....	....	.	.07	..	....	1.22	.52	.78	....	....	....	....	....	....	....	.96	....	..	....	....	....	....	.13	....	....	....	....	.50	....	3.80
Mt. Vernon	.01	.06	....	....	....	.06	..	....	.50	.46	....	....	....	....	.01	....	..	.04	.08	.01	.24	....	....	....	.10	....	.01	....	.07	1.47	....	4.07
Mount Ayr	....	....	....	..	....	....	....	T	.60	.26	....	....	....	T	....	.04	....	.25	.80	.95	....	....	....	....	....	T	.35	2.65	....	1.10	....	7.00
Mt. Pleasant	....	..	....	....	....	....	....	....	.05	7.20	....	....	....	....	.02	.07	..	.42	1.30	.10	....	.20	..	.06	..	....	....	....	....	.54	.90	....	4.65
New Hampton	....	.09	....	....	....	.14	.02	....	.49	.24	....	....	....	.04	....	....	.70	....	.50	.28	....	....	....	....	....	....	.48	....	.92	.45	....	5.82
Newton	.07	....	....	....	....	....	....	....	1.20	1.18	....	....	....	....	....	.52	.40	.79	....	....	....	....	.05	....	....	....	.02	....	.17	.68	....	3.89
Northwood	.04	....	....	....	....	....	....	..	.22	.96	....	....	..	....	....	T	....	..	....	....	....	....	....	....	....	2.04	3	....	....	.05	....	3.64
Odebolt	....	....	.60	..	30	....	.03	..	....	.32	....	....	..	....	....	....	....	1.9	....	.12	....	....	....	....	....	....	.44	....	.90	.53	....	6.35
Ogden	.06	....	T	....	....	.06	....	....	1.75	.50	....	....	....	..	....	....	....	....	T	.82	.10	.01	..	....	T	....	T	....	T	3.10	....	5.06
Olin	....	.06	....	....	....	....	....	....	.67	.30	....	....	....	....	....	....	....	....	T	.07	T	..	.2	T	.02	..	.07	T	....	.18	.08	T	.06	....	1.70
Omaha, Neb	.15	....	.02	....	....	....	....	T	.62	.14	T	....	.05	....	T	.07	T	..	.2	T	.02	..	.07	T	....	.18	.08	T	.06	....	2.86
Onawa	....	....	.03	....	....	....	..	.02	.03	.90	....	....	.02	.02	.32	.02	....	....	....	.01	.08	....	.05	..	T	....	.18	....	.02	.16	....	5.52
Osage	....	....	....	....	....	....	....	....	.75	1.13	..	....	....	.03	....	.05	.69	1.27	....	....	....	....	....	..	....	....	....	....	1.02	.58	....	6.72
Oskaloosa	.15	....	....	....	....	....	....	.	1.30	1.20	....	....	..	..	....	....	.12	.20	....	.39	.06	....	..	....	T	..	.7	.13	.37	2.12	....	8.40
Pacific Junction	....	....	....	....	....	.51	....	.06	.02	1.00	.21	....	....	....	....	T	....	....	....	1.07	....	....	.11	....	....	....	.31	T	.06	.05	....	8.40
Perry	.38	....	....	....	....	.10	....	....	1.44	.54	....	..	....	....	....	....	T	.73	....	.24	....	....	....	....	....	....	.78	....	2.16	.60	..	6.97
Plover	....	..	....	....	.15	....	..	....	.69	....	....	....	....	....	....	.44	....	....	1.22	....	....	....	....	....	....	....	1.05	....	.21	.66	....	4.42
Pocahontas	....	..	..	....	....	....	..	....	.16	.31	....	....	....	.8	..	....	....	....	.62	....	..	.0	....	.05	....	....	1.05	1.19	....	.52	....	4.25
Red Oak	....	....	....	....	.60	....	....	T	....	.37	....	....	.02	....	....	.26	T	.10	..	2.18	....	....	....	....	....	....	.24	T	....	.10	....	3.87
Ridgeway	....	....	....	....	T	....	T	....	.72	.15	T	....	T	.06	.08	.56	.26	2.01	....	....	.03	....	T	....	T	....	....	....	.56	.88	....	5.26
Rock Rapids	.50	....	..	....	....	....	....	T	T	T	....	....	T	....	.17	....	....	.60	T	....	..	T	T	2.10	T	1.65	....	....	....	4.15	....	9.17
Rockwell City	....	....	....	..	.35	....	....	....	.65	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.85	....	.20	....	....	2.05
Sac City	.03	....	....	....	.03	....	....	....	.04	.48	....	....	....	....	....	.04	....	....	....	....	....	....	....	....	....	1.45	T	....	....	....	....	2.07
St. Charles	.05	.20	....	....	..	T	....	....	....	....	.11	....	....	....	....	.05	.04	.11	.02	.70	....	....	....	....	.01	.01	1.62	....	.38	1.00	....	4.19

DAILY AND MONTHLY PRECIPITATION FOR JUNE, 1905--CONTINUED.

STATIONS.	DAY OF MONTH																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sheldon	.15						T	.62		.09				T	.65	T		.27			.03	.10		1.00	.09	T	2.52	.02		1.85		6.79
Sibley		.24							.45	.01	T				T	.25	.06		.81		.15		.08	.16	1.26		.16	1.75	.01	1.80		7.19
Sidney						.04				.30	.32					.15				.80			.04				.33			.49		2.50
Sigourney						.04			.09	2.73				.50			.08		.26	.27	.05						.61	.46	.39	2.00		7.48
Sioux Center	.01		T					.03		.09	T				.58	T		.83			.04	.03		1.82	.04		4.05	.15		1.20		8.87
Sioux City								.11		.18	T		.03		.79	.01			T	.14		T		.10	.05		1.09	.03	.02	T		2.55
Stockport										‡									.38	1.50						.07	.51	.31	.51	.60		14.57
Storm Lake		.08		T					.05	.33	T				.10		.02		.56					.15				3.30	.51	.10		5.20
Thurman					T				.02	.12	.22		T		.70	2.05		T		2.20			.10				.30		.03	.24		5.98
Tipton										3.15									1.19	.14	.02				.23		.04			1.15		5.92
Toledo									.40	2.00				.30			.15		.40	.10	.10				T		.10		.15	.75		4.45
Wapello									.02	2.00				.55					.81	.52					.09	.24			.44			4.67
Washington										1.72				.25					.58	.36								.30		2.15		5.36
Washta	.06		.12		.05			.05	.26	1.00					.48	.18		.05				T		.05	T		3.35	.10				5.75
Waterloo	.12					.21			.56	T					.68		1.10	.92		T	.08		T		.03		.02		.08	1.73		5.53
Waukee	.67	T	T			.21			.80	1.70						.03	.04	.01		.55			T		.04	T	1.42		1.25	.59		7.31
Waverly						.40			.80	.10	T			1.08	.05		.96	.72	.25	.04	.52				.02		.01		.14	1.67		6.76
Webster City					.90			T		.32				T			.67			.07			T				.60	T	.10	.40		3.06
Whitten						.80			.30	.14			.16			T	.60	T	.54	.12	.22		T		T		.15		.13	1.00		4.16
Wilton Junction									.57	3.60								.25	1.00		.23				T	.47				.45		6.57
Winterset	.18					T			T	3.10						T			T	1.12					T	T	1.35	.02	.04	.43		6.24
West Bend					T				.07	.95	.22				.10	T	.05	1.77				.04			T		.85		.67	.51		5.23
Woodburn		.82				T				2.00				.05		T	T		.55	1.28							1.35		.20	.55		6.80
Zearing	1.04					.48			.37	.23						T	.84		.53	.12			T				.23		T	.78		4.02

T. Amount too small to measure. *12.10. †11.09. ‡10.63.

Precipitation Chart June 1905.



JULY, 1905. No. 7



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MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XVI. JULY, 1905. No. 7.

IOWA CROP CONDITIONS AUGUST 1, 1905.

The August 1st report of crop correspondents has been tabulated, showing following estimates of the condition of crops on the percentage basis: Corn, 94 per cent; spring wheat, 93; oats, 97; flax, 78 ; potatoes, 92; pastures, 103; apples, 40; grapes, 91.

Last year at corresponding date the estimates were: Corn, 88; spring wheat, 75; oats, 89, flax, 94; pastures, 96; potatoes, 101; apples, 73; grapes, 86.

JULY WEATHER AND CROPS.

The daily mean temperature of July for the state was 70.6°, which is 3.8° below normal. The rainfall was 2.91 inches, or 1.44 nches below the July average. The temperature was quite uniform, except as affected by altitude and latitude; but the rainfall was unequally distributed, ranging from 7.08 inches at Albia, Monroe county, to .69 of an inch at Washta, Cherokee county. The average of the northern section was 2.00 inches; central section, 3.19 inches; and the southern section, 3.45 inches.

The temperature of the month was exactly the same as in July 1904; but the rainfall this year was 1.50 inches less than last year, and conditions were more favorable this year for crop growth and harvest operations. During the first decade the weather was generally cool and showery, retarding the necessary work of finishing the cultivation of corn, and in many fields that crop was laid by in condition not up to the normal. The showery weather during the first half of July was somewhat unfavorable for securing the heavy crop of clover. But the latter half of the month was quite favorable for haying and harvesting oats, barley, rye and winter wheat. The hottest period of the month was during the second decade, from about the 13th to the 20th, during which time corn made very rapid progress. At the close of the month the average condition of corn was better than at the corresponding date in any year since 1900. Spring wheat ripened under favorable conditions, and the harvest was begun in the last week in July, with but little appearance of damage by rust. The oats crop was secured in good condition, and early threshing reports indicated a full normal yield. The hay crop secured in the latter half of July was generally in good condition, though somewhat overripe in the southern half of the state. As a whole July was a favorable month, with a minimum amount of damage from excess or deficiency of moisture or temperature. The crops already secured are better than was deemed possible in the spring months, and the growing crops give promise of an abundant yield.

TRAITS OF SUMMER STORMS.

[N. Y. Tribune, July 14.]

One of the most striking differences between such storms as have occurred in this vicinity within the last few days and those of winter is seen in the distribution of the attendant rainfall. At both seasons a wide area is likely to be affected at any one time, but the actual result is not the same. In cool weather the precipitation is usually almost uniform over the whole of the region favored, which may embrace several large states, and it is practically continuous for several hours. In warm weather it is concentrated over many widely separated spots. Sunshine often intervenes between these; and where there is a downpour at all it is generally swift, sudden and copious. That which visited New York City on Monday was almost without precedent in this respect for northern latitudes; but it illustrated the extremely local character of such meteorological episodes.

Summer and winter storms are dissimilar also in the changes in wind direction and temperature which accompany them. In cool weather the wind usually holds from the same quarter from the beginning to the end of the period of precipitation, and finally shifts to the northwest, where it stays for a day or two. Previous to that occurrence the air is mild if not really warm, but the mercury takes an abrupt drop when the sky clears. In July another programme is observed. Nine times out of ten the wind goes back after a shower to the same quarter as before which is generally the southeast. This may happen on several successive days while a given locality is under the influence of one particular barometric depression. The movement of a "low" in summer is almost invariably sluggish, and not until the centre of it has passed to the eastward does any lasting change come in the wind or temperature. A shower is often ushered in, to be sure, with a gust of greater or less violence from the west, but its duration is brief. The phenomenon is attributed by meteorologists to a convulsive descent of air from above in the middle of the storm; and though the volume of atmosphere which is thrust downward may be large enough to produce a cooling effect that last an hour or so, the benefit is shortlived. No permanent relief can be expected until the low area of barometer is followed by a high one and the wind comes steadily from the northwest.

Observations made with balloons and kites in thousands of instances show that with increasing elevation above the earth there is usually a slow fall in temperature. The average difference is about 1 degree Fahrenheit for every 300 or 325 feet. On occasions, however, notable departures from this standard are observed. Sometimes the diminution is not so rapid as might be expected, and when such a situation exists no particular consequences need be looked for. When, on the other hand, at an elevation of a few thousand feet a stratum of air is found which is much colder than the established formula demands trouble is almost sure to follow. At one point or another the hot air below will force its way upward, an exchange will take place on a greater or a smaller scale, and thundershowers, wind squalls, tornadoes or hailstorms will follow. A large brood of these local demonstrations is generated almost simultaneously, their intensity being governed mainly by the extent

to which the lower air is saturated with water vapor and by the temperature deficiency of the upper stratum.

The task of forecasting local disturbances is beset with peculiar difficulties. It is comparatively easy for the expert to recongnize on a weather map the conditions which are favorable to their development. These are likely to prevail over a wide area at one time, and warning of their existence ought always be given. It is practically impossible, however, to foresee precisely where any particular outbreak will begin. The most that can be done ordinarily is to say that there is a chance that such storms will form. After one does, its progress can be reported by telephone; but the responsibility of doing that has never been assumed by the national government, and probably never will be. Local forecasters who have studied the deflecting influence of hills upon the routes of summer storms might be enabled in time to perform useful service in announcing the probable path that would be taken by one which had come within the range of their observations; but the extremely short life of most disturbances would impair the value of even these indications.

CYCLONES ARE HARMLESS.

[Nature and Science in St. Nicholas.]

The ordinary land cyclone is usually quite harmless, and it is only by a mistaken use of the term that it has become associated with those terrifying storms peculiar to our country known as tornadoes. Cyclones have a bad reputation because they are commonly associated with other more harmful storms. Instead of being dangerous and destructive they are the chief source of rain in spring and autumn and supply the snow which adds so much to the pleasure of our northern winter. They cover a large extent of territory at one time, and on an average follow one another across the country from west to east at intervals of about three days.

A tornado often does great damage. It is known by its funnel-shaped cloud, which bounds and bounces along, now high in the air and again touching the ground. When it skims along the ground the havoc is greatest. Here the mightiest structures of man are crushed in an instant before the avalanches of wind let loose from every direction. The air seems to have an explosive force, buildings falling outward instead of inward, as one might think. In such a storm no place is safe, but the southwest corner of a cellar affords the best protection obtainable. If in the open lie flat on the ground. During a tornado, which lasts but a few minutes, the sky is covered by clouds of inky blackness, which here and there take on a livid greenish hue. The surface winds rush spirally upward into the funnel-shaped cloud, carrying with them many articles which are afterwards dropped some distance beyond. The danger zone is confined to a path less than a half mile in width and one hundred miles in length. These storms occur only on land.

The true hurricane is ocean-born. On the high seas of the tropics it marshals its forces of wind and wave, before which the stoutest ship is helpless and the fairest islands are laid waste. Even the sturdy mainland trembles under its awful castigation. These ocean storms last much longer than tornadoes, cover more territory and cause more damage. The hurricane which overwhelmed Galveston destroyed several thousand lives and millions of dollars' worth of property. The West India islands are frequently scourged by these awful visitations, and our own Atlantic coast sometimes feels the lash of these dreaded storms.

But the hurricane and the tornado are rare. The former seldom extends far inland, and usually occurs in the late summer or fall. Tornadoes are products of the south and west and are mostly confined to the spring and early summer months. The cyclone is a universal storm which travels over land and sea, in season and out of season, in spring or in fall, in summer or in winter. It is an old friend, but one much abused.

GROW A LITTLE ALFALFA.

[Cedar Rapids Republican.]

It is the boast of the arid west that it is the alfalfa country. But there is every reason for believing that Iowa can beat the world on alfalfa as well as on corn. The soil of the arid west has no natural advantages over the soil of Iowa. Even alfalfa likes a fairly good soil. But it wants depth. Some wise men assert that alfalfa roots go down 300 feet into the soil. There are westerners who claim to have found traces of them 150 feet below the top crust. But alfalfa wants depth. Where it strikes a hard pan alfalfa will not grow. Nor will it grow in rocks.

But Iowa has millions of acres that will grow alfalfa, undoubtedly. The way to find out is to try it. Alfalfa is said to add the balanced ration to the Iowa feed lot. All corn is not good, not even for hogs. Alfalfa is a growth that has the necessary variant. Even hogs are said to eat the hay with avidity and some Nebraska men have made small fortunes selling gound up alfalfa hay for chicken feed. Some of it is due to a fad. Some of it is based on solid facts. But give alfalfa a trial. Show that even with those forage plants Iowa is up with the best.

Soil inocculation and all that sort of thing is said to be unnecessary. Professor Holden says it can be done without that troublesome work. He says for the Iowa farmer to take a couple of acres of oat land. Spread some manure on it, six or eight loads an acre, disc it twice and then plow and harrow until it is like a garden seed bed. Sow the alfalfa fairly deep, an inch down. With favorable weather, which includes some rains, the alfalfa will grow from six inches to a foot in height. Leave the growth on the soil. Next spring there will be three crops.

Why not try it? Why not try it in every county in the state?

And now!

CLIMATOLOGY OF THE MONTH OF JULY, 1905.

BAROMETER.—Mean pressure, 29.93 inches; highest observed, 30.24 inches, at Sioux City, on the 24th; lowest observed, 29.37 inches, at Charles City, on the 4th; range for state, 0.87 of an inch.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 117 stations, was 70.6 degrees, which is 3.8° below normal. By sections the mean temperatures were as follows: Northern section, 69.5°, which is 3.7° below normal; central section, 70.8°, which is 3.5° below normal; southern section, 71.4°, which is 4.3° below normal. The highest monthly mean was 73.4°, at Keokuk; lowest monthly mean, 67.4°, at Sibley. The highest temperature reported was 102°, at Waukee, on the 16th; lowest temperature reported, 40°, at Washta, on the 25th. The average monthly maximum was 95.3°; average monthly minimum, 49.0°. The greatest daily range, 41°, at Waukee; average of greatest daily ranges, 31.6°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 128 stations, was 2.91 inches, which is 1.44 inches below normal. The averages by sections were as follows: Northern section, 2.00 inches, which is 2.21 inches below normal; central section, 3.19 inches, which is 1.09 inches below normal; southern section, 3.54 inches, which is 1.08 inches below normal. The largest amount reported was 7.08 inches at Albia; least amount reported, 0.69 of an inch, at Washta. The greatest daily rainfall reported was 4.00 inches, at Grinnell, on the 19th. Average number of days on which .01 of an inch or more was reported, 9.

WIND AND WEATHER.—Prevailing direction of the wind, northwest; highest velocity reported, 39 miles per hour, from the northwest, at Sioux City, on the 4th. Average number of clear days, 14; partly cloudy, 10; cloudy, 7.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Charles City	29.93	30.22	25	29.37	4
Davenport	29.92	30.21	15	29.43	4
Des Moines	29.94	30.22	25	29.40	3
Dubuque	29.93	30.22	25	29.40	4
Omaha, Neb	29.93	30.20	24	29.44	3
Keokuk	29.92	30.24	25	29.50	4
Sioux City	29.92	30.24	24	29.42	3
Means	29.93	30.24	24	29.37	4

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Charles City	4.028	23	NW	4
Davenport	4.588	25	NW	4
Des Moines	5.135	34	SE	19
Dubuque	4.296	30	NW	22
Keokuk	4.450	36	SW	2
La Crosse, Wis	4.550	26	NW	22
Omaha, Neb	5.514	64	NE	13
Sioux City	7.381	39	NW	4

OBSERVERS' NOTES.

ALTA—*David E. Hadden.* Mean temperature of July was about 3.5° below normal; rainfall 3 inches less than the 15-year average.

ALTON—*W. S. Slagle.* Very good month for growth of crops; wheat and corn doing well; no rust damage yet.

AUDUBON—*Geo. E. Kellogg.* Hail on 24th destroyed crops in small area.

BONAPARTE—*B. R. Vale.* First half of July cloudy and wet; very hot 14th to 18th inclusive; cool the balance of month, farm work retarded.

BOONE—*Carl Fritz Henning.* Splendid month for grain, such as oats, wheat and corn; large crop of hay.

BRITT—*Geo. P. Hardwick.* Excessive cloudiness and fog in July; extremes of temperature; corn uneven and late; oats and hay crops above average; apple twig blight prevailing over the county.

CHARITON—*C. C. Burr.* Corn is developing rapidly; no severe storms in July, but hay was badly damaged by showers.

CLINTON—*Luke Roberts.* July was over 2° below normal; deficiency in rainfall 2.69 inches; and yet all growing crops were in fine condition at close of month.

CRESCO—*L. G. Krumm.* At Bonair on 17th hail did much damage; surface very dry at close of month.

CRESTON—*W. L. Gaston.* July was unusually cool; good hay weather during latter part of month.

ELLIOTT—*Henry Barnes.* Heavy crop of hay gathered in good order in July; yield of grain fairly good; corn fully up to the average; good yield of potatoes.

FLORENCE—*H. Du Bois.* Hay harvested in fine condition; oats yielding 30 to 35 bushels; corn up to average for July.

FOREST CITY—*J. A. Peters.* From 13th to 20th corn made rapid growth; hay was never gotten up in better condition; month closes quite dry.

GRAND MEADOW—*F. L. Williams.* Many wet days but no very heavy rains; harvesting well along at close of month.

GRINNELL—*A. O. Price.* "Catchy" weather for haying; small grain good and crops secured in fair condition.

HANLONTOWN—*Miss G. M. Paschen.* Corn was mostly eared by 23d; barley and early oats harvested by 20th; standing up good; fair crop of black and red raspberries; drought cut berry crop short somewhat.

HUMBOLDT—*H. S. Wells.* Rain 1.4 inches; corn about 20 per cent below average; potato crop short; tame hay harvested.

IDA GROVE—*J. E. Conn.* This has been a cool month, but no damage was done to crops, which are looking good.

INWOOD—*G. M. Larsen.* A fine month; corn in fine condition; with favorable weather it will be a "bumper" crop; abundance of good hay put up.

JEFFERSON—*Geo. W. Day.* Haying commenced on 13th; oats harvest on 17th; no damage by hailstorm on 13th.

KEOSAUQUA—*J. H. Landes.* First of July and last of June wet weather spoiled nearly all early clover hay; but last of July was fine for harvesting; grain in fine condition at close of month.

OLIN—*Nathan Potter.* First week was mostly bad for making clover hay; since that time it has been good weather for harvesting.

POCAHONTAS—*F. E. Hronek.* High temperature from 14th to 20th; harvesting about finished by close of month and crops good.

RIDGEWAY—*Arthur Betts.* Month cool and similar to July, 1904, but not so pleasant; 319 hours of sunshine, or 39 less than average; hot weather 14th to 19th.

SHELDON—*A. W. Beach.* Best harvest weather in years; hay all put up without a drop of rain; harvest was late and corn is a week behind.

STOCKPORT—*C. L. Beswick.* No clear days between June 26 and July 13, and rain every day between those dates except July 7th.

WAUKEE—*E. J. Leonard.* Rain in first week hindered haying and corn plowing; generally favorable during remainder of month; grain nearly all in shock at close of July.

WAVERLY—*H. S. Hoover.* Very cool except a few days, 13th to 20th; last 11 days gave us remarkable weather for haying and harvesting; oats crop about an average; corn improving.

WEST BEND—*Ph. Dorweiler.* Month was below average in temperature; harvest well under way; corn backward.

WHITTEN—*Dr. Frank P. Butler.* On July 4th wore an overcoat to make calls. Heavy electric storm on night of 18th; oats blown down and corn lodged.

ERRATA IN MAY REVIEW.

CLEAR LAKE.—On page 11, the precipitation of the 4th, 6th and 7th should have been .35 of an inch, .10 of an inch and .18 of an inch respectively.

CLEAR LAKE.—Total precipitation on page 6, omitted, should have been 7.53 inches.

CLIMATOLOGICAL DATA FOR JULY, 1905.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.						PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.	
Algona	Kossuth	1,213	28	69 4	- 4.3	95	16	48	25	33	1.18	- 2.49	.88	....	7	20	7	4	NW
Alta	Buena Vista	1,513	14	69.9	- 3.8	95	16	49	9,24	27	1.47	- 4.24	.55	....	8	16	10	5	N
Alta (near)	Buena Vista										1.93		.68	....	7				
Alton	Sioux			69.5		95	16	48	24	29	1.55		.70	....	7	16	12	3	NE
Britt	Hancock	1,236	8	69.6	- 3.3	94	16,17	46	25	34	1.97	- 2.35	.72	....	8	3	28	2	N
Charles City	Floyd	1,015	18	69.0	- 5.0	95	17	50	10	28	1.19	- 2.73	.74	....	9	10	13	8	NW
Clear Lake	Cerro Gordo	1,241	7	71.2	- 2.7	93	16	50	9,24	31	1.60	- 3.15	1.20	....	3	14	14	3	NW
Cresco	Howard		31	68.0	- 3.1	93	16	50	24	26	1.33	- 2.70	.57	....	11	14	9	8	N, NW
Decorah	Winneshiek	857	12	69 8	- 2.8	98	17	48	25	29	3.32	+ 0.11	1.06	...	8				
Dows	Wright	1,142	9	68.4	- 4.6	94	16	46	25	30	1.75	- 2.60	.72	....	11	15	10	6	N
Elkader	Clayton	727	21	71.6	- 2.4	98	17,18	46	25	36	2.23	- 2.11	.75		9	13	14	4	SE, NW
Estherville	Emmet	1,298	12	68.8	- 3.9	96	16	46	25	32	3.05	- 0.83	1.50	...	7	18	2	11	NW
Florence	Wright	1,226									2.14		.52	....	8	9	20	2	W
Forest City	Winnebago	1,226	11	70.0	- 2.9	96	16	49	24	34	3.30	- 0.13	1.37	....	7	20	1	10	N, W, NW
Grand Meadow	Clayton	1,180	11	39.0	- 2.0	92	16,17	50	24	27	3.19	- 1.18	.68	..	14	7	17	7	SW
Greene	Butler	924	8	70.6	- 4.5	97	16,17	49	10,24	34	1.86	- 2.83	1.17	....	7	7	14	10	W
Hampton	Franklin	1,155	13	70.8	- 1.9	97	16,17,18	50	24,25	30	3.06	- 1.08	1.54	....	10	9	17	5	NW
Hanlontown	Worth			67.6		94	16,17	47	25	30	3.04		1.41	....	6	17	7	7	NW
Humboldt	Humboldt	1,095	16	68.9	- 5.0	96	17	48	25	30	1.24	- 2.70	.57	....	5	15	10	6	NW
Inwood ‡	Lyon			68.7		100	16	45	9,25	33	1.29		.48	....	6	23	1	7	NW
Larrabee ‡ (c)	Cherokee	1,266	12	72.0	- 1.0	99	17	44	24	36	.63	- 4.03	.22		6				NE
LeMars	Plymouth	1,224	7	70.1	- 3.8	97	16	45	24	33	2.86	- 2.04	1.05	...	10	6	22	3	S
Mason City	Cerro Gordo	1,132	8	70.6	- 0 8	98	16,17	52	9	28	2 25	- 0.54	1.25	....	6	11	17	3	N
New Hampton	Chickasaw	1,169	7	70.3	- 3.1	96	17	51	24	29	2.82	- 0.87	.71	....	10	16	13	2	N
Northwood	Worth	1,222	8	69 3	- 2.7	94	16,17	49	24	30	1.92	- 2.07	1.17	...	10	15	7	9	N
Osage	Mitchell	1,184	13	69.3	- 1.7	96	16,17	49	9	32	1.49	- 2.05	.58	....	9	15	5	11	NE, S, NW
Plover	Pocahontas		8	69.3	- 5.2	95	16,17	43	25	37	1 18	- 3.95	.60	....	5	19	5	7	NW
Pocahontas	Pocahontas	1,190		70.2		97	16	47	24	30	1.83		1.07		6	12	12	7	NW
Ridgeway	Winneshiek	1,215	7	71.6	- 5.0	96	16	52	9	31	1.85	- 3.24	.56	....	12	14	15	2	S
Rock Rapids	Lyon	1,021	...	70.1	- 2.7	96	16	48	25	34	2.63	+ 0.11	.90	....	5	15	14	2	N
Sheldon	O'Brien	1,422	6	70.1	- 2.9	100	16	42	9	37	1.20	- 5.65	.70	....	6	17	5	9	S
Sibley	Osceola	1,212	12	67.4	- 3.9	95	16	46	24	51	2.40	- 1.51	1.20	...	6	15	4	12	NW
Sioux Center	Sioux		6	69.4	- 5.1	96	16	47	9	29	.73	- 4.65	.30		6	19	9	3	S
Storm Lake	BuenaVista	1,440	8	68.0	- 5.1	95	16	47	10	30	1.30	- 2.98	.38	....	8	15	4	12	NW
Washta	Cherokee	1,157	....	69.0		98	16	40	25	38	.69	- 4.41	.25	....	5	22	3	6	N
Waverly	Bremer	942	9	69.2	- 4.7	92	16,17,18	51	24,25	27	2.84	- 1.00	1.19	....	18	10	14	7	NW
West Bend	Palo Alto	1,197	12	69.0	- 3.9	94	16	47	24	30	1 58	- 1.26	.50	....	6	12	13	6	N
Average				69.5	- 3.7	95.7		47.7		33.1	2.00	- 2.21			8	14	11	6	NW

CENTRAL SECTION.

Altoona	Polk										2.47		1.58	....	10				
Amana	Iowa	721	27	71.0	- 3.0	93	17,18	52	24	26	2.65	-1.55	.61	....	14	13	8	10	NW
Ames	Story	926	21	70.4	- 4.6	93	16,17	49	10,25	29	2.14	-2.44	.82	....	12	17	8	6	
Audubon	Audubon	1,301	9	69.5	- 3.4	96	16	45	24	33	2.83	-1.09	.85	....	9	11	12	8	NE
Baxter	Jasper	998	....	70.2	- 4.2	95	17	50	10,24,25	32	4.54	- .35	2.50	....	8	10	10	11	
Belle Plaine	Benton	826	14	70.8	- 2.8	95	18	52	24,25	28	5.93	†2.29	2.25	....	11	12	10	9	SE
Boone	Boone	....	....	70.6	...	95	17	51	9	29	3.52		2.08	...	12	18	6	7	
Buckingham	Iowa										5.17	† .77	2.54	....	7	9	19	3	
Carroll	Carroll	1,265	13	69.4	- 4.5	96	16	46	10,24	32	2.97	- .93	.88	....	10	21	5	5	
Cedar Rapids	Linn	733	23	72.7	- 3.1	98	18	54	24,25	26	2.77	-1.10	1.11	....	14	10	12	9	SW
Clinton	Clinton	609	38	71.8	- 2.2	96	17	48	25	35	1.48	-2.61	.47	....	9	11	9	11	SW
Davenport	Scott	606	34	72.0	- 3 0	93	17	54	24	27	.99	-2.67	.41	....	8	11	11	9	NW
Delaware	Delaware	1,083	12	69.0	- 3.6	92	17	47	25	32	1.75	-1.93	.79	....	10	....			SW
Des Moines	Polk	861	27	71.0	- 3.5	94	16	54	25	24	4.53	†1.00	2.38	....	10	6	17	8	N
De Soto	Dallas	866	....	70.1		92	16	52	9	21	4.78		2.16	....	18	22	1	8	NW
Dubuque	Dubuque	655	32	71.4	- 2.9	94	17	52	25	26	1.51	-2.77	.38	....	12	9	10	12	N
Fort Dodge	Webster	1,126	....	70.4		97	16,17	49	25	29	2.06		1.00	....	11	19	3	9	S
Galva	Ida	1,290	12	68.4	- 5.6	94	16	48	10	35	2.60	-1.90	1.58	....	7	26	0	5	S
Grinnell	Poweshiek	1,023	10	70.3	- 3.7	93	17,18	49	24	31	5.96	†2.24	4.00	....	11	11	13	7	SW
Grundy Center	Grundy	976	12	69.6	- 2.6	94	17	49	24	28	4.46	† .28	2.01	..	12	16	7	8	NW
Guthrie Center	Guthrie	1,077	7	71.0	- 3.0	96	16	49	10,24	29	3.53	-1.01	1.12	....	12	22	6	3	NW
Harlan	Shelby	1,192	....	69.8	- 4.6	95	16,18	45	24	40	4.21	-1.50	1.96	....	12	6	20	5	N, NW
Ida Grove (e)	Ida	1,220		71.6		97	16,17	41	9	32	1.65		.70	....	5	21	8	2	S
Independence	Buchanan	921	40	69 2	- 4.2	96	18	47	25	30	2.41	-2.31	.75	....	10	12	12	7	SW
Iowa City	Johnson	683	47	71.6	- 2.6	95	15,16,18	52	24	31	3.59	- .91	1.27	....	13	14	1	16	N
Iowa Falls	Hardin	1,170	10	69.3	3.7	94	16,18	47	25	32	2.79	-1.05	1.10	....	11	18	4	9	NW
Jefferson	Greene		....	73.1		97	18	51	10	27	2.16		1.00	....	8	11	17	3	SE
Le Claire	Scott	576	....								2.30		.81	....	9	....	....	....	NE
Little Sioux	Harrison		....	71.8		97	16	47	9,10,24	34	1.15		.38	..	9	19	8	4	NE
Logan	Harrison	928	36	72.1	- 2.9	97	16,17	46	24	33	4.20	- .71	1.20	....	9	13	16	2	NE
Maquoketa	Jackson	688	12	70.0	- 5.1	94	18	44	25	38	4.46	† .37	2.90	...	10	13	6	12	NE
Marshalltown	Marshall	947	10	70.2	- 3.6	97	16,17	49	25	33	4.60	† .15	1.47	....	13	14	4	13	NW
Montezuma	Powe-hiek										3.62		2.30	....	7	....	....		
Monticello	Jones	925	....	71.0	- 1.9	98	15	45	25	38	2.24	-1.92	1.15	....	4	16	8	7	NW
Mount Vernon	Linn	847	30	71.4	- 2.0	95	17,18	51	6,24	31	1.43	-3.20	.62	....	9	13	11	7	W
Muscatine	Muscatine		46								4.59	† .68	1.78	....	9	....	....	....	S
Newton	Jasper	944	15	69.8	- 5.7	94	16,17,18	53	12,24,25	29	6.12	†2.24	3.36	....	10	12	13	6	N
Nevada	Story										3.71		1 54	....	8	19	8	9	
Odebolt	Sac	1,356	8	70.9	- 5.2	99	16	46	10	38	2.58	-2.54	1.23	...	6	22	4	5	
Ogden	Boone	1,058	9	70.3	- 4.6	95	16,17	48	24	29	2.91	-1.21	1.54	...	8	12	15	4	SE
Olin (d)	Jones	760	7	71.5	- 3.3	92	17,18				3.12	- .48	1.01	....	8	....	....	....	
Perry	Dallas	975	....	71.2		95	16	50	9	27	4.05		1.25	..	10	3	17	11	
Onawa	Monona		....	73.1	- 2.9	98	16	50	9,24	38	1.14	-3.49	.60	....	8	24	4	3	NW
Rockwell City	Calhoun		8	69.4	- 4.5	95	18	48	24	32	2.99	-1.01	.89	....	8	22	6	3	
Sac City	Sac	1,278	23	69.1	- 4.2	93	16	50	11,24	28	3.65	- .16	1.41	....	9	21	6	4	
Sioux City	Woodbury	1,165	16	70.6		100	16	48	10	28	1.41		.70	....	6	10	12	9	NW
Tipton	Cedar	807		73.2	- 1.4	96	17,18	55	24,25	28	2.55	-1.87	.66	....	7	15	15	1	SW
Vinton	Benton	810	15	69.9	- 3.8	93	17	49	25	28	2.44	- .95	.54	..	8	22	0	9	SW
Waterloo	Black Hawk	862	16	71.0	- 3.0	98	17	51	10,24,25	31	4.35	† .11	2.43	....	10	14	12	5	NW
Waukee	Dallas	1,039	....	72.6		102	16	50	9,24	41	3.53		1.41	....	12	11	14	6	NW
Webster City	Hamilton		..	71.5		99	17	47	10,24,25	39	3.03		1.00	....	8	25	0	6	NW
Whitten	Hardin	1,036	....	70.4	- 4.3	96	16	48	24	28	5.23	-1.46	2.10	....	7	11	13	7	NW
Wilton Jct	Muscatine	683	11	71.9	- 3.5	96	16	48	25	34	3.26	-2.01	.95	....	8	14	4	13	NW
Zearing	Story	718	....	70.0	...	93	17	51	24	27	2.09		.70	....	6	16	10	5	NW
Average				70.8	- 3 5	95 5		49.0		31.0	3.19	-1.09			9	15	9	7	NW

†Above normal. ‡ Received too late to be computed with means. *a*. One day missing; *b*, two days, etc. § Not supplied with self-registering instruments.

CLIMATOLOGICAL DATA FOR JULY, 1905—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	11	71.6	- 4.5	98	16	50	10	32	2.84	- 1.96	.87	. .	9	12	14	5	NW	
Albia	Monroe	957	....	70.6	- 4.5	94	12,16	53	24,25	37	7.08	† 2.95	1.50	...	14	....	....	....	SW	
Allerton	Wayne	.....	....	71.2	.....	94	16,18	49	24	29	3 62	.....	1.35	...	17	18	5	8	NW	
Atlantic	Cass	1,184	14	70.2	- 8.5	97	17,18	42	24	37	2.34	- 2.01	1.22	....	6	6	11	14	S	
Bedford	Taylor	...	5	71.4	- 2.5	95	16	47	24	32	2.87	- 2.73	1.64	....	12	16	6	9	NW	
Bonaparte	Van Buren	.....	14	72.0	- 4.4	93	18	50	25	30	2.54	- 1.06	.95	....	10	....	....	....	.....	
Burlington	Des Moines	544	..	72.8	.....	94	18	53	24	26	3.30	.	.88	....	13	16	9	6	SW	
Chariton	Lucas	1,042	10	70.0	- 5.1	93	18	50	24	28	4.91	- 1.33	1 32	..	8	15	7	9	SE	
Clarinda	Page	.....	15	72.3	- 4.0	101	16	49	24	40	5.22	† .54	1.41	....	12	21	2	8	NE	
College Springs	Page	.....	14	71.8	- 3.6	96	18	50	24	30	2.64	- 3.09	1.30	....	11	17	12	2	NE, NW	
Columbus Junct.	Louisa	586	...	71.0	..	93	17,18	53	24	28	2.75	.....	.85	....	14	15	13	3	NW	
Corning	Adams	1,127	13	70.5	- 4.0	95	16,18	44	24	32	2.25	- 2.22	.96	....	7	15	13	3	. NW	
Corydon	Wayne	992	12	71.3	- 4.5	92	16,18	51	24	26	4.74	† .34	2.10	..	13	13	11	7	S	
Creston	Union	.....	....	69.8	.....	94	16	48	7	30	3.42	.....	.68	....	15	18	5	8	W, NW	
Cumberland	Cass	.....	....	.....	...	.....	.....	.....	.....	.....	4 02	- 1.15	2.07	....	6	23	3	5	S, SW	
Earlham	Madison	.....	....	69.0	.....	92	16,17	47	25	31	3.49	.....	.77	....	11	18	6	7	NW	
Elliott	Montgomery	.....	...	72.1	.....	99	16,17	45	24	40	2.18	.....	.82	....	9	18	11	2	NW	
Ft. Madison	Lee	516	56	.....	.....	.....	.....	.....	....	.....	3.64	- .47	.68	....	8	7	10	14	SW	
Greenfield	Adair	.....	14	71.6	- 3.0	100	16	47	24	31	2.81	- 2.08	1.03	....	11	19	6	6	S	
Indianola (a)	Warren	.....	....	70.6	- 5.0	95	16,18	52	24	35	3.17	- .47	1.50	....	11	5	12	14	.....	
Keokuk	Lee	619	84	73.4	- 3.5	94	18	56	24	25	2.89	- 1.21	.82	....	12	14	8	9	SW	
Keosauqua	Van Buren	644	13	72.3	- 4.5	96	18	50	25	32	2.57	- 1.40	.99	....	11	5	12	14	.....	
Lacona	Warren	.....	...	.....	.....	.....	....	.....	.....	.	4 22	- .65	1.42	....	14	7	20	4	.....	
Lenox	Taylor	1,120	10	71.0	- 3.7	95	16	51	9	29	1.81	- 3.41	1.03	....	9	21	7	3	S, NW	
Leon	Decatur	1,120	....	71.6	..	93	16,18	52	9	28	2.76	.....	1.24	..	11	19	4	8	E	
Mt. Ayr	Ringgold	1,236	12	71.6	- 4.1	96	16	51	9	30	3.61	- 1.50	1.23	..	10	7	7	17	NW	
Mt. Pleasant	Henry	729	24	72.4	- 2.9	97	17	52	24	32	2.91	- .83	.66	....	10	9	12	10	NW	
Omaha, Neb.	Douglas	1,113	84	72.6	- 3.6	95	16	54	9	27	2.36	- 2.39	.74	....	10	10	10	11	N	
Oskaloosa	Mahaska	843	22	71.0	- 4.4	93	18	51	25	28	3.62	- .43	.72	....	12	18	0	13	SW, NW	
Ottumwa	Wapello	649	11	72.4	- 4.4	96	16	58	9	31	2.40	- 1.89	1.10	....	4	23	3	5	.....	
Pacific Junction	Mills	960	6	70.8	- 4.5	96	16	47	24	37	4.17	- .40	1.18	....	12	12	16	3	N	
Red Oak	Montgomery	1,033	8	73.1	- 3.5	96	16,17	49	24	29	3.21	- 1.59	1.36	...	9	11	10	10	W	
St. Charles	Madison	1,070	....	70.4	.....	93	18	52	9	23	6.63	.. ...	3.35	....	11	18	8	5	NW	
Sidney ‡	Fremont	.....	....	73.1	.....	96	16,17,13	51	9	32	3.72	.....	.70	....	10	23	1	7	SE	
Sigourney	Keokuk	887	9	72.6	- 5.0	95	17,18	51	24	30	4.35	- .33	1.11	....	15	1	28	2	NW	
Stockport	Van Buren	.....		71.1	....	90	16,17	55	24	24	1.88	.. .	.64	..	12	14	4	13	NW	
Thurman	Fremont	.....	....	72.2	- 4.3	95	16,18	50	24	34	6.30	† .82	1.54	....	8	15	12	4	SW	
Washington (c)	Washington	769	13	70.6	- 5.0	92	16,17,18	52	24	25	3.39	- .14	1.87	....	12	....	....	....	SW	
Winterset	Madison	1,129	....	70.5	- 3.8	95	16	50	9,24	29	3.65	- 2.28	1.07	....	11	4	18	9	NW	
Woodburn	Clarke	961	....	70.6	.....	92	18	48	24	34	5.60	† .19	2.12	....	9	16	8	7	SW	
Average		.....	....	71.4	- 4.3	94.8	.....	50.2	.....	30.6	3.54	- 1.08	.....	....	11	14	9	8	NW	
Average for State		.....	....	70.6	- 3.8	95.3	.....	49.0	.....	31.6	2.91	- 1.44	.....		9	14	10	7	NW	

DATES OF THUNDERSTORMS.

NORTHERN SECTION.

Algona, 2, 5, 18.
Alta, 2, 4, 5, 13, 22, 25.
Alton, 2, 5, 6.
Charles City, 5, 18.
Cresco, 7, 11, 13, 17, 18.
Dows, 13, 18.
Elkader, 7, 8, 11, 17, 18, 31.
Florence, 3, 4, 5.
Hampton, 18.
Hanlontown, 5.
Humboldt, 5, 26.
Mason City, 3, 5, 6.
New Hampton, 19.
Osage, 18.
Pocahontas, 2.
Ridgeway, 7, 8, 11, 13, 17, 18.
Rock Rapids, 3, 5, 7, 26, 30,
Sheldon, 3, 5.
Sibley, 3, 6
Sioux Center, 3, 4, 5, 6
Washta, 4, 5.
Waverly, 2, 3, 6, 11, 13, 17, 18.
West Bend, 18.

CENTRAL SECTION.

Amana, 2, 5, 6, 8, 11, 14, 13, 18, 19, 22.
Audubon, 2, 3, 7, 13, 22.
Boone, 13.
Carroll, 2, 3, 4, 6, 14.
Clinton, 2, 5, 8, 11.
Davenport, 2, 5, 6, 8, 11.
Des Moines, 2, 6, 7, 13, 17, 19.
Dubuque, 2, 5, 6, 7, 8, 11, 17, 18, 19, 22, 31.
Grinnell, 2, 3, 4, 5, 6, 7, 8, 13, 14.
Guthrie Center, 2, 5, 7, 8, 13, 19, 22.
Harlan, 2, 4, 7, 13, 19, 22, 26.
Independence, 2, 6, 10, 11, 13, 17, 18.
Iowa Falls, 4, 5, 11, 13, 18, 22.
Jefferson, 13.
Little Sioux, 5.
Logan, 4, 13, 26.
Mt. Vernon, 11.
Nevada, 3, 4, 13.
Olin, 2, 3, 4, 5, 6, 11, 19.
Onawa, 2, 7, 8, 14, 26.
Waterloo, 2, 3, 5, 13, 18.
Waukee, 2, 4, 5, 6, 7, 13, 17, 19, 22.
Whitten, 3, 11, 12, 13, 17, 19.
Wilton Junction, 5, 19.
Zearing, 13, 17, 19.

SOUTHERN SECTION.

Atlantic, 4, 13.
Allerton, 2, 7, 8, 14, 19, 22.
Burlington, 3.
Columbus Junction, 2, 8, 11, 13.
Corning, 6, 7, 19.
Corydon, 2, 14, 19.
Creston, 4, 22.
Earlham, 7, 8, 13, 14, 17, 19, 22.
Elliott, 14.
Indianola, 7, 13, 14, 18, 19.
Lenox, 19.
Sigourney, 7, 11, 13, 19, 22.
Stockport, 2, 11, 13.
Winterset, 1, 14, 19.
Woodburn, 8, 14, 19.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JULY, 1905.

STATIONS.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Afton	Max..	79	80	76	81	81	82	83	78	75	70	74	86	93	94	94	98	95	96	84	84	85	86	81	78	84	74	80	78	82	84	86	83.3
	Min ..	56	60	62	59	59	57	59	56	52	50	56	59	62	62	68	72	70	69	65	64	61	59	53	52	52	60	61	63	58	58	61	59.8
Albia*	Max..	77	80	75	79	81	80	80	80	73	68	73	94	80	84	91	94	92	94	76	83	81	84	77	78	78	67	73	80	80	82	86	80.5
	Min ..	61	61	61	62	62	58	57	68	55	55	57	57	66	58	62	70	73	72	66	61	60	60	57	58	53	57	61	62	59	58	62	60.7
Algona	Max..	75	75	76	78	73	79	79	71	75	81	75	82	85	91	91	95	94	90	86	82	83	80	74	76	78	72	71	76	74	83	83	80.1
	Min .	60	59	62	59	56	57	55	58	49	51	52	60	60	58	69	72	71	71	60	59	61	59	52	49	48	61	60	60	62	54	57	58.7
Allerton	Max.	81	79	74	80	81	81	83	79	73	70	68	80	89	91	92	94	93	94	86	85	82	85	76	76	80	75	73	81	81	83	86	81.6
	Min ..	60	62	61	61	62	57	57	60	53	56	58	60	61	63	69	70	70	69	67	64	59	69	58	49	51	60	61	63	57	60	61	60.9
Alta	Max..	77	72	73	77	76	77	77	70	72	77	75	83	82	90	90	95	93	89	87	80	80	80	74	75	76	65	75	70	76	81	83	78.9
	Min ..	56	62	63	59	55	57	57	54	49	51	51	58	62	63	70	74	70	68	68	61	63	58	50	49	54	61	60	57	56	57	59	58.9
Alton	Max..	76	74	74	78	77	78	77	69	74	77	74	83	85	90	92	95	94	87	87	84	81	80	75	75	78	72	75	74	78	80	81	79.8
	Min ..	56	61	64	67	57	57	56	59	50	49	50	54	64	62	71	72	66	70	60	62	60	58	51	48	55	63	63	60	52	55	62	59.2
Amana	Max..	78	82	77	78	81	79	79	81	72	68	75	81	87	90	91	92	93	93	85	82	80	82	75	74	78	72	68	79	78	83	85	80.6
	Min ..	62	64	64	63	60	58	58	59	57	56	60	57	58	62	70	71	74	72	69	65	61	60	54	52	54	61	62	65	60	58	59	61.5
Ames	Max..	80	77	74	78	79	81	82	78	74	74	70	83	87	88	90	93	93	92	88	83	82	82	77	78	78	69	71	75	81	84	86	80.9
	Min ..	61	59	63	61	60	59	56	56	50	49	53	56	59	61	68	82	71	70	67	68	60	64	54	51	49	62	61	61	59	56	58	60.0
Atlantic	Max..	77	75	71	79	79	84	81	77	75	76	76	85	88	92	93	96	97	97	89	88	82	87	79	79	80	73	84	79	81	84	87	82.9
	Min ..	57	57	64	59	58	53	55	53	49	48	50	53	57	66	67	73	66	68	65	59	57	62	52	42	49	60	62	58	51	55	55	57.4
Audubon	Max..	75	78	74	79	78	81	79	75	73	79	71	85	90	92	92	96	95	95	90	83	79	85	77	78	81	71	82	75	80	83	85	81.8
	Min ..	57	56	63	51	62	53	55	53	49	57	46	54	56	64	65	72	64	69	64	65	52	58	52	45	50	60	61	59	53	53	55	57.2
Baxter	Max..	78	78	73	78	80	82	81	80	75	73	70	84	87	89	90	93	95	94	85	84	84	83	77	79	79	68	70	78	83	85	87	81.4
	Min ..	59	60	61	60	58	57	55	55	52	50	56	52	59	58	69	71	69	73	65	63	58	62	52	50	50	60	60	59	58	57	58	58.9
Bedford	Max..	79	76	72	79	78	79	80	78	75	75	72	84	89	90	90	95	92	94	85	88	86	87	78	79	79	75	80	80	84	86	90	82.4
	Min ..	59	63	61	60	59	65	53	54	50	54	57	52	61	64	70	72	69	68	68	62	59	63	63	47	51	59	63	65	55	61	61	60.3
Belle Pl'e	Max..	78	80	74	78	83	82	82	71	74	65	74	82	88	90	93	94	94	95	82	83	82	83	75	74	78	70	68	79	80	83	86	80.6
	Min ..	62	63	63	62	60	58	55	58	56	54	58	56	60	62	70	71	73	71	65	63	61	61	54	52	52	62	60	64	59	59	63	60.9
Bonapar'e	Max..	79	83	78	78	80	79	82	82	71	65	78	80	88	92	92	92	92	93	86	86	82	86	78	76	80	72	74	85	81	83	85	81.9
	Min ..	65	62	67	68	61	56	58	59	59	57	61	59	59	66	69	71	71	72	69	66	60	62	60	52	50	60	62	65	59	61	58	62.1
Boone*	Max..	77	77	73	78	78	81	81	76	74	74	73	81	89	89	90	94	95	94	85	84	82	83	76	75	75	68	71	75	80	83	86	80.5
	Min ..	60	60	63	61	60	59	59	58	51	52	54	58	60	64	69	73	73	72	68	65	62	63	55	52	53	59	61	61	59	57	60	60.7
Britt	Max..	78	78	79	77	77	73	81	72	73	80	75	86	89	91	90	94	94	93	88	81	84	81	73	76	80	76	79	78	77	81	83	81.4
	Min ..	60	59	62	59	57	57	51	55	49	50	52	60	59	58	69	72	70	68	58	58	59	59	51	48	46	58	59	57	65	52	56	57.9
Burling'n	Max..	80	85	79	77	79	76	83	82	70	65	82	80	87	92	93	93	93	94	85	88	81	86	80	79	81	71	73	89	81	82	86	82.3
	Min ..	65	63	62	63	62	64	59	60	60	55	61	63	65	69	70	72	72	72	72	67	63	62	62	53	54	61	63	65	60	61	62	63.3
Carroll*	Max..	76	75	78	78	77	80	81	73	75	78	73	84	87	84	92	96	94	95	86	83	87	89	77	77	78	65	80	73	82	84	85	81.4
	Min ..	56	63	62	48	56	55	56	55	49	46	47	55	60	62	67	73	69	71	64	63	60	57	50	46	52	60	59	58	53	52	55	57.4
Cedar R*.	Max..	78	83	77	78	80	81	82	82	74	67	76	80	89	93	95	97	97	98	83	88	84	83	77	75	80	73	67	79	82	86	89	82.4
	Min ..	63	63	66	65	63	60	56	56	60	58	60	60	61	64	68	71	77	76	70	67	63	63	57	54	54	60	62	63	64	66	63	63.0
Chariton	Max..	79	77	74	79	78	78	80	77	71	70	66	81	87	90	89	92	91	93	78	82	80	83	75	74	77	76	74	78	80	80	83	79.7
	Min ..	60	60	60	60	61	56	57	60	53	53	58	59	60	62	69	71	70	72	64	65	60	60	57	50	51	59	60	62	57	58	61	60.2
Charles C.	Max..	75	79	73	74	75	76	78	75	72	75	73	79	85	88	90	94	95	92	87	81	81	78	71	71	78	70	65	75	77	81	82	78.9
	Min ..	62	60	63	61	58	58	53	57	51	50	59	57	57	60	70	44	72	66	65	59	60	58	53	52	51	57	57	61	59	55	57	59.1
Clarinda*.	Max..	75	73	75	82	81	84	82	78	75	78	76	88	95	96	96	101	100	98	89	90	86	90	81	81	83	76	82	85	85	85	88	85.0
	Min ..	60	60	60	60	58	56	57	57	50	52	55	55	55	65	73	71	68	68	70	63	57	61	58	49	53	57	59	64	57	60	60	59.6
Clear L	Max..	81	78	74	74	76	78	81	71	76	78	94	86	83	90	90	98	97	91	89	82	84	78	74	74	78	71	71	79	81	83	82	82.0
	Min ..	61	60	63	59	59	59	58	57	50	54	56	58	65	62	64	74	75	74	64	61	62	62	53	50	54	60	59	60	62	58	58	60.4
Clinton	Max..	82	86	83	78	81	80	84	84	74	66	83	82	89	91	94	95	96	95	90	85	82	88	79	75	82	78	77	87	83	83	87	83.8
	Min ..	64	64	67	65	60	57	57	58	61	57	60	60	59	63	61	62	68	68	69	61	60	53	56	51	48	51	59	62	59	57	58	59.8
Col. Spgs.	Max..	77	77	79	80	78	82	82	77	74	72	74	84	91	90	91	95	95	96	92	78	83	87	78	77	81	76	81	80	83	83	84	82.5
	Min ..	61	64	60	60	60	57	57	57	51	54	58	56	61	67	70	73	70	69	70	64	60	64	60	50	54	54	64	67	58	63	61	61.1
Colum. J.	Max..	77	84	77	78	79	79	79	81	71	65	79	78	86	90	92	90	93	93	86	89	79	89	72	74	78	69	69	84	80	83	86	80.9
	Min ..	62	60	65	62	61	58	58	58	58	57	59	57	61	63	69	71	72	72	68	67	59	61	56	53	54	58	62	60	60	59	61	61.2
Corning	Max.	72	75	75	79	72	79	78	73	74	71	75	84	91	90	91	95	94	95	85	85	81	86	81	76	80	72	80	79	81	81	84	81.1
	Min ..	59	51	62	65	59	56	55	54	59	52	55	54	63	66	70	74	70	71	68	62	59	62	55	44	54	60	63	64	55	58	58	59.9
Corydon	Max..	80	77	72	79	81	81	81	82	73	70	69	82	88	89	90	92	91	92	83	84	83	86	80	77	80	73	74	81	82	83	86	81.3
	Min ..	60	62	61	60	61	57	58	62	53	56	59	61	62	64	71	72	71	70	66	64	60	62	57	51	54	63	61	63	57	60	62	61.3
Cresco	Max..	73	76	73	69	72	76	77	72	70	72	70	79	82	87	89	93	91	89	84	78	78	76	71	66	74	68	66	76	75	80	77	76.7
	Min ..	62	59	64	62	59	60	56	59	51	54	54	59	60	61	67	74	72	71	63	59	58	61	53	50	52	52	54	60	61	55	59	59.4
Creston	Max..	73	76	76	78	75	77	78	75	71	70	70	80	88	88	90	94	91	92	76	83	79	83	74	73	76	68	75	77	78	80	82	78.9
	Min ..	59	61	63	60	60	56	48	59	52	55	56	57	61	66	70	73	71	71	70	66	61	64	56	51	57	59	60	62	57	60	62	60.7
Davenpo't	Max..	77	83	78	77	78	73	81	78	70	63	78	78	86	91	92	92	93	93	85	85	79	83	76	72	78	72	70	84	80	83	84	80.4
	Min ..	66	65	68	64	64	61	60	61	61	55	60	63	64	67	65	74	75	75	71	68	61	63	57	54	55	62	63	65	62	62	63	63.7
Decorah	Max..	76	83	75	73	78	78	80	72	73	76	77	82	85	88	92	94	98	93	88	82	81	78	72	68	77	73	67	77	78	82	80	79.9
	Min ..	62	62	65	62	61	60	53	59	53	50	57	60	57	62	64	76	70	71	63	60	61	59	56	53	48	51	58	60	61	60	57	59.7
Delaware	Max..	73	79	76	74	79	77	81	81	72	66	72	81	86	90	88	91	92	90	86	82	78	81	72	69	79	73	68	79	79	81	83	79.3
	Min ..	62	63	64	61	57	58	57	57	55	52	56	57	59	60	61	70	72	67	66	61	59	57	50	48	47	55	55	62	58	57	59	58.8
Des M.	Max..	74	76	72	80	79	80	77	77	74	71	70	82	87	88	90	94	93	93	78	83	80	82	76	74	76	67	71	76	81	84	84	79.6
	Min ..	62	64	62	62	61	59	59	59	55	57	58	58	64	64	71	74	73	72	65	69	64	66	56	55	54	62	61	62	59	60	64	62.3
De Soto	Max..	75	76	72	78	77	79	76	75	72	69	71	79	86	85	88	92	90	91	85	80	78	81	75	73	75	70	73	74	78	80	82	78.5
	Min ..	66	60	63	61	61	57	58	58	52	54	56	61	61	64	69	75	75	72	68	66	62	64	56	53	55	62	61	64	59	59	62	61.7
Dows	Max..	76	76	72	67	74	76	76	74	74	74	72	82	85	89	91	94	93	92	86	82	82	78	72	75	76	71	67	75	76	82	83	78.8
	Min ..	60	59	62	58	56	58	54	56	50	52	51	54	58	59	66	73	70	70	64	61	58	59	52	48	46	60	60	57	59	54	57	58.1
Dubuque	Max.	72	81	77	76	79	78	79	80	72	67	74	78	86	90	91	93	94	94	86	83	79	81	73	68	77	73	78	81	77	81	81	79.8
	Min ..	64	66	66	63	61	60	63	61	60	57	59	61	63	64	66	73	73	72	70	66	63	62	59	66	52	56	63	64	65	60	62	62.9
Earlham	Max..	72	76	72	79	79	80	81	80	72	72	71	82	88	87	88	92	92	91	81	81	80	83	75	76	77	69	75	75	80	82	85	79.8
	Min ..	57	55	61	60	58	54	52	57	50	49	52	55	57	63	65	72	69	69	64	61	56	60	53	47	48	58	65	60	54	58	67	58.3
Elkader	Max..	76	84	80	75	83	83	85	80	79	70	75	86	91	94	93	97	98	98	93	88	86	86	79	72	82	66	72	83	88	89	90	83.7
	Min ..	63	62	66	64	59	62	57	56	55	49	59	57	58	60	64	73	73	67	67	60	59	55	52	50	46	50	54	63	59	55	67	59.4
Elliott	Max..	87	71	74	86	81	82	85	77	75	78	80	93	97	98	95	99	99	98	84	87	83	88	78	77	83	80	86	79	88	84	88	85.0
	Min ..	59	61	64	60	51	55	56	55	47	49	51	53	61	69	70	73	68	69	68	63	56	63	59	45	52	61	63	63	55	57	59	59.2
Esthervil*	Max..	78	74	73	76	75	77	77	70	73	77	75	89	85	89	94	96	95	84	89	82	84	79	73	75	78	70	74	74	80	82	83	79.7
	Min ..	56	57	63	59	58	58	54	59	50	49	50	58	61	60	64	72	70	70	58	58	60	57	52	50	46	56	56	59	60	53	59	57.8
ForestCy*	Max..	79	79	76	77	76	79	81	70	75	78	76	83	85	93	90	96	95	91	91	83	86	78	75	78	81	74	69	82	77	83	83	81.3
	Min ..	60	58	61	59	55	59	55	59	55	54	54	56	60	59	65	73	70	71	61	59	60	60	52	49	51	56	58	60	61	56	57	58.8
F. Dodge*	Max..	78	76	75	77	77	78	78	71	74	78	75	82	86	90	93	97	97	96	90	84	83	82	75	77	76	72	73	74	76	84	86	81.0
	Min ..	60	61	63	60	58	59	58	57	51	50	52	58	68	64	68	73	72	72	66	64	61	61	53	50	49	58	61	61	61	55	58	59.7
Galva	Max..	78	75	72	77	76	77	78	70	73	78	78	84	87	89	90	94	93	91	86	86	83	82	79	75	80	78	81	78	77	80	80	80.8
	Min ..	54	58	62	58	55	56	52	58	45	43	44	63	59	59	65	72	65	69	63	59	60	55	48	45	50	50	60	57	53	52	57	56.0
Grand M.	Max..	76	79	77	74	74	79	79	77	73	71	72	80	79	97	88	92	92	90	85	82	78	78	71	68	76	68	69	78	75	80	80	78.3
	Min ..	60	62	64	64	56	60	56	58	54	53	57	58	69	60	66	73	72	73	64	60	60	60	54	50	51	55	54	61	61	55	60	59.7
Greene	Max..	80	80	74	77	77	79	82	76	75	75	77	83	84	93	93	97	97	95	90	84	85	81	77	77	79	75	67	79	82	86	87	82.2
	Min ..	61	59	63	62	58	60	54	55	50	49	58	56	57	59	69	72	72	72	63	60	60	60	53	49	50	59	57	57	60	55	56	58.9
Greenfield	Max..	83	80	78	84	84	85	87	78	75	74	78	89	92	94	95	100	97	99	91	84	82	87	80	78	80	79	85	80	84	80	85	84.7
	Min ..	56	59	62	59	56	55	56	54	49	53	52	56	68	65	72	72	71	69	67	63	55	61	54	47	55	54	60	53	54	55	59	58.6
Grinnell	Max..	77	77	77	78	81	82	83	80	73	70	72	83	91	90	92	92	93	93	87	81	80	84	78	75	82	70	67	78	84	83	86	81.3
	Min ..	59	61	60	60	59	56	54	56	54	59	56	54	60	59	70	71	70	70	59	63	60	62	51	49	51	61	59	62	57	57	60	59.8
(near) Guthrie C	Max..	82	77	78	81	80	80	80	74	74	75	79	86	90	91	91	96	95	95	95	84	83	83	76	77	79	76	78	75	80	83	83	82.5
	Min..	57	59	63	60	60	55	56	55	50	49	52	59	61	66	69	79	70	71	67	64	59	60	54	49	52	61	61	61	56	55	59	59.6
Grundy C	Max..	77	77	72	76	79	80	80	80	75	71	72	81	87	88	90	92	94	92	84	83	82	81	76	75	76	70	65	75	79	84	85	79.9
	Min ..	59	59	62	62	58	59	54	55	52	50	57	53	59	60	68	72	72	71	66	61	59	61	51	49	51	62	60	62	59	56	59	59.3
Hampton	Max..	83	79	74	78	76	79	83	75	78	77	73	82	80	92	92	97	97	97	90	86	87	80	76	80	77	70	67	77	78	86	86	81.9
	Min ..	61	60	62	60	58	59	56	56	51	52	55	56	60	59	70	74	73	71	64	62	60	61	53	50	50	60	59	62	61	58	58	59.7
Hancock	Max..	76	75	74	80	78	80	80	70	72	76	73	85	92	93	93	96	95	97	87	87	77	87	78	77	81	77	82	78	81	81	87	82.1
	Min ..	60	61	63	60	59	59	60	58	50	50	52	55	64	70	71	74	99	70	68	65	58	62	56	49	55	61	63	62	57	59	60	60.6
Hanlontown	Max..	73	76	73	73	73	74	76	70	71	75	71	80	84	88	89	94	94	88	86	80	80	77	72	71	75	70	66	75	75	79	80	77.7
	Min ..	60	58	61	59	55	58	52	50	48	50	55	56	59	58	68	74	70	71	60	57	59	59	51	48	47	56	55	59	60	52	57	57.5
Harlan	Max..	77	76	75	79	77	81	77	74	74	77	74	86	91	91	98	95	94	95	90	82	76	84	79	75	82	74	81	75	78	82	85	81.6
	Min ..	58	60	63	59	57	54	57	56	49	48	47	51	51	65	67	70	66	68	66	64	58	59	54	45	52	60	61	60	62	56	58	58.1
Humboldt	Max..	74	73	76	77	76	69	72	70	72	68	70	72	78	81	98	95	96	91	89	82	83	82	74	73	78	71	69	72	74	81	83	78.2
	Min ..	61	60	64	60	58	59	57	56	50	49	51	62	61	60	60	74	72	72	63	62	59	60	53	49	48	62	63	62	63	54	56	59.6

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JULY, 1905—CONTINUED.

STATIONS.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Ida Grove	Max	78	75	75	82	76	79	78	78	72	78	75	88	90	93	94	97	97	94	90	81	77	83	75	75	78	73	..	..	..	..	..	82.0
	Min	57	58	65	58	67	63	56	56	41	51	47	54	61	65	62	67	75	72	72	71	65	70	50	62	68	58	..	..	..	..	..	61.2
Independ.	Max	72	80	71	76	77	79	78	78	72	69	72	78	85	87	90	93	94	96	85	85	80	79	74	74	77	74	69	76	79	83	85	79.6
	Min	61	59	63	61	57	64	57	58	52	50	57	56	57	59	65	71	71	70	65	61	58	57	53	51	47	58	58	58	60	55	68	58.9
Indianola.	Max	75	77	72	78	78	80	77	78	74	69	67	81	90	91	92	95	93	95	85	77	80	83	79	74	88	72	72	75	80	82	84	80.5
	Min	60	61	62	61	60	56	59	66	54	53	57	56	63	64	69	77	71	71	56	64	..	..	55	52	53	61	61	63	58	58	62	60.8
IowaCity*	Max	79	85	79	79	80	81	81	85	74	67	83	82	89	93	95	95	94	95	81	85	82	82	76	75	80	72	68	82	82	86	88	83.2
	Min	62	60	65	64	62	59	59	58	58	58	57	57	59	62	65	68	74	73	69	66	60	60	55	52	53	56	61	62	62	58	60	61.1
Iowa F*	Max	79	79	75	77	78	78	78	75	73	77	70	88	88	89	90	94	93	94	88	81	82	81	74	75	78	75	68	76	78	83	82	80.4
	Min	60	59	62	61	58	58	53	56	54	48	52	55	56	57	62	70	70	69	65	60	59	59	52	48	47	59	60	60	61	56	57	58.2
Jefferson.	Max	79	88	75	82	78	80	81	82	78	78	76	87	87	92	93	96	96	97	91	84	87	84	77	79	79	78	78	77	79	85	86	83.5
	Min	59	63	65	61	60	57	71	62	56	51	54	63	65	66	71	76	74	74	71	67	64	63	54	56	56	63	62	63	59	58	60	62.7
Keokuk	Max	81	85	81	78	80	75	79	80	69	65	76	76	87	92	93	92	93	94	87	86	79	85	80	75	78	76	75	86	82	88	85	81.7
	Min	69	65	66	63	67	61	60	61	62	56	62	63	62	70	72	76	75	76	76	70	63	65	64	56	58	64	61	68	61	64	65	65.2
Keosauqua *	Max	79	84	78	80	82	80	84	88	71	63	79	82	89	92	92	93	94	96	88	87	84	88	81	76	82	70	74	86	83	84	87	82.9
	Min	65	61	63	63	61	57	57	59	59	57	57	58	59	64	68	78	71	78	69	65	59	62	60	52	50	58	62	62	59	60	59	61.7
Le Mars	Max	81	76	77	79	77	81	80	70	74	80	79	86	85	92	93	97	95	88	90	84	78	83	77	79	80	76	78	75	79	81	83	81.7
	Min	56	61	63	58	53	53	56	57	48	47	50	54	66	64	70	72	70	68	62	61	68	58	50	45	55	62	61	57	50	55	62	58.5
Lenox	Max	79	75	71	79	78	80	79	86	72	72	72	84	88	89	91	95	93	94	85	84	80	86	76	76	82	74	79	80	80	81	84	81.1
	Min	58	62	62	59	60	57	57	57	51	54	55	55	65	66	70	73	71	70	69	64	60	64	57	52	55	59	62	65	57	59	64	60.9
Leon	Max	83	79	72	80	80	80	81	77	73	69	69	83	89	91	92	93	92	93	89	84	85	87	84	76	81	69	77	79	80	81	84	81.7
	Min	60	62	60	60	62	58	58	60	52	56	58	59	62	68	69	71	70	70	69	65	61	63	58	53	55	60	62	65	59	60	63	61.4
Lit. Sioux	Max	81	77	76	81	80	81	81	76	76	80	81	87	93	92	93	97	95	96	91	85	80	88	79	79	81	75	84	78	79	80	87	83.5
	Min	60	62	62	60	57	56	60	58	47	47	49	53	69	62	74	75	71	74	68	62	63	57	53	47	58	63	64	60	55	60	59	60.2
Logan	Max	83	80	78	80	80	81	83	86	81	80	75	88	96	98	95	97	97	95	90	86	76	90	79	79	84	76	85	80	80	84	88	84.7
	Min	68	59	61	56	57	55	59	55	57	51	48	53	68	64	69	72	68	69	66	65	58	57	54	46	55	61	63	60	56	59	60	59.5
Maquoketa *	Max	80	82	78	76	78	82	84	82	73	65	79	79	87	91	92	93	93	94	86	88	82	85	77	73	82	74	71	84	88	85	87	82.1
	Min	60	62	66	62	59	56	55	55	57	55	58	56	55	61	60	66	71	67	67	59	56	53	53	51	44	51	55	58	58	54	55	57.9
Marshaltown*	Max	75	79	76	79	82	81	81	80	76	71	71	81	90	91	94	97	97	96	81	84	81	84	78	75	79	72	69	76	84	86	88	81.7
	Min	59	58	61	60	58	58	55	56	53	50	57	53	57	59	65	71	70	70	66	62	58	65	52	50	49	55	60	61	60	56	57	58.7
Mason C.	Max	77	77	72	77	75	78	79	72	75	77	76	82	83	90	95	98	98	91	92	84	85	79	76	75	76	73	68	75	80	84	81	80.5
	Min	61	60	62	62	57	58	55	58	52	54	57	59	62	68	70	75	75	74	64	62	62	64	56	53	54	58	58	62	62	58	59	60.8
Monticelo	Max	90	88	89	76	84	85	86	92	77	75	65	76	88	92	97	98	92	93	92	86	85	80	83	76	75	79	79	82	84	84	83	84.9
	Min	59	60	62	59	55	55	56	54	53	50	55	54	54	59	59	60	70	67	67	61	59	55	53	57	45	52	61	60	54	56	56	57.1
Mt. Ayr	Max	79	74	73	80	82	84	83	79	75	72	72	85	91	94	93	96	94	95	84	85	84	88	79	80	81	70	78	82	84	83	89	82.8
	Min	58	62	59	58	58	57	58	57	51	55	57	57	64	84	69	72	69	69	66	65	55	62	67	52	55	55	61	64	58	60	63	60.5
Mt. Pl'snt	Max	82	85	79	78	81	80	83	83	72	66	80	80	90	93	95	96	97	96	88	90	82	86	79	77	81	72	74	84	81	83	88	83.3
	Min	65	61	64	61	60	56	58	58	58	54	59	59	62	61	69	71	71	72	70	68	60	61	59	52	53	61	60	63	59	60	62	61.5
Mt. Ver'n	Max	76	82	75	76	81	83	88	84	75	65	80	81	88	94	93	93	95	95	82	92	85	86	77	75	83	72	65	79	84	88	88	82.6
	Min	61	67	64	60	59	51	58	58	54	53	57	57	60	64	65	68	72	70	66	64	59	59	54	51	52	59	59	62	61	58	60	60.1
New H.	Max	77	80	77	75	80	80	79	78	73	76	75	82	87	88	91	94	96	93	87	84	80	79	73	70	78	72	72	81	78	82	82	80.6
	Min	62	61	63	62	57	60	56	58	56	55	57	58	58	61	68	68	72	69	68	60	65	59	53	51	52	58	56	59	60	58	60	60.0
Newton	Max	74	78	70	76	70	78	80	71	74	68	69	80	88	89	91	94	94	94	90	80	79	82	75	73	78	71	69	75	80	81	84	79.2
	Min	60	61	61	60	60	57	58	59	54	55	58	53	61	60	70	72	71	72	65	63	61	63	54	53	53	61	61	62	58	60	61	60.5
N'thwood	Max	78	80	75	79	76	76	78	73	74	79	76	82	83	89	89	94	94	92	86	82	80	80	76	73	76	76	69	78	77	81	82	80.1
	Min	62	58	58	59	56	58	55	58	53	52	55	56	58	59	69	73	70	70	61	59	58	59	52	49	52	55	56	61	61	55	56	58.5
Odebolt	Max	82	75	76	80	78	80	80	75	76	84	79	89	85	94	94	99	98	98	93	85	81	89	76	78	80	75	82	73	80	86	88	83.2
	Min	57	65	66	59	57	57	50	51	48	46	47	55	62	68	69	77	70	71	65	63	60	62	51	49	54	61	60	58	56	52	57	58.6
Ogden	Max	78	79	75	74	77	81	80	72	76	75	74	81	88	90	90	95	95	94	91	83	82	83	77	76	78	72	75	75	80	84	85	81.1
	Min	56	58	60	59	58	57	58	57	51	50	52	60	61	63	69	73	71	71	67	63	61	62	53	48	52	62	61	62	56	55	59	59.5
Olin	Max	78	82	81	75	77	79	79	80	71	65	75	78	86	89	89	90	92	92	86	83	78	82	..	..	..	..	68	81	79	84	84	80.9
	Min	62	63	66	63	58	58	59	58	58	57	59	57	68	64	65	69	73	70	69	73	60	53	..	..	..	..	59	63	61	57	59	62.1
Omaha, N	Max	78	75	71	82	77	80	78	72	73	75	73	85	91	90	92	95	95	94	88	84	75	87	76	76	78	74	81	78	78	81	84	81.2
	Min	62	63	61	61	62	62	63	59	54	56	57	62	64	69	74	76	75	75	72	69	65	63	60	56	60	63	64	64	62	65	65	64.0
Onawa	Max	81	78	77	84	84	84	80	74	78	80	78	89	91	93	95	98	96	96	93	89	84	87	80	88	81	77	83	78	83	85	84	84.8
	Min	61	62	64	59	59	58	60	58	50	52	53	57	65	65	70	75	70	72	69	67	64	59	56	50	59	69	63	60	56	60	62	61.4
Osage	Max	78	79	73	74	73	79	80	73	76	78	75	84	88	91	97	96	96	92	88	83	83	79	78	73	79	72	66	76	79	84	82	80.4
	Min	61	60	66	61	57	59	55	56	49	51	53	45	58	59	68	72	71	68	62	59	59	59	53	50	51	55	55	62	60	55	56	58.2
Oskaloosa	Max	74	80	76	78	80	79	79	79	71	67	71	79	87	89	91	92	92	93	84	81	79	82	75	72	79	72	71	79	79	81	84	79.8
	Min	62	62	62	63	62	59	56	62	56	57	60	59	60	62	69	72	74	73	67	67	62	66	57	53	51	62	62	65	62	60	61	62.1
Ottumwa.	Max	75	80	81	79	81	83	86	81	76	74	73	79	89	91	94	96	95	93	82	85	80	86	79	75	84	67	73	86	84	86	85	82.5
	Min	60	62	59	60	64	59	61	63	58	59	64	59	60	61	63	65	61	63	61	63	64	68	62	68	65	61	60	75	63	62	61	62.4
Pacific J'n	Max	77	75	77	80	80	79	78	75	74	76	74	89	91	91	93	96	94	94	86	84	84	87	79	75	78	75	83	79	81	82	85	82.3
	Min	60	62	59	58	57	57	58	57	49	52	50	52	63	62	69	73	70	69	67	62	57	60	55	47	55	60	63	62	55	60	59	59.3
Perry	Max	80	80	74	80	79	81	81	76	75	75	75	84	90	90	91	95	94	94	85	83	82	85	77	78	80	71	78	78	80	84	86	82.0
	Min	59	62	64	61	59	57	58	56	50	51	54	61	62	64	69	74	71	71	62	65	61	62	55	51	53	62	62	63	57	56	59	60.4
Plover	Max	76	80	77	74	77	78	77	71	74	80	76	84	86	91	93	95	95	92	88	81	85	82	73	75	80	74	80	76	78	84	84	81.1
	Min	57	59	60	58	54	56	57	57	49	52	52	59	60	59	68	69	72	67	60	59	57	56	50	48	43	60	57	58	60	54	57	57.5
Pocah'tas	Max	79	74	76	77	78	79	79	72	75	81	85	83	83	91	92	97	96	93	90	83	85	81	75	75	77	71	78	75	75	83	87	81.5
	Min	56	59	62	60	56	56	65	58	48	57	50	59	62	61	69	72	70	71	61	62	60	65	50	47	50	62	61	59	59	55	58	59.0
Red Oak	Max	82	75	72	81	81	84	84	71	76	78	76	84	92	92	93	96	96	95	92	89	83	87	80	81	80	76	80	82	83	84	83	83.7
	Min	62	64	62	61	61	58	60	59	51	53	55	56	65	70	72	72	75	71	71	65	71	68	63	49	51	62	63	66	58	62	62	62.5
Ridgeway	Max	82	79	82	75	76	81	82	79	76	75	80	82	85	90	92	96	94	92	95	83	82	83	75	74	80	72	70	80	80	84	80	81.8
	Min	64	61	65	64	60	60	60	60	52	55	57	61	61	62	68	75	78	71	64	62	60	60	55	53	53	58	58	62	64	60	63	61.5
Rock R.	Max	78	76	78	78	72	78	76	68	74	78	82	86	88	92	94	96	95	90	86	84	82	84	80	76	80	78	78	74	80	78	85	81.4
	Min	56	60	58	68	64	56	56	56	50	48	52	54	64	61	71	72	67	66	60	60	64	60	56	52	46	60	60	58	54	57	58	58.8
R. City	Max	87	86	87	70	71	80	79	70	75	80	75	80	80	90	91	94	94	95	90	85	84	80	72	70	75	71	80	72	80	83	80	80.5
	Min	55	58	61	55	56	56	57	54	49	51	55	57	61	64	66	71	66	71	68	66	60	61	51	48	55	61	60	51	55	55	56	58.4
Sac City	Max	77	77	74	78	76	77	76	76	72	71	73	83	80	88	89	93	91	91	87	80	79	81	75	74	78	71	77	72	76	81	83	79.2
	Min	56	60	63	59	57	57	56	55	51	51	50	56	61	62	67	73	69	71	65	63	63	59	52	50	52	62	61	55	59	53	60	59.0
St. Cha'les	Max	71	75	70	77	77	77	80	76	74	77	70	78	82	87	89	92	92	93	84	81	80	83	75	74	78	70	74	75	79	81	84	79.2
	Min	60	60	62	61	61	58	60	59	52	55	57	59	64	64	70	72	72	72	66	65	62	64	57	53	55	61	61	65	59	60	64	61.6
Sheldon	Max	80	74	70	80	76	81	82	72	79	80	80	88	89	62	92	100	95	89	92	85	85	81	76	78	79	72	76	73	82	85	85	82.2
	Min	54	61	62	59	55	56	54	58	42	48	50	53	62	61	69	72	72	69	65	57	62	57	52	47	51	62	59	58	55	56	59	58.0
Sibley *	Max	76	72	78	76	75	77	76	68	73	76	77	81	83	90	90	95	92	83	87	79	82	76	72	73	76	70	73	72	75	80	80	78.3
	Min	53	58	53	53	55	56	55	56	47	47	49	53	59	59	66	72	66	66	57	57	59	57	50	46	48	56	60	59	58	55	62	56.4
Sigourn'y	Max	80	84	78	79	82	81	83	83	74	70	79	82	90	91	93	93	95	95	89	83	83	86	79	76	82	75	73	81	89	86	88	83.3
	Min	60	62	63	62	59	62	56	61	57	57	59	57	60	62	69	70	73	71	65	66	62	63	55	51	52	62	62	64	68	68	60	61.9
Sioux C'r.	Max	77	75	75	77	76	77	78	68	75	78	79	84	86	90	92	96	94	87	88	82	82	80	74	75	79	74	76	73	78	81	33	80.3
	Min	56	60	62	58	57	55	57	58	47	51	52	55	68	61	69	72	69	69	62	62	64	58	49	48	53	62	62	57	53	56	61	58.6
Sioux C'y	Max	77	75	71	80	77	80	80	71	75	76	78	84	84	93	98	100	96	89	89	81	76	82	75	76	79	68	78	75	78	80	82	80.6
	Min	59	65	59	59	60	59	60	56	50	48	53	56	68	67	72	75	75	69	64	63	64	60	52	48	56	62	62	58	55	61	68	60.6
Stockport	Max	76	82	73	76	77	76	78	76	70	66	74	76	84	88	89	90	90	82	85	81	84	82	74	73	77	69	73	80	78	80	84	78.8
	Min	65	62	65	63	62	60	59	60	60	57	60	60	60	66	71	73	74	72	67	63	70	64	63	55	59	62	62	66	61	62	61	63.4
Storm L*	Max	75	71	72	77	74	77	76	70	73	76	75	82	82	88	89	95	92	89	88	80	80	79	74	74	75	65	75	71	77	81	83	78.5
	Min	55	58	62	59	56	58	53	59	48	47	48	52	61	61	67	73	72	71	60	60	59	58	50	48	50	58	59	57	55	53	56	57.5
Thurman.	Max	82	73	72	85	83	81	79	74	75	76	78	88	91	90	92	95	93	95	89	87	81	90	78	79	82	78	84	88	85	84	86	83.5
	Min	61	62	59	58	59	57	59	55	53	53	51	54	65	65	74	75	71	72	69	64	59	62	58	50	55	60	64	64	59	63	59	60.9
Tipton	Max	77	84	77	76	79	83	84	84	76	67	76	77	87	94	98	94	96	96	84	90	85	86	81	80	82	73	67	84	83	90	89	83.0
	Min	65	66	67	63	61	59	61	62	61	60	60	60	62	61	67	72	74	73	71	68	64	62	58	55	55	62	63	64	64	62	65	63.5
Vinton	Max	78	78	73	75	78	79	80	79	73	67	71	85	87	87	90	91	93	92	88	84	81	80	71	74	77	73	67	75	78	82	84	79.7
	Min	56	60	63	62	61	60	57	58	58	54	58	58	60	60	68	73	73	72	67	63	60	61	57	54	49	50	50	60	62	57	63	60.1
Washi'ton	Max	75	82	78	76	79	79	80	80	70	66	76	78	85	89	91	92	92	92	78	83	79	83	77	72	78	66	69	82	..	..	..	79.5
	Min	61	62	64	62	61	58	57	61	58	56	60	57	61	64	69	72	73	72	68	66	61	61	56	52	53	61	61	63	..	..	..	61.8
Washta	Max	78	75	74	76	80	80	80	78	76	80	78	88	88	92	93	98	97	92	91	84	81	83	76	78	70	80	82	74	81	83	82	82.1
	Min	56	60	62	56	55	56	53	52	46	42	44	52	58	60	70	72	72	62	62	62	57	58	53	45	40	65	60	53	49	51	52	56.0
Waterloo*	Max	77	82	75	77	80	82	82	81	75	75	72	80	89	90	94	97	98	97	86	85	83	85	78	74	81	79	68	78	81	85	88	82.4
	Min	61	60	68	63	60	60	57	57	58	51	59	56	58	60	63	69	72	72	66	62	61	61	54	51	51	55	60	61	60	57	59	59.7

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR JULY 1905—CONTINUED.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Waukee..	Max..	84	78	72	82	80	83	78	76	80	77	75	91	88	96	93	102	93	96	82	92	84	84	82	91	78	71	88	78	90	91	92	84.7
	Min .	59	61	62	60	60	57	59	56	50	53	54	59	63	63	69	73	72	72	66	64	60	63	54	50	54	61	61	63	57	57	61	60.4
Waverly..	Max..	75	78	73	75	76	76	77	74	72	71	70	77	83	87	88	92	92	92	85	82	78	78	72	71	74	71	67	74	77	83	83	78.2
	Min ..	61	61	63	61	59	60	56	58	54	52	58	57	59	60	69	72	72	71	67	62	62	60	56	51	51	60	59	61	60	57	59	60.3
Web'ter C	Max..	81	86	77	82	84	83	85	81	74	80	76	87	92	90	92	95	99	96	90	82	86	89	76	78	86	76	75	82	82	88	92	84.6
	Min ..	61	58	63	60	57	58	59	56	50	47	49	57	58	59	67	72	69	68	65	62	59	59	52	47	47	63	61	59	61	52	55	58.4
W. Bend.	Max..	78	77	78	78	78	77	77	70	74	81	75	84	85	92	90	94	92	89	84	78	82	78	72	74	80	76	72	75	72	80	82	79.8
	Min ..	58	59	63	54	54	57	57	56	48	51	52	60	62	58	68	72	69	62	60	59	61	59	51	47	49	61	60	61	62	55	57	58.1
Whitten..	Max..	79	80	74	77	78	80	80	85	76	74	72	81	87	88	91	96	95	95	85	81	83	83	74	76	79	75	76	78	80	84	86	81.5
	Min ..	59	59	61	59	57	58	56	54	52	49	56	53	59	58	68	80	70	70	65	60	60	60	51	48	51	62	60	61	60	55	66	59.3
Wilton J.	Max.	80	87	88	80	83	81	83	85	75	67	83	84	89	92	93	96	95	95	88	86	82	86	79	79	82	77	73	88	81	85	86	84.1
	Min ..	64	63	67	60	57	55	57	61	58	56	60	60	59	63	65	69	71	72	69	63	59	57	54	51	48	51	48	62	60	57	52	59.7
Wint'rset	Max..	78	79	74	81	80	82	81	77	75	71	73	81	90	90	91	95	92	94	87	82	80	85	77	78	77	75	76	77	81	81	83	81.4
	Min ..	58	59	61	61	65	55	56	55	50	51	54	58	61	62	67	73	70	69	65	62	58	60	54	50	53	58	60	63	56	57	68	59 6
Woodb'n.	Max..	81	82	76	79	80	84	85	78	76	72	75	83	91	89	90	91	90	92	80	82	82	84	76	76	82	75	80	80	80	83	85	81.8
	Min ..	58	57	61	61	60	55	54	58	52	54	59	57	57	62	67	71	71	70	65	61	57	60	56	48	49	61	62	63	55	58	58	59.3
Zearing ..	Max..	77	76	73	77	77	78	79	75	72	70	68	81	85	87	89	92	93	92	87	81	79	81	74	74	76	78	66	74	80	82	84	79.3
	Min ..	60	59	62	60	58	58	57	57	52	52	56	56	62	60	71	73	72	71	67	63	61	61	54	51	52	63	60	60	64	58	68	60.6

* At those stations thermometers are read in the morning; the maximum temperature then observed appears in the maximum column for the preceding day, on which it nearly always occurs.

DAILY AND MONTHLY PRECIPITATION FOR JULY, 1905.

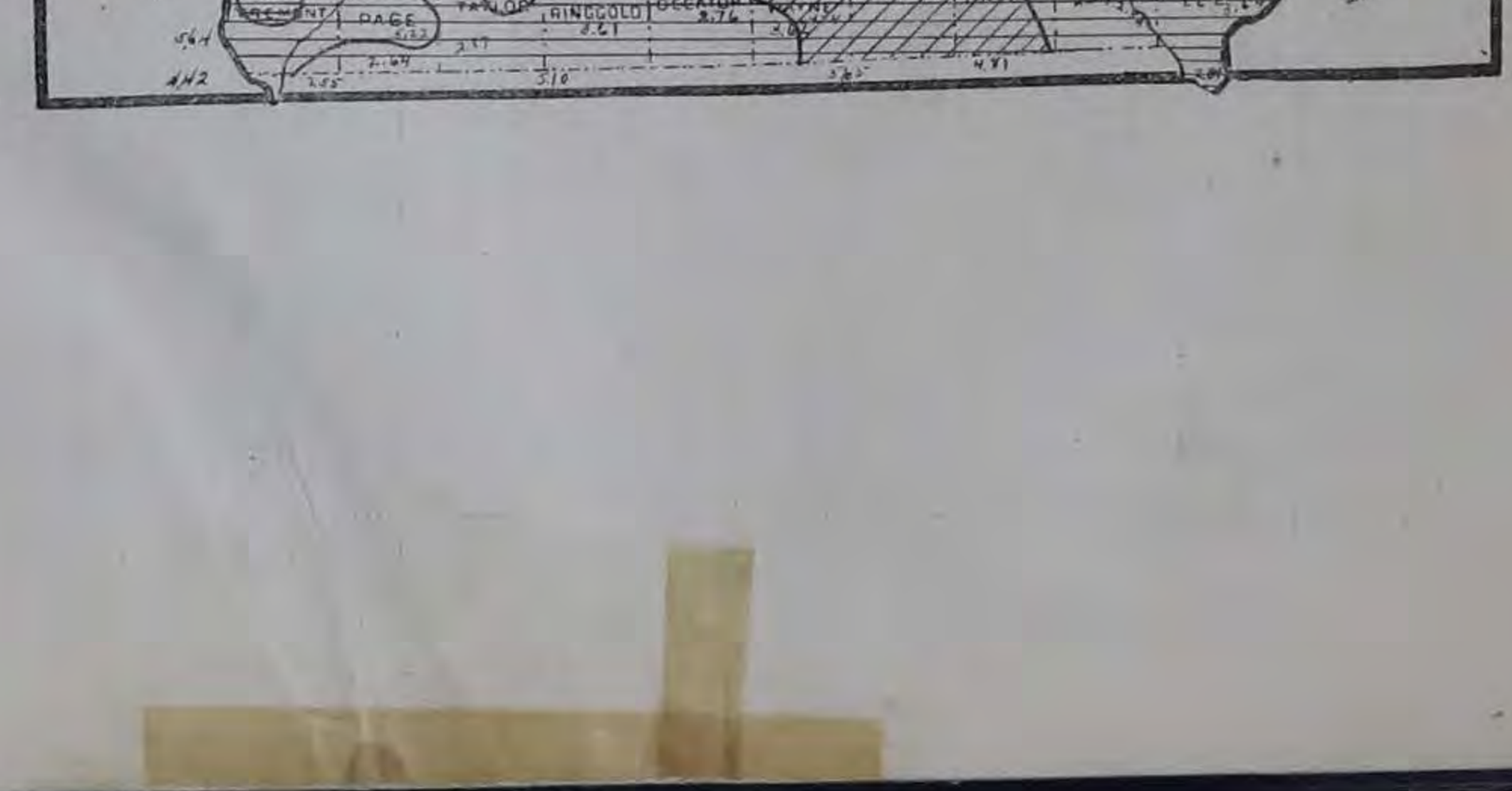
STATIONS.	DAY OF MONTH.																													TOT
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	.10	.19	....	.06	.	.18	....	....	...	.18	....	....	.40	...	....	....	....	.27	...	...	.59	....	...	T	.87	...	....	....	....	....	2.84
Albia	.81	..	1.12	.10	....	.	.02	.13	.23	....	.25	1.50	.80	....	.38	....	....	....	.80	.21	....	....	....	....	....	.08	.65	...	....	...	....	7.08
Algona	....	.19	.30	.07	.07	.11	....	....	....	....	T	....	....	....	....	....	....	....	.38	....	....	.06	....	....	....	T	T	...	....	....	...	1.18
Allerton	.03	.61	.15	.36	.03		.25	.16	.08	.05	.09	.04	...	.35	....	....	....	....	.05	....	.	.03	.03	....	T	1.36	.06	T	T	....	....	3.62
Alta	....	.55	.05	.08	.23	....	....	....	....	....	...	....	.03	....	.	....	....	..	....	....	..	.03	....	....	....	.80	....	....	....	....	.20	1.47
Alta [near]	....	.47	.07	.11	.68	.	....	....	....	....	...	...	.06	..	..	....	....	..	....	....	....	.28	....	....	....	.26	....	..	....	....	....	1.03
Alton	....	.01	.60	.16	.01	.04	....	.03	....	....	....	...	T	....	....	....	....	T	....	....	....	T	....	....	T	T	T	....	....	T	.70	1.55
Amana	....	.23	.30	.11	T	.36		.61	.05	.06	.32	....	.11	.02	...	....	....	....	.04	....	....	.39	....	..	....	.01	.04	....	....	..	....	2.65
Ames	..	.07	.09	.06	.16	....	....	....	....	....	....	.03	.82	.02	....	.	....	....	.37	....	....	.09	....	....	.25	.15	.03	....	....	....	....	2.14
Atlantic	....	.38	.16	.10	....	....	....	....	....	....	....	....	.06	....	....	....	....	....	T	....	T	.42	....	....		1.22	....	.	.	....	....	2.34
Audubon	....	.60	.50	..	....	....	....	....	....	....	....	....	.18	.35	....	....	....	....		....	.02	.18	.01	....	T	.85	T	....	....	....	....	2.83
Baxter	...	...	.68	....	.20	.05	T	....	...	....	....	....	.50	.08	...	....	..	....	2.50	..	....	.48	....	....	...	.15	....	....	....	....	....	4 54
Bedford	....	.11	.25	.11	.27	.04	.17	.02	....	..	.05	....	...	T	....	....	....	....	.01	....	....	....	....	....	.12	1.64	.08	....	....	....	....	2.87
Belle Plaine	....	1.00	.20	T	T	.40	....	1.02	.	.10	.11	....	.30	....	....	....	....	....	2.25	....	...	.45	....	....	....	T	.02	....	....	....	....	5.93
Bonaparte	.08	.95	.25	.10	.02	T	T	.40	T	.17	.03	T	....	....	..	....	....	....	....	....	....	....	....	....	....	.36	.18	....	....	....	..	2.54
Boone	.40	T	T	.14	.04	.05	T	....	....	....	....	.09	....	2.08	....	..	....	....	.16	.01	....	.18	.01	....	....	.28	.08	T	....	....	....	3.52
Britt	....	.04	.03	.70	.24	.03	.72	...	....	....	T	T	T	....	....	....	....	....	....	....	....	....	....	....	....	.19	.02	....	....	....	....	1.97
Buckingham	....	.20	.44	T	T	.24	....	T	....	....	1.25	..	.35	....	....	....	T	2.54	...	....	....	.15	....	....	....	T	T	....	....	..	....	5.17
Burlington	.11	.27	.59	.18	.41	.20	.06	.88	T	.08	.17	.06	....	....	..	....	....	....	....	....	....	....	....	....	....	.21	.08	....	....	....	....	3.30
Carroll	T	.47	.07	.55	.60	.06	....	..	....	....	....	....	....	.88	....	....	....	....	.05	....	....	T	.07	....	....	.18	.04	....	....	....	....	2.97
Cedar Rapids	1.11	....	.55	.10	.02	.03	.21	....	.01	....	.12	.18	.02	.15	....	....	....	....	.08	T	....	....	....	....	....	.18	T	.02	..	....	....	2.78
Chariton	....	.65	.25	T	....	.25	.36	.70	....	T	T	T	T	.38	....	....	....	....	1.32	....	....	T	....	....	....	1.00	T	....	....	....	....	4.91
Charles City	T	T	.74	.01	.15	.01	....	....	....	....	.02	.01	T	....	....	....	....	....	.11	....	....	T	....	....	....	.12	.02	T	T	....	....	1.19
Clarinda	.24	.11	.95	.23	.22	.45	.30	.25	....	....	....	....	....	....	....	....	....	....	.56	....	....	....	.08	....	.28	1.41	.19	....	....	....	....	5.22
Clear Lake	....	....	1.20	.05	T	.35	....	.	....	....	....	....	T	T	....	....	....	....	....	T	..	..	....	....	....	T	T	....	....	....	....	1.60
Clinton	....	....	.38	.06	.08	.47	.12	....	....	.17	.13	....	....	....	....	....	....	....	....	..	....	....	.07	..	....	....	T	....	....	T	....	....	1.48
College Springs	.03	.02	.60	.12	.10	.05	.03	.12	....	....	T	....	....	....	....	....	....	T	....	....	....	.10	....	....	....	....	T	....	....	....	....	....	2.64
Columbus Junct'n	..	.47	.17	.10	....	.17	...	.10	....	.23	.85	.16	.10	.07	..	....	....	....	....	....	....	.17	....	....	....	1.30	....	....	....	....	....	2.75
Corning	.26	.06	.26	.06	.52	T	.13	T	....	....	T	....	...	T	....	....	....	....	.11	....	....	.08	....	....	....	.12	.07	....	....	....	....	2.25
Corydon	....	2.10	.09	.10	....	.02	.04	.48	....	.03	.06	....	....	.19	..	....	....	....	.57	..	....	.06	....	....	T	.96	T	....	....	....	....	4.74
Cresco	....	....	.57	.10	.03	.10	.06	.01	....	....	.04	....	....	....	....	....	.23	....	.18	....	....	.31	.20	....	....	.97	.03	....	....	....	....	1.33
Creston	.63	.02	.10	.21	.15	.12	...	.13	....	....	T	.11	....	.17	....	....	....	....	....	.19	....	.40	....	....	.01	.05	T	.01	....	....	3.42
Cumberland	1.25	....	.20	....	....	....	....	....	....	....	....	....	T	....	..	....	....	....	.10	....	....	.40	....	....	....	2.06	.48	.01	..	....	....	4.02
Davenport	....	.03	.07	.04	T	.41	T	.07	....	.28	.08	T	.01	....	....	..	....	....	....	....	....	....	....	....	....	T	T	T	....	....	....	0.99
Decorah	....	....	.48	.70	...	.42	1.06	.28	T	T	T	....	T	..	....	..	.10	....	.08	....	....	T	....	....	....	T	T	T	.20	...	...	3.32
Delaware	..	....	.79	.13	.01	T	....	....	....	.11	.10	.08	..	....	....	....	....	....	.05	....	....	....	....	....	....	....	....	.08	.01	....	....	1.75
Des Moines	.02	.12	.03	T	....	.40	.48	....	....	T	.02	T	.58	....	....	....	....	....	.44	.05	....	....	....	....	....	....	....	....	....	....	....	4.53
De Soto	.03	.02	.15	.02	.04	....	.34	T	....	....	....	T	.09	.06	....	....	....	....	2.38	....	....	T	....	....	....	.48	.02	....	....	....	....	4.73
Dows	....	.02	.72		.10	.25	..	....	....	....	T	.04	....	....	....	....	....	....	.52	..	....	.03	....	....	....	.79	.02	....	....	....	....	1.75
Dubuque	....	.12	.26	.05	.36	T	.16	.15	....	.01	.04	....	.16	.45	2.16	....	....	....	.39	..	....	.05	....	....	....	.03	.02	.02	....	....	....	1.51
Earlham	.11	T	.24		.11	T	.28	T	....	....	....	T	.09	.06	....	....	....	....	....	....	....	.26	....	....	....	....	T	..	T	....	....	3.49
Elkader	....	....	.75	.10	T	....	T	.41	....	T	.10	....	.06	....	....	....	....	.08	.01	.01	....	.21	....	....	....	.77	.01	....	....	....	....	2.23
Elliott	T	.57	.20	.11	.18	....	.05	....	..	....	....	....	....	....	....	....	....	.44	....	.61	...	T	.02	....	....	....	....	....	....	....	.26	2.18
Estherville	1.50	...	.60	.28	....	.15	....	.40	....	....	....	....	.10	....	....	....	....	....	.36	....	....	.13	....	....	....	.06	....	....	....	....	....	3.05
Florence	....	T	.51	.06	.38	.32	....	....	....	....	....	....	....	....	....	....	....	....	.52	....	..	.10	....	....	....	.08	....	T	T	....	....	2.14
Forest City	1.04		1.30	.07	.06	.63	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	12	....	....	....	....	....	....	....	3.30
Fort Dodge	1.00	....	.06	.13	.03	.45	....	....	....	....	....	.02	....	.20	....	....	....	....	.02	....	....	....	....	....	....	.05	.08	.02	....	....	....	2.06
Fort Madison	.20	.43	.53	....	T	.43	....	....	....	.33	.54	.50	....	....	....	....	....	....	....	....	....	....	....	....	....	T	.68	....	....	....	....	3.64
Galva	...	.09	.11	.13	.05	T	....	....	....	....	....	....	.16	....	....	....	....	T	.68	....	....	.53	....	....	....	1.53	....	....	....	....	....	2.60
Grand Meadow	..	..	.43	.36	.07	....	.27	.16	....	.03	.01	.85	.04	....	....	....	....	T	.23	....	....	.45	....	....	....	.20	.06	....	.08	....	..	3.19
Greene	....	....	1.17	.07	....	.15	....	....	....	....	....	....	.11	....	....	....	....	....	....	....	....	....	....	....	....	.08	.05	....	....	....	....	1.86
Greenfield	.36	.59	.11	....	.06	.18	.09	T	....	....	T	....	T	.20	.14	..	....	....	.20	....	.03	.11	....	..	T	1.03	.05	....	....	....	....	2.81
Grinnell	T	.17	.45	.15	....	.15	....	....	....	.03	T	.17	.20	.14	..	....	....	....	4.00	....	....	.40	....	....	....	.10	....	....	....	....	....	5.96
Grundy Center	T	.02	1.07	.05	.03	.03	.	....	....	....	.09	.07	.32	....	....	....	....	.23	2.01	....	..	.49	....	....	....	.05	....	....	....	....	....	4.46
Guthrie Center	.02	.20	.06	.14	.24	....	.22	.53	....	....	....	.50	....	.04	....	....	....	....	.58	....	....	.34	....	..	T	1.12	.04	....	....	....	....	3.53
Hampton	....	1.54	.03	.05	....	....	....	....	....	....	....	....	.05	....	....	....	....	....	....	....	....	.08	....	....	.36	....	.06	.07	....	....	....	3.06
Hancock	.04	.56	.78	.10	.17	.05	T	....	..	....	....	....	....	T	T	....	....	....	....	....	.82	....	....	....	....	.08	....	....	....	....	....	2.68
Hanlontown	....		.41	.09	.76	.28	....	....	....	....	....	....	....	.43	.96	....	....	....	....	T	....	....	....	....	....	.60	....	....	....	....	....	3.04
Harlan	T	.30	.22	T	.10	....	.08	.01	..	....	....	....	....	.03	....	....	....	....	....	....	....	....	....	....	....	.47	....	.03	....	....	....	4.21
Humboldt	....	T	.12	.10	.57	....	....	....	....	....	....	....	....	.37	....	....	....	....	....	....	....	.15	....	.02	.03	1.93	....	....	T	....	....	1.24
Ida Grove	....	....	....	.35	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.42	T	....	....	....	....	1.65
Independence	....	.20	.70	.45	....	.10	....	....	.03	.02	T	T	.10	....	....	....	....	....	....	....	....	.20	....	....	.03	.70	....	....	....	....	....	2.41
Indianola	T	.03	.10	.02	....	.01	.01	....	..	T	.12	....	.12	.75	....	....	....	....	.75	....	....	.01	....	....	....	T	....	....	....	....	.05	3.17
Iowa City	1.27	T	.56	.21	.03	T	.30	....	.02	....	.26	.44	....	.16	....	....	....	....	1.50	....	....	T	....	....	....	.50	.01	....	....	....	....	3.59
Iowa Falls	1.10	....	.87	.14	.01	.05	T	....	....	....	T	.07	....	.20	....	....	....	....	.06	....	....	....	.14	....	....	T	.06	.08	..	....	....	2.79
Jefferson	....	.11	.11	.08	.08	T	T	T	....	....	....	....	1.00	.39	....	....	....	....	.15	....	....	....	.15	....	....	.04	T	T	.01	....	....	2.16
Keokuk	.02	.82	.27	.08	.06	.41	T	T	.05	.16	.61	T	....	....	....	....	....	....	.01	....	....	T	....	....	T	.27	.11	....	..	....	....	2.89
Keosauqua	.21	.07	.92	.10	.04	T	.25	T	.09	.02	.13	T	.01	.03	.80	....	....	....	....	....	....	.01	....	....	....	.21	.19	....	....	....	....	2.57
Lacona	....	.10	.08	....	.02	.03	.37	.27	.08	.08	.18	.01	.03	.80	....	....	....	....	1.42	....	....	T	....	....	....	T	.70	.04	....	....	....	4.23
Le Claire	.50	....	.21	T	.10	.81	T	.19	.02	.02	.21	.24	....	....	....	....	....	....	....	....	....	....	T	..	....	.75	....	....	....	....	....	2.30
Le Mars	....	.10	1.05	.25	.25	.10	.50	....	....	....	....	....	.05	....	....	....	....	....	....	....	....	....	....	....	.22	.09	....	....	....	....	....	2.86
Lenox	....	.10	.15	.07	.22	....	.08	....	....	....	.07	....	....	.07	....	....	....	....	.02	....	....	....	....	....	T	1.03	..	....	....	....	....	1.81
Leon	....	.13	.40	.10	....	....	T	.07	....	..	.07	.02	....	.32	....	....	....	....	.09	..	..	.25	....	....	....	1.24	.07	....	....	....	....	2.76
Little Sioux	....	.37	.08	.03	.20	....	.01	....	....	....	....	....	....	.05	....	....	....	....	....	....	....	....	....	....	.02	.38	....	....	....	....	....	1.15
Logan	.03	....	.10	.80	....	....	.20	.80	....	....	....	....	1.00	....	....	....	....	....	....	....	....	....	....	....	.05	1.20	....	....	....	....	....	4.20
Maquoketa	2.90	....	.68	.06	.09	.21	....	.14	..	....	.05	.16	...	T	..	....	....	....	.03	....	....	....	.14	....	....	....	....	....	....	....	....	4.46
Marshalltown	1.47	.01	.91	.05	.01	.11	.06	..	....	....	....	.14	....	.25	....	..	..	....	1.24	....	....	....	.30	....	....	T	.03	.02	....	....	....	4.60
Mason City	....	....	1.25	T	.45	.25	...	....	..	....	.05	....	....	....	....	..	....	....	T	....	....	....	....	....	....	.15	T	.10	....	....	....	2.25
Montezuma	....	..	2.30	....	....	T	.10	.12	....	....	....	.10	.30	....	....	....	....	....	.60	....	....	T	....	....	....	....	.10	....	....	....	....	3.62
Monticello	....	....	1.15	..	.23	T	....	....	....	....	.20	....	.57	...	..	....	....	....	T	....	....	....	....	....	....	.09	T	....	....	....	....	2.24
Mount Ayr	....	.27	.20	.15	.10	....	1.15	....	....	....	....	.20	....	.07	..	....	....	....	.17	....	....	....	....	....	....	1.23	.07	....	..	....	....	8.61
Mt. Pleasant	T	.41	.20	.66	.15	T	....	T	....	.06	.47	.47	.15	....	....	....	....	....	....	....	....	....	....	....	....	.32	.02	....	..	....	....	2.91
Mt. Vernon	....	.22	.28	.04	T	.01	..	T	....	....	.62	....	.06	..	....	....	....	....	.03	....	....	....	T	....	....	.16	T	....	....	....	.01	1.43
Muscatine	1.78	....	1.11	.11	.06	....	..	....	.13	....	.38	.90	T	.05	....	....	....	....	....	T	T	....	....	....	....	....	T	.07	....	....	....	4.59
Nevada	..	.02	1.54	.45	....	....	..	....	....	....	.31	....	.55	.10	....	....	....	....	....	....	....	.61	....	....	....	.13	....	....	....	....	....	3.71
New Hampton	....	.	.71	.18	.60	.04	....	.70	....	..	.	.06	.03	....	....	....	....	....	.14	....	....	....	....	....	....	.33	.03	T	..	....	....	2.82
Newton	....	.10	.75	.94	....	....	....	.10	....	....	T	....	.37	.07	....	....	....	....	3.36	....	....	.27	..	....	....	.13	.03	....	....	....	....	6.12
Northwood	.01	....	1.17	.05	.15	.23	....	....	....	....	....	T	.12	....	....	....	....	....	.02	....	....	.12	....	....	....	.01	....	.04	....	....	....	1.92
Odebolt	....	.35	....	....	.37	....	....	....	....	....	....	....	....	1.23	....	....	....	....	....	....	.04	.12	....	....	....	.47	....	....	....	....	....	2.58
Ogden	....	.05	.08		.23	T	....	....	....	....	....	....	.13	1.54	....	..	..	....	....	.68	....	T	....	....	....	.19	.01	....	....	....	....	2.91
Olin	....	....	1.01	.24	T	.75	....	.02	....	.30	.50	T	....	....	....	....	....	....	.10	....	....	.20	....	....	....	T	....	....	....	....	....	3.12
Omaha, Neb	.01	.31	.38	.06	T	T	.16	.06	....	....	....	....	.74	....	..	....	....	....	....	....	....	.03	..	....	.80	.36	T	....	T	....	....	2.36
Onawa	....	.60	.01	.05	....	....	T	.02	....	....	....	....	.01	.25	....	....	....	....	....	....	....	.02	....	....	T	.18	....	....	....	....	....	1.14
Osage	....	....	.58	.13	.33	.12	....	....	....	....	....	.24	T	....	....	....	....	....	.03	....	....	....	....	....	....	.04	T	.01	....	.01	....	1.49
Oskaloosa	....	.47	.57	T	.04	.20	....	.13	....	.03	.72	....	.54	.13	....	....	....	....	....	.57	....	....	....	....	....	.21	.04	....	....	..	....	3.62
Ottumwa	....	....	....	1.10	....	T	....	.25	....	....	....	....	T	....	....	....	....	T	.65	....	....	T	....	....	.40	....	....	....	....	....	....	2.40
Pacific Junction	1.18	.70	.22	.23	.28	.06	.08	.34	....	....	....	.25	....	.53	....	....	....	....	....	T	....	.06	....	....	.03	.46	....	....	....	....	....	4.17
Perry	....	.07	.28	.02	T	T	.36	.06	....	....	....	....	....	1.00	....	..	..	....	1.25	..	....	....	....	....	....	.66	.10	....	....	....	....	4.05
Plover	....	.60	.32	....	.14	....	....	....	....	....	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	.07	.05	....	....	....	....	1.18
Pocahontas	....	1.07	.42	.05	.03	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.06	T	....	.04	....	....	T	1.36	....	....	....	....	T	1.83
Red Oak	.30	.57	.20	....	.33	.18	.17	T	....	....	....	.19	....	.01	....	....	....	.88	.13	....	....	T	....	....	....	....	.05	.06	.03	....	....	3.21
Ridgeway	T	T	.56	.19	.15	.08	.02	T	....	..	....	....	T	....	....	....	....	....	T	....	..	T	..	....	....	.60	....	....	....	.50	....	1.85
Rock Rapids	....	T	.90	....	.45	T	.18	....	..	....	....	.10	....	.40	....	....	....	....	....	....	....	....	....	....	....	.35	....	....	....	....	.89	2.63
Rockwell City	....	.45	.10	.40	.80	....	....	....	..	....	....	....	....	1.41	....	....	....	....	....	....	....	.19	....	....	....	.39	.02	..	....	....	.02	2.99
Sac City	....	.62	.34	.10	.56	....	....	....	....	....	....	....	....	1.26	....	....	....	....	....	1.08	....	.09	....	....	....	.60	.03	....	....	....	....	3.65
St. Charles	.02	.02	.07	....	.04	.01	3.35	....	....	....	.06	T	....	....	....	....	....	....	....	....	....	.00	....	....	....	....	....	....	....	....	....	6.63

DAILY AND MONTHLY PRECIPITATION FOR JULY, 1905--CONTINUED.

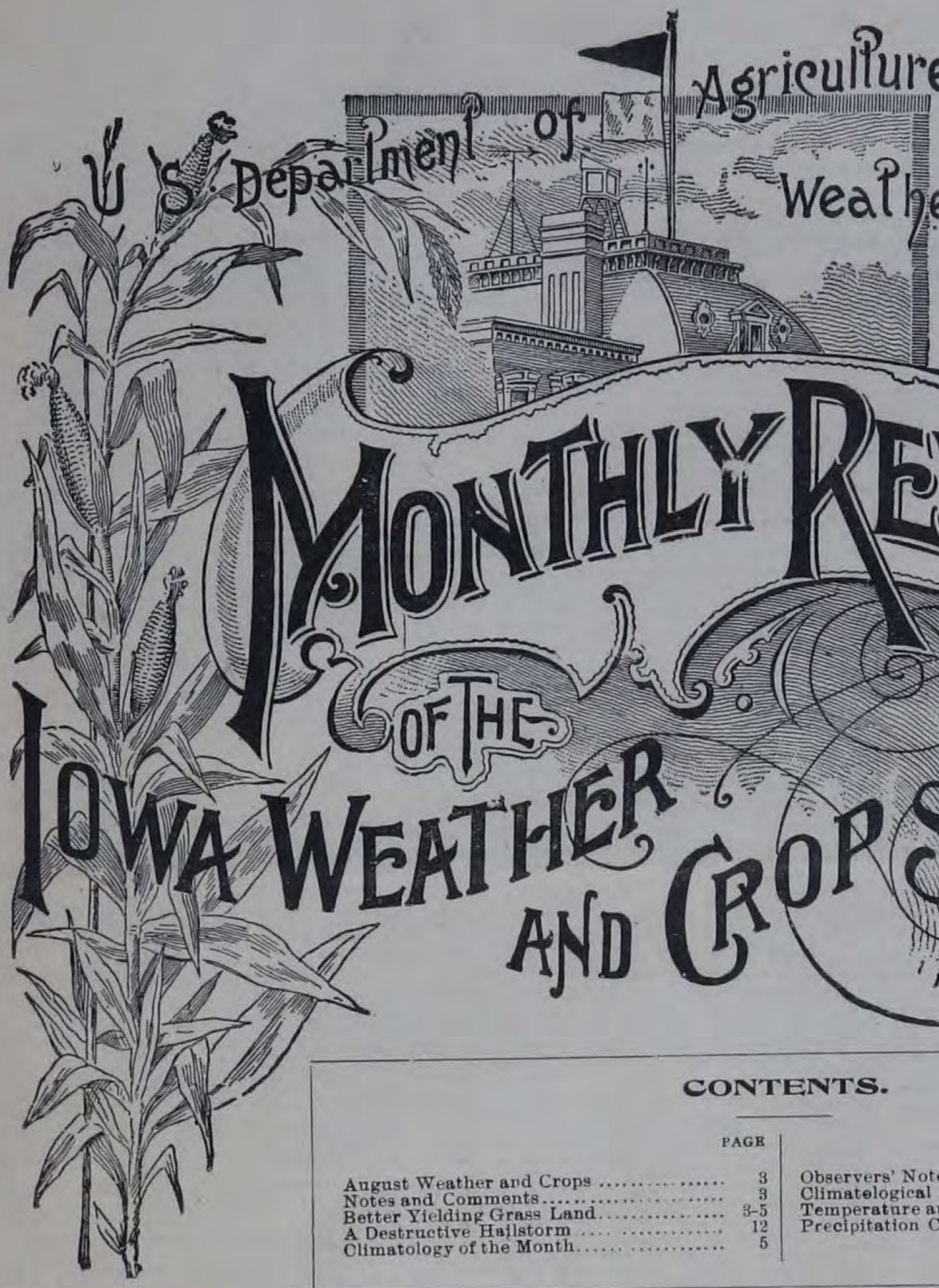
STATIONS.	DAY OF MONTH																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sheldon		.03	.70	T	.35													.02				T				.08					.02	1.20
Sibley	1.20		.42	.59		.09		.01						T								.10				.12	.02					2.40
Sigourney	T	1.11	.60	.40	T	.35	.21	.08	T	.11	.04	.16	.11	.07					.87			T	T			T				T	.02	4.35
Sioux Center		T	.30	.18	.12	.03		.08					T	T				T			T	T			.54	.21	T		T	T	T	.73
Sioux City		.20	.22	.02	T		T						.22					T			T											1.41
Spirit Lake																		T								.40	.14	T				1.88
Stockport	.07	.64	.24	.06	T	.05		.02	T	.10	.03	T	.10	.03				T					.09			.22	.03					1.30
Storm Lake	.20		.88	.28	T	.08								.02												.22	.03					1.30
Thurman	.78	1.13	.48		.32	T	T	1.54						.84					T		T	.36			T	.85		T				6.30
Tipton		.44		.11		.66		.41		.25	.49															.19						2.55
Vinton		.50	.45	.05					.10		.40	.05					.54									.35						2.44
Washington	.40	.10		.10		.12		.04		.12	1.87		.23						.28							.10	.05	.03				3.39
Washta		.18	.12	.03	T								.06					T					T			.25	T					.69
Waterloo	T	.86	.13	.03	.11			.22		T	T	.12	.36				.05	2.43								.04	T					4.35
Waukee	.03	.17	.07		.08	T	.39				T	T	.89	1.32			.17		.62			.02				.52	.05					3.53
Waverly		.02	.49	.46		.09		.01		.01	.01	.32	.06				.01	.48	.71			.02				.12	.02	.01				2.84
Webster City		.24	.86	T	.31	.27						.25	.50						1.00							.10						3.03
West Bend		.20	.25		.50						T		T					.35				T				.25	.03					1.58
Whitten	T	T	1.25	.25	.08					T	T	.76	.62				T		2.10			.17				T	T					5.23
Wilton Junction		.40	.21	.15				.65		.15	.95	.65	.10						T							T	T					3.26
Winterset	.14	.15	.02	T	.09	T	.10				.02	T	.30	1.07			T		.96			T				.76	.04		T			3.65
Woodburn		.20		.15				1.33		.04	.06	T		.58					2.12			.08			T	1.04	T					5.60
Zearing			.35	T	T	.07					T	T	.64	T			.06		.70			.27				T						2.09

T. Amount too small to measure.

Precipitation Chart July 1905.



AUGUST, 1905. No. 8



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St. Charles	C. W. Minard
Sheldon	Dr. A. W. Beach
Sibley	H. G. Doolittle
Sidney	A. P. Speers
Sigourney	J. T. Parker
Sioux Center	Jacob de Ruyter
Sioux City	*C. D. Reed
Spirit Lake	W. C. Drummond
Stockport	C. L. Beswick
Storm Lake	L. E. Burdick
Stuart	Hon John Herriott
Thurman	C. R. Paul
Tipton	F. K. Gregg
Toledo	Herbert Giger
Vinton	H. G. Haines
Wapello	Geo. W. Schofield
Washington	Wm. A. Cook
Washta	H L. Felter
Waterloo	M. L. Newton
Waukee	E. J. Leonard
Waverly	H. S. Hoover
Webster City	C. D. Carpenter
Whitten	Dr. Frank P. Butler
Wilton Junction	J. M. Rider
Winterset	B. L. Sprinkle
West Bend	Phil Dorweiler
Woodburn	C. B. McDonough
Zearing	C. P. Bean

*U. S. Weather Bureau.

WEATHER-CROP OBSERVERS.

Reporting for the Weekly Bulletin.

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Allerton	James Piper
Alta	Jonas Cushman
Audubon	A. H. Edwards
Blairstown	T. H. Weil
Burt	R. Jain
Cedar Rapids	Hon. A. J. Fuhrmeister
Centerville	Jacob Harter
Charles City	W. B. Towner
Clarksville	F. M. Russell
Council Bluffs	L. Prouty
Correctionville	Hon. W. B. Chapman
Creston	M. V. Ashby
Danville	Sherman Matthews
Dunlap	Hon. B. F. Roberts
Emerson	D. B. Nims
Fort Dodge	R. W. Blaine
Fruitland	R. T. Hummel
Goldfield	D. M. Stephens
Geneva	Wm. H. Thompson
Gruver	C. Higinbotham
Hartwick	Fred McCulloch
Harlan	H. B. Kees
Humeston	Hon. S. H. Moore
Ida Grove	P. E. Lund
Independence	Geo. H. Wilson
Indianola	H. D. Guthrie
Ireton	J. M. Sherman
Long Grove	Hon. Chris Marti
Manson	J. D. Skinner
Marshalltown	Hon. S. B. Packard
Mt. Pleasant	W. S. Wright
Milton	Hon. E. C. Holland
Monroe	J. A. Dibel
Nevada	Geo. C. White
Northwood	T. L. Bolton
Oakville	Z. W. Steele
Orange City	H. J. Vande Waa
Pella	J. H. Ver Steeg
Preston	J. G. Storm
Pittsburg	G. C. Duffield
Portland (Nora Springs, P. O.)	Arthur Pickford
Platte (Creston R. D.)	M. H. Dibel
Red Oak	Hon. C. L. Stratton
Seymour	L. B. Sager
Stuart	W. W. Bailey
Toledo	W. G. Malin
Van Horne	Spencer Smith
Wauk on R. D.	T. B. Wiley
Weldon	Ed Worden
Winterset	H A. Kinsman
We t Branch	Wrigley Smith
West Union	H. B. Blackman
Wilton	Thos. Boot
Wiota	I. S. Coomes
Woodward	George Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

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AUGUST WEATHER AND CROPS.

The month of August was above normal in temperature and rainfall for the state at large. The mean temperature was 74.3°, which is 2.3° above the August normal for Iowa. And the average was 3.7° higher than the mean temperature of July, 1905, which is quite a departure from the normal in this state. From the first week to the close of the month the temperature was about or above the normal line, so there was practically no check to the growth of the immature crops. The rainfall was generally timely in its coming, and not greatly in excess of local needs in any part of the state; the distribution being unusually favorable.

The average number of clear days was 16, and there was a sufficient number of hours of sunshine to promote healthy growth of plants. At the close of the month the corn crop had reached the roasting ear and glazing stage, giving promise of reaching the line of safety from harm by frost by the 20th to 30th of September. All crops were much further advanced on September 1st, than on the corresponding date in 1904, or the two preceding years. Some damage resulted from severe local storms of rain, hail and wind, but the aggregate of loss from this cause was not much in excess of the usual amount of damage in other seasons. There are numerous reports of injury to corn by root worms, mostly in fields where corn has been grown two or more consecutive years.

Thrashing oats and wheat from the shock was continued through the month, and reports indicate that the grain suffered some detriment from exposure to frequent showers.

The conditions were generally favorable to pastures, and the second crop of clover was unusually heavy. There were some complaints of blight of the leaves of the late potato crop, but the early crop was heavy enough to compensate in part for this loss. Altogether the month of August was very favorable.

NOTES AND COMMENTS

By a press dispatch we are pained to learn of the death of Moses Simon, who for the past fifteen years has served as cooperative observer of the Weather Bureau at Carroll, Iowa. He passed away on September 1, 1905, after a period of illness from cancer. He was a good citizen, and a most efficient observer. The station at Carroll will be continued under supervision of Mrs. Simon.

The Mount of the Holy Cross in Colorado has been set aside by the government as a forest reserve. This fine park will include an area of 1,500,000 acres, much of which at one time was covered by heavy timber.

Some money will be required to move the crops of the West, but in Iowa most of the moving will be done by cattle, horses, swine, sheep and poultry. The home market in the feed lots is the best place to dispose of corn and other feed stuffs.

FOR want of timely stacking, the farmers of Iowa suffered heavy loss in the quality of oats and wheat thrashed from the shock. That is a very wasteful practice, which in some years has caused the loss of millions in the impairment or total destruction of small grain. Is stacking a lost art in Iowa? If so, the Agricultural College at Ames should send out a score of young experts to teach the farmers how to build stacks, and show them the cash value of careful work in that line. There's millions in it.

BETTER YIELDING GRASS LANDS.*

(By Prof. Chas. F. Curtiss, Dean of Agriculture, I. S. C.)

We have had and are having a great corn revival throughout Illinois and the entire corn belt and it is an excellent thing. It certainly means that we are going to produce very much better results. We are going to get more from the corn lands of this great West, but we need to have as well as a corn revival, a grass revival. We need to study the grass crop as well as the corn crop.

The two great products of the central west are corn and grass and the greater of these is grass. That is, the grass and the forage crops of our farms and our farming states are of greater value, taken the one year with another, on an average, than any other single crop that we produce.

As a rule, we give less consideration to the hay and grass lands—and especially is this true of our grazing lands—than to any other part of our farms. I believe they are the lands that are the most susceptible to improvement, and it is the crop in which we can increase the returns with the least expenditure of additional labor, and at the least cost.

□ We are confronted with new conditions in the agriculture of the central west today. We have seen these lands advance, within a decade or a little more, from $50 and $75 to $100 and $150 per acre, and it is my prediction that they have not yet reached the limit. At the same time, while these western lands have been advancing in value we have experienced a decline of 25 to 50 per cent in the lands further east, the lands of the Ohio and Miami valleys and eastward from that. There will sometime be a corresponding advance in the lands of some other sec-

*This article is an extract from a stenographic report of Professor Curtiss' address before the late Illinois Farmers' Institute. It has lately been revised by Professor Curtiss and was published in the Prairie Farmer of Chicago, August 10, 1905.

tions, if we do not give attention to the right methods of maintaining the productive capacity of our farming land.

We all know that as valuable as corn is, it is not a complete ration, and if we expect to produce the best results in growing animals, and in dairy stock, and in developing horses, and in maintaining the breeding qualities of our animals, we must have a variety of feed stuffs. We must have the constituents that go to build up the bone and muscle and properly develop the animal in the highest form and highest state of excellence. These things are absolutely essential; never so much so as today, in view of the high-priced land that we have, in view of the quicker returns we must get from these animals, and the higher excellence that we must produce in the finished product. That point is generally conceded by the most successful stock men. In the face of the fact that we have higher priced labor, higher priced feed products of all kinds, the problem presented is, how we may cheapen the production of these animals by the rations we use, or the methods we employ in growing and producing them on our farms, and produce the finished product at comparatively a lower cost and without sacrificing any of the excellence.

I believe that the grass crop affords today the surest and most practical means of accomplishing cheaper production. That is, I think if we would give to the improvement of our forage crops and our pasture lands the same attention that we have given to the improvement of our cultivated crops and our grain crops, that we would receive a larger increase, larger returns for less expenditure than any other improvement that we may have.

It is sometimes said that when land becomes worth a hundred dollars an acre or more, that it is worth too much to maintain in grass. I believe that statement and that theory are entirely fallacious.

You will find today in the rich agricultural land of Great Britain a larger area of grass, relatively, than you will find in Illinois or Iowa. You will find lands worth three or four hundred dollars per acre more largely devoted to the growing of grass crops than they are in this country. And I believe, if we are to maintain our farms in the highest state of productive capacity, and conduct them with the highest profits, we shall be obliged to devote a large part of our farming lands to grass production, and relatively less to corn production.

I believe that if we were today to reduce the cultivated lands devoted to the grain crops twenty-five per cent and apply better methods, and devote that reduction of grain crops to grass production, that we might maintain our present output of grain, and at the same time have this increased grass land, that could be applied to the production of live stock, with greater profit than any other part of the farm. And I think it goes without saying we all recognize that we could reduce the acreage of our cultivated grain crops one-fourth per cent without decreasing the yield, if, at the same time we could apply the best methods of more thorough cultivation and of rotation, and the improved methods of agriculture which are being introduced today.

Now, in view of the fact that the grain crops have all advanced in value, in view of the fact that everything a farmer buys to balance his corn crop is high priced, and will undoubtedly continue high in price, I believe that we have, right on our farms and in the products of our farms, the means of balancing the ration, with greater economy and with greater profit, and with greater advantage to the maintenance of the fertility of the farm, than through the purchase of any of the by-products from the factories or the mills. These products must continue to be high, and while of course we do not expect to quit producing them, because there is a certain output from our factories and our mills that must always be consumed on the farm, and they ought to be consumed here rather than go abroad, yet there is a limit to the price we can pay for them and utilize them with profit.

Instead of paying out a large amount of money for these products at high prices, we might better produce on the farm the feeding stuffs containing the nutrients and the elements of growth and muscle and bone making that we need in our animals. The safest, the surest and the best means of producing that will be through the grass crops rather than in the grain crops.

Now I think we could, in the first place, extend the grazing season from two to three months in the year, on nearly every farm throughout this state and other states similarly situated. In fact, we do not get good grazing more than five or six months in the year, seldom more than five months. Wherever we can grow blue grass, we can extend the grazing period to eight or nine months, without serious difficulty. Particularly is that true with regard to the production of horses and of beef cattle. It can not be so readily done with diary cattle for the reason we can not expose them so much, and have them out so many months in the year.

But by maintaining our lands in good condition, and providing for a good growth of grass throughout the summer months, and carrying a surplus into the autumn and over the winter, we can graze up till the first of January in nearly all parts of Illinois. From this latitude south there will be no difficulty. And then, by maintaining a surplus of grass on the pastures over winter, we can turn stock out by the first of April instead of the first of May. So we can add two months to the grazing period at the end of the season, and one month at the beginning of the season, by holding in reserve on our grass lands a surplus of feed, which can be drawn upon at any time.

In order to do this, however, it will be necessary to give attention to the grass lands, in the way of building them up; in the way of cultivating them. If we expect to grow a crop of grass, we must expect to feed that crop the same as we feed our live stock. And we must give the same attention to the cultivation and the maintenance of the grass lands in the best state of fertility that we give to other parts of the farm. Three-fourths of our grass lands are relatively neglected lands. The pasture lands, as a rule, are the poorest and most inferior parts of the farm.

It is not always the case, but as a rule, the pasture receives no consideration, until all other parts of the farm have been brought under improved methods. And if we were to give it the annual attention in the way of top dressing, in the way of harrowing and distributing fertilizer, in the way of renewing the grass seed, and in the way of drainage, keeping the soil sweet and light and in the best possible condition, I believe that we could practically double the output from our pasture lands.

One of the first essentials is to see that we have a good stand of grass. So many of our grass lands are simply set aside to grass, and they are grazed closely from the beginning to the end of the season. The soil bakes, and becomes what we call hide-bound at times. The grass dies, and then if it is exposed when it is bare during the winter and during the midsummer's severe drouth, it dries out and kills out, and very soon we will have not more than half or three-quarters of a stand of grass on many of our grazing lands. And whenever that condition occurs, nature provides for a covering, and the weeds come in there, and they take possession of the soil just as soon as there is an opportunity. Just as soon as there is a reduced condition or weakened vitality of the grass crop, the weeds will come on and take possession. So that over a large part of our grazing lands, we have not a stand of grass at all, in many cases not to exceed a half a stand.

The first thing should be to secure a stand, after providing drainage. Of course that should be the beginning of all agricultural operations. We should have our grass land drained, as well as our agricultural land, and if we do not we can not expect returns. Of course we may get an inferior, coarse, rough sort

of grass, but it will not be the grass and it will not be the production that we must have from our valuable land today. No man can afford to own valuable land today that is not drained.

That should be the beginning. Then we ought to go through our grass land and make sure of getting a stand, the very first thing we do. I do not mean that we ought to put a plow in and plow them up regardless of conditions or what we want to use them for. I want to say emphatically that the best grass land of the world, in all farming countries, is land that has been devoted to grass for centuries. And that will be so in this state. Of course it may be desirable, and will be desirable to rotate a good part of the farm, but if certain portions of the farm can be put into grass and left there permanently, it will be much better than to be continually plowing the pasture land. If our land is lacking a stand in grass, it will not be necessary to put a plow in and plow it up and reseed, to start over again. We can put the disk and harrow in there and give the surface of our pasture land a thorough cutting up; so complete a cutting up that it will look, perhaps, as though but little grass remained. But put on, in connection with that, clover and timothy seed, and alsike and we can at once get a stand of grass without in any way disturbing the sod which has been there so long, and which is of such great value in getting the land up to its highest state of production. It will surprise you to see how much this will improve the grass land.

We have recently made some experiments on the college farm at Ames with blue grass pasture land that was not by any means in a low condition. It had been pastured, but kept up in a good state of fertility, but by going on it in the spring, just as soon as the frost was out of the ground, and putting a disk on and cutting it up, and then sowing the grass seed at the rate of two or three pounds per acre, dependent upon the varieties—sometimes as much as five pounds per acre—and following that with the harrow, and then not pasturing too heavily for a time, we have been able to add as much as one hundred per cent to the productive capacity of the soil in the first season, and that advantage will accrue for several seasons to follow.

It is very easy to add fifty per cent to the grass crop in a single year, by this method. Instead of having grass land growing weeds we can have the entire area growing grass. There is never any trouble about weeds in the pastures, if you first have the soil in good condition, and have grass enough to make a good stand. We see weedy pastures all over this country, on the best farms as well as on the poorest, and in nine cases out of ten the sole trouble is that the methods of managing this grass land have been wrong, and the weeds stand is a protest against that farmer's methods. The weeds would not be there if the methods had been right, and if there had been an opportunity for the grass to take possession of the soil. If you give our grasses possession of the rich farming land of central Illinois or any part of the state, and maintain the soil in the right condition, there will be no trouble in keeping down the weeds.

These are some of the first things that need to be observed in the growing of grass. Then, when we get our lands in that condition, we need to keep them there. It is like what the old English gardener said to an American lady, about making a lawn. In traveling in England she was very much taken with the richness and the velvety, luxuriant growth of the English lawns, and she thought she would get a recipe for making that kind of a lawn and have some in her own dooryard, so she asked him if he would kindly tell her how he made a lawn, and got it in such nice condition. He said:

"Madam, it is very simple. I prepares the seed bed perfectly, and I sows the grass seed, and then I waters it and mows it, and waters it and mows it for four hundred years, and then you have a lawn."

Now, that is the way to make a pasture. We must get the soil right, get the grass seed in there, and keep it in there, and then feed the grass crop the same as the corn crop. We know we can not grow corn unless we get the soil up and keep it up in a high state of fertility. And the same is true of the grass crop. If we give the same attention to the improvement of our grass lands, we will get double the returns for the outlay and labor and expense that we would get in improving our tillable lands.

CLIMATOLOGY OF THE MONTH.

BAROMETER.—Mean pressure, 29.94 inches; highest observed, 30.33 inches, at Dubuque, on August 26th; lowest observed, 29.65 inches, at Davenport, on August 14th; range for state, 0.68 of an inch.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 125 stations, was 74.3°, which is 2.3° above normal. By sections the mean temperatures were as follows: Northern section, 73.1°, which is 24° above normal; central section 74.4°, which is 2.8° above normal; southern section 75.4°, which is 1.8° above normal. The highest monthly mean was 78.0° at Waukee; lowest monthly mean, 70.6° at Fayette. The highest temperature reported was 104°, at Waukee, on the 11th; lowest temperature reported 44°, at Rock Rapids, on the 6th. The average monthly maximum was 95.5°; average monthly minimum, 52.9°. Greatest daily range, 46° at Rock Rapids; average of greatest daily ranges, 33.1°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 136 stations, was 4.05 inches, which is 0.50 of an inch above normal. The averages by sections were as follows: Northern section, 4.06 inches, which is 0.96 of an inch above normal; central section, 3.48 inches, which is 0.24 of an inch below normal; southern section, 4.61 inches, which is 0.71 of an inch above normal. The largest amount reported was 8.47 inches at Plover; least amount reported, 1.04 inches at Vinton. The greatest daily rainfall reported was 3.74 inches at Allerton, on the 14th. Average number of days on which .01 of an inch or more was reported, 9.

WIND AND WEATHER.—Prevailing direction of the wind, south; highest velocity reported, 48 miles per hour, from the northeast, at Sioux City, on the 20th. Average number of clear days, 16; partly cloudy, 9; cloudy, 6.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Charles City	29.94	30.30	26	29.71	14
Davenport	29.95	30.29	26	29.65	14
Des Moines	29.94	30.28	26	29.66	14
Dubuque	29.96	30.33	26	29.70	14
Omaha, Neb	29.92	30.22	25	29.67	14
Keokuk	29.94	30.26	26	29.67	14
Sioux City	29.90	30.22	25	29.71	14
Means	29.94	30.33	26	29.65	14

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Charles City	3.930	22	S	17
Davenport	4.420	25	SW	22
Des Moines	4.724	36	SW	18
Dubuque	3.937	28	NE	19
Keokuk	4.195	30	NW	21
La Crosse, Wis	4.154	36	N	21
Omaha, Neb	4.734	30	NW	17
Sioux City	7.200	48	NE	20

CLIMATOLOGICAL DATA FOR AUGUST, 1905.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	73.1	† 2.0	94	10	52	20	35	4.89	+ 1.18	1.91	....	11	18	5	8	SE, NW	
Alta	Buena Vista	1,513	14	73.3	† 2.8	96	11	55	19	30	4.75	+ 1.11	1.89	....	12	13	14	4	S	
Alta (near)	Buena Vista	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.96	.....	1.02	....	10	.....	.....	.....	.....	
Alton	Sioux	.....	.....	73.5	.....	94	10	52	7	35	3.65	.....	1.42	....	9	15	11	5	SW	
Britt	Hancock	1,236	8	72.6	† 2.6	95	11	50	8	40	2.96	- .71	.78	....	12	6	22	3	SE	
Charles City	Floyd	1,015	18	71.8	- 0.2	95	11	52	25	34	5.46	+ 2.62	1.72	....	8	11	12	8	SE	
Clear Lake	Cerro Gordo	1,241	7	74.2	† 2.8	95	11	54	26	29	3.78	- .28	1.00	....	9	12	16	3	SE	
Cresco	Howard	.....	31	70.8	- 0.4	93	11	51	25	30	3.13	† .28	.83	....	12	16	10	5	S, SE	
Decorah	Winneshiek	857	12	71.8	† 1.8	94	11	49	26	32	3.07	+ 1.39	.51	...	9	...	...	...		
Dows	Wright	1,142	9	71.9	† 1.9	93	11	49	26	30	4.83	+ .95	1.59	....	13	13	9	9	SE, SW	
Elkader	Clayton	727	21	73.8	† 3.0	101	11	50	25, 26	42	2.83	+ .03	1.00		9	15	12	4	SE	
Estherville	Emmet	1,298	12	72.2	† 1.2	95	10	52	20	36	5.05	+ 1.75	1.90	..	8	21	0	10	SE	
Fayette * (a)	Fayette	.....	15	70.6	.....	94	10	48	24	39	5.08	+ 2.18	1.90	...	11	....		..	SW	
Florence	Wright	1,226	..	.....	.....	.....	.....	.....	.....	.....	3.26	.....	1.68	....	1	11	20	0	SW	
Forest City	Winnebago	1,226	11	73.4	† 2.6	97	11	52	26	33	2.42	+ .21	1.17	..	8	18	0	13	S	
Grand Meadow	Clayton	1,180	11	71.0	† 2.0	92	11	52	25	28	3.93	+ 1.43	1.47	....	10	8	16	7	SE	
Greene	Butler	924	8	73.6	† 1.2	98	11	51	26	57	5.01	+ 1.86	1.95	....	12	6	19	6	W	
Hampton	Franklin	1,155	13	74.3	† 4.4	99	11	53	26	34	3.96	+ .81	1.50	....	10	8	16	7	SE	
Hanlontown	Worth	.....	...	71.9		98	11	50	26	37	2.39	.....	.56	....	14	16	9	6	SE	
Humboldt	Humboldt	1,095	16	73.4	† 6.5	94	11	55	25	33	6.01	+ 2.90	2.05	....	10	17	9	5	SW	
Inwood	Lyon	.....	....	73.8	.....	96	9	52	19, 20	39	2.76	.....	.75		7	22	2	7	S	
Larrabee	Cherokee	1,266	12	75.0	† 3.8	97	4, 11	55	7, 19	36	3.93	+ .59	1.76	....	8	15	13	3	SW	
LeMars	Plymouth	1,224	7	74.4	† 2.4	97	10	50	7	40	3.88	+ 1.17	1.20	....	9	14	15	2	S	
Mason City	Cerro Gordo	1,132	8	73.8	† 4.2	96	10, 11	55	25, 26	31	5.00	+ 2.34	2.55	....	10	9	19	3	SW	
New Hampton	Chickasaw	1,169	7	72.4	† 1.7	96	11	54	26	36	4.26	+ 1.76	1.88	...	10	18	17	1	S	
Northwood	Worth	1,222	8	72.4	† 2.7	96	11	50	26	33	2.97	- .65	.87	....	13	10	15	6	S	
Osage	Mitchell	1,184	13	72.2	† 4.7	96	11	51	11, 25	45	2.83	- .17	1.02	....	12	12	10	9	S	
Plover	Pocahontas	.....	8	74.9	† 3.9	95	11	52	26	31	8.47	+ 4.47	2.73	..	9	18	8	5	SE	
Pocahontas	Pocahontas	1,190	..	74.2	....	98	11	55	25	35	5.87	.....	1.89	....	11	11	15	5	SW	
Ridgeway	Winneshiek	1,215	7	74.0	† 1.2	97	11	53	25	33	3.62	+ .92	1.10	....	14	16	11	4	S	
Rock Rapids	Lyons	1,021	....	74.6	† 4.8	96	10	44	6	46	6.00	+ 4.24	1.70	....	6	....	....	...		
Sheldon	O'Brien	1,422	6	74.8	† 3.4	99	11	53	19	53	3.15	- .27	.90	....	9	17	4	10	S	
Sibley	Osceola	1,212	12	71.6	† 2.5	93	10	52	20	34	4.63	+ 1.38	1.56	..	11	17	3	11	SE	
Sioux Center	Sioux	.....	6	73.2	† 1.0	94	10	52	19	31	2.76	- 1.34	.85	..	8	18	8	5	S	
Storm Lake	Buena Vista	1,440	8	73.0	† 1.5	95	11	55	19	31	2.67	- .25	.68	....	11	16	1	14	SE	
Washta	Cherokee	1,157	....	73.8	.....	99	11	45	1	42	2.23	- .68	.88	....	8	17	11	3	S	
Waverly	Bremer	942	9	72.0	† 0.6	94	11	53	26	29	5.49	+ 2.96	1.62	....	14	13	13	5	S	
West Bend	Palo Alto	1,197	12	73.0	† 3.3	93	11	54	20, 26	33	5.33	+ 1.70	1.98	....	9	10	11	10	S, NW	
Average		.....	....	73.1	† 2.4	95.7	....	51.8	.....	34.7	4.06	+ 0.96	.....	....	10	14	11	6	S	

CENTRAL SECTION.

Altoona	Polk	.....	....	.....	.....	.....	.....	.....	.....	.....	1.96	-1.62	.49	....	11	15	9	7	SW	
Amana	Iowa	721	27	74.2	† 3.4	94	11, 12	49	26	31	3.03	- .51	1.92	....	12	14	13	4	SE, SW	
Ames	Story	926	21	75.4	† 3.2	95	11	52	26	32	2.72	-1.23	1.17	....	11	12	14	5	SW	
Audubon	Audubon	1,301	9	74.4	† 2.5	97	11	50	9	40	7.22	-3.20	2.50	....	12	11	9	11	SW	
Baxter	Jasper	998	....	74.0	† 2.4	95	11	52	16, 26	31	2.66	-1.70	.89	....	9	15	6	10	SE	
Belle Plaine	Benton	826	14	73.8	† 3.2	94	12	56	27	30	6.45	.....	1.42	...	12	21	5	5	SE	
Boone	Boone	....	....	74.8	...	96	11	55	26	28	2.72	-2.08	.84	..	9	10	19	2	.....	
Buckingham	Iowa	.....	....	.....	.....	.....	.....	.....	.....	.....	1.64	-2.13	.50	....	8	20	0	11	.....	
Carroll	Carroll	1,265	13	74.2	† 3.0	96	11	50	26	36	3.48	† .23	1.33	....	11	15	13	3	SW	
Cedar Rapids	Linn	733	23	75.4	† 2.7	97	11	53	26	32	4.11	†1.06	1.06	....	13	15	12	4	S	
Clinton	Clinton	609	38	73.6	† 2.4	95	11	51	20, 26	36	1.93	-1.65	.73	....	12	13	7	11	E	
Davenport	Scott	606	34	75.2	† 2.4	94	12	55	26	27	5.53	†2.67	3.38	....	9	17	10	4	S	
Delaware	Delaware	1,083	12	71.8	† 2.0	95	11	49	26	34	1.15	-2.23	.50	....	7	19	10	2	S	
Denison	Crawford	1,180	9	75.0	† 2.9	97	11	50	7	39	5.21	†1.95	1.37	....	13	12	15	4	SW	
Des Moines	Polk	861	27	75.5	† 3.5	94	11	58	26	26	4.50		1.10	..	9	22	5	4	SE	
De Soto	Dallas	866	....	74.6	.....	92	11	57	26	26	3.07	- .08	1.09	....	12	9	10	12	S	
Dubuque	Dubuque	655	32	73.5	† 1.9	94	11	57	26	28	7.63	.....	3.10	....	8	16	1	14	S	
Fort Dodge	Webster	1,126	....	74.4	.....	97	11	55	10, 18, 27	40	3.79	+ .45	1.05	....	9	24	3	4	S	
Galva	Ida	1,290	12	72.2	† 0.8	93	11	49	7	37	3.10	- .56	1.10	....	7	15	9	7	S	
Gilman	Marshall	1,052	....	.....	.....	.....	.....	.....	.....	.....	5.74	+2.08	2.35	..	11	15	11	5	SW	
Grinnell	Poweshiek	1,023	10	74.2	† 2.4	95	11	52	26	32	2.81	- .76	1.23	....	9	14	8	9	SW	
Grundy Center	Grundy	2,976	12	73.2	† 2.5	94	11	50	26	31	3.23	-1.43	.75	....	11	25	4	2	SW	
Guthrie Center	Guthrie	1,077	7	75.1	† 2.7	98	8	54	7, 26	36	4.70	† .09	1.71	....	9	12	16	3	S	
Harlan	Shelby	1,192	....	74.2	† 2.3	94	10, 11	52	7	36	2.60	.....	.80	....	8	18	10	3	W	
Ida Grove	Ida	1,220		73.0	.....	95	12	48	6	39	2.62	-1.64	.81	....	11	13	2	16	S	
Iowa City	Johnson	683	47	74.4	† 2.8	96	10	51	26	34	2.62	- .78	.87	....	9	18	6	7	SW	
Iowa Falls	Hardin	1,170	10	72.5	† 2.3	95	11	49	26	37	1.86	.....	.60	....	12	....	....	..	S	
Le Claire	Scott	576	....	.....	.....	.....	.....	.....	.....	.....	1.30	.....	.69	....	7	18	11	2	SE	
Little Sioux	Harrison	.....	....	77.2	.....	98	11	51	7	40	1.74	-2.12	1.00		5	15	15	1	SW	
Logan	Harrison	928	36	76.4	† 3.9	97	11	52	7	37	3.32	† .49	1.66	....	12	17	4	10	SW	
Maquoketa	Jackson	688	12	72.2	† 0.3	97	12	46	26	35	3.21	- .36	.80	..	9	16	1	14	SE	
Marshalltown	Marshall	947	10	74.8	† 2.8	103	11	50	26	37	5.20	.....	2.85	....	5	....	....		.....	
Montezuma	Poweshiek	.....	....	.....	.....	.....	.....	.....	.....	.....	3.75	† .20	1.75	....	5	15	7	9	SW	
Monticello	Jones	925	....	72.2	† 1.2	96	12	47	25	33	1.56	-3.01	.70	....	9	23	3	5	.....	
Mount Vernon	Linn	847	30	75.0	† 4.8	98	11	55	25	34	3.36	-1.02	1.10	....	11	....	....	....	S	
Muscatine	Muscatine	.....	46	.....	.....	.....	.....	.....	.....	.....	5.10	†1.23	1.34	....	9	21	7	3	S	
Newton	Jasper	944	15	73.7	† 1.5	93	11	54	26	26	2.61		1.16	....	8	15	12	4	.....	
Nevada	Story	.....	....	.....	.....	.....	.....	.....	.....	.....	2.82	- .87	1.00	....	8	21	8	2	.....	
Odebolt	Sac	1,356	8	75.7	† 1.1	100	11	56	7, 19, 31	36	3.87	- .19	.65	...	11	19	11	1	SE	
Ogden	Boone	1,058	9	74.8	† 1.8	95	11	55	26	32	3.28	- .30	1.80	....	7	16	10	5	S	
Olin	Jones	760	7	73.2	† 2.4	94	12	48	26	30	5.30	.....	2.63	....	8	8	18	5	.....	
Perry	Dallas	975	....	75.0	...	95	11	55	26	30	2.03	-1.86	.65	..	10	27	2	2	S	
Onawa	Monona	.....	....	77.5	† 4.0	98	10	55	7	36	4.20	† .66	1.10	....	10	22	5	4	.....	
Rockwell City	Calhoun	.....	8	73.8	† 2.4	95	11, 12	55	28	33	3.46	† .10	2.13	....	9	17	14	0	SW	
Sac City	Sac	1,278	23	73.4	† 3.4	93	11	56	19, 25	30	1.84	-1.35	.70	....	8	11	11	9	SE	
Sioux City	Woodbury	1,165	16	75.4	† 3.8	96	10	54	7	36	4.75	- .50	.....	....	7	21	9	1	SW	
Tipton	Cedar	807	..	75.6	† 5.1	98	12	57	26	29	3.00	- .82	1.05	....	9	15	12	4	SW	
Toledo	Tama	856	9	73.7	† 1.3	95	12	49	26	32	1.05	-1.56	.72	..	4	....	....	....	S	
Vinton (f)	Benton	810	15	73.6	† 2.9	93	12	46	26	33	4.41	† .81	1.15	....	8	15	9	7	S	
Waterloo	Black Hawk	862	16	74.4	† 3.6	99	11	51	26	35	5.39	.....	1.58	....	10	18	10	3	SW	
Waukee	Dallas	1,039	....	78.0	.....	104	11	57	26	39	3.97	.....	1.40	....	7	23	0	8	S	
Webster City	Hamilton	.....	..	75.2	.....	98	11, 12	50	26	39	1.61	-2.28	.64	....	6	12	15	4	SW	
Whitten	Hardin	1,036	....	73.4	† 2.5	94	11	50	26	32	3.53	- .68	.98	....	6	15	6	10	S	
Wilton Jct	Muscatine	683	11	74.0	† 1.1	94	5, 11, 12	48	26	39	4.32	.....	1.60	....	11	23	5	3	W	
Zearing	Story	718	....	73.6	...	95	11	47	26	33										
Average		.....	....	74.4	† 2.8	95.8	....	52.0	.....	33.6	3.48	- .24	..	..	7	16	9	6	S, SW	

†Above normal. ‡ Received too late to be computed with means. *a*. One day missing; *b*, two days, etc. § Not supplied with self-registering instruments.

CLIMATOLOGICAL DATA FOR AUGUST, 1905—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.						PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.	
Afton	Union	1,212	11	75.1	† 1.2	94	5, 10, 11, 12	54	26	28	4.67	† 1.16	1.12	....	8	17	7	7	SW	
Albia	Monroe	957	....	75.0	† 1.9	95	10, 11	52	26	31	7.87	† 3.89	1.65	....	13	14	1	16	SE	
Allerton	Wayne	.....	....	75.5	.....	97	11	54	26	32	6.62		3.74	....	10	21	6	4	SW	
Atlantic	Cass	1,164	14	74.8	† 3.9	98	11	50	7	40	4.54	† 1.48	1.22	....	9	5	11	15	S	
Bedford	Taylor	..	5	75.5	† 2.0	96	10	56	20	34	2.64	- 3.47	.75	....	6	21	6	4	SE, SW	
Bonaparte	Van Buren	.....	14	75.2	† 0.3	96	11	53	26	35	7.93	† 4.10	3.00	....	11	..	..	....	.....	
Burlington	Des Moines	544	..	76.0	.....	93	5, 11, 12	57	26	28	6.61	.....	2.40	.	11	20	8	3	NE, S	
Chariton	Lucas	1,042	10	74.5	† 0.8	95	11	53	26	30	7.74	† 4.84	2.00	...	8	20	8	3	SE	
Clarinda	Page	.....	15	76.2	† 1.6	100	11	57	7, 26	38	2.97	- .74	1.12	....	10	19	1	11	SE	
College Springs	Page	.....	14	75.8	† 1.6	94	5, 9	59	26	30	2.45	- .99	.87	....	6	24	5	2	SE	
Columbus Jct (a)	Louisa	586	...	75.2		94	11, 12	52	26	31	3.30	.....	1.42	....	9	22	9	0	SW	
Corning	Adams	1,127	13	74.0	† 1.2	92	10, 11	55	7	31	4.29	† .89	.89	....	7	14	14	3	SW	
Corydon	Wayne	992	12	75.2	† 0.9	96	11	55	26, 27	34	2.81	- 1.20	.66	....	9	14	11	6	SW	
Creston	Union	.....	....	74 2	.....	93	11	58	26	23	5.43	.....	1.57	..	10	16	8	7	S	
Cumberland	Cass	.....	....	....	....	.....	.....	.....	.....	.....	3.73	- 1.02	1.38	....	6	30	1	0	SW	
Earlham (d)	Madison	.....	....	73.0	.....	94	11	50	27	34	4.27	....	1 48	....	7	19	8	4	SE	
Elliott	Montgomery	.....	..	76.6	.....	98	10	58	20, 26	36	2.61	.....	1.10	...	7	20	10	1	S	
Ft. Madison	Lee	516	56	.....	.....	.....	.....	.....	.....		4.93	† 1.27	2.03	..	10	10	12	9	S	
Greenwood	Mills	.....	17	75.5	† 1.4	94	11	59	7	28	3.15	- .36	1.00	....	4	10	21	0	SW	
Greenfield	Adair	.....	14	75.4	† 2.8	97	12	54	2	32	4.39	† 1.57	1.08		10	22	6	3	S	
Hancock	Pottawattamie	.....	....	76.0	.....	97	11	57	7	33	2.77	.....	.93	.	7	24	6	1	SW	
Hopeville	Clark	.....	13	75.8	† 2.7	97	10	56	26	32	3.25	- .04	.63	....	9	11	14	6	S	
Indianola	Warren	.....	....	74.8	† 2.1	95	11	55	26	33	6.17	† 5.01	2.00	..	9	8	14	9	SE	
Keokuk	Lee	619	34	76.9	† 2.4	94	11	56	26	27	3.16	† .33	1.68	....	9	17	10	4	SW	
Keosauqua	Van Buren	644	13	75.8	†0 .9	98	11	50	26	39	3.92	† .43	1.77	....	11	9	11	11	.....	
Knoxville	Marion	920	12	75.0	† 1.3	93	11	55	26	29	7.81	† 3.29	1.70	....	10	19	4	8	SW	
Lacona	Warren	.....	....	.....	.....	.....	.....	.....	.....	.....	6.71	† 1.56	2.75	....	8	11	13	7	.....	
Lenox	Taylor	1,250	10	74.6	† 1.4	92	10, 11	57	26	27	3.53	- .07	.77	....	9	19	10	2	S	
Leon	Decatur	1,120	....	75.8	.....	94	10	55	26	28	4.60	.....	1.35	....	10	24	2	5	NW	
Massena	Cass	.....	....	77.0	.....	102	11	52	7	41	3.84	.	1.40	...	9	28	0	3	S	
Mt. Ayr	Ringgold	1,236	12	75.8	† 2.0	97	9, 10	56	26	32	4.87	† 1.55	1.05		10	14	11	6	W	
Mt. Pleasant	Henry	729	24	75.4	† 3.0	95	9	52	26	33	6.10	† 2.19	1.79	....	11	16	9	6	SE	
Omaha, Nebr	Douglas	1,113	34	77.6	† 3.9	94	10	62	7	26	3.03	- .31	1.08	....	8	14	7	10	SW	
Oskaloosa	Mahaska	843	22	75.0	† 3.2	94	11	53	26	28	3.80	† .66	1.02	....	10	20	2	9	SW	
Pacific Junction	Mills	960	6	74.5	† 1.1	93	10	53	7	32	3.47	- .98	1.06	....	8	16	14	1	S	
Pella	Marion	.....	....	75.9		96	10	54	26	27	4.87		1.42	....	10	15	13	3	S	
Red Oak	Montgomery	1,033	8	77.0	† 2.3	94	10	59	7	29	3.96	† .87	1.30	....	8	13	17	1	SW	
St. Charles	Madison	1,070	....	75.6	.....	95	10	56	26	27	4 04	.....	1.60	....	11	18	7	6	SW	
Sidney	Fremont	.....	....	77.0	.....	94	9, 10, 11	60	26	28	5 43	.....	1.35	....	9	22	6	3	S	
Sigourney (b)	Keokuk	877	9	75.6	† 1.4	96	11	53	26	31	3.94	† .21	1.60	....	9	2	29	0	.....	
Stockport	Van Buren	.....	....	74.6	.....	93	11	54	26	27	5.44	.....	2.36	..	12	17	6	8	SE	
Thurman	Fremont	.....	....	75.6	† 1.4	93	10	58	7	30	7.60	† 2.17	2.80	....	7	17	11	3	SW	
Washington (c)	Washington	769	13	74.4	† 1.2	93	11	54	26	29	5.58	† 2 09	2.50	....	7	....	....	....	SW	
Winterset	Madison	1,129	....	74.4	† 2.0	93	10, 11	55	26	29	3.84	† .30	1.04	....	11	15	14	2	S	
Woodburn	Clarke	961	....	74.0	.....	94	5	50	26	31	2.75	- 3.66	1.00	....	6	23	2	6	SW	
Average		.....	....	75.4	† 1.8	95.0	....	55.0	.....	31.0	4 61	† 0.71	.....	....	9	17	9	5	SW	
Average for State		.....	....	74.3	† 2 3	95.5	.	52.9	....	33.1	4.05	† 0.48	..		9	16	9	6	S	

DATES OF THUNDERSTORMS.

NORTHERN SECTION.

Algona, 1, 4, 12, 23, 24.
Alta, 12, 13, 14, 16, 17, 18, 20, 21, 23, 24, 26, 30, 31.
Alton, 2, 30, 26.
Cresco, 3, 7, 8, 20, 30.
Dows, 1, 2, 14, 18, 24, 26, 30.
Elkader, 2, 3, 5, 7, 8, 12, 13, 20, 24, 26, 30.
Estherville, 15, 24.
Fayette, 7, 12, 13, 23, 27, 30, 31.
Florence, 1, 2, 3, 12, 23, 26, 30.
Grand Meadow, 3, 8, 9 14, 24, 27.
Hanlontown, 5, 12, 30.
Humboldt, 4.
Inwood, 16.
Larrabee, 12, 13, 14, 16, 17, 18, 20.
Mason City, 13, 21, 24, 26, 30.
New Hampton, 13, 24, 29.
Northwood, 13, 26.
Osage, 1, 2, 4, 12, 13, 26.
Pocahontas, 12, 21, 23, 30, 31.
Plover, 1, 3, 12, 14, 20, 21, 23, 30, 31.
Rock Rapids, 6.
Ridgeway, 4, 5, 7, 8, 12, 13, 20, 21, 23, 24, 26, 27, 29, 30.
Storm Lake, 31.
Sioux Center, 1, 2, 11, 12, 17, 20.
Sibley, 2, 13, 17, 18, 24.
Sheldon, 1, 12, 13, 14, 16, 17, 22.
Washta, 20, 30.
West Bend, 1, 12, 14, 18, 24, 30, 31.
Waverly, 1, 2, 4, 8, 12, 13, 18, 21, 24, 30.

CENTRAL SECTION.

Amana, 1, 5, 12, 13, 14, 21, 24, 30.
Audubon, 13, 17, 20, 21.
Boone, 1, 16, 23, 26.
Carroll, 13, 21.
Clinton, 3, 5, 8, 12, 13, 21, 24, 26.
Davenport, 2, 5, 8, 13, 14, 18, 19, 21, 22, 24.
Des Moines, 16, 17, 18, 21, 22, 23, 24, 26, 27, 30.
Dubuque, 3, 5, 8, 9, 13, 18, 19, 21, 24, 27, 30.
14, 16, 18, 21, 31.
Grinnell, 1, 2, 6, 14, 16, 21, 22, 27, 30, 31.
Grundy Center, 1, 2, 12, 13, 21, 30.
Guthrie Center, 13, 14, 17, 20, 21, 22, 23.
Harlan, 1, 4, 5, 12, 13, 14, 16, 18, 20, 21, 22, 23, 24.
Iowa Falls, 1, 2, 12, 14, 24, 26, 30.
Little Sioux, 22.
Marshalltown, 24.
Nevada, 21, 22, 24, 26.
Olin, 5, 12, 13, 21, 27.
Perry, 6, 20, 21, 23, 30.
Onawa, 6, 13, 18, 21, 23, 30.
Sioux City, 4, 8, 12, 13, 14, 17, 20, 23, 26, 30.
Waterloo, 2, 12, 21, 24, 30.
Waukee, 2, 6, 13, 14, 16, 18, 20, 21, 22, 24, 26.
Whitten, 2, 13, 14, 21, 24, 26.
Zearing, 14, 21, 24, 27.

SOUTHERN SECTION.

Allerton, 13, 14, 16, 18, 22, 24, 27.
Atlantic, 12, 17, 22, 23, 26.
Burlington, 13, 15, 22, 24.
Columbus Junction, 3, 5, 11, 12, 13, 14, 22, 24.
Corning, 13, 18, 22, 27.
Corydon, 16, 22.
Creston, 13, 14, 18, 22, 24, 27.
Earlham, 2, 6, 13, 14, 16, 18, 21, 22, 25, 27.
Greenfield, 12, 13, 14, 16, 17, 18, 21, 22, 23, 24.
Hancock, 21.
Indianola, 1, 2, 12, 13, 14, 16, 17, 20, 21, 36.
Keokuk, 2, 3, 5, 11, 12, 13, 16, 21, 22, 24.
Keosauqua, 21, 24.
Lacona, 22, 26, 27.
Lenox, 13, 14, 18, 22, 27.
Leon, 14, 16.
Massena, 13, 14; 18, 19, 22, 23, 24, 27.
Mt. Pleasant, 15, 22, 24.
Oskaloosa, 21, 24, 26.
Pella, 5, 19, 20, 21, 24, 27.
Red Oak, 17, 18, 21.
Sidney, 18, 22, 24, 27.
Sigourney, 5, 14, 15, 22, 24.
Winterset, 14, 19, 21.
Woodburn, 22, 27.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR AUGUST, 1905.

STATIONS.		DATE																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max.	90	78	85	91	94	85	86	89	91	94	94	94	81	86	87	77	86	81	81	87	91	85	91	81	80	88	85	87	87	87	86	86.5
	Min.	63	65	64	63	68	67	59	60	65	65	66	66	66	65	64	64	61	63	62	59	65	65	67	69	64	54	62	62	63	65	63	63.7
Albia*	Max.	84	74	84	90	92	83	84	89	90	95	95	92	76	86	86	71	86	81	84	89	90	84	88	86	82	83	80	87	88	88	90	85.7
	Min.	60	64	64	65	67	72	60	60	65	67	68	68	69	66	64	64	63	64	63	64	69	65	65	67	62	52	58	62	64	66	67	64.2
Algona	Max.	85	83	85	92	89	85	86	91	88	94	93	92	79	78	82	78	82	80	80	87	87	85	87	80	78	80	84	86	90	80	80	84.7
	Min.	60	60	59	62	65	60	59	64	59	65	66	66	65	66	66	61	61	62	57	52	65	60	64	62	53	58	62	62	66	66	60	61.5
Allerton	Max.	87	78	84	91	94	83	86	89	93	96	97	93	80	88	86	82	85	80	83	88	90	88	88	89	83	83	82	87	88	90	88	87.1
	Min.	62	65	64	64	71	68	59	60	64	64	66	67	66	63	63	62	61	65	62	60	67	65	67	69	66	54	61	64	63	65	65	63.9
Alta	Max.	81	82	85	92	91	86	87	92	90	94	96	90	79	83	77	76	85	79	82	86	84	88	85	76	79	81	85	88	91	71	84	84.7
	Min.	59	62	62	63	64	62	57	64	62	66	67	66	65	64	62	62	62	60	55	59	61	63	67	62	57	59	62	62	67	58	59	61.9
Alton	Max.	82	81	84	92	91	85	87	91	91	94	93	87	79	82	76	79	84	80	83	88	83	86	86	82	83	82	86	88	92	88	85	85.5
	Min.	59	58	61	63	63	58	52	65	59	59	65	65	64	66	63	60	60	64	55	55	61	64	67	63	61	61	62	62	63	67	61	61.5
Amana	Max.	84	79	85	89	92	84	85	88	87	92	94	94	80	83	79	75	83	85	82	87	90	79	86	80	78	80	78	84	88	83	82	84.4
	Min.	62	66	66	63	70	69	59	62	64	62	65	67	68	68	68	62	60	69	60	58	70	67	64	70	57	49	63	64	63	68	62	64.0
Ames	Max.	85	78	84	90	94	89	87	89	93	93	95	93	82	85	88	74	85	83	85	89	90	83	87	81	80	79	85	87	89	90	86	86.4
	Min.	64	63	64	62	68	69	57	64	61	63	64	81	67	66	67	62	62	64	68	57	66	66	65	67	66	52	64	63	64	67	62	64.4
Atlantic	Max.	89	85	85	93	93	87	90	91	95	96	98	95	81	87	88	78	88	83	85	89	90	89	90	82	82	85	90	90	90	89	90	88.5
	Min.	56	64	58	58	68	66	50	58	56	60	59	59	64	62	58	64	61	68	58	58	64	65	62	68	63	55	68	61	66	66	62	61.1
Audubon	Max.	85	85	86	94	91	87	92	95	89	96	97	95	82	87	86	82	90	81	85	90	91	93	80	81	85	92	92	93	81	90	88	88.5
	Min.	57	64	57	56	64	67	60	56	50	56	60	60	65	62	57	61	59	64	56	55	62	65	63	66	60	52	63	62	65	65	63	60.4
Baxter	Max.	86	78	84	93	94	83	87	87	92	93	95	93	81	85	85	73	82	85	85	80	89	80	85	83	82	79	84	85	87	86	86	85.4
	Min.	61	63	65	64	68	68	57	61	61	65	65	66	66	66	66	52	61	64	58	55	63	64	75	65	56	52	61	61	64	67	63	62.6
Bedford	Max.	87	77	86	90	92	84	88	88	95	96	95	89	80	88	87	88	88	81	85	90	90	91	93	80	81	85	92	92	93	81	90	87.5
	Min.	61	67	63	60	68	65	57	57	61	62	62	64	67	67	60	67	60	65	67	56	65	65	68	70	64	57	63	63	64	64	65	63.5
Belle Pl'e	Max.	85	80	83	88	92	85	85	87	87	91	93	92	83	85	85	73	82	85	85	90	91	92	94	84	84	87	87	88	89	87	87	84.0
	Min.	62	65	66	64	68	68	60	63	63	63	66	66	68	65	67	62	60	66	58	58	69	66	64	67	57	62	56	63	63	67	62	63.7
Bonnpar'e	Max.	86	75	84	89	91	89	85	90	91	92	96	83	85	83	85	77	86	83	84	90	92	80	87	86	80	81	80	85	88	89	88	85.8
	Min.	66	66	64	62	70	70	69	61	66	61	61	67	68	67	65	64	63	69	65	60	67	65	64	69	64	53	63	61	60	64	67	64.5
Boone*	Max.	84	79	83	91	95	88	87	89	91	94	96	91	73	84	86	69	84	80	85	88	88	83	86	79	79	79	86	87	90	82	86	85.2
	Min.	65	64	63	65	67	69	62	65	64	67	68	68	66	67	68	63	62	64	61	61	66	66	65	66	57	55	58	65	66	68	61	64.3
Britt	Max.	87	82	86	91	89	86	86	90	89	93	95	91	77	79	84	73	84	79	80	89	87	85	89	78	76	80	86	91	90	79	81	84.9
	Min.	58	62	60	60	64	58	55	50	56	65	65	63	65	66	66	62	61	61	56	52	66	58	63	63	52	52	62	63	62	63	58	60.2
Burling'n	Max.	87	76	85	89	93	86	87	89	91	92	93	93	86	83	83	78	86	86	84	88	88	86	88	84	81	83	81	87	88	91	87	86.5
	Min.	63	66	65	65	69	72	63	64	67	64	65	69	69	68	65	63	64	66	66	63	68	66	65	67	64	57	63	68	66	69	68	65 5
Carroll*	Max.	87	81	85	94	92	87	88	93	94	94	96	93	78	81	84	78	87	81	84	87	86	90	88	77	80	82	89	88	90	82	87	86.5
	Min.	60	64	58	60	64	67	53	61	58	65	65	62	65	66	61	64	61	62	54	57	63	65	66	68	57	50	64	62	68	70	58	61.9
Cedar R*	Max.	85	79	84	90	93	86	87	91	91	94	97	96	80	85	77	77	85	88	83	92	92	80	88	78	81	83	77	88	91	80	83	85.8
	Min.	63	65	66	67	68	69	63	65	67	66	68	73	69	69	68	63	61	64	63	60	58	69	66	68	58	58	54	66	66	67	61	64.9
Chariton	Max.	86	76	84	90	92	85	84	87	90	94	95	91	82	85	85	81	84	80	81	86	89	86	87	83	80	81	83	86	87	86	86	85.5
	Min.	62	64	64	64	70	69	59	60	63	64	65	67	65	63	63	62	61	65	60	58	67	64	65	67	64	53	60	63	64	67	65	63.5
Charles C.	Max.	83	80	82	89	91	83	84	90	88	94	95	91	75	78	73	74	81	77	79	88	86	84	85	77	78	79	79	85	90	78	75	82 9
	Min.	59	62	63	62	63	59	56	61	60	64	66	67	64	64	64	58	60	59	58	54	64	61	64	59	52	53	64	63	66	60	57	60.8
Clarinda*	Max.	88	74	85	95	96	85	88	94	98	99	100	96	94	91	90	89	92	79	86	90	93	84	85	85	88	84	84	86	87	91	93	90.2
	Min.	62	65	63	63	65	64	57	58	62	62	63	64	64	64	61	64	60	61	60	58	63	63	65	68	62	57	60	63	62	63	63	62.3
Clear L	Max.	89	82	84	88	89	85	88	90	90	92	95	90	76	80	74	76	82	83	83	87	88	85	89	81	80	75	84	87	90	85	75	84 6
	Min.	60	61	62	64	67	64	62	69	64	69	70	68	67	65	65	60	61	64	60	62	67	62	63	64	66	54	64	64	67	64	59	63.8
Clinton	Max.	84	81	85	89	92	85	87	89	89	90	95	93	86	83	86	74	82	80	82	85	84	87	90	81	88	80	85	88	89	82	83	85.5
	Min.	60	59	63	60	67	63	58	58	64	60	62	66	65	66	64	62	60	64	61	51	66	66	68	68	56	51	62	62	58	65	60	61.8
Col. Spgs.	Max.	89	77	85	89	94	..	84	88	94	98	93	93	65	65	66	..	62	64	63	61	61	66	65	66	70	63	59	64	66	64	64	87.4
	Min.	63	67	65	62	69	65	60	60	64	65	64	64	66	66	67	61	60	61	61	63	59	67	64	63	71	58	52	62	65	62	67	64.2
Colum. J.	Max.	85	80	85	88	92	89	89	88	89	91	94	94	84	84	85	77	85	84	84	..	90	83	87	85	79	81	77	85	87	85	85	85 9
	Min.	74	64	65	64	63	70	60	64	67	64	63	66	66	67	61	60	61	61	63	59	67	64	63	71	58	52	62	65	62	67	65	64.5
Corning	Max.	85	74	83	89	90	83	83	87	90	92	92	90	79	85	83	77	85	80	81	86	88	84	87	80	82	87	88	87	88	87	85	84.8
	Min.	60	66	61	62	68	65	55	62	59	56	64	67	67	64	62	65	61	63	58	62	66	64	68	70	65	58	63	63	66	66	66	63.2
Corydon	Max.	85	77	85	91	93	83	87	87	93	95	96	92	79	85	87	85	85	79	84	86	89	86	87	86	81	81	81	86	87	90	87	86.3
	Min.	64	66	65	65	71	69	60	62	61	61	67	68	67	63	63	64	62	66	63	61	68	65	67	69	66	55	55	65	65	67	65	64.2
Cresco	Max.	78	77	81	88	88	81	82	87	85	90	93	84	78	68	69	72	79	77	77	85	83	82	85	78	74	74	78	84	87	81	71	80.2
	Min.	58	61	62	61	65	61	60	63	62	66	69	68	64	61	63	54	58	64	60	55	67	58	63	62	51	56	63	60	66	67	52	61.3
Creston	Max.	84	74	80	89	90	81	83	83	88	91	93	98	78	82	82	73	84	78	81	86	87	85	86	79	77	81	80	84	88	83	86	83.3
	Min.	64	66	66	64	70	68	61	64	64	66	69	70	67	63	64	66	62	64	62	62	68	66	67	70	64	58	60	64	66	67	64	65,0
Davenpo't	Max.	85	80	83	88	93	83	86	89	90	89	93	94	85	83	78	77	83	87	83	89	90	77	87	79	79	82	76	86	88	85	83	84 8
	Min.	61	61	66	67	72	69	64	67	67	67	68	72	67	68	65	63	62	68	66	64	71	68	64	65	60	55	63	66	67	70	65	65.7
Decorah	Max.	84	80	82	88	89	82	84	88	87	92	94	88	82	71	76	82	78	80	81	85	85	80	87	78	74	79	76	87	88	81	74	82.6
	Min.	59	63	62	58	63	62	63	59	61	63	64	68	63	63	61	62	64	63	58	53	66	62	64	58	50	49	64	59	65	62	56	60.9
Delaware	Max.	82	80	83	88	90	84	84	87	85	92	95	90	72	75	70	76	80	85	79	80	77	54	67	65	61	65	52	49	62	61	62	66	55	61.0
	Min.	56	63	65	59	69	61	59	61	62	61	64	65	64	63	63	58	63	65	57	54	67	65	61	65	52	49	62	61	62	66	75	90	87.8
Denison	Max.	84	83	87	93	92	88	89	93	93	95	97	92	83	87	85	81	89	83	90	89	88	89	90	79	81	84	90	90	93	75	90	87.8
	Min.	57	64	59	59	65	68	50	66	57	65	65	62	66	64	62	61	71	63	54	54	62	66	66	67	61	58	64	62	68	64	62	62.3
Des M	Max.	85	75	84	89	93	85	86	88	90	93	94	91	82	85	85	81	84	80	81	86	89	86	87	83	80	81	83	86	87	86	86	85.1
	Min.	65	65	66	66	72	70	61	64	66	68	68	69	68	67	68	64	64	66	64	62	67	68	68	63	62	58	63	64	68	69	66	65.9
De Soto	Max.	82	75	81	88	89	82	83	88	87	91	92	89	81	81	83	75	83	80	82	87	87	82	86	82	84	80	83	86	87	86	86	83.9
	Min.	65	65	65	64	71	71	60	64	64	65	67	68	67	67	67	64	62	65	65	62	66	61	67	70	62	57	65	66	67	69	65	65.3
Dows	Max.	81	80	82	88	88	83	83	87	88	91	93	91	74	80	78	71	82	78	80	86	88	83	86	78	78	79	85	87	89	77	81	83.1
	Min.	61	59	61	61	64	60	57	61	61	63	63	63	65	64	65	60	59	61	57	54	62	63	61	66	54	49	62	61	65	62	58	60.7
Dubuque	Max.	82	78	83	89	92	84	84	90	84	90	94	91	73	76	71	76	80	84	76	88	87	81	84	75	79	79	72	84	88	79	76	82.2
	Min.	63	61	66	64	69	65	62	65	67	65	68	71	66	66	63	63	62	69	62	60	72	68	66	64	59	57	66	67	67	66	60	64.8
Earlham	Max.	84	75	85	90	91	85	85	87	90	93	94	90	78	84	86	73	84	82	83	87	84	86	86	79	79	81	85	..	..	..	..	84.7
	Min.	65	62	60	56	69	65	58	57	59	64	61	63	65	62	59	63	63	63	60	62	65	67	64	69	60	51	50	..	..	..	..	61.4
Elkader	Max.	87	86	87	94	95	89	90	93	91	97	101	95	77	73	71	78	85	85	85	94	92	89	91	80	81	84	73	90	93	86	79	86.8
	Min.	59	65	65	58	67	58	55	59	60	60	63	66	65	60	60	56	61	68	55	52	68	61	60	68	50	50	64	61	60	62	65	60.7
Elliott	Max.	93	82	86	96	88	88	93	95	97	98	97	97	87	87	86	87	90	83	83	89	95	88	93	82	82	85	89	92	91	86	88	89.5
	Min.	59	67	62	68	67	59	60	60	63	63	64	64	68	63	61	68	62	63	61	58	67	67	67	72	61	58	65	64	66	66	65	63.8
Esthervil*	Max.	80	78	85	92	89	89	88	93	90	95	92	88	78	85	80	70	83	81	82	88	84	86	86	73	77	88	80	92	81	80	80	84.3
	Min.	58	60	60	60	64	62	58	63	58	59	67	64	63	65	65	62	61	62	56	52	62	62	58	59	62	53	53	55	57	63	60	60.0
Fayette	Max.	83	80	83	90	92	88	87	90	89	94	79	93	74	74	73	76	83	81	81	89	86	82	70	78	..	78	76	86	89	78	67	82.5
	Min.	54	64	64	58	60	58	53	57	59	62	64	61	59	62	63	55	57	60	52	50	69	65	62	48	..	50	58	60	65	60	55	58.8
ForestCy*	Max.	85	83	85	91	62	86	88	92	90	96	97	93	75	81	77	75	84	84	83	89	90	90	89	74	81	80	87	88	93	80	78	85.7
	Min.	59	60	60	60	63	60	59	62	60	68	66	66	64	64	60	60	62	58	56	66	60	60	64	53	52	64	59	65	65	57	61	61.1
F. Dodge*	Max.	86	81	85	93	93	90	89	92	89	95	97	94	89	83	82	72	85	80	83	89	88	86	88	78	80	79	88	92	93	79	83	86.2
	Min.	59	62	63	64	62	64	59	61	65	55	68	67	67	67	67	63	62	55	59	58	65	65	65	65	56	56	55	67	68	67	61	62.5
Galva	Max.	84	83	85	91	90	90	86	92	91	91	93	90	80	83	81	78	85	80	83	86	80	85	86	81	80	89	90	78	85	86	83	85.0
	Min.	59	62	63	64	62	64	59	61	65	55	68	67	67	67	67	63	62	55	59	58	65	65	65	65	56	56	55	67	68	67	61	62.5
Glenwo'd	Max.	84	83	85	91	90	90	86	92	91	91	93	90	80	83	81	78	85	80	83	86	80	85	86	81	80	89	90	78	83	86	83	85.0
	Min.	57	53	60	58	61	60	49	64	52	58	60	58	57	60	61	63	62	64	55	55	61	64	61	64	59	59	64	59	62	60	59	59.3
Grand M.	Max.	83	72	84	90	89	83	85	89	92	93	94	89	82	85	84	89	87	83	83	87	88	85	88	78	83	78	83	88	90	85	89	86.1
	Min.	64	65	61	65	69	65	59	66	64	67	69	68	67	65	62	65	62	63	60	66	68	65	68	70	63	61	61	65	68	67	63	64.9
Greene	Max.	81	80	80	85	87	82	81	86	84	90	92	87	75	70	70	75	79	80	77	85	88	83	85	76	75	76	75	34	85	85	56	61.0
	Min.	60	63	64	60	65	61	60	62	60	62	66	67	65	62	62	55	59	66	58	56	56	58	61	64	52	53	64	63	65	65	56	61.0
Greenfield	Max.	84	82	85	92	93	87	88	91	92	96	98	92	75	80	75	76	84	82	83	90	90	86	90	79	79	81	82	90	91	80	80	85.6
	Min.	58	62	62	63	65	60	57	64	60	63	65	67	65	65	66	60	59	63	58	53	65	62	62	67	53	51	64	61	65	64	57	61.5
Grinnell	Max.	87	84	87	92	94	92	88	89	90	94	96	98	92	75	80	75	80	83	83	87	89	87	92	82	78	84	87	87	89	85	87	88.0
	Min.	58	62	62	63	65	60	57	64	60	63	65	67	65	65	66	60	59	63	58	53	62	62	67	82	78	84	87	64	65	67	65	62.8
Greenfield	Max.	87	84	87	92	94	92	88	89	90	94	96	98	92	75	80	75	80	83	83	87	89	87	92	82	78	84	87	87	89	85	87	88.0
	Min.	56	54	55	62	68	67	60	59	64	63	68	67	66	63	62	64	65	60	59	63	58	53	65	62	62	67	53	51	64	61	65	62.8
Grinnell	Max.	87	78	85	91	94	85	87	89	90	94	96	98	92	75	80	75	80	83	83	87	89	87	92	82	78	84	87	87	89	85	87	88.0
	Min.	56	54	55	62	68	67	60	59	64	63	68	67	66	63	62	64	65	60	59	63	58	53	65	62	62	67	53	51	64	61	65	62.8
Grinnell	Max.	87	78	85	91	94	85	87	89	90	94	96	98	92	75	80	75	80	83	83	87	89	87	92	82	78	84	87	87	89	85	87	88.0
	Min.	61	63	65	59	69	68	84	85	86	89	92	94	92	73	83	77	70	83	83	82	88	88	86	82	78	84	87	64	65	67	65	62.8
(near) Grundy C	Max.	83	81	82	87	89	84	57	62	64	65	67	65	65	66	67	61	60	63	58	54	67	63	61	66	54	49	62	61	65	62	58	60.7
	Min.	61	62	65	63	67	63	57	62	64	65	67	65	65	66	67	61	60	63	58	54	67	63	61	66	54	49	62	61	65	62	58	60.7
Guthrie C	Max.	83	77	84	90	90	84	86	98	91	93	93	92	85	85	84	63	65	63	65	61	60	64	67	68	69	60	54	65	69	68	64	64.1
	Min.	62	65	61	62	68	69	54	62	65	65	66	66	65	68	63	80	72	86	82	85	90	92	90	90	80	85	83	85	92	93	78	81	86.7
Hampton	Max.	85	84	86	91	93	86	89	91	93	97	99	96	75	80	66

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR AUGUST, 1905—CONTINUED.

STATIONS.		DATE.																														MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Hanlontown	Max..	81	78	82	89	89	84	87	91	90	94	98	89	72	76	72	72	82	80	81	88	88	85	88	77	76	80	84	87	92	78	76	83.4
	Min ..	59	60	59	53	64	59	57	64	57	63	67	65	64	63	64	58	60	62	56	51	65	58	61	64	51	50	63	62	66	64	58	60.4
Harlan....	Max.	85	81	87	92	90	87	88	91	93	94	94	93	81	84	83	81	88	82	83	88	90	87	89	82	81	82	88	89	90	80	87	86.8
	Min ..	58	63	60	59	65	66	52	60	59	61	60	61	67	62	59	65	61	63	57	56	63	67	65	68	62	56	63	63	64	65	63	61.7
Hopeville	Max..	87	73	86	91	92	86	85	89	93	97	96	95	80	87	87	77	86	80	84	88	91	88	89	83	80	84	85	87	89	86	89	86.8
	Min .	64	68	64	65	70	67	60	61	65	65	67	69	66	68	64	64	62	65	62	64	66	65	68	71	66	56	62	64	64	67	64	64.9
Humboldt	Max..	80	82	83	91	90	78	84	84	88	93	94	86	76	84	82	76	85	79	81	89	86	84	88	82	76	80	82	83	93	80	78	83.8
	Min ..	62	60	62	61	66	63	58	66	60	66	67	66	66	68	70	64	62	64	58	56	63	63	66	65	55	56	64	66	68	59	61	62.9
Ida Grove	Max..	83	81	90	94	91	87	89	94	94	94	90	95	80	85	80	79	86	80	85	87	83	85	86	85	80	83	86	87	90	83	84	86.3
	Min ..	61	60	65	65	68	48	53	63	68	60	58	70	60	65	58	59	58	61	52	54	62	59	60	65	59	55	54	61	62	56	55	59.8
Indianola.	Max..	85	75	84	90	90	84	85	87	90	94	95	92	79	85	85	81	86	82	83	88	90	84	87	86	80	82	82	87	87	84	88	85.7
	Min ..	62	65	64	65	70	70	60	61	66	66	62	67	68	66	65	63	62	67	63	60	62	63	67	67	62	55	62	63	65	59	66	64.0
Inwood ..	Max..	84	83	89	93	88	86	93	93	93	95	93	87	77	82	79	83	83	81	84	89	87	87	88	81	81	81	93	89	95	86	85	86.8
	Min ..	59	59	56	64	60	56	54	64	60	63	68	62	64	66	60	62	61	62	52	52	59	61	67	61	58	61	62	61	68	63	60	60.7
IowaCity*	Max..	88	80	85	90	93	82	86	90	89	96	95	95	83	85	82	79	86	86	83	90	91	88	89	81	81	83	79	87	90	88	85	86.4
	Min ..	60	63	64	65	65	69	60	52	66	62	64	67	69	67	67	62	60	64	61	57	63	65	66	66	58	51	53	64	61	61	63	62.4
Iowa F*..	Max..	84	82	84	89	90	86	84	88	89	93	95	94	78	83	78	74	84	78	82	89	88	84	89	79	79	81	84	88	90	75	81	84.8
	Min ..	58	60	62	60	61	61	56	56	58	59	65	63	63	65	66	61	60	61	55	52	60	64	63	67	53	49	60	62	62	65	59	60.2
Keokuk ..	Max..	85	78	83	89	93	85	86	89	91	90	94	92	89	86	86	80	87	85	86	90	91	81	87	89	80	81	79	85	88	91	90	86.6
	Min ..	65	67	66	68	71	73	65	66	72	66	67	73	71	69	67	64	66	70	67	66	69	68	67	68	66	56	64	63	67	70	69	67.2
Keosauqua *.	Max..	89	74	85	91	94	86	87	90	92	95	98	95	87	87	83	79	87	83	87	92	94	84	87	90	82	82	81	86	89	92	89	87.9
	Min ..	60	66	64	62	67	71	60	61	65	61	63	68	63	65	64	64	63	66	64	60	67	66	66	68	65	50	56	61	61	65	68	63.7
Knoxv'lle	Max..	85	77	84	90	91	83	84	88	89	92	93	91	83	85	85	81	83	82	82	87	87	83	87	82	79	80	81	84	87	84	86	85.0
	Min ..	63	64	64	64	72	72	63	63	65	63	68	68	63	66	66	64	62	67	63	62	68	65	65	67	61	55	62	63	67	70	67	65 1
Larrabee	Max..	87	85	89	97	93	88	91	95	94	95	97	96	83	85	81	81	86	82	85	88	87	89	90	83	81	84	85	88	92	81	86	87 9
	Min ..	60	59	61	62	62	58	55	66	60	65	73	64	64	69	62	63	62	63	55	56	62	65	67	62	61	56	65	61	67	59	60	62.1
Le Mars..	Max..	84	84	86	94	93	87	90	94	93	97	95	82	91	83	79	82	85	82	86	89	84	88	90	84	83	82	89	89	93	83	85	87.3
	Min ..	58	60	59	62	62	60	50	66	59	64	66	65	63	65	61	62	63	64	54	55	62	64	66	63	61	61	64	59	67	57	60	61.4
Lenox....	Max..	85	77	84	89	89	84	85	88	90	92	92	89	85	85	84	80	86	80	83	86	89	85	87	83	78	82	82	86	87	86	86	84.6
	Min ..	63	66	64	65	69	66	61	61	65	65	68	68	66	67	64	68	61	64	60	62	66	66	68	71	65	57	62	62	65	66	63	64.6
Leon.....	Max..	85	80	83	91	91	87	85	88	90	94	93	93	86	86	84	86	85	86	83	86	88	89	88	85	79	81	81	85	85	86	85	86.3
	Min ..	64	66	64	65	70	78	62	62	65	66	67	69	67	67	65	63	63	65	62	60	66	65	68	72	66	55	61	64	64	65	64	65.2
Lit. Sioux	Max..	83	85	90	97	91	89	91	97	97	97	93	91	83	85	86	85	89	84	87	91	92	90	89	86	84	84	92	91	94	87	90	89.5
	Min ..	64	65	65	67	62	63	51	68	65	71	69	69	68	63	60	63	66	65	57	65	64	60	70	69	61	63	67	66	69	70	64	65.0
Logan....	Max..	86	86	88	95	95	89	89	94	95	95	97	94	88	88	85	84	90	83	85	91	91	91	87	80	82	85	90	92	92	90	91	89.3
	Min ..	61	64	61	61	64	66	52	63	60	62	63	63	76	62	60	64	61	63	57	57	64	72	..	71	61	58	63	66	65	63	64	62.9
Maquoketa *.	Max..	84	80	85	90	95	88	89	89	90	94	93	97	75	83	76	78	82	87	84	89	91	81	87	77	79	80	74	85	88	80	81	84.9
	Min ..	56	60	61	58	63	58	55	57	63	57	58	65	65	65	66	60	61	63	60	54	63	66	60	65	55	48	52	60	57	63	51	59.5
Marshaltown*	Max..	88	85	86	93	95	88	89	92	91	96	103	99	77	86	82	72	88	86	85	92	93	81	90	88	84	84	85	90	92	86	85	88.0
	Min ..	60	63	62	63	69	67	56	61	62	63	66	67	66	65	65	61	60	62	58	57	63	65	62	66	54	50	52	60	63	66	60	61.7
Mason C..	Max..	80	80	82	89	90	88	87	92	91	96	96	89	77	77	72	74	83	84	81	89	86	88	89	80	80	78	80	87	91	82	76	84.3
	Min ..	60	62	62	64	67	63	62	67	64	69	70	69	65	65	65	60	62	65	61	58	67	62	65	65	55	55	63	62	67	64	59	63.4
Massena..	Max..	92	86	91	99	100	91	93	94	100	100	102	98	86	92	92	80	91	88	88	92	98	96	98	83	87	88	90	95	93	92	93	92.5
	Min ..	58	60	61	58	60	60	52	60	58	62	65	62	63	63	62	60	60	63	60	62	60	78	59	70	63	56	61	63	65	62	63	61.6
Monticello	Max..	84	82	83	88	92	87	88	89	88	92	94	96	73	82	77	79	81	82	82	88	88	81	85	77	76	79	74	84	87	76	81	83.7
	Min ..	57	63	60	66	59	55	58	62	58	60	64	64	64	66	60	60	65	56	53	66	66	61	69	55	47	62	61	60	65	56	62	60.6
Mt. Ayr..	Max	88	77	88	93	92	88	89	89	97	97	95	95	78	90	90	80	88	80	87	89	92	90	91	83	80	85	84	89	90	90	89	88.2
	Min ..	65	65	65	64	65	64	61	61	65	65	66	66	64	59	63	65	61	63	60	60	65	64	67	70	65	58	62	63	64	63	63	63.5
Mt. Pl'snt	Max	86	80	84	90	91	90	86	90	95	94	93	88	85	82	83	76	85	83	84	90	91	82	88	88	80	80	84	86	87	88	86	86.3
	Min .	63	64	64	70	70	78	68	64	62	64	68	69	67	65	62	62	62	68	64	59	66	64	64	66	61	52	62	62	62	66	66	64.6
Mt. Ver'n	Max..	92	76	88	91	96	87	88	89	93	96	98	97	78	87	78	77	85	89	83	90	94	88	88	79	87	83	72	88	88	87	87	87.2
	Min ..	60	62	64	63	66	66	62	63	64	65	68	66	64	65	66	59	59	65	60	56	65	65	62	72	55	50	61	69	61	62	61	62.7
New H. ..	Max	83	82	82	88	90	84	84	88	87	91	96	91	78	76	73	76	83	78	79	85	85	84	94	83	78	80	80	86	88	82	78	83.6
	Min ..	60	62	65	62	65	60	60	60	62	62	65	70	64	63	62	56	58	58	59	56	63	64	62	62	58	54	60	62	62	67	58	61.3
Newton..	Max.	85	74	80	88	91	84	84	88	87	92	93	92	82	82	80	74	82	81	82	83	88	79	85	80	78	79	79	85	87	84	85	83.6
	Min ..	63	63	65	65	70	70	60	63	65	66	68	68	67	65	61	62	62	61	62	60	67	64	65	66	58	54	61	62	65	68	63	63.8
N'thwood	Max..	84	84	84	90	90	84	86	90	88	95	96	91	76	89	77	75	82	78	79	88	87	84	86	79	76	78	84	86	91	80	77	84.3
	Min ..	56	66	56	60	62	61	59	63	60	63	65	67	63	63	63	56	56	63	57	55	63	53	63	64	52	50	61	62	64	65	57	6 .4
Odebolt ..	Max	87	85	89	96	94	90	92	96	95	98	100	95	79	85	88	81	88	82	84	88	86	91	87	80	82	83	90	90	91	84	84	88.4
	Min ..	60	63	63	62	66	66	56	67	60	67	69	66	67	66	63	63	61	63	56	57	62	65	66	65	60	59	64	65	67	64	58	63.0
Ogden ...	Max	86	80	85	91	93	88	87	90	92	94	95	93	83	84	85	81	85	80	88	88	88	85	87	81	79	79	88	88	90	90	87	86.6
	Min .	65	64	62	64	67	67	57	65	60	64	66	65	65	60	61	59	62	64	59	59	64	65	66	68	57	55	64	65	67	66	62	63.0
Olin	Max..	80	79	83	86	89	84	86	86	86	89	91	94	77	81	78	77	80	84	80	85	87	81	85	78	76	78	74	82	80	77	79	82.7
	Min ..	60	63	65	63	70	63	58	65	65	60	61	66	67	67	67	61	61	67	60	56	68	67	67	70	57	48	63	68	67	72	62	63.7
Omaha, N	Max	82	81	86	92	89	86	88	91	93	94	93	86	82	86	84	86	87	81	86	88	88	89	89	82	81	83	91	88	91	83	89	86.9
	Min ..	63	68	66	70	73	67	62	69	69	72	73	72	70	69	67	69	64	65	65	68	70	67	71	70	65	65	69	70	70	70	67	68.2
Onawa...	Max	82	82	89	95	88	88	91	96	97	98	97	91	85	88	87	84	88	85	90	92	87	93	89	86	83	88	93	94	96	89	86	89.6
	Min	64	64	65	65	65	69	55	67	64	67	68	68	69	66	65	66	64	65	59	61	66	67	69	69	33	62	67	70	68	65	64	65.4
Osage.....	Max..	85	82	82	90	91	86	86	90	89	95	96	90	74	76	73	75	83	82	82	88	89	87	88	78	80	79	80	87	90	82	77	84.3
	Min ..	57	61	62	59	63	62	58	61	61	63	51	67	65	63	63	54	59	64	53	55	64	60	62	65	51	52	63	60	60	68	56	60.2
Oskaloosa	Max	85	75	82	87	91	83	84	89	88	92	94	91	82	84	84	76	84	82	82	89	89	80	86	85	79	81	81	86	88	86	85	84.8
	Min ..	64	65	65	62	73	72	61	63	66	65	67	66	68	69	65	65	64	69	62	61	67	65	65	65	60	53	62	66	66	70	67	65.1
Pacific J'n	Max..	86	80	85	91	90	84	85	90	91	93	92	90	84	85	84	90	86	82	84	87	88	86	91	80	80	82	90	87	89	84	86	86.5
	Min ..	63	63	60	63	65	65	53	60	63	60	64	65	66	62	57	66	63	60	53	60	65	64	66	66	64	59	66	65	64	62	63	62.5
Pella.....	Max..	87	80	85	91	93	86	87	91	94	96	94	86	85	86	81	85	85	85	90	85	85	87	83	83	82	81	81	82	89	86	87	86.4
	Min ..	63	65	66	67	71	71	62	62	68	69	69	67	68	67	63	63	67	64	61	68	68	65	65	68	60	54	63	64	65	69	66	65.4
Perry.....	Max..	84	81	85	91	92	80	87	89	91	93	95	92	81	85	84	76	85	80	83	87	88	86	88	80	79	83	86	88	89	80	87	85.7
	Min	65	65	64	63	67	70	58	62	64	65	65	67	65	68	61	64	63	65	62	59	65	67	66	70	58	55	65	66	66	67	64	64.2
Plover.....	Max	86	80	85	90	94	85	85	92	91	92	95	92	83	85	85	75	83	80	86	88	88	87	89	79	77	82	86	88	91	79	83	86.2
	Min ..	70	75	76	78	82	61	57	63	60	63	64	65	63	65	66	63	60	62	60	55	60	61	65	64	54	52	61	64	63	58	62	63.6
Pocah'tas	Max..	90	83	87	93	91	86	89	93	92	95	98	93	80	85	81	75	85	83	83	88	89	88	89	80	79	78	87	89	92	80	85	86.6
	Min .	59	60	61	63	64	61	58	58	60	65	65	66	64	66	64	64	63	63	57	58	58	63	65	64	55	56	63	62	67	60	61	61.7
Red Oak..	Max..	83	79	84	92	92	84	87	90	93	94	92	93	82	89	89	87	89	85	81	89	90	88	90	85	82	83	86	90	90	89	89	87.6
	Min ..	62	62	65	63	70	67	59	63	68	67	69	71	70	67	68	69	65	66	64	64	69	68	70	73	64	61	66	66	67	69	66	66.4
Ridgeway	Max..	81	81	83	91	91	83	87	93	87	95	97	88	76	74	73	76	83	82	82	90	87	90	91	81	78	79	76	88	91	89	76	84.5
	Min	62	62	65	62	66	67	64	60	64	65	70	72	66	61	64	58	60	66	60	62	70	61	65	64	53	55	64	62	66	71	57	63 4
Rock R...	Max..	80	86	92	93	88	90	90	90	93	96	91	84	76	80	80	83	82	80	83	90	91	90	82	84	86	88	86	90	94	80	78	86.6
	Min ..	50	54	51	51	48	44	55	65	70	68	64	64	64	70	72	70	58	60	63	66	70	68	68	68	66	64	64	70	72	64	54	62.5
R City...	Max..	85	80	85	91	91	85	85	92	89	94	95	95	83	85	83	74	87	80	82	87	87	86	87	80	75	82	81	88	92	83	85	85 6
	Min ..	58	57	58	62	65	64	56	65	67	66	68	65	65	66	62	61	60	63	56	60	62	60	65	65	60	64	62	55	65	58	60	61.9
Sac City..	Max..	83	81	83	90	90	86	86	91	90	92	93	90	77	82	80	75	84	79	81	85	85	86	85	81	77	80	85	86	89	80	84	84.4
	Min ..	60	62	60	60	60	65	67	66	60	65	65	64	65	66	62	63	64	62	56	57	61	64	67	66	56	58	64	64	66	60	61	62.5
St. Cha'les	Max	85	77	83	89	91	84	85	88	90	95	94	91	80	83	84	76	85	82	83	88	89	85	86	78	76	78	81	82	87	89	83	89	85.2
	Min ..	65	65	65	67	71	70	62	64	67	68	69	70	68	67	65	64	63	67	66	64	66	65	68	70	62	58	63	64	66	70	66	66 0
Sheldon..	Max..	84	85	90	95	90	85	88	90	92	94	99	90	81	83	80	84	82	82	85	83	89	89	87	80	81	82	90	91	95	85	85	87.1
	Min ..	59	60	61	62	61	61	58	62	65	64	78	72	64	65	62	63	63	62	53	55	61	65	68	62	58	58	65	60	67	64	61	62.5
Sibley *...	Max..	83	79	88	90	88	83	87	89	88	93	90	85	77	79	75	76	81	79	81	85	84	88	87	75	79	79	88	87	92	75	88	83.4
	Min ..	58	60	59	61	62	54	53	55	59	62	64	63	63	65	62	64	62	61	58	52	60	60	62	61	56	56	61	60	60	62	60	59.7
Sidney ...	Max..	87	82	87	91	91	84	87	92	94	94	94	89	84	88	89	91	90	87	85	88	90	88	90	81	82	83	88	88	89	88	89	88.1
	Min ..	64	66	64	66	71	66	62	64	68	66	68	68	68	64	65	67	66	62	65	65	68	66	68	71	66	60	65	65	67	70	68	66.0
Sigourn'y	Max..	87	80	86	90	92	86	86	89	90	94	96	94	85	89	86	87	86	84	91	..	..	84	87	85	81	81	82	85	81	88	88	86.9
	Min ..	60	67	64	64	70	71	60	63	65	64	65	68	67	68	66	65	69	61	60	.	..	65	64	67	60	53	62	63	63	67	66	64.4
Sioux C'r.	Max..	83	83	85	92	90	83	88	90	92	94	93	88	88	83	76	80	81	79	80	87	83	83	86	79	82	80	85	87	91	83	85	85.2
	Min ..	57	56	59	61	65	61	58	62	65	64	64	63	64	66	59	58	61	63	52	56	56	63	66	62	60	60	66	61	67	64	59	61.2
Sioux C'y	Max..	81	79	87	95	91	87	90	93	93	96	95	87	81	82	79	83	87	81	85	89	90	88	90	85	82	83	86	90	90	89	89	87.6
	Min ..	61	63	60	68	68	62	54	70	62	71	73	66	66	67	63	67	64	62	59	59	65	67	71	65	62	62	66	64	72	61	64	64.6
Stockport	Max..	84	76	80	85	87	82	82	87	87	91	93	90	85	80	82	77	83	80	88	89	90	81	84	83	77	78	77	82	86	87	85	83.8
	Min ..	64	67	66	64	71	68	64	64	69	64	67	69	67	68	65	65	65	71	61	65	70	66	65	69	65	54	63	62	63	68	63	65.5

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR AUGUST 1905—CONTINUED

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Storm L*	Max	81	81	85	92	91	85	83	92	92	92	95	89	76	83	78	76	84	79	82	86	85	85	84	72	78	80	85	88	91	72	84	84.2
	Min	57	61	62	63	65	62	57	63	61	68	70	65	64	69	61	62	61	62	55	59	60	62	64	63	58	59	61	60	63	65	59	61.8
Thurman	Max	84	79	87	91	90	85	85	90	91	93	92	87	84	88	87	89	87	82	84	87	88	87	88	85	80	84	88	87	89	85	87	86.8
	Min	62	66	62	61	67	66	58	60	62	62	63	65	68	62	60	67	63	63	63	61	68	66	69	70	66	62	64	65	67	68	60	64.3
Tipton	Max	87	79	84	92	92	85	89	90	93	95	97	98	82	82	75	77	85	86	85	90	91	82	86	85	82	82	72	85	89	84	85	86.0
	Min	63	63	66	66	63	71	64	65	69	68	69	69	65	67	68	62	62	68	64	62	70	66	65	70	61	57	59	65	64	69	63	65.3
Toledo	Max	83	79	81	83	90	84	89	90	85	92	94	95	78	83	78	72	83	83	81	89	83	78	87	84	80	81	81	87	89	81	83	84.4
	Min	60	65	66	62	69	58	62	63	62	62	65	67	67	67	67	62	60	65	57	57	68	66	63	71	55	49	64	61	65	68	61	63.0
Vinton	Max	84	81	..	88	92	90	85	89	88	90	92	93	..	83	85	82	82	83	82	90	87	82	83	81	80	78	77	84	87	85	80	84.9
	Min	61	65	..	62	69	59	60	64	63	61	65	68	..	66	60	61	59	68	67	57	68	62	62	71	54	46	63	54	64	69	59	62.3
Washl'ton	Max	..	..	91	86	90	81	84	88	88	91	93	92	81	82	80	75	83	82	83	88	88	78	84	82	79	79	76	84	86	84	84	84.2
	Min	..	..	..	65	70	68	62	64	66	64	66	68	68	67	64	62	62	69	62	59	68	64	64	70	59	54	62	64	64	68	66	64.6
Washta	Max	85	85	90	95	95	85	92	96	97	97	99	94	80	87	83	82	88	85	87	90	89	89	87	77	83	84	89	93	94	71	80	88.0
	Min	45	56	58	55	57	58	60	63	55	58	65	65	60	65	68	57	63	62	51	51	60	65	64	64	60	58	64	64	60	60	60	59.7
Waterloo*	Max	85	81	84	96	96	88	90	92	91	95	99	97	76	82	76	74	84	86	85	91	90	82	87	81	82	83	81	89	92	75	81	86.2
	Min	61	63	65	63	69	63	58	61	64	63	66	66	67	65	66	60	59	62	58	56	67	68	66	69	55	51	59	62	63	67	53	62.5
Waukee	Max	88	80	93	100	98	87	92	96	99	100	104	97	85	89	94	79	88	87	92	96	93	91	88	84	90	86	94	97	90	87	95	91.6
	Min	62	63	64	63	67	69	59	62	64	64	65	68	67	66	66	63	62	65	64	61	65	64	67	68	60	57	64	65	66	68	64	64.3
Waverly	Max	80	77	81	87	90	83	84	88	86	92	94	90	73	78	73	72	81	77	79	85	84	79	84	77	75	73	78	84	87	80	77	81.7
	Min	61	63	63	62	68	62	53	62	62	64	66	68	65	65	65	60	59	65	59	56	64	65	64	68	55	53	63	62	62	67	58	62.4
Web'ter C	Max	91	88	86	92	95	92	90	91	92	97	98	98	87	89	92	75	85	80	86	92	93	87	90	83	81	81	91	90	92	82	85	88.7
	Min	64	62	62	60	63	61	54	63	58	63	63	64	60	68	68	62	61	62	56	53	64	63	64	67	54	50	67	63	72	61	66	61.8
W. Bend	Max	88	83	85	92	88	85	85	89	88	90	93	92	82	85	82	75	84	80	80	87	88	85	88	77	77	80	85	88	89	77	83	84.8
	Min	60	61	60	61	64	60	57	64	59	65	65	64	64	66	65	63	59	61	56	54	63	61	62	64	56	54	62	61	67	61	60	61.3
Whitten	Max	86	81	83	89	90	85	85	87	88	91	94	93	77	83	79	75	83	82	80	88	89	83	88	80	77	80	85	88	88	84	80	84.5
	Min	66	62	63	63	67	64	57	60	61	79	66	62	66	65	67	61	60	64	59	56	66	66	63	59	54	50	62	61	63	60	59	62.8
Wilton J.	Max	88	85	88	91	94	88	89	89	90	93	94	94	82	87	82	82	85	88	85	87	90	83	80	82	78	82	80	88	88	89	86	86 7
	Min	52	63	64	64	55	54	61	55	53	60	61	62	65	69	68	62	59	60	57	65	70	65	66	64	58	48	60	60	61	67	66	61.3
Wint'rset	Max	83	79	83	90	91	85	84	89	89	93	93	91	82	85	88	80	85	81	82	87	85	84	88	82	80	82	84	86	87	84	86	85.3
	Min	63	63	62	62	70	68	57	60	64	66	66	63	66	63	63	63	60	64	69	60	63	64	66	69	53	55	63	63	65	68	64	63 6
Woodb'n	Max	89	81	84	87	94	84	83	85	87	92	91	93	84	87	85	75	83	84	80	85	90	83	91	85	80	81	85	86	85	89	85	85.6
	Min	60	64	63	58	70	62	55	57	61	60	64	64	67	65	62	61	59	65	57	57	67	65	65	65	65	50	63	65	64	63	65	62.4
Zearing	Max	87	80	84	89	92	87	87	89	89	92	95	92	85	85	84	73	83	80	83	88	90	80	85	80	82	79	84	85	88	78	83	85.1
	Min	63	64	61	63	62	65	53	61	60	65	68	65	67	66	68	62	59	63	57	55	63	62	62	67	55	47	64	63	65	66	60	62.1

* At those stations thermometers are read in the morning; the maximum temperature then observed appears in the maximum column for the preceding day, on which it nearly always occurs.

OBSERVERS' NOTES.

ALLERTON—*Rex Shriver.* Good yield of small grain; corn considerably damaged by root worms.

ALTA—*David E. Hadden.* High wind on 14th damaged shade trees, out buildings and sheds on fair ground; another windstorm on the 16th and both storms leveled corn badly.

AMANA—*Conrad Schadt.* The days were generally hot and nights mainly cool with fog; ground too dry for plowing near close of the month; mean temperature was 32° higher than in July.

BAXTER—*W. T. Thorp.* Weather favorable for corn; too much rain for thrashing and oats were damaged by being left in shock.

BONAPARTE—*B. R. Vale.* Rain 7.93 inches; a wet month with normal temperature; vegetation vigorous; subsoil full of water.

BRITT—*Geo. P. Hardwick.* No serious storms, but damp and excess of cloudiness; grain left to thrash from shock badly damaged; corn has made rapid advancement, but will not produce a yield

CHARITON—*C. C. Burr.* Grain damaged in shock by rains; fields too soft for movement of thrashing engines.

CLINTON—*Luke Roberts.* Rain, 4.11 inches, or .97 of an inch above normal. Month exceptionally fine for crops and work in fields. Greatest amount of rainfall in any 24 consecutive hours, 1 06 inches on 13th and 14th. No windstorm heavy enough to prostrate corn or other crops. If the temperature remains above the frost line for three weeks beyond August the crop will beat the record.

CRESCO—*L. G. Krumm.* On the 7th corn was badly riddled by hail in a narrow strip half a mile wide.

CRESTON—*W. L. Gaston.* The electrical storm on the 13th was the severest known here for many years.

ELLIOTT—*Henry Barnes.* Corn was somewhat damaged by windstorms on 17th and 21st. Old corn nearly all sold, and there has been a free movement of small grain to market.

FOREST CITY—*J. A. Peters.* August was an exceptionally good month for corn and for threshing small grain. Corn needs three weeks in September to mature.

GRAND MEADOW—*F. L. Williams.* A wet harvest and much damp grain in shock or stack; oats extra heavy; corn practically safe and crop heavy; pastures excellent.

GRINNELL—*A. O Price.* Seldom better pastures or bigger aftermath in meadows; at end of month corn was glazing and promised a big yield.

HANLONTOWN—*Miss G. M Paschen.* Threshing from shock begun on 9th; oats fair yield; harvest apples were ripe the 17th; good crop of blackberries.

INWOOD—*G. M. Larsen.* A fine month; grain yield fair to good; corn in good condition, needing two weeks of good weather in September.

OLIN—*N. Potter.* August was all that could be desired for threshing and ripening corn.

PLOVER—*J. S Smith.* Corn damaged by wind on 23d fully 25 per cent in pathway of storm, about 18 miles wide.

RIDGEWAY—*Arthur Betts.* Warmest August since 1900; hard hail 7th and 8th and some damage done; sunshine 302 hours, or 70 per cent.

WAUKEE—*E. J. Leonard.* Month favorable for work; corn needs dry weather; threshing about half done.

BELATED REPORTS.

FAYETTE—June—Mean temperature, 67.2°; highest, 91° on the 4th; lowest, 42° on the 8th; greatest daily range, 36°; total precipitation, 5.15 inches; greatest in 24 hours, 1.10 inch; prevailing direction of wind, southeast; number of clear days, 10; partly cloudy, 13; cloudy, 7; rainy, 13.

FAYETTE—July—Mean temperature, 68.4°; highest, 93° on the 17th; lowest, 42° on the 25th; greatest daily range, 36°; total precipitation, 2.62 inches; greatest in 24 hours, .57 of an inch; prevailing direction of wind, northwest; number of clear days, 16; partly cloudy, 8; cloudy, 7; rainy, 11.

MASSENA—July—Mean temperature, 72 2°; highest, 100° on the 16th; lowest, 48° on the 9th; greatest daily range, 35°; total precipitation, 1.91 inches; greatest in 24 hours, .88 of an inch; prevailing direction of wind, north and south; number of clear days, 19; partly cloudy, 4; cloudy, 8; rainy, 8.

DENISON—July—Mean temperature, 69.2°; highest, 95° on the 17th; lowest, 45° on the 10th; greatest daily range 32°; total precipitation, 3.68 inches; greatest in 24 hours, 1.03 inches; prevailing direction of wind, south; number of clear days, 21; partly cloudy, 8; cloudy, 2; rainy, 10

ERRATA IN JUNE AND JULY REVIEW.

AMANA—Precipitation on page 11, for June 5th, recorded .16 of an inch, should read .06 of an inch.

MONTICELLO—Precipitation on page 11, for June 11th, recorded .78 of an inch, should read .18 of an inch.

CEDAR RAPIDS—Precipitation, page 6, recorded 2.77 inches in July, should read 2.78 inches departure from normal, recorded 1.10 inches should read 1.09 inches.

DAILY AND MONTHLY PRECIPITATION FOR AUGUST, 1905.

STATIONS.	DAY OF MONTH.																													TOT
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	.92	.20	..	..	T	....	....	....	...	....	....	.80	.33	..	.11	....	.52	..	..	T	.67	....	....	....	....	1.12	....	..	....	....	4.67
Albia	....	1.65	.80	....	....	.03	....	....	....	....	....	....	....	.68	.08	...	1.38	.02	.04	....	T	1.48	.03	1.30	....	....	.25	.13	....	....	....	7.87
Algona	.36	.18	..	..	.13	....	...	....	..	..	....	.40	.11	1.00	.31	....	..	.14	.20	...	....	..	....	1.91	....	....	....	....	T	T	.15	4.89
Allerton	T	.05	.06	....	....	.05	..	....	....	....	....	....	.81	3.74	....	.42	..	.20	....	....	..	.76	....	.10	....	....	.43	....	..	....	....	6.62
Alta	.03	...	...	T	....	..	....	....	....	....	....	....	.23	1.89	....	.11	....	.55	....	.73	..	....	....	.41	....	.01	....	....	....	.24	.55	4.75
Alta [near]	.04		....	T	....	..	....	....			T	.16	.32	.43	....	.09	....	.18	..	.26	..	....	.23	....	..	....	....	....	....	.23	1.02	2.96
Alton	.04	.17	..	T	..	....	....	....	....	....	T	18	.79	.18	.	.60	T	T	....	....	1.42	.12	.13	....	.49	....	..	.09	....	....	.10	T	3.65
Amana		.18	....	..	.11	T	....	..	....	....	....	.07	.35	.20	.14	....	....	....	....	....	.12	.13	....	.49	....	..	.09	....	....	.10	T	1.96
Ames	....	.04	.04	....	....	....	....	....	..	....	....	....	.11	.02	.14	.07	....	.18	....	....	.09	.13	....	1.92	....	....	.02	....	....	....	.27	3.03
Atlantic	T	.83	....	....	T	T		....	....	....	....	1.22	....	.55	....	....	.92	.08	....	....	....	.74	.04	.09	....	T	.07	....	..	....	....	4.54
Audubon	....	.10	..	..	..	.01	....	....	....	....	....	..	.10	.13	....	.03	..	.50	T	..	.55	.08	.01	1.17	....	....	.04	....	....	....	....	2.72
Baxter	.04	.40	..	....	....	.27	....	....	....	....	....	....	.32	.10	1.40	....	....	....	....	....	.35	2.15	....	1.87	....	....	.15	....	....	.02	.15	7.22
Bedford	....	.53	..	....	....	.14	....	....	..	..	....	....	.48	....	....	....	....	.45	....	....	....	.75	....	.29	....	....	....	.	....	....	....	2.64
Belle Plaine	....	.10	....	....		.06	..	....	....	....	....	....	.80	....	.89	....	....	....	....	....	.04	.02	....	.20	....	....	.27	....	....	.28	....	2.66
Bonaparte	....	.82	.10	....	.20	T	....	....	....	....	.17	1.70		1.00	....	.02		....	.11	....	....	3.00	....	.75	....	....	.06	....	..	....	....	7.93
Boone	....	1.30	.05	....	....	....	....	....	..	....	....		.46	.04	.01	....	.96	1.38	....	....	.03	.14	....	1.42	....	..	.13	....	....	....	.53	6.45
Britt	..	.33	..	....	.09	....	....	....		....	....	.78	.13	.15	.55	.04	.	.14	.04	.	T	....	....	.63	....	.04		....	....	....	.04	2.96
Buckingham	.56	.06		..	....	....	....	....	....	....	....	.52	.84	.12	.13	..	....	T	.04	.	T	..	....	....	.12	....	T	.12	....	....	.25	T	2.72
Burlington	....	.35	.02	....	.20	.02	....	....	....	....	....	....	.73	.42	1.55	....	....	....	.10	..	....	2.40	....	.78	....	....	.04	....	....	....	..	6.61
Carroll	....	T	....	..	....	....	..	....	....	....	....	....	.50	T	.25	....	.06	.25	....	....	.20	.05	....	.13	....	....	....	....	....	....	.20	1.64
Cedar Rapids	....	1.33	.70	....	....	T	..	....	....	....	....	....	.19	.34	.02	T	....	....	....	....	T	.08	....	.06	.18	....	.08	.28	....	....	.22	3.48
Chariton	....	.40	T		T	T	....	....	....	....	....	....	1.65	2.00	T	.68	....	.10	....	....		1.10	....	.26	....	....	1.55	....	....	....	....	7.74
Charles City	.18	.18	T	T	....	....	T	T	....	....	....	1.32	1.02	.52	.04	....	....	.01	T	..	.16	....	.20	1.47	....	.05	.09	....	T	.22	T	5.46
Clarinda	....		.43	....	....	.18	....	....	....	..	....		.29	....	....	....	....	1.12	....	..	....	.59	....	.07	....	....	.29	....	....	....	....	2.97
Clear Lake	1.00	.20	T	..	....	....	....	....	....	....	....	.20	.50	.10	.25	..	....	T	.	....	T	....	....	.80	..	T	T	T	.05	.68	T	3.78
Clinton	....	.98	.26	...	.14	....		..	.23	....	....	.10	....	1.06	....	....	....	....	.46	....	.07	....	....	.76	....	.02	....	....	....	.03	....	4.11
College Springs		.64	....	....		.30	....	....	....	....	....	T		.46	....	....	....	.87	....	....	....	.06	....	....	....	....	.12	....	....	....	....	2.45
Columbus Junct'n	T	.20	.11	..	.14	....		....	....	..	....	T	.98	.10	.24	....	....	....	....	.	T	1.42	....	....	....	....	.15	.02	..	....	T	3.36
Corning	....	.89	....	..	....	....	.38	..	....	..	....	....	.44	.84	....	T	T	.83	....	....	....	.43	....	T	....	....	.48	....	....	....	....	4.29
Corydon	....	.22	.31	....	....	.07	....	....	....	....	....	....	.66	..	..	.50	....	.11	....	....	....	.64	....	.11	....	....	.19	..	....	....	..	2.81
Cres o	..	.03	....	....	.02	....	.21	.	.57	....		T	.83	.57	....	....	....	T	.02	....	T	....	T	.54	....	.02	.19	....	....	.12	.01	3.13
Creston	..	....	.30	....	..	T	....	....	..	..	....	....	.30	1.50	.10	T	.20	.54	.05	..	....	.70	....	.17	....	..	1.57	....	....	....	....	5.43
Cumberland	....	....	....	....	T	T	....	....	....	....	....	1.00	.32	....	....	T	....	.70	..	..	....	1.38	.01	.32	..	..	....	....	....	....	....	3.73
Davenport	..	.27	T	.01	.10	T	..	....	.11	....	....	....	.71	.03	..	..	....	.02	.01	....	.05	.22	....	.23	....	....	.17	....	....	T	T	1.93
Decorah	....	.02	.06	....	.32	....	T	.51	....	....	....	.29	.49	.60	....	....	....	....	....	T	....	....	.46	....	....	T	.32	....	T	....	T	3.07
Delaware	....	.25	....	....	.02	....	..	.12	....	..	....	.63	.80	27	....	....	....	....	....	....	.02	....	....	3.38	....	..	.04	....	..	....	....	5.53
Denison	....	....	....	..	....	....	....	T	..	..	....	....	.04	.10	....	.04	....	.40	....	....	.50	.03	T	..	....	....	....	....	....	.04	....	1.15
Des Moines	1.19	.18	....	....	....	.01	....	....	....	....	....	....	.73	T	T	.41	.10	.05	....	.16	.48	.78	.02	1.00	....	.10	T	....	....	T	T	5.21
De Soto	....	.62	....	....	....	.02	....	....	....	....	....	....	.72	.32	T	.69	..	.37			T	1.10	....	.55	..	..	.11	....	....	....	....	4.50
Dows	.22	1.59	.03	....	....	....	....	....	....	....	....	....	.03	1.49	.06	....	....	.13	.02	....	.04	..	....	....	..	.05	....	....	....	.10	.05	4.83
Dubuque	..	.16	.23	....	.26	....	....	.25	....	....	....	T	.74	.35	T	....	....	T	.04	....	T	....	.73	....	.19	.06	....	....	....	.05	.01	3.07
Earlham	....	T	.	....	..	.31	..	....	.	....	....	..	.82	.09	....	.58	....	.63	....	T	T	1.48	....	.36	....	....	....	....	....	....	....	4.27
Elkader	....	.07	....	....	.05	....	....	....	.45	....	....	....	....	1.00	....	....	....	....	....	....	....	....	....	.78	....	....	.28	....	....	.18	.02	2.83
Elliott	....	.38	T	.06	....	....	..	....	....	....	....	....	.05	.22	....	....	....	1.10	....	....	....	.75	....	.05	....	....	....	....	....	....	....	2.61
Estherville	...	1.10		....	.10	....	....	....	....	..	..	T	.77	.20	.83	T	...	T	.05		T	T	...	T	1.90	....	....	....	....	.10	....	5.05
Florence	.16	.70	....	....	....	....	....	....	....	....	....	..	.10	T	....	.12		.10		T	T	...	T	1.68	T	.20	....	....	....	.20	T	3.26
Forest City	....	.37	....	....	.05	....	..	T	....	....	....	T	.06	.87	.30	T	....	....	.20	....	....	....	....	.33	....	....	.24	....	....	....	....	2.42
Fort Dodge	....	2.30	T	....	....	....	....	....	....	....	....	....	.45	....	1.20	..	T	.18	.03	....	.09	....	....	3.10	....	....	T	....	....	....	.28	7.63
Fort Madison	....	2.03	T	.64	T	.	....	....	....	....	....	....	.15	.16	....	....	....	.03	....	....	....	1.42	....	.50	....	....	T	....	....	....	....	4 93
Galva	....	.05	..	....		....	....	....	....	....	....	....	.55	.48	....	.57	..	.33	....	....	50		....	.09	....	....	....	....	....	.17	1.05	3.79
Gilman	....	....	....	....	....	.15	....	....	....	....	....	....	.50	.10	T	....	....	T	..	..	.90	.	T	1.10	..	....	T	....	....	.30	.05	3.10
Glenwood	T	.75	....	....	....	..	.	....	....	....	....	....	T	.65	..	....	..	1.00	..	....	....	.75	..	....	....	....	....	....	....	....	....	3.15
Grand Meadow	....	.03	.50	....	.05	....	....	.12	.56	..	....	T	....	.82	..	....	..	....	..	....	.02	....	....	1.47	....	..	.32	....	....	.04	T	3.93
Greene	.25	.37	.02	....	....	....	....	....	....	....	....	.04	.68	.33	.27	....	....	.02		....	....	....	....	1.95	....	....	.15	....	....	.90	.03	5.01
Greenfield	..	.02	.03	....	T	T	....	..	....	....	....	..	1.08	.35	....	T	....	.92	.06	..	.10	.86	....	.21	....	....	.76	....	....	....	....	4.39
Grinnell [near]	.10	.42	....	....	....	T	....	....	....	....	....	....	.40	.32	.08	.17	....	T	..	....		1.28	....	2.35	....	..	.50	....	....	.05	.07	5.74
Grundy Center	.07	1.23	....	..	..	....	....	....	..	....	....	.14	.87	.03	....	....	....	....	....	..	.06	....	....	....	....	....	.12	....	....	.27	.02	2.81
Guthrie Center	....	.21	.04	....	..	.03	....	....	....	....	....	....	.34	.62	....	.04	....	.50	....	....	.75	.16	....	.49	..	....	.05	....	....	....	T	3.23
Hampton	.15	.05		....	....	....	....	....	....	....	....	T	.28	.40	.04	....	.10	....	.04	....	....	....	....	1.50	....	..	....	....	....	1.32	....	3.96
Hancock	.02	.04	T	....	....	T	....	....	....	....	....	T	.93	T	....	....	....	.88	....	....	....	.71	T	.16	..	....	.03	....	....	....	....	2.77
Hanlontown	.29	.06	....	....	.26	....	.02	....	....	....	....	.08	.56	.08	.10	....	....	.10	.04	....	....	....	....	.34	....	30	....	....	....	.12	.03	2.77
Harlan	.22	.07	T	...	T	T	..	T	....	....	....	T	.08	1.71	..	T	....	1.16	..	....	.01	1.35	T	.08	....	....	.08	..	....	....	T	2.39
Hopeville	....	.49	.02	....	....	T	..	....	....	....	....	....	.39	.63	....	.33	....	.32	....	....	....	.51	..	.14	....	....	.42	....	....	....	....	4.70
Humboldt	1.70	1.29	....	....	..	....	....	....	..	....	....	....	.10	....	....	.03	..	.18	.02	..	.04	....	....	2.05	....	..	....	....	....	.30	.30	3.25
Ida Grove	..	.04	....	....	....	....	....	....	....	....	....	....	.43	....	....	.80	.32	.04	....	.69	....	....	.05	....	....	....	....	....	....	23	....	6.01
Indianola	....	1.09	T	....	T	T	....	....	....	....	....	....	1.43	.07	.51	....	..	.06	T	..	.01	2.00	..	.70	....	....	.30	....	..	....	....	2.60
Inwood	....	.16	....		....	....	....	....	....	....	....	.37	.75	.64	...	.42	....	....	....	.37	....	....	....	....	....	T	....	....	....	....	.05	6.17
Iowa City	..	.32	....	T	.34	T	.01	....	....	..	....	T	.24	.48	.01	....	....	....	....	....	.03	.81	T	.12	.22	....	.04	..	..	..	T	2.76
Iowa Falls	....	.87	T	T	....	T	.	....	....	....	.	....	.24	.25	.03	.05	T	.09	T	T	T	....	.57	....	....	.04	....	....	....	....	.48	2.62
Keokuk	....	.30	.03	....	.38	T	..	....	....	....	....	....	.05	T	....	....	....	....	.02	....	.50	1.18	....	.66	....	....	.06	....	....	....	....	3.16
Keosauqua	....	.40	.12	....	T	T	....	....	....	....	....	.02	T	.20	.30	....	.07	T	.08	....	....	1.47	.30	.93	..	..	.03	....	....	....	....	3.92
Knoxville	T	.60	....	....	...	....	..	....	..	....	....	....	1.25	1.70	....	.55	....	.25	.55	....	.04	1.12	....	1.45	....	....	.30	..	....	....	....	7 81
Lacona	..	.48	..	..	...	....	....	....	....	....	....	....	2.75	.08	....	.80	....	....	....	....	.02	1.28	....	.82	....	....	.48	..	....	....	....	6.71
Larrabee	.05	.15	..	....	....	....	....	....	....	....	....	T	1.76	.65	..	.36	T	T	....	T	....	....	T	....	....	.05	....	....	....	.75	.16	3.93
Le Claire	...	.46	.02	....	.04	....	....	....	.60	....	..	....	....	.17	.02	....	....	....	.02	....	T	.17	.02	.04	.15	....	.15	T	....	....	....	1.86
Le Mars	.13	....	....	....	....	....	....	..	....	..	....	.93	....	.10	....	.33	T	....	....	....	.91	....	....	.08	....	.12	....	....	....	1.20	.08	3.88
Lenox	....	.75	.02	....	....	.07	....	....	....	....	....	....	.51	.77	....	T	....	.55	....	....	....	.49	....	.05	....	....	.52	....	....	....	....	3.53
Leon	....	.11	....	..	....	.11	..	....	....	T	.07	....	.36	2.10	....	.40	....	.26	....	....	....	.52	....	.15	....	....	.52	....	....	....	....	4.60
Little Sioux	.02	T	....	....	.01	..	....	..	....	....	....	....	....	.22	....	....	....	.69	....	....	....	.24	....	07	....	....	....	....	....	....	.05	1.30
Logan	.02		....	..	....	.03		..	....	.19	..	....	.01	....	....	....	..	1.00	..	....	....	.68	....	....	....	....	....	....	....	....	....	1.74
Maquoketa	....	.23	.	..	....	....	....	....	....	..	....	.08	T	1.66	.24	....	....	....	T	.05	T	.05	..	.12	.46	..	.05	.15	....	....	.04	3.32
Marshalltown	....	.34	.05	....	....	....	....	....	..	....	....	....		.58	.80	T	...	....	....	.07	....	.77	....	.28	....	....	.25	....	....	....	.07	3.21
Mason City	.12	.18	.20	....	T	T	....	....	....	....	....	....	1.20	.23	T	....	....	.10	....	....	.10	....	....	2.55	....	.27	....	....	....	.10	T	5.00
Massena	....	.03	..	....	T	T	.05	....	....	....	....	....	.43	.69	....	....	....	1.15	.25	....	....	.25	..	.23	....	..	.76	....	....	....	....	3.84
Montezuma	....	.10	.10	....	....	....	....	..	....	....	....	....	....	.40		..	....	....	....	....	....	2.85	....	1.75	....	....	....	....	....	....	....	5.20
Monticello	.2	....	....	....	....	....	....	....	....	....	....	....	1.75	....	....	....	....	....	....	T	T	....	....	1.30	....	....	.30	....	....	.20	....	3.75
Mount Ayr	....	.25	....	....	.04	.16	..	.	....	....	....	....	1.00	.65	....	.20	....	.55	....	....	....	.81	....	.16	....	....	1.05	..	..	....	....	4.87
Mt. Pleasant	..	.89	....	..	.06	.05	....	.04	....	....	.03	.39	.05	....	1.08	..	....	T	.02	....	....	1.79	....	1.70	....	....	....	....	....	....	....	6.10
Mt. Vernon	....	.52	....	..	....	....	....	....	....	....	....	.01	.70	.05	T	....	....	....	.01	..	.02	.07	....	.08	....	....	.10	....	....	....	....	1.56
Muscatine	T	.33	....	....	.30	....	T	....	....	....	....	..	.48	.70	.12	....	....	....	....	T	T	1.10	.20	.07	.02	....	.01	.03	....	....	T	3.36
Nevada	....	.34	.	....	....	....	....	....	....	....	..	.37	.20	.16	.40	....	..	....	....	....	.02	.25	....	1.16	..	.08	....	....	....	....	..	2.61
New Hampton	....	.26	....		....	....	.23	....	....	....	....	....	1.38	.75	....	..	....	....	....	....	.04	....	....	.70	....	.10	.17	....	.26	....	....	4.26
Newton	T	.85	....	....	....	T	....	....	..	..	....	....	.52	.16	.56	.05	....	....	....	....	....	.49	....	.0	....	..	1.34	....	....	....	.11	5.10
Northwood	.02	....	.03	....	....	....	....	....	....	....	....	.07	.87	.11	.38	....	...	.13	.04	....	.16	....	0	.7	..	.42	.03	....	....	....	....	2.97
Odebolt	.05	....	....	....	.	..	....	....	....	....	....	....	.29	.04	...	.40	....	.40	....	....	1.00	..	..	.04	....	....	....	....	..	.60	....	2.82
Ogden	.07	.29	....		....	..	....	....	....	....	....	T	.57	.03	.02	.65		.48	....	T	.20	.53	....	.64	..	..	....	....	....	....	.3	3 87
Olin	....	.66	....	....	.01	..	....	....	....	....	....	T	1.40	.40	....	....	....	.32	....	T	T	.0	....	....	..	....	.47	....	....	....	....	3.28
Omaha, Neb	.76	.32	....	T	T	.05	....	..	....	....	....	T	.31	.04	....	..	.55	.09	....	....	....	.91	T	T	..	....	....	....	....	....	....	3.03
Onawa	.04	..	....	T	T	.15	..	....	....	....	....	....	.65	.25	....	....	....	.55	....	....	.03	.05	.01	.1	....	....	....	....	....	.15	....	2.03
Osage	T	.21	....	....	.02	....	....	..	....	....	.	.03	.77	.15	.27	....	....	.03	.01	....	.07	....	....	1.02	....	.11	.14	....	....	....	T	2.83
Oskaloosa	.35	....	....	....	.06	T	..	....	....	....	....	....	.04	.45	....	.36	....	.05	....	....	.50	.75	....	.0	..	....	.22	....	..	....	....	3.80
Pacific Junction	.07	.62	...	....	....	.07	....	....	....	....	....	T	.10	.86	....	....	....	1.06	....	....	....	.66	..	.03	..	....	....	....	....	....	T	3 47
Perry	....	.44	....	....	....	T	....	....	..	....	....		.77	....	....	2.63	....	.43	....	T	.49	..	..	.25	....	....	T	....	....	.30	.05	5 80
Plover	1.70		.20	..	....	....	..	....	....	....	....	....	2.10	.13	.55	T	....	.22	....	T	T	....	....	2.75	....	....	....	....	....	.4	.36	8.47
Pocahontas	1.57	....	....	..	....	....	....	....	....	....	....	....	1.04	.06	.07	.28	.24	.	.04	....	.07	....	1.89	.	....	....	....	....	.41	....	.20	5.87
Red Oak	....	1.30	.11	....	T	.08	....	....	....	....	....	.04	T	.10	....	....	....	1.27	....	....	.	.90	....	....	....	....	.16	....	....	....	....	3.96

DAILY AND MONTHLY PRECIPITATION FOR AUGUST, 1905--CONTINUED.

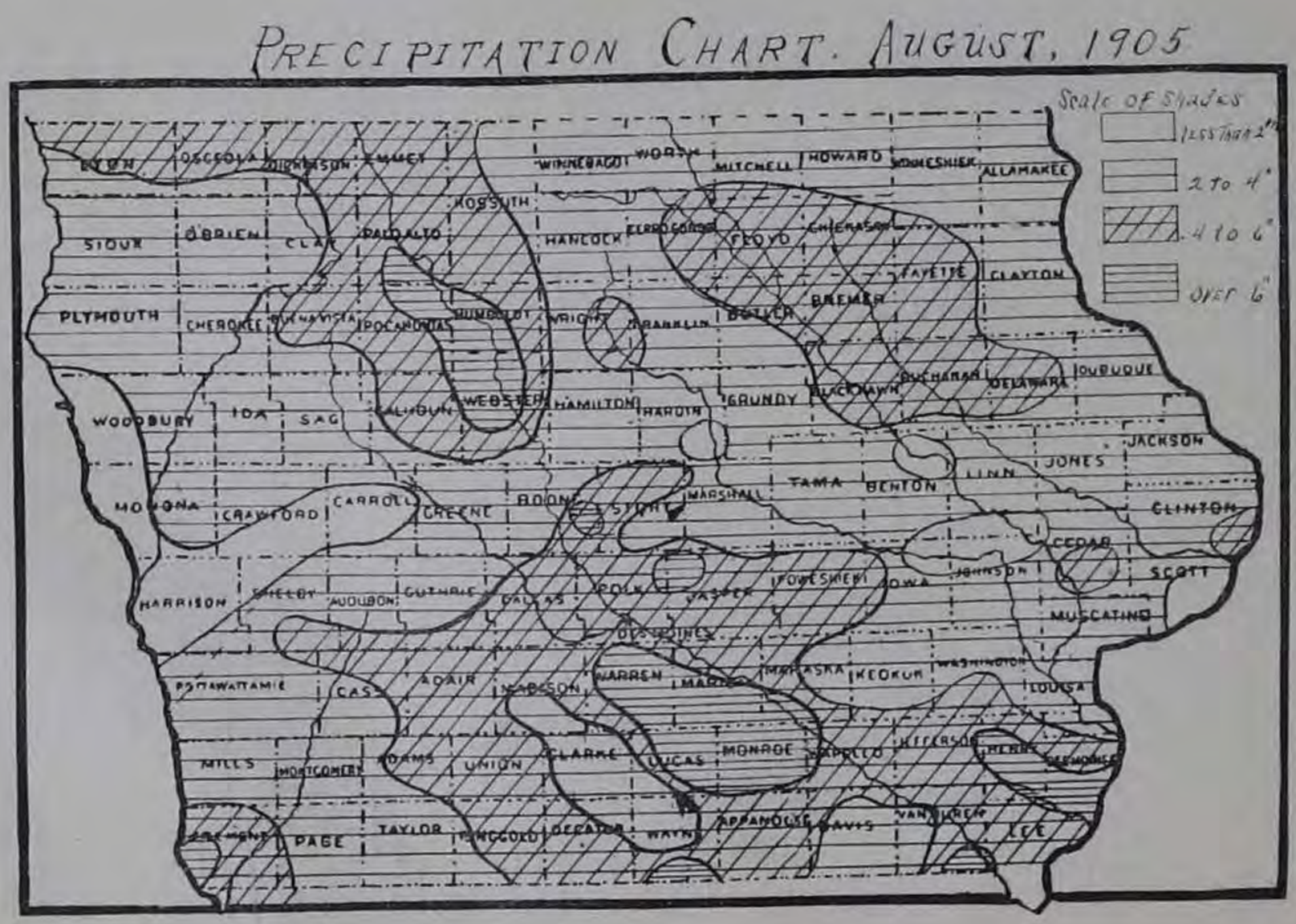
STATIONS.	DAY OF MONTH																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Ridgeway	...	.03	...	T	.04	....	.55	.54	....	....	....	....	1.10	.36	....	.01	....	....	.08	...	.02	....	.04	.53	....	.28	....	....	.04	...	.05	3.62
Rock Rapids	....	....	...	....	....	....	....	....	....	....	....	.50	1.10	1.70	....	1.00	T	....	T	...	....	...	1.30	.40	....	....	....	....	....	..	....	6.00
Rockwell City	.25	.65	...	....	....	....	....	....	....	....	....	....	.55	.15	....	.25	....	.30	...	.10	....	.25	....	.60	....	....	....	....	....	....	1.10	4.20
Sac City	T	.06	....	....	....	....	....	....	....	...	...	2.13	.10	....	....	.11	....	.16	....	..	.08	....	....	.09	...	....	....	....	....	.13	.60	3.46
St. Charles	...	.15	.11	....	....	T	...	....	....	....	....	....	.40	.12	....	.60	....	.21	.01	....	.26	1.60	....	.40	....	....	.18	....	....	....	..	4.04
Sheldon	.15	....	....	....	....	....	....	....	....	....	....	.01	.85	.60	T	.55	T	.05	....	.02	....	...	.90	....	....	....	....	....	....	T	.02	3.15
Sibley	....	.59	.08	....	....	....	...	....	....	....	....	....	1.56	.26	.66	.02	.59	.02	.02	....	....	....	....	.83	....	....	....	....	....	....	.05	4.68
Sidney	.01	1.13	....	....	....	.30	....	....	....	....	....	T	.04	.58	....	....	....	1.35	....	..	....	.75	...	.04	....	....	1.28	....	....	....	...	5.43
Sigourney	....	.60	....	....	.07	T	....	..	....	....	....	....	.40	.20	....	....	T	.01	.05	....	....	1.60	..	.90	....	....	.11	....	....	....	....	3.94
Sioux Center	.06	.07	....	.09	....	....	....	....	....	....	T	....	.71	.11	....	.82	T	....	....	.85	T	...	T	....	....	T	....	....	....	.05	....	2.76
Sioux City	T	T	...	T	T	....	....	T	....	....	....	T	.52	.17	....	T	.04	.02	....	.70	T	....	.06	...	T	.09	..	....	....	.24	...	1.84
Stockport	....	.27	.11	....	.28	T	....	....	....	....	.23	.75	.05	.45	....	.03	....	.01	....	....	....	2.86	....	.84	....	....	.06	....	....	....	....	5.44
Storm Lake	....	.08	...	....	....	....	....	....	....	....	....	....	.46	.12	.53	.03	.20	.16	.11	....	.12	..	...	.18	....	....	....	....	....	....	.68	2.67
Thurman	T	1.28	....	....	....	.23	....	....	....	....	....	T	T	.31	....	....	....	2.80	....	....	....	1.35	....	.03	....	....	1.65	....	....	....	....	7.60
Tipton	.74	....	....	....	.14	..	....	....	....	....	....	....	....	2.12	1.25	....	....	....	....	....	....	.22	...	....	....	....	....	....	....	.28	....	4.75
Toledo	....	.35	....	....	....	....	....	....	....	....	....	....	.90	.65	.30	....	....	....	....	....	.10	.25	...	....	....	....	.10	...	....	.30	.05	3.00
Vinton	...	....	....	....	....	.72	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.10	....	.13	....	....	....	....	....	....	....	.10	1.05
Washington	....	....	....	....	.05	....	....	....	....	....	....	.10	.65	.25	2.50	...	....	....	....	....	....	1.95	....	.08	....	....	T	....	....	....	....	5.58
Washta	T	.08	....	....	....	....	....	....	....	....	....	T	.03	.13	....	.40	....	.13	....	.88	.	....	....	.03	....	....	....	....	....	.55	....	2.23
Waterloo	....	.31	....	....	....	....	....	....	....	....	....	T	.11	1.15	.06	.41	....	T	T	....	.02	....	....	1.89	....	....	.15	....	....	.31	T	4 41
Waukee	....	1.17	....	....	....	.02	....	....	....	....	....	....	.52	.02		1 05	....	.25	....	....	.21	1.58	....	.45	....	....	.12	....	....	....	T	5 39
Waverly	.02	.19	.04	....	.01	....	....	....	....	....	....	.08	1.62	.58	55	....	....	.02	....	....	.06	....	....	1 52	....	....	.18	....	....	.65	.02	5.49
Webster City	1.27	.85	....	....	....	....	....	....	....	....	....	....	....	T	T	T	.25	....	....	....	.16	....	....	1.40	....	.27	....	....	....	T	.27	3.97
West Bend	1.98	....	T	...	....	....	....	....	....	....	....	.60	T	.10	.44	T	....	12	.06	....	T	....	....	1.80	....	T	....	....	....	.01	.22	5.83
Whitten	....	.51	....	....	....	T	....	....	....	....	....	...	.64	.05	.06	....	....	T	....	....	.10	...		.25	....	T	T	....	...	....	T	1.61
Wilton Junction	....	.31	T	..	.87	....	...	...	....	....	....	....	.98	.41	...	...	....	..	....	....	....	.74	....	.22	..	....	...	...	...	....	....	3.53
Winterset	...	.06	....	...	....	.04	....	....	....	....	....	....	.37	.68	....	.45	....	.42	.06	....	.24	1.04	....	.3	...	...	.10	....	....	...	....	3.84
Woodburn	....	....	.27	....	....	.03	....	....	....	....	...	....	....	1.00	....	.34	....	..	....	...	....	.90	....		....	....	.21	....	....	....	....	2.75
Zearing	.76	.37	.04	....	....	..	....		....	....	....	...	.05	.21	T	T	...	.06	....	....	.89	.05	....	1.60	...	....	.10	....	....	T	.19	4.52

T. Amount too small to measure.

A DESTRUCTIVE HAILSTORM.

On the evening of August 21st one of the most damaging hailstorms ever witnessed in Poweshiek county struck the town of Montezuma, says the *Grinnell Herald* of August 22d.

The storm came from the northwest and cut a clean swath about three miles wide and several miles long, stripping trees of leaves and bark, cutting off cornstalks and ruining the crops, de troying fruit, breaking window lights and splitting shingles and weather boarding. The hail was accompanied by a high wind. At Ewart where but little hail fell the corn was blown to the northeast while at Montezuma the wind blew toward the southeast. The hailstones were very large ranging from the size of a walnut to the size of the fist. The *Republican* office at Montezuma presented a broadside to the storm and suffered greatly thereby, having all its north window lights demolished and being deluged with rain. The lights on the north side of churches, schoolhouses, masonic hall and court house as well as those of dwelling houses were smashed during the terrific bombardment. The high school building lost fifty-six lights, Garfield school twenty. All the lights on the north side of every church in town were broken and about three-fourths of the lights on the north side of residences. It is reported that corn crops in the path on the storm were completely destroyed. The hailstorm lasted about fifteen minutes and rain fell in torrents accompanied by high wind and blinding lighting which did a great deal of damage, setting fire to barns and killing stock.



SEPTEMBER, 1905 No. 9



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CENTRAL STATION, DES MOINES, IOWA.

J. R. SAGE,
DIRECTOR.

GEO. M. CHAPPEL,
LOCAL FORECASTER,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

THE IOWA WEATHER AND CROP SERVICE

WAS ESTABLISHED BY ACT OF THE TWENTY-THIRD GENERAL ASSEMBLY, AND IS UNDER SUPERVISION OF THE

STATE BOARD OF AGRICULTURE,

CONSTITUTED AS FOLLOWS:

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Tenth District—O. A. OLSON, Forest City.
Eleventh District—H. L. PIKE, Whiting.

METEOROLOGICAL STATIONS AND OBSERVERS.

From the following, weekly and monthly reports of Metorological data are received by the Iowa Weather and Crop Service.

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Algona	Dr. F. T. Seeley
Allerton	Rex Shriver
Alta	D. E. Hadden
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Alton	W. S. Slagle
Amana	Conrad Schadt
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Delaware	Wm. Ball
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De Soto	R. D. Minard
Dows	H. A. Flett
Dubuque	*Orin Parker
Earlham, R. F. D.	Geo. Phillips
Elkader	Chas. Reinecke
Elliott	Henry Barnes
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Fayette	R. Z. Latimer
Florence (Clarion P. O.)	H. Du Bois
Forest City	J. A. Peters
Fort Dodge	Tobin College
Ft. Madison	Miss L. A. McCready
Galva	F. H. Schleiter
Gilman	Jas. L. Wylie
Glenwood	J. P. Jackson
Grand Meadow (Postville P.O.)	F. L. Williams
Greene	J. L. Cole
Greenfield	J. G. Culver
Grinnell	Prof. J. S. Buck
Grinnell (near)	A. O. Price
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Guthrie Center	D. G. Beardsley
Hampton	E. C. Grenelle
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Harlan	C. A. Reynolds
Hopeville	M. T. Ashley
Humboldt	H. S. Wells
Ida Grove	J. E. Conn
Independence	E. F. Wulfke
Indianola	Prof. J. L. Tilton
Inwood	Geo. M. Larsen
Iowa City	Prof. A. A. Veblen
Iowa Falls	J. B. Parmelee
Jefferson	G. W. Day
Keokuk	*Fred Z. Gosewisch
Keosauqua	Prof. J. A. Landes
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Lenox	J. L. Hurley
Le Mars	Dr. T. E. Cole
Leon	Millard F. Stookey
Little Sioux	G. H. Gibson
Logan	Glenn H. Stern
Maquoketa	Frank W. Keeney
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Perry	J. A. Harvey
Plover	J. S Smith
Pocahontas	F. E. Hronek
Red Oak	G. W. Holt
Ridgeway	Arthur Betts
Rock Rapids	W. C. Wyckoff
Rockwell City	C. M. Randall
Sac City	Frank Stouffer
St. Charles	C. W. Minard
Sheldon	Dr. A. W. Beach
Sibley	H. G. Doolittle
Sidney	A. P. Speers
Sigourney	J. T. Parker
Sioux Center	Jacob de Ruyter
Sioux City	*C. D. Reed
Spirit Lake	W. C. Drummond
Stockport	C. L. Beswick
Storm Lake	L. E. Burdick
Stuart	Hon. John Herriott
Thurman	C. R. Paul
Tipton	F. K. Gregg
Toledo	Herbert Giger
Vinton	H. G. Haines
Wapello	Geo. W. Schofield
Washington	Wm. A. Cook
Washta	H L. Felter
Waterloo	M. L. Newton
Waukee	E. J. Leonard
Waverly	H. S. Hoover
Webster City	C. D. Carpenter
Whitten	Dr. Frank P. Butler
Wilton Junction	J. M. Rider
Winterset	B. L. Sprinkle
West Bend	Phil Dorweiler
Woodburn	C. B. McDonough
Zearing	C. P. Bean

*U. S. Weather Bureau.

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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XVI. SEPTEMBER, 1905. No. 9.

SEPTEMBER WEATHER AND CROPS.

September was about two degrees above normal in daily average temperature, with a small excess of the mean rainfall. The warmest and brightest period of the month was the last decade, and the coldest period was from the 1st to the 9th. The heaviest rainfall for the state occurred in the second decade, from about the 12th to the 18th. The distribution of rainfall was quite unequal, the heaviest downpours occurring in the southwestern half of the state, dividing by a diagonal line from Lyon to Lee county. In portions of the area of greatest precipitation the excess was somewhat detrimental to crops, and especially damaging to wheat and oats in the fields put up in shocks awaiting favorable conditions for thrashing. The heaviest losses of the season resulted from the prevalent method of thrashing from the shock instead of the stack or barn. As a result, much of the excellent crop of small grain produced this year has been badly discolored and reduced below the standard grades in the markets. During the stormy period, about the 17th to the 19th, severe windstorms swept over considerable areas in all districts, aggregating probably about one-third of the state. Corn was prostrated to an unusual extent, and much of it failed to regain its standing position on account of great weight of ears and stalks. The damage and consequent reduction in quality and amount of the output can not be estimated prior to the harvest, but it is certain that a material loss resulted from that cause. The extraordinary weather of the last twelve days was of inestimable value to the state, bringing to maturity the belated portion of the corn crop and affording ideal conditions for cutting fodder, thrashing grain, putting up the second crop of clover, aftermath and wild hay, fall plowing, etc. At the close of the month practically 98 per cent of corn was well matured, and most of that which was planted about the middle of June was made sound and merchantable. Altogether September was a month to be remembered for its abundant sunshine and generally beneficient conditions, serving as a fitting crown of a most bountiful season.

NOTES AND COMMENTS.

According to a bulletin issued by the Iowa Highway Commission, this state has in rounds numbers about 100,000 miles of country roads. Of this mileage about 25,000 miles should be classed as main traveled roads. When these main traveled highways are made solid and reliable at all times of the year, they will constitute such a network that no farmer will be far from a good road. The business of the State Commission is to devise and adopt plans and systems of highway construction and maintenance, and disseminate information to all officers whose duties are in anyway related to that line of public service.

About 800,000 acres of land in Iowa is dedicated to public use in the highways, exclusive of the large acreage in the streets of the cities and towns. The country roads, and many of the streets in towns, afford fertile breeding ground for all kinds of pestiferous weeds. One of the good roads problems awaiting solution is how to abate the weed nuisance and make roads pleasant to the eye as well as passable for travel.

In the building of culverts and bridges and the digging of ditches reference must always be had to the maximum amount of water which they may be called upon to handle. It is the extraordinary and not the average rainfall which wrecks these structures and determines the water carrying capacity of the ditch. We recall the case of the man who undertook to drain and reclaim a small lake bed. He carefully figured out the average rainfall and the area of the watershed tributary to the lake and made out that a ditch of a certain size would easily carry off all the water. He drained the lake bed and had it all in crops, when one day along in June came a cloudburst, a rainfall of ten inches inside of six hours, which covered his crops with six feet of water, his ditch not being one-half large enough to handle such a volume of water, so when it did finally dispose of the water the crops were all ruined.—*J. S. Trigg*.

The present season affords, in the west at least, a remarkable object lesson in the value of tile drainage for wet farms. Side by side may be seen cornfields, the one on well drained land, the other taking its chance with the soil undrained, the one burdened with a magnificent crop, the other yellow and spindly, promising no satisfactory return whatever. The difference in the value of these two crops just about represents the cost of tile draining the land. It is almost needless to say that no business is being so overworked in that territory as the tile factories.—*J. S. Trigg*.

There are few bureaus in the United States Department of Agriculture that are more worthy of commendation than the climate and crop service as it has been instituted in every state in the Union. Not only are these weekly reports of interest, but they may be made of great value to both the producer and the consumer. Either can regulate their sales and purchases in a considerable measure by conditions of weather and crops as regularly recorded by the various bureaus working in conjunction with the Department of Agriculture.—*Prairie Farmer*.

Dr. Sohn said recently: "The climatic conditions in Greenland above the Artic circle are ideal. Even at our best consumption resorts in this country the patient has good days and bad nights. He can not go out in the damp air, and ordinarily

he loses at night what he has gained during the day. The secret of the outdoor treatment for this disease is abundant sunlight and dry, cold, bracing atmosphere. In the Artic regions in summer there is a period of three months of never-ceasing sunlight every hour in the twenty-four. Think of the effect of a continuous sun-bath of fourteen weeks. I have made numerous bacteriological cultures in Greenland, and have never found a disease germ. Such germs can not exist in that climate, as their propagation depends upon a temperature almost as high as that of the human body."

Hon. John Cownie, who is one of the best agricultural writers in the state, wants the farmers to get their seed corn in before any heavy frosts come, not later than the middle of October. He wants the best ears selected. He wants the ears put in crates, or swung over a beam in order that they may be thoroughly dried. He wants the corn kept during the winter months where it will not be exposed to zero temperature, some place where it will have a very even temperature, where dampness can not reach it and where rats and mice do not enter and destroy. Presumably he prefers the attic over a farmer's kitchen. In the spring he wants only the best kernels of each ear taken and planted, none of the kernels that grow at the tip or the butt of the ear.

If all this advice is followed and the corn is planted early, Mr. Cownie will guarantee 100 per cent corn in every field in the state. Mr. Cownie's advice is so direct and it is so easily followed that it is to be hoped the farmers generally will make use of it.—*Cedar Rapids Republican.*

THE NINE-LIVED CORN.

[*"Frolic of the Types," Council Bluffs Nonpareil.*]

The corn was killed in early May,
The floods had washed it quite away.

And later on it died again
And rotted 'neath the constant rain.

Once more we tolled its final knell;
The seed had not been tested well.

Yet, later, it began to sprout,
Then died. The weeds had run it out.

And later yet, still thin and pale,
It perished in a storm of hail.

Then came a fierce and burning heat,
It died that week of "fired" feet.

And then the awful smut arrived
And not a single stalk survived.

And soon we watched it in dismay,
Dry up and shrivel quite away.

Then came the last and saddest death;
It wilted 'neath the frost king's breath.

Nine times it died; and yet that fall,
We built new cribs to hold it all.

Now tell me, is there any cat
With lives enough to equal that?

ANOTHER RAIN MEDICINE MAN.

A correspondent of the Kansas City Star, writing from Topeka, Kansas, August 11th, said: There was an echo of the days when Kansas indulged seriously in the business of rainmaking in the mail of the secretary of state today. It was a letter from a Missourian who asked for the privilege of "showing" Kansas how to make rain. The Missourian is Allen Dorman, "president of the Continental Rainmaking company," of Clinton, Missouri. In a letter to the secretary of state, Prof. Dorman declared that he could come to Kansas and produce rain at any time and asked for orders. In his statement to the Kansas official, Dorman says:

"Rainmaking is a science. Oxygen is a poor conductor and bears the mineral molecules in their detached form that bridles the cloud with their electricity when it is far off. The mineral molecules are not oxidized; some may be borne far away on their mission of good. The Mississippi valley has been helped a billion dollars. Clinton, Mo., has been helped. Science has done the work. I have a drought formula."

"Boom, boom, boom! hear the cannon boom. A rain will surely come. A much needed rain is coming if science can induce nature to turn loose her moisture. The cannon booms and throws chemicals above the ground current to form new raindrops and prepare the chemical blue of the sky for rain. Science is advancing with leaps and bounds, but to help nature and to cope with its extensive meteorological conditions a purse of $500 may be required. Boards of trade and cities are expected to arrange lodging, location, cannon, etc., to save time and expense. Please state size of cannon caliber for chemical packages."

Mr. Dorman then proceeds to tell the secretary of state that he is the inventor of countless things of benefit to mankind. In his list of patents are "break hens from setting," "tooth powder," "to break new shoes," "home-made lye," "pie pan plates," etc.

Kansas ceased depending on artificial means for rain fifteen years ago. The state has suffered to such an extent from excessive moisture this year that a rainmaker would receive a scant welcome here.

LIGHTNING RODS UP TO DATE.

[The Literary Digest.]

The matter of protection from lightning, in the light of the most recent statistics, observations and experiments, is taken up in the report of a committee appointed in 1904 by the Royal Institute of British Architects. The conclusion of this body, which included several well-known scientific men and engineers, tend to modify in important directions the report published by the Lightning Rod Conference of Great Britain in 1882, which laid down what have since been considered the standard rules on the subject. The gist of these was that buildings should be protected by copper-strip conductors well grounded at the bottom and sharply pointed near the top. While the observance of this method doubtless saved many buildings, there has been a general feeling that it did not go thoroughly enough into the matter, and the present investigation, which covers the years 1901–04, is the result. The conclusions are thus stated editorially in *The Electrical World and Engineer* (New York):

"As the result of the investigation, and of experimental researches conducted since the lightning-rod conference report of 1882, the whole theory of lightning protection has been modified. The old idea was to erect perpendicular conductors from good ground to the top of the building. If there are several high points on the building, erect a perpendicular to each. It was supposed that a vertical rod exercised a protecting range of influence for a radial distance equal to its own height. These notions are abandoned. It is now supposed that lightning flashes are of two distinct characters, or, as described in the report, there are A flashes and B flashes. The vertical conductor is all right for the A flash, but for the B flash it may be of no use. There is thus always the comforting reflection left open to the owner of a lightning-struck rodded building that he suffered from a B flash. In brief, an A flash is a direct or main discharge between cloud and ground, while a B flash is a side discharge between one cloud and ground precipitated as the immediate consequence of a main flash between two opposed clouds. The only complete protection against a B flash is to construct a bird cage of metal around the building and to

ground the bird cage. This is almost precisely the construction followed in a modern skyscraper or tall office building, except that occasionally the steel structure is not thoroughly grounded. It is noticed in the report that these tall steel structures appear to be immune. Those who work inside modern tall office buildings during thunderstorms ought to lay this consolation to their souls: that they are rendered as nearly immune to lightning as modern science can devise. A flashes and B flashes may jump about and envelop them, but persons who are well inside the metal bird cage may consider themselves safe."

The new report, departing from the old, no longer recommends to gild, platinize, or electroplate the points near the top of a rod, and it restores iron conductors to confidence, preferring them to copper (except on the score of permanence) because of larger inductance, which in the old days was held in horror. Finally, the new report advises that two rods should be provided on each tower or high part of a building, one on each side. The writer concludes:

"Horizontal conductors should interconnect all vertical rods at the roof-ridge level, and also at the ground level. This works in the direction of the bird cage theory. All large masses of metal, in or on the building, should be grounded as directly as possible. Gas pipes should be kept away from lightning conductors. Steel pipe grounds are recommended, terminating below in packed charcoal and kept moist by rain-flow above. There can be no doubt that the new report is a great improvement over the earlier one, and property owners all over the world owe thanks to the committee for its labors. All nations have taxes and lightning damages in common."

CLIMATOLOGY OF THE MONTH OF SEPTEMBER, 1905.

BAROMETER.—Mean pressure, 29.99 inches; highest observed, 30.35 inches, at Dubuque, on the 13th; lowest observed, 29.50 inches, at Charles City, on the 18th; range for state, 0.85 of an inch.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 124 stations, was 65.8°, which is 2° above normal. By sections the mean temperatures were as follows: Northern section, 64.2°, which is 1.9° above normal; central section, 65.8° degrees, which is 2.5° above normal; southern section, 67.3°, which is 1.5° above normal. The highest monthly mean was 69.2°, at Red Oak; lowest monthly mean, 62°, at Hanlontown. The highest temperature reported was 96°, at Mount Ayr and Ottumwa, on the 1st; lowest temperature reported, 36° at Washta, on the 4th. The average monthly maximum was 88.0°; average monthly minimum, 44.0°. Greatest daily range, 48°, at Massena; average of greatest daily ranges, 34.1°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 130 stations, was 3.81 inches, which is .50 of an inch above normal. The averages by sections were as follows: Northern section, 3.23 inches, which is .16 of an inch below normal; central section, 3.08 inches, which is .17 of an inch below normal; southern section, 5.11 inches, which is 1.81 inches above normal. The largest amount reported was 13.18 inches at Thurman; least amount reported, .50 of an inch, at Clear Lake. The greatest daily rainfall reported was 6.10 inches at Alta on the 18th. Average number of days on which .01 of an inch or more was reported, 8.

WIND AND WEATHER.—Prevailing direction of the wind, southeast; highest velocity reported, 50 miles per hour, from the southeast, at Sioux City, on the 15th. Average number of clear days, 14; partly cloudy, 8; cloudy, 8.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Charles City	29.99	30.31	13	29.50	18
Davenport	30.00	30.26	13	29.63	18
Des Moines	30.00	30.27	8	29.55	18
Dubuque	30.01	30.35	13	29.59	18
Omaha, Neb	29.97	30.23	4	29.55	17
Keokuk	30.00	30.23	23	29.65	18
Sioux City	29.25	30.23	4	29.51	18
Means	29.99	30.35	13	29.50	13

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Charles City	4491	25	SE	30
Davenport	4766	38	NW	1
Des Moines	5088	37	SW	18
Dubuque	4219	23	S	18
Keokuk	4722	36	W	15
La Crosse, Wis	4721	21	S	26
Omaha, Neb	5324	54	NE	15
Sioux City	8407	50	SE	15

CLIMATOLOGICAL DATA FOR SEPTEMBER, 1905.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	64.0	† 1.5	84	27	42	23	32	1.61	- 1.55	.55	....	7	15	6	9	SE	
Alta	Buena Vista	1,513	14	64.1	† 0.9	84	11,27,28	44	4	35	7.66	† 4.99	6.10	....	7	13	11	6	S	
Alta (near)	Buena Vista	.....	.....	.....	.....	.....	.....	.....	.....	.....	7.29	.....	5.35	....	8	.....	.....	.....	.....	
Alton	Sioux	.....	...	64.6	.....	85	11	42	23	33	5.20	.....	2.31	....	7	15	9	6	SE	
Britt	Hancock	1,236	8	63.5	† 1.9	85	11,27	40	23	36	1.49	- 2.56	.67	....	8	8	19	3	SW	
Charles City	Floyd	1,015	18	62.8	- 1.3	85	27	41	23	36	2.00	- 1.19	.78	....	12	12	8	10	SE	
Clear Lake (a)	Cerro Gordo	1,241	7	62.8	† 1.2	82	28	47	13,25	26	.50	- 3.08	.50	....	1	.....	.....	.....	SE	
Cresco	Howard	.....	31	63.3	† 1.7	82	27,28	43	14	30	1.45	- 2.24	.55	....	9	14	9	7	SE	
Decorah	Winneshiek	857	12	64.5	† 2.6	83	27,29	42	23	31	1.91	- 1.54	.94	....	5	.....	.....	.....	.....	
Dows	Wright	1,142	9	63.9	† 2.3	86	27	40	23	35	1.36	- 2.41	.47	....	9	14	9	7	SE	
Elkader	Clayton	727	21	66.5	† 4.5	90	27	39	23	40	3.07	- .75	1.66	....	6	17	9	4	SE	
Estherville (a)	Emmet	1,298	12	62.8	† 1.9	85	11	42	5,6	38	5.68	† 2.58	2.60	....	8	17	0	13	SE, NW	
Fayette ‡	Fayette	.....	15	63.7	† 1.2	87	27	37	23	38	3.58	† .62	2.60	....	8	15	7	8	SW	
Florence	Wright	1,220	..	.....	.....	.....	.....	.....	.....	.....	1.57	.....	.42	....	6	2	24	4	S	
Forest City (a)	Winnebago	1,226	11	63.6	† 1.3	88	27,28	42	23	36	1.98	- 1.84	.45	....	7	16	1	13	SW	
Grand Meadow	Clayton	1,180	11	64.2	† 2.5	93	29	45	23,25	27	3.36	† .19	2.65	....	6	11	8	11	SE	
Greene	Butler	924	8	64.0	- 0.1	86	27	42	23	37	1.68	- 1.66	.50	....	9	8	10	12	E	
Hampton	Franklin	1,155	13	65.8	† 3.5	91	27	45	23	36	2.57	- .93	.65	....	8	9	18	3	SE	
Hanlontown	Worth	.....	...	62.0	.....	84	11,28	38	23	38	1.54	.....	.34	....	9	17	4	9	SE	
Humboldt	Humboldt	1,095	16	64.2	† 1.9	84	27	43	23	30	1.84	- 1.60	.98	....	7	16	4	10	SE	
Inwood	Lyon	.....	...	64.7	.....	89	11	39	4	40	4.42	.....	2.00	....	5	22	0	8	S, SE	
Larrabee (a)	Cherokee	1,266	12	64.9	† 1.8	85	14,27	42	4	35	7.41	† 4.53	5.50	....	8	14	10	6	S	
LeMars	Plymouth	1,224	7	64.8	† 1.9	85	1,11	41	4	32	8.31	† 5.12	3.55	....	8	14	9	7	S	
Mason City	Cerro Gordo	1,132	8	64.0	† 1.0	85	27	44	23	33	1.00	- .85	.35	....	6	10	12	8	SE	
Northwood	Worth	1,222	8	63.3	† 3.0	84	28	42	23	33	1.89	- 1.60	.75	....	11	15	9	6	SW	
Osage	Mitchell	1,184	13	63.4	† 4.0	85	27	43	23	35	1.53	- 1.97	.50	....	9	12	7	11	S	
Plover	Pocahontas	.....	8	63.6	† 0.2	85	14	46	2,4	29	.....	.....	.....	....	....	20	8	2	S	
Pocahontas	Pocahontas	1,190	..	64.6	..	85	11,26,27	45	4,23	33	3.25	.....	.85	....	7	14	6	10	SE, S	
Ridgeway	Winneshiek	1,215	7	66.4	† 4.2	91	30	45	25	33	2.02	- 2.11	.88	....	14	13	12	5	S	
Rock Rapids	Lyons	1,021	...	67.8	† 4.8	88	26,28	38	3	35	2.73	† .43	.80	....	5	.....	.....	.....	S	
Sheldon	O'Brien	1,422	6	65.7	† 3.3	88	11	42	4	38	4.36	† .27	1.80	....	8	17	7	6	S	
Sibley	Osceola	1,212	12	62.6	† 1.4	86	11	43	5,13,20	38	4.07	† .91	1.69	....	10	18	0	12	SE	
Sioux Center	Sioux	.....	6	63.9	† 3.2	86	11	42	4	33	4.47	† .09	1.10	....	9	16	7	7	S	
Spirit Lake	Dickinson	1,458	..	65.2	† 1.2	93	21	44	5	47	3.15	- 2.56	1.00	....	8	11	10	9	S	
Storm Lake	Buena Vista	1,440	8	63.4	- 0.1	85	27	44	23	33	3.95	† .93	2.10	....	6	16	1	13	NE, SE	
Washta	Cherokee	1,157	....	65.2	.....	89	27	36	4	40	5.51	† 1.60	3.88	....	5	18	6	6	S	
Waverly	Bremer	942	9	64.2	† 1.7	87	27	42	23	33	1.73	- 1.47	.70	....	10	11	12	7	.....	
West Bend	Palo Alto	1,197	12	63.4	† 2.6	83	27	43	5	30	2.65	- .53	.58	....	8	10	11	9	S	
Average	.....	.....	....	64.2	† 1.9	85.9	.....	42.2	.....	34.4	3.23	- .16	.....	....	8	14	8	8	SE	

CENTRAL SECTION.

Altoona	Polk	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	...	...	...	...	.....	
Amana	Iowa	721	27	66.4	† 3.7	90	1	45	23	34	1.84	-1.52	.70	....	6	12	5	13	SE	
Ames	Story	926	21	65.7	† 2.3	88	27	43	23	34	2.96	- .57	1.20	....	9	13	13	4	SW	
Audubon	Audubon	1,301	9	65.5	† 2.1	87	27	41	23	41	4.50	†1.44	1.31	....	12	9	12	9	SE	
Baxter	Jasper	998	....	66.5	† 4.1	86	27	44	23	33	2.81	- .30	1.32	....	5	12	3	15	SE	
Belle Plaine	Benton	826	14	65.2	† 1.5	88	1	43	23	33	3.05	† .15	1.00	....	9	9	9	12	SE	
Boone (a)	Boone	....	....	65.2	.....	87	28	47	23	34	2.91	.....	1.24	..	7	16	7	7	SE	
Buckingham	Iowa	.....	....	.....	.....	.....	.....	.....	.....	.....	3.37	† .48	2.29	....	5	10	16	4	.....	
Carroll	Carroll	1,265	13	64.2	† 1.1	85	27	42	23	33	2.51	- .61	.90	....	7	17	0	13	.....	
Cedar Rapids	Linn	733	23	66.6	† 3.0	92	1	46	23	40	1.50	-1.39	.74	..	7	11	10	9	SE	
Clinton	Clinton	609	38	65.8	† 2.7	91	1	41	5	35	3.81	† .71	3.04	....	6	9	14	7	S	
Davenport	Scott	606	34	67.9	† 3.2	92	1	50	25	32	3.48	† .30	2.72	....	7	11	9	10	E	
Delaware	Delaware	1,083	12	64.2	† 2.8	85	1	44	20,25	32	2.62	- .62	1.16	....	5	13	11	6	SE	
Denison ‡	Crawford	1,180	9	66.0	† 2.6	89	27	41	4,23	35	2.96	- .25	.95	....	7	20	3	7	S	
Des Moines	Polk	861	27	67.3	† 3.2	88	27	50	23	31	3.47	† .27	.81	....	10	12	9	9	S	
De Soto	Dallas	866	...	67.4	.....	89	27	46	23	34	3.03	.....	.98	....	6	20	4	6	SE	
Dubuque	Dubuque	655	32	67.0	† 3.8	87	27	49	23	29	1.25	-2.84	.57	....	6	11	11	8	SW	
Fort Dodge	Webster	1,126	....	63.8	.....	86	27,28	44	23,24	35	2.54	.....	1.45	..	10	17	3	10	S	
Galva	Ida	1,290	12	64.0	- 0.5	84	27	42	4	34	4.70	† .70	2.35	....	7	17	1	12	S	
Gilman	Marshall	1,052	....	.....	.....	.....	.....	.....	.....	.....	3.52	† .89	.98	....	5	12	10	8	S	
Grinnell	Poweshiek	1,023	10	66.2	† 2.8	90	1	45	23	34	2.07	- .39	.85	....	5	11	9	10	SW	
Grundy Center	Grundy	2,976	12	65.6	† 2.7	87	27	42	23	34	1.54	-1.78	.48	....	7	12	9	9	SE	
Guthrie Center	Guthrie	1,077	7	66.0	† 2.5	85	27	43	23	30	3.68	† .22	.85	..	7	21	3	6	SW	
Harlan	Shelby	1,192	....	65.6	† 3.5	85	27	41	4	31	3.54	- .46	1.01	....	8	10	13	7	S	
Ida Grove	Ida	1,220		62.3	.....	83	11	38	5	31	2.73	.....	1.10	....	4	23	3	4	SW	
Iowa City (a)	Johnson	683	47	66.0	† 2.6	91	1	.....	.....	.....	1.54	-2.29	.77	....	7	5	11	14	N	
Iowa Falls	Hardin	1,170	10	63.4	† 1.8	85	27	40	23	36	2.81	- .51	1.74	....	7	14	4	12	SE	
Jefferson (f)	Greene	.....	....	66.6	...	88	26,27	45	4	31	4.40	.....	1.64	....	6	.....	.....	.....	SE	
Le Claire	Scott	576	....	.....	.....	.....	.....	.....	.....	.....	3.11	.....	2.70	..	5	.....	.....	.....	S	
Little Sioux	Harrison	.....	.....	68.6	.....	88	27,28	44	4	33	4.64	.....	.93	....	9	15	8	7	SE	
Logan	Harrison	928	36	67.0	† 3.0	86	27	40	4	35	6.52	†3.41	1.71	....	6	10	16	4	SE, SW	
Maquoketa	Jackson	688	12	64.6	† 0.8	90	1,27	39	23	42	2.82	- .39	1.20	...	8	16	5	9	SW	
Marshalltown	Marshall	947	10	66.0	† 1.8	90	27	42	23	43	8.34	† .67	1.48	....	12	10	6	14	SE	
Monticello	Jones	925	....	64.0	† 2.4	87	1	40	22	41	2.64	-1.05	1.12	....	6	14	7	9	SE	
Mount Vernon	Linn	847	30	66.4	† 4.7	91	1	45	20,23	37	1.32	-1.49	.80	....	6	11	12	7	NW	
Muscatine	Muscatine	.....	46								1.33	-2.39	.38	....	7	.....	.....	.....	S	
Newton	Jasper	944	15	65.2	† 2.3	86	1	48	23	32	3.47	† .24	1.66	....	5	15	7	8	S	
Odebolt	Sac	1,356	8	65.1	† 2.0	85	29	44	4	30	4.69	†1.54	1.92	....	7	17	5	8	.....	
Ogden	Boone	1,058	9	66.4	† 1.7	88	11	46	23	34	2.38	-1.42	.77	....	8	12	5	13	SE	
Olin	Jones	760	7	65.8	† 4.3	89	1	43	20,23	33	2.30	-1.08	.82	....	4	13	12	5	SW	
Perry (c)	Dallas	975	....	66.2	.....	86	27	45	23	31	2.40	.....	1.20	....	5	....	....	..	.....	
Onawa	Monona	.....	....	68.2	† 4.1	89	28	44	4	38	5.23	†2.46	2.10	....	11	19	2	9	SE	
Rockwell City	Calhoun	.....	8	65.3	† 1.1	88	28	43	23	34	2.70	- .37	.60	....	7	17	2	11	.....	
Sac City	Sac	1,278	23	64.4	† 2.8	84	27	43	23	33	2.37	- .92	.50	....	6	22	4	4	SE	
Sioux City	Woodbury	1,165	16	65.7	† 0.5	87	11	44	4	33	6.37	†4.28	4.29	....	9	13	5	12	SE	
Tipton	Cedar	807		68.6	† 3.9	92	1	49	20,26	31	2.06	-1.13	1.02	..	3	19	7	4	SE	
Toledo (a)	Tama	856	9	66.1	† 2.0	88	1,27	42	23	36	4.00	† .89	1.70	....	9	14	7	9	.....	
Vinton (a)	Benton	810	15	65.8	† 3.0	89	29	42	23	34	2.08	- .71	1.10	....	7	....	....	..	S	
Waterloo	Black Hawk	862	16	65.4	† 3.0	89	27	42	23	37	2.99	- .50	1.29	....	6	8	17	5	SE	
Waukee	Dallas	1,039	...	67.0	.....	90	1	48	4,23	31	3.59	.....	1.16	....	7	14	8	8	SE	
Webster City	Hamilton	.....	..	65.2	.....	87	27	40	23	38	2.04	.....	.53	....	7	21	0	9	SE	
Whitten (h)	Hardin	1,036	....	65.4	† 2.8	85	27	41	23	36	.....	.....	.....	....	....	..	..	..	.....	
Wilton Jct	Muscatine	683	11	66.9	† 2.6	94	1	45	23	42	4.60	†1.42	1.50	....	6	16	1	13	NW	
Zearing	Story	718	..	65.2	.....	88	27	41	23	36	1.81	.....	.63	..	7	16	8	6	E	
Average	.....	.....	.....	65.8	† 2.5	87.8	.....	43.6	.....	34.6	3.08	-0.17	.....	....	7	14	7	9	SE	

†Above normal. ‡Received too late to be computed with means. *a*. One day missing; *b*, two days, etc. §Not supplied with self-registering instruments.

CLIMATOLOGICAL DATA FOR SEPTEMBER, 1905—CONTINUED.

SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	11	66.6	† 1.5	88	1,27	47	20,23	29	5.27	† 1.40	1.78	...	7	12	10	8	SW	
Albia	Monroe	957		66.4	† 2.2	90	1	47	23,24	37	4.92	† 1.00	1.52	....	11	16	9	5	SW, NW	
Allerton	Wayne	.....	....	67.8		93	1	48	4,20	33	4.67	.....	1.36	....	10	16	9	5	SW, NW	
Atlantic	Cass	1,164	14	66.3	† 7.2	89	27	40	4	34	9.23	† 6.56	2.35	...	9	5	10	15	SE	
Bedford	Taylor	.....	5	67.8	† 4.5	93	1	45	4	33	5.73	† 2.21	1.18	..	10	14	8	8	SE	
Bonaparte	Van Buren	.....	14	68.2	† 0.5	93	1	47	19,20	35	2.05	- 1.96	1.03	....	9	...	....	.....	.....	
Burlington	Des Moines	544		68.9	.....	93	1	48	23	33	2.90	.....	.96	....	10	17	5	8	SE	
Chariton	Lucas	1,042	10	66.3	† 0.7	91	1	47	20,21,23	38	3.67	- .06	.98	....	6	17	7	6	SE	
Clarinda	Page	.....	15	67.4	† 1.4	94	1	45	20	43	6.14	† 3.58	2.17	...	11	15	2	13	SE, S	
College Springs	Page	.....	14	67.6	† 0.5	88	1	45	4	34	7.88	† 5.42	2.95	....	8	19	5	6	SE	
Columbus Jct	Louisa	586	...	64.1	....	91	1	48	26	34	1.56	.....	.65	....	5	19	8	3	SE	
Corning	Adams	1,127	13	65.1	‡ 0.0	88	1	45	4	30	7.89	† 5.41	1.75	....	7	12	12	6	SE	
Corydon	Wayne	992	12	68.0	† 1.5	92	1	49	4,5,20	32	3.04	- .82	.83	....	7	12	5	13	SE	
Creston (a)	Union	.....	....	66.0		86	1	48	4,5	30	6.37	.....	2.00	....	8	14	6	10	.....	
Cumberland	Cass	.....	....	...	.....	.....	.....	.....	.....	.....	8.22	† 5.24	2.01	....	10	18	2	10	SW	
Earlham	Madison	.....	....	64.6	.....	87	1	40	24	43	3.53	.....	1.22	....	7	17	3	10	S	
Elliott	Montgomery	.....	....	67.5		89	1	44	4	33	6.39	.....	1.18	...	8	15	12	3	SE	
Ft. Madison	Lee	516	56	...	....	.....	.....	.....	.....	.....	2.38	- 1.41	.80	....	6	10	6	14	S	
Glenwood	Mills	.....	17	67.5	- 0.4	86	27	45	4	35	7.50	† 5.37	2.25	....	6	10	17	3	SW	
Greenfield	Adair	.....	14	66.1	† 0.3	87	1	44	4	32	6.06	† 2.78	1.46	....	9	15	10	5	S	
Hopeville (a)	Clark	.....	13	67.8	† 1.2	93	1	49	4,20,23	31	5.68	† 2.15	2.03	....	6	9	13	8	S	
Indianola	Warren	.....	....	66.8	† 1.2	91	1	47	23	33	.....	.....	1.28	....	...	9	8	13	SE	
Keokuk	Lee	619	34	68.6	† 2.2	92	1	50	26	32	4.15	† .63	1.38	...	11	15	3	12	SW	
Keosauqua	Van Buren	644	13	67.2	- 0.2	94	1	46	23	40	2.20	- 2.28	.80	...	8	2	13	15	.....	
Lacona	Warren	.....	....	...	....	....	.....	.....	.....	.....	3.96	† .35	1.12	....	10	11	14	5	.....	
Lenox	Taylor	1,250	10	66.8	† 1.3	88	1	45	4	38	6.73	† 3.76	2.08	....	9	15	11	4	S	
Leon	Decatur	1,120	....	67.0		88	1	50	4,5,19, 20,21,23	32	4.45	.....	1.11	....	12	16	6	8	SE	
Massena	Cass	.....	....	68.1	.....	91	1.24	43	4,24	48	7.57	.....	1.50	...	8	17	4	9	SE, S	
Mt. Ayr	Ringgold	1,236	12	68.4	† 1.7	96	1	46	4	36	6.92	† 3.75	2.30	....	9	10	11	9	SE	
Mt. Pleasant	Henry	729	24	67.6	† 4.0	93	1	48	5,20	31	2.02	- 1.34	.77	....	8	13	9	8	SW	
Omaha, Neb.	Douglas	1,113	34	68.8		88	24	51	4	27	5.94	.....	1.80	....	8	10	10	10	S	
Oskaloosa	Mahaska	843	22	67.2	† 2.8	89	1	45	23	35	2.31	- .79	.84	....	6	18	0	12	SE, SW	
Ottumwa	Wapello	649	11	66.8	† 0.2	96	1	48	5	28	3.37	- .95	2.16	..	7	16	2	12	.....	
Pacific Junction	Mills	960	6	67.0	† 3.1	87	23	39	4	35	8.13	† 5.81	2.00	....	8	14	8	8	SE, S	
Pella	Marion	.....	....	68.6	.....	91	1	48	23	34	2.28	.....	.85	..	6	14	4	12	S	
Red Oak	Montgomery	1,033	8	69.2	† 2.5	92	1	46	4,5	29	8.26	† 5.30	2.20	....	10	14	10	6	S	
St. Charles	Madison	1,070	....	68.5	.....	92	1	50	3,4,23	29	3.27	.....	1.01	....	10	18	6	6	S	
Sidney	Fremont	.....		67.9	.....	90	1	49	8,4,19	29	9.64	.....	3.59		8	17	3	10	SE	
Sigourney	Keokuk	877	9	67.6	† 2.5	92	1	47	20,26	37	2.09	- .88	1.05	....	8	4	23	3	SW, NW	
Stockport	Van Buren	.....	....	65.4		90	1	48	23	24	2,36	.....	.67	..	9	16	2	12	S	
Thurman	Fremont	.....	....	67.4	† 1.6	88	1	44	4	31	13.18	† 9.97	4.82	....	6	11	11	8	SW	
Washington	Washington	769	13	66.6	† 1.6	90	1	46	23	29	1.87	- .75	.70	....	6	....	....	....	SE	
Winterset	Madison	1,129	....	66.8	† 1.6	86	1	46	23	30	3.56	† .21	1.00	....	9	14	7	9	S	
Woodburn	Clarke	96	....	65.8	.....	88	1	42	23	31	4.87	† .48	1.15	....	7	11	9	10	SW	
Average		.....	...	67.3	† 1.5	90.3	.....	46.2	.....	33.3	5.11	† 1.81	.....	....	8	13	8	9	SE	
Average for State		.....	....	65.8	† 2.0	88.0	.....	44.0	.....	34.1	3.81	† .50	.....	...	8	14	8	8	SE	

DATES OF THUNDERSTORMS.

NORTHERN SECTION.

Algona, 12, 14, 15, 18.
Alta, 12, 14, 15, 17, 18.
Alton, 18.
Charles City, 1, 12, 14, 18.
Cresco, 14.
Dows, 12, 18.
Elkader, 1, 14, 18.
Estherville, 16, 18, 19.
Fayette, 1, 12, 14, 18.
Florence, 1, 12, 14, 18.
Hanlontown, 15, 16.
Inwood, 15, 16.
Larrabee, 14, 15, 17, 18.
Mason City, 12, 14, 18.
Northwood, 14, 16.
Osage, 1, 14
Pocahontas, 12, 14, 15, 17.
Ridgeway, 1, 12, 14, 18.
Sheldon, 14, 15.
Sibley, 14, 16, 18.
Sioux Center, 14, 15 16, 17, 18, 26.
Washta, 18.
Waverly, 12, 14, 18, 19.
West Bend, 12, 16.

CENTRAL SECTION

Amana, 1, 14, 16, 18.
Audubon, 12, 13, 14, 15, 16, 18.
Boone, 15.
Carroll, 6.
Clinton, 1, 2.
Davenport, 1, 2, 12, 14, 18, 19.
Des Moines, 12, 13, 14, 15, 18.
Dubuque, 1, 2, 14, 18, 26.
Grinnell, 1, 14, 18.
Guthrie Center, 12, 14, 15, 18.
Harlan, 12, 13, 14, 15, 16, 18.
Ida Grove, 18.
Iowa Falls, 1, 12, 14, 16, 18, 26.
Jefferson, 6, 12, 14.
Little Sioux, 16.
Logan, 5, 6, 13, 14, 16, 18.
Monticello, 18.
Olin, 14.
Onawa, 13, 16, 18.
Sioux City, 14, 15, 17, 18.
Waterloo, 18, 26.
Waukee, 2, 12, 13, 14, 15, 16, 18.
Wilton Junction, 1.

SOUTHERN SECTION.

Allerton, 2, 13, 14, 16, 18.
Atlantic, 12, 13, 14, 15.
Bedford, 16.
Burlington, 2, 12.
Columbus Junction, 14.
Corning, 12, 13, 14, 15, 16, 17, 18.
Creston, 16.
Earlham, 12, 13, 14, 16, 18
Elliott, 13, 14.
Hopeville, 12, 13, 18.
Indianola, 12, 14.
Keokuk, 1, 13, 15, 16, 18.
Lacona, 14, 18.
Lenox, 12, 13, 14, 15, 16
Leon, 12.
Massena, 6, 12, 13, 14, 15, 16, 18
Mount Pleasant, 2.
Omaha, Nebraska, 13, 14, 15, 16, 18.
Oskaloosa, 14, 16, 18.
Red Oak, 15, 18.
Sidney, 13, 14, 15, 16, 18.
Sigourney, 18.
Stockport, 12, 13, 16, 19.
Thurman, 5, 6, 13, 14, 15, 16, 18
Winterset, 12, 14.

ERRATA.

OSKALOOSA.—July.—Daily precipitation on the 10th, recorded .03 of an inch, should have been left blank.

COLUMBUS JUNCTION.—August.—Total precipitation recorded 3.30 inches on page 7, should have been 3.36 inches.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR SEPTEMBER, 1905.

STATIONS.		DATE																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max..	88	75	69	71	64	61	73	77	76	81	83	81	70	76	79	80	80	74	69	77	79	81	76	85	78	85	88	82	82	80	....	77 3
	Min ..	67	52	49	49	50	52	58	57	57	61	59	60	58	60	62	58	57	63	48	47	55	54	47	57	52	53	62	56	58	62	....	56.0
Albia*....	Max..	90	68	62	68	63	65	73	77	78	81	81	87	68	70	83	75	79	78	72	80	83	84	79	84	74	85	89	84	86	79	....	77.5
	Min ..	66	50	53	49	47	48	53	54	57	59	60	60	60	52	60	60	58	63	53	51	52	59	47	47	53	54	57	57	58	63	....	55.3
Algona...	Max.	76	66	60	72	72	59	71	74	78	80	83	72	65	78	79	75	77	73	67	79	77	73	74	75	72	72	84	83	82	79	....	74.2
	Min .	64	47	48	46	44	52	57	59	53	55	56	54	46	60	61	55	56	64	50	45	54	55	42	53	47	54	56	60	60	59	....	53.9
Allerton .	Max..	93	85	68	67	63	60	75	74	77	82	83	86	72	70	82	72	81	76	71	80	84	85	82	89	78	85	89	85	86	79	...	78.6
	Min ..	67	54	51	48	49	53	58	53	58	64	59	61	60	59	61	64	60	64	50	48	56	58	49	58	54	54	62	55	60	61	...	56.9
Alta.	Max..	75	65	67	71	68	59	69	74	71	70	84	70	63	81	78	77	72	70	68	81	80	75	77	77	78	77	84	84	81	78	....	74.1
	Min ..	59	47	48	44	48	52	58	53	57	57	68	58	50	60	60	56	57	52	45	46	52	53	45	56	52	56	58	62	63	51	....	54.1
Alton....	Max..	77	69	70	75	67	67	69	75	78	78	85	75	64	81	79	78	71	68	68	80	77	74	72	75	81	76	83	84	81	74	....	75.0
	Min ..	65	48	47	47	47	54	53	57	57	50	52	59	49	62	58	58	58	54	47	46	51	53	42	55	52	65	54	62	62	58	....	54.1
Amana...	Max..	90	75	60	68	72	63	70	75	80	79	82	80	70	70	82	77	75	77	74	78	81	81	74	81	69	81	87	82	84	80	....	76.6
	Min ..	66	56	61	55	47	54	59	53	62	63	56	62	59	54	62	62	58	68	55	46	57	50	45	54	50	47	60	56	58	62	....	56.2
Ames	Max..	85	70	63	74	69	61	70	76	75	83	83	79	67	73	82	77	70	72	71	82	84	81	76	82	73	84	88	84	83	80	....	76.8
	Min ..	65	51	50	48	45	53	60	60	54	57	57	59	53	56	59	58	54	63	53	49	55	50	43	52	51	50	59	54	57	62	....	54.6
Atlantic..	Max..	88	71	71	74	60	61	73	78	74	84	85	75	69	80	84	77	87	74	71	81	83	81	80	87	82	85	89	85	85	82	..	78.5
	Min ..	62	49	48	40	47	52	58	60	50	58	52	59	57	63	61	60	55	59	50	47	49	47	41	53	53	59	54	61	60	59	....	54.1
Audubon.	Max'	81	71	68	74	63	60	75	79	72	82	85	75	72	82	84	81	82	75	71	81	83	78	81	82	81	83	87	85	85	81	...	78 0
	Min ..	61	48	48	43	43	52	58	60	50	55	50	60	55	60	60	58	52	62	49	46	42	45	41	55	50	59	55	59	55	58	..	53.0
Baxter. ..	Max..	89	75	83	73	73	62	72	77	75	84	83	84	69	78	81	78	75	74	71	79	84	82	74	83	73	82	86	83	83	80	....	78.0
	Min ..	63	51	50	47	45	53	57	57	59	61	58	60	54	55	60	57	54	60	53	47	55	55	44	56	50	50	63	54	58	63	....	55.0
Bedford ..	Max..	93	79	72	75	64	62	74	77	76	85	84	87	74	70	80	73	77	72	72	78	82	85	80	89	82	85	87	84	84	81	..	78.8
	Min ..	68	52	50	45	49	51	59	53	55	64	59	62	60	63	62	62	64	63	48	46	55	52	48	56	57	58	62	59	61	64	....	56.9
Belle Pl'e	Max..	88	68	61	67	71	60	65	74	79	81	80	77	65	70	80	75	78	75	69	78	80	79	78	80	68	81	85	81	83	80	...	74.9
	Min .	65	55	51	5+	48	53	55	55	58	62	57	62	57	54	60	60	56	62	54	47	55	53	43	52	50	48	56	58	59	65	....	55.5
Bonapar'e	Max..	93	82	63	62	70	64	68	78	80	77	82	86	73	72	82	80	83	80	78	80	82	87	79	87	73	83	90	86	88	78	....	78.9
	Min .	68	58	54	52	49	55	57	56	62	66	53	61	61	56	63	60	68	70	47	47	58	58	48	56	51	48	59	56	62	62	....	57.4
Boone* ..	Max.	81	66	68	71	67	59	70	75	74	83	83	74	64	75	82	79	76	71	70	83	84	79	77	83	72	82	87	85	83	..	....	75 8
	Min ..	62	51	50	49	48	52	53	58	55	57	61	62	53	55	58	59	54	57	52	50	52	56	47	49	52	52	54	59	59	61		54.6
Britt.	Max..	78	65	60	72	75	62	71	78	80	82	85	70	66	78	78	78	80	74	68	80	77	73	76	76	74	78	85	84	83	82	...	75 5
	Min ..	61	45	47	44	43	52	58	50	50	48	53	56	46	54	55	53	53	65	51	43	52	45	40	48	49	54	55	61	60	55	....	51.5
Burling'n	Max..	93	81	61	63	73	65	67	78	84	72	83	86	76	73	82	75	82	86	78	81	84	80	79	88	74	84	91	88	89	78		79.1
	Min ..	69	60	52	55	57	55	59	59	63	65	56	62	60	57	62	63	63	69	57	52	59	60	48	56	53	51	60	55	62	63	....	58.7
Carroll* ..	Max..	78	66	67	74	66	61	67	76	71	78	82	76	66	81	80	78	77	74	73	78	80	77	78	81	76	80	85	83	82	80	....	75.7
	Min ..	63	47	47	43	43	51	53	57	51	52	56	59	52	58	60	57	54	58	48	47	49	50	42	43	48	55	58	58	62	62	..	52.7
Cedar R*.	Max..	92	67	59	69	74	63	71	75	79	78	84	82	70	70	85	76	77	79	70	82	83	83	79	84	70	84	91	87	89	84	....	77.9
	Min ..	62	59	53	53	50	50	55	54	57	63	58	59	58	56	59	63	59	59	55	49	51	54	46	48	50	50	51	57	57	61	...	55 2
Chariton .	Max.	91	81	64	68	63	60	73	75	76	81	84	83	71	71	82	75	80	75	71	80	85	84	79	85	76	85	90	84	85	80	..	77.9
	Min ..	65	53	49	48	49	49	57	55	58	63	59	61	60	57	59	60	57	62	50	47	47	52	47	57	52	52	62	56	58	58	....	55.3
Charles C.	Max..	74	63	58	69	73	60	65	75	78	81	82	70	68	70	81	76	76	72	68	80	76	74	74	77	69	73	85	83	82	82	....	73.0
	Min ..	59	50	48	46	44	52	56	52	52	54	57	51	47	55	58	58	57	63	47	44	53	44	41	47	48	49	56	57	56	56	....	51.9
Clarinda*.	Max..	94	75	73	76	58	62	74	78	73	85	88	90	70	78	85	71	82	73	75	82	83	86	82	91	86	88	90	87	86	83	....	80.1
	Min ..	65	53	49	47	47	52	55	54	54	55	56	57	58	60	63	60	61	64	48	45	46	51	48	48	56	57	60	56	57	58	.	54.7
Clear L ..	Max..	70	66	68	66	73	66	66	74	70	81	81	..	65	73	78	76	74	70	69	79	78	74	74	75	70	73	81	82	81	80	....	78 6
	Min ..	65	55	50	57	50	52	56	58	59	56	58	..	47	54	63	58	56	64	51	52	56	58	48	57	47	49	57	59	58	62	....	52.1
Clinton...	Max..	91	72	62	64	74	71	74	78	79	76	81	81	71	71	82	78	79	86	77	78	83	83	74	81	71	80	86	84	85	83	....	77.8
	Min ..	60	58	51	52	41	52	59	56	59	61	55	58	53	51	61	59	59	65	51	43	54	48	43	48	48	46	55	51	57	58	....	53.7
Col. Spgs.	Max..	88	78	71	74	68	63	74	79	76	80	82	87	70	76	79	71	78	74	70	76	79	83	78	81	83	78	85	83	83	80	....	77.7
	Min ..	68	52	50	46	54	55	60	55	56	64	56	53	60	64	63	61	64	59	49	49	53	56	53	53	60	61	63	60	60	65	....	57.4
Colum. J.	Max..	91	82	63	63	72	83	72	78	82	80	80	84	73	70	81	80	79	82	80	73	81	84	75	82	74	82	86	85	86	80	..	78.9
	Min ..	67	57	52	53	49	61	56	57	60	57	57	61	59	59	61	61	60	67	55	49	57	56	50	57	51	48	61	57	60	63	....	57.3
Corning..	Max..	88	74	70	70	61	61	71	74	74	79	82	81	69	77	79	72	78	72	70	76	79	81	77	85	80	84	85	82	83	80	....	78.8
	Min ..	68	51	49	45	47	52	59	54	51	60	61	62	58	63	62	60	63	63	48	50	55	51	47	59	55	58	64	59	60	59	....	56.4
Corydon..	Max..	92	88	66	70	64	60	75	71	74	82	83	85	74	70	82	73	81	75	74	79	85	86	80	89	76	85	88	84	86	78	....	78.5
	Min ..	69	53	51	49	49	53	57	56	58	64	60	59	61	59	61	61	59	66	51	49	57	59	57	59	54	53	64	58	61	62	..	57.6
Cresco ...	Max..	77	66	55	64	71	66	66	72	76	79	81	75	66	66	79	73	75	72	65	77	74	72	72	73	67	71	82	82	81	81	....	72.5
	Min ..	63	51	48	52	48	51	57	55	55	55	61	59	44	43	61	61	58	64	58	47	57	58	45	52	44	48	55	59	59	60	....	54.1
Creston...	Max..	86	69	66	68	59	60	69	73	72	78	81	78	66	76	79	73	77	72	69	77	79	81	77	83	73	82	86	83	83	82	....	78.0
	Min ..	65	52	50	48	48	52	58	59	59	60	63	64	59	58	64	60	61	66	49	50	52	56	51	54	54	55	60	60	61	62	...	55.0
Davenpo't	Max..	92	70	59	62	71	65	69	77	80	74	82	82	69	71	83	75	80	85	72	79	83	86	76	82	70	82	87	87	88	79	..	77.2
	Min ..	63	58	53	55	51	55	60	61	62	63	58	64	56	55	64	64	63	68	56	53	61	58	51	57	50	50	64	59	64	62	....	58.6
Decorah. .	Max..	80	68	58	67	72	69	67	76	78	79	82	75	68	67	79	76	78	76	72	77	77	75	72	76	68	73	83	82	83	82	....	74.5
	Min ..	63	54	48	53	43	52	58	57	53	55	57	55	48	52	62	62	59	65	51	43	57	53	42	50	48	48	52	57	56	62	..	54.5
Delaware.	Max..	85	73	60	64	72	67	73	73	80	77	80	77	66	67	81	77	75	76	73	76	76	76	74	76	67	77	82	81	83	79	....	74.8
	Min ..	60	54	49	51	46	51	55	56	59	60	54	59	50	50	58	61	56	64	53	44	55	52	45	52	44	47	57	55	57	57	....	53 7
Des M....	Max..	88	68	64	71	63	61	70	75	74	82	83	80	65	74	81	74	76	74	71	81	82	82	76	83	73	85	88	84	84	80	....	76.4
	Min ..	65	55	53	51	50	54	59	62	63	65	63	64	59	58	64	61	59	56	54	52	59	55	50	60	54	54	65	60	62	59	....	58.2
De Soto ..	Max..	85	74	64	71	63	61	72	74	73	81	84	78	69	78	84	74	80	73	73	82	83	81	80	88	76	86	89	87	85	82	....	77.5
	Min ..	67	53	50	50	48	53	58	61	59	63	62	61	58	60	63	59	57	64	52	50	57	53	46	60	53	55	64	58	61	64	..	57.3
Dows.	Max.	76	66	59	71	72	60	67	74	75	83	82	72	66	74	82	76	74	70	63	51	44	54	50	40	53	48	58	65	55	56	61	53.0
	Min ..	64	46	49	47	42	51	56	59	48	54	57	60	49	52	58	56	50	63	51	44	54	50	40	53	48	58	65	55	56	61	....	51.9
Dubuque.	Max..	85	69	58	63	73	70	70	76	78	75	81	79	69	66	85	75	76	80	69	80	80	79	76	80	68	78	87	85	85	81	....	75.9
	Min ..	65	58	51	54	53	56	60	60	63	63	64	60	53	55	64	64	61	66	55	51	58	56	49	59	50	53	61	60	61	64	....	58.2
Earlham.	Max..	87	74	65	69	60	59	72	75	73	82	82	78	68	77	82	78	74	72	70	82	80	81	82	88	76	85	88	86	88	86	....	76.7
	Min ..	60	49	47	47	44	51	52	58	52	59	57	60	56	61	60	56	54	51	49	47	47	46	41	40	45	55	59	58	59	57	....	52.6
Elkader ..	Max..	88	73	62	68	80	70	71	77	81	83	87	82	72	66	87	78	82	78	71	83	84	83	79	85	74	84	90	88	88	86	....	79.3
	Min ..	63	55	50	54	42	57	58	60	58	56	53	63	47	52	59	62	60	63	56	42	58	47	39	50	45	46	56	53	52	55	....	53.7
Elliott....	Max..	89	74	70	72	62	64	71	79	79	82	85	85	77	80	81	74	82	75	70	77	79	82	76	85	82	85	87	84	85	83	....	78.5
	Min ..	66	52	50	44	52	58	60	61	53	62	54	62	58	62	62	60	62	62	61	47	52	51	46	55	56	52	58	60	61	62	..	56.5
Esthervil*	Max..	75	63	62	70	73	68	69	73	79	80	85	71	63	81	82	75	75	68	65	80	78	73	75	74	74	75	84	84	84	81	..	74.2
	Min ..	60	48	48	47	42	42	54	58	56	52	58	58	49	48	55	54	55	61	49	48	51	54	43	43	51	52	55	61	43	43	....	51.3
Fayette..	Max..	83	74	55	68	74	60	69	73	77	80	82	76	68	67	82	77	79	77	68	79	78	77	75	79	72	79	87	84	84	82	....	75.5
	Min ..	61	53	48	52	40	49	56	56	55	53	50	60	48	57	59	59	57	62	50	41	55	48	37	51	44	45	54	54	54	50	....	51.9
ForestCy*	Max..	74	65	58	74	76	60	65	75	84	85	86	70	67	78	84	78	78	72	70	83	83	75	78	78	72	78	88	88	83	..	....	76.0
	Min ..	60	45	47	48	45	50	52	52	54	53	54	54	45	46	54	55	54	64	51	44	45	54	42	45	46	49	54	55	58	59	....	51.1
F. Dodge*	Max..	76	62	59	70	71	59	70	75	73	80	83	69	64	77	79	74	73	71	67	81	80	77	75	79	72	75	86	86	82	80	....	74.2
	Min ..	62	50	50	48	47	48	54	58	52	52	60	60	50	53	59	56	54	56	52	49	51	55	44	44	51	52	56	59	61	62	...	53.5
Galva	Max..	78	72	67	71	69	63	71	79	70	78	81	71	62	71	80	75	78	75	69	68	79	77	79	76	76	79	84	82	79	77	....	75.1
	Min ..	65	48	48	42	43	53	59	50	52	49	51	62	51	60	55	56	54	59	47	45	50	49	43	51	51	62	54	60	61	56	....	52.9
Glenwo'd	Max..	85	72	69	72	63	63	73	75	72	79	83	84	73	78	79	75	76	70	72	78	80	82	79	85	84	83	86	84	82	77	....	77.1
	Min ..	66	51	50	45	56	58	59	61	58	61	60	63	58	64	63	59	63	50	54	56	56	55	50	62	59	68	63	62	63	56	...	57.9
Grand M.	Max..	82	68	57	65	72	66	68	73	76	79	79	74	66	64	79	75	77	75	72	76	75	75	72	75	68	72	84	83	83	80	....	78.7
	Min ..	62	54	54	50	47	51	56	58	56	57	58	57	46	52	60	62	59	60	55	46	63	56	45	55	45	47	57	58	56	60	....	54.7
Greene...	Max..	75	66	59	71	75	61	68	76	77	82	85	74	67	70	83	78	78	71	68	80	79	76	76	78	72	75	86	85	83	82	....	75.2
	Min ..	65	50	48	52	45	52	57	53	53	54	57	60	46	54	57	57	55	65	53	43	44	52	42	52	47	47	57	56	55	56	....	52.8
Greenfield. ..	Max..	87	76	71	72	62	60	74	77	73	81	83	78	69	78	81	80	81	75	68	78	78	79	76	82	78	86	85	84	83	80	....	77.1
	Min ..	60	49	47	44	49	52	58	59	52	53	60	59	56	59	62	58	59	60	48	50	55	54	48	50	51	57	63	59	60	62	....	55.1
Grinnell. (near)	Max..	90	70	69	68	73	62	71	75	76	81	85	83	70	71	85	78	75	75	72	80	82	84	77	80	71	83	88	83	83	79	....	77.3
	Min ..	60	49	47	44	49	52	58	59	52	53	60	59	56	59	62	58	59	60	48	50	55	54	48	57	49	48	62	57	60	62	....	55.0
	Max..	90	70	69	68	73	62	71	75	76	81	85	83	70	71	85	78	75	75	72	80	82	82	80	55	55	45	57	49	48	62	57	60	62	....	55.0
	Min ..	61	52	49	47	46	50	56	53	60	61	58	61	55	55	60	59	54	66	52	40	55	55	45	57	49	48	62	57	60	62	....	55.0
Grundy C	Max..	84	68	63	72	73	59	67	75	76	82	84	77	65	71	82	75	72	72	70	82	80	81	76	83	70	82	87	83	84	81	...	75.9
	Min ..	67	51	50	53	47	52	57	63	56	58	59	63	50	54	60	59	55	63	53	46	54	54	42	59	48	49	60	56	58	64	....	55.3
Guthrie C	Max..	81	79	66	71	65	61	71	75	73	80	82	75	69	78	81	76	79	73	69	79	79	79	77	82	76	85	88	86	88	86	....	76.3
	Min ..	65	50	49	47	45	53	59	58	52	58	60	60	56	62	62	54	55	64	50	49	55	51	43	60	52	58	61	58	60	65	....	55.7
Hampton.	Max..	74	66	58	72	78	59	66	77	77	87	87	71	65	72	87	81	78	71	69	85	87	78	81	85	74	77	91	88	86	84	....	77.0
	Min ..	66	50	49	52	49	52	56	57	52	79	83	84	71	65	75	83	75	75	76	68	82	80	64	71	62	58	68	72	84	69	80	54.6
Hanlontown .	Max..	70	68	58	75	76	61	65	74	57	48	49	54	56	44	55	62	54	54	64	51	44	50	53	38	50	45	50	52	58	55	55	72.2
	Min ..	62	46	47	51	40	50	56	57	48	49	54	56	44	55	62	54	54	64	51	44	50	53	38	50	45	50	52	58	55	55	....	51.7

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR SEPTEMBER, 1905—CONTINUED.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Harlan ...	Max.	80	72	68	71	63	61	73	78	74	81	83	75	72	80	82	79	80	74	70	78	80	78	77	81	81	81	85	83	82	79	....	76.7
	Min ..	63	50	48	41	48	52	59	61	51	55	53	60	55	56	62	59	56	63	49	45	49	48	45	60	53	61	56	60	59	60		54.6
Hopeville	Max..	93	75	67	69	62	60	73	76	77	81	84	87	71	75	82	76	79	..	71	80	83	83	80	86	79	86	88	85	85	81	....	78.4
	Min .	68	53	51	49	50	53	58	56	57	64	60	62	59	61	62	61	61	..	50	49	58	56	49	57	54	54	63	58	60	63	....	57.1
Humboldt	Max..	77	66	61	68	68	62	70	70	75	73	82	70	64	74	79	78	70	71	71	76	77	74	73	73	72	72	84	82	77	77	..	72.9
	Min ..	65	50	50	48	46	55	60	60	52	53	58	61	50	60	60	55	56	66	52	48	54	54	43	55	50	56	57	60	61	67	...	55.4
Ida Grove	Max..	75	68	67	70	66	63	70	73	74	76	83	76	68	80	76	76	75	74	68	68	76	74	76	76	80	77	81	81	80	75	....	74.0
	Min ..	61	44	50	42	38	49	55	49	48	48	56	56	49	53	65	53	49	53	44	45	46	48	44	47	52	58	50	55	58	52	....	50.6
Indianola.	Max.	91	75	69	70	63	61	73	75	75	82	84	77	69	74	83	75	80	78	71	81	83	85	80	84	75	86	89	86	85	81	....	78.0
	Min ..	53	53	50	49	50	53	58	50	60	63	61	63	59	58	61	60	58	53	52	49	57	55	47	59	53	53	62	57	61	54	....	55.7
Inwood ..	Max..	86	83	72	78	68	60	76	75	80	82	89	81	64	84	80	79	76	67	71	82	81	79	78	79	82	84	80	84	82	73	...	77.8
	Min ..	48	43	56	39	45	53	58	50	55	52	52	48	49	60	54	57	58	51	43	46	52	46	47	55	50	54	52	51	62	61	...	51.6
IowaCity*	Max..	91	69	60	68	74	65	71	77	83	80	84	82	72	69	85	77	80	79	71	82	82	82	80	82	74	85	90	86	90	82	...	78.4
	Min ..	65	58	52	53	47	48	56	53	58	62	56	56	59	54	58	62	60	62	55	45	48	51	45	46	49	46	44	53	54	..	....	53.6
Iowa F* ..	Max..	77	65	59	71	72	61	70	77	77	80	83	72	68	72	80	77	75	78	68	80	78	77	75	79	72	80	85	83	83	81	....	75.0
	Min ..	61	49	49	49	44	50	59	53	52	54	56	59	49	54	57	55	53	57	53	44	45	50	40	50	47	49	51	55	56	56	....	51.7
Jefferson	Max..	80	70	65	73	68	61	73	78	80	82	87	79	73	78	79	77	77	73	..	..	..	..	..	..	82	88	88	85	84	80	....	77.3
	Min ..	66	50	52	45	49	53	58	58	53	56	58	56	58	55	54	56	55	64	..	..	..	..	..	..	55	60	59	60	60	55	....	56.0
Keokuk ..	Max.	92	72	62	62	67	64	67	78	81	69	80	85	66	76	81	74	81	86	72	79	81	86	75	87	73	82	88	84	87	72	..	77.0
	Min ..	72	62	54	54	50	55	59	62	64	66	58	64	62	59	64	64	63	69	58	54	61	64	55	61	54	50	64	58	66	62	....	60.2
Keosauqua *.	Max..	94	70	64	65	69	64	81	78	81	78	81	88	78	72	[illegible]	77	79	81	73	80	83	86	86	87	74	84	88	82	86	76	....	78.9
	Min .	67	58	53	50	47	52	56	56	59	63	54	58	62	56	61	63	59	69	54	48	51	56	46	48	51	48	52	52	53	59	....	55.4
Larrabee	Max..	..	66	71	72	72	63	73	77	79	80	83	73	65	85	83	79	76	67	69	81	79	73	78	75	80	78	85	84	82	76	....	76.0
	Min ..	..	47	48	42	47	53	60	55	54	53	56	56	50	60	60	59	56	55	47	46	50	57	46	53	50	60	57	61	62	60	..	53.8
Le Mars..	Max..	85	66	70	73	66	61	71	77	78	78	85	75	67	83	82	79	71	69	68	79	77	75	77	76	82	76	83	83	81	73	....	75.5
	Min ..	65	44	48	41	47	53	59	56	57	49	55	60	51	61	62	57	59	56	45	47	50	50	43	54	52	64	53	63	63	58	....	54.1
Lenox	Max..	88	74	69	70	61	61	70	74	73	79	82	80	70	77	78	72	77	72	70	83	79	82	77	86	78	83	85	82	80	79	....	76.4
	Min ..	68	52	49	45	52	52	58	57	58	62	63	59	58	62	61	60	63	63	48	50	56	56	50	59	55	57	64	59	61	63	....	57.3
Leon	Max..	88	86	67	69	67	61	72	73	76	79	81	84	72	74	77	75	77	73	69	76	77	82	77	84	76	83	85	80	81	77	.	76.6
	Min ..	69	54	52	50	50	53	58	57	60	64	60	62	60	61	62	63	60	64	50	50	50	58	50	57	55	54	64	57	60	61	....	52.5
Lit. Sioux	Max..	84	72	71	77	69	62	77	79	76	83	87	80	75	82	85	82	79	75	74	84	84	81	79	86	86	84	88	88	83	78	...	79.7
	Min ..	66	48	49	44	54	54	61	58	60	52	61	63	57	65	64	62	60	57	55	53	52	52	50	60	60	66	57	66	65	57	....	57.6
Logan	Max..	85	81	81	74	65	64	79	77	76	82	85	70	73	81	84	78	82	78	81	80	81	79	78	54	83	83	86	84	82	76	...	79.1
	Min ..	66	48	48	40	50	55	60	60	53	62	52	56	56	62	64	60	59	57	46	45	50	48	49	57	56	55	56	60	61	58	....	55.0
Maquoketa *.	Max.	90	71	62	64	79	66	72	78	77	76	81	84	68	67	82	77	78	83	73	80	85	86	78	85	71	80	90	88	88	83	....	78.1
	Min ..	62	60	51	52	45	48	52	53	59	61	54	57	52	48	57	58	48	62	56	40	42	45	39	41	44	43	46	46	48	54		51.1
Marshaltown*	Max.	88	68	61	72	74	62	71	78	73	85	86	82	80	76	87	82	79	76	73	84	85	83	80	86	82	87	90	87	86	84	....	79.6
	Min .	61	51	49	49	45	48	53	54	57	57	59	61	52	53	59	58	54	57	53	47	50	49	42	43	48	47	54	53	53	57	....	52.4
Mason C..	Max.	70	65	55	70	74	63	64	72	75	80	83	72	65	72	79	76	75	71	68	80	77	74	75	76	71	74	85	84	81	81	.	73.6
	Min ..	65	50	48	53	46	52	57	55	53	54	60	60	47	55	62	58	55	65	53	47	56	48	44	54	47	50	57	60	58	60	.	54.3
Massena..	Max..	91	79	75	72	67	61	76	83	73	88	89	80	72	81	88	83	85	72	75	84	88	90	88	91	85	89	87	90	88	84	..	81.8
	Min ..	65	49	49	43	48	52	59	59	51	61	59	60	57	61	61	59	57	55	47	48	52	50	44	43	52	57	59	58	60	58	....	54.4
Monticello	Max..	87	67	60	68	73	66	73	76	79	77	82	81	69	68	83	77	75	80	69	78	79	81	73	80	67	77	85	82	84	80	..	75.9
	Min ..	58	51	52	45	50	54	49	58	61	58	57	53	52	59	61	55	60	55	42	55	46	40	47	45	44	55	50	54	56	50	....	52.2
Mt. Ayr..	Max	96	78	71	74	62	60	79	75	75	85	86	89	72	76	83	74	77	72	78	80	86	87	83	93	83	85	90	85	85	80	....	79.8
	Min .	68	51	49	46	52	51	57	58	59	62	60	61	59	62	62	62	62	62	47	49	54	57	50	57	55	55	64	57	60	63	..	57.0
Mt. Pl'snt	Max.	93	82	63	63	72	64	69	77	81	77	80	85	75	71	81	75	80	82	79	79	80	84	82	72	80	88	84	86	76	78	...	77.9
	Min .	66	57	51	53	48	53	56	57	60	66	57	61	59	56	62	62	60	67	54	48	57	57	56	50	49	59	57	62	61	62	....	57.4
Mt. Ver'n	Max..	91	73	57	57	73	62	70	75	78	81	82	86	71	77	85	77	76	76	71	81	87	83	82	87	76	80	90	86	90	78	....	77.9
	Min ..	62	54	50	51	48	52	56	55	58	62	56	59	55	53	61	62	59	65	53	45	54	51	45	52	46	46	58	56	61	64	....	55.0
Newton..	Max.	86	74	61	68	67	62	69	73	75	79	82	80	70	70	71	72	74	72	69	78	78	79	74	76	70	82	85	81	83	79	....	74.6
	Min ..	68	53	50	49	49	51	57	57	62	63	60	62	57	55	55	59	56	63	53	47	57	56	48	54	51	50	64	57	59	55	...	55.9
N'thwood	Max..	72	65	59	70	73	63	66	76	80	81	81	69	67	73	82	78	79	71	69	77	74	72	75	73	68	75	83	84	82	81	....	73.9
	Min ..	64	48	47	53	44	51	57	58	51	51	53	58	44	54	63	56	56	63	53	43	55	55	42	50	45	50	53	54	55	54	....	52.7
Odebolt ..	Max.	78	70	65	72	67	60	71	73	75	79	84	72	66	80	78	76	74	68	76	78	75	78	80	80	79	80	82	85	80	....	75.2
	Min ..	65	48	48	44	46	52	59	55	54	59	58	62	53	62	60	55	56	61	49	47	54	53	45	60	50	62	63	60	55	55	....	55.0
Ogden	Max..	81	73	65	73	68	69	72	77	78	82	88	75	68	76	83	78	76	77	70	83	85	80	77	83	73	82	87	85	83	80	....	77.6
	Min ..	61	49	50	47	48	58	57	59	58	55	61	60	54	57	61	56	54	54	51	49	55	54	46	58	52	53	61	56	58	63	....	55.2
Olin	Max..	89	79	62	65	70	65	72	75	80	75	79	80	70	67	82	78	76	80	75	76	78	80	73	79	75	78	85	82	83	80	..	76.3
	Min ..	63	59	53	54	47	52	57	52	61	65	55	60	56	52	63	63	59	66	57	43	58	58	48	51	47	45	56	56	58	62	...	55.4
Omaha, N	Max..	83	71	69	73	61	63	75	76	72	80	85	80	74	80	81	77	79	74	74	82	84	81	79	88	84	83	86	88	82	74	....	77.8
	Min ..	63	53	52	51	55	55	61	64	60	60	62	64	59	66	62	62	66	52	52	55	58	61	57	62	62	67	66	66	67	56	...	59.9
Onawa ...	Max..	83	76	70	77	71	63	72	78	76	84	88	82	70	80	83	85	77	75	77	85	85	82	84	84	87	79	85	89	85	78	....	79.9
	Min .	67	50	50	44	54	53	60	57	56	54	58	63	56	63	63	60	59	53	47	47	54	54	48	58	55	66	59	63	65	59	....	56.5
Osage.....	Max..	72	66	57	70	75	62	65	73	79	83	82	70	68	69	81	76	77	71	68	79	78	74	73	75	69	72	85	82	79	79	....	73.6
	Min ..	64	48	47	52	44	51	57	54	51	55	57	60	45	54	60	57	57	64	53	44	55	52	43	50	46	48	56	56	56	58	....	53.1
Oskaloosa	Max..	89	78	64	65	66	64	71	74	76	79	82	82	71	69	81	75	78	77	69	79	79	82	76	80	73	85	87	83	84	80	...	76.6
	Min ..	69	55	52	50	54	54	59	52	63	65	58	64	62	57	57	61	61	68	55	49	59	54	45	58	53	50	65	60	59	65	....	57.8
Ottumwa	Max.	96	69	59	64	67	64	71	78	74	86	84	86	82	81	80	74	74	80	74	80	82	80	80	82	80	82	92	86	89	72	...	78.3
	Min ..	70	52	51	59	48	52	57	55	57	58	57	60	56	55	56	57	56	57	55	56	57	58	56	56	57	56	65	58	61	64	...	55.4
Pacific J'n	Max..	86	76	70	78	62	64	75	76	70	81	84	83	74	78	81	75	79	76	73	83	81	82	87	85	84	83	86	86	83	76	....	78.4
	Min ..	65	58	48	39	53	53	59	60	55	58	55	60	58	57	61	59	61	55	47	48	51	50	56	55	57	62	52	57	62	60	...	55.7
Pella.	Max.	91	85	66	72	67	63	78	76	89	83	85	85	83	81	82	75	88	75	72	81	83	84	78	84	75	85	89	84	81	79	....	80.0
	Min ..	68	55	51	50	50	53	53	57	62	65	60	63	63	56	60	61	57	67	53	49	58	53	48	58	51	51	66	57	60	62	.	57.2
Perry.....	Max..	82	71	65	72	68	62	72	79	75	80	83	76	..	..	..	81	77	73	71	80	80	78	79	81	75	83	86	84	83	82	..	76.9
	Min .	67	51	50	48	46	54	59	62	55	53	60	61	..	..	..	56	56	65	52	48	54	52	45	57	52	54	60	59	59	65	...	55.6
Plover....	Max..	75	67	67	68	69	70	69	70	74	79	80	81	82	85	84	80	74	76	77	79	80	73	75	74	71	72	75	77	76	74	....	74.9
	Min ..	66	46	47	46	47	50	49	51	58	58	55	54	55	56	55	57	55	53	49	48	53	51	54	55	54	52	51	52	50	51		52.4
Pocah'tas	Max..	76	65	65	70	73	61	72	75	77	81	85	73	65	78	81	78	72	76	68	81	79	74	76	74	74	79	85	85	82	80	....	75.3
	Min ..	63	47	46	45	47	48	59	59	53	52	53	58	49	59	59	59	56	63	49	48	53	54	45	54	46	56	55	61	61	61	....	53.9
Red Oak..	Max..	92	79	73	76	69	65	73	77	74	81	84	87	74	79	82	75	80	76	74	80	82	84	80	84	88	87	87	85	84	80	...	79.7
	Min ..	69	54	51	46	46	54	61	60	56	56	57	65	60	65	64	62	64	65	59	51	56	55	51	57	60	60	63	63	63	68		58.7
Ridgeway	Max..	81	67	58	67	76	67	70	77	87	82	85	76	68	71	85	78	76	78	72	79	80	78	77	79	70	78	87	85	84	91	...	77.0
	Min	64	53	50	53	50	53	59	57	57	60	62	58	46	53	63	62	60	66	54	46	57	56	49	54	45	49	57	60	60	63	....	55.9
Rock R...	Max..	80	72	68	70	80	76	78	74	78	86	80	82	78	80	85	80	76	64	60	76	86	82	85	80	82	88	86	88	78	76		78.5
	Min ..	60	54	38	40	48	54	60	62	66	54	56	52	58	60	70	66	60	52	50	54	64	60	50	48	46	68	70	68	60	62	...	57.0
R City...	Max..	87	68	65	71	70	63	73	78	78	83	73	73	68	80	81	80	82	76	75	68	78	75	70	78	70	70	84	88	83	83	....	76.0
	Min ..	63	47	45	45	48	53	53	58	53	55	58	58	50	60	58	60	61	53	64	48	52	53	43	55	60	58	50	58	60	58	....	54.6
Sac City..	Max..	76	66	65	70	68	61	72	79	76	78	81	76	64	80	77	75	75	75	68	79	77	74	76	77	75	77	84	82	81	78	....	74.7
	Min ..	64	47	48	46	45	52	58	59	52	56	56	61	50	61	60	55	54	62	49	48	54	52	43	56	47	56	54	61	61	57	....	54.1
St. Cha'les	Max.	92	73	64	69	61	60	72	74	74	84	85	79	68	75	85	85	80	73	73	82	83	85	83	88	79	88	90	89	87	81	....	78.7
	Min ..	66	53	50	50	51	53	58	60	61	63	62	64	59	60	64	64	59	63	51	52	58	57	50	62	53	55	65	60	62	63		58.3
Sheldon..	Max..	82	66	70	77	73	63	68	77	82	82	88	78	76	82	85	81	73	68	72	83	84	78	80	80	81	85	87	85	83	75	...	78.1
	Min ..	64	45	48	42	45	54	59	58	55	49	55	54	47	59	50	57	57	57	46	45	49	52	46	53	51	63	54	65	62	57	..	53.3
Sibley....	Max..	74	63	67	70	73	60	69	74	79	80	86	69	64	82	80	76	79	68	69	81	80	73	76	74	78	79	84	83	82	73		74.8
	Min ..	61	45	46	44	43	44	53	56	54	50	53	56	43	49	51	54	55	60	45	43	45	47	45	45	48	49	53	54	62	62	....	50.5
Sidney ...	Max..	80	80	67	68	64	63	73	79	74	80	84	85	72	79	80	73	79	74	72	79	79	82	80	86	84	84	86	84	82	80	..	78.1
	Min ..	66	60	49	49	54	53	59	58	56	61	59	63	59	62	62	60	63	56	49	51	51	56	51	63	59	62	61	60	60	57	...	57.7
Sigourn'y	Max..	92	84	64	69	73	63	74	79	82	79	84	86	74	70	82	77	80	80	74	79	81	84	76	82	78	84	88	88	85	79	....	78.7
	Min ..	67	57	50	51	49	54	58	54	61	64	56	60	60	54	60	60	59	67	54	47	59	55	48	56	51	47	59	55	59	63	...	56.5
Sioux C'r.	Max..	79	70	69	71	68	59	70	75	78	78	86	76	64	81	80	77	72	68	68	78	76	73	76	75	82	78	82	81	81	71	....	74.7
	Min	63	44	45	42	48	54	59	56	55	53	56	57	49	61	57	53	57	51	45	45	55	53	46	56	51	64	57	51	52	58	...	53.1
Sioux C'y	Max..	76	65	69	71	60	61	70	76	77	79	87	70	68	84	78	79	75	67	72	85	82	77	79	79	88	78	85	85	81	71		75.6
	Min ..	58	50	49	44	52	54	60	51	58	50	62	58	54	64	63	61	63	51	49	52	56	55	49	58	57	61	56	64	64	51	...	75.8
Spirit L.	Max..	76	79	80	82	78	59	66	81	88	86	88	79	66	83	88	81	82	67	68	83	93	89	84	72	77	77	88	82	82	83	....	79.6
	Min ..	48	47	45	46	44	53	54	56	60	52	59	48	48	53	49	55	59	55	48	48	46	46	45	45	49	59	52	52	53	51	....	50.8
Stockport	Max.	90	80	64	62	62	63	67	75	79	74	79	83	72	70	77	76	74	73	72	73	76	74	65	72	72	70	71	72	73	71	....	72.7
	Min ..	69	60	55	52	52	55	59	56	62	66	55	62	60	56	65	64	60	69	55	50	60	58	48	57	53	49	49	61	62	63	....	58.1

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR SEPTEMBER 1905—CONTINUED.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Storm L*	Max..	75	66	65	70	67	60	60	74	75	80	83	70	65	81	77	77	72	74	69	80	81	75	71	79	76	78	85	82	81	77	....	74.4
	Min ..	60	46	47	45	45	51	52	50	50	50	51	60	49	50	58	57	56	59	47	47	52	52	44	50	49	50	55	56	62	63	....	52.3
Thurman	Max..	88	75	71	78	64	65	78	76	74	79	83	83	70	79	79	74	78	78	72	79	78	83	78	87	83	85	87	85	82	78	....	78.0
	Min ..	65	53	50	44	54	58	59	57	54	59	53	64	57	63	60	58	64	57	48	48	53	52	50	61	61	66	59	63	62	61	....	56.9
Tipton	Max	92	80	67	66	74	63	70	75	79	78	82	83	73	67	83	75	78	81	78	80	84	78	84	83	74	80	80	85	89	81	....	78.4
	Min ..	66	60	58	55	51	51	58	58	62	66	62	62	58	56	63	63	63	68	57	49	59	53	56	56	51	49	62	60	65	65	..	58.7
Vinton	Max..	85	75	62	68	75	67	68	72	74	79	81	79	74	70	83	78	74	75	74	79	77	80	76	80	73	..	87	80	89	80	....	76.3
	Min .	65	55	51	54	47	53	57	50	60	60	56	61	54	54	62	61	57	66	53	49	59	51	42	57	49	..	47	55	58	62	....	55.3
Washi'ton	Max..	90	69	59	59	68	62	67	75	79	76	80	83	68	68	82	73	79	78	71	80	81	84	75	82	72	82	87	84	86	79	..	75.9
	Min .	70	57	52	54	49	54	58	56	61	65	58	62	58	55	62	64	61	66	54	48	58	57	46	57	50	48	61	57	60	63	....	57.4
Wa-hta	Max..	80	70	70	75	68	61	72	78	80	84	88	76	67	80	86	85	74	74	72	82	84	84	80	80	84	82	89	86	84	75	....	78.5
	Min ..	58	46	48	36	40	56	58	48	55	47	58	64	47	52	56	55	58	52	45	42	44	46	45	50	52	62	52	62	60	66	....	51.9
Waterloo*	Max..	85	68	61	72	78	61	69	75	78	84	85	77	69	71	85	79	76	75	72	83	83	81	79	83	73	83	89	85	75	84	....	77.3
	Min	58	54	49	52	46	47	54	54	57	58	56	59	51	53	56	60	58	64	53	45	55	49	42	50	48	48	59	55	55	58	....	53.4
Waukee	Max	90	74	67	74	65	60	75	80	74	83	82	77	70	74	79	72	77	72	69	79	87	78	74	80	72	85	84	82	83	79	....	76.8
	Min .	67	52	50	48	49	53	57	60	60	62	65	62	58	59	62	58	58	63	51	50	56	55	48	59	53	54	53	59	62	63	....	57 2
Waverly..	Max..	78	69	59	68	72	61	66	70	73	78	81	72	66	68	80	75	75	73	71	78	72	76	73	78	68	78	87	82	82	81	..	73.7
	Min ..	65	53	48	53	45	52	57	55	55	56	57	60	52	55	60	59	56	66	54	46	56	56	42	52	48	50	58	56	58	60	....	54.7
Web'ter C	Max..	81	68	69	73	75	65	73	80	82	85	85	74	70	77	83	80	78	75	76	80	78	78	77	81	73	81	87	84	83	82	..	77.7
	Min ..	48	57	47	50	43	55	60	61	51	52	55	58	50	56	59	54	55	65	51	43	53	49	40	45	56	53	57	55	57	44	....	52.6
W. Bend.	Max..	73	64	62	70	71	59	73	76	79	80	82	70	67	81	81	78	76	76	68	79	76	72	75	74	72	78	83	82	81	79	....	74.6
	Min ..	63	46	47	46	43	53	58	55	53	51	57	58	47	58	58	54	55	62	50	45	53	54	45	58	47	55	57	59	59	64	..	52.2
Whitten	Max..	84	71	60	70	72	63	70	77	78	80	83	..	..	..	..	..	..	..	..	77	78	78	75	80	70	83	85	80	83	81	....	76.8
	Min ..	65	48	49	49	45	53	56	57	54	57	58	..	..	..	..	..	..	..	..	48	53	50	41	23	45	47	60	56	57	61	....	54.6
Wilton J.	Max.	94	74	63	65	75	67	73	80	85	78	81	84	72	70	69	80	82	86	78	78	80	83	75	81	71	88	87	84	86	82	....	78.4
	Min ..	63	54	50	51	47	53	57	60	59	62	65	56	56	54	63	60	63	67	58	46	58	51	45	53	47	46	55	52	58	62	....	55.4
Wint'rset	Max..	86	76	66	70	65	60	72	76	79	85	81	79	71	76	80	75	79	73	69	78	78	78	76	81	76	83	84	81	82	79	....	76.5
	Min ..	69	52	48	47	49	52	57	60	61	62	61	61	58	61	62	58	66	62	49	48	55	53	46	59	57	56	62	58	60	61	....	57 0
Woodb'n.	Max..	88	77	69	70	62	65	78	77	81	81	80	82	70	72	77	73	79	78	69	75	78	80	73	83	74	82	85	79	83	79	....	76.6
	Min ..	70	53	49	48	45	53	58	52	53	63	60	62	59	59	59	58	55	63	49	44	56	52	42	55	50	53	64	55	56	53	..	55.1
Zearing..	Max..	82	70	60	71	70	61	67	77	75	84	83	76	69	72	82	77	70	72	70	81	83	79	77	82	73	83	88	84	85	81	....	76.1
	Min ..	67	50	50	47	44	58	57	60	51	58	59	61	51	54	57	57	52	64	53	47	54	51	41	57	47	52	59	57	57	60	....	54.4

* At these stations thermometers are read in the morning; the maximum temperature then observed appears in the maximum column for the preceding day, on which it nearly always occurs.

OBSERVERS' NOTES.

ALTA—*David E. Hadden.* On the 18th 6.10 inches of water fell in the twenty-four hours ending 11 P. M. of the 18th. The month as a whole was ideal; no frosts; corn made rapid progress and at the close was out of danger.

AMANA—*C. Schadt.* Weather fine and agreeable during the month; no frost and corn had ample time to mature.

BONAPARTE—*B. R. Vale.* Early half showery and cloudy; latter half bright, warm and good for corn.

BRITT—*Geo. P Hardwick.* Month exceptionally fine, without frost. Half of corn crop is up to average. Pastures good; plowing advanced.

CHARITON—*C. C. Burr.* Corn crop varies from total failure on flat land to 70 bushels per acre on good rolling ground. From April 1st to October 1st had 32.09 inches of rainfall; pasture splendid and fall plowing made good progress.

CLINTON—*Luke Roberts.* A fine month for ripening corn, with no frost; temperature 2° above normal; rainfall 3.81 inches, over a half-inch above average; of this amount 3.04 inches fell on the first day.

CRESTON—*W. L. Gaston.* The heaviest rain of the season occurred this month, the total being 6.37 inches. No frost, and everything green or fully ripe.

ELLIOTT—*H. Barnes.* At close of month corn was mostly mature, and a full average yield; potatoes below average.

FLORENCE—*J. H. DuBois.* At close of month 98 per cent of corn was safe; largest amount of fall plowing done for years; potatoes about a half a crop.

FOREST CITY—*J. A. Peters.* A frostless September and 95 per cent of corn was safe at its close; temperature 2.5° above normal.

GRAND MEADOW—*F. L. Williams.* At 6:15 P. M. on the 18th a heavy windstorm blew down some buildings and trees; corn was badly lodged; no frost during month and corn ripe; pastures extra.

GRINNELL—*A. O. Price.* Month without frost and corn fully ripened; pastures of June freshness.

HANLONTOWN—*Miss G. M. Paschen.* Cutting corn begun on 15th; potato crop poor; good yield of apples; plum crop light.

HUMBOLDT—*H. S. Wells.* Some plowing and thrashing yet to be done, but this work is well along; much corn is being fed; no clover seed harvested.

IDA GROVE—*Dr. J. E. Conn.* An unusually warm September; corn all matured and a fine crop.

INDIANOLA—*John L. Tilton.* On the 14th a severe thunderstorm occurred at Indianola. Lightning struck the center poles of a tent on the fair grounds. The county fair was in progress and the tent was filled with people; four persons were killed and several severely injured by the shock. The storm was unusually severe over a wide area A livery barn in town was struck and set on fire, but the property was saved by strenuous work. The telephones were burned out and rendered useless. It was a sad calamity to the people of that town and county.

INWOOD—*Geo. M. Larsen.* A fine month and better than was expected for benefit of corn crop; no frost; corn badly lodged by wind.

IOWA FALLS—*J. B. Parmalee.* This is the fourth time September has escaped a killing frost in the last fourteen years.

JEFFERSON—*Geo. W. Day.* Corn crop all right; potatoes and apples half crops; grapes above average.

KEOSAUQUA—*J. H. Landes.* Fine fall weather; latter half of month warm, with plenty of sunshine, grand weather for drying out corn which is now out of danger.

MASSENA—*Fred L. Knott.* Heavy wind blew corn down, cutting average yield at least ten bushels per acre.

MONTICELLO—*A. Mattheisen.* Corn cutting progressed finely, and 90 per cent safe at close of month; small grain good in yield and quality.

NORTHWOOD—*Chas. H. Dwelle.* Small grain good; corn excellent and out of danger of frost.

OLIN—*N. Potter.* September was frostless and an ideal month; corn all fully matured; pasture fine, and second crop of hay more than average.

OSKALOOSA—*Jos. Boyd.* An ideal month for maturing a bountiful crop of corn, for which we should thank the Giver of all good.

RIDGEWAY—*Arthur Betts.* Warmest of all Septembers; 239 hours of sunshine, or 64 per cent; no soft corn this year.

SHELDON—*A. W. Beach.* An ideal month for ripening all late corn which is now safe; sunshine was noted every day but two.

WASHTA—*H. L. Felter.* A severe thunderstorm on morning of 18th, with hail and damaging wind.

WAUKEE—*E. J. Leonard.* Month generally fair; corn drying fast and good quality; thrashing nearly done; late potatoes poor.

WEST BEND—*Ph. Dorweiler.* Ideal weather and no trace of frost; corn crop is all right.

ERRATA FOR AUGUST REPORT.

OSAGE—Mean minimum temperature, page 9, 60.2, should read 60.7. Monthly mean temperature, page 6, 72.2, should read 72.5. Date of minimum temperature 11",25", should read 25", page 6.

DAILY AND MONTHLY PRECIPITATION FOR SEPTEMBER, 1905.

STATIONS.	DAY OF MONTH.																													TOT
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	T	....	....	.28	.93	....	....	....	....	..	....	1.78	.44	.07	.70	....	1.07	....	....	...	....	....	....	....	....	....	....	..	....	....	5.27
Albia	..	.03	....	..	..	.26	.03	....	..	.06	....	....	.08	.12	1.20	.57	T	.05	1.52	....	....	....	1.00	....	....	....	....	....	....	T	....	4.92
Algona	....	T	T	....	....	.14	.03	....	....	....	..	.55	....	.09	T	.10	....	.28	.42	....	..	....	....	....	....	T	....	....	....	T	....	1.61
Allerton	T	T	..	....	.26	1.06	.02	....	T	.03	....	.04	1.36	.34	T	.53	T	.94	.09	....	..	....	....	....	....	....	T	....	....	.65	....	4.67
Alta	....	....	....	....	....	.38	....	....	....	....	....	....	....	.36	.17	..	T	6.10	....	....	....	....	....	....	....	....	....	....	..	.77	....	7.66
Alta [near]	....	....	....	....	....	.44	.08	.02	....	....	....	....	..	.40	.09	.14	....	5.35	....	....	....	..	....	....	....	.08	....	....	....	.27	..	7.29
Alton	....	....	....	....	.24	....	.06	....	....	..	....	....	....	1.61	T	.63	T	1.19	1.12	....	....	....	..	....	....	....	....	....	....	T	....	5.20
Amana	T	.13	....	....	....	.05	....	....	....	....	....	....	....	.38	....	.33	....	.25	.70	....	....	....	..	....	....	....	....	....	....	....	..	1.84
Ames	....	.01	....	....	....	.22	....	....	....	....	.01	.01	....	.72	....	.75	.02	1.20	.02	....	....	....	....	....	....	....	....	....	....	.42	....	2.96
Atlantic	....	....	....	....	.99	.48	....	....	....	....	....	2.35	.70	1.45	1.74	.10	....	1.00	....	....	....	....	....	....	....	....	....	....	....	.21	..	9.23
Audubon	....	.01	..	....	.01	.88	.01	....	T	....	....	1.31	.26	.68	.01	.31	....	.79	.02	....	....	....	....	....	....	....	....	....	....	....	....	4.50
Baxter	....	....	....	....	....	.15	....	....	..	....	....	....	....	.54	....	.72	..	1.32	.08	....	....	....	....	....	....	....	....	....	....	.49	....	2 81
Bedford	.09	....	....	..	.45	1.10	....	..	....	....	....	T	1.18	.48	.20	1.03	T	.68	.03	..	..	....	....	....	....	....	....	....	....	.02	....	5.73
Belle Plaine	.01	T	...	....	....	.03	.20	....	..	46	....	....	....	.54	....	.34	....	.45	1.00	....	...	....	....	....	....	....	....	....	....	....	....	3.05
Bonaparte	....	.07	....	....	....	.22	.03	....	....	.10	....	.05	.05	.10	.40	....	..	1.03	....	....	..	....	....	....	....	....	....	....	....	....	....	2.05
Boone	T	....	T	T	....	.30	.08	.02	....	....	....	.05	T	T	.52	.70	T	..	1.24	....	....	....	..	....	....	....	....	....	....	....	....	2.91
Britt	....	.04	....	..	..	.13	.08	T	..	....	....	.67	T	.08	....	.05	....	.21	.23	....	....	....	....	....	....	....	....	....	....	T	..	1.49
Buckingham	.12	.10	....	....	..	....	....	....	....	....	....	....	....	.48	....	.38	....	2.29	....	....	....	....	....	....	....	....	....	....	....	T	....	3.37
Burlington	....	.19	.	....	....	.13	.02	..	..	.33	....	.96	.17	.09	.05	.14	....	T	.82	....	....	....	....	....	....	....	....	....	....	....	....	2.90
Carroll	....	....	....	.	....	.80	.05	....	....	....	....	....	.03	.18	....	.90	....	05	.50	....	....	....	....	....	....	....	....	....	....	....	....	2.51
Cedar Rapids	.06	.05	....	....	....	.02	T	....	....	....	....	....	....	....	.28	.12	....	.23	.74	....	....	....	....	....	....	....	....	....	....	....	....	1.50
Chariton	T	....	T	..	.10	.85	....	....	T	....	....	T	.43	.75	T	.65	..	.89	....	....	....	....	....	....	....	....	....	....	....	.27	....	3.67
Charles City	T	.03	.03	T	....	.02	.03	....	....	....	....	.30	....	.48	T	.01	.01	.70	.08	....	....	....	....	....	....	.04	....	....	....	.53	....	2.00
Clarinda	....	....	....	....	....	1.66	.07	....	....	....	....	....	.93	.33	.47	1.70	.07	.07	.31	....	....	....	....	....	....	....	....	....	....	....	....	.50	6.14
Clear Lake	T	T	T	..	....	....	T	....	....	T	....	..	....	.50	T	T	....	T	....	....	....	..	....	....	....	T	....	....	....	.06	....	.50
Clinton	3.04	..	.02	..	....	....	....	....	....	.23	..	....	....	....	....	....	....	....	.46	....	....	....	....	....	....	....	....	....	....	.30	....	3.81
College Springs	....	....	..	....	.95	.95	....	....	....	....	....	.50	1.35	.25	....	2.95	....	.63	....	....	....	....	....	....	....	....	....	....	....	T	....	7.88
Columbus Junct'n	T	.65	....	....	....	.02	....	....	....	....	....	....	....	.22	....	.23	..	T	.45	....	....	....	....	....	....	....	....	....	....	.73	..	1.56
Corning	....	....	....	....	....	1.60	....	....	....	....	....	.38	1.75	....	1.08	.92	....	1.43	....	....	....	....	....	....	....	....	....	....	....	....	....	7.89
Corydon	....	....	....	....	.28	.72	....	....	.10	....	....	T	..	.10	....	.67	....	.83	.34	..	..	....	..	....	....	....	....	....	....	....	....	3.04
Cres o	.01	.04	.07	....	....	....	....	....	....	....	....	.10	....	.55	T	.08	T	.52	.07	..	....	....	..	....	....	.01	....	....	....	T	....	1.45
Creston	T	T	....	....	....	1.20	.07	T	....	....	..	....	....	.75	.85	.75	2.00	....	.15	.60	....	....	....	....	....	....	....	....	....	....	....	6.37
Cumberland	....	....	....	....	2.01	.29	....	....	....	....	..	1.01	.62	.70	1 01	1.02	....	.42	.90	....	....	....	..	....	....	....	....	....	....	.24	....	8.22
Davenport	2.58	.23	T	T	....	T	....	....	....	.05	....	....	....	.07	....	.04	T	.55	T	....	....	....	..	....	....	....	....	....	....	.01	....	3.48
Decorah	....	.11	T	..	....	....	....	....	....	....	....	.02	....	.78	T	.06	....	.94	....	....	....	....	..	....	....	....	....	....	....	T	....	1.91
Delaware	.01	....	T	..	....	....	....	....	....	....	....	....	....	.45	....	....	..	1.16	.74	....	....	....	....	....	....	.26	....	....	....	....	....	2.62
Des Moines	T	T	....	....	.15	.22	....	..	..	....	....	.43	.06	.81	.20	.59	.01	.65	....	....	....	....	....	....	....	....	....	....	....	.35	....	3.47
De Soto	....	....	T	....	T	.50	T	....	....	....	....	....	.15	.83	....	.98	....	.55	.02	....	..	....	....	....	....	.10	....	....	....	....	....	3.03
Dows	.01	T	T	....	....	.22	.02	....	....	....	....	.06	..	.26	....	.17	....	.47	.05	....	....	....	..	....	....	.02	....	....	....	.13	....	1.36
Dubuque	.32	.04	T	....	....	....	....	....	....	....	....	....	....	.17	....	T	....	.57	....	....	....	....	....	....	....	....	....	....	....	....	....	1.25
Earlham	....	....	....	....	.20	.65	T	....	....	....	....	.01	.16	.78	....	1.22	....	.51	....	....	....	....	..	....	....	.05	....	....	....	....	....	3.53
Elkader	.15	....	.06	....	....	....	....	..	....	....	....	T	....	.50	....	....	....	.65	1.66	....	....	....	....	....	....	....	....	....	....	.38	....	3.07
Elliott	....	....	....	....	.46	1.15	..	....	....	....	....	T	1.15	.54	.52	1.18	....	1.01	....	....	....	....	....	....	....	....	....	....	....	....	....	6.39
Estherville	T	....	.04	....	....	.14	.11	....	....	....	....	.35	....	.50	T	.97	....	.97	2.60	....	....	....	....	....	....	....	....	....	....	....	....	5.68
Fayette	.07	.04	.03	....	....	T	....	....	..	..	....	.08	....	.48	....	....	..	2.60	.03	....	....	....	....	....	....	.09	..	..	....	.16	....	3.58
Florence	T	T	T	..	....	.20	T	....	....	....	....	.03	....	.42	....	.20	....	.34	.38	....	....	....	....	....	....	T	....	....	....	....	....	1.57
Forest City	.10	....	T	....	....	T	.30	....	....	....	....	.45	....	.10	.18	....	....	....	....	.45	..	....	....	....	....	....	....	....	....	.40	....	1.98
Fort Dodge	.02	....	.10	..	....	.16	.08	T	....	....	....	.24	T	.05	.07	.27	....	....	1.45	..	..	....	....	....	....	....	.10	....	..	....	..	2.54
Fort Madison	....	....	....	..	....	.18	T	....	....	.75	....	....	.05	....	.50	.10	....	.80	....	....	....	....	....	....	....	....	....	....	....	T	....	2.38
Galva	....	T	....	....	....	.50	....	....	....	....	....	....	....	.41	.51	.12	....	2.35	.15	....	....	....	....	....	....	....	....	....	....	.66	....	4.70
Gilman	....	T	T	..	....	.10	....	....	....	....	....	....	....	.95	....	.62	....	.98	97	....	....	....	....	....	....	....	....	....	....	T	....	3.52
Glenwood	....	....	....	....	....	....	1.85	....	..	....	....	....	2.10	.25	....	2.25	....	.85	....	....	....	....	....	....	....	....	....	....	....	.20	....	7.50
Grand Meadow	.10	....	.11	....	....	....	....	....	....	....	....	.08	....	....	....	....	..	.33	2.65	....	....	....	....	....	....	.09	....	....	....	....	....	3.36
Greene	.05	....	05	....	....	.06	T	....	....	..	....	.14	....	.25	....	.08	..	.50	.47	....	....	....	....	....	....	.08	....	....	....	....	....	1.68
Greenfield	T	....	....	....	.25	.92	.04	....	....	....	....	.74	.25	1.46	....	1.32	....	.99	.08	....	....	....	....	....	....	....	....	....	....	T	....	6.06
Grinnell [near]	..	....	....	..	....	.22	....	....	....	....	....	T	.05	.40	....	.55	....	.85	....	....	....	....	....	....	....	....	....	....	....	T	....	2.07
Grundy Center	..	.02	..	..	....	.13	....	....	....	....	....	.05	....	.45	....	.18	....	.48	.23	....	....	....	....	....	....	T	....	....	....	....	....	1.54
Guthrie Center	..	....	....	....	.02	.60	....	....	..	....	....	.85	.26	.33	....	.83	....	.79	....	....	....	....	....	....	....	....	....	....	....	T	....	3.68
Hampton	T	.05	.03	....	..	.12	....	....	....	....	..	.35	....	.65	.12	....	....	.63	....	....	....	....	....	....	....	.20	....	....	....	.42	....	2 57
Hanlontown	....	....	....	....	....	.05	.27	.20	....	....	....	.34	....	.29	.05	.06	....	.27	....	....	....	....	....	....	....	.01	....	....	....	....	..	1.54
Harlan	..	....	...	..	.08	.20	T	T	....	....	....	.09	.50	.92	T	1.01	..	.55	....	....	....	....	....	....	....	....	....	....	....	.19	.	3.54
Hopeville	....	....	..	....	.31	.84	..	....	....	....	....	.03	2.03	1.08	..	....	....	1.39	....	....	....	....	....	....	....	....	....	....	....	....	....	5.68
Humboldt	....	.10	....	....	....	.22	....	....	....	....	....	.30	....	.12	....	.12	..	.48	.50	....	....	....	....	....	....	....	....	....	....	.45	....	1.84
Ida Grove	....	....	....	....	....	.36	....	....	....	....	....	....	....	....	.32	....	..	1.60	....	....	....	....	....	....	....	....	....	....	....	.80	..	2.73
Inwood	....	....	....	....	....	.15	....	....	....	....	....	....	....	2.00	..	.72	T	.75	....	....	....	....	....	....	....	....	....	....	....	....	....	4.42
Iowa City	....	.14	.05	.02	....	....	T	T	....	T	T	....	....	....	.28	.26	.02	T	.77	....	..	....	....	....	....	.13	....	....	....	....	....	1.54
Iowa Falls	T	.05	T	T	....	T	.17	T	..	....	....	.04	T	T	.52	.16	....	.14	1.60	..	..	....	....	....	....	....	....	....	....	....	....	2.81
Jefferson	....	T	..	....	....	....	.46	.12	....	....	....	....	1.64	...	.40	..	.68	..	1.10	....	....	....	....	....	....	....	....	....	....	T	..	4.40
Keokuk	.05	.46	..	....	T	.37	.09	....	T	1.38	....	..	.22	.53	.04	.33	.02	.72	....	....	....	....	....	....	....	....	....	....	....	....	..	4.15
Keosauqua	....	.46	....	....	....	.29	.03	T	.	.05	.05	....	T	T	.10	.42	....	....	.80	....	....	....	....	....	....	....	....	....	....	.43	....	2.20
Lacona	T	.02	T	..	.07	.43	.02	..	....	..	....	.12	.27	.88	....	.60	....	1.12	..	....	....	....	....	....	....	.09	....	....	....	.41	....	3.96
Larrabee	....	T	....	....	....	.51	.05	....	.	....	....	....	....	.65	.20	....	....	5.50	....	....	....	....	....	....	....	....	....	....	....	....	....	7.41
Le Claire	T	2.70	....	T	....	....	T	....	....	.02	.01	....	....	.80	....	.42	T	....	.32	....	....	....	....	....	....	....	....	....	....	....	....	3.11
Le Mars	..	....	..	....	T	.40	.08	....	.	....	....	....	....	....	....	....	....	3.55	2.68	....	....	....	....	....	....	.07	..	..	..	.31	....	8.31
Lenox	..	....	....	....	.26	.83	..	....	....	....	....	.46	1.02	.50	2.08	1.07	..	.36	..	....	....	....	....	....	....	....	....	....	....	.45	....	6.73
Leon	....	....	....	....	.28	1.09	.02	..	....	.02	....	.21	.98	.25	.07	.74	....	.74	.05	....	....	....	....	....	....	....	....	....	....	....	....	4.45
Little Sioux	....	..	....	....	.17	.93	....	....	....	....	....	....	....	.35	.67	.15	.92	....	.74	.19	....	....	....	....	....	....	....	....	....	....	....	4.64
Logan	....	..	..	....	.48	1.00	..	..	..	....	.23	.50	....	.80	.38	....	1.65	....	1.71	....	....	....	....	....	....	....	....	....	....	.52	....	6.52
Maquoketa	.03	1.20	....	....	....	....	....	....	....	....	....	....	....	....	....	.26	.03	....	.02	.55	..	....	....	....	....	....	....	....	....	....	....	2.82
Marshalltown	.15	.12	.10	....	....	.04	.05	....	..	....	....	.01	.01	....	....	.80	.56	.02	.05	1.43	....	....	....	....	....	....	....	....	....	....	....	3.34
Mason City	....	T	.05	..	....	.06	.04	....	....	....	....	.20	....	.30	....	....	....	....	.35	....	....	....	....	....	....	T	....	....	....	.58	....	1.00
Massena	....	....	....	....	....	1.28	....	....	....	....	....	1.50	.65	.99	.05	1.37	....	....	1.15	....	....	....	....	....	....	....	....	....	....	.21	....	7.57
Monticello	.10	....	..	....	....	....	....	....	....	....	....	....	....	.31	....	....	.15	1.12	..	....	....	....	....	....	....	.75	....	....	....	....	....	2.64
Mount Ayr	T	....	....	....	.25	1.45	.05	....	T	....	....	.10	2.30	.22	.60	.70	T	1.25	....	....	....	....	....	....	....	....	....	....	....	....	....	6.92
Mt. Pleasant	.	.04	T	....	....	20	.04	....	T	.14	....	....	.05	.45	....	.33	..	T	.77	....	....	....	....	....	....	....	....	....	....	....	....	2.02
Mt. Vernon	....	.20	....	.01	..	T	....	....	....	....	....	....	....	.30	....	....	..	.25	.55	....	....	....	....	....	....	....	....	....	....	.01	....	1.32
Muscatine	....	.35	.03	..	.	....	T	....	....	14	.01	....	....	....	.58	....	60	....	1.66	.58	....	....	....	....	....	....	....	....	....	....	....	1.53
Newton	....	....	....	....	..	.25	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3.47
Northwood	.10	.04	.04	..	....	.05	.09	T	....	....	....	.22	....	.75	.05	.08	....	.07	....	....	..	..	....	....	....	.40	....	....	....	....	....	1.89
Odebolt	....	T	.06	....	....	.70	..	....	....	....	....	....	....	.41	.97	....	....	1.92	.21	..	....	....	....	....	....	....	....	....	....	.42	....	4.69
Ogden	....	T	.03	..	.39	T	..	....	....	....	....	.14	.02	.37	....	.77	....	.64	.02	....	....	....	....	....	....	....	....	....	....	....	....	2.38
Olin	T	.65	T	....	....	....	....	....	....	T	....	....	....	.35	....	T	....	.82	....	....	....	....	....	....	....	....	....	....	....	.48	....	2.30
Omaha, Neb	....	....	....	..	1.37	.35	T	....	....	....	....	....	1.80	.22	1.03	.15	....	.62	....	....	....	....	....	....	....	....	....	....	....	.40	....	5.94
Onawa	....	....	....	....	.05	.98	.01	.06	..	....	....	....	.30	.80	.05	.55	..	2.10	.33	....	...	....	....	....	....	....	....	....	....	.50	....	5.23
Osage	T	.03	.07	....	....	.01	.05	....	....	....	....	.25	....	.30	....	.04	....	.28	.50	....	....	....	..	....	....	....	....	....	....	....	....	1.53
Oskaloosa	T	.02	....	..	....	.21	....	..	....	....	....	T	T	.65	....	.55	04	.84	....	....	....	....	....	....	....	....	....	....	....	T	....	2.31
Ottumwa	.01	....	..	.	T	....	....	....	....	....	....	.04	.01	.36	.45	....	....	2.16	....	....	....	....	....	....	....	....	....	....	....	.35	....	3.37
Pacific Junction	T	....	....	....	....	.74	.94	....	T	....	....	....	1.30	.50	.80	2.00	T	.95	....	....	..	....	....	....	....	....	....	....	....	.40	..	8.13
Pella	..	....	T	....	....	.27	....	....	....	....	....	.02	....	.85	....	.60	....	.30	24	....	..	....	....	....	....	....	....	....	....	T	....	2.28
Perry	....	....	....	....	.05	.41	T	T	....	....	..	.10	....	....	....	1.20	....	.64	....	..	....	....	....	....	....	....	....	....	....	....	....	2.40
Pocahontas	....	.02	....	....	....	.41	T	....	....	..	....	.64	....	.13	.04	..	.77	.39	....	....	....	....	....	....	....	....	....	....	....	.85	....	8.25
Red Oak	....	.02	....	...	.54	1.00	.03	....	....	....	....	T	2.00	T	.95	1.50	....	2.20	.02	....	....	....	....	....	....	....	....	....	....	....	....	8.26
Ridgeway	T	.04	.06	.01	....	....	..	....	....	....	.01	.11	....	.54	.08	.03	.02	.60	.28	....	....	....	....	....	....	.03	.01	....	....	.25	....	2.02
Rock Rapids			....	....	....	T	....	....	....	....	....	....		.80		....	.70	.20	.75	....	....	....	....	....	....	.2	....	....	....	....	....	2.73

DAILY AND MONTHLY PRECIPITATION FOR SEPTEMBER, 1905--CONTINUED.

STATIONS.	DAY OF MONTH																														TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Rockwell City	...	...	..	....	....	.60	....	....	....	....	....	....	....	.50	.45	....	.10	.40	.	....	..	....	. .	....	....	.10	....	....	....	.55	....	2.70
Sac City	....	....	...	....	.50		....	....	....	....	T	....	T	48	T	.31	....	.43	.15	....	....	....	..	....	....	....		....	....	.50	....	2.37
St. Charles	.02	....	.02	....	.03	.63	.04	....	....	....	..	.07	.20	.45	....	.80	....	1.01	....	....	....	....	....	....	....	....	....	....	....	....	....	3.27
Sheldon	....	.01	..	....	....	.25	....	....	....	..	....	....	T	.60	.90	.40	..	1.80	....		....	....	....	....	....	.02	....	....	....	.38	....	4.36
Sibley	.01	...	.03	..	....	.15	.11	....	..	..	..	..		.96	.03	.50	....	.47	1.69	....	....	....	....	....	....	.12	T	..	....	....	....	4.07
Sidney	....	....		....	.85	.90	...	....	....	....	....	....	1.80	.28	.28	3.59	...	1.90	..	...	....	....	..	...	....	....	....	....	....	.04	....	9.64
Sigourney	....	.06	.01	....	....	.11	....	....	....	.03	....	....	T	.34	....	.44	.05	1.05	....	..	....	....	....	....	....	....	....	....	..	T	....	2.09
Sioux Center	....	.02	....	....	T	.29	...	....	..	....	....	....	T	1.10	.90	.42	T	.95	.27	....	....	....	....	....	....	.15	....	....	..	.38	....	4.47
Sioux City	....	....	...	....	.10	.23	T	....	....	....	....	T	T	.32	.46	....	1.60	3.17	.19	....	....	..	....	....	....	.07	....	..	....	.23	..	6.37
Spirit Lake	....	.20	....	..	....	.14	.16	....	....	....	....	....	....	.25	.30	1 00	.85		...	....	....	..	....	....	....	T	....	....	....	.25	....	3.15
Stockport	T	.10	T	..	T	.20	.01		....	.17	..	....	.67	.20	....	.40	T	.01	.60	....	....	....	....	....	..	....	..	....	....	....	T	....	2.36
Storm Lake	....	....	..	....	....	.23	.11	T	....	....	....	T		.30	....	.18	....	1.03	2.10	....	..	....	..	....	....	....	....	....	....	..	..	3.95
Thurman	....	....	....	....	....	2.26	....	....	....	....	....	..	3.38	.68	....	4.82	....	1.89	.	....	....	....	....		....		....	....	..	.15	....	13.18
Tipton	....	1.02	...	....	....	....	...	...	....	...	...	....	....	.31	...	....	..		.73	....	....	....	....		....	....	....	....	....	....	....	2 06
Toledo	.10	.10	....	....	....	.15	....	....	....	....	....	.05	T	.70	....	.45	....	.75	1.70	..	....	....	....	....	..	....	....	....	....	....	....	4.00
Vinton	.10	...	....	....	....		.10	....	....	....	....	....	....	.32	....	.12	.02	.32	1.10	....	....	....	....	....	....	....	....	....	....	....	....	2.08
Washington	.70	....	....	....	....	.03	....	....	....	.29	....	....		.25	....	.25	..	.55		....	..	..	....	....	....	..	....	....	....	..	....	1.87
Washta	..	T		....	....	.48	.08	....	....	....	....	....	..	.28	.33	...	....	3.88	..	..	....		....	....	....	...	....	....	..	.46	....	5.51
Waterloo	.16		T	....		.11	....		..	..	....	.08	....	.44	....	....	....	1.29	..	....	....	....	..	....	....	.89	.02	....	....	....	....	2.99
Waukee	....	.05	....	....	T	.47	....	....	....	..	....	.03	.07	1.16	T	.82	....	.99	....	....	..	....	....	..	..	....	....	....	....	....	....	3.59
Waverly	.07	.01	T	..	....	.03	.02	....	....	....		.11	..	.43	....	.08	....	.20	.70	....	....	....	....	....	....	.08	....	....	....	....	..	1.73
Webster City	....	.17	...	....	T	.32	....	....	....	..	..	..	....	.36	..	.30	..	.36	....	....	..	....	....	....	....	T	....	....	....	.53	..	2.04
West Bend	....	T	....	....	....	.20	.02	....	....	..	..	.58	....	.10	....	.14	T	.70	.40		....	..	....	....		....	....	....	....	.51	....	2.65
Wilton Junction	.85	1.25	...	....	....	T	....	..	...	1.50	....	....	....	.30	....	.17	..	....	.53	....	....	....	....	....	....	....	....	....	....	T	....	4.60
Winterset	.01	T	....	....	.10	.68	.02	....	...	..	.	.02	.18	.75	....	.80	....	1.00	T	..	....	....	..	..	....	....	....	....	..	....	....	3.56
Woodburn	T	....	....	....	...	.80	....	....	....	....	...	.05	.30	1.00	.32	.75	....	1.15		..		..	....	....	....	....	....	...	....	...	....	4.87
Zearing	....	.04	.01			.15	..	..	....	....	....	T	....	.50	..	.43	...	.63	.05	.	....	..	....	....	....	....		....		....	...	1.81

Precipitation Chart September 1905



OCTOBER, 1905. No. 10



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Centerville	Jacob Harter
Charles City	W. B. Towner
Clarksville	F. M. Russell
Council Bluffs	L. Prouty
Correctionville	Hon. W. B. Chapman
Creston	M. V. Ashby
Danville	Sherman Matthews
Dunlap	Hon. B. F. Roberts
Emerson	D. B. Nims
Fort Dodge	R. W. Blaine
Fruitland	R. T. Hummel
Goldfield	D. M. Stephens
Geneva	Wm. H. Thompson
Gruver	C. Higinbotham
Hartwick	Fred McCulloch
Harlan	H. B. Kees
Humeston	Hon. S. H. Moore
Ida Grove	P. E. Lund
Independence	Geo. H. Wilson
Indianola	H. D. Guthrie
Ireton	J. M. Sherman
Long Grove	Hon. Chris Marti
Manson	J. D. Skinner
Marshalltown	Hon. S. B. Packard
Mt. Pleasant	W. S. Wright
Milton	Hon. E. C. Holland
Monroe	J. A. Dibel
Nevada	Geo. C. White
Northwood	T. L. Bolton
Oakville	Z. W. Steele
Orange City	H. J. Vande Waa
Pella	J. H. Ver Steeg
Preston	J. G. Storm
Pittsburg	G. C. Duffield
Portland (Nora Springs, P. O.)	Arthur Pickford
Platte (Creston R. D.)	M. H. Dibel
Red Oak	Hon. C. L. Stratton
Seymour	L. B. Sager
Stuart	W. W. Bailey
Toledo	W. G. Malin
Van Horne	Spencer Smith
Wauton R. D	T. B. Wiley
Weldon	Ed Worden
Winterset	H. A. Kinsman
West Branch	Wrigley Smith
West Union	H. B. Blackman
Wiota	I. S. Coomes
Woodward	George Swisher

U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XVI. OCTOBER, 1905. No. 10.

OCTOBER WEATHER AND CROPS.

The daily average temperature of October for the state was 49.2°, which is 3 3° below normal. The average at the Mississippi river stations was higher than in the interior and western districts. The average precipitation was 3.40 inches, or .98 of an inch in excess of the October normal. The greater part of the rainfail came in the second decade. The first decade was warm and generally clear and dry, affording almost ideal conditions for ripening the belated portion of the corn crop, and for securing the second crop of clover and harvesting potatoes, apples and vegetables in good condition. The first killing frost was reported about the 11th and 12th in all districts, and all crops were fully matured. The wet weather prevalent from the 12th to the 20th retarded the drying out of the corn, but the last decade was more favorable and a good beginning was made in cribbing the fine crop that had been produced. The pastures were green, affording ample forage for stock throughout the month. Good progress was made in fall plowing. An increased acreage of winter wheat was sown in September, and this crop was in excellent condition as to stand and height at the close of October. All minor crops, garden truck and fruit were harvested in due season. Except some damage to-flattened corn by the wet weather about the middle of the month, the conditions during October were all that could be desired.

GENERAL NOTES.

In the next monthly issue the final crop report for 1905 will be published. To supplement the reports of regular crop correspondents, we respectfully solicit notes, estimates, figures and criticisms from any of the readers of this publication who may be qualified to give an opinion relative to the yield and quality of corn and other staple farm crops. There is much variability in the yield of corn. What is the average number of bushels harvested in the territory within the range of your observation? What is the quality compared with previous years? Take as wide range of observation as possible. Don't judge the general average by the yield of a single farm, or a limited area in a township. The public want reliable figures. Help us get the facts.

The gold output for Alaska for the year is estimated at about twenty-one million dollars. That's a very handsome dividend upon the original cost of that region. But the labor expended, and the privations endured in the production of that gold, brought a meagre compensation as compared with the rewards of labor expended upon the fertile fields of Iowa. The hay crop of this state for this year is worth one and two-thirds the value of Alaska's gold output, and the labor cost of the hay product was not half as great. Why, the farmers of Iowa waste more than the value of Alaska's gold every year in their corn fields, and that's not half the amount they waste yearly by not applying the best methods of farming. There is vastly more net profit in good farming than in gold mining in any country.

Everyone has tried to describe our Indian summer, and none has succeeded. It is like painting the rainbow. Such days must be seen, must be felt. It is not the eye alone that drinks in the scene with delight; it is not the ear alone that catches, far from the maddening crowd, all manner of voices and songs and instruments in the grand chorus of nature; it is not the lungs alone that feast upon the pure crisp air that fairly intoxicates you; it is not the sense of smell alone that is delighted with an odor so slight, pungent, indescribable, yet strangely agreeable; it is all these, and much more. And getting away from the busy haunts of man, up among the islands of the grand river or walking or driving through a wooded vale, or a broad expanse of prairie, there are sermons in an Indian summer day more eloquent, more effective than any that have ever been put into words. He who loves nature returns to his labors physically, mentally and morally better because of a day in the open during Indian summer.—*Burlington Hawkeye.*

The soil of Emmet county will raise a large yield of corn as well as small grain if properly tilled. H. C. Hanson, south of Armstrong, has a field of corn which he considered about the best in the county, and in order to ascertain if his statements were true some neighbors and people from Ringsted went out and husked a load, measured the ground and the corn, and examined the whole field carefully. It was found the average yield of the whole field would be about 92 bushels to the acre. They did not find a hill missing, and very few hills had less than three stalks. This is an example and a lesson of what good farming and good seed corn will accomplish. — *Armstrong Journal.*

According to the *Marine Review*, thirty million tons of iron ore will be transported down the lakes this year. There has been a steady increase in the ore trade, and also a constant decrease in the cost of transportation. It is confidently expected that there will be a movement of forty-five million tons of ore within the coming decade. This signifies a vast deal for the prosperity of the Northwest.

The total eclipse of the sun in August, 1905, occurred in the period of the greatest sunspot activity, and this afforded a rare opportunity to solar scientists to solve some of the problem relating to the variations of the sun's energies.

A Moscow report says that famine is prevalent in 100 districts of twenty-three provinces of Russia, and that it affects 18,000,000 persons, who will have to be fed until next July.

PENALTY FOR COUNTERFEITING FORECASTS.

Any person who shall knowingly issue or publish any counterfeit weather forecasts or warnings of weather conditions, falsely representing such forecasts or warnings to have been issued or published by the Weather Bureau, or other branch of the Government service, or shall molest or interfere with any weather or storm flag or weather map or bulletin displayed or issued by the United States Weather Bureau, shall be deemed guilty of a misdemeanor, and, on conviction thereof, for each offense, be fined in a sum not exceeding five hundred dollars, or be imprisoned not to exceed ninety days, or be both fined and imprisoned, in the discretion of the court.—[See Act of Congress approved March 3, 1905.]

FROST DATA AT RIDGEWAY, WINNESHIEK COUNTY.

BY ARTHUR BETTS, OBSERVER.

Year.	Late Frost.	Early Frost.	Frostless Period.
1897	.....	October 17	.....
1898	May 6	October 6	152 days
1899	April 22	September 29	159 "
1900	May 4	October 8	156 "
1901	April 22	October 4	164 "
1902	April 24	October 14	172 "
1903	May 3	September 18	137 "
1904	April 27	October 6	161 "
1905	April 21	October 11	172 "
Average	April 27	October 6	160 days

POPULARIZING METEOROLOGY.

[New York Tribune.]

The work of the Weather Bureau at Washington in making practical popular applications of its meteorological knowledge is greatly to be commended. In the realm of science there are, generally speaking, two classes of workers: those who make original researches and discoveries and those who make the knowledge thus acquired known and practically profitable to the world. Perhaps it would be better to say there are these two classes of work, because it sometimes happens that they are both done by the same men, and those who make original researches also make practical applications of them to human needs. That combination of activities marks, of course, the highest form of unity.

Our Weather Bureau makes many observations, experiments and what not with a view to increasing theoretical knowledge of the weather and climatic conditions and phenomena. But these are of little value to the people unless their results are applied in some practical manner. For years daily forecasts of the weather have been widely published, and these steadily increasing in accuracy, have become more and more valuable to the public; even those who affect lightly to scoff at "Old Prob." often trusting to them implicity and profitably. A further development of the same principle is now seen in the issuance of special warnings of weather changes to special districts in which special crops are likely to be affected. A warning twenty-four hours in advance of the coming of frost may mean all the difference between prosperity and ruin to some fruit growing region.

In promoting that sort of work Professor Moore is giving to the Weather Bureau perhaps its greatest popular value. The average farmer or other citizen may take comparatively little interest in learned talk of high pressure and low pressure and atmospheric strata and all the rest of it, but he appreciates as ready money in his pocket a bit of information that enables him to gather a crop just in time to save it from being destroyed by frost; and when he finds such practical results proceeding from the more abstruse investigations in which he has taken little or no interest and which he may have been inclined to regard as a squandering of money, he will realize that after all they are well worth while.

JUST A WINTER'S SLEEPING.

The flowers of summer are dead,
And the world waits her garments to shed,
For her handmaid, October, has come to disrobe her—
November will spread her white bed!

She will sleep, and her sleep will be deep,
And the dull hours will silently creep,
And glad dreams without number will sweeten her slumber,
For she ll dream of the spring in her sleep!

But so weary she is, and outworn
With the burden of toil she has borne,
That not once will she stir till the birds call to her,
And the strength of the winter is shorn.

Then she'll throw off the robe that has kept
Her so warm from the winds that have swept
'Round the couch where she lies—and the light in her eyes
Will be brighter because she has slept!

—*Cleveland Leader.*

GRASS AS A MEAT MAKER.

All through the corn belt men have placed too much dependence upon corn as a meat maker and not enough on grass and other crops. Meat made from grass—and by grass we mean clover, alfalfa and blue grass—is always cheaply produced, while meat made from corn has often to be sold for less than it cost. But few men understand the real value of a good pasture as a meat producer, and altogether too little attention is paid to keeping pasture lands up to a high state of productiveness, the most common sin being in connection with overstocking them and never giving the grass any kind of a show to grow. We know of men who would hardly be able to sleep nights if they had a pasture which carried a heavy and luxuriant growth of grass and would not rest until they had got enough stock into it to "keep it down," as they express it. Grass must have some sort of a chance to grow above ground if it is to have a good, strong and vigorous root system. Where grass is weakened by overpasturing the weeds are quick to take advantage of the fact and soon swarm all over the field to still further help kill out the grass. A blue grass pasture unfed from July 1 till winter will furnish one of the best and very cheapest winter rations for the colts and for cattle and sheep as well, provided the snow does not get too deep.—*J. S. Trigg.*

CLIMATOLOGY OF THE MONTH OF OCTOBER, 1905.

BAROMETER.—Mean pressure, 30.09 inches; highest observed, 30.68 inches, at Charles City and Dubuque, on the 28th; lowest observed, 29.66 inches, at Sioux City, on the 13th; range for state, 1.02 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 116 stations, was 49.2° degrees, which is 3.3° below normal. By sections the mean temperatures were as follows: Northern section, 46.9°, which is 4.0° below normal; central section, 49.5°, which is 2.3° below normal; southern section, 51.1° degrees, which is 3.6° below normal. The highest monthly mean was 54.8°, at Keokuk; lowest

monthly mean, 42.4°, at New Hampton. The highest temperature reported was 95°, at Inwood and Sheldon, on the 4th; lowest temperature reported, 16°, at Decorah, Elkader, Maquoketa and Inwood, on the 28th, 29th and 30th. The average monthly maximum was 84.7°; average monthly minimum, 20.4°. Greatest daily range, 53°, at Keosauqua; average of greatest daily ranges, 38.7°

PRECIPITATION.—Average precipitation for the state, as shown by records of 125 stations, was 3.40 inches, which is 0.98 of an inch above normal, The averages by sections were as follows: Northern section, 3.15 inches, which is .96 of an inch above normal; central section, 3.58 inches, which is 1.13 inches above normal; southern section, 3.46 inches, which is .85 of an inch above normal. The largest amount reported was 5.36 inches at Iowa City; least amount reported, 1,20 inches, at Sioux Center. The greatest daily rainfall reported was 3.14 inches at Clinton on the 16th and 17th. Average number of days on which .01 of an inch or more was reported, 8.

WIND AND WEATHER.—Prevailing direction of the wind, Northwest; highest velocity reported, 47 miles per hour, from the south, at Sioux City, on the 8th. Average number of clear days, 16; partly cloudy, 6; cloudy, 9.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES.			
		Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Charles City	30.03	30.68	28	29.73	13
Davenport	30.09	30.64	28	29.73	17
Des Moines	30.09	30.66	28	29.70	14
Dubuque	30.14	30.68	28	29.69	19
Omaha, Neb	30.09	30.66	28	29.67	13
Keokuk	30.10	30.65	28	29.76	17
Sioux City	30.07	30.66	28	29.66	13
Means	30.09	30.68	28	29.66	13

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Charles City	5481	26	SE	17
Davenport	5681	34	NW	19
Des Moines	5887	32	SW	8
Dubuque	5246	28	NW	19
Keokuk	5651	36	W	19
La Crosse, Wis	6078	30	W	31
Omaha, Neb	6174	29	NW	19
Sioux City	9268	47	S	8

OBSERVERS' NOTES.

ALLERTON—*Rex Shriver*. About one-third of corn gathered and some fall plowing being done; pastures good.

ALTA—*David E. Hadden*. First killing frost on morning of the 10th; corn entirely safe; first snow on the 19th, but soon turned to rain; month as a whole pleasant.

ALTON—*W. S. Slage*. Corn picking in progress; much of it down and would be damaged by snow.

AMANA—*Conrad Schadt*. Fine weather, with balmy days during a great part of the month; rains moistened the grounds thoroughly, which had been very dry.

ATLANTIC—*J. W. Love*. First frost on 10th; first ice on 12th; severe thunderstorms 16th and 17th; wild fowls flying southward on 27th; snow on 29th.

BAXTER—*W. T. Thorp*. Corn matured naturally and husking is in progress.

BONAPARTE—*B. R. Vale*. A pleasant and profitable month; corn husking begun about the 20th; much fall plowing done; fall grain doing nicely.

BRITT.—*Geo. P. Hardwick*. Corn and other tender vegetation killed on 12th; about an average crop of corn; husking during the last week; pastures fair to near the end of month.

CHARITON—*C. C. Burr*. Many are cribbing corn, which is badly tangled and down; more than usual fall plowing done; grass and pastures never better.

CLINTON—*Luke Roberts*. October, 1905, was 1° colder than normal, and 5° above the coldest October during the last 27 years; 8° below the warmest October. Rainfall, 4.45 inches; was 2.12 in excess of normal.

CORNING—*Jerome Smith*. The frost on the 12th killed all tender vegetation.

CRESCO—*L. G. Krumm*. First heavy frost on the 11th; ice on shallow troughs.

ELLIOTT.—*Henry Barnes*. Corn was well matured but badly down; husking somewhat delayed by bad weather; potatoes a fair crop.

FLORENCE.—*J. H. DuBois*. Large amount of plowing done; corn picking begun on 23d; average yield 50 to 55 bushels per acre.

FOREST CITY.—*J. A. Peters*. Corn husking begun last week in October; first killing frost on 11th, and corn out of the way.

GRAND MEADOW.—*F. L. Williams*. Field work well along; pastures good, and plowing well advanced.

GRINNELL.—*A. O. Price*. Rainfall 4.68 inches, almost 4 inches in excess of October, 1904; stock water will be abundant; corn dry enough to husk the last of month.

HANCOCK.—*W. Armstrong*. Corn harvest begun about the 25th; crop not quite up to 1904.

HANLONTOWN.—*Mrs. G. M. Paschen*. Most all stack thrashing finished by 15th; potatoes most all dug by 20th when corn husking begun; corn best in quality and yield for past 4 years; fall work retarded by bad weather.

HUMBOLDT.—*H. S. Wells*. A good month for corn harvest, and a bountiful crop.

INWOOD.—*Geo. W. Larsen*. Warmest day in October, 94° on 4th; coldest, 16° on 30th. Frost nearly every morning after the 10th; corn husking in progress and the crop is extra good in yield and quality. First snow on 20th, wet and heavy.

JEFFERSON.—*Geo. W. Day*. Corn gathering begun on 17th; bushels per acre, 35 to 75; quality good.

KEOSAUQUA—*J. H. Landes*. Ice one-fourth inch thick on morning of 12th. This is phenomenal, the first frost of the season being a genuine freeze. A beautiful fall month and favorable for work.

LARRABEE—*H. B. Strever*. First killing frost on 12th; corn was generally well ripened.

LEON—*Millard F. Stookey*. First killing frost of season on 12th; first snow on 30th.

MONTICELLO—*A. Matthiesen*. Corn crop good in yield and quality; ground in fine condition for plowing.

OLIN—*Nathan Potter*. October was a good month, the first half being warm and dry, and latter half wet enough to moisten the ground for plowing.

POCAHONTAS—*F. E. Hronek*. Killing frost on 12th, the latest date for years; no damage to crops.

RIDGEWAY. *Arthur Betts*. First decade of the month delightful; we had in the month 212 hours of sunshine, or 62 per cent; first killing frost on 11th; first snow on 19th.

SHELDON.—*A. W. Beach*. First half of month warm and clear; latter half cool and disagreeable, with two snowstorms.

STOCKPORT.—*C. L. Beswick*. First killing frost October 12th; latest frost in spring, April 22d; giving 173 frostless days; 95 to 98 per cent of corn was well ripened.

WAUKEE.—*E. J. Leonard*. Except about ten days near the middle of month October was favorable; first frost on 12th, and snow on 30th; crops all matured without damage.

BELATED REPORT.

HANCOCK.—September, mean temperature 70.5°; highest 91° on the 25th; lowest 44° on the 4th; greatest daily range 45°; total precipitation 7.61 inches; greatest in 24 hours 2.71 inches on 16th; prevailing direction, south; number of clear days, 23; partly cloudy, 1; cloudy, 6; rainy, 10.

CLIMATOLOGICAL DATA FOR OCTOBER, 1905.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	46.4	- 4.2	82	4	21	28	37	3.62	+ 1.52	1.00	T	8	13	7	11	S	14
Alta	Buena Vista	1,513	14	46.2	- 4.6	85	4	20	28	41	2.08	- .09	.75	2.3	8	15	5	11	NW	14
Alta (near)	Buena Vista										2.08		.59		7					
Alton	Sioux			47.2		84	4	22	28	39	1.41		.59	T	4	18	7	6	NW	14
Britt	Hancock	1,236	8	46.4	- 5.3	85	4	19	28	38	3.85	+ 1.67	.98	2.0	10	9	11	11	SW	15
Charles City	Floyd	1,015	18	46.8	- 4.8	85	4	20	28	35	3.23	+ .84	1.15	0.4	8	12	9	10	NW	9, 13, 14, 17
Clear Lake	Cerro Gordo	1,441	7	47.6	- 4.2	83	4	20	28	31	3.25	+ .37	.85	1.0	6	19	2	10	NW	
Cresco	Howard		31	46.6	- 1.0	84	4	19	29	30	4.93	+ 2.56	.99	2.0	10	16	6	9	NW	13
Decorah	Winneshiek	857	12	47.2	- 3.5	82	4	16	28	30	3.40	+ 1.06	.76	T	8					
Dows	Wright	1,142	9	47.4	- 5.2	86	4	20	28, 31	36	3.82	+ 1.47	.98	.5	10	15	4	12	NW	14, 15
Elkader	Clayton	727	21	49.4	- 0.1	88	4	16	29	40	4.31	+ 1.56	1.85		8	16	8	7	NW	13, 14, 19
Florence	Wright	1,220									4.85		.90	.5	8	10	13	8	NW	16
Forest City	Winnebago	1,226	11	46.4	- 4.1	92	4	20	28	42	3.84	+ 1.47	1.21	T	7	14	3	14	SW	
Grand Meadow (‡)	Clayton	1,180	11	47.6	- 2.4	78	4, 8	20	28, 29	27	2.93	+ .36	.78	T	7	15	9	7		13, 17
Greene	Butler	924	8	48.1	- 5.5	85	4	21	28	32	3.85	+ 1.71	.75		10	8	11	12	W	
Hampton	Franklin	1,155	13	49.5	- 1.1	91	4	22	28	37	3.46	+ .88	.90	T	6	12	14	5		13, 14
Hanlontown	Worth			45.9		87	4	19	28	36	3.60		.87	1.0	8	17	1	13	SE	15
Humboldt	Humboldt	1,095	16	49.8	+ 0.1	83	8	20	28	37	4.11	+ 2.38	1.18		8	16	5	10	NW	
Inwood	Lyon			47.3		94	4	16	30	38	1.47		.60	8.0	5	19	1	11	NW	
Larrabee (b)	Cherokee	1,266	12	48.6	- 1.9	84	4, 7	22	30	42	2.61	+ .77	1.05	4.0	5	14	9	8	SW, NW	14
LeMars	Plymouth	1,224	7	47.2	- 5.3	84	4	23	28, 31	43	1.78	- .07	.65	T	4	16	7	8	S	
Mason City	Cerro Gordo	1,152	8	47.8	- 1.6	82	4	22	28	32	3.64	+ 1.63	1.02	T	7	10	11	10	SW	14
New Hampton	Chickasaw	1,169	7	42.4	-11.1	81	7	20	28, 29, 30	32	3.28	+ .68	.84	T	9	13	2	16	W	9, 10, 15
Northwood	Worth	1,222	8	46.0	- 2.0	84	4	20	28	33	4.20	+ 1.51	.90	7.2	11	15	11	7	NW	14
Osage	Mitchell	1,184	13	46.7	- 0.2	84	4	20	28, 31	34	3.45	+ 1.02	1.01	4.0	9	14	4	13	S, NW	14
Plover (c)	Pocahontas			47.4	- 4.9	83	7	20	28, 30	40	2.86	+ .55	.69	3.0	7					16
Pocahontas	Pocahontas	1,190		47.4		86	4	21	28	42	3.35		.87	0.5	6	15	6	10	S	14
Ridgeway	Winneshiek	1,215	7	48.8	- 5.1	88	4, 7	20	28, 29	34	3.58	- .30	1.10	1.0	9	15	11	5	S	15, 17
Rock Rapids	Lyons	1,021	7	44.2	- 8.8	87	5	26	11, 16, 21, 30	38	2.50	+ .75	.60	0.0	5				N	
Sheldon	O'Brien	1,442	6	48.2	- 5.2	94	4	20	28, 30	50	2.41	+ .41	1.25	6.0	6	19	2	10	S	14
Sibley (a)	Osceola	1,212	12	44.2	- 6.7	89	4	17	30	44	2.11	+ .44	.40	4.3	10	17	3	11	NW	15
Sioux Center	Sioux		6	46.1	- 7.1	84	4	18	28	41	1.20	- .86	.65	5.0	5	17	2	12	S	14
Storm Lake	Buena Vista	1,440	8	44.0	-11.5	88	4	17	28	33	2.85	+ 1.09	.75	T	7	17	1	13	NW	
Washta	Cherokee	1,157		48.0		92	4	17	28, 29	50	1.92	- .05	.68	T	4	16	7	8	S	14
Waverly (a)	Bremer	942	9	47.6	- 5.8	81	4, 7	20	31	32	3.04	+ .40	.70	T	12	15	6	10	NW	1, 13, 14, 17
West Bend	Palo Alto	1,197	12	46.5	- 2.5	83	4	18	28	33	2.75	+ .99	.90	0.3	8	13	10	8	N	14, 15
Average				46.9	- 4.0	85.8		19.8		37.3	3.15	+ .96		3.2	8	15	6	10	NW	

CENTRAL SECTION.

Amana	Iowa	721	7	50.1	+ 0.5	82	4	21	31	34	4.52	- 1.78	2.36	T	9	13	15	5	NW	17
Ames	Story	926	21	49.4	- 1.5	84	4	20	28	42	3.55	+ 1.03	1.32		8	16	9	6	W	
Audubon	Audubon	1,301	9	48.5	- 2.7	85	4, 5	18	28	40	3.17	+ .94	1.39	T	9	12	11	8	NW	13, 14, 17
Baxter	Jasper	908		49.8	- 4.9	82	4	18	28	32	3.98	+ 1.27	.95	T	8	13	6	12	NW	
Belle Plaine	Benton	826	14	48.8	- 1.8	80	4, 7, 8	20	31	30	4.35	+ 2.07	2.10		7	15	11	5	NW	
Boone	Boone			49.0		85	4	21	28	42	3.60		1.10	T	8	17	2	12	NW	
Buckingham	Iowa										3.57	+ 1.73	1.15	TT	6	12	15	4		
Carroll	Carroll	1,265	13	48.1	- 3.2	84	4	18	28	46	3.63	+ 1.37	1.10	T	6	19	3	9		
Cedar Rapids	Linn	733	23	50.6	- 0.9	87	4	23	29	46	4.19	+ 1.60	2.05		8	10	12	9	S	
Clinton	Clinton	609	38	49.8	- 0.6	83	4	20	29, 31	41	4.45	+ 2.04	3.14		6	19	8	4	SW	16
Davenport	Scott	606	34	52.6	+ 0.5	84	4	25	28	30	2.73	+ .11	2.32	T	8	15	7	9	NW	16, 17
Delaware	Delaware	1,083	12	48.0	- 1.0	80	4	20	28, 29, 31	33	3.35	+ 1.13	1.18		8	18	4	9	SW	
Des Moines	Polk	861	27	50.8	- 1.4	85	4	24	31	39	3.64	+ .60	1.67	0.8	8	11	10	10	SW	14, 16, 17
De Soto	Dallas	866		50.9		87	4	20	28	48	3.86		1.33		7	16	5	10	SW, NW	
Dubuque	Dubuque	655	32	50.9	+ 0.3	83	4	23	29	30	3.88	+ 1.17	2.25		7	14	9	8	NW	14, 17
Fort Dodge	Webster	1,126		48.3		87	4	22	28	41	4.18		1.20	T	9	19	2	10	SSE, NW	
Galva	Ida	1,290	12	47.2	- 4.1	82	4	18	28	43	2.05	+ .33	.72	.6	6	18	2	11	S	
Gilman	Marshall	1,052									4.33	+ 2.04	1.18	?	7	16	7	8	SW	
Grinnell	Poweshiek	1,023	10	50.4	- 1.9	84	4	19	28	37	4.68	+ 2.23	2.43		8	19	2	10	SW	14, 15, 17, 18
Grundy Center	Grundy	976	12	49.0	- 2.4	88	4	20	28, 31	35	3.32	+ .63	1.15		10	11	14	6	NW	14, 15, 17, 18
Guthrie Center	Guthrie	1,077	7	49.2	- 3.3	82	4	18	28	43	3.32	+ 1.10	.70	T	10	19	6	6	SW, NW	14, 16
Harlan	Shelby	1,192		48.5	- 5.9	83	4	19	28, 31	43	2.75	+ .28	1.40	T	8	13	9	9	S	13, 14, 17, 18
Independence	Buchanan	921	40	48.4	+ 0.2	81	4, 7	19	31	46	3.98	+ 1.61	1.80	T	8	17	7	7	SW	14
Iowa City	Johnson	683	47	50.4	- 0.7	86	4	21	31	43	5.36	+ 2.82	1.93		9	18	6	7	NW	
Iowa Falls	Hardin	1,170	10	46.8	- 3.5	81	4, 7	19	28	39	3.15	+ .85	.67	T	10	13	7	11	NW	13, 14, 16
Jefferson	Greene			50.1		88	4, 5, 7	19	28	42	3.18		1.00	T	6	15	7	9	NW	
Le Claire	Scott	576									3.01		2.02		8				NW	
Little Sioux	Harrison			51.0		86	3, 4, 7	21	31	44	1.54		.67	T	7	15	7	9	SE	13, 14
Logan	Harrison	928	36	50.0	- 2.3	82	4	19	31	44	1.85	- .63	.61	T	5	9	13	9	NE, NW	
Maquoketa	Jackson	688	12	48.0	- 6.4	85	4	16	29	45	4.29	+ 1.35	1.75		8	18	3	10	NE	
Marshalltown	Marshall	947	10	52.4	- 0.6	86	4	19	28	46	3.45	+ .98	1.01	T	9	18	2	11	SE, NW	
Monticello (a)	Jones	925		47.8	- 1.7	85	7	18	30	42	4.28	+ 1.56	1.65		5	15	8	8	S, NW	
Mount Vernon	Linn	847	30	50.9	+ 3.6	86	4	19	31	33	4.67	+ 2.27	2.70	.2	8	21	3	7	S	17
Muscatine	Muscatine		46								4.49	+ 1.45	2.77		9				S	
Newton	Jasper	944	15	49.6	- 2.2	82	4	18	28	36	5.07	+ 2.30	2.42	T	8	16	7	8	NW	
Odebolt	Sac	1,356	8	48.2	- 7.2	85	4	20	28	41	2.49	+ .28	.73		7	18	4	9		
Ogden ‡	Boone	1,058	9	49.2	- 4.2	85	4	20	28	42	3.83	+ .67	.78		7	17	7	7	NW	
Olin	Jones	760	7	50.2	- 1.7	80	4, 8	20	31	38	4.03	+ 1.61	3.10	T	5	15	9	7	S	17
Onawa	Monona			50.8	- 5.4	88	3	23	31	48	1.28	- 1.11	.52	.4	9	21	4	6	NW	13, 14
Rockwell City	Calhoun		8	49.0	- 3.7	83	4	20	28	41	3.22	+ .64	1.05		5	22	1	8		
Sac City (l)	Sac	1,278	23	44.9	- 5.0	83	4	20	28	31	2.50	- .06		T						
Sioux City	Woodbury	1,165	16	49.2	- 1.8	86	4	24	27	45	1.89	+ .19	.59	0.9	8	15	6	10	NW	13
Tipton	Cedar	807		52.4	- 0.6	85	4	23	31	30	4.81	+ 2.88	2.98	.4	6	19	6	6	SW	
Toledo	Tama	856	9	50.4	- 2.1	85	4	19	28	39	4.06	+ 2.19	1.75	.3	8	18	6	7	SW, NW	15
Waterloo	Black Hawk	862	16	49.9	+ 0.2	85	4	21	28	36	3.38	+ 1.06	1.20	T	11	12	11	8	NW	14
Waukee (a)	Dallas	1,039		49.6		81	4	21	28	37	3.88		1.37	0.8	10	14	9	8	NW	14, 16, 17
Whitten	Hardin	1,036		47.1	- 5.8	80	7	17	31	31	3.78	+ 1.16	1.05	T	9	13	8	10	SW	14, 15, 17, 19
Wilton Jct	Muscatine	683	11	51.2	- 1.6	83	4	20	28	32	3.94	+ 1.87	3.03		6	14	6	11	NW	17
Zearing	Story	718		48.8		85	4	18	28	42	3.02		.98	T	6	17	7	7	SW	15, 17
Average				49.5	- 2.3	83.7		20.0		39.3	3.58	+ 1.13		0.6	8	16	7	8	NW	

CLIMATOLOGICAL DATA FOR OCTOBER, 1905—CONTINUED.
SOUTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Afton	Union	1,212	11	49.8	- 4.1	87	5	20	28	34	3.66	† .70	1.60	....	8	12	12	7	SW	
Albia	Monroe	957	....	49.1	- 5.5	85	4	21	29	41	4.17	† 1.38	1.80	T	9	18	5	8	SE, NW	
Allerton	Wayne	....	....	52.0	.....	86	5	22	28, 31	32	3.96	.....	1.23	1.0	11	19	4	8	SW	17
Atlantic	Cass	1,164	14	48.4	- 3.6	85	4, 5	18	28	48	4.79	† 2.15	1.59	.5	9	14	4	13	S, NW	16, 17
Bedford	Taylor	....	5	49.4	- 7.7	85	5	18	31	46	2.16	- .67	.45	1.0	7	16	4	11	S, NW	
Bonaparte	Van Buren	.....	14	53.2	- 2.5	86	4	23	28	40	2.09	† .27	.60	....	9					
Burlington	Des Moines	544	....	54.3	.....	87	5	25	28	35	3.03	.....	.87	0	10	19	4	8	S	17, 19
Chariton	Lucas	1,042	10	51.4	- 3.4	85	5	20	31	42	3.46	† .64	1.55	T	6	16	7	8	SE	
Clarinda	Page	.....	15	50.2	- 4.4	89	4	21	31	43	2.33	- .46	.77	3.0	12	17	4	10	S	
College Springs(c)	Page	.....	14	51.3	- 6.4	82	4, 5	23	31	41	2.30	- .81	.75	?	6					
Columbus Jct	Louisa	586	....	51.3	.....	84	4	23	28	30	3.88	.....	2.75	T	7	25	2	4	S	15, 16, 17
Corning	Adams	1,127	13	49.4	- 4.6	83	4	21	31	41	2.93	† .37	.86	....	6	15	9	6	SW	14, 17
Corydon	Wayne	992	12	52.7	- 2.4	88	5	21	28, 31	40	4.99	† 2.12	2.41	T	9	16	4	11	SW	17
Cumberland	Cass	.....	....	.....	.....	....	.....	.....	.....	....	2.75	- .06	2.36	1.0	3	23	3	5	S	
Earlham	Madison	.....	....	48.4	.....	84	4	17	28	40	4.24	.....	1.87	T	10	17	4	10	S	14, 17
Elliott	Montgomery	.....	....	49.6	.....	81	5	22	28, 31	31	3.31	.....	1.01	.8	8	17	7	7	S	13, 17
Ft. Madison	Lee	516	56	....	....	.....	.....	.....	.....	.....	1.93	- .82	.80	....	6	12	9	10	SW, W	16, 19
Glenwood	Mills	.....	17	53.4	- 3.5	85	4	23	28, 31	41	4.40	† 1.82	1.77	.5	5	11	10	10	SW	
Greenfield	Adair	.....	14	49.8	- 3.8	85	4	20	31	37	4.38	† 2.08	1.86	.9	9	20	2	9	S, NW	13, 14, 16, 17
Hancock	Pottawattamie	.....	....	50.0	.....	85	3, 4	23	28, 29, 30, 31	46	4.48	.....	2.00	T	8	21	3	7	S, NW	17
Hopeville	Clark	.....	13	51.2	- 3.4	87	5	22	31	42	3.68	† 1.25	2.05	....	8	10	13	8	NW	
Indianola (a)	Warren	.....	....	50.8	- 3.4	84	4	20	28	41	4.13	† 2.07	1.77	T	10	10	6	15	NW	13, 14, 16, 17
Keokuk	Lee	619	34	54.8	-0.7	83	5	26	28	34	3.41	† .65	1.87	0	10	15	7	9	SW	14, 16, 17, 18
Keosauqua	Van Buren	644	13	51.8	- 4.3	85	4	23	28	53	2.31	† .41	.67	0	10	9	11	11		19
Lacona	Warren	.....	....	.....	.....	....	.....	....	.....	.....	4.85	† 1.66	3.04	0	7	6	21	4		
Lenox	Taylor	1,250	10	50.0	- 4.3	82	4	22	31	40	3.32	† .33	.78	.8	11	18	6	7	NW	14
Leon	Decatur	1,120	....	51.2	.....	80	4	22	31	37	3.91	.....	1.92	....	9	19	6	6	SE	
Mt. Ayr(a)	Ringgold	1,236	12	52.0	- 3.3	87	5	20	31	44	3.75	† 1.36	1.00	T	10		..	....	SW	16, 17
Mt. Pleasant	Henry	729	24	51.8	- 1.2	83	4	23	30	40	2.04	- .01	.51	0	10	17	6	8	SW	16
Omaha, Neb.	Douglas	1,113	34	51.8	- 1.1	87	4	27	31	36	3.97	† 1.50	1.96	.9	10	16	2	13	S	9, 13, 14, 16
Oskaloosa	Mahaska	843	22	51.4	- 0.5	83	4	23	28, 31	40	3.70	† 1.37	1.79	....	7	18	2	11	SW	17
Pacific Junction	Mills	960	6	49.2	- 7.2	83	4	20	31	43	3.61	† 1.15	1.33	1.6	6	16	7	8	S	9, 14
Pella	Marion	.....	....	52.4	.....	84	4	23	28	48	4.40	.....	2.32	T	10	15	9	7	NW	17
Red Oak	Montgomery	1,033	8	52.5	- 4.8	86	4	25	31	40	2.73	- .47	.95	2.0	10	15	7	9	NW	13
St. Charles	Madison	1,070	....	52.2	.....	90	4	21	28	42	3.16	.....	1.04	1.0	11	17	8	6	NW	
Sidney	Fremont	.....	....	49.9	.....	83	4	18	31	42	2.34	.....	1.02	1.5	5	19	1	11	SE	
Sigourney	Keokuk	877	9	52.0	- 3.4	84	4	21	28	37	5.23	† 2.21	2.44	..	7	5	22	4	SW	14, 17, 18
Stockport	Van Buren	.....	....	52.8	.....	83	4	23	28	39	1.84	.....	.75	0	9	6	2	13	S	17
Thurman	Fremont	.....	....	50.9	- 5.4	85	4	20	31	33	2.94	- 1.10	.16	.5	5	17	4	10	SW	13, 14
Washington	Washington	769	13	51.4	- 2.6	84	4	22	28	31	4.54	† 2.41	3.02	0	6	..	....	....	SW	
Winterset	Madison	1,129	....	49.0	- 4.7	81	5	20	28	36	3.74	† .37	1.27	.8	11	13	7	11	S	14, 16, 17
Woodburn	Clarke	961	....	49.4	.....	80	4	18	28	40	3.53	† 1.67	1.75	T	8	12	9	10	SW, NW	18
Average		.....	....	51.1	- 3.6	84.5	.....	21.5	.....	39.6	3.46	† .85	.....	1.1	8	16	6	9	S, SW	
Average for State		.....	....	49.2	- 3.8	84.7	.....	20.4	.....	38.7	3.40	† .98	....	1.6	8	16	6	9	NW	

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR OCTOBER, 1905.

STATIONS.		DATE																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max..	70	74	77	82	87	79	78	78	75	53	40	67	70	68	62	54	60	49	45	45	53	49	60	57	53	58	49	39	48	38	49	60.4
	Min ..	45	46	50	55	53	56	59	46	46	39	34	29	47	52	37	31	46	41	37	36	27	28	30	43	30	37	34	20	25	31	21	39.2
Albia*....	Max..	70	77	78	85	83	80	82	80	80	58	45	69	75	66	54	70	78	59	55	48	55	58	62	68	52	68	48	50	48	45	51	61.4
	Min ..	50	50	52	53	55	53	53	55	60	43	36	28	36	52	42	34	46	43	36	40	30	29	40	32	35	35	35	22	21	22	22	36.8
Algona...	Max..	68	74	77	82	78	78	81	78	70	51	42	64	69	58	56	45	49	47	39	44	50	46	54	51	51	47	42	33	38	38	46	56.2
	Min ..	41	42	51	51	41	50	59	57	45	36	30	27	38	52	40	31	41	37	32	31	27	34	36	29	27	37	26	21	24	24	22	36.7
Allerton .	Max..	72	77	80	84	86	81	72	81	79	58	50	70	74	65	65	57	70	58	51	46	57	55	65	61	58	65	54	42	46	39	52	63.5
	Min ..	47	43	49	54	56	54	55	54	50	40	34	29	49	52	40	34	48	45	39	36	28	27	33	47	34	36	36	22	27	33	22	40.5
Alta.	Max..	69	75	79	85	76	79	82	78	65	49	45	71	70	55	46	47	46	43	38	41	44	39	55	52	55	46	39	32	37	36	43	55.4
	Min ..	40	45	50	52	50	51	59	63	38	31	31	30	42	41	36	31	42	33	34	30	29	31	31	30	31	33	25	20	26	24	28	36.9
Alton....	Max..	69	74	78	84	76	80	82	80	68	50	48	72	69	59	49	48	47	45	43	44	47	48	53	51	55	50	47	35	38	38	42	57.2
	Min ..	40	42	43	45	53	55	61	61	44	35	32	31	38	43	38	32	42	37	32	34	30	30	29	30	35	40	27	22	29	23	24	37.3
Amana...	Max..	69	77	77	82	76	76	81	81	79	57	47	60	73	65	64	52	62	57	50	47	53	46	58	57	50	58	49	39	45	40	50	60.5
	Min ..	50	44	49	59	49	50	55	51	55	45	35	28	42	51	44	31	47	45	38	35	28	31	30	43	32	35	31	32	33	33	21	39.7
Ames	Max..	71	76	82	81	80	80	82	81	72	54	45	68	70	61	61	48	55	52	45	45	53	49	62	56	54	58	46	40	45	42	51	60.3
	Min ..	42	42	49	55	52	51	53	52	45	39	31	28	44	52	40	30	45	39	36	35	27	32	38	39	38	35	28	20	24	27	21	38.4
Atlantic..	Max..	72	76	80	85	85	80	81	80	63	49	51	74	69	61	53	51	53	48	48	49	54	51	60	58	59	59	46	38	44	40	51	60.1
	Min ..	38	38	51	56	49	52	53	55	46	36	31	25	45	52	38	30	47	38	34	35	24	22	25	41	25	40	28	18	25	26	19	36.8
Audubon.	Max..	70	77	82	85	85	82	82	80	70	53	50	73	70	59	57	47	54	47	41	44	54	52	60	57	60	53	47	37	43	38	51	60.1
	Min ..	39	38	50	55	45	49	56	55	45	36	32	25	42	51	38	29	45	38	36	38	25	28	28	38	28	40	28	18	25	27	19	36.9
Baxter. ..	Max..	73	75	79	82	81	77	80	81	74	57	47	55	70	66	63	53	60	55	47	47	53	49	61	57	54	58	60	39	45	41	52	61.0
	Min ..	45	45	50	56	52	50	55	55	46	40	33	26	48	51	40	30	44	43	35	35	28	31	32	40	30	35	30	18	22	29	20	38.5
Bedford ..	Max..	73	76	79	83	85	83	81	81	76	56	53	73	72	66	65	52	49	52	47	46	53	54	58	57	60	61	51	41	39	39	51	61.6
	Min ..	41	41	45	53	49	49	41	49	46	40	31	27	48	51	30	32	47	42	40	31	23	25	26	26	32	40	33	22	29	31	18	37.2
Belle Pl'e	Max..	68	73	78	80	76	75	80	80	79	54	29	59	71	62	59	53	62	54	48	46	53	45	58	57	52	58	45	40	42	55	35	59.0
	Min ..	47	43	48	55	52	50	55	53	60	42	35	25	46	50	42	32	40	37	41	33	28	28	31	31	30	34	31	21	22	31	20	38.5
Bonapar'e	Max..	70	79	81	86	83	81	83	84	82	68	49	65	80	67	67	59	72	67	55	51	57	55	65	61	55	65	65	44	48	42	51	65.7
	Min ..	52	49	47	50	54	51	52	55	58	46	37	25	47	52	45	30	49	45	42	35	27	29	32	46	35	32	32	23	28	35	25	40.7
Boone* ..	Max..	72	76	82	85	79	80	82	80	66	54	44	70	70	59	52	54	54	48	42	42	52	49	61	53	50	55	44	40	42	39	52	59.2
	Min ..	46	49	52	58	54	52	54	56	60	39	35	28	30	51	40	33	37	40	39	35	30	31	34	36	29	32	30	21	22	30	28	38.9
Britt.	Max..	68	75	79	85	73	78	82	79	68	54	41	63	72	58	58	48	51	43	39	46	50	45	53	50	53	52	40	33	41	38	47	55.9
	Min ..	41	42	49	47	50	52	57	55	44	33	30	26	40	53	39	28	42	33	32	30	28	33	29	28	25	37	25	19	25	22	20	35.9
Burling'n	Max..	74	81	81	81	87	82	84	85	82	69	49	64	79	68	67	60	70	63	52	52	53	52	66	63	53	61	54	45	49	43	49	65.3
	Min ..	54	51	49	57	59	53	57	58	61	47	36	29	50	52	46	35	50	59	48	38	29	31	37	45	36	33	39	25	29	36	28	43.3
Carroll* ..	Max..	69	74	80	84	79	80	81	79	56	53	51	73	69	59	53	48	50	41	43	46	51	52	60	54	58	57	45	38	43	41	54	58.7
	Min ..	40	45	53	56	51	50	53	55	55	35	31	27	47	51	37	30	38	36	37	33	29	31	29	35	27	33	29	18	25	27	19	37.5
Cedar R*.	Max..	72	78	83	87	77	78	85	85	82	57	42	62	77	67	51	54	63	59	50	48	53	47	61	57	52	58	44	40	44	39	52	61.4
	Min ..	51	48	49	53	58	51	52	57	59	46	38	29	31	49	47	34	35	47	42	36	31	32	32	33	33	38	34	24	28	25	24	39.9
Chariton .	Max..	71	73	80	84	85	81	81	80	79	57	54	69	73	70	64	55	63	56	55	46	56	58	64	61	53	63	53	39	45	42	52	63.2
	Min ..	47	39	49	55	52	53	51	53	50	41	36	27	50	50	40	32	47	44	40	36	27	28	32	43	34	36	34	22	25	32	20	39.5
Charles C.	Max..	70	75	80	85	73	76	83	80	73	51	39	58	70	59	54	46	55	48	41	43	50	41	54	52	51	50	37	34	40	38	49	58.6
	Min ..	46	43	51	50	50	47	55	54	44	37	31	30	33	52	35	30	45	37	33	32	29	34	33	31	27	36	25	20	26	22	22	36.9
Clarinda*.	Max..	74	80	83	89	88	85	85	83	67	59	54	76	70	65	57	54	53	51	46	49	60	56	63	60	63	69	53	40	43	34	54	63.1
	Min ..	44	43	45	46	49	51	52	51	57	39	31	28	34	48	39	32	39	42	41	35	27	27	27	30	31	31	37	24	25	31	21	37.3
Clear L ..	Max..	72	73	77	83	79	79	79	81	74	49	44	61	70	65	55	48	48	43	48	44	48	46	50	50	48	47	35	30	39	37	45	59.5
	Min ..	48	51	55	56	50	59	57	58	47	39	31	30	45	52	40	34	41	40	33	30	30	34	31	30	25	38	26	20	25	23	25	38.8
Clinton...	Max..	70	76	77	83	78	75	80	82	82	70	48	56	77	67	65	59	69	60	56	49	52	48	60	57	50	58	50	40	45	41	46	62.1
	Min ..	51	45	44	46	53	43	48	49	51	45	36	29	36	46	42	39	48	41	40	32	25	29	27	43	31	28	31	23	20	32	20	37.5
Col. Spgs.	Max..	69	73	78	82	82	80	80	80	70	57	53	71	71	60	57	53	55	52	46	47	55	53	..	60	60	..	..	60	45	40	47	62.3
	Min ..	49	43	48	55	50	55	55	54	..	37	31	30	49	51	40	35	47	43	40	32	27	30	27	47	33	..	..	40	25	32	23	40.3
Colum. J.	Max..	70	71	77	84	80	77	82	82	82	72	49	58	76	68	64	57	68	63	54	49	48	48	50	48	48	54	54	43	46	42	41	61.1
	Min ..	51	49	50	54	56	50	53	57	56	45	33	27	49	52	45	33	48	47	42	35	31	30	31	41	31	31	35	23	28	33	25	41.5
Corning..	Max..	67	73	78	83	80	79	79	78	70	58	51	70	69	65	60	51	54	49	44	48	54	50	53	57	54	58	48	38	42	39	50	59.6
	Min ..	43	44	51	51	52	57	58	54	46	38	37	29	47	51	38	33	47	41	38	34	27	25	30	44	31	31	33	22	26	29	21	39.1
Corydon..	Max..	74	77	80	85	88	81	82	81	79	60	50	70	74	66	65	54	67	61	50	49	57	55	63	62	59	65	55	42	45	43	54	64.3
	Min ..	46	48	50	66	56	54	57	55	51	41	36	30	50	53	40	34	48	45	40	36	29	28	34	45	34	37	35	21	22	34	21	41.1
Cresco ...	Max..	67	73	78	84	74	78	80	79	74	50	41	55	68	60	58	46	54	50	44	42	47	42	52	49	49	48	42	31	36	38	42	55.5
	Min ..	46	45	53	54	48	47	55	56	47	39	31	30	43	50	41	31	41	42	32	31	31	34	32	32	26	37	28	21	19	27	23	37.8
Davenpo't	Max..	71	78	79	84	80	79	82	84	82	61	44	60	76	68	68	56	68	59	57	47	53	44	60	58	50	53	49	41	45	40	48	62.2
	Min ..	55	54	54	56	58	51	58	60	52	44	35	32	50	54	46	38	48	49	40	37	33	35	36	41	33	35	32	25	28	37	27	43.1
Decorah..	Max..	72	73	77	82	72	73	81	81	81	53	43	55	70	59	60	56	53	42	43	49	42	53	52	51	52	44	32	39	38	41	42	56.8
	Min ..	50	48	55	52	50	49	59	53	57	42	32	32	40	52	43	43	38	32	32	28	32	32	31	25	38	27	19	16	22	20	22	37.7
Delaware.	Max..	68	72	76	80	78	70	79	79	75	55	45	57	71	62	62	49	60	48	49	43	51	40	56	53	47	54	46	35	41	37	47	57.6
	Min ..	47	47	50	53	54	46	53	52	52	42	32	28	38	52	40	32	58	40	35	33	30	30	32	37	30	32	27	20	20	27	20	38.4
Des M....	Max..	71	76	81	85	79	80	80	80	74	55	46	69	71	64	56	51	58	54	46	45	54	49	59	59	51	58	46	40	45	39	52	60.5
	Min ..	49	48	52	59	58	54	60	57	46	43	34	30	52	54	39	35	46	42	38	35	31	31	35	40	34	40	29	26	28	25	34	41.1
De Soto ..	Max..	74	79	83	87	80	83	83	84	74	56	50	76	72	63	62	50	54	48	45	46	55	54	61	58	57	58	47	38	47	40	51	61.8
	Min ..	46	44	51	61	52	53	58	54	47	40	35	28	51	58	40	32	47	42	37	37	28	30	33	45	32	40	30	20	25	30	21	40.0
Dows.	Max..	70	76	81	86	77	79	82	81	74	51	43	66	71	60	59	46	53	47	42	48	47	46	57	52	54	50	43	33	43	39	47	58.1
	Min ..	42	41	49	50	51	49	57	56	45	35	33	24	40	51	40	28	41	38	32	33	26	34	30	30	27	36	27	20	25	26	20	36.6
Dubuque.	Max..	69	77	78	83	73	74	80	81	81	58	49	55	74	64	64	50	61	57	50	44	51	43	59	55	49	56	44	36	40	40	48	59.5
	Min ..	54	53	57	60	58	51	57	59	51	45	36	35	45	53	44	38	50	43	37	36	32	34	37	40	33	37	31	25	23	32	25	42.3
Earlham.	Max..	71	78	80	84	83	80	79	80	69	55	55	69	70	63	61	48	53	44	51	54	50	62	59	60	55	56	49	37	42	49	49	60.7
	Min ..	41	39	40	58	47	64	47	49	45	33	39	24	39	51	37	26	37	35	34	25	22	24	39	41	27	37	29	17	28	29	19	36.1
Elkader ..	Max..	75	79	83	88	77	77	85	85	83	64	45	63	78	59	58	48	57	62	46	44	52	41	63	59	55	54	45	40	42	39	48	60.9
	Min ..	48	42	51	56	47	42	58	49	64	45	33	30	38	58	43	30	46	44	35	31	24	31	30	33	25	33	29	20	16	27	18	37.9
Elliott ...	Max..	69	73	77	78	81	80	80	78	75	51	51	58	70	63	53	52	52	49	49	45	52	48	59	57	56	57	51	40	45	43	49	59.4
	Min ..	42	42	49	48	54	55	57	56	61	42	33	23	48	55	33	33	48	42	39	35	27	25	26	44	29	41	32	32	28	29	22	39.7
ForestCy*	Max..	71	79	82	92	77	80	85	83	58	53	39	64	71	56	50	47	50	47	38	48	51	51	58	54	50	51	35	33	35	42	48	57.1
	Min ..	40	42	47	50	49	51	52	54	53	35	31	26	30	42	40	29	31	37	37	31	26	32	30	30	32	33	26	20	23	25	24	35.7
F. Dodge*	Max..	71	76	81	87	78	81	83	81	62	52	44	70	72	59	51	49	50	48	40	44	47	47	53	55	55	50	39	48	41	33	50	58.3
	Min ..	45	46	47	54	54	52	53	57	61	33	35	30	31	45	40	32	41	39	38	33	31	29	33	34	28	34	23	22	24	29	23	38.3
Galva	Max..	68	74	78	82	76	78	81	77	71	50	45	71	69	57	49	47	48	48	41	45	46	48	55	53	56	51	46	35	39	37	50	57.2
	Min ..	39	43	51	42	52	51	58	56	45	35	31	28	40	47	39	31	43	37	33	34	28	32	35	33	30	39	26	18	28	25	22	37.1
Glenwo'd	Max..	69	75	80	85	84	80	83	80	76	54	53	75	74	64	63	50	52	48	45	45	53	52	59	58	58	57	52	41	40	40	51	63.4
	Min ..	43	48	54	58	55	56	60	60	46	40	33	34	52	50	49	39	45	37	38	33	32	28	32	42	43	42	35	23	29	28	23	41.5
Grand M.	Max..	68	72	74	78	68	71	77	78	77	63	45	54	70	60	59	47	57	54	44	44	48	46	55	50	46	54	44	34	40	36	46	56.7
	Min ..	47	47	56	57	52	46	56	56	50	40	32	31	44	52	39	32	42	41	32	32	30	31	30	34	28	33	30	20	20	26	23	38.5
Greene...	Max..	71	72	81	85	75	78	82	82	73	52	44	61	73	60	58	46	56	49	42	45	50	43	56	52	53	52	44	34	42	38	48	58.0
	Min ..	46	42	54	53	50	47	55	53	46	37	32	29	38	52	42	31	42	40	33	32	29	34	33	32	27	37	33	21	25	30	23	38.2
Greenfield. ..	Max..	72	75	79	85	80	84	80	79	72	54	52	70	70	70	61	51	54	52	44	46	52	50	60	57	55	58	49	38	42	40	46	60.5
	Min ..	44	47	49	58	55	60	54	54	43	37	33	32	49	48	38	35	45	44	36	36	28	26	35	40	30	39	30	21	25	26	20	39.1
Grinnell.	Max..	71	77	80	84	77	78	82	82	81	59	53	63	74	66	62	50	64	56	50	50	55	50	60	57	62	60	50	40	44	40	50	62.2
	Min ..	45	45	47	55	53	48	57	53	51	39	34	23	46	50	40	32	45	42	35	34	28	28	23	40	31	35	30	19	24	32	20	38.5
(near) Grundy C	Max..	71	75	80	83	77	77	81	82	74	57	43	62	71	62	60	51	57	55	46	48	53	48	61	56	54	56	46	40	44	39	50	59.9
	Min ..	45	44	52	56	50	49	57	55	49	38	33	27	45	52	41	30	43	42	34	33	28	31	32	36	28	37	28	20	21	27	20	38.2
Guthrie C	Max..	71	73	79	82	80	80	80	79	72	52	47	70	68	62	61	48	52	49	43	44	52	48	58	56	51	54	53	38	42	40	52	59.3
	Min ..	43	44	54	60	51	54	57	55	46	39	34	27	52	52	39	30	46	39	36	37	27	23	33	41	27	40	29	13	26	29	19	39.0
Hampton.	Max..	75	79	75	91	82	82	88	83	74	55	43	65	76	58	58	45	55	52	42	45	50	50	61	60	58	55	42	41	43	42	49	60.3
	Min ..	45	47	53	55	51	49	58	56	44	38	32	28	47	52	41	33	42	40	35	32	29	35	34	34	28	40	27	22	25	26	23	38.7
Haucock .	Max..	69	75	85	85	83	80	82	80	74	58	52	75	63	60	60	60	53	48	43	45	52	49	57	57	58	58	48	39	42	41	52	60.8
	Min ..	43	43	48	55	47	53	59	58	47	38	34	39	46	53	40	33	46	39	38	36	30	30	32	42	31	42	34	23	23	23	23	39.3
Hanlontown .	Max..	71	73	78	87	69	77	84	81	72	53	43	62	60	60	57	47	50	46	38	44	52	45	52	48	53	46	41	30	37	37	39	55.2
	Min ..	42	39	52	51	49	45	53	58	43	32	28	26	34	52	39	28	41	36	32	30	27	32	29	29	34	38	25	19	25	22	20	35.6
Harlan....	Max..	69	74	79	83	82	80	81	80	72	52	70	70	78	65	52	48	50	47	40	45	53	50	58	57	57	55	47	38	43	39	54	59.6
	Min ..	40	40	46	51	47	54	53	56	46	38	32	27	44	52	37	33	44	39	36	35	27	26	27	39	28	38	31	19	28	28	19	37.4
Hopeville	Max..	70	77	80	84	87	83	81	81	75	56	49	72	72	64	63	53	63	51	47	44	56	53	63	63	58	60	49	39	45	39	55	62.3
	Min ..	47	47	49	55	55	57	55	52	46	39	36	30	47	52	39	33	48	43	38	37	28	30	31	45	33	38	34	23	27	30	22	40.2

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR OCTOBER, 1905—CONTINUED.

STATIONS.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Humboldt	Max..	70	75	74	73	82	75	79	83	76	70	52	45	66	69	62	58	48	50	48	43	42	50	47	56	52	54	50	42	42	40	50	58.8
	Min..	45	68	44	52	51	52	52	60	58	46	38	37	29	40	52	44	32	44	38	34	34	30	35	33	33	47	39	20	28	26	28	40.8
Independence	Max..	63	69	79	81	75	69	81	80	78	69	50	58	73	54	62	50	60	60	48	45	51	49	54	55	52	51	49	36	41	40	48	59.3
	Min..	28	43	46	51	53	47	53	57	57	42	33	28	27	39	42	30	43	48	38	33	28	34	30	37	27	34	32	20	20	31	19	37.6
Indianola	Max..	72	..	80	84	80	81	81	84	75	56	48	70	71	65	62	50	63	55	47	46	56	51	61	59	55	58	50	38	47	38	52	61.1
	Min..	47	16	41	58	55	53	55	63	47	40	36	29	..	53	40	48	34	44	37	37	29	28	33	43	33	38	37	20	27	30	21	40.4
Inwood	Max..	80	79	80	84	75	78	86	79	65	48	50	68	74	60	56	50	47	52	48	44	45	52	60	54	57	51	43	41	35	36	44	59.2
	Min..	43	41	57	52	49	59	55	56	44	31	29	32	36	34	35	29	30	33	32	29	28	25	27	29	10	38	24	28	23	16	24	35.4
IowaCity*	Max..	71	78	81	86	81	80	84	85	83	61	45	64	77	65	50	55	64	61	51	49	54	49	61	61	55	60	47	42	48	42	51	62.6
	Min..	50	45	47	50	51	49	61	54	57	46	30	26	34	52	45	32	35	47	42	36	28	30	29	51	31	32	35	22	23	28	21	38.1
Iowa F*	Max..	68	75	79	81	75	77	81	80	73	59	40	68	70	60	50	53	57	48	44	44	49	45	57	52	52	58	40	35	43	38	49	57.5
	Min..	46	39	45	51	51	49	50	51	51	37	33	24	38	40	41	28	33	41	37	32	27	32	32	31	27	35	27	19	22	26	20	36.2
Jefferson	Max..	73	77	82	83	83	82	83	82	73	56	52	71	71	60	61	58	52	49	42	48	53	52	62	60	55	54	49	40	42	41	55	61.3
	Min..	45	50	55	59	54	53	59	54	45	39	34	29	46	52	40	31	45	31	36	35	30	29	33	37	27	37	27	19	25	27	23	38.9
Keokuk	Max..	70	77	79	83	88	80	82	83	78	69	51	65	77	68	69	59	74	68	56	49	54	52	63	58	53	63	56	44	47	43	48	64.5
	Min..	57	54	52	56	61	54	56	60	58	48	40	31	52	53	47	55	49	50	44	38	33	33	42	49	38	38	42	26	31	36	32	45.0
Keosauqua*	Max..	71	78	80	85	83	80	83	80	80	64	54	65	79	68	55	59	72	58	54	52	55	53	64	61	64	65	56	46	48	39	49	64.5
	Min..	50	46	45	50	53	50	52	63	55	46	36	24	26	52	45	30	31	49	44	36	27	28	31	35	36	32	32	23	24	35	26	39.1
Larrabee	Max..	69	78	80	84	77	80	84	79	70	51	..	72	69	58	51	48	56	47	40	45	48	48	58	51	56	52	53	..	37	37	48	59.5
	Min..	41	46	50	49	53	54	59	58	54	48	33	30	42	46	34	30	30	38	33	33	28	31	28	28	31	40	28	..	28	22	23	37.8
Le Mars	Max..	64	76	78	84	78	79	82	79	69	50	48	73	69	60	48	48	53	48	42	38	43	48	57	53	55	53	47	38	37	37	47	57.6
	Min..	44	42	50	45	48	57	59	60	45	34	31	30	37	45	36	32	41	38	32	28	28	28	27	30	32	37	27	23	30	28	23	36.9
Lenox	Max..	72	74	77	82	81	78	79	79	71	55	52	71	70	63	62	53	58	49	46	45	51	50	59	58	55	58	50	38	44	40	50	60.4
	Min..	45	47	51	58	55	57	59	53	48	39	32	31	45	52	38	34	47	41	38	36	29	27	28	28	32	39	35	23	26	30	22	39.5
Leon	Max..	71	72	75	80	79	77	79	78	76	56	48	68	71	64	65	54	64	53	49	44	54	50	60	57	54	61	53	41	45	40	55	61.1
	Min..	48	48	50	56	55	56	55	52	50	42	37	31	50	53	40	34	48	44	40	36	29	31	33	48	34	38	36	24	29	33	22	41.4
Lit. Sioux	Max..	74	79	86	86	85	83	88	82	75	54	55	78	71	58	55	50	50	52	43	48	55	54	64	61	61	58	48	40	40	40	59	62.3
	Min..	40	49	55	56	53	60	60	61	47	34	33	34	52	48	38	37	40	39	37	33	31	24	30	40	32	42	28	22	28	27	21	39.7
Logan	Max..	81	80	81	82	80	89	80	80	52	51	52	71	70	59	53	50	49	47	47	48	54	50	59	58	57	57	47	41	45	39	56	59.8
	Min..	60	61	63	59	62	60	58	52	46	35	31	26	44	48	39	34	45	38	37	34	28	25	29	38	29	39	32	21	21	27	19	40.1
Maquoketa*	Max..	73	78	79	85	78	77	83	84	82	63	46	58	75	66	48	56	62	59	51	52	53	45	65	61	52	56	50	45	45	39	48	61.7
	Min..	51	43	43	43	49	41	46	44	49	45	34	27	30	32	40	25	29	47	35	29	22	32	25	29	27	28	31	19	16	26	18	34.3
Marshaltown*	Max..	81	80	84	86	83	81	85	84	78	75	72	69	75	73	70	68	65	68	61	59	55	53	64	62	60	59	56	54	53	51	51	68.1
	Min..	45	42	46	54	49	48	51	52	54	39	35	26	29	43	41	29	33	42	39	34	28	30	33	34	28	29	30	19	20	27	22	36.6
Mason C.	Max..	70	75	78	82	72	75	81	80	70	50	45	58	71	67	55	48	54	45	40	45	50	46	53	49	50	51	40	32	40	37	46	56.6
	Min..	49	45	55	55	60	48	59	56	45	[illegible]	32	31	[illegible]	34	43	39	43	40	33	31	32	34	34	32	28	40	28	22	27	27	25	38.9
Monticello	Max..	75	76	81	74	72	85	81	80	60	45	56	78	68	50	52	51	57	49	46	52	40	59	56	49	58	46	38	43	60	50	..	59.2
	Min..	41	46	51	50	47	51	50	55	45	34	27	36	43	45	29	37	46	38	36	24	27	27	39	28	30	31	20	20	29	18	20	36.3
Mt. Ayr	Max..	74	79	81	84	87	82	81	82	74	63	55	74	72	64	..	65	63	54	47	47	56	55	65	57	60	62	58	40	44	43	52	63.8
	Min..	46	51	48	54	55	58	57	54	46	40	31	30	50	51	..	34	46	41	38	36	27	30	31	46	32	39	35	24	28	31	20	40.3
Mt. Pl'snt	Max..	70	75	77	83	82	78	81	82	79	69	48	60	78	66	67	56	68	67	55	50	53	48	60	61	53	62	55	44	46	40	48	63.8
	Min..	50	49	48	51	59	50	54	56	58	44	36	27	38	51	41	33	48	46	43	35	30	29	34	44	33	32	35	23	24	22	25	40.2
Mt. Ver'n	Max..	74	78	82	86	82	82	84	83	81	57	44	61	75	65	50	51	60	63	74	50	52	60	64	68	57	58	48	..	47	37	51	63.3
	Min..	49	49	46	50	55	48	52	53	55	48	35	25	42	50	42	31	47	44	36	33	27	33	29	40	29	31	31	20	21	30	19	38.5
New Hampton	Max..	72	79	76	80	78	72	81	80	73	55	45	55	70	65	64	40	58	50	48	42	51	43	54	50	50	58	46	34	40	38	47	57.6
	Min..	45	42	48	50	53	47	52	52	47	38	32	28	33	51	41	30	42	42	32	31	29	34	31	32	28	40	27	20	20	28	20	37.1
Newton	Max..	75	74	77	82	78	77	80	80	75	55	58	64	71	65	64	54	63	58	50	44	52	47	55	59	53	59	46	40	45	39	51	60.8
	Min..	47	46	47	53	51	51	57	49	52	40	34	28	45	51	40	33	50	42	37	35	28	30	32	35	31	34	26	18	28	26	20	38.4
N'thwood	Max..	70	74	76	84	70	75	82	78	69	47	41	57	65	57	57	52	52	48	38	45	49	44	52	48	52	48	40	37	37	35	45	55.6
	Min..	43	42	54	51	48	47	55	51	48	36	31	28	35	59	39	30	41	36	33	30	29	29	32	30	26	37	26	20	26	25	21	36.4
Odebolt	Max..	68	75	80	85	80	81	83	80	78	50	46	72	72	56	56	45	47	47	41	42	45	48	58	54	57	52	46	36	38	38	52	58.2
	Min..	43	47	53	54	52	53	60	57	45	35	31	31	45	33	39	32	44	38	34	34	30	32	31	35	30	41	27	20	27	26	25	38.2
Ogden	Max..	78	76	81	85	73	80	82	80	71	53	46	70	70	62	60	47	54	52	43	44	52	48	54	58	53	55	47	40	43	40	50	59.7
	Min..	49	45	51	56	53	55	57	54	45	37	35	28	41	52	39	33	45	39	35	36	30	29	31	32	30	39	29	20	26	30	21	38.8
Olin	Max..	69	72	75	80	75	74	79	80	79	71	49	57	73	68	64	64	63	62	51	46	53	49	57	56	49	56	52	38	42	40	49	61.0
	Min..	51	45	44	49	53	49	55	48	56	46	35	27	35	50	46	30	49	47	40	37	25	33	27	42	31	31	34	21	21	33	20	39.4
Omaha, N	Max..	70	76	83	87	83	81	84	81	70	54	53	77	67	60	54	51	49	45	44	46	55	53	59	57	58	57	47	37	41	37	58	60.5
	Min..	48	53	56	61	61	63	63	60	46	42	37	41	58	43	40	43	43	40	38	33	35	32	36	43	36	43	34	29	33	28	27	43.2
Onawa	Max..	76	81	88	86	87	84	87	83	76	51	58	80	69	60	58	50	48	45	44	48	51	56	59	61	61	54	50	41	39	43	57	62.3
	Min..	42	45	51	53	53	55	58	59	45	37	33	32	45	48	37	36	44	39	35	32	29	31	30	41	34	40	30	25	29	26	23	39.3
Osage	Max..	70	74	78	84	71	75	80	78	72	48	43	57	70	58	58	48	54	49	42	44	48	43	56	49	48	48	41	32	38	37	45	56.1
	Min..	46	40	52	50	50	45	56	52	45	35	38	30	38	53	41	29	41	39	33	32	29	34	33	40	26	37	27	20	23	26	20	37.3
Oskaloosa	Max..	67	76	79	88	80	78	82	82	81	51	47	66	75	64	63	53	65	56	51	48	55	50	59	59	53	61	52	41	48	40	52	61.8
	Min..	50	45	51	53	52	53	60	57	52	44	36	26	50	53	42	33	49	46	40	36	30	30	32	43	34	36	35	23	24	35	23	41.1
Pacific J'n	Max..	70	75	80	83	81	81	81	80	78	55	55	73	66	60	53	50	51	50	45	47	54	52	60	58	58	57	49	40	43	39	50	60.3
	Min..	39	42	46	53	49	53	55	56	45	34	32	30	47	49	38	38	47	35	38	33	28	25	29	40	29	39	32	22	29	26	20	38.0
Pella	Max..	71	87	81	84	81	79	82	81	80	58	49	77	74	68	62	52	68	58	51	47	55	50	61	60	54	60	53	43	48	42	52	63.3
	Min..	49	49	51	57	37	51	58	54	52	48	35	29	51	52	41	34	46	45	44	36	35	30	34	43	39	36	34	22	25	34	23	41.6
Plover	Max..	80	76	78	79	75	80	83	78	70	46	45	68	70	58	51	47	50	..	40	38	..	49	54	..	54	48	50	35	37	35	46	57.9
	Min..	40	42	48	55	47	52	55	55	45	34	34	27	38	45	40	28	42	..	31	31	..	34	29	..	29	34	27	20	28	20	21	36.8
Pocah'tas	Max..	70	70	80	86	79	80	83	80	70	51	45	71	72	59	53	48	49	46	40	45	48	48	55	53	54	48	48	35	42	38	49	57.9
	Min..	45	46	46	47	48	51	54	54	45	35	34	29	38	53	37	32	34	40	33	33	30	31	32	30	30	38	25	21	26	26	23	37.0
Red Oak	Max..	72	78	81	86	84	82	83	81	74	61	56	73	71	65	64	53	53	51	48	48	51	53	60	61	60	60	52	41	44	42	57	62.7
	Min..	45	46	52	60	53	56	59	58	49	41	35	33	52	53	42	38	48	43	41	58	31	29	32	47	33	43	38	27	32	32	25	42.3
Ridgeway	Max..	72	77	81	88	74	75	88	83	78	52	42	59	75	63	66	54	57	56	43	44	55	43	60	55	52	53	42	38	41	39	42	59.5
	Min	46	47	53	54	50	48	56	56	45	40	31	30	48	53	41	32	41	40	35	32	30	35	32	84	28	37	28	20	20	25	21	38.2
Rock R.	Max..	80	78	78	85	87	80	82	50	46	56	50	48	46	42	50	46	50	50	38	40	38	38	46	50	50	52	40	34	34	30	46	52.9
	Min..	60	40	48	50	62	56	64	28	30	30	26	30	28	30	36	26	32	36	34	28	26	28	30	30	32	36	28	28	30	26	30	35.4
R. City	Max..	80	78	78	83	80	78	80	78	74	47	41	70	68	60	66	46	50	53	46	46	47	46	55	58	52	50	48	48	42	45	50	59.3
	Min..	55	57	60	55	55	51	55	56	45	36	34	29	44	43	40	39	36	42	33	34	30	32	31	33	29	29	25	20	26	25	23	38.6
Sac City	Max..	63	74	79	83	76	..	..	..	..	..	..	..	..	..	..	..	..	50	48	45	46	47	57	52	55	50	45	37	41	38	50	54.8
	Min..	41	46	52	52	51	..	..	..	..	..	..	..	..	..	..	..	..	38	38	33	28	32	31	32	30	40	28	20	27	25	21	53.0
St. Cha'les	Max..	77	82	84	90	83	84	83	83	77	56	50	73	71	65	64	50	61	54	46	45	59	59	70	60	63	60	49	37	47	41	55	63.8
	Min..	47	49	53	61	57	54	59	54	45	40	36	31	51	52	39	35	47	42	36	37	31	30	36	33	32	39	34	21	26	31	22	40.6
Sheldon	Max..	78	80	82	94	78	82	86	81	72	52	52	75	73	57	56	47	48	53	40	47	50	51	64	57	58	50	45	35	32	40	48	60.2
	Min..	40	39	50	44	51	54	61	56	44	34	32	29	38	45	37	29	40	36	32	32	28	29	29	30	35	39	24	20	26	20	23	36.3
Sibley	Max..	..	76	77	89	75	79	82	79	49	57	47	71	66	47	49	46	47	46	34	43	47	48	57	51	55	48	38	30	34	35	..	55.2
	Min..	38	39	48	45	46	49	53	58	44	33	33	29	34	44	38	30	35	34	33	32	28	30	28	29	30	36	25	22	23	17	20	34.9
Sidney	Max..	70	75	80	83	82	81	81	81	72	55	52	72	70	62	52	52	51	50	44	40	53	49	60	58	55	60	50	40	40	40	45	59.8
	Min..	46	49	52	62	63	60	60	56	45	38	30	30	49	49	37	36	46	40	38	33	28	25	31	44	32	39	33	29	26	23	18	40.0
Sigourn'y	Max..	70	78	79	84	81	78	82	82	80	64	50	64	76	67	66	54	67	58	54	49	59	52	60	62	54	61	55	42	43	43	51	63.3
	Min..	48	46	47	55	55	50	56	53	57	45	36	27	47	54	44	33	48	45	42	36	29	29	33	44	34	34	35	21	23	35	23	40.8
Sioux C'r.	Max..	63	76	76	84	76	78	80	79	68	49	47	70	68	58	48	49	47	46	49	43	45	49	55	50	55	48	43	33	35	35	45	56.2
	Min..	40	43	48	47	51	50	56	52	44	35	32	29	33	42	38	30	40	36	33	33	29	27	33	30	33	37	25	18	28	21	22	36.0
Sioux C'y	Max..	71	79	83	86	83	80	85	80	69	50	51	81	70	56	50	48	46	45	39	47	45	52	58	54	58	50	42	35	39	37	50	58.7
	Min..	46	52	53	49	58	60	63	63	45	38	33	36	45	38	37	36	36	39	34	30	32	32	34	33	38	41	24	24	29	25	26	39.8
Stockport	Max..	81	63	65	80	81	80	82	83	80	69	53	66	77	68	68	62	70	68	56	46	55	52	63	60	52	63	59	42	48	45	50	63.5
	Min..	53	51	50	56	55	58	53	55	56	47	38	27	50	52	48	33	50	48	41	36	29	33	34	46	36	33	32	23	28	37	26	42.2
Storm L*	Max	70	75	74	88	77	78	81	77	49	49	47	76	71	55	50	45	50	48	38	43	47	48	59	55	55	50	40	35	30	37	49	56.6
	Min..	42	48	51	55	48	48	52	57	47	34	32	31	36	42	37	30	35	37	35	31	31	31	32	30	28	34	25	17	24	24	23	31.4
Thurman	Max..	69	75	83	85	83	80	83	80	76	56	55	74	68	64	54	52	53	49	48	47	54	52	58	59	58	59	53	39	43	41	50	61.3
	Min..	41	42	53	60	60	52	61	60	48	40	32	31	54	50	40	35	45	40	40	33	28	27	26	47	30	42	34	25	30	29	20	40.5
Tipton	Max	73	77	79	85	79	79	82	82	80	70	51	60	75	66	65	58	62	59	50	50	52	47	60	60	53	57	51	43	45	39	48	62.5
	Min..	53	53	50	55	58	51	55	58	60	49	36	30	45	51	46	35	48	49	38	36	31	35	32	43	35	34	35	25	27	35	28	42.3
Toledo	Max..	73	77	82	85	81	79	83	82	82	58	47	64	73	68	62	48	63	58	48	50	54	50	64	62	56	59	52	40	46	40	53	62.4
	Min	46	41	50	57	49	48	58	56	51	41	35	25	42	52	42	29	45	44	36	34	28	28	34	41	28	36	29	19	21	29	20	38.5
Washi'ton	Max..	70	76	79	84	79	78	82	82	80	61	45	63	77	64	65	55	66	59	53	50	55	40	60	60	53	62	50	43	48	38	51	62.5
	Min..	50	48	48	53	55	50	53	56	55	45	31	26	48	52	42	33	48	45	40	36	29	29	34	44	34	38	29	22	24	35	23	40.4

OCTOBER

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR SEPTEMBER 1905—CONTINUED.

STATIONS.		DATE.																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Washta ..	Max..	74	80	83	92	82	87	86	84	75	53	48	75	70	57	52	45	50	50	45	46	45	52	60	55	59	53	45	45	33	40	50	60.4
	Min ..	33	44	50	42	48	57	58	56	46	33	29	26	37	45	42	30	42	38	32	35	25	30	26	30	28	36	23	17	17	25	21	35.5
Waterloo*	Max..	78	78	83	85	79	79	84	83	82	57	44	61	73	63	62	47	60	58	46	49	52	46	61	57	54	56	45	39	42	47	49	61.1
	Min ..	47	43	53	55	53	48	55	54	46	41	34	29	39	52	42	31	45	40	34	33	31	24	32	36	29	36	28	21	22	33	23	38.7
Waukee..	Max..	72	74	78	81	77	79	79	79	73	54	46	66	69	63	62	49	54	50	45	44	53	44	57	57	52	57	50	38	45	40	49	59.2
	Min .	..	45	51	60	55	53	53	54	47	39	35	29	50	53	40	34	46	42	36	37	29	32	34	42	31	39	32	21	26	30	22	39.9
Waverly..	Max..	..	74	79	81	73	75	81	80	70	53	43	59	71	61	59	45	56	52	41	45	50	43	55	52	50	52	44	35	41	38	47	56.9
	Min ..	..	42	52	54	54	50	55	54	45	40	33	29	41	54	42	32	43	42	34	33	29	32	32	34	30	37	29	22	24	27	20	38.2
W. Bend.	Max..	70	74	78	83	73	72	81	78	70	51	43	69	70	60	55	47	49	46	40	44	48	48	54	49	52	47	42	32	38	37	47	56.4
	Min ..	41	42	50	49	47	48	58	58	45	34	34	27	39	52	40	29	41	39	33	31	28	34	30	31	29	36	25	18	25	24	21	36.6
Whitten..	Max..	70	73	77	78	78	77	80	79	75	50	45	60	76	62	60	48	57	50	46	42	52	45	57	53	55	47	37	45	41	40	48	58.0
	Min ..	43	42	47	48	50	47	55	52	46	36	32	25	42	51	40	30	43	40	33	31	25	32	30	35	35	27	18	23	22	24	17	36.2
Wilton J.	Max.	69	75	78	83	78	78	80	81	80	71	52	58	76	67	65	57	64	64	55	49	53	47	60	57	50	59	51	41	46	42	47	62.3
	Min ..	51	53	43	51	52	47	49	57	54	47	38	25	43	58	47	31	48	48	40	37	25	31	30	43	32	30	35	20	22	32	22	40.0
Wint'rset	Max..	71	73	77	80	81	78	78	78	73	55	47	66	68	61	61	50	57	49	45	44	52	47	57	56	51	56	49	37	44	39	48	59.0
	Min ..	44	45	50	58	53	53	54	52	47	38	35	30	47	51	38	33	45	40	37	34	28	28	32	40	29	37	31	20	25	31	21	38.9
Woodb'n.	Max..	67	71	75	80	79	79	77	78	77	59	49	65	72	67	65	59	65	52	50	47	53	48	61	59	52	60	50	43	49	49	50	61 5
	Min ..	44	40	44	51	50	50	54	52	50	38	34	25	49	53	40	28	48	37	36	35	25	24	26	44	30	33	26	18	24	32	26	37.4
Zearing ..	Max..	70	76	81	85	80	79	81	81	76	53	46	65	70	61	60	48	55	51	45	44	52	48	60	57	54	55	50	40	45	42	51	60.0
	Min ..	45	42	50	55	50	48	56	54	46	38	34	23	39	52	41	28	44	41	35	35	27	33	31	36	28	37	27	18	23	31	19	37.6

* At those stations thermometers are read in the morning; the maximum temperature then observed appears in the maximum column for the preceding day, on which it nearly always occurs.

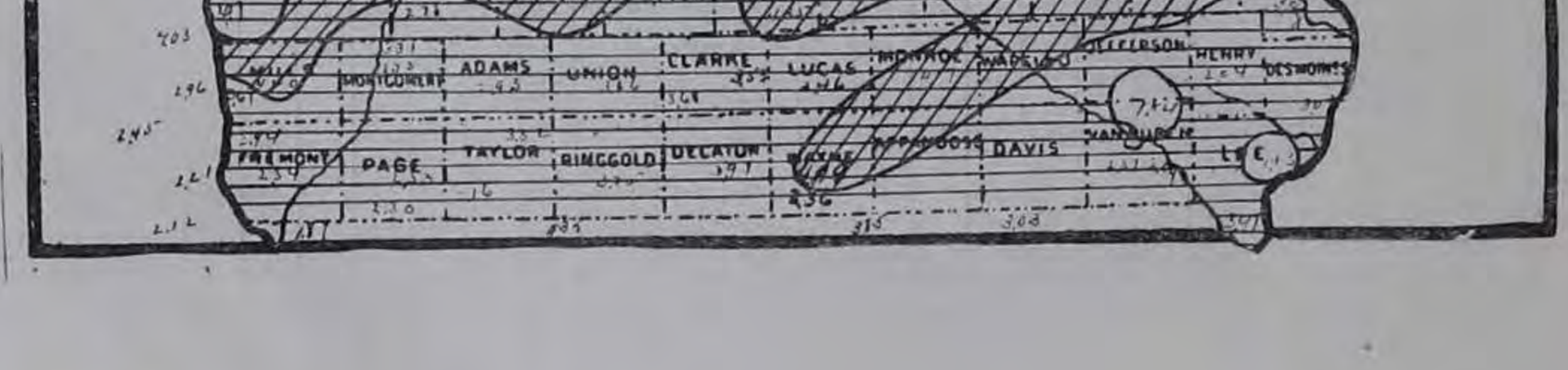
DAILY AND MONTHLY PRECIPITATION FOR OCTOBER, 1905.

STATIONS.	DAY OF MONTH. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL
Afton	.46	..	....	....	...	....	....		.15	...	....	....	....	.82	....	.02	1.60	.	.18	..	....	....	....	.10	....	....	....	....	..	.33	...	3.66
Albia	.38	....	....	....	....	....	....	....	....	.22	....	..	....	.87	.05	1.80	.40	.10	.05	....	....	....	....	..	....	....	....	....	....	.30	....	4.17
Algona	.50	....	....	....	....	....	....	....	1.00	....	T	..	....	.60	.07	.01	.42	...	.96	....	....	....	....	....	....	T	....	....	T	.06	....	3.62
Allerton	.38	...	..	....	....	....	....	....	T	.20	..	....	....	.53	.03	.04	1.23	.08	.10	..	....	....	....	.39	....	....	.02	....	....	.36	....	3.36
Alta	....	....	....	....	....	....	....	....	.58	..	..	....	....	.53	....	.16	....	....	.75	....	....	....	....	....	....	.01	....	T	.05	..	....	2.08
Alta [near]	....	....	....	....	....	....	....	....	.51	....	....	..	.32	.43	....	.16	....	....	.59	....	....	....	....	....	....	.04	..	..	.03	....	....	2.08
Alton	..	....	....	....	....	....	....	....	.29	....	..	....	....	.26	....	.27	....	....	.59	..	..	....	....	....	....	T	....	T	T	....	..	1.41
Amana	.41	....	....	....	....	....	....	....	....	.08	.01	....	....	1.00	T	.05	2.36	.20	.28	..	....	....	....	....	....	....	....	....	....	.13	....	4.52
Ames	.17	....	....	....	....	....	....	....	.41	.14	....	....	...	1.31	.16	...	1.08	....	.28	.02	....	....	....	..	....	....	....	....	....	....	....	3.55
Atlantic	....	.	....	....	....	....	....	....	.72	....	..	....	.24	1.04	.10	1.50	1.06	.03	....	....	....	....	.05	....	....	....	....	....	T	.05	....	4.79
Audubon	.08	....	....	....	....	...	....	....	.98	.02	....	....	....	1.39	.09	.01	.50	....	.05	....	....	....	....	.05	....	....	....	....	....	T	....	3.17
Baxter	.50	....	....	....	....	....	....	....	....	.75	....	....	...	.83	.17	.	.95	....	.23	....	....	....	....	....	....	....	....	....	....	.55	....	3.98
Bedford	..	....	....	....	....	....	....	....	....	.45	....	....	....	.33	....	.07	.51	....	.08	....	....	....	....	.32	....	....	....	....	T	.40	....	2.16
Belle Plaine	.12	....	....	....	....	....	....	....	....	.40	....	....	....	1.14	.06	..	2.10	....	.50	....	....	....	....	....	....	....	....	....	....	.03	....	4.35
Bonaparte	.20	....	....	....	....	....	....	....	....	.09	....	..	....	.30	....	.05	.60	.22	.17	....	....	....	....	.20	....	....	....	....	....	.26	....	2.03
Boone	.45	...	....	....	....	....	....	....	....	.78	..	....	....	1.10	.26	....	.73	.08	.16	.04	T	....	..	....	....	....	T	....	....	....	....	3.60
Britt	.54	....	....	..	....	....	....	....	.98	.08	T	..	....	.70	.29	.05	.25	....	.88	.03	....	....	....	..	....	.07	....	T	T	....	....	3.85
Buckingham	.55	...	....	....	....	....	....	....	.61	....	.03	....	....	.98	..	....	1.15	..	.25	....	....	....	....	....	....	T	....	....	....	T	....	3.57
Burlington	.22	....	....	....	....	....	....	....	....	.08	....	....	....	.17	.08	.25	.57	.46	.87	....	....	....	....	.10	..	....	....	....	....	.23	....	3.03
Carroll	.35	....	....	....	....	....	....	....	.93	....	....	....	....	1.10	.59	....	.53	....	.13	....	....	....	....	....	....	....	....	....	....	....	.26	3.63
Cedar Rapids	.82	....	....	....	....	....	....	....	....	.07	....	T	...	.13	.42	....	.85	2.05	....	.09	....	....	....	....	T	....	....	....	.14	T	....	4.19
Chariton	.60	....	....	....	....	....	....	....	.40	....	....	....	....	.55	T	T	1.55	T	.22	....	....	T	....	....	....	.08	....	....	T	....	....	3.46
Charles City	....	....	....	....	....	.	....	....	.92	....	T	....	.03	1.14	.02	.09	.27	..	.68	....	T	....	....	.26	....	....	T	..	....	.33	..	3.23
Clarinda	....	....	....	....	....	..	....	....	.77	....	..	..	..	.48	.07	....	.38	.04	T	....	....	....	....	....	....	....	....	....	....	....	....	2.33
Clear Lake	.85	..	....	....	....	..	....	....	.55	....	....	..	....	.60	.45	..	.10	....	.70	....	....	....	....	....	....	....	....	....	....	.50	..	3.25
Clinton	....	..	....	....	....	....	....	....	.16	..	....	....	....	.12	....	....	3.17	.50	....	....	....	....	....	....	....	....	....	....	....	.75	..	4.45
College Springs		....	....	....	..	....	....	..	.70	....	....	....	....	.20	....	.20	....	....	.10	....	....	....	....	.35	..	....	....	....	....	.13	...	2.30
Columbus Junct'n	.20	....	....	....	....	..	....	....	....	....	T	....	....	.44	.05	.06	2.75	....	.25	....	....	....	....	....	....	....	....	....	....	....	....	3.88
Corning	....	....	....	....	....	....	....	....	....	.80	....	....	T	.72	.09	....	.86	....	.04	....	....	....	....	....	....	....	....	....	T	.42	....	2.93
Corydon	.37	....	....	....	....	....	....	....	T	.26	.02	..	....	1.54	.04	.03	2.41	T	..	....	....	....	....	.11	....	....	....	....	....	.21	....	4.99
Cresco	.10	....	....	....	....	....	....	....	.92	.76	T	....	....	.84	.99	.01	.25	....	.85	.06	....	....	....	....	....	.15	....	..	T	....	....	4.93
Cumberland	....	....	....	....	....	....	....	....	.21	....	....	....	.18	....	....	....	2.36	....	....	....	....	....	....	....	....	....	....	....	....	.10	..	2.85
Davenport	.12	..	..	....	....	....	....	..	.02	.	T	..	....	.06	T	.04	2.31	.01	.14	T	....	....	....	T	....	....	....	....	....	.08	....	2.73
Decorah	.38	....	....	....	....	....	....	....	....	.70	....	....	...	....	.12	....	.70	.50	T	.76	.10	..	....	....	....	....	.14	....	....	....	....	....	3.40
Delaware	.42	....	....	....	....	....	....	....	....	.05	....	....	....	.20	.18	....	1.18	.57	.64	....	....	....	....	....	....	....	....	....	..	.11	..	3.35
Des Moines	....	....	....	....	....	....	....	....	.73	....	....	....	.41	.53	.04	.05	1.62	....	.19	....	....	....	....	....	....	....	....	....	....	.08	....	3.64
De Soto	...	....	....	....	....	....	....	....	.25	.75	....	....	....	1.18	.09	T	1.38	..	.17	....	....	....	....	....	....	.06	....	....	....	.09	....	3.86
Dows	.44	....	....	....	....	....	....	....	.38	.25	T	....	.04	.96	.85	.03	.27	....	.54	....	....	....	....	....	....	T	....	....	....	....	....	3.82
Dubuque	.39	....	....	....	....	....	....	....	.03	T	..	....	....	.50	T	.01	2.24	T	.61	....	....	....	....	....	....	....	....	....	..	.10	....	3.88
Earlham	.44	....	....	....	....	....	....	....	.35	.42	....	....	...	1.26	.05	.07	1.37	.10	....	....	....	....	.08	..	....	....	....	....	....	.10	....	4.24
Elkader	.23	..	....	....	....	....	....	....	....	.25	....	....	....	.06	1.85	....	1.05	....	.82	....	....	....	....	....	....	.05	....	....	....	....	....	4.31
Elliott		....	..	....	....	....	....	....	.63	....	....	....	.18	.95	....	.13	1.01	....	.03	....	..	..	....	.27	....	..	....	....	....	.11	....	3 31
Florence	.45	....	....	....	....	....	....	....	.80	.20	....	....	.90	.90	.75	T	.10	....	.75	....	....	....	....	..	T	..	....	....	....	....	....	4.85
Forest City	....	....	....	....	....	..	....	....	1.15	....	....	..	....	.19	1.02	....	.40	.20	T	.78	....	....	....	....	....	....	.12	....	T	....	....	3.84
Fort Dodge	.60	....	....	..	..	.	....	....	....	1.20	....	....	....	.64	1.13	....	.20	.03	.12	.23	....	....	....	....	....	..	.03	..	....	T	....	4.18
Fort Madison	....	....	....	....	....	....	....	....	T	....	....	....	....	.35	..	.25	....	.80	.05	....	..	....	....	.24	....	....	....	....	....	.24	....	1.93
Galva	....	....	....	....	....	....	....	....	.51	....	....	....	T	.72	.08	T	.12	....	.60	....	..	....	....	....	....	T	....	....	.02	....	....	2.05
Gilman	.28	....	....	....	..	....	..	....	....	.63	....	....	....	.85	.97	T	1.18	....	.30	....	....	....	....	....	....	....	....	....	....	.12	....	4 33
Glenwood		..	..	....	....	....	....	..	....	.75	..	....	T	....	1.77	T	1.25	....	T	....	....	....	T	.58	....	....	....	....	....	T	....	....	4 10
Grand Meadow	.24	....	....	..	....	....	....	....	....	.42	....	....	T	....	.44	T	.78	.23	....	.69	....	....	....	....	....	.13	..	....	....	....	....	....	2.98
Greene	.37	....	....	....	....	....	....	....	.17	.75	T	....	....	.62	.52	.04	.55	....	.50	.25	....	....	....	....	....	.08	....	..	.	....	....	3.85
Greenfield	.55	....	....	....	....	....	....	....	.48	.41	T	....	....	1.36	.06	T	1.27	....	.04	....	....	....	....	.11	....	....	....	....	....	.10	....	4.38
Grinnell [near]	.35	....	....	....	....	....	....	....	....	.40	....	....	....	.85	....	.20	1.90	.53	.30	....	..	....	....	..	..	....	....	....	....	.15	..	4.68
Grundy Center	.32	..	....	....	..	....	....	....	.11	.64	..	....	....	.55	.25	T	1.15	.04	.20	.02	....	....	....	....	....	.04	....	....	....	....	....	3 32
Guthrie Center	.70	....	..	....	..	....	....	....	.70	.09	....	....	....	.70	.07	.02	.95	..	.03	....	....	....	....	.02	....	T	....	....	....	.04	....	3.32
Hampton	....	...	....	..	....	....	..	....	.68	....	....	....	.90	.78	....	.33	.11	....	.68	....	....	....	....	....	....	....	....	....	....	....	....	3.46
Hancock	.04	....	..	...	....	....	....	..	.80	....	....	..	....	1.30	.12	.02	2.00	....	.05	....	..	....	....	.15	....	....	....	....	T	T	...	4.48
Hanlontown	.49	....	....	....	....	....	....	....	.87	....	T	....	....	.64	.40	....	.35	...	.05	....	....	....	....	....	....	.03	....	....	T	....	....	3 60
Harlan	....	....	....	....	....	....	....	....	1.01	T	....	....	T	1.40	.11	T	.04	....	.05	.02	....	....	....	.10	....	....	....	....	.02	.02	....	2.75
Hopeville	..	....	....	....	....	....	....	....	.47	....	....	....	....	.60	.03	....	2.05	.03	.15	....	..	....	....	.14	....	....	....	....	....	.21	....	3.68
Humboldt	.62	....	....	....	....	....	....	....	1.18	.20	....	....	....	.58	.68	T	.19	..	.60	....	....	....	....	..	....	.06	....	....	....	....	....	4 11
Independence	....	.	....	....	....	..	....	....	....	....	T	....	....	.30	1.50	.10	1.25	.25	.25	.30	....	..	....	..	..	.03	....	....	....	T	...	3.98
Indianola	.45	....	....	....	....	....	....	....	.22	.29	T	T	....	1.03	.05	.01	1.77	T	.14	T	....	..	....	.01	....	....	....	....	....	.16	T	4.13
Inwood	....	....	....	....	....	....	....	....	.22	....	....	....	....	.40	....	T	....	....	.69	T	..	....	....	....	..	.05	....	....	.20	....	....	1.47
Iowa City	.36	....	....	....	....	....	....	....	..	.02	T	....	....	.50	.51	..	1.93	1 68	....	.19	....	....	....	.03	....	....	T	..	....	.14	....	5 36
Iowa Falls	.28	...	....	...	...	..	....	....	....	.67	.01	....	....	.60	.51	....	.59	.04	.13	.30	....	....	....	....	....	....	.02	....	T	T	....	3 15
Jefferson	.74	..	....	.	....	....	....	....	.83	.07	....	....	T	....	1.00	....	.45	...	.09	....	....	....	....	....	....	T	....	..	T	....	....	3 18
Keokuk	.14	....	....	....	....	....	....	....	.08	T	....	....	....	.30	....	1.10	.27	.27	.95	....	....	....	....	....	....	....	.01	....	....	.20	..	3.41
Keosauqua	.20	....	....	....	....	....	..	....	....	.11	....	....	....	.62	.15	....	.35	.20	.14	.05	....	....	....	.23	T	....	....	....	....	T	.25	2.31
Lacona	....	....	....	....	..	....	..	....	.03	.67	....	....	....	...	.48	....	.03	3.01	....	....	....	....	....	.05	..	....	....	....	....	.08	....	4.85
Larrabee	....	....	..	....	....	....	....	..	.64	..	..	....	....	.55	....	.87	....	....	1.05	....	....	....	....	T	T	....	....	....	....	....	.05	2.61
Le Claire	.06	....	....	....	....	....	....	....	....	.16	..	....	..	T	.05	....	2.02	.56	.05	.06	....	....	....	....	..	T	T	T	T	....	..	3.01
Le Mars	....	....	....	....	....	....	....	....	.38	....	....	....	....	.45	.30	....	....	....	.65	....	....	....	....	....	....	....	....	....	....	.15	..	1.78
Lenox	.41	....	....	....	....	....	....	....	.51	.36	....	....	.10	.74	.05	T	.78	.02	.40	....	....	....	....	.10	....	....	....	....	....	.23	....	3.32
Leon	.51	...	....	....	....	....	....	....	T	.39	....	....	....	.81	....	.10	1.92	.01	.15	....	....	....	....	.26	..	....	....	....	....	....	....	3.91
Little Sioux	....	...	....	....	..	....	....	....	.42	....	....	....	.11	.67	.05	.01	.14	..	.14	....	....	....	....	..	....	....	....	....	T	....	....	1.54
Logan	....	..	....	....	....	....	....	....	.48	....	..	.	..	.15	.50	T	.61	.	.11	....	....	....	....	..	....	....	....	....	T	....	....	1.85
Maquoketa	.64	....	....	....	....	....	....	....	....	.09	....	....	T	.35	....	1.10	1.75	....	.20	....	....	....	....	....	....	....	.02	....	....	....	.14	4.29
Marshalltown	.33	...	....	....	....	....	....	....	....	.72	....	....	....	.54	.39	....	1.01	.22	.18	.10	....	....	..	....	....	....	....	....	T	T	.05	3.45
Mason City	.32	..	....	....	....	....	....	....	.75	....	....	....	....	.75	.50	T	.20	....	1.02	..	....	....	....	....	....	.10	....	....	....	....	....	3.64
Monticello		....	..	....	....	....	....	....	....	....	....	....	..	.67	....	1.15	1.65	....	1.68	....	..	....	....	....	..	....	....	....	....	.13	....	4.28
Mount Ayr	.80	...	.	..	....	....	....	..	.15	.45	....	..	....	.35	.05	1 00	....	....	.15	.05	..	....	....	.25	....	....	....	....	....	.50	...	3.75
Mt. Pleasant	.19	....	..	....	....	....	..	..		.09	....	....	....	.39	.02	.23	.51	.03	.85	....	....	....	....	....	....	....	....	....	....	.18	.02	2.04
Mt. Vernon	.84		..	..	...	....	..	..	....	T	.02	....	....	.98	T	.01	2.70	.03	.45	..	....	....	....	T	....	T	....	....	....	.14		4.67
Muscatine	.23	..		...	..	...			....	[illegible]		....	....	.11	.13	.	2 77	.96	.08	.08	....	....	....	....	....	....	T	....	....	....	.08	4 49
New Hampton	....	....	..	..	....	....	....	....	.4	.75	..	..	....	.2	29	.02	.41	....	.84	.2	.	..	....	....	....	.09	....	....	....	....	..	3 28
Newton	.3		..	....	..	..	..	....	.80	.17	.0	..		.1	60	..	.32	...	.83	.0	...	....	....	....	....	.14	....	....	.12	T	....	5.07
Northwood	.18	....	....	.	..	..	..	....	.56	....	....	....	2	7	42	.02	....	.15	.32	..	....	....	....	..	....	..	....	....	T	....	....	4.20
Odebolt	....	....	....	....	..	..	....	....	.55	.20		....	....	3	T	....	.65	.61	.21	....	....	....	....	T	..	....	....	....	....	....	....	2.49
Ogden	....	..	..	..	....	....	..	....	....	....	T	....	....	5	T	2 00	1.10	.29	....	....	....	....	....	....	....	....	....	....	.14	....	....	3 83
Olin	..	..	..	..	....	....	....	..	.52	....	....	..	1	....	0	1	67	..	.04	....	....	....	.2	.02	..	.1	..	....	T	.09	....	4 03
Omaha, Neb	....	....	..	..	....	....	....	....	.40	....	....	....	.03	....	5	0	07	..	.15	....	....	....	....	....	....	....	....	....	....	....	....	3.97
Onawa	....	....	..	....	....	....	....	....	.20	.30	T	....	....	.8	40	T	15	..	1.01	.10	....	....	....	....	....	....	....	....	T	....	....	1.28
Osage	23	..	..	..	....	....	..	....	T	.18	....	....	....	....	....	....	83	....	....	....	....	....	....	....	....	....	....	....	....	.15	....	3.45
Oskaloosa	43				..	..	..	..	.81	....	....	....		1 3			11	07	..	....	..	....	T	T	....	....	....	....	....	.16	....	8 70
Pacific Junction		..	..	..	..	....	..	..	.02	.38	....	....	....	.70	40	0	2 2	.0	15	....	....	....	....	....	....	....	....	....	....	.14	..	3.61
Pella	37	..	..	..	..	....	....	....	.45	....	....	....	....	....	....	4	2		6	....	....	....	....	....	....	.6	....	....	T	....	....	4.40
Plover		....	..	..		....	....	....	.87	....	..	....	....	.1	2	3	....	1	....	....	..	....	....	....	....	.0	..	....	T	....	....	2.86
Pocahontas		....				....	....	....	.50	1			.10	0	1	.0	55	..	0			....	....	....	....	....	....	....	....	....	.10	3.35
Red Oak	.25	...			..	....	....		.88	.08	.01	..	T	3	0	02	3	...	1 1	..	....	....	....	....	....	1	..	....	T	....	....	2.73
Ridgeway	...	....	..	..	..	....	....	....				.50	...	...	.69	.	.		.	....	....	....	....	....	....	.40	....	....	.40	....	....	3.58
Rock Rapids		....	.	..	..	....	....	....				....	....	....		.4	.31	...	....	....	....	....	....	....	....		....	....	....	....	....	2 50
Rockwell City	...	...	.	..	..	....	....	.	1 05	...		....	...	.95	...	....	....	...	....	....	....	....	....	....	....	T	....	....	....	....	....	3.22
Sac City			..					....	....	....	2.15	..	....	....	....	....	....	....	....	....	....	....	....	....	....		....	....	....	....	....	2 50
St. Charles	.47	....	.	..	...	..	...	.	.03	55	...	....	....	.5	.10	.02	1.01	...	.20	.01	.	....	.04	...	.	....	....	....	.17	...	....	3.16

DAILY AND MONTHLY PRECIPITATION FOR OCTOBER, 1905--CONTINUED.

STATIONS.	DAY OF MONTH																														TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sheldon	..	....	....	....	...	..	...	....	.32	....	..	....	....	.50	....	.01	.02	....	1.25		...	....	....	....	....	....	...	....	.31	....	..	2.41
Sibley	.34	....	..	....	....	....	....	....	.12	.17	....	....	....	.07	.40	....	.04	....	.37	.24	....	....	....	....	....	..	....	....	.20	.16	..	2 11
Sidney		....	....	....	....	....	...	....	.60	....	....	..	....	1.02	....	.03	.52		....	....	....	....	.02	....	....	....	....	....	....	.15	....	2.34
Sigourney	.21	....	....	...	...	....	....	....	....	.09	T	..	....	2.10	T	T	2.44	.13	.09	T	....	....	....	T	....	..	..	....	....	.17	....	5.23
Sioux Center	....	....	....	...	...	....	....	....	.02	....	....	....	....	.65	..	.	.03	....	.30	....	..	..	....	....	T	....	....	....	.20	....	....	1.20
Sioux City	....	....	....	....	....	....	....	....	.51	....	....	....	.38	.54	..	.09	.03	.0	.80	...	..	..	....	T	....	T	....	T	.02	...	....	1.89
Stockport	..	....	..	....	....	....	....	....	....	.06	..	....	..	.75	.03	.05	.32	.11	.16	....	....	....	....	.11	....	....	....	....	....	.25	....	1 84
Storm Lake	.67	....	....	....	....	..	...	....	....	.75	....	....	...	.45	.34	....	.15	..	.08	.41	....	....	....	....	....	....	....	....	T	....	....	2.85
Thurman	....	....	....	....	....	....	....	....	.78	....	....	..	....	.96	..	....	.82	....	T	....	....	....	....	.30	....	....	T	....	T	.08	....	2.94
Tipton	.81	....	..	....	....	..	...	....	....	..	.04	....	....	.57	....	....	2.98	....	.25	....	....	..	....	....	....	....	....	....	....	.16	....	4.81
Toledo	.33	..	....	....	...	....	....	....	....	.55	T	....	..	.90	.85	....	1.05	.15	.20	....	..	....	....	....	....	....	....	....	....	.08	....	4.06
Washington	.30	....	....	....	....	....	....	..	....	....	....	....	....	.98	....	....	3.07	....	.07		....	...	....	....	....	....	....	....	....	....	.12	4.54
Washta	....	....	...	....	..		..	..	.42	....	....	....	T	.68	....	.20	....	....	.62	....	....	....	....	....	....	T	T	T	....	....	....	1.92
Waterloo	.41	....	...	....	....	...	....	....	.37	.28	T	....	....	.45	.08	.09	1.20	.13	.26	.09		....	....	....	....	.02	....	....	....	....	....	3.38
Waukee	.36	....	....	....	....	....	....	....	.15	.45	.01	....	....	1.14	.12	T	1.37	.02	.13	....	....	....	....	....	....	....	....	..	....	.75	....	3 88
Waverly	.26	....	....	....	....	....	....	..	.33	.56	.03	.	....	.33	.36	.02	.70	....	.40	.01	....	....	....	....	....	.04	....	..	....	....	....	3.04
West Bend	....	..	....	....	..	....	....	....	.90	....	....	....	....	.45	.50	.01	.29	...	.57	....	....	....	....	....	....	.02	....	....	.01		....	2.75
Whitten	.33	....	....	..	....	....	....	....	.40	.62	T	..	..	.50	.32	.04	1.05	...	.45	.07	....	....	...	....	T	....	....	....	T	T	....	3.78
Wilton Junction	.30	....	....	....	....	....	....	....	....	....	....	....	....	.38	.04	....	3.03	.07	.12	....	....	....	....	....	....	....	....	....	....	....	....	3.94
Winterset	.39	....	....	....	....	....	....	....	.19	.53	....	....	....	.79	.11	.03	1.24	.01	.23	....	....	....	..	.06	....	....	....	....	....	.16	....	3.74
Woodburn	.36	....	....	....	....	....	....	....	T	.48	....	..	....	.45	.07	....	....	1.75	.18	....	....	....	....	.05	...	....	T	....	....	.19	...	3.58
Zearing	.17	....	..	....	....			..	....	.65	....	....		.53	.83	T	.98	....	.36	..	....	....		....	....	....	....	....	....	....	....	3.02

Precipitation Chart October 1905.



NOVEMBER, 1905. No 11



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MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XVI. NOVEMBER, 1905. No. 11.

IOWA CROPS, 1905.

Final Report for the State. Total Yield; Value of Soil Products at Farm Prices, Dec. 1, 1905.

The crop season of 1905, as shown by tabulated reports from each county, was the best that has been reported in this state since 1900. Altogether the showing as to aggregate yield and prices of staple products is beyond estimates made during the early half of the season.

Corn. Reports indicate unusual variation in the yield of corn, the averages by counties ranging from 25 to 45 bushels per acre, as a result of notable local differences in condition of the soil in the critical stages of the season. The first report of the season showed an average increase in the acreage of corn planted as compared with last year, but adverse local conditions in May and June caused a loss of acreage which has been taken into account in the final estimate of the output. The census returns showed the total area of corn to have been 9,583,815 acres in 1904. The yield this year is based on a total of 9,285,150 acres, the average yield for the state being 37.2 bushels per acre. The total product appears to be 345,871,840 bushels, which is 816,800 bushels in excess of the output of any previous year; but the average per acre was higher in four previous seasons since 1890. The average value of the corn crop on Dec. 1 was about 35 cents per bushel — total for the state, $121,055,144.

Wheat. The yield and quality of winter wheat has been good this season, but the acreage was small. The total appears to be 1,253,020 bushels, an average of 20.2 bushels per acre, and quality good. The total of spring wheat was 5,155,760 bushels — an average of 14.4 bushels per acre. The total wheat output (6,108,780 bushels) is worth $4,614,321 — an average of 72 cents per bushel.

Oats. The yield of oats, 37.2 bushels per acre, is above the average but the product was somewhat impaired by wet weather while standing in shocks. The total appears to be 146, 439,240 bushels, which amount has been exceeded but once in the records of the state, and that was in 1895. The farm value of the crop Dec. 1 was 25 cents per bushel — total $36,609,810.

Rye. Total yield 1,283,500 bushels—an average of 18 bushels per acre. Value, $667,420, at 52 cents per bushel.

Barley. Average per acre, 27.5 bushels; total yield 15,566,770 bushels. Value 33 cents per bushel; total value $5,137,034.

Flax Seed. Amount produced, 173,710 bushels. Value $156,393, at 90 cents per bushel.

Potatoes. Bushels produced, 9,352,190—average per acre 84 bushels; value 50 cents per bushel; total $4,676,045.

Hay. (*Tame*) Area harvested 3,598,500 acres, total output 6,477,300 tons, or 1.8 tons per acre. Value of crop $35,625,150, at $5.50 per ton.

Hay (*Wild.*) Amount harvested 1,313,310 tons; an average 1.2 tons per acre. Value of crop $5,909,895 at $4.50 per ton.

Pasturage and Grazing. This item includes pastures, grazing in meadows and grain fields after harvest and in corn fields in fall and winter months, and can be estimated only by reckoning its value as a factor in the production of farm animals and animal products of all kinds. In my judgment the farms of this state should be credited with the full value of the soil output which is the real basis of our great animal industry, and I have tentatively placed the estimate at about $400 per farm, believing that is below rather than above the average. The total output is placed at $80,000,000.

TABULATED CROP SUMMARY.

Crops.	Total Products.	Farm Value Dec. 1.
Corn	345,871,840 bus.	$121,055,144
Wheat	6,408,780 bus.	4,614,321
Oats	146,439,240 bus.	36,609,810
Barley	15,566,770 bus.	5,137,034
Rye	1,283,500 bus.	667,420
Potatoes	9,352,190 bus.	4,677,045
Flax seed	173,770 bus.	156,393
Hay (tame)	6,477,300 tons	35,625,150
Hay (wild)	1,313,310 tons	5,909,895
Pasturage and Grazing (cornfields, etc.)	Estimated	80,000,000
Buckwheat		85,000
Sweet potatoes		135,000
Sorghum & broom corn		190,000
Timothy seed		1,200,000
Clover seed		195,000
Millet & alfalfa		520,000
Sweet corn		510,000
Fruit crops & gardens		5,000,000
Total soil products		$302,286,212

In the above estimate of the value of cereal products no account is made of the increment derived from the consumption of these staple crops on the farms.

NOVEMBER WEATHER AND CROPS.

The average temperature of November was 38.4° which is 3.2° above normal. The average precipitation, 2.84 inches, was 1.53 inches in excess of the normal. But there was a large excess of clear and partly cloudy weather, the average number of clear days being 16, and partly cloudy 7. Conditions were unusually favorable for gathering corn, and all kinds of field work usual to the season. The bulk of the corn crop has been secured in good condition. Pasturage has been very good up to the close of the month. The rainfall was ample for maintenance of soil moisture during the winter. The area of fall wheat has been materially increased, and the condition of that crop is excellent. The area of fall rye is about the average of recent years, and the stand is good. The large amount of fall plowing in evidence in all sections of the state gives an encouraging outlook for the crop season of 1906.

FINAL CROP REPORT, 1905.

AVERAGE PER ACRE AND TOTAL YIELD—BY COUNTIES.

COUNTIES.	Winter Wheat.		Spring Wheat.		Corn.		Oats.		Rye.		Barley.		Flax Seed.		Potatoes.		Hay (Tame).		Hay (Wild).	
	Bushels Per Acre.	Total Bushels.	Bushels Per Acre.	Total Bushels.	Bushels Per Acre.	Total Bushels.	Bushels Per Acre.	Total Bushels.	Bushels Per Acre.	Total Bushels.	Bushels Per Acre.	Total Bushels.	Bushels Per Acre.	Total Bushels.	Bushels Per Acre.	Total Bushels.	Tons Per Acre.	Total Tons.	Tons Per Acre.	Total Tons.
Adair	15	2,600	14	43,540	35	3,297,770	30	896,460	24	1,630	25	72,700	....	.....	67	77,720	1.8	82,030	1.0	5,250
Adams	15	10,200	13	6,110	41	2,929,040	33	545,320	22	3,080	30	67,200	....	.....	60	41,400	1.8	59,040	1.0	2,140
Allamakee	18	3,960	15	27,150	40	1,879,840	35	1,439,970	18	33,020	30	329,700	10	1,450	90	85,050	2.2	98,890	1.5	2,530
Appanoose	20	12,400	16	1,760	32	1,570,240	32	381,120	18	7,380	30	2,550	....	.....	60	64,800	1.5	89,800	1.2	1,210
Audubon	....	.....	14	122,920	35	3,178,870	28	855,960	18	2,250	25	181,250	....	.....	85	83,300	1.8	54,610	1.0	6,180
Benton	20	800	18	9,180	42	5,531,820	33	2,027,190	17	7,780	28	381,640	....	.....	85	145,350	1.6	66,100	1.2	10,870
Black Hawk	....	.....	15	4,950	42	4,276,020	34	1,715,980	16	20,360	33	100,280	....	.....	90	109,800	1.8	65,660	1.5	18,760
Boone	....	.....	15	26,250	38	4,260,020	30	1,536,580	15	3,390	25	7,010	....	.....	74	76,180	1.9	41,780	1.5	86,220
Bremer	....	.....	17	5,270	39	2,962,720	40	2,108,840	25	41,500	24	61,960	8	1,120	65	78,650	2.0	43,980	1.5	28,680
Buchanan	18	750	16	1,630	41	3,802,870	40	2,043,440	18	14,040	31	57,530	10	150	92	90,160	1.8	80,910	1.5	20,800
Buena Vista	....	.....	14	17,920	36	3,633,160	38	2,567,830	20	1,120	28	84,700	9	1,440	75	90,750	1.6	88,620	1.2	26,520
Butler	....	.....	14	4,900	38	4,212,680	30	2,287,500	15	14,550	25	29,750	11	560	65	78,130	1.7	41,320	1.2	14,530
Calhoun	....	.....	14	28,150	38	4,086,860	37	2,339,880	22	3,080	32	117,120	12	1,680	82	77,080	1.6	36,020	1.0	22,010
Carroll	....	.....	15	97,870	38	4,288,686	35	2,107,350	20	1,740	30	181,560	....	.....	90	145,800	1.8	53,410	1.5	21,060
Cass	20	16,240	12	78,240	34	3,917,840	27	883,980	20	3,280	30	107,100	....	....	90	138,150	2.0	68,580	1.2	2,900
Cedar	22	14,080	18	10,980	45	4,718,250	40	1,280,220	14	8,540	24	442,820	....	.....	76	71,220	1.8	91,380	1.0	550
Cerro Gordo	....	.....	13	6,370	39	3,598,530	33	3,160,740	16	2,880	26	48,880	9	2,970	91	96,460	1.9	61,570	1.2	17,180
Cherokee	....	.....	15	68,430	37	4,171,650	42	2,362,500	18	720	27	173,070	9	1,170	95	108,300	2.0	63,040	1.3	15,750
Chickasaw	....	.....	15	9,300	36	2,293,560	33	2,152,590	15	7,720	29	122,670	10	12,300	75	77,250	2.0	55,080	1.4	16,980
Clarke	20	2,400	16	160	34	1,755,080	28	425,710	20	2,400	20	4,460	....	.	98	89,670	1.5	74,280	1.0	810
Clay	....	.....	13	17,160	35	2,957,120	36	2,168,280	22	2,170	27	215,180	9	1,450	110	99,550	1.7	45,810	1.2	28,340
Clayton	22	23,320	16	33,760	43	3,320,030	40	2,460,480	18	73,980	32	892,320	....	. . .	90	136,890	2.0	108,160	1.5	8,160
Clinton	18	7,380	14	12,880	42	5,124,420	33	1,323,960	18	25,380	27	248,670	....	.....	105	112,350	1.5	96,990	1.0	8,010
Crawford	....	.....	18	279,110	42	5,918,180	37	1,854,810	20	4,190	30	186,900	....	.....	110	187,100	2.0	86,440	1.5	10,360
Dallas	20	16,200	13	15,080	38	4,430,040	33	1,330,130	12	6,020	25	12,420	..	.....	80	77,600	2.0	63,340	1.5	8,790
Davis	14	9,100	....	.....	25	1,857,750	28	454,160	14	21,840		.....	...	.....	68	43,520	1.5	86,280	1.0	110
Decatur	19	7,790	....	.....	36	2,407,680	29	384,830	21	5,390	....	.....	....	.....	65	43,550	1.5	73,550	1.0	420
Delaware	22	15,840	..	.....	45	3,854,700	40	1,570,240	20	33,060	25	191,250	..	.....	85	93,600	2.0	94,560	1.5	12,100
Des Moines	20	86,500	14	3,780	35	2,275,700	34	935,480	20	36,380	28	17,640	..	.....	80	73,040	1.8	50,720	1.2	330
Dickinson	....	.....	12	25,560	35	1,647,100	35	1,309,350	15	900	30	412,500	9	3,780	60	82,400	2.0	26,760	1.5	26,500
Dubuque	13	1,950	14	17,220	45	3,241,980	40	1,997,200	22	21,780	30	165,600		.....	65	104,650	1.6	92,640	1.0	2,140
Emmett	....	.....	14	11,340	33	1,766,490	32	1,427,840	20	1,280	28	52,080	10	2,900	70	86,750	1.8	81,730	1.4	23,730
Fayette	20	2,800	15	17,550	45	4,065,300	41	2,692,470	22	14,960	32	264,240	9	3,630	70	102,970	1.8	104,220	1.4	17,000
Floyd	....	.....	15	2,760	38	3,299,540	35	2,599,410	18	20,430	30	139,080	10	7,250	65	118,300	2.0	61,880	1.5	7,720
Franklin	....	.....	15	18,600	38	4,042,820	40	3,009,640	16	1,760	35	39,300	12	1,920	92	97,520	1.5	44,320	1.2	23,170
Fremont	22	88,640	15	18,210	40	4,612,800	32	358,170	20	6,730		.....	....	.....	80	62,720	1.5	27,050	1.5	4,820
Greene	....	.....	14	8,680	39	4,371,210	34	1,673,140	15	630	27	54,050	10	1,200	90	63,100	1.8	38,330	1.0	20,140
Grundy	....	.....	14	12,040	43	4,341,710	31	2,059,930	18	24,840	30	225,300	....	.....	110	145,200	1.8	65,280	1.5	14,640
Guthrie	25	5,250	12	56,040	34	2,983,840	28	1,148,140	12	1,220	25	52,250	....	.....	88	59,850	1.7	61,650	1.0	6,570
Hamilton	18	570	14	34,580	40	4,288,680	31	1,744,370	20	560	30	22,950	12	1,560	98	119,540	1.8	54,650	1.2	28,980
Hancock	20	600	15	30,450	35	2,875,950	39	2,579,280	21	1,170	20	64,670	10	3,100	110	114,500	2.2	30,060	1.5	29,910
Hardin	....	.....	12	27,720	38	3,924,640	36	2,284,160	14	1,640	28	30,240	8	160	80	103,280	2.0	55,820	1.5	22,860
Harrison	22	4,620	12	260,040	40	5,862,400	35	658,780	16	3,280	25	35,650	..	.....	75	95,250	2.0	38,850	1.3	21,290
Henry	16	10,880	14	1,680	34	2,293,160	32	963,360	17	38,420	24	15,360	....	.....	90	50,850	1.7	52,480	1.0	00
Howard	....	.....	14	11,270	35	1,792,350	33	1,913,140	15	570	32	299,480	11	31,920	65	61,750	1.7	56,390	1.2	12,216
Humboldt	....	.....	18	58,800	42	2,868,770	36	1,767,520	20	160	30	37,990	10	1,440	115	55,200	1.8	42,240	1.5	26,946
Ida	....	.....	13	76,960	39	3,814,590	36	1,335,960	20	210	30	225,630	....	.....	102	96,900	1.8	45,090	1.2	4,970
Iowa	21	8,820	16	13,360	43	3,922,370	33	1,257,960	17	10,130	28	114,840	....	.....	97	119,310	2.0	87,840	1.5	2,460
Jackson	17	4,930	15	21,360	41	3,958,150	37	1,058,570	18	25,360	30	188,210	....	.....	70	81,900	1.8	106,060	1.5	60
Jasper	19	13,580	13	42,250	39	5,270,850	38	1,551,160	20	4,220	25	60,259	..	.....	75	121,600	1.8	96,850	1.5	8,100
Jefferson	18	22,880	12	1,810	30	1,924,980	32	769,530	14	50,820	30	45,600	....	.....	87	58,200	1.8	59,540	1.0	60
Johnson	24	15,120	16	8,360	42	4,352,460	36	1,452,960	15	24,240	28	185,640	...	.....	105	132,200	2.0	102,780	1.0	2,540
Jones	..	.....	15	9,930	43	3,678,060	31	852,280	20	17,440	27	201,420	....	.....	102	98,940	2.0	102,960	1.0	580
Keokuk	18	14,580	16	6,800	30	2,935,650	32	1,011,520	20	56,800	25	139,500	....	.....	85	73,100	1.5	68,940	1.0	520
Kossuth	....	.....	15	63,540	35	4,648,280	34	4,157,520	22	2,200	28	84,750	9	8,190	94	149,460	1.6	60,190	1.2	92,430
Lee	18	210,010	....	.....	31	1,880,950	28	600,320	18	74,880	30	3,600	..	.....	60	70,800	1.8	83,080	1.0	100
Linn	20	16,240	16	40,480	44	5,112,360	41	2,055,880	20	18,640	30	27,690	..	.....	75	135,750	1.6	96,160	1.5	9,010
Louisa	20	14,280	15	9,150	39	3,808,550	35	812,350	18	52,020	28	19,880	..	.....	70	40,250	1.8	85,140	1.5	2,890
Lucas	18	51,340	..	...	29	1,472,040	30	383,800	16	6,410	....	.....	...	.....	50	23,750	1.6	107,260	1.5	460
Lyon	....	.....	15	246,150	38	3,553,920	40	2,826,880	18	2,700	28	1,435,560	10	1,040	85	105,400	2.0	35,700	1.5	17,230
Madison	22	10,230	16	16,320	38	3,194,680	32	899,840	17	3,450	30	81,090	....	.....	112	76,280	2.0	87,820	1.2	2,010
Mahaska	18	20,160	13	10,580	30	3,031,890	28	853,690	15	15,390	28	138,320	....	.....	83	75,530	1.8	70,940	1.5	1,960
Marion	21	32,780	15	13,130	31	2,809,560	28	761,880	20	7,080	25	36,750	....	.....	70	59,640	1.8	66,730	1.2	1,290
Marshall	....	.....	14	48,870	39	4,466,670	40	2,324,840	20	5,600	31	68,510	....	.....	80	91,200	2.0	70,360	1.0	2,610
Mills	17	30,770	12	65,280	38	3,248,870	32	456,020	20	840	28	16,880	....	.....	90	77,400	2.0	44,950	1.5	7,550
Mitchell	....	.....	12	6,020	35	2,104,200	36	2,554,920	18	3,600	25	243,950	10	4,100	60	97,200	1.8	54,060	1.2	3,680
Monona	25	18,300	14	244,080	30	3,900,510	33	642,840	20	5,140	31	199,020	10	210	93	113,460	2.0	19,850	1.6	33,870
Monroe	23	15,870	20	4,200	30	1,293,600	30	556,200	20	17,400	24	7,440	....	.....	50	80,500	1.8	72,840	1.0	350
Montgomery	24	71,440	13	115,960	37	3,604,170	35	481,400	20	1,780	28	57,680	....	.....	97	78,870	2.2	80,800	1.0	1,280
Muscatine	24	16,080	16	6,510	33	2,489,850	35	602,350	19	60,610	25	219,250	....	.....	72	152,640	2.0	51,680	1.5	2,510
O'Brien	....	.....	15	94,950	36	3,735,720	30	1,828,980	20	1,130	25	510,150	10	3,220	90	101,160	2.0	53,700	1.5	17,760
Osceola	....	.....	12	42,120	34	1,877,840	35	1,678,600	15	1,450	24	537,120	11	660	80	56,150	2.0	34,270	1.5	15,220
Page	22	137,060	14	29,540	40	4,608,800	32	567,680	21	7,350	25	20,050	....	....	85	77,350	1.5	47,430	1.0	350
Palo Alto	....	.....	15	14,550	42	3,881,420	35	426,330	15	580	30	72,300	12	6,880	100	89,000	1.5	22,800	1.5	66,780
Plymouth	....	.....	14	721,510	38	6,274,750	35	2,240,550	18	3,320	30	569,250	10	1,660	90	146,700	1.5	37,790	1.0	34,820
Pocahontas	...	.....	18	19,440	38	3,424,710	40	2,528,480	16	1,280	30	55,750	8	3,440	94	101,520	2.0	36,240	1.4	48,740
Polk	23	18,860	14	35,840	39	4,154,670	34	1,371,110	16	6,440	26	5,980	....	.....	70	134,400	2.0	72,410	1.0	8,610
Pottawattamie	23	31,350	12	226,820	35	7,714,350	36	1,518,820	20	4,460	28	69,440	....	.....	92	221,900	1.8	98,480	1.6	19,810
Poweshiek	18	1,710	16	15,750	34	3,645,340	33	1,252,090	16	3,520	28	172,760	....	.....	115	125,350	1.8	79,410	1.0	510
Ringgold	17	5,440	10	920	35	2,524,550	32	698,770	15	2,400	20	460	....	....	94	47,940	1.6	90,270	1.0	490
Sac	....	.....	14	33,740	42	4,831,260	40	2,056,200	18	1,260	30	284,320	10	400	110	118,300	1.5	51,910	1.0	14,480
Scott	24	34,320	15	24,610	43	3,476,120	33	698,630	20	23,080	28	706,330	....	.....	105	505,050	1.8	55,330	1.2	5,420
Shelby	22	2,090	13	255,780	36	4,406,760	30	908,910	17	3,230	24	187,560	....	.....	98	125,440	1.8	68,940	1.5	9,780
Sioux	22	1,650	15	507,750	42	6,309,660	40	2,568,480	18	720	31	1,274,330	10	530	112	157,920	2.5	59,820	2.0	42,260
Story	30	2,750	18	16,880	41	4,929,430	35	1,945,750	18	5,220	28	14,700	..	.....	93	78,120	2.2	66,890	1.4	22,120
Tama	....	.....	18	46,620	45	5,418,450	31	1,648,890	20	83,500	28	358,000	....	.....	80	129,760	2.0	120,820	1.5	7,230
Taylor	20	25,640	17	1,440	39	3,358,680	29	512,430	20	6,820	25	20,450	..	.....	90	58,680	1.8	91,990	1.5	1,980
Union	20	8,480	....	.....	35	2,280,790	32	600,640	18	1,620	30	6,860	....	.....	85	68,950	2.0	93,610	1.0	1,170
Van Buren	16	23,360	..	.....	31	1,556,510	27	518,670	12	89,240	25	1,870	....	.....	72	34,960	1.5	83,200	1.0	520
Wapello	20	20,740	12	4,080	31	1,944,940	30	492,550	18	38,180	25	33,520	....	.....	70	68,670	1.5	54,890	1.0	160
Warren	18	5,400	12	9,620	33	3,008,280	28	640,920	17	4,930	25	26,250	....	.....	74	59,940	1.5	66,460	1.0	1,230
Washington	20	18,489	12	8,620	34	3,341,850	33	1,208,840	18	28,080	28	73,080	....	.....	70	48,440	1.8	80,160	1.2	420
Wayne	18	2,340	....	.....	37	2,598,250	33	561,750	16	2,240	24	480	....	.....	50	25,250	2.0	141,890	1.0	180
Webster	....	.....	16	32,170	42	4,715,340	40	2,900,880	15	2,780	28	21,520	11	2,090	65	73,450	2.0	54,410	1.5	52,230
Winnebago	....	.....	15	73,950	32	1,681,920	33	1,546,710	18	810	25	37,150	8	7,720	90	61,380	1.8	31,590	1.3	36,140
Winneshiek	....	.....	16	49,920	40	2,885,420	35	2,439,850	20	5,420	25	427,750	12	34,920	78	92,040	1.8	87,970	1.6	9,470
Woodbury	24	19,680	14	216,160	30	4,892,430	36	1,543,780	17	11,470	30	351,450	10	270	88	124,960	1.8	38,800	1.4	23,220
Worth	....	.....	14	80,460	37	1,678,690	36	2,286,720	22	880	25	127,750	6	12,540	90	66,880	2.0	49,680	1.4	23,710
Wright	....	.....	12	33,620	33	3,221,460	28	1,681,280	20	3,040	30	55,230	8	2,720	85	71,820	2.0	51,410	1.5	27,930
Totals for State	..	1,253,020	...	5,155,760	....	345,871,840	....	146,439,240	....	1,288,500	....	15,566,770	....	173,770	....	9,352,190	....	6,477,300	....	1,313,310
Av. per acre	20.2	.....	14.4	.....	37.2	.....	33.8	.....	18	.....	27.5	.....	9.8	.....	84	.....	1.8	.....	1.2	.....

THE STATE CENSUS.

The State Census compiled during the past year is the most complete and satisfactory report of the kind that has been issued in Iowa. In the line of statistics of agriculture it is comprehensive and reliable.

According to the returns of the assessors, serving as enumerators, the area in corn in Iowa last year was 9,542,956 acres, and the total yield of corn was 346,577,988 bushels. These figures reveal the fact that the report of the Iowa Weather and Crop Service last year was made on conservative lines, though many people expressed the belief that the aggregate was too high. Our figures were 9,052,450 acres in corn, and the yield, 323,853,330 bushels. In all reports made by this bureau since 1890 our estimates of yield and acreage have been below the totals shown by the State and National census returns. In fact we have been too conservative to serve any good purpose in the line of moderation.

INDIAN SUMMER.

The following paragraph, copied from the Century Dictionary, gives a very good definition of the term Indian Summer, which is applied to the mild weather occuring in the Mississippi Valley in the autumn:

"Indian Summer in the United States.—A period in autumn characterized by calm and absence of rain. This condition is especially well manifested in the upper Mississippi Valley, where it is in conspicuous contrast with the climatic phenomena which precede and follow it. West of the belt of States lying adjacent to the Mississippi, the rainfall is so small that the chief characteristic of the Indian Summer is not exceptional enough to excite attention, and from the Mississippi Valley eastward the autuma periods of calm and dryness become more and more irregular in their occurrence and are, on the whole, of shorter duration. Hence, in the eastern States any period of unusally quiet, dry and hazy weather, even if it lasts only a few days, may be designated as Indian Summer, provided it occurs at any time between the middle of September and the early part of December. The haze which fills the air at such times is simply the dust and smoke which are not blown away by the wind, but float near the earth's surface. The name is due to the fact that the phenomena of the Indian Summer are much more distinctly marked in the region chiefly occupied by the Indians at the time this term became current than they were in the more eastern regions to which the white population was chiefly limited prior to the beginning of the present century."

CLIMATOLOGY OF NOVEMBER, 1905.

BAROMETER.—Mean pressure, 30.05 inches; Highest observed, 30.65 inches, at Des Moines, on the 30th; lowest observed; 29.30 inches, at Charles City on the 28th; range for the state, 1.45 inches

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 123 stations, was 38.4 degrees, which is 3.2° above normal. By sections the mean temperatures were as follows: Northern section 36.7 degrees which is 4.1° above normal; Central section 38.3 degrees, which is, 3.3° above normal; Southern section 40.3 degrees, which is 2.3° above normal. The highest monthly mean was 42.8° at Red Oak; lowest monthly mean, 35.2 at Sibley. The highest temperature reported was 70° at Belle Plaine, Webster City, Burlington and Corning, on the 4, 12, 13 and 17; lowest temperature reported —12°, at Estherville on the 30th, The average monthly maximum was 63.2°; average monthly minimum, 0.6°. Greatest daily range, 54° at Massena; average of greatest daily ranges 34.3°.

PRECIPITATION.—Average precipitation for the state, as shown by records of 131 stations, was 2.84 inches, which is 1.53 inches above normal. The averages by sections were as follows; Northern section, 3.16 inches, which is 1.91 inches above normal; Central section, 2.67 inches, which is 1.26 inches above normal; Southern section, 2.58 inches, which is 1.40 inches above normal. The largest amount reported was 5.30 inches at Plover, least amount reported, .90 inch at Mt. Vernon. The greatest daily rainfall reported was 2.70 inches at Ft. Madison on the 23d. Average number of days on which .01 of an inch or more was reported..

WIND AND WEATHER.—Prevailing direction of the wind, Northwest; highest velocity reported, 54 miles per hour from the Northwest, at Sioux City, on the 24th. Average number of clear days, 16; partly cloudy 7, cloudy, 7.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Charles City	30.02	30.74	30	29.30	28
Davenport	30.05	30.70	30	29.38	28
Des Moines	30.06	30.75	30	29.41	28
Dubuque	30.05	30.74	30	29.34	28
Omaha, Neb	30.06	30.72	30	29.35	27
Keokuk	30.08	30.72	30	29.49	28
Sioux City	30.08	30.71	30	29.42	28
Means	30.05	30.75	30	29.30	28

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Charles City	6668	36	NW	28
Davenport	6496	34	NW	24
Des Moines	6582	36	SW	28
Dubuque	5552	28	S	23
Keokuk	6792	36	SW	24
La Crosse, Wis	6206	32	N	29
Omaha, Neb	6929	36	NW	29
Sioux City	9983	54	NW	24

OBSERVERS' NOTES,

ALTA.—*David E. Hadden.* The mean temperature of November, 1905 was 4.2 degrees above the normal and the precipitation, 2.12 inches in excess of the average of the preceding 15 years and the amount was larger than that of any November during the same period. The month as a whole was pleasant and ideal for corn picking.

ALTON—*W. S. Slagel.* Snow storm on 28th. Ten per cent of the corn still in the fields; picking delayed on account of wet weather. Many hogs died from cholera.

AMANA—*Conrad Schadt.* The month was remarkable for its many fine Indian Summer days. There were but four days on which the mean temperature was below the freezing point and only one—the last—on which the maximum temperature was below that point. Farmers had good and ample time for corn husking and plowing.

AMES.—*G. E. Stayner.* Light snow on the 7th and 29th.

ATLANTIC.—*J. W. Love.* November has been very pleasant with plenty of pasture for stock till close of month. Quite a thunder storm for this time of the year on the 23d.

ANDUBON.—*Geo. E. Kellogg.* Ninety per cent of corn in crib and is of extra quality and above average amount. Thunderstorm on 23d.

BRITT—*Geo. P. Hardwick.* Splendid month for farm work, plowing until 28th: Pastures unusually good until end of

CLIMATOLOGICAL DATA FOR NOVEMBER, 1905.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Amana	Iowa	721	7	38.4	† 5.2	60	17.28	6	30	29	3.14	†1.39	1.63	T	7	15	10	5	NW	27.
Ames	Story	926	21	38.2	† 5.0	68	12	- 1	30	37	2.43	†1.38	1.05	T	6	17	7	6	W	
Audubon	Audubon	1,301	9	37.8	† 3.3	62	12	0	30	37	2.42	† .94	96	T	4	14	5	11	NW	28.
Baxter	Jasper	998	....	39.0	† 1.6	67	16	0	30	36	2.50	†1.69	1.38	T	6	17	4	9	NW	27.
Belle Plaine	Benton	826	14	38.5	† 4.1	70	4	6	30	48	2.41	† .58	1.40	1.0	5	17	5	8	NW	
Boone	Boone	....	....	37.8	.....	63	12	- 1	30	37	2.53	.....	1.34	T	6	20	4	6	NW	
Buckingham	Iowa	.....	....	.....	.....	.....	.....	.....	.....	.....	3.31	†2.53	2.00	T	8	11	17	2	.....	
Carroll	Carroll	1,265	13	38.8	† 5.6	64	11, 12	- 1	30	37	2.48	†1.33	1.00	T	6	16	3	11	.....	24.
Cedar Rapids	Linn	733	28	37.7	† 1.9	60	13.24	7	30	34	2.65	†1.23	80	T	4	11	14	5	SW	
Clinton	Clinton	609	38	37.4	† 1.9	61	23	9	30	33	2.48	† .58	1.15	T	6	14	7	9	W	
Davenport	Scott	606	34	39.7	† 2.9	62	28	10	30	35	2.01	- .05	95	T	6	15	6	9	NW	
Delaware	Delaware	1,083	12	36.0	† 4.0	58	12	3	30	30	3.12	†1.51	1.43	0	8	14	10	6	NW	
Denison (c)	Crawford	1,180	9	38.4	† 4.0	64	3	- 1	30	37	2.50	†1.60	1.06	T	5	23	0	7	S	
Des Moines	Polk	861	27	40.0	† 3.6	64	12	3	30	46	2.34	† .68	1.40	0.1	5	11	11	8	W	
De Soto	Dallas	866	....	39.8	.....	65	12	0	30	35	1.43	.....	.68	0	4	17	2	11	SW	
Dubuque	Dubuque	655	32	38.4	† 3.4	62	11	7	30	31	2.64	† .54	1.08	T	7	16	4	10	NW	
Fort Dodge (a)	Webster	1,126	....	37.1	.....	68	11	- 2	30	38	2.55	...	1.12	0.5	5	19	2	9	SW	
Galva	Ida	1,290	12	38.0	† 5.8	60	11, 16	- 3	30	31	3.10	†1.77	1.21	.9	7	17	5	8	S	.23
Gilman	Marshall	1,052	....	.....	.....	.....	.....	.....	.....	.....	2.61	1.63	1.80	0	4	14	11	5	SW	
Grinnell (near)	Poweshiek	1,023	10	38.7	† 2.9	61	17	0	30	31	3.26	†1.74	1.70	0.1	6	14	5	11	NW	27.
Grundy Center	Grundy	976	12	38.0	† 5.2	62	11	0	30	35	2.65	†1.37	1.30	T	6	13	9	8	W, NW	28. 27.
Guthrie Center	Guthrie	1,077	7	38.6	† 2.0	66	12	- 1	30	31	2.16	†1.11	1.03	T	7	18	7	5	NW	23.
Harlan	Shelby	1,192	....	38.4	† 1.0	60	12	0	30	38	3.06	†2.26	1.87	T	6	11	11	8	SW	23.
Ida Grove (g)	Ida	1,220	....	37.6	.....	64	11	- 3	30	37	.....	.....	.....	.....	..	..	..	..	.....	
Independence	Buchanan	921	40	37.6	† 4.4	61	12	3	30	31	3.20	†1.68	1.70	0	1	16	8	6	W	
Iowa City	Johnson	683	47	37.6	† 2.1	62	11, 12	6	30	37	2.92	† .60	1.18	T	5	17	7	6	SW	
Iowa Falls	Hardin	1,170	10	36.3	† 4.1	62	11	0	30	34	2.49	†1.21	.82	T	4	16	6	8	SW	
Jefferson (a)	Greene	.....	....	40.2	.....	64	12	0	30	34	1.84	.....	.88	T	4	...	...	...	SE	
Le Claire	Scott	576	....	...	.....	..	.....	.....	.....	.....	2.39	.....	1.03	T	5	..	...	...	SW, W	
Little Sioux	Harrison	.....	....	41.0	.....	66	11	- 1	30	38	2.60	.....	1.00	0	5	13	9	8	NW	23.
Logan	Harrison	928	36	39.4	† 3.8	62	16	1	30	34	3.09	†1.93	1.50	0	5	9	12	9	NW	
Maquoketa	Jackson	688	12	35.7	- 1.4	64	17	5	30	43	2.99	†1.54	1.25	0	5	20	4	6	NE	
Marshalltown (b)	Marshall	947	10	40.4	† 4.7	62	11, 12	0	30	35	2.77	†1.44	1.43	T	5	12	1	17	NW	27.
Monticello	Jones	925	....	35.4	† 1.9	60	11, 12, 17	5	29	41	2.83	† .69	1.40	T	8	13	11	6	NW	
Mount Vernon	Linn	847	30	37.8	† 4.6	66	12	5	39	40	.90	- .22	.70	T	3	11	9	10	SW	
Muscatine	Muscatine	.....	46	.....	.....	.....	.....	....	.....	.....	2.23	- .02	.82	T	5	....	....	..	S	
Newton	Jasper	944	15	37.4	† 2.9	61	11	- 1	30	30	2.97	†1.17	1.70	0	7	....	...	...	NW	
Odebolt	Sac	1,356	8	38.9	† 2.9	61	11	0	30	28	3.26	†2.14	1.60	?	4	22	5	3	.....	
Ogden	Boone	1,058	9	38.6	† 3.4	62	11	0	30	36	2.24	†1.13	1.00	T	5	14	7	9	NW	
Olin (f)	Jones	760	7	37.2	† 0.3	...	.....	7	30	33	2.85	†1.65	1.40	..	3	....	....	....	.....	
Perry (b)	Dallas	975	....	38.4	.....	62	12	1	30	34	3.46	.....	1.23	....	5	10	11	9	.....	
Onawa	Monona	.....	....	40.6	† 2.9	69	2, 11	- 1	30	40	4.26	†3.13	2.30	0	6	19	5	6	NW	5. 23.
Rockwell City	Calhoun	.....	8	37.9	† 3.9	69	12	3	30	38	2.98	†2.13	1.40	1.0	4	21	2	7	.....	
Sac City (d)	Sac	1,278	23	38.4	† 5.9	60	11, 12	- 1	30	38	.....	.....	.....	.....	4	....	....	....	NW	
Sioux City	Woodbury	1,165	16	39.6	† 5.3	67	11	- 5	30	33	4.16	†3.34	1.97	1.0	7	13	7	10	NW	23. 27
Tipton	Cedar	807	....	39.7	† 3.7	61	13	10	30	28	1.64	- .13	1.33	0	4	17	8	5	SW	
Toledo	Tama	856	9	39.0	† 2.9	62	11, 12	1	30	34	3.00	†1.47	1.40	T	4	16	8	6	SW, NW	
Vinton (b)	Benton	810	15	38.5	† 4.1	62	13	9	30	30	2.90	†1.75	2.40	0	2	....	....	....	.....	
Waterloo	Black Hawk	862	16	39.6	† 4.4	64	11, 12	4	30	33	2.60	†1.20	1.28	T	5	17	6	7	NW	
Waukee (a)	Dallas	1,039	....	39.4	....	60	12, 23	1	30	32	2.07	.....	1.04	0.6	7	20	2	8	NW	23.
Webster City	Hamilton	.....	....	38.7	.....	70	12	10	29.30	41	3.67	.....	1.60	?	4	15	0	15	NW	
Whitten	Hardin	1,036	....	37.0	† 2.2	59	11, 12	- 1	30	29	1.82	† .53	1.00	T	4	13	10	7	NW	27.
Wilton Jct	Muscatine	683	11	38.6	† 1.2	65	18	5	30	31	2.78	† .98	1.50	T	3	16	2	12	W	
Zearing	Story	718	....	37.6	.....	61	11, 12	- 1	30	35	2.01	.....	1.06	T	6	19	4	7	NW	
Average		.....	...	38.3	† 3.3	63.0	.....	2.1	.....	35.0	2.67	†1.26	.....	0.6	5	15	7	8	NW	

month. Corn nearly all gathered in good condition, except that the hard freezing of Oct. 28th Nov. 1st, killed the germ of much that grew late

CLEAR LAKE.—*Oscar Stevens.* Clear Lake froze over on the night of the 29th.

CLINTON.—*Dr. Luke Roberts.* Maximum temperature, 6 degrees below and minimum and mean 3 degrees above normal; rainfall 0.67 inch in excess of normal. Storm days 7 less, cloudy days less and clear days more than normal.

CRESTON.—*Rev. Wm. L. Gaston.* The greatest rainfall reported from this station since April last occurred this month.

FLORENCE.—*J. H. DuBois.* Plowing up to the 26th.

FOREST CITY—*J. A. Peters.* Rainfall 1.79 inches above normal. First taste of winter, Thanksgiving, Nov. 30th,

FORT MADISON.—*Miss L. A. McCready.* Thunder storm on 27th.

GRINNELL.—*A. O. Price.* Thunder storm. Stock water abundent.

HANLONTOWN.—*Miss G. M. Paschan.* Corn husking most all finished by 20th, yield from 30 to 40 bushels per acre with better quality than past 3 years. Some fall plowing and ditching done during the month.

LARRABEE.—*H. B. Streever.* Frost stopped the plowing on the 28th.

OLIN.—*Nathan Potter.* A fine month with no severe storms; fall work on the farm in better shape than for several years.

ONAWA.—*C. G. Perkins.* More rain this month than during any November since 1886. Thunder storms on 5th and 23d.

RIDGEWAY.—*Arthur Betts.* Wettest of all the Novembers of which I have a record.

SHELDON.—*A. W. Beach.* Except for excessive rains, a very good month and corn is about all husked.

SIGOURNEY.—*J. T. Parker.* First snow of season on 8th.

WAUKEE.—*E. J. Leonard.* Month generally favorable; ground not frozen to hinder plowing till the 29th.

BELATED REPORTS.

WEBSTER CITY.—Oct.—Mean temperature 48.4°; highest 82° on the 6th and 7th; lowest 17° on the 28th; greatest daily range 41°; total precipitation 2.42 inches; greatest in 24 hours .75 inch on the 9th; prevailing direction, northwest. Number of clear days 16, partly cloudy 0, cloudy 15, rainy 5.

VINTON.—Oct.—Mean temperature 51.2°; highest 82° on the 4th and 7th; lowest 20° on the 29th; greatest daily range 34; total precipitation 2.22 inches; greatest in 24 hours 1.26 inches on the 17th; prevailing direction, northwest. Number of rainy days 4.

KNOXVILLE.—Oct.—Mean temperature 52.2°; highest 83° on the 4th and 5th; lowest 23° on the 28th and 31st; greatest daily range 38°; total precipitation 4.41 inches; greatest in 24 hours 2.10 inches on the 17th; total snowfall, trace. Number of rainy days 8.

NEVADA.—Oct.—Total precipitation 3.15 inches; greatest in 24 hours .95 inches on the 10th; total snowfall, trace. Number of clear days 22, partly cloudy 1, cloudy 8, rainy 6.

ESTHERVILLE.—Oct.—Maximum 88° on the 4th 5th. and 6th; total precipitation 3.06 inches; greatest in 24 hours .80 inch on the 1st and 10th; prevailing direction, northwest. Number of clear days 15, partly cloudy 0, cloudy 16, rainy 9.

ERRATA IN OCTOBER REVIEW.

SIBLEY.—Mean temperature recorded 44.2° on page 6, should have been 45.0°.

STORM LAKE.—Mean temperature recorded 44.0° on page 6 should have been 46.5°. Mean minimum temperature recorded 31.4° on page 9, should have been 36.4°.

CLIMATOLOGICAL DATA FOR NOVEMBER, 1905—CONTINUED.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Algona	Kossuth	1,213	28	33.4	†4.5	60	11, 12	- 5	30	34	3.37	† 2.11	1.78	T	7	15	7	8	SE, NW	
Alta	Buena Vista	1,513	14	36.6	†5.0	61	11	- 4	30	36	3.20	† 2.03	1.28	0.4	7	14	10	6	S, NW	23
Alta (near)	Buena Vista										3.11		1.20		7					
Alton	Sioux			37.2		63	11	- 6	30	28	3.91		1.43	0.5	6	19	5	6	SW	23, 28
Britt	Hancock	1,236	8	35.5	†2.4	62	11, 12	- 7	30	37	2.86	† 1.88	1.25	0.8	7	7	16	7	NW	
Charles City	Floyd	1,015	18	35.7	†2.7	64	11	0	30	36	2.08	† .58	.73	T	7	10	10	10	NW	
Clear Lake	Cerro Gordo	1,441	7	35.3	†1.6	57	12	- 5	30	31	2.20	† 1.37	.85		6	20	4	6	S	
Decorah	Winneshiek	857	12	36.7	†4.3	62	11, 12	2	30	34	2.80	† 1.21	.89		7					
Dows	Wright	1,142	9	36.8	†3.1	63	11	- 3	30	36	2.75	† .41	1.21	0.2	6	14	9	7	SW	
Elkader	Clayton	727	21	37.2	†4.6	67	12	4	30	40	2.55	† .87	1.10		4	18	11	6	NW	
Estherville(a)	Emmet	1,298	12	35.9	†6.8	63	11	-12	30	40	4.06	† 2.89	1.40	2.0	6				NW	
Florence	Wright	1,226									2.54		1.10	.8	6	8	15	7	SE	
Forest City	Winnebago	1,226	11	35.8	†4.6	64	11	- 4	30	33	2.93	† 1.57	1.20	T	4	19	2	9	SW	
Grand Meadow(‡)	Clayton	1,180	11	35.4	†3.2	58	11, 12	1	30	26	2.68	† 1.09	1.15	0.2	6	10	8	12	NW	
Hampton	Franklin	1,155	13	38.0	†5.9	66	11	- 1	30	32	2.86	† 1.25	1.00	T	4	9	17	4	SW	
Hanlontown	Worth			35.8		64	11	- 7	30	37	3.09		.95	T	6	21	2	7	NW	
Humboldt	Humboldt	1,095	16	38.4	†4.9	60	4, 11, 12, 16	- 2	30	30	2.92	† 1.46	1.48	T	6	19	4	7	NW	
Larrabee	Cherokee	1,266	12	37.6	†5.7	65	17	2	29, 30	33	3.74	† 2.76	1.74	.5	6	16	8	6	SW	23
LeMars	Plymouth	1,224	7	37.6	†4.2	64	11	- 6	30	31	4.93	† 3.87	2.20	T	3	17	7	6	S	23, 27
Mason City	Cerro Gordo	1,132	8	37.2	†7.8	63	11	- 2	30	29	2.65	† 1.65	.80	0	6	11	12	7	NW	27
New Hampton	Chickasaw	1,169	7	36.6	†1.8	62	11	0	30	33	2.38	† .59	1.02	0	6	14	11	5	W	
Northwood	Worth	1,222	8	35.5	†3.6	62	11	- 5	30	31	2.78	† 1.22	.97	1.5	7	14	8	8	NW	
Osage	Mitchell	1,184	13	35.8	†6.6	61	11	- 2	30	32	2.66	† 1.21	.90	0.1	6	14	6	10	NW	
Plover (d)	Pocahontas			36.6	†2.8	61	4, 11	0	29	31	5.30	† 3.71	2.30	T	4					23
Pocahontas	Pocahontas	1,190		37.5		62	11	- 3	30	30	4.32		1.98	1.1	4	18	5	7	S	
Ridgeway	Winneshiek	1,215	7	38.0	†0.8	64	12	0	30	36	2.93	† .98	1.00	0.2	9	14	11	5	S	23, 27
Rock Rapids	Lyons	1,021	7	38.2	†10.2	68	16	- 6	30	32	3.70	† 2.71	1.60	3.5	5					
Sheldon	O'Brien	1,442	6	38.0	†2.4	65	16	-10	30	38	3.94	† 3.23	1.25	1.0	6	17	4	9	S	24, 27
Sibley (a)	Osceola	1,212	12	35.2	†4.3	63	11	- 9	30	35	4.24	† 3.37	1.55	2.2	7	19	1	10	SE, NW	
Sioux Center	Sioux		6	39.8	†1.3	68	11	- 8	30	33	3.23	† 2.66	1.05	2.0	6	14	6	10	W	23
Storm Lake	BuenaVista	1,440	8	36.4	†0.0	61	11	- 5	30	36	3.00	† 2.04	1.20	T	4	18	1	11	NW	19
Washta	Cherokee	1,157		37.6		63	11	- 4	30	32	2.57	† 1.32	1.32	T	3	18	6	6	S, NW	
Waverly	Bremer	942	9	37.2	†2.7	61	11	3	30	30	1.97	† .49	1.01	T	6	10	11	9	NW	
West Bend(a)	Palo Alto	1,197	12	36.4	†5.4	60	11	- 4	30	31	3.29	† 1.90	1.52	T	5				W	27
Average				36.7	†4.1	62.5		- 3.4		33.3	3.16	† 1.91		1.1	6	15	8	7	NW	

SOUTHERN SECTION.

Afton	Union	1,212	11	39.9	†4.0	61	13, 17	0	30	29	3.12	†2.01	2.00	0.	5				SW	23, 27
Albia	Monroe	957		40.0	†1.0	65	13	3	30	34	2.47	†.83	1.02		5	16	4	10	SW	
Allerton	Wayne			41.0		66	13	2	30	34	2.95		1.09	T	5	20	3	7	NW	
Atlantic	Cass	1,164	14	38.6	†4.1	62	16, 22	1	30	35	2.54	†1.68	1.50	0.	4	12	5	13	W	23
Bedford	Taylor		5	39.0	-0.7	62	16	1	30	33	3.33	†2.36	1.86	T	6	19	3	8	NW	
Bonaparte	Van Buren		14	41.1	†2.9	68	13, 17	6	30	39	1.84	- .16	.72	0.	6					
Burlington	Des Moines	544		42.0		70	13	8	30	35	2.09		.75	0.	6	18	7	5	NW	
Chariton	Lucas	1,042	10	40.6	†2.0	65	13	3	30	35	2.55	†1.14	1.15		6	17	7	6	SE	
Clarinda	Page		15	39.8	†2.4	65	12, 13, 32	3	30	38	3.41	†2.38	2.33	T	5	17	7	6	NW	
College Springs(a)	Page		14	40.8	†3.4	63	13, 27	4	30	32	3.13	†2.09	2.00	0.	3	19	3	8	S, NW	
Columbus Jct	Louisa	586		38.0		68	17, 28	7	30	30	2.69		1.68	T	6	23	3	4	W	27
Corning	Adams	1,127	13	39.3	†2.1	70	17	1	30	34	3.46	†2.50	2.10	0.	6	15	11	4	SW	23
Corydon	Wayne	992	12	41.9	†3.8	67	13	2	30	33	2.17	† .67	1.07	0.2	6	18	5	7	SW, NW	
Creston	Union			39.5		62	13	1	30	35	3.23		2.02	0.	3				NW	
Cumberland	Cass										2.31	†1.67	.92		4	22	2	6	S	
Earlham	Madison			38.7		63	12	7	29	37	1.98		1.03	T	5	16	6	8	SW	
Elliott	Montgomery			39.8		61	13, 17, 18	3	30	34	1.11		.78	T	3	17	9	4	SE	2
Ft. Madison	Lee	516	56								3.98	†1.82	2.70		3	13	9	8	W	
Glenwood	Mills		17	41.8	†3.2	65	15	2	30	34	3.00	†2.40	1.80	0.	3	8	15	7	SW	
Greenfield	Adair		14	39.5	†3.6	63	13	-2	30	34	2.85	†1.79	1.24	T	7	19	4	7	S	23
Hopeville	Clark		13	40.4	†4.9	64	13	1	30	33	2.92	†1.94	1.87	T	6	12	14	4	W	27
Indianola	Warren			39.6	-2.0	63	12	1	30	33	3.21	†1.91	2.11	T	7	5	11	14	SW	23
Keokuk	Lee	619	34	42.7	†3.9	68	13, 28	8	30	25	2.32	† .20	1.01	T	7	17	5	8	SW	27
Keosauqua	Van Buren	644	13	41.1	†1.8	68	12	5	30	40	2.08	† .45	1.00	T	4	15	4	11		
Knoxville	Marion	920	12	40.6	†3.4	63	12	8	30	32	2.42	†1.88	1.40	T	6	15	7	8	SW	
Lacona	Warren										2.52	†1.44	1.27	0.	6	7	17	6		
Lenox(e)	Taylor	1,250	10	40.2	†2.8	63	13	0	30	30	3.22	†2.09	1.98	0.	5	22	5	3	NW	
Leon	Decatur	1,120		41.0		64	13	3	30	28	2.46		1.21	0.	6	21	2	7	SE	
Massena	Cass			39.3		67	12, 13	0	30	54	2.05		1.25		2	21	0	9		
Mt. Ayr	Ringgold	1,236	12	40.8	†2.9	64	13, 22	2	30	36	2.90	† .62	1.65	0.	6	15	7	8	SW	28
Mt. Pleasant	Henry	729	24	39.6	†4.9	64	13	5	30	31	2.65	†1.06	.75	T	7	17	4	9	SE	27
Omaha, Neb.	Douglas	1,113	34	42.6	†6.0	65	15	4	30	43	2.72	†1.66	1.65	T	4	11	7	12	SW	23
Oskaloosa	Mahaska	843	22	39.7	†3.0	62	13	3	30	34	2.26	† .71	1.00	T	6	17	1	12	SW	27
Ottumwa	Wappelo	649	11	39.8	†0.6	65	13	6	30	37	2.43	† .75	.97	0.	3	19	3	8		
Pacific Junction	Mills	960	6	39.2	†2.9	62	15	1	30	35	2.70	†2.11	.85		5	16	8	6	S	
Pella	Marion			40.5		62	23	3	30	33	2.77		1.50	T	6	16	6	8	SW	
Red Oak	Montgomery	1,033	8	42.8	†1.2	65	13, 16	5	30	33	3.19	†2.15	1.56	0.	6	17	8	5	NW	
St. Charles	Madison	1,070		41.4		67	12, 22	0	30	34	3.29		2.18	T	8	17	8	5	NW	
Sidney	Fremont			38.8		60	16	-1	30	39	3.61		1.34	0.	5	20	6	4	SE	
Sigourney(a)	Keokuk	877	9	39.9	†1.1	61	11, 23	4	30	35	2.25	† .75	.96	T	5	7	20	3	NW	27
Thurman	Fremont			40.8	†2.6	63	13, 15	2	30	35	4.18	†3.09	2.41	T	3	15	9	6	NW	23
Wapello	Louisa	588	7	41.6	-0.4	68	13, 17	10	30	35	1.96	† .50	.70	T	5	17	8	5	SW	
Washington	Washington	769	13	40.4	†4.8	64	13	6	30	32	2.35	† .96	1.30	0.	3				W, S W	
Winterset	Madison	1,129		38.2	-0.2	62	12	0	30	30	2.57	†1.36	1.63	0.	4	16	4	10	SW	
Woodburn	Clarke	961		38.5		63	13	2	30	36	2.15	†1.11	1.40	T	3	17	4	9	SW	
Average				40.8	†2.3	64.2		3.0		34.5	2.68	†1.40		0.2	5	16	7	7	SW	
Average for State				38.4	†3.2	63.2		0.6		34.3	2.84	†1.53		0.6	5	16	7	7	NW	

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR NOVEMBER, 1905.

STATIONS.		DATE																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max..	42	56	58	56	46	48	41	51	48	47	57	58	61	57	56	58	61	49	47	43	48	58	58	54	49	48	49	59	30	21	...	50.0
	Min ..	25	27	42	31	39	38	37	29	24	25	32	34	35	38	36	35	38	34	27	23	23	21	36	36	28	29	28	30	8	0	...	29.2
Albia*....	Max..	41	58	54	51	49	50	41	41	42	50	60	62	65	45	58	62	60	59	49	51	60	62	64	46	51	45	62	62	18	22	...	51.0
	Min ..	22	23	33	34	37	29	31	29	24	25	27	34	35	27	25	28	37	35	30	24	28	35	41	40	30	29	30	32	12	3	....	29.0
Algona. ..	Max..	35	51	47	59	46	46	43	37	41	50	60	60	57	42	55	57	58	50	46	46	57	56	54	54	45	37	35	50	22	18	.	47.1
	Min .	15	25	30	28	35	25	29	28	24	26	32	38	33	20	35	31	32	24	25	26	23	29	42	30	27	24	26	22	0	-5	....	25 7
Allerton .	Max..	47	61	54	56	52	51	45	54	45	52	61	63	66	49	57	58	63	52	52	50	52	62	62	56	58	50	41	53	40	24	..	52.7
	Min ..	22	27	30	32	40	28	36	28	22	23	31	34	34	29	30	36	37	37	29	23	24	28	49	38	29	29	31	39	11	2	....	29.3
Alta.	Max..	28	51	50	59	42	43	39	35	42	50	61	59	52	43	58	57	55	51	49	49	47	54	54	50	46	35	37	47	11	17	....	45.7
	Min ..	15	28	29	34	31	25	31	28	24	26	31	32	35	35	41	31	37	29	29	24	24	33	40	29	30	27	29	11	0	-4	....	27.4
...	Max..	41	50	50	58	48	47	45	40	39	53	63	57	51	49	52	62	53	49	48	50	51	54	55	54	45	38	35	39	15	19	..	47.2
	Min ..	20	32	30	35	26	25	35	34	24	25	30	29	31	26	37	28	32	29	31	28	26	32	45	30	30	29	30	15	2	-6	....	27.3
Amana...	Max..	42	51	50	52	49	45	42	58	40	49	58	58	58	39	53	55	60	50	45	46	45	55	60	55	46	41	39	59	38	22	....	48.0
	Min ..	23	24	33	26	38	33	38	28	23	22	20	35	32	23	34	37	36	35	26	21	24	24	38	34	27	31	30	38	13	6	....	28.7
Ames	Max..	47	52	51	52	49	50	47	36	43	50	62	63	59	45	58	59	58	51	50	48	49	61	58	56	51	46	42	60	29	21	....	50.0
	Min ..	21	16	16	28	41	28	32	28	26	22	33	35	31	19	37	33	36	34	25	21	24	24	38	32	27	27	30	26	7	-1	...	26.5
Atlantic .	Max..	45	55	55	51	43	48	45	53	45	50	61	61	61	46	59	62	59	49	53	52	51	62	55	44	51	42	45	58	23	23	...	50.8
	Min ..	19	29	30	29	40	27	28	27	21	20	32	32	25	31	35	27	28	34	19	21	27	28	45	39	28	25	31	28	8	1	....	26.9
Audubon.	Max..	45	45	53	52	45	48	44	45	32	50	60	62	58	46	58	60	65	50	51	50	51	61	55	53	50	42	39	58	28	31	...	49.5
	Min .	18	23	29	24	41	26	32	26	22	20	42	32	30	30	35	26	29	33	20	19	20	24	39	31	27	25	30	23	5	0	....	26.0
Baxter . .	Max..	43	53	50	50	48	49	45	39	40	60	61	63	59	48	56	67	61	54	49	48	47	50	57	56	52	43	37	61	34	22	....	50.2
	Min ..	18	25	30	30	38	30	36	27	23	24	31	35	34	23	36	34	39	34	24	23	23	25	34	33	26	27	28	32	9	0	...	27.7
Bedford ..	Max..	48	58	55	45	46	50	46	56	39	48	44	58	45	45	53	62	61	58	54	52	53	61	60	60	37	47	44	43	33	21	....	49.1
	Min .	19	31	32	34	43	28	34	29	28	20	29	34	29	23	41	32	33	39	30	25	28	28	42	32	28	29	32	32	8	1	..	28.9
Belle Pl'e	Max..	35	58	62	70	60	45	44	49	32	41	49	40	47	42	45	56	68	67	62	25	37	33	41	60	48	41	36	52	21	28	....	46.4
	Min .	22	25	30	22	45	32	42	33	21	21	31	32	32	31	47	36	43	45	32	24	31	21	32	41	33	28	28	42	12	6	....	30.6
Bonapar'e	Max..	43	55	54	60	67	48	48	41	44	52	63	63	65	48	56	59	63	50	48	49	48	62	65	58	53	49	44	64	40	24	....	53.0
	Min .	23	24	33	31	40	34	38	29	22	22	20	35	33	20	34	38	37	37	30	25	23	23	35	35	25	30	32	40	14	6	....	29.2
Boone* ..	Max.	40	50	52	52	42	50	41	33	42	50	62	63	58	44	58	59	57	51	51	47	48	62	53	43	50	40	60	40	14	21	...	47.9
	Min ..	20	22	32	33	33	28	29	30	27	28	29	33	36	21	23	35	36	33	29	27	25	25	34	35	29	30	30	32	9	-1	....	27.7
Britt.	Max..	35	50	48	61	47	49	42	40	39	50	62	62	48	45	54	53	52	51	43	46	47	56	56	54	47	36	35	52	37	21	....	47.4
	Min ..	15	25	29	25	36	26	25	23	21	25	25	26	28	14	35	29	28	25	23	24	21	28	39	25	24	21	27	24	0	-7	....	23.6
Burling'n	Max..	42	50	55	59	57	47	48	40	47	53	63	65	70	41	58	60	68	62	48	50	50	61	63	58	53	51	42	68	48	27	....	52.0
	Min ..	24	27	34	31	41	34	37	29	24	24	34	37	35	22	34	37	42	36	34	29	27	24	40	33	31	32	31	42	15	8	....	31.1
Carroll* ..	Max.	47	53	55	59	45	43	39	48	46	59	64	64	60	50	61	63	56	51	54	50	52	62	55	45	53	39	59	37	13	20	....	50.1
	Min ..	15	27	27	30	40	28	28	23	29	26	36	47	40	39	38	24	19	32	21	23	21	22	38	27	28	29	28	31	6	-1	....	27.4
Cedar R*.	Max.	38	50	49	53	44	44	42	37	42	50	52	60	56	43	54	56	58	50	45	45	46	56	60	48	46	40	60	52	18	21	..	47.0
	Min ..	25	24	31	27	28	34	33	29	26	25	25	34	35	24	24	37	36	35	30	26	25	25	26	31	29	33	30	31	16	7	....	28.4
Chariton.	Max.	45	60	53	55	50	50	49	46	45	51	62	62	65	50	57	61	61	52	51	49	50	62	63	56	50	45	40	62	43	23	....	52.2
	Min ..	22	26	32	33	40	28	38	27	24	23	30	34	33	28	36	35	39	35	27	21	24	27	40	37	28	27	29	38	10	3	....	29.1
Charles C.	Max..	35	49	45	56	46	43	40	34	39	50	64	62	51	40	52	57	55	51	46	47	60	55	34	54	48	37	40	54	18	21	....	46.3
	Min ..	19	24	25	26	32	32	27	24	22	24	30	33	23	17	39	33	33	24	23	25	25	26	37	28	28	26	28	18	4	0	....	25.1
Clarin da*	Max.	55	59	60	49	47	58	47	50	45	53	62	65	65	43	62	54	53	45	54	53	54	65	56	46	54	48	63	46	15	24	....	52.0
	Min ..	23	23	33	33	39	28	31	29	23	21	26	28	29	24	35	32	32	34	25	24	27	27	29	37	22	32	32	33	8	3	....	27.5
Clear L ..	Max.	34	46	46	48	45	43	42	35	39	45	56	57	53	44	50	50	53	50	47	46	46	51	50	48	40	35	35	38	36	19	....	44.2
	Min ..	16	28	28	21	37	28	32	25	24	29	35	38	35	15	35	31	36	25	23	32	22	28	41	31	25	26	25	31	5	-5	...	26.4
Clinton...	Max..	38	44	40	55	48	42	44	39	43	48	58	60	60	38	52	52	60	51	46	49	45	52	61	56	53	37	41	60	40	23	....	47.7
	Min ..	21	20	29	23	39	32	34	28	22	20	28	34	29	19	38	34	32	30	31	28	25	20	28	31	24	30	28	39	15	9	....	27.2
Col. Spgs.	Max..	51	54	55	50	47	50	48	47	44	48	57	58	63	57	60	60	60	52	51	51	53	58	56	54	52	49	63	45	30	22	....	51 5
	Min ..	27	33	33	35	42	28	34	32	25	23	23	..	31	29	37	32	37	30	29	29	30	43	32	28	30	37	30	10	4	...	30.1
Colum. J.	Max..	31	48	48	50	50	40	40	40	34	39	49	49	48	39	45	56	63	53	45	48	47	56	63	58	49	45	42	60	44	23	....	46.7
	Min ..	23	25	32	31	38	33	34	23	24	24	29	36	29	19	35	36	39	35	35	24	23	26	38	35	28	31	30	41	14	7	....	29.4
Corning..	Max.	42	55	54	50	46	49	44	54	41	47	56	59	61	45	58	59	70	51	49	49	49	59	56	54	49	43	44	60	30	22	....	50.2
	Min ..	23	31	30	35	42	26	35	29	22	22	31	33	32	21	35	29	16	33	26	27	27	31	39	33	29	28	31	29	7	1	....	28.4
Corydon..	Max..	46	61	55	56	53	52	48	54	47	53	62	64	67	49	57	63	60	55	53	49	52	63	63	58	52	52	41	62	40	23	...	53.7
	Min ..	21	28	31	35	40	29	38	29	24	25	30	35	35	28	37	35	39	36	29	22	25	30	42	38	30	29	31	40	10	2	....	30.1
Creston..	Max..	56	56	54	50	50	49	49	53	48	48	58	60	62	49	56	59	60	50	50	50	60	58	55	44	48	42	59	35	15	17	....	49.9
	Min ..	22	30	31	37	43	28	30	32	24	25	28	34	35	24	35	35	40	35	28	29	25	26	42	37	31	30	29	30	8	1	...	29.1
Davenpo't	Max..	38	48	49	54	51	40	42	31	42	49	60	59	62	58	58	54	61	59	47	46	48	57	62	57	47	43	47	62	30	22	....	48.6
	Min ..	26	28	35	30	40	34	36	31	28	28	34	40	27	21	36	36	41	36	32	31	26	28	40	35	31	32	30	30	13	10	....	30.8
Decorah. .	Max..	43	47	43	56	47	40	42	37	38	50	62	62	52	39	48	53	56	56	48	48	48	54	57	57	48	37	38	52	28	23	....	47.0
	Min ..	19	22	28	22	34	33	32	29	24	24	38	35	39	18	38	32	37	24	22	20	24	26	38	29	27	22	30	28	8	2	....	26.4
Delaware.	Max.	36	43	46	51	45	45	41	40	41	46	57	58	54	37	48	50	57	49	40	43	48	50	56	55	46	40	55	45	38	19	....	45.6
	Min ..	20	20	31	24	24	32	24	24	23	25	30	33	31	17	32	32	35	32	27	28	22	24	40	32	32	25	25	35	11	3	....	26.3
Denison ..	Max.	46	53	64	..	55	48	44	47	44	..	..	..	..	47	60	62	65	60	52	51	52	63	55	54	51	43	50	55	21	21	...	48.5
	Min ..	20	33	27	..	35	26	36	30	25	25	33	32	31	30	36	29	32	10	22	28	26	34	47	33	31	29	32	20	6	-1	....	28 2
Des M....	Max.	41	54	52	54	46	50	44	38	42	10	62	64	61	44	60	58	61	56	49	48	49	61	61	55	51	42	59	63	17	20	....	50.2
	Min ..	24	30	34	33	34	31	32	31	27	26	33	37	36	25	33	38	42	35	29	27	27	31	39	32	31	32	32	17	6	3	....	29.8
De Soto ..	Max..	46	54	55	53	48	51	44	40	44	51	62	65	62	47	60	64	58	60	54	50	52	63	60	55	52	42	42	60	27	20	....	51.0
	Min ..	22	28	33	31	40	28	31	28	25	21	31	32	34	28	40	36	40	34	24	22	24	23	45	33	28	28	30	27	8	0	....	28.5
Dows.	Max.	39	49	46	56	46	50	43	36	39	49	68	60	54	42	55	57	57	50	47	47	47	61	63	55	48	42	35	56	31	19	..	47.7
	Min .	17	22	30	24	37	29	35	25	22	24	30	34	31	15	37	29	36	27	21	20	20	25	40	33	26	27	29	30	6	-3	....	25.9
Dubuque.	Max..	35	43	46	58	46	41	40	36	41	50	62	61	56	37	50	53	58	50	43	45	46	55	58	56	49	42	39	61	30	22	....	46.8
	Min ..	22	27	33	28	39	34	36	32	29	27	36	40	29	21	34	37	42	32	30	27	27	28	39	33	32	31	30	30	12	7	....	30.1
Earlham.	Max..	45	54	53	53	45	50	50	42	51	55	58	63	61	46	57	60	59	54	58	47	50	58	61	54	50	45	35	59	30	15	....	50.6
	Min ..	19	28	29	26	39	25	35	33	20	19	25	30	39	19	37	37	39	25	21	16	21	30	35	34	28	25	28	30	7	8	....	26.8
Elkader ..	Max.	36	44	45	58	50	40	40	36	44	54	66	67	57	38	50	60	60	56	48	49	49	60	58	53	50	44	38	45	36	22	....	48.2
	Min ..	20	18	31	20	35	33	33	23	24	21	33	38	32	20	34	30	36	24	21	18	19	20	38	32	26	26	28	35	11	4	....	26.1
Elliott....	Max..	43	56	55	52	47	51	46	50	43	48	54	58	61	48	60	59	61	61	50	51	51	59	58	53	50	43	43	59	25	27	....	50.9
	Min ..	21	30	29	35	43	27	33	32	23	28	29	31	30	34	34	31	32	35	25	25	27	30	44	34	30	27	32	25	8	3	....	28.7
Esth'rv'le	Max.	40	50	48	50	45	..	47	36	43	53	63	61	49	48	56	60	52	50	45	49	48	55	53	38	46	38	38	35	10	15	..	47.1
	Min ..	23	22	32	27	33	23	..	25	23	25	27	31	32	25	24	19	32	26	25	23	25	26	36	31	28	23	26	30	-5	12	....	24.7
ForestCy*	Max.	39	51	49	60	40	45	38	37	42	51	64	63	42	42	53	57	55	55	49	48	49	58	57	37	47	38	49	35	20	20	....	46.3
	Min ..	16	19	30	29	40	28	25	25	25	28	31	32	31	16	22	29	33	30	26	25	23	28	33	32	25	24	26	30	4	-4	....	25.8
F. Dodge*	Max..	45	49	56	55	56	53	40	35	48	50	63	62	55	44	59	59	56	51	48	48	49	59	55	40	48	38	46	35	11	..	....	48.6
	Min .	20	19	22	17	18	28	32	20	22	22	29	35	36	21	25	31	34	32	25	27	26	27	33	35	29	29	29	35	11	-2	....	25.6
Galva	Max..	40	51	50	59	58	47	43	39	42	51	60	59	54	46	59	60	55	51	49	49	50	57	55	54	52	41	35	48	18	18	....	48.3
	Min ..	17	31	30	34	37	24	36	31	22	24	31	31	33	30	39	29	32	30	24	25	24	30	43	40	27	27	29	18	5	-2	....	27.7
Glenwo'd	Max..	56	57	57	51	47	50	49	57	48	51	61	62	62	52	65	63	60	53	53	51	52	62	56	54	53	54	43	60	10	22	....	52.4
	Min ..	25	34	32	35	42	27	39	32	26	28	31	33	36	33	39	37	39	34	31	30	28	28	46	35	35	32	31	29	7	2	....	31.2
Grand M.	Max..	34	43	45	54	46	40	37	35	37	47	58	58	53	36	48	52	55	49	45	44	43	54	55	51	45	37	35	53	34	18	....	44.7
	Min ..	17	23	28	23	32	31	39	20	22	25	32	38	32	19	32	30	36	30	26	26	23	29	41	30	25	25	25	25	8	1	....	26.0
Greenfield. ..	Max.	46	52	54	52	47	48	46	52	50	49	57	62	63	54	57	59	59	53	48	47	49	58	57	60	49	43	39	57	34	20	....	50.7
	Min ..	19	29	30	35	40	35	35	31	21	25	30	32	32	20	33	33	38	33	25	24	22	32	42	35	29	29	29	26	7	-2	....	28.8
Grinnell.	Max.	42	57	52	51	50	48	42	38	48	52	60	60	60	40	55	60	61	48	48	46	47	59	58	54	50	45	37	50	37	20	....	49.2
(near)	Min ..	20	26	31	32	35	30	32	26	22	23	30	33	32	24	35	43	38	34	24	25	24	27	38	35	27	27	28	35	9	0	....	28.2
Grundy C	Max..	42	53	51	53	47	47	43	37	42	51	62	61	53	42	54	57	59	54	58	47	47	58	56	55	50	40	35	55	35	20	....	48.8
	Min ..	18	24	31	28	37	32	36	25	22	24	30	33	31	19	36	32	35	29	23	22	23	28	41	33	27	28	28	34	11	0	....	27.3
Guthrie C	Max..	44	53	52	53	48	49	44	42	43	48	59	66	58	45	58	59	55	50	49	49	49	58	55	55	49	43	41	58	27	19	....	49.3
	Min ..	19	28	30	30	42	27	35	18	22	23	32	35	34	25	38	32	40	33	23	23	22	30	44	34	30	28	29	26	7	-1	....	27.9
Hampton.	Max..	39	50	48	57	45	49	44	40	42	54	66	62	54	43	54	61	58	57	52	50	50	60	55	55	50	38	35	37	28	21	....	48.4
	Min ..	19	25	32	26	38	30	34	26	26	27	34	35	38	17	37	32	39	29	26	23	22	29	44	32	27	26	27	28	4	-1	....	27.5
Hancock .	Max..	45	55	54	50	46	50	44	54	45	50	61	59	60	46	59	60	60	52	51	51	52	61	56	56	51	42	51	57	26	22	...	50.2
	Min ..	23	33	33	36	41	29	37	33	26	25	31	32	35	34	37	34	37	34	27	29	28	32	45	33	31	31	33	23	7	2	....	30.3
Hanlontown .	Max..	37	50	48	60	47	45	42	33	39	51	64	63	49	40	55	57	53	50	47	46	48	55	55	56	49	39	34	50	28	18	...	46.9
	Min ..	15	23	26	23	39	28	29	29	22	24	32	31	25	15	37	30	34	25	22	23	23	24	40	26	24	23	26	26	0	-7	....	24.6
Harlan....	Max..	45	54	55	50	47	48	45	50	44	50	59	60	59	45	59	59	56	50	51	50	50	59	54	52	50	40	42	55	21	22	....	49.4
	Min ..	18	28	29	30	41	26	37	31	22	23	26	28	31	33	35	30	30	34	24	24	26	30	48	33	28	29	30	21	6	0	....	27.5

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR NOVEMBER, 1905—CONTINUED.

STATIONS.		DATE.																														MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Hopevi'e	Max..	47	58	55	52	47	50	44	52	44	50	59	61	64	48	57	61	60	48	52	50	50	62	59	54	50	44	41	60	27	22	....	50.8
	Min ..	32	30	32	34	41	29	34	30	25	25	32	35	36	26	38	35	38	38	30	26	26	29	41	34	29	30	31	27	9	1	...	30.1
Humbo't	Max..	40	52	49	60	45	48	45	37	42	51	60	60	52	44	56	60	55	52	43	48	50	59	56	56	49	41	46	53	29	18	....	48.7
	Min ..	18	27	31	30	40	28	34	30	27	25	33	33	32	22	40	31	35	29	24	28	26	30	44	33	29	28	30	29	3	-2	....	28.2
IdaGro'e	Max..	..	..	..	..	..	..	..	40	44	52	64	60	57	49	59	63	56	53	53	50	52	62	56	55	49	46	37	53	24	19	....	50.2
	Min ..	..	..	..	..	..	..	..	22	19	23	32	30	31	31	33	26	33	29	21	22	24	32	36	31	25	25	29	22	5	-3	....	25.1
Indep'ce	Max..	48	50	50	53	50	43	43	38	40	49	60	61	60	48	50	54	58	49	46	46	45	56	56	57	48	44	35	58	38	21	....	48.5
	Min ..	20	20	32	24	35	32	34	26	24	25	29	35	34	22	33	33	35	31	26	22	23	23	33	33	24	28	26	27	10	3	....	26.7
Indian'la	Max..	48	57	58	53	46	50	44	40	44	50	60	63	61	43	57	60	60	51	51	48	50	61	61	56	48	43	39	61	29	20	....	50.2
	Min ..	22	27	32	33	41	28	36	29	24	24	31	36	35	24	33	35	45	34	25	26	25	30	41	35	29	30	20	28	10	1	....	29.1
Iowa C*	Max..	39	52	48	54	46	46	43	38	42	52	62	59	60	42	54	57	61	53	42	50	50	59	62	44	48	43	59	53	19	21	....	48.6
	Min ..	22	23	30	24	30	33	34	27	22	21	25	34	30	19	19	36	36	36	26	22	23	23	25	36	26	28	31	31	16	6	....	26.5
Iowa F*	Max..	36	52	48	54	43	47	39	36	39	49	62	60	53	43	55	55	58	50	47	47	45	58	56	40	48	36	57	41	15	21	....	46.3
	Min ..	19	27	30	23	32	31	32	25	24	21	23	31	30	17	35	32	38	28	22	21	21	30	30	36	26	28	27	32	13	0	....	26.3
Jefferson	Max..	43	52	53	55	48	51	43	37	44	52	63	64	59	46	60	61	56	53	52	49	51	63	62	56	56	56	49	..	54	22	....	52 1
	Min.	20	28	31	32	30	26	33	30	24	27	34	35	37	26	40	32	38	31	23	26	25	29	38	34	29	26	28	..	9	0	....	28.3
Keokuk	Max..	44	53	53	58	58	47	48	42	44	50	59	62	68	45	55	57	66	55	47	48	48	59	62	54	54	48	44	68	47	24	..	52.3
	Min ..	27	30	16	34	44	35	41	32	28	28	34	39	37	24	36	41	45	38	37	30	28	29	40	41	34	34	33	44	15	8	..	33.3
Keosauqua**	Max..	41	55	54	59	58	58	48	43	43	50	61	68	65	58	57	60	65	59	50	49	49	61	66	56	58	49	63	62	47	37	....	54.8
	Min ..	23	24	33	26	31	35	35	28	23	21	22	32	22	23	38	38	37	37	31	20	20	21	23	40	28	27	31	33	15	5	...	27.4
Knoxvi'e	Max..	40	60	53	51	49	49	44	40	41	51	67	63	61	44	57	54	60	50	49	49	50	61	61	56	50	44	41	61	36	22	....	50.7
	Min ..	24	28	32	32	40	30	38	30	27	26	33	36	36	29	37	38	42	34	29	23	24	30	41	36	30	21	30	36	11	3	....	30 5
Larrabee	Max..	41	47	51	61	44	48	43	35	42	51	62	59	63	48	62	62	65	52	51	51	50	56	54	53	47	37	35	47	19	19	....	48.2
	Min ..	16	30	34	29	35	25	25	30	22	24	31	32	35	30	38	29	32	30	30	25	25	33	42	30	27	26	27	16	2	2	....	27.1
Le Mars	Max..	41	51	51	55	46	45	43	40	44	53	64	59	53	47	61	62	57	51	49	50	50	54	55	54	46	41	38	40	18	18	..	47.8
	Min ..	17	31	27	36	39	22	35	34	22	26	31	33	33	37	37	36	33	27	29	16	22	32	46	32	29	27	28	18	4	-6	....	27.4
Lenox...	Max..	43	56	54	51	46	..	..		..	47	56	57	62	48	56	58	59	50	49	48	49	58	56	54	..	..	..	..	..	21	...	51.3
	Min ..	21	29	29	33	40	27	38	30	25	23	31	33	32	23	34	35	38	36	29	27	26	30	41	35	29	31	30	30	6	0	....	29.0
Leon	Max..	45	58	53	53	50	50	44	50	43	47	56	57	64	56	56	57	60	54	46	48	48	58	60	57	49	45	42	61	36	21	....	50.8
	Min ..	24	30	32	35	41	42	39	30	26	25	31	34	36	31	37	39	38	37	30	25	24	30	41	37	30	32	31	35	10	3	....	31.2
Little Sioux	Max..	47	51	60	53	47	50	47	56	48	56	66	64	60	51	64	65	57	52	57	54	54	64	56	55	53	43	42	54	23	22	...	52.4
	Min ..	17	31	22	41	42	26	37	35	21	27	34	31	32	35	32	29	32	31	26	32	32	37	49	35	32	28	32	23	7	-1		29.6
Logan...	Max..	46	55	55	51	48	49	46	55	46	51	59	60	60	49	61	62	51	50	50	51	52	61	56	54	51	44	41	56	13	21	...	50.1
	Min ..	19	31	28	35	40	24	36	30	22	24	30	30	30	33	33	32	37	30	36	24	28	32	46	33	29	28	31	22	6	1	....	28.7
Maquoketa*	Max..	41	45	51	53	45	41	44	36	46	52	62	62	61	50	53	53	64	54	46	47	48	55	61	43	48	46	58	55	23	24	....	48 9
	Min ..	20	16	22	18	20	32	32	20	20	18	19	30	31	14	18	34	33	24	21	19	18	18	19	27	23	28	26	28	16	5	....	22.5
Marshalt'n*	Max..	50	55	54	53	52	56	49	48	45	50	62	62	60	57	56	57	61	56	55	53	52	53	58	57	55	54	59	58	..	..	....	55.0
	Min ..	20	20	32	26	28	31	31	36	23	22	27	34	33	22	22	24	34	33	22	21	23	23	29	37	27	28	28	30	12	0	....	25 9
Mason C.	Max..	32	49	47	56	45	46	42	35	40	50	63	61	50	37	55	55	54	50	42	45	45	55	52	50	47	42	35	50	32	19	....	46.0
	Min ..	19	26	33	27	37	33	35	26	22	28	36	35	36	19	37	32	39	28	25	25	25	29	42	32	30	26	28	32	8	-2	....	28.3
Massena	Max..	52	55	62	50	45	48	57	59	48	54	52	67	67	47	48	45	63	53	59	53	53	65	55	54	57	44	50	60	12	23	....	51.9
	Min	19	28	29	34	41	30	25	27	22	20	30	30	29	29	27	28	40	33	24	26	27	29	43	35	26	25	29	6	10	0	....	26.7
Monticello .	Max..	35	45	49	54	44	43	42	37	41	49	60	60	58	44	53	52	60	51	44	45	45	53	58	40	47	40	58	49	20	22	....	46.6
	Min ..	18	30	20	30	32	32	24	22	20	27	32	31	17	23	32	33	29	22	18	20	19	18	38	23	22	27	30	16	5	13	....	24.1
Mt. Ayr	Max..	49	59	58	49	47	51	47	58	45	50	58	60	64	49	59	63	63	48	58	51	52	64	58	55	52	45	48	63	32	23	....	52.4
	Min ..	23	30	31	34	41	28	38	30	25	23	26	31	33	27	34	38	37	36	30	26	25	31	39	32	30	31	30	27	8	2	...	29.2
Mt. Pleasant	Max..	44	52	50	59	57	45	47	41	42	48	59	60	64	45	54	55	62	53	47	47	47	57	61	56	51	46	41	61	45	24	....	50.7
	Min ..	22	25	32	31	39	32	37	27	22	22	28	35	33	18	33	35	37	35	27	24	23	26	37	34	27	30	28	39	14	5	....	28.6
Mt. Vernon.	Max..	44	46	50	51	43	43	42	38	53	58	64	66	58	42	53	62	58	52	40	52	54	60	58	54	46	43	38	56	28	28	....	49.3
	Min ..	21	21	31	26	35	31	33	25	28	23	30	34	28	18	30	34	32	30	26	23	23	20	33	20	24	36	28	26	8	5	....	26.3
N. Hampton	Max..	37	50	47	57	48	43	42	36	38	48	62	60	54	42	50	53	56	51	46	40	44	52	55	56	47	40	38	56	38	21	....	46.9
	Min ..	18	22	32	27	34	32	33	25	22	23	29	32	32	18	28	31	33	31	28	23	25	26	36	31	25	25	27	33	8	0	....	26.3
Newton.	Max..	38	55	50	51	49	48	45	36	40	49	61	59	59	41	57	57	59	49	47	46	46	58	59	54	48	42	43	47	25	20	....	47.9
	Min ..	18	25	31	29	37	29	29	27	21	23	31	34	34	27	35	33	33	34	25	23	23	23	37	29	25	28	28	24	4	-1	....	26.8
Northwood..	Max..	33	48	44	58	44	42	43	35	39	49	62	59	50	39	53	55	53	51	48	44	44	53	53	54	45	37	38	49	28	19	....	45.6
	Min ..	16	22	30	24	41	32	31	24	22	24	31	35	27	16	36	31	30	28	23	24	22	-26	35	29	26	25	26	28	2	-5	....	25.4
Odeboldt	Max..	45	51	50	58	45	47	42	38	41	50	61	59	55	45	57	60	55	51	50	50	60	53	65	42	48	43	36	53	23	20	...	48.1
	Min ..	19	30	30	30	40	27	36	30	30	29	36	35	35	30	37	40	37	31	28	25	33	31	34	32	30	28	29	23	6	0	..	29.7
Ogden...	Max..	43	51	51	53	46	49	44	36	43	50	62	61	58	44	56	58	58	53	50	47	49	61	57	56	57	44	38	48	28	19	....	49.0
	Min ..	19	28	30	29	40	26	30	30	24	27	32	33	35	21	38	31	38	34	27	25	25	25	41	35	29	28	28	28	9	0	....	28.2
Olin	Max..	44	46	43	52	48	43	42	40	41	..	..	..	..	..	..	53	59	51	45	45	44	53	60	57	45	40	39	59	40	21	....	46.5
	Min ..	23	21	33	29	41	34	37	26	22	..	..	..	..	..	..	35	34	35	27	20	25	20	30	38	25	30	29	35	16	7	....	28.0
Omaha, Neb.	Max..	46	57	59	48	48	52	47	57	44	52	61	63	60	50	65	64	58	52	54	51	53	62	57	48	51	42	59	58	15	22	....	51.8
	Min ..	27	38	35	40	34	31	40	36	30	32	36	36	40	37	42	40	43	36	34	33	33	39	47	37	38	34	33	15	6	4	....	33.5
Onawa ..	Max..	48	55	69	51	48	48	48	51	51	59	67	69	60	53	67	67	56	55	61	52	53	63	56	54	50	46	41	41	20	21	....	52.7
	Min ..	20	33	29	35	40	26	33	33	23	24	28	23	30	35	37	32	33	29	29	26	27	32	46	32	31	29	29	20	5	-1	....	28.6
Osage ...	Max..	35	47	43	58	45	41	39	34	38	47	61	59	52	38	46	53	53	50	45	44	43	52	50	53	45	40	35	49	33	19	....	44.8
	Min ..	17	23	33	25	38	32	33	25	23	23	29	34	31	16	34	32	38	28	26	24	24	26	38	32	27	27	26	33	9	-2	....	26.8
Oskaloosa ..	Max..	42	58	52	55	50	49	44	39	43	51	61	61	62	45	55	57	60	51	48	49	49	59	61	55	49	43	41	61	35	23	....	50.3
	Min ..	23	27	32	29	39	32	39	27	24	22	32	35	33	28	36	35	40	35	27	21	25	25	39	35	28	28	30	35	10	3	...	29.1
Ottumwa...	Max..	45	44	54	59	46	49	45	42	46	52	63	64	65	44	43	62	61	60	50	51	48	62	63	47	53	47	42	40	14	24	....	49.5
	Min ..	25	28	30	29	37	33	34	31	26	29	26	36	39	29	27	39	49	36	31	26	26	28	30	34	32	33	31	31	8	6	....	30.0
Pacific Jct.	Max..	45	58	56	43	44	53	46	58	42	50	58	-59	60	43	62	61	60	51	57	50	51	60	55	53	51	43	47	55	38	24	....	51.4
	Min ..	19	29	26	34	40	25	33	30	22	22	26	28	26	34	30	29	30	35	29	24	25	30	48	30	29	28	21	20	8	1	....	26.9
Pella	Max..	40	56	51	58	51	49	46	39	50	58	61	61	61	48	56	58	61	54	50	48	48	60	62	57	48	46	40	60	41	21	.	51.2
	Min ..	23	26	31	31	40	30	38	29	23	23	33	35	35	28	36	36	42	34	29	26	24	27	38	32	29	31	30	36	11	3	....	29.8
Perry . .	Max..	44	53	51	54	48	50	44	38	42	50	61	62	58	45	59	50	57	51	50	47	49	61	57	55	51	41	40	59	25	20	....	49.4
	Min ..	19	29	32	28	40	28	32	29	23	24	31	34	33	21	39	31	38	35	24	24	23	27	..	..	..	33	30	24	9	1	....	27.4
Plover...	Max..	40	50	50	61	48	50	40	38	46	51	61	59	..	..	52	58	52	51	50	47	..	..	53	46	48	37	44	47	20	30	....	47.3
	Min ..	18	25	29	30	33	25	31	30	25	25	30	29	..	..	35	28	32	25	27	25	..	..	40	28	25	26	25	20	0	5	....	25.8
Pocahontas.	Max..	41	52	49	59	45	48	42	37	42	51	62	60	52	45	57	59	50	51	51	48	48	58	55	53	48	38	36	50	20	20	...	47.6
	Min ..	17	29	29	30	35	27	34	32	25	27	32	32	33	28	36	30	35	25	26	25	23	30	43	32	29	28	29	20	3	-3	....	27.4
Red Oak	Max	46	57	52	54	48	53	49	57	49	58	61	64	65	52	60	65	64	54	54	55	56	63	56	57	52	48	44	60	31	25	....	53.5
	Min ..	25	36	33	39	45	30	41	34	27	25	33	35	32	35	37	34	38	38	28	31	31	34	46	38	34	31	33	31	10	5	....	32.2
Ridge'y	Max..	37	50	47	61	46	41	40	34	45	52	61	64	57	40	52	58	59	56	49	47	47	56	58	60	54	45	42	47	36	25	....	48.9
	Min ..	17	22	34	25	35	33	34	26	28	26	31	36	30	18	34	32	36	30	29	25	21	23	37	30	25	26	26	36	7	0	....	27.2
Rock R..	Max..	40	50	50	38	44	44	50	33	46	56	44	48	54	56	60	68	54	56	54	58	48	50	48	50	48	54	46	42	10	18	..	47.5
	Min ..	24	28	30	26	30	30	28	28	30	34	30	32	30	32	34	33	34	38	31	36	28	30	34	30	34	32	34	26	4	-6	....	28.9
R City...	Max..	50	52	50	55	45	48	40	40	40	45	65	68	60	60	57	59	58	50	48	45	45	58	50	50	53	44	55	35	21	19	...	48.8
	Min ..	19	27	30	35	30	26	35	31	25	26	28	30	25	28	30	35	35	28	27	24	25	26	35	33	29	29	28	21	6	3	..	27.0
Sac City.	Max..	40	52	50	58	45	48	46	45	42	50	60	60	55	45	58	59	55	51	49	47	49	58	54	..	..	..	..	58	23	22	...	49.2
	Min ..	18	26	35	29	38	26	33	31	24	27	33	33	34	28	35	31	39	29	25	24	24	29	42	..	..	..	..	20	6	-1	....	27.6
St. Cha'es	Max..	53	49	59	53	48	54	44	43	49	55	63	67	66	45	60	66	64	50	60	53	59	67	61	55	52	43	41	60	31	20	....	53.0
	Min ..	22	28	32	34	40	28	33	30	26	27	35	37	33	24	39	37	42	33	26	24	22	30	48	36	30	31	29	31	9	0	....	29.9
Sheldon.	Max..	45	53	59	48	40	49	42	36	47	56	66	63	58	58	62	65	56	55	55	52	51	57	53	57	47	37	33	36	18	17	....	48.9
	Min ..	15	29	34	36	26	29	34	32	28	28	32	29	33	28	36	27	33	29	30	28	26	32	46	30	28	26	27	18	-5	10	....	27.1
Sibley...	Max..	40	49	50	57	43	47	39	34	42	53	63	62	48	48	59	61	51	53	52	50	49	56	53	38	47	39	34	31	6	-19	....	45.8
	Min ..	15	16	29	29	35	24	25	31	24	25	27	28	32	26	23	27	28	30	30	24	24	26	32	31	28	23	24	29	3	-9	....	24.7
Sidney ..	Max..	42	59	55	47	47	51	48	58	44	47	48	49	50	46	59	60	59	51	50	47	47	57	55	52	48	43	47	59	20	18	....	48.9
	Min ..	23	28	30	34	43	25	32	30	24	25	31	30	34	32	36	37	37	35	29	25	26	29	41	30	30	29	30	20	6	-1	....	28.7
Sigour'y	Max..	45	56	50	55	52	46	58	41	42	50	61	60	60	49	53	56	58	54	48	48	58	..	61	56	48	45	40	60	49	21	...	51.0
	Min ..	22	24	33	29	40	33	28	27	22	24	31	35	33	35	31	33	37	29	24	23	25	..	36	39	27	30	30	37	14	4	....	28.8
Sioux C'r	Max..	45	50	49	55	45	47	44	37	43	53	63	59	49	48	60	63	53	49	48	50	50	53	53	63	45	37	36	38	14	17	...	46.8
	Min ..	18	30	30	30	33	24	35	34	26	26	27	32	35	24	36	30	35	28	26	26	24	32	45	28	29	28	29	14	0	-8	....	28.9
Sioux C.	Max..	44	53	55	50	48	50	43	45	46	56	67	61	55	58	65	64	54	52	53	50	50	58	56	42	48	37	45	43	10	20	....	49.1
	Min ..	22	36	32	37	30	29	33	31	28	31	35	37	35	33	43	34	38	31	35	32	30	34	40	32	34	30	32	10	-3	-5	....	30.0
Storm L*	Max..	41	52	51	59	44	46	39	34	43	51	61	60	52	46	58	59	56	53	50	48	50	59	53	40	48	36	48	33	9	20	....	46.6
	Min ..	16	16	23	29	37	25	26	31	24	25	30	33	37	28	28	32	32	27	26	25	25	26	35	32	30	25	27	29	4	-5	...	26.0

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR NOVEMBER, 1905—CONTINUED.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Thurm'n	Max..	44	60	57	50	49	58	47	59	47	50	59	62	63	48	63	62	60	54	53	50	58	58	57	55	50	47	48	60	27	18	..	52.1
	Min ..	21	37	50	32	44	27	35	32	25	22	32	33	28	34	35	30	32	38	30	24	31	38	44	33	28	27	32	25	8	2	..	29.5
Tipton ..	Max..	42	47	50	52	45	41	41	38	44	50	60	60	60	40	52	55	60	52	44	49	49	55	61	55	46	44	38	59	43	25	..	48.6
	Min ..	25	26	35	30	38	34	37	30	26	27	32	37	37	24	33	37	38	37	32	29	26	28	38	36	28	33	30	37	15	10	..	30.8
Toledo ..	Max..	45	55	50	58	48	47	43	37	45	51	62	62	59	42	53	57	61	61	48	48	48	60	58	46	50	43	36	60	34	22	..	49.5
	Min ..	21	26	34	25	39	32	37	25	22	21	32	35	32	26	36	35	41	34	22	22	24	26	41	35	26	28	29	34	10	1	..	28.4
Vinton ..	Max..	45	50	48	50	50	44	43	50	42	50	..	..	62	44	52	57	57	54	54	47	47	55	57	55	48	42	37	58	42	22	..	48.6
	Min ..	22	24	38	28	37	32	36	25	24	25	..	..	33	28	34	50	38	28	30	18	24	25	38	38	27	30	30	34	13	9	..	28.4
Wappello	Max..	47	58	57	56	53	46	45	45	49	53	61	65	68	45	55	64	68	56	51	50	49	59	60	55	46	50	40	64	48	26	..	53.0
	Min ..	25	27	33	31	29	36	36	31	24	25	33	32	33	28	34	38	41	38	33	28	26	22	37	37	29	31	31	38	16	10	..	30.2
Wash'on	Max.	42	52	54	53	49	47	45	39	45	52	62	62	64	42	62	58	62	53	44	48	49	60	63	56	48	46	44	60	32	28	..	51.8
	Min ..	23	25	34	31	39	33	38	28	23	24	30	36	33	19	35	36	38	36	29	26	24	36	36	32	28	30	30	32	12	6	..	29.1
Washta ..	Max..	46	48	55	58	47	50	42	40	44	52	62	60	58	48	60	60	55	53	52	50	52	60	55	45	48	45	38	40	18	20	..	48.7
	Min ..	15	33	36	26	39	24	37	30	20	25	32	26	30	32	34	26	26	21	26	20	25	28	43	33	32	25	30	18	5	-4	..	26.4
Waterloo*	Max..	47	52	50	55	47	48	44	38	43	53	64	64	67	45	55	63	59	56	49	49	49	58	58	55	57	43	38	58	36	28	..	50.4
	Min .	20	24	32	26	36	33	35	26	27	25	33	36	30	24	37	35	37	31	24	28	24	25	41	44	27	27	29	36	12	4	..	28.8
Waukee..	Max.	40	54	52	53	48	48	44	41	41	57	58	60	59	44	59	58	57	50	46	46	47	59	60	55	49	..	39	59	28	18	..	49.3
	Min .	21	28	32	33	41	28	36	30	25	25	33	35	36	22	38	34	40	34	27	25	24	31	42	35	30	..	29	28	9	1	..	29.4
Waverly.	Max..	35	49	47	54	48	45	41	35	39	49	61	60	53	40	53	55	57	50	47	46	45	45	55	54	48	39	36	56	32	21	..	46.8
	Min ..	20	24	32	24	35	32	35	26	24	23	31	35	31	21	36	34	36	29	24	25	26	26	39	33	26	24	29	32	10	8	..	27.5
Web. C'y	Max..	50	53	50	52	56	47	45	37	40	53	55	70	55	43	56	54	58	57	51	48	48	65	55	67	54	45	35	58	31	22	..	50.3
	Min ..	17	25	30	26	39	29	31	26	25	21	32	34	33	16	36	31	30	31	21	22	23	24	40	35	27	29	30	30	10	10	..	27.1
W. Bend.	Max..	36	51	47	59	46	47	42	36	42	49	60	59	50	48	54	57	52	50	47	47	..	56	53	53	47	38	35	50	27	18	..	46.6
	Min ..	15	25	30	28	36	24	30	29	28	25	30	29	31	25	37	28	35	26	27	24	..	30	43	31	25	24	27	27	8	4	..	26.8
Whitten..	Max.	42	53	45	54	47	45	45	37	38	48	59	59	55	42	54	57	58	51	46	45	45	56	58	57	48	48	36	57	30	19	..	47.8
	Min ..	17	28	30	28	36	30	33	25	22	22	30	32	30	17	35	31	35	30	23	23	22	25	39	34	25	28	28	28	9	-1	..	26.8
Wilton J.	Max..	41	48	51	54	48	43	44	46	41	47	58	58	61	41	52	53	63	65	45	46	36	61	54	50	47	43	40	59	49	22	..	49.2
	Min ..	22	29	33	24	42	33	34	27	25	21	28	55	30	17	32	38	36	35	27	24	22	35	40	22	25	27	29	36	14	5	..	28.1
Wint'rset	Max..	41	54	51	52	46	47	48	43	42	46	57	62	59	46	56	53	58	49	46	46	47	58	59	56	47	48	38	58	31	19	..	48.4
	Min ..	20	27	22	32	39	27	36	30	23	26	32	34	35	22	35	32	39	33	24	23	23	28	42	35	27	28	27	31	8	0	..	28.0
Woodb'n.	Max..	42	59	52	54	49	48	46	50	43	47	56	58	63	49	55	56	61	49	46	47	54	57	61	55	56	45	40	61	28	42	..	50.1
	Min ..	19	25	25	30	40	26	33	24	20	18	31	35	30	31	37	31	39	37	26	17	20	21	40	30	25	25	30	30	10	2	..	26.9
Zearing ..	Max.	47	53	50	53	45	45	46	37	39	50	61	61	57	43	56	57	58	52	52	48	48	59	57	56	50	42	36	58	33	21	..	49.0
	Min ..	20	25	31	25	23	36	34	25	22	28	32	33	30	17	36	30	36	30	20	19	19	24	40	35	20	29	28	33	10	-1	..	26.1

* At those stations thermometers are read in the morning; the maximum temperature then observed appears in the maximum column for the preceding day, on which it nearly always occurs.

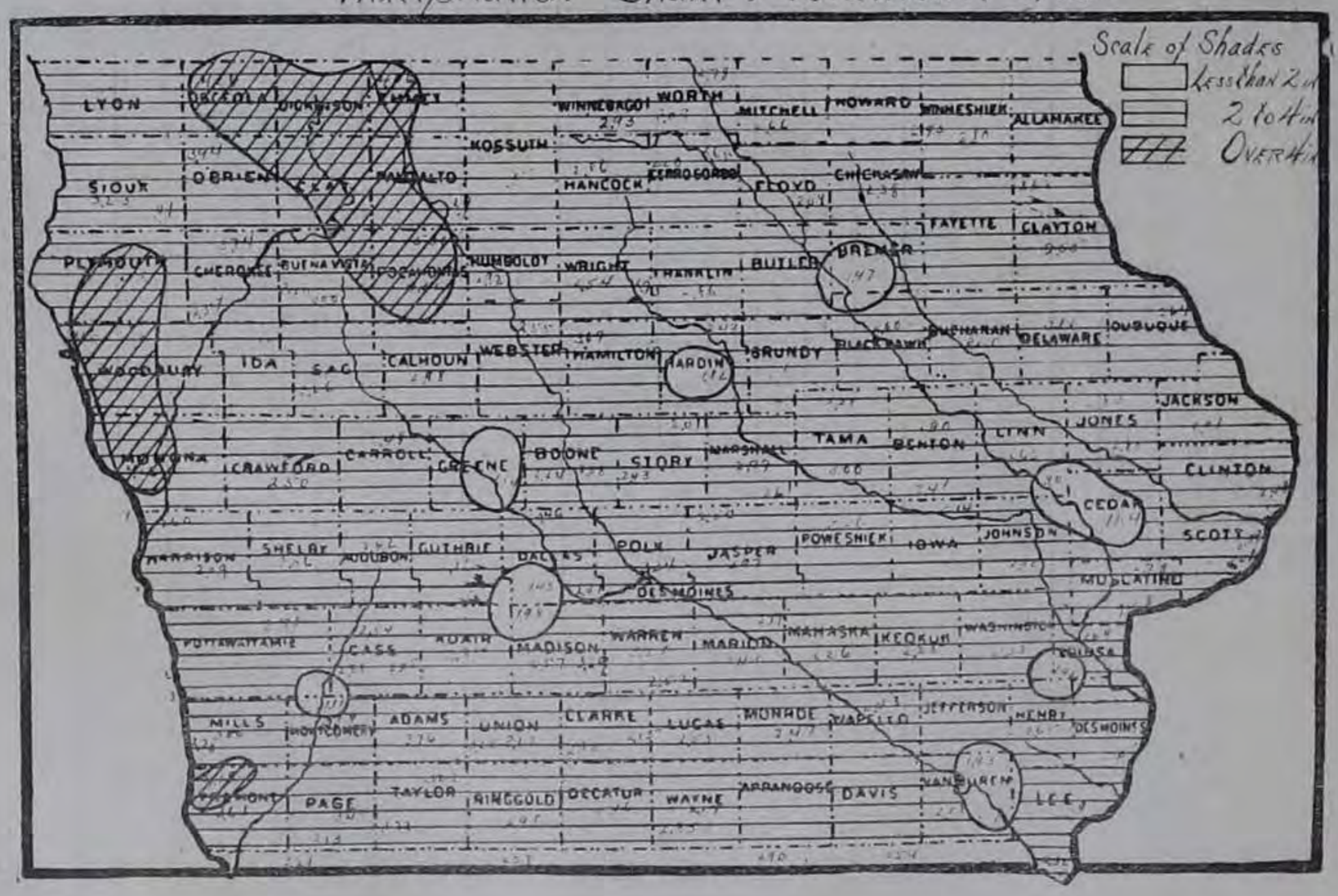
DAILY AND MONTHLY PRECIPITATION FOR NOVEMBER, 1905.

STATIONS.	DAY OF MONTH.																													TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....	..	....	.23	2.00	....	....	....	....	....	....	....	....	....	....	....			....	....	....	....	.65	.07	....	....	.17	....	....	....	....	3.12
Albia	....	....	...	....	1.02	.08	....	....	.10	....	....	....		....	....	....	....	....	..	....	..	....	....	.97	....	....	....	.30	....	....	..	2.47
Algona	....	....	....	.06	1.78	....	....	.02	....	....	....	....	....	T	..	....	....	....	....	....	....	....	.90	.07	....	....	.80	.24	....	....	....	3.37
Allerton	....	....	....	T	1.09		T	T	....	....	....	....	....		....		....	....	....	....	....	....	.32	.68	...	..	.22	.04	T	..	...	2.35
Alta	....	..		.20	1 05		....	.09	....	....	...	....	....	..	....	....	....	....	....	....	....	....	1.15	.13	....	....	.53	.05	....	....	..	3.20
Alta [near]	....	....	....	.10	1.20	...	....	.10	....	..	....	....	....	..	....	....	..	....	....	....	....	....	1.10	.14	....	..	.30	.17	....	....	....	3.11
Alton	....	..	....	T	1.12	....	....	.08	....	....	....	....	....	..	....	....	....	....	....	....	....	....	1.43	.28	....	....	.39	.61	....	....	..	3.91
Amana	.02	....	....	....	1.63	....	....	.02	...	....	...	....	....	....	....	....	....	....	....	....	..	..	.28	.37	....	....	.53	.29	T	....	....	3.14
Ames	....	....	....	.03	1.05	....	.08	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	1.01	.05	...	....	.18	....	T	....	....	2,43
Atlantic	....	....	....	.86	.64	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	....	.82	..	....	..	22	..	....	....	....	2.54
Audubon	....	..	...	.29	.94	...		...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.96	....	....	....	.23	.	....	....	....	2.42
Baxter	....	....	....	....	1.38	....	....	.08	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.58	.16	....	....	.20	.10	....	....	....	2.50
Bedford	....	....	....	.48	1.86	....	....	...	....	....	....	....	....	....	....	....	..	....	....	....	....	....	.65	.07	....	....	.17	.10	T	....	....	2.33
Belle Plaine	....	....	..	.01	1.40	....	T	.10	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.50		....	....	.40	....	....	....	....	2.41
Bonaparte	....	..	....	....	.72	..	....	.04	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.33	.21	....	....	.48	.11	..	....	....	1.84
Boone	....	....	.	....	.70	.26	....	.02	.07	....	..	....	..	..	....	....	....	....	....	....	....	....	....	1.34	....	....	....	.14	....	T	....	2.53
Britt	....	....	....	....	1.25	.01	T	T	....	..	..	....	....	..	....	..	....	....	....	....	....	....	.76	.38	....	....	.20	.24	.02	....	....	2.86
Buckingham	...	....	....	T	2.00	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	.68	..	....	.68	....	....	....	....	3.31
Burlington	....	T	....	....	.75	....	....	.09	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.15	.12	....	....	.59	.39	....	....	....	2,09
Carroll	..	....	....	..	1.00	.15	....	.04	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.09	.95	....	....	....	.25	T	....	....	2.48
Cedar Rapids	....		T	...	.80	.60	....	....	T	....	....	....	....	..	....	....	....	....	....	....	....	....	....	.54	....	....	....	.71	....	T	....	2.65
Chariton	....	T	....	T	1.15		T	.10	....	....	....	....	....	..	....	....	....	....	....	....	....	....	.75	.20	....	....	.35	....	....	..	....	2.55
Charles City	....	....	....	.01	.75	.02	T	T	.	....	....	....	....	....	....	....	....	....	....	....	....	....	.65	.05	T	....	.61	.01	T	....	....	2.08
Clarinda	....	....	....	....	3.33	....	..		....	..	..	....	....	....	....	....	....	....	....	....	....	....	....	.91	..	....	.17	....	....	T	....	3.41
Clear Lake	....	....	..	....	.85	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.45	.15	....	....	.05	.70	T	....	..	3.20
Clinton	....	.08	....	....	1.15	...	....	....	....	..	....	....	....	....	.01	....	....	....	....	....	....	....	.22	....	....	....	...	1.02	T	....	....	2.48
College Springs	...	....	....	2.00	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.91	...	....	....	.22	....	....	....	....	3 13
Columbus Junct'n	...	.02	....	..	1 68	....	....	.05	....	....	....	....	....	....	....	....	....	....	....	....	....	..	.24	.06	....	....	.64	....	T	...	....	2.69
Corning	....	..	....	....	2.10	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.20	....	....	.16	....	....	....	....	3 46
Corydon	....	..	....	T	1.07	....	T	.02	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.34	.39	....	....	.27	.08	T	....	....	2.17
Creston	....	....	....	....	1.02	T	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.04	....	....	....	.17	T	....	..	3.23
Cumberland	...	..	..	.40	.61	....	....	....	....	....	....	....	....	....	....	....	....	....	..	....	....	....	.92	....	....	....	.38	....	....	....	....	2.31
Davenport	....	.05	....	....	.95	....	....	T	....	....	....	....	....	....	T	....	....	....	....	....	....	....	.09	.18	....	....	.72	.02	T	....	....	2.01
Decorah	....		..	.89	.06	.15	....	....	....	....	....	....	....	....	T	....	....	....	....	....	....	....	.48	.12	....	....	.70	.40	....	....	....	2.80
Delaware	....	....	....		1.43	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.54	....	..	....	1.15	....	....	....	....	3.12
Denison	....	....	....	.53	1.06	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.63	.03	....	....	.25	....	....	..	....	2.50
Des Moines	....	....	....	.12	1.29	....	T	.03	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.65	T	....	....	.25		T	....	....	2.34
De Soto	....	....	....	T	.61	....	....	.07	...	....	....	....	....	....	....	....	....	....	....	....	....	....	.68		....	....	.07	T	....	....	....	1.43
Dows	...	....	....	.04	1.17	...	...	.02	....	..	....	....	....	....	....	....	....	....	....	....	....	....	.90	.24	....	....	....	.38	T	....	....	2.75
Dubuque	....	T	....	....	1.02	....	.02	....	....	....	....	....	....	....	.02	....	....	....	....	....	....	....	.38	.12	T	...	.96	.12	T	T	....	2 64
Earlham	....	....	...	.03	1.03	....	...	T	..	....	....	....	....	....	....	....	....	....	....	....	....	....	.71	....	....	....	.19	.02	T	....	....	1.98
Elkader	....	....	....	....	1.10	...	.10	...	....	....	....	....	....	....	T	....	....	....	....	....	....	....	.80	....	....	....	1.05	....	....		....	2.55
Elliott	....	....	....	.13	....	..	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.78	....	....	....	.21	....	T	..	....	1.11
Estherville	....	...	..		1.05	.15	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.01	1.40	....	....	....	1.25	.20	....	....	4.06
Florence		...	....	T	1.10	...	....	.10	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.66	.35	....	....	.23	.10	....	....	....	2.54
Forest City	....	....	....	....	.20	1.00	...	....	....	....	....	..	....	....	....	....	....	....	....	....	....	..	....	.87	....	....	....	.86	....	T	..	2.93
Fort Dodge	....	....	....	1.12	.16	..	...	....	.05	....	....	....	....	....	....	....	....	....	....	....	....	....	2.70	.90	...	....	....	.32	....	....	....	2.55
Fort Madison	....	T	....	....	.43	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.08	....	....	....	.83	....	....	....	....	3.98
Galva	....	..	...	.17	1.21	....	....	.09	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.61	.12	....	....	.34	T	.09	....	....	3.10
Gilman	....	T	...	.05	1.80	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.00	....	....	....	.15	....	....	....	....	2.61
Glenwood	....	....	....	....	1.80	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.20	....	....	....	....	3.00
Grand Meadow	....	....	....	....	.90	....	....	....	....	....	....	....	....	....	.04	....	....	....	....	....	....	....	....	.55	.02	....	....	1.15	.02	....	....	2.68
Greenfield	....	....	...	14	1.24	....	....	.06	.	....	....	..	....	....	....	....	....	....	....	....	....	....	.96	.14	....	....	.29	.02	T	....	....	2 85
Grinnell [near]	....	T	....	T	1.70	...	....	.10	....	....	....	....	..	....	....	....	....	....	....	....	....	....	.25	.70	....	....	.50	....	.01	....	....	3 26
Grundy Center	....	....	....	T	1.30	....	....	.01	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.43	.30	....	....	.41	.20	T	....	....	2.65
Guthrie Center	....	....	....	.07	.72	...	T	.07	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.03	.07	....	....	.17	.03	T	....	....	2.16
Hampton	....	....	....	.88	.41	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.00	....	....	..	.57	T	..	....	....	2.86
Hancock	....	....	..	.68	.85	....	....	...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.90	..	....	....	.25	....	T	....	....	2.71
Hanlontown	....	..	....	.10	.95	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.64	.17	....	....	.73	.50	T	T	....	3.09
Harlan	....	....	....	.40	1.47	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.68	.25	....	....	.25	.01	T	..	....	3.06
Hopeville	....	....	....	.13	1 87	....	T	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.58	.14	....	....	.14	.06	T	....	....	2.92
Humboldt	....	....	...	...	1.48	..	....	.02	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.86	.09	..	....	.20	.27	T	....	....	2.92
Independence	....	T	....	...	1.70	...	....	..	....	....	....	....	....	..	....	....	....	....	....	....	....	....	.10	.60	....	....	.80	....	T	....	....	3.20
Indianola	....	....	..	.08	2.03	..	T	.09	....	....	..	....	....	....	....	....	....	....	....	....	....	....	.60	.15	....	....	.20	.06	T	...	...	3.21
Iowa City	..	....	.01	....	1.18	.30	....	....	T	..	....	....	....	....	....	....	....	....	....	....	....	....	....	.66	....	....	..	.74	..	T	....	2.92
Iowa Falls	..	..	....	....	.76	.45	...	....	T	....	....	....	....	....	....	T	....	....	....	....	....	....	....	.82	T	....	....	.46	T	T	....	2.49
Jefferson	....	....	....	T	.88	...	T	.06	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.75	T	....	..	.15	....	....	....	....	1.84
Keokuk	....	.02	....	....	1.01	....	....	.05		....	....	....	....	....	....	....	....	....	.32	....	....	....	.28	..	....	....	60	.04	T	T	....	2.32
Keosauqua	....	....	.	...	1 00	T	T	...	.05	....	....	....	....	....	....	....	....	....	....	T	....	....	....	.50	....	....	....	....	....	....	....	2.08
Knoxville	....	....	....	....	1.40	....	....	.07	....	..	....	....	....	....	....	....	....	....	....	....	....	....	.47	.20	..	....	.20	.53	....	....	....	2.42
Lacona	....	....	....	.03	1.27	....	.01	.20	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.39	....	....	....	.62	.08	....	....	....	2 52
Larrabee	...	....	....	.40	.83	....	....	.09	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.74	....	....	....	.63	.05	T	T	....	3.74
Le Claire	....	....	.25	....	.41	.33	....	....	T	....	....	....	....	....	....	....	T	....	....	....	....	....	..	37	....	....	....	1.03	T	T	....	2.39
Le Mars	....	....	....	1.08	....	..	T	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2.20	....	....	....	1.65	T	....	....	....	4.93
Lenox	....	....	....	.28	1.70	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.00	.10	....	....	.14	....	....	....	....	3.22
Leon	..	....	....	.03	1.21	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.69	.19	....	....	.20	.14	T	....	....	2.46
Little Sioux	....	....	....	.41	1.00	...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.70	....	....	....	.42	.07	....	....	..	2.09
Logan	....	....	....	.40	1.50	.	....	...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.74	....	....	....	.44	.01	....	....	....	3.06
Maquoketa	...	...	.06	....	.50	.84	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	.34	....	....	....	1.25	....	....	....	2.99
Marshalltown	....	....	....	....	1.09	.34	...	....	.06	....	..	....	....	....	....	....	....	....	....	....	....	....	....	.83	....	....	....	.55	T	....	....	....	2.77
Mason City	....	..	....	.15	.80	...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.50	.30	....	....	.35	.45	....	....	....	2.65
Massena	..	....	....	....	1.25	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.80	....	....	....	.55	....	..	..	....	2.05
Monticello	....	..	....	....	1.40	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.48	....	....	..	95	.05	T	....	....	2.83
Mount Ayr	....	....	....	.30	1.65	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.68	.07	....	....	.15	....	....	....	....	2.90
Mt. Pleasant	....	.12	..	....	.75	....	....	.08	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.37	.57	....	....	.11	....	....	....	....	2.65
Mt. Vernon	....	T	....	....	....	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.10	.70	....	....	....	.10	T	T	....	.90
Muscatine	....	....	.07	...	.77	.38	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.24	....	....	....	.82	T	T	....	2.28
Nevada	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
New Hampton	....	....	....	T	.78	....	.04	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	.14	.40	....	....	.40	.62	T	....	....	2.88
Newton	....	....	....	.05	1.70	....	....	.08	....	....	....	....	....	..	....	....	....	....	....	....	....	..	.70	.12	....	....	.26	.06	....	....	....	2.97
Northwood	.	....	....	T	.88	.03	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	.65	.15	....	....	.97	....	....	....	....	2.78
Odebolt	....	....	....	....	1.60	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.80	....	....	....	.10	.10	....	....	2.26
Ogden	....	....	....	T	.92	....	....	.08	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.00	.08	....	....	.16	....	....	....	....	2.24
Olin	....	T	....	....	1.40	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.40	....	....	....	1.05	....	T	....	....	2.85
Omaha, Neb	..	....	....	1.18	.47	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.71	T	....	....	.38	T	T	..	....	2.72
Onawa	....	....	....	.25	2.30	....	....	.01	....	....	....	....	....	....	....	....	....	....	....	....	T	....	1.00	.10	....	....	.60	.	..	....	....	4.28
Osage	...	....	....	T	.90	....	.07	....	....	....	....	....	....	....	....	....	....	....	....	....	..	....	.46	.32	....	....	.21	.70	....	T	....	2.66
Oskaloosa	....	....	....	T	1.00	....	....	.08	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.40	.40	....	....	.15	.23	T	....	....	2.26

DAILY AND MONTHLY PRECIPITATION FOR NOVEMBER, 1905--CONTINUED.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Ottumwa		T			.96			.50															.97									2.48
Pacific Junction				.75	.85																		.73	.10			.27					2.70
Pella				T	1.50			.10															.41	.46			.20	.10	T			2.77
Perry				T	.96			.10															1.00	1.23			.17					3.46
Plover				.18	2.80			T		T													1.36				1.46					5.80
Pocahontas					1.98			.11															1.22				1.01					4.32
Red Oak				.68	1.56																		.66	.03			.24	.02				3.19
Ridgeway				.18	.78	.17	.07								.03								.50	.19	T		1.00		.03			2.93
Rock Rapids		T			1.60			.05															1.15				.60	.30				3.70
Rockwell City					1.40			.10															1.03				.45					2.98
Sac City				.25	1.08																		1.02									
St. Charles				.02	2.13		T	.04	.02														.62	.14			.21	.11	T			3.29
Sheldon			T		1.25			T															1.15	.69			.70	.15				3.94
Sibley					1.11	.08			.12														.32	1.55				.96	.10			4.24
Sidney				1.20	1.34																		.78	.04			.25					3.61
Sigourney		T			.96			.10															T	.80			.25	.14	T			2.25
Sioux Center				.45	.70			.08															1.05				.75	.20				3.28
Sioux City				.78	.68		.01	T											T				1.93	.04			.62	.10				4.10
Stockport		.02			.84			.05															.27				.75					1.93
Storm Lake					1.11	T			.10														T	1.20				.59	T			3.06
Thurman					2.41																		1.10				.67		T			4.18
Tipton																								.31				1.33				1.64
Toledo					1.40			.25															.60				.75					3.00
Vinton					2.40																	.50									2.90
Wapello			.06		.70			T																.55			.15	.50				1.96
Washington					1.30			T																.55			.50					2.35
Washta				T	1.32			T															.90				.35	T	T			2.57
Waterloo					1.28		T																.39	.13			.68	.12	T	T		2.60
Waukee				.02	1.02			.06															.72	.06			.13	.06				2.07
Waverly				.01	1.01			T															.82	.15			.25	.23	T			1.97
Webster City	.80			T	1.60																		.86				.41					3.67
West Bend					1.52			.03															.93				.76	T	T			3.29
Whitten				T	1.00		T	T															.37	.15			.30	T	T			1.82
Wilton Junction					1.50			T															.42					.86	T			2.78
Winterset				T	1.63	.30	T	T															.71	.09			.14	T				2.54
Woodburn					1.40		T	T																.60				.15					2.15
Zearing					1.06			.04															.53	.11			.15	.12	T			2.10

Precipitation Chart November 1905.



DECEMBER, 1905. No 12



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AND .. ANNUAL SUMMARY, 1905.

CENTRAL STATION, DES MOINES, IOWA.

J. R. SAGE,
DIRECTOR.

GEO. M. CHAPPEL,
LOCAL FORECASTER,
U. S. WEATHER BUREAU, ASS'T DIRECTOR.

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Elliott	Henry Barnes
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Gilman	Jas. L. Wylie
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Perry	J. A. Harvey
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Pocahontas	F. E. Hronek
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Ridgeway	Arthur Betts
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West Union	A. B. Blackman
Wiota	I. S. Coomes
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U. S. DEPARTMENT OF AGRICULTURE—WEATHER BUREAU.

MONTHLY REVIEW

OF THE

Iowa Weather and Crop Service.

VOLUME XVI. DECEMBER, 1905. No. 12.

DECEMBER WEATHER AND CROPS.

December, 1905, will take rank in the climatic records as one of the most agreeable winter months ever experienced in Iowa. The average temperature for the state, twenty-seven degrees, was four degrees above the normal. The average precipitation 0.52 of an inch, was 0.73 of an inch below normal.

The conditions were very favorable for completing the corn harvest, the care of live stock, and the usual farm work of the season. The fields afforded excellent grazing for stock in all parts of the state, with but little obstruction from stormy weather and snow.

No reports have been received of damage to winter wheat and rye by freezing. There were nineteen clear days, six cloudy and six partly cloudy, as the averages of reports received from all stations.

CLIMATOLOGY OF THE MONTH, DECEMBER 1905.

BAROMETER.—Mean pressure, 30.13 inches; highest observed, 30.59 inches, at Des Moines on the 4th; lowest observed, 29.35 inches, at Davenport on the 28th: range for state, 1.24 inches.

TEMPERATURE.—The monthly mean temperature for the state, as shown by records of 117 stations, was 27.0°, which is 4.0° above normal. By sections the mean temperatures were as follows: Northern section 25.2°, which is 5.0° above normal; Central section 26.9°, which is 3.8° above normal; Southern section 28.9°, which is 3.3° above normal. The highest monthly mean was 32.4°, at Red Oak; lowest monthly mean, 22.8° at Charles City. The highest temperature reported was 62°, at Jefferson on the 8th; lowest temperature reported -11°, at Monticello on the 23d and 24th. The average monthly maximum was 52.0°; average monthly minimum, -3.1°. Greatest daily range, 53° at De Soto; average of greatest daily ranges 36.0.

PRECIPITATION.—Average precipitation for the state, as shown by records of 125 stations, was 0.52 inch, which is 0.73 of an inch below normal. The averages by sections were as follows: Northern section, .40 inch, which is 0.65 inch below normal; Central section, 0.63 inch, which is 0.71 inch below normal; Southern section, 0.53 inch, which is 0.84 inch below normal. The largest amount reported was 1.69 inches at Ottumwa; least amount reported, Trace, at Estherville, and Rock Rapids. The greatest daily rainfall reported was 1.27 inches at Ottumwa on the 28th. Average number of days on which .01 of an inch or more was reported, 3.

WIND AND WEATHER.—Prevailing direction of the wind, Northwest; highest velocity reported, 37 miles per hour, from the Northwest, at Sioux City on the 8th. Average number of clear days, 19; partly cloudy, 6; cloudy, 6.

ATMOSPHERIC PRESSURE.

STATIONS.	Mean barometer reduced.	EXTREMES. Highest reduced barometer.	Date.	Lowest reduced barometer.	Date.
Charles City	30.10	30.56	9	29.54	28
Davenport	30.12	30.56	4	29.35	28
Des Moines	30.14	30.59	4	29.56	28
Dubuque	30.12	30.56	1	29.41	28
Omaha, Neb	30.14	30.67	9	29.68	27
Keokuk	30.16	30.60	4	29.38	28
Sioux City	30.12	30.58	3	29.62	27
Means	30.13	30.59	4th	29.35	28

WIND MOVEMENT.

STATIONS.	Number of miles.	Maximum velocity.	Direction.	Date.
Charles City	5618	28	NW	9
Davenport	5341	26	NW	29
Des Moines	5527	25	NW	9
Dubuque	4802	27	NW	29
Keokuk	5659	34	NW	29
La Crosse, Wis	5810	24	N	28
Omaha, Neb	6027	35	NW	9
Sioux City	8818	37	NW	8

CLIMATOLOGICAL DATA FOR DECEMBER, 1905—Continued.

NORTHERN SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				SKY.				
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	Number rainy days	Number clear days.	Number partly cloudy days.	Number cloudy days.	Prevailing direction of wind.
Algona	Kossuth	1,238	28	25.2	†4.9	47	6,17	-5	4	35	.20	-.85	.12	2.0	3	22	6	3	SNW
Alta	Buena Vista	1,513	14	25.5	†4.7	49	26	-4	4	31	.15	-.88	.09	1.5	3	17	10	4	NW
Alta (near)	Buena Vista										.25		.15	2.5	2				
Alton	Sioux			26.6		49	17	-1	4	32	.03		.03	0 2	1	23	6	2	NW
Britt	Hancock	1,336	8	23.8	†6.7	47	6,11	-7	4	40	.37	-.42	.27	3.7	3	8	19	4	SW
Charles City	Floyd	1,015	18	22.8	†1.8	51	.6	-7	24	35	.61	-.75	.37	6.4	4	15	8	8	NW
Clear Lake	Cerro Gordo	1,441	7	24.4	†5.8	44	6,16	-1	24	31	.80	-.35	.30	3.0	1	25	1	5	W
Cresco	Howard																		
Decorah	Winneshiek	857	12	25 2	-4.8	47	6,7	-8	24	35	1.26	-.10	.60	8.5	5				
Dows	Wright	1,142	9	24 6	†4.8	51	6	-7	24	39	.34	-.55	.30	3.5	3	18	8	5	NW
Elkader	Clayton	727	21	25.1	†3.5	56	7	-10	31	44	1.05	-.88	.70	11.0	3	17	8	6	SE
Estherville	Emmet	1,298	12	24.4	†8.0	52	28	-8	4	37	T	-.59	T	-T	0	18	0	13	NW
Fayette (*i*)	Fayette		15	20.8		44	16	-10	31	34	.94		.42	8.5	4				
Florence	Wright	1,226									.35		.25	3.5	2	12	14	5	N
Forest City	Winnebago	1,226	11	24.8	†5.4	48	6	-7	4	41	.30	-.61	.20	3.0	3	19	5	7	SW
Grand Meadow	Clayton	1,180	11	23.9	†2.4	45	7,17	-5	24	31	.89	-.67	.50	9.0	5	20	6	5	SW
Greene	Butler																		
Hampton	Franklin	1,155	13	26.5	†5.6	54	6	-2	4	34	.57	-.75	.34	5 1	4	11	15	5	NW
Hanlontown	Worth			24.2		47	11,16	-8	4	39	.40		.30	4.0	2	19	6	6	NW
Humboldt	Humboldt	1,095	16	26 6	†3.8	48	6	-4	4	34	.10	-.66	.05	1.0	2	22	4	5	SW
Larrabee	Cherokee	1,266	12	26.2	†4.3	51	17	-4	4	40	.17	-.90	.12	2.4	2	21	6	4	SW
Le Mars	Plymouth	1,224	7	26.8	†5.8	51	17	-2	4	29	.10	-.99	.10	1.0	1	21	8	2	NW
Mason City	Cerro Gordo	1,132	8	26.1	†5.7	48	6	-0	4	31	.45	-.21	.45	4.5	1	16	9	6	SW
New Hampton	Chickasaw	1,169	7	23.8	†5.9	48	6	-6	24	32	.56	-.11	.38	5.0	3	16	9	6	S
Northwood	Worth	1,222	8	23.6	†4.5	45	6	-6	24	38	.56	-.35	.40	5.5	4	19	7	5	SW
Osage	Mitchell	1,184	13	23.8	†4.7	46	6	-4	24	32	.55	-.73	.45	5.5	4	17	5	9	NW
Plover	Pocahontas			25.9	†6.0	48	6,26	-4	4	35	.15	-.60	.10	1.5	2	21	4	6	S
Pocahontas	Pocahontas	1,190		25.2		49	17	-2	4	34	.21		.13	2.2	2	19	8	4	SW
Ridgeway	Winneshiek	1,215	7	26.2	†5.4	53	6	-5	24	32	1.27	-1.23	.66	7.4	3	16	8	7	W
Rock Rapids	Lyons	1,021	7	25.4	†5.7	48	15	-2	3	34	T	-.61	T	T	0				N
Sheldon	O'Brien	1,422	6	27.4	†8.4	56	7	-1	4	36	.10	-.80	.10	1.0	1	23	5	3	SNW
Sibley (*a*)	Osceola	1,212	12	24 1	†5.0	57	6	-9	1	40	.17	-.69	.17	1.7	1	24	0	7	NW
Sioux Center (*a*)	Sioux		6	26.4	†6.7	52	17	-2	8.4	34	.25	-.63	.10	2.5	3	21	5	5	SW
Spirit Lake	Dickinson																		
Storm Lake	BuenaVista	1,440	8	25.0	†4.8	50	26	-2	4	41	.26	-.67	.20	2.6	1	20	0	11	SW
Washta	Cherokee	1,157		26.4		52	11	-1	8	42	.10	1.07	.10	1.0	1	20	7	4	NW
Waverly	Bremer	942	9	25.0	†4.8	49	6,7	-5	24	33	.81	-.27	.45	8.0	4	12	11	8	S
West Bend	Palo Alto	1,197	12	25.9	†6.0	48	6,17	-1	8,24	34	.15	-.84	.10	1.5	2	14	11	6	NW
Average				25.2	†5.0	49.7		-4.4		35.5	.40	-.65		3.9	3	18	7	6	NW

SOUTHERN SECTION.

Afton	Union	1,212	11	27.4	†2.6	51	12	—1	4,5	38	.25	—1.03	.25	2.5	1	17	9	5	SW
Albia (*a*)	Monroe	957		27.0	†3.6	56	11	—3	24	45	1.08	—.08	.61	11.0	3	20	6	5	SW
Allerton (*c*)	Wayne			28.6		57	11	—2	24	40	.61		.28	6.1	5	23	3	5	NW
Atlantic	Cass	1,164	14	28.2	†5.7	55	11	—8	4	40	.10	—1.28	.10	1.0	1	16	6	9	SW.NW
Bedford	Taylor		5	26 6	†3.4	51	6	—4	4	38	.15	—.77	.13	1.3	2	21	2	8	NW
Belknap	Davis	875																	
Bonaparte	Van Buren		14	29.2	†1.4	57	11	—3	24	36	.88	—.62	.35	4.0	4				
Burlington	Des Moines	544		31.3		55	7,11	3	24	34	1.35		.71	2.0	5	21	4	6	
Chariton	Lucas	1,042	10	28.3	†3 7	55	11	—5	24	40	.65	—.87	.30	7.0	2	20	5	6	SW
Clarinda	Page		15	27.9	†1.4	56	11	—2	4	47	.19	—1.04	.15	2.0	3	22	5	4	NW
College Springs	Page		14	30.2	†3 2	58	11	8	3	34	.03		.03	0.3	1	19	8	6	NW
Columbus Jct	Louisa	586		28.4		54	7	—2	24	30	1.24		.52	7 8	6	25	1	5	NW
Corning	Adams	1,127	13	27.8	†0.6	52	11	—3	4	38	.20	—1.04	.15	2.0	2	19	7	5	SW
Corydon	Wayne	992	12	29.4	†3.6	57	11	—3	24	39	.63	—.94	.35	7.0	5	18	5	8	
Creston	Union			28.9		52	11	—1	3	44	.35		.30	3 5	2	21	2	8	SW.NW
Cumberland	Cass										.04	—.92	.04	0.4	1	22	6	8	S
Earlham	Madison																		
Elliott	Montgomery			28.1		51	11	—5	4	35	.13		.13	1.2	1	23	8	0	NW
Ft. Madison	Lee	516	56								1.10	—.90	.70	1.5	2	18	5	8	N, N W
Glenwood	Mills		17	31.0	†1.9	54	11	—2	4	34	.05	—.73	.05	0.5	1	14	14	8	SW
Greenfield	Adair		14	27.4	†2.9	51	11	—4	4	34	.21	—1.14	.17	2.6	2	20	5	6	SW
Hopeville	Clarke		13	29.4	†3.9	54	11	0	4	34	.18	—.93	.13		3	15	10	6	SW
Hancock	Pottawattamie			29.2		52	11	—2	4	36	.08		.08	T	1	24	5	2	NW
Indianola (*b*)	Warren			28.8	†3.6	56	11	—2	24	37	.66	—.75	.32	6.2	5				SW
Keokuk	Lee	619	34	32.2	†2.4	53	7	5	24	29	1.08	—.93	.72	0.6	5	19	5	7	SW
Keosauqua	Van Buren	644	13	28.0	†1.0	56	11	0	24	42	1.04	—.50	.59	5.0	3	11	8	12	
Knoxville ‡	Marion	920	12	28.9	†3.6	56	11	0	24	33	.85	—.51	.30	8.5	5	21	2	8	SW
Lacona	Warren										.92	—.73	.30	12.6	5	11	17	3	
Lenox	Taylor	1,250	10	28.0	†3.8	51	11	—3	4	34	.18	—1.10	.15	1.8	2	21	6	4	NW
Leon	Decatur	1,120		28.3		52	11	—2	4	32	.39		.17	3.9	3	27	1	3	NW
Massena	Cass																		
Mt. Ayr	Ringgold	1,236	13	29.7	†5.1	56	11	0	4	36	.38	—.94	.25	4.5	3	19	6	6	SW
Mt. Pleasant	Henry	729	24	28.4	†2.6	51	7,8	0	24	31	1.28	†.07	.58	5.5	5	20	8	8	SW
Omaha, Neb.	Douglas	1,113	34	31.6	†4.9	54	11	1	3	28	.14	—.87	.14	1.4	2	18	6	7	SW
Oskaloosa	Mahaska	843	22	27.6	†1.8	54	11	—6	24	37	.84	—.44	.35	8.4	6	22	0	9	NW
Ottumwa ‡	Wapello	649	11	28.8	†1.4	57	11	1	24	34	1.69	† 42	1.27	0.1	3	17	5	9	
Pacific Junction	Mills	960	6	28.6	†3.8	51	11	—5	4	36	.07	—.89	.07	0.7	1	21	3	7	N
Pella (*a*)	Marion			29.0		55	11	—1	24	33	.86		.44	8.2	5				SW
Red Oak	Montgomery	1,033	8	32.4	†7.6	55	30	0	4	34	.06	—1.16	.06	2.0	2	23	5	3	SW
St. Charles	Madison	1,070		31.1		61	11	0	4	39	.52		.33	5.2	5	19	4	8	NW
Sidney	Fremont	877	9	27.6		50	11	—3	4	33	.15		.15	1.5	1	27	1	8	NW
Sigourney	Keokuk			28.1	†3.2	53	11	—4	24	33	1.06	—.35	.50	8.5	3	6	19	6	NW
Stockport	Van Buren			29.0		54	7,8,11	—1	24	41	.63		.40	7.0	5	19	4	8	NW
Thurman	Fremont			28.8	†5.6	53	11	—5	4	35	.10	—1.63	.10	1.0	1	12	15	4	NW
Wapello (*a*)	Louisa	588	7	30.9	†3 9	59	11,12	8	4.31	31	1.23	—.11	.47	4.0	3	21	3	7	W
Washington	Washington	769	13	28 4	†1.4	54	7	—4	24	34	1.05	—.42	.45		3				SW
Winterset	Madison	1,129		27.4	†2,2	53	11	—1	4	33	.46	—.91	.40	4.7	3	17	7	7	S
Woodburn	Clarke	961				53	11				.37	—.89	.35	5.5	2	20	4	7	SW
Average				28.9	†3.3	53.9		—1·7		35.9	0.53	—.84		3.7	3	19	6	6	SW, NW
Average for State				27.0	†4.0	52.0		—3.1		36.0	0.52	—0.73		4.2	3	19	6	6	NW

†Above normal. ‡Received too late to be computed with means. *a*. One day missing; b. two days, etc.

CLIMATOLOGICAL DATA FOR DECEMBER, 1905.

CENTRAL SECTION.

STATIONS.	COUNTIES.	Elevation, feet.	Length of record, years.	TEMPERATURE, IN DEGREES FAHRENHEIT.							PRECIP., IN INCHES.				Number rainy days	SKY.			Prevailing direction of wind.	DATES OF THUNDER STORMS.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).		Number clear days.	Number partly cloudy days.	Number cloudy days.		
Amana	Iowa	721	7	27.0	†5.0	50	7,8	-5	24	28	.97	-.62	.41	6.6	5	18	8	5	SW. NW	
Ames (a)	Story	926	21	28.2	†6.4	57	10	-4	3 23	49	.23	-.79	.21	4.0	2	14	6	11	N	
Audubon	Audubon	1,301	9	27.2	†4.1	53	11	-5	4	38	.15	-1.10	.07	1.5	3	21	1	9	NW	
Baxter	Jasper	998	....	26.6	†4.2	53	11	-2	4	37	.80	-.66	.30	3.0	1	21	2	8	NW	
Belle Plaine	Benton	826	14	25.2	†1.2	49	11	-6	24	37	.65	-.84	.30	6.5	4	17	8	6	NW	
Boone	Boone	....	....	26.9	...	53	11	-1	4	45	.41	.....	.33	5.5	3	22	0	9	.....	
Buckingham	Tama	.....	.....	.....	.....	.....	.....	.....	.....	....	.69	-.31	.37	7.0	3	15	14	2	.....	
Carroll	Carroll	1,265	13	26.6	†3.6	54	11	-6	4	46	.27	-.81	.15	2.7	2	15	6	10	.....	
Cedar Rapids	Linn	733	23	25.6	†0.3	52	7	-10	24	37	.52	-1.09	.25	4.2	3	12	11	8	SW. NW	
Clinton	Clinton	609	38	27.4	†2.3	52	8	1	24	30	1.42	-.39	.92	4.1	5	13	11	7	SW	
Davenport	Scott	606	34	29.5	†1.7	53	8	3	24	26	1.32	-.41	.77	4.4	3	14	10	7	NW	
Delaware	Delaware	1,083	12	24 0	†2.8	48	7	-5	24	28	.94	-.58	.55	9.5	2	17	8	6	NW	
Denison (a)	Crawford	1,180	9	28.4	†6.5	54	11	-6	4	40	.12	-.48	.10	1.2	2	....	....	....	S	
Des Moines	Polk	861	27	28.9	†2.1	57	11	1	24	36	.55	-.89	.35	6.6	5	16	7	8	NW	
De Soto	Dallas	866	...	27.8	.....	57	11	-5	5	53	.47	.	.30	4.7	4	21	3	7	SW. NW	
Dubuque	Dubuque	655	32	27.6	†1.7	52	7	-1	24	29	1.17	-.64	.72	9.6	7	11	13	7	W	
Fort Dodge	Webster	1,126	....	25.2	.....	50	6	-9	4	42	.25	.	.15	2.5	2	17	2	12	SW	
Galva	Ida	1,290	12	26.5	†4.9	50	11	-4	4	37	.08	-.76	.05	.8	2	24	1	6	S	
Gilman ‡	Marshall	1,052	...	...	.....	.....	.....	.....	.....	.....	.40	.	.30	4.0	2	16	7	8	S	
Grinnell (near)	Poweshiek	1,023	10	28 9	†2.7	52	6,7	-4	24	35	1.00	-.29	.50	9.8	5	20	2	9	SW	
Grundy Center	Grundy	976	12	25.2	†3.0	51	6	-8	24	35	.71	-.54	.41	7.0	2	19	6	6	NW	
Guthrie Center	Guthrie	1,077	7	27.8	†6.5	53	11	-4	4	32	.95	-1.13	.60	....	3	21	5	5	NW	
Harlan	Shelby	1,192	....	26.4	†4.2	53	11	-6	4	40	.05	-1.02	.05	1.0	1	15	9	7	NW	
Ida Grove (‡)	Ida	1,220	....	27.4		50	6,11	-7	4	40	.10	.....	.10	1.0	1	18	11	2	NW	
Independence	Buchanan	921	40	25 5	†3.8	50	6,7	-4	31	38	.93	-.55	.50	9.8	4	19	6	6	SW	
Iowa City	Johnson	683	47	24.2	†0.1	51	7,8	-10	24	35	1.04	-.62	.67	5.8	3	20	3	8	....	
Iowa Falls	Hardin	1,170	10	24.6	†4.1	49	6	-6	24	35	.47	-.69	.40	4.7	3	20	2	9	....	
Jefferson	Greene	.....	....	30.0		62	8	-1	4	39	.06	.....	.03	0.5	2	20	7	4	....	
Le Claire	Scott	576	...	.....	.....	...	.....	.....	.....		1.38	.....	.71	....	4	....	....	..	W	
Little Sioux	Harrison	....	....	30.0	....	57	11	-2	4	40	.05	.	.05	0.5	1	24	4	8	NW	
Logan	Harrison	928	36	28.2	†3.3	52	11	-4	4	35	.20	-1.15	.10	2.0	2	14	12	5	NW	
Maquoketa	Jackson	688	12	24.8	-0.3	53	7	-7	24	39	1.58	-.03	.90	4.1	3	18	2	11	SW	
Marshalltown (b)	Marshall	947	10	26.4	†0.9	52	11	-1	4,5,24	48	.56	-.92	.28	5.2	4	15	4	12	SW NW	
Montezuma	Poweshiek	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Monticello	Jones	925	....	24.4	†2.3	54	19	-11	23,24	39	1.33	-.83	.90	13.2	2	18	6	7	NW	
Mount Vernon	Linn	847	30	26.8	†2.2	53	7	-7	24	33	1.47	-.19	.76	10 5	5	21	3	7	S	
Muscatine	Muscatine	.....	46	....	.....	.....	.....	.....	.....	.....	.97	-1.31	4.5	6.1	4	....	....	....	S	
Newton	Jasper	944	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Nevada	Story	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Odebolt	Sac	1,356	8	27.6	†6.3	50	1,0	-2	4	34	.06	-1.04	.06	1 0	1	24	3	4	.....	
Ogden	Boone	1,058	9	27.1	†3.7	52	6,1	-2	4	37	.50	-.51	.40	5.0	2	19	5	7	NW	
Olin	Jones	760	7	26.2	†3.4	50	7,8	-9	24	32	1.54	†.08	.90	6.8	4	18	5	8	NW	
Perry	Dallas	975	....	26.8		55	11	-3	24	41	.45	.....	.30	4.5	3	15	7	9	.....	
Onawa	Monona	.....	....	29.6	†5.2	56	11	-1	3	40	.10	-.98	.05	1.0	3	27	0	4	NW	
Rockwell City	Calhoun	.....	8	27.7	†6.8	50	11,16	-1	4	33	.05	-1.25	.05	.5	1	21	7	3	.....	
Sac City	Sac	1,273	25	26.6	†3.2	52	11	-3	4	38	.17	-.98	.15	1.8	2	23	4	4	NW	
Scranton	Greene	1,172	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Sioux City	Woodbury	1,165	16	28.4	.....	54	17	-3	3	36	.07	-.81	.06	0.9	2	17	7	7	NW	
Stuart	Guthrie	.....	..	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tipton	Cedar	807		28.5	†4.7	50	6,7,8,	-3	24	27	.93	-.97	.52	9.2	2	25	0	6	SW	
Toledo†	Tama	856	9	26.9	†3.7	52	6,7	-5	24	37	.20	-.94	.20	3.0	1	18	6	7	SW NW	
Vinton (a)	Benton	810	15	26.4	†2.5	52	7	-5	24	33	.68	-.53	.33	6.8	3	....	....	....	NW	
Waterloo	Black Hawk	862	16	26.9	†5.8	54	6	-4	24	33	.73	-.41	.42	7.2	3	20	4	7	SW NW	
Waukee	Dallas	1,039	....	27.4	.....	54	11	-1	4	35	.85	.....	.50	8.5	4	19	5	7	SW	
Webster City† (a)	Hamilton	.....	....	26.9	.....	50	6,7,11	4	4	34	.30	....	.30	3.0	1	....	....	....	NW	
Whitten	Hardin	1,036	....	25.1	†5.8	48	6,11	-7	24	38	.60	- 57	.40	6 0	2	17	8	6	NW	
Wilton Jct	Muscatine	683	11	26.8	†1.2	50	7,8	-5	24	30	1.50	†.05	.75	10 0	5	23	0	8	NW	
Zearing	Story	718	..	23.2	.....	54	11	-9	24	38	.41	.....	.36	3.5	2	21	4	6	SW	
Average		...	....	26.9	†3.8	52 5	.....	-3.3	.....	.....	36.6	0.63	-.71	....	5.0	3	19	5	7	NW	

ERRATA IN NOVEMBER REVIEW.

CHARLES CITY—Greatest precipitation in 24 hours recorded .73 inch on page 7, should have been .74 inch.

SHELDON. Maximum temperature recorded 65° on the 16th, on page 7, should have been 66° on the 11th.

OBSERVER'S NOTES.

ALTON.—*W. S. Slagle.* All corn was picked by Dec. 15; hog cholera abated; bees were out on 26th.

AMANA.—*Conrad Schadt.* Indian summer extended far into December; weather mild until towards close of month.

ATLANTIC.—*J. W. Love.* Unseasonably warm winter month; pasturage yet for stock; no rain only 1 inch of snow.

BONAPARTE.—*B. R. Vale.* An open month; good roads; only reached zero once; subsoil dry.

BRITT.—*Geo. P. Hardwick.* Remarkably fine month; above average of recent years; corn harvest finished earlier than usual.

CHARITON.—*C. C. Burr.* No severe storms and more than usual number of fine days; stock in good condition.

CLINTON.—*Luke Roberts.* December warm, the mean temperature being 4.7° above normal. Rain fall 0.43 of an inch below normal; wind moderate; 4 inches of snow.

GRAND MEADOW.—*F. L. Williams.* December extremely favorable for all kinds of stock; good sleighing at end of month.

IOWA FALLS.—*J. B. Parmalee.* The finest December in ten years.

OLIM.—*N. Potter.* December has been remarkable for eveness: no severe storms, with good roads and healthfulness; one of the best in Iowa's history, or the winters experience in 60 years.

RIDGEWAY.—*Arthur Betts.* Month uncommonly fine; 190 hours of sunshine, or 19 more than ever before in December; For 1905 the mean temperature was 46.8°; precipitation 36.93; hours of sunshine 2823; snowfall 42.3 inches; clear days 159; cloudy days 56, prevailing wind south.

WAVERLY.—*H. S. Hoover.* Remarkable month for finishing up outdoor work; it was 4.4 degrees warmer than the preceding December.

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR DECEMBER, 1905.

STATIONS.		DATE																													MEAN.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	Max.	21	33	30	14	29	44	49	49	46	36	41	51	42	33	34	35	44	45	36	36	30	33	30	32	43	45	40	36	35	39	41	37.2
	Min.	0	14	9	-1	-1	20	21	26	28	21	11	28	28	15	13	12	11	22	27	16	17	26	18	13	20	26	27	30	19	20	12	17.6
Albia*	Max.	30	21	16	30	47	54	53	50	35	42	56	44	29	33	38	48	47	31	41	31	33	25	28	35	43	45	43	33	34	40		37.8
	Min.	7	12	8	2	4	23	25	20	29	10	11	28	12	14	12	15	17	27	25	17	22	18	12	- 3	10	17	32	32	22	14	8	16.
Algona	Max.	27	24	13	23	37	47	43	42	32	41	45	34	25	32	36	44	47	36	37	31	29	32	28	35	44	44	40	33	32	32	29	34.6
	Min.	12	5	2	-5	21	22	26	30	17	10	28	22	13	12	13	19	28	21	9	17	26	19	7	0	16	23	25	21	16	9	7	15.8
Allerton	Max.	31	30	17	30	49	55	54	49	38	42	57	45	36	37	44	49	48	37	41	32	32	30	33	33	48	42	35	38	37	43	34	40.0
	Min.	13	12	2	1	21	22	25	26	21	..	..	..	..	..	14	15	22	26	19	12	27	18	9	- 2	19	23	28	31	19	16	9	17.2
Alta	Max.	28	28	6	25	39	46	44	38	28	43	47	35	28	35	41	46	44	30	39	35	27	33	20	38	47	49	37	38	32	33	37	35.2
	Min.	11	1	0	-4	21	25	25	28	18	12	26	13	9	13	13	24	30	15	13	18	24	17	2	8	20	25	28	22	13	14	10	15.8
Alton	Max.	29	26	11	28	37	45	41	39	30	44	45	40	39	37	40	45	46	41	41	39	30	30	27	39	44	45	40	39	34	33	33	36.8
	Min.	15	7	0	-1	21	22	22	29	20	12	27	24	14	13	13	23	31	9	13	24	25	16	10	8	13	20	28	14	14	10	10	16.3
Amana	Max.	30	29	18	24	45	49	50	50	39	41	49	40	28	33	36	48	46	39	39	35	35	32	25	26	34	41	40	37	33	30	26	36.2
	Min.	16	14	5	5	22	17	28	26	24	11	29	27	16	10	15	10	20	28	27	20	32	20	9	- 5	12	21	29	33	23	6	3	17.8
Ames	Max.	37	37	14	28	45	52	51	46	47	57	..	48	35	34	39	48	49	36	39	30	32	31	29	35	40	43	39	47	34	37	38	39.2
	Min.	14	8	4	8	22	18	28	25	20	16	29	26	14	12	12	18	20	25	12	15	23	22	4	6	27	19	23	29	20	10	7	17.3
Atlantic	Max.	34	30	18	28	45	50	51	45	36	45	55	42	36	39	44	48	48	33	41	31	30	37	30	41	50	47	43	38	38	42	44	39.8
	Min.	16	9	0	-8	21	15	30	30	24	10	30	22	17	13	10	21	25	28	9	16	25	20	14	5	17	24	20	23	18	8	4	16.6
Audubon	Max.	32	28	12	26	44	47	48	48	35	44	53	42	34	38	42	46	48	37	40	30	30	35	30	40	47	46	43	36	36	39	42	38.5
	Min.	13	6	-2	-5	16	18	26	32	23	12	27	24	11	11	9	13	25	26	6	25	25	25	9	9	16	23	23	23	16	10	4	16.0
Baxter	Max.	27	29	15	24	42	51	52	47	40	46	53	44	30	33	40	46	49	38	36	30	32	35	25	35	33	42	40	40	35	39	35	37.5
	Min.	14	8	2	-2	23	19	27	25	23	10	29	26	10	10	10	10	23	25	15	15	18	20	5	10	16	5	15	20	10	28	20	15.7
Bedford	Max.	33	30	13	29	32	51	36	35	34	42	46	44	30	37	44	34	47	36	42	31	30	33	32	39	34	47	40	37	38	41	44	36.8
	Min.	17	9	1	-4	17	18	26	27	9	7	27	22	11	16	13	14	25	26	12	20	26	16	14	2	19	28	21	20	19	15	6	16.5
Belle Pl'e	Max.	27	15	19	28	42	47	48	47	28	41	49	38	30	32	37	43	48	32	39	35	33	29	27	30	38	43	42	37	32	32	25	35.3
	Min.	4	14	2	1	24	18	20	25	27	8	27	25	12	10	11	10	20	25	20	17	20	21	10	- 6	12	21	23	28	20	5	-2	15.2
Bonapar'e	Max.	3	30	20	29	48	55	56	53	35	43	57	46	32	35	38	43	45	38	40	34	31	32	30	33	41	47	46	39	34	40	40	39.6
	Min.	17	17	6	4	22	20	26	24	25	10	32	27	14	13	17	13	19	27	23	19	32	22	10	- 3	16	29	28	32	24	12	5	18.8
Boone*	Max.	26	18	14	27	45	52	51	46	28	45	53	38	30	34	39	48	48	28	39	29	30	31	21	36	42	45	40	34	35	39	39	36.5
	Min.	0	8	2	-1	0	24	26	30	26	13	20	26	14	13	14	22	22	26	16	18	20	22	18	2	22	22	27	30	20	17	16	17.8
Britt	Max.	28	25	18	25	39	47	43	44	32	41	47	36	22	32	38	44	45	33	36	29	33	27	30	34	34	39	40	33	30	30	28	34.8
	Min.	14	4	1	-7	22	20	22	28	16	8	23	18	12	12	12	18	26	18	9	12	27	18	0	- 6	6	20	20	22	15	5	5	13.2
Burling'n	Max.	33	30	24	30	48	54	55	53	40	42	55	43	34	31	48	44	47	37	37	37	35	34	33	37	44	53	50	41	36	39	40	40.7
	Min.	18	17	8	6	20	26	32	29	28	12	32	20	16	17	18	16	24	27	30	28	32	28	15	3	19	31	31	34	26	18	15	21.9
Carroll*	Max.	29	18	14	27	45	50	53	46	30	45	51	38	29	29	44	50	51	29	41	27	31	38	26	41	50	47	43	38	37	40	44	38.2
	Min.	3	15	-2	-6	-1	19	29	28	28	12	21	24	11	12	11	12	28	23	11	16	19	17	16	0	17	20	26	28	16	14	12	15.1
Cedar R*	Max.	28	27	18	27	42	51	52	50	32	44	46	38	28	32	36	44	47	34	39	34	35	28	21	27	34	42	43	34	30	31	24	35.4
	Min.	7	21	6	6	10	19	19	26	26	13	13	27	18	18	14	12	12	24	29	18	27	27	7	-10	4	6	22	30	26	10	5	15.7
Chariton	Max.	31	29	12	29	48	53	52	50	44	43	55	48	33	38	41	48	46	37	40	31	31	30	31	35	42	45	42	39	35	40	37	39.2
	Min.	16	10	3	0	20	21	27	27	27	9	28	27	18	12	13	13	22	23	31	16	27	16	8	- 5	10	24	28	29	20	12	8	17.4
Charles C.	Max.	25	24	13	24	40	51	48	43	32	40	44	34	23	31	36	46	46	33	38	33	32	27	15	28	31	37	36	32	27	31	21	32.9
	Min.	15	6	4	5	23	19	25	26	12	10	24	18	14	12	10	15	24	23	13	17	25	10	-3	- 7	6	16	14	22	9	-2	-5	12.8
Clarinda*	Max.	35	25	14	32	49	53	52	49	33	46	56	48	40	39	44	48	50	35	41	32	31	37	32	43	50	50	41	37	40	42	44	40.8
	Min.	3	9	1	-2	2	13	17	23	32	9	16	25	13	15	15	14	16	26	13	14	22	20	15	7	12	20	26	26	18	17	9	15.0
Clear L	Max.	25	25	14	23	37	44	41	43	37	36	41	37	28	30	26	44	40	37	35	30	32	30	28	30	33	38	35	35	30	30	26	32.7
	Min.	13	5	0	3	20	21	26	30	14	12	24	22	12	12	19	27	34	24	13	16	25	16	5	- 1	12	21	22	23	15	7	6	16.0
Clinton	Max.	31	31	25	27	40	48	50	52	41	39	36	43	29	34	38	35	44	35	39	38	35	35	27	25	30	42	45	38	35	32	29	36.4
	Min.	18	15	9	8	22	18	25	22	22	11	27	24	14	14	17	10	16	25	23	20	33	24	8	1	15	20	29	34	26	13	10	18.4
Col. Spgs.	Max	34	32	15	46	46	49	49	47	35	46	58	43	35	37	38	45	47	36	36	32	35	32	32	38	46	48	44	38	40	40	40	39.8
	Min.	18	11	8	24	24	19	27	29	28	12	29	28	14	19	15	28	28	13	13	22	28	26	16	11	22	26	28	23	20	18	10	20.5
Colum. J.	Max.	34	32	20	26	42	51	54	41	26	42	52	42	31	34	37	42	45	38	39	36	36	35	31	28	37	45	46	41	33	35	34	37.6
	Min.	19	16	15	5	20	24	28	25	5	11	29	26	14	18	15	16	23	27	28	23	32	25	10	- 2	12	26	32	32	21	12	6	19.1
Corning	Max.	31	29	18	28	49	49	48	46	36	43	52	41	34	39	34	46	45	33	38	31	30	34	32	39	46	46	40	36	37	38	43	38.2
	Min.	16	8	-1	-3	20	23	23	30	24	9	25	28	12	14	11	15	28	28	13	18	35	18	13	1	20	26	25	28	18	17	3	17.4
Corydon	Max.	31	30	18	31	50	55	54	51	45	43	57	46	36	36	45	50	48	41	42	35	33	31	31	36	45	43	45	38	35	40	30	40.5
	Min.	17	11	2	1	22	23	27	28	26	10	30	27	18	15	13	11	23	25	22	17	28	19	11	- 3	18	26	29	31	19	16	7	18.2
Creston	Max.	31	18	13	29	45	50	50	46	42	42	52	50	44	45	40	46	46	28	40	35	31	31	31	38	46	46	46	34	39	40	40	39.1
	Min.	3	9	-1	0	1	22	28	29	28	36	29	28	13	15	15	16	25	27	18	19	26	19	18	5	16	23	27	28	19	19	15	18.7
Davenpo't	Max.	31	31	21	26	41	50	52	53	38	40	49	43	30	33	39	43	45	34	37	38	34	32	25	28	36	43	48	40	32	37	33	37.6
	Min.	19	14	8	9	24	26	33	31	20	14	33	24	17	16	19	19	21	27	25	25	32	20	5	3	20	30	34	32	25	18	16	21.4
Decorah	Max.	29	25	18	22	38	47	47	46	44	39	44	36	24	33	38	44	45	36	39	32	33	32	22	27	32	38	39	33	39	27	22	34.5
	Min.	7	11	6	11	24	20	28	24	20	12	31	23	12	12	11	13	28	28	28	16	28	21	5	- 8	7	22	13	24	17	7	-3	16.0
Delaware	Max.	26	25	19	21	36	41	48	48	37	40	46	34	26	29	35	40	42	37	37	35	32	30	20	19	29	35	38	35	31	19	24	32.6
	Min.	12	11	5	6	17	20	26	26	14	17	25	22	12	10	12	12	22	25	16	17	25	16	3	- 5	7	21	22	28	19	1	10	15.3
Denison	Max.	29	38	13	26	44	39	48	43	36	46	51	..	43	37	43	48	49	40	42	35	33	36	31	43	40	47	43	39	37	38	44	39.6
	Min.	13	7	-1	-6	17	21	27	32	25	8	27	..	26	13	13	23	31	24	10	22	26	18	14	8	21	25	29	17	16	7	4	17.2
Des. M.	Max.	30	27	15	28	46	53	52	47	35	47	57	42	29	34	37	47	48	32	38	32	32	32	27	37	42	45	39	38	38	40	37	38.2
	Min.	18	9	4	2	25	23	30	31	19	13	32	23	16	16	19	17	24	28	19	20	29	21	1	1	21	29	32	32	23	17	13	19.6
De Soto	Max.	31	23	18	32	48	54	51	47	35	46	57	43	30	33	36	49	50	32	40	29	31	32	24	40	44	47	41	35	34	41	44	38.7
	Min.	15	9	1	-2	-5	15	29	29	23	9	29	26	13	12	11	13	26	26	12	17	28	18	5	- 4	20	28	29	31	21	13	10	16.4
Dows.	Max.	25	25	12	23	41	51	49	42	41	44	46	40	29	32	37	46	48	35	38	30	29	28	26	32	35	39	37	35	32	31	26	35.0
	Min.	12	6	2	-4	22	20	26	21	21	10	25	22	10	9	8	16	23	23	9	14	26	19	7	- 7	12	17	16	27	17	6	4	14.2
Dubuque	Max.	28	28	22	24	37	50	52	50	40	42	46	39	28	34	37	44	44	37	38	36	34	31	22	23	32	42	42	39	32	31	24	35.7
	Min.	18	13	8	11	19	21	31	29	22	14	33	25	18	15	17	16	25	29	29	21	30	21	4	- 1	15	27	30	32	20	9	7	19.6
Elkader	Max.	27	25	21	25	35	53	56	46	40	41	47	36	27	37	40	47	45	37	40	33	30	20	26	36	42	42	35	30	32	23	35.8
	Min.	15	15	6	5	20	9	25	28	21	10	27	20	15	11	9	9	24	28	24	18	20	20	2	- 8	5	19	14	26	20	0	-10	14.4
Elliott	Max.	38	36	11	32	49	48	48	47	42	45	51	43	46	38	41	41	45	40	29	29	28	24	28	40	44	47	48	40	38	44	41	39.4
	Min.	17	8	-1	-5	20	18	22	29	24	10	25	27	12	15	12	13	28	29	14	21	21	11	12	12	19	23	23	23	17	12	9	16.8
Esth'rv'l*	Max.	26	15	12	29	40	48	48	40	27	38	47	35	25	33	44	48	51	25	39	34	38	34	21	37	46	52	40	37	33	31	24	34.5
	Min.	-5	5	-5	-8	1	24	27	26	21	14	27	26	11	12	13	16	30	18	12	18	20	19	9	0	18	18	26	18	15	9	4	14.2
Fayette	Max	26	25	16	24	37	..	..	..	..	..	..	..	..	31	35	44	41	38	..	35	35	28	20	23	30	36	38	33	30	20	20	30.2
	Min.	14	10	4	5	12	..	..	..	..	..	..	..	..	8	7	10	24	28	..	26	20	20	0	- 9	7	16	20	28	18	-5	-10	11.5
ForestCy*	Max.	25	20	10	27	44	48	44	45	25	38	44	33	26	40	44	46	46	27	38	28	30	23	16	35	37	44	37	32	38	31	30	33.9
	Min.	11	8	2	-7	3	20	26	28	20	10	28	26	17	14	26	27	23	23	11	12	18	18	6	- 5	15	18	22	26	15	14	6	15.7
F. Dodge*	Max.	22	10	15	28	41	50	48	44	33	44	49	35	25	33	38	40	47	28	38	29	30	34	20	35	46	45	40	34	33	35	39	35.2
	Min.	-2	2	8	-3	-1	25	26	22	25	12	20	26	14	14	15	15	19	25	11	15	20	23	18	2	18	21	26	27	19	12	10	15.3
Galva	Max.	30	26	9	27	40	42	39	40	34	43	50	39	29	36	40	46	49	38	39	37	29	37	28	40	46	47	41	40	33	34	41	37.1
	Min.	13	6	-1	-4	18	23	23	27	21	10	25	26	12	15	13	22	30	22	10	19	26	18	8	3	20	20	21	17	15	10	5	15.9
Glenwo'd	Max.	35	30	17	28	48	49	51	41	39	48	54	43	36	40	44	48	52	43	42	42	32	38	34	47	51	52	46	40	43	42	45	42.0
	Min.	11	8	0	-2	22	27	31	33	24	14	23	30	16	18	15	23	28	25	14	21	21	22	23	14	23	28	23	22	18	19	19	20.0
Grand M.	Max.	26	25	18	22	35	44	45	44	39	40	42	35	24	25	34	44	45	37	37	32	31	29	20	21	30	38	39	33	31	25	20	32.6
	Min.	14	10	4	5	17	20	27	28	18	10	25	23	14	1	14	13	24	26	21	11	27	20	4	- 5	10	21	21	25	16	4	3	15.2
Greenfield	Max.	33	28	30	30	43	48	50	48	35	43	51	44	35	36	39	46	45	35	38	32	28	36	32	36	43	44	41	33	33	40	40	38.6
	Min.	12	6	-2	-4	14	24	26	28	23	10	25	20	12	12	12	27	27	25	16	18	15	17	10	3	16	19	23	17	16	16	15	16.1
Grinnell (near)	Max.	28	25	17	26	45	52	52	48	38	44	51	42	32	31	38	47	50	40	37	30	34	30	27	31	41	46	43	35	33	38	32	37.5
	Min.	12	9	2	-1	22	21	26	27	20	9	26	25	10	10	12	17	21	25	20	12	27	17	4	- 4	15	24	28	29	19	12	10	16.3
Grundy C	Max.	26	23	17	23	41	51	50	45	39	44	41	38	28	33	37	45	48	41	38	31	34	30	23	27	35	39	38	34	32	34	21	35.1
	Min.	13	9	2	-3	21	21	26	27	21	8	25	21	12	9	10	17	24	25	11	16	30	19	8	- 8	11	22	23	28	19	5	3	15.3
Guthrie C	Max.	30	30	13	28	44	48	49	45	37	43	53	44	30	35	38	46	47	33	39	30	31	35	29	39	46	45	43	40	37	40	41	38.5
	Min.	14	7	-1	-4	19	19	29	30	23	11	28	23	12	11	10	19	29	26	9	26	27	17	9	1	19	28	27	26	18	14	7	17.2
Hampton	Max.	25	21	14	27	45	54	52	45	37	45	47	38	27	35	40	49	49	37	41	29	32	29	25	34	39	42	39	34	32	33	29	36.3
	Min.	13	8	2	-2	22	25	28	30	19	12	28	23	14	10	10	20	26	25	13	15	28	20	8	0	17	24	24	27	19	7	8	16.7
Hancock	Max.	34	30	11	28	43	41	50	45	33	47	52	43	34	40	41	46	47	39	40	34	28	38	31	42	48	49	42	48	32	39	42	39.5
	Min.	15	8	-1	-2	22	34	26	31	25	11	25	27	18	16	15	19	25	26	15	22	25	20	13	11	22	23	27	25	18	18	15	18.8
Hagenstown	Max.	24	25	12	24	44	38	45	44	35	38	47	34	25	31	38	47	46	35	38	30	30	28	24	33	36	46	36	33	28	34	27	34.0
	Min.	13	5	0	-8	20	20	26	30	18	10	33	23	12	9	10	16	28	28	11	14	25	17	2	- 6	11	20	17	23	16	4	4	14.4
Harlan	Max.	33	27	11	26	43	46	46	44	35	44	53	41	34	38	40	45	48	36	39	34	29	36	31	42	47	45	42	38	37	38	42	38.4
	Min.	14	-4	-5	-6	14	18	20	25	22	9	26	27	16	15	11	14	26	28	9	18	24	19	14	7	7	6	23	17	17	10	6	14.3
Hopevi'e	Max.	31	28	14	31	50	52	52	47	34	43	54	40	34	37	43	48	47	37	40	29	31	31	32	37	47	48	41	35	47	48	41	39.5
	Min.	18	10	1	0	20	28	31	26	28	10	29	29	10	16	15	18	32	27	20	18	27	19	11	3	20	27	27	51	20	20	14	19.3

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR DECEMBER, 1905—CONTINUED.

STATIONS.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN
Humbo't	Max..	24	24	14	26	40	48	46	42	38	44	46	40	28	32	38	46	47	38	38	30	34	34	33	36	44	40	34	34	33	33	38	36.2
	Min ..	14	7	2	-4	10	21	21	31	20	12	36	25	15	12	22	22	23	24	18	18	26	22	6	2	16	24	22	24	17	10	7	17.1
Indep'ce	Max..	26	28	15	22	37	50	50	49	44	43	43	41	34	33	40	45	46	42	38	36	36	38	21	23	31	37	35	36	31	30	20	35.8
	Min ..	12	11	8	7	19	17	25	24	25	9	28	24	16	10	12	12	18	25	22	15	30	21	5	12	9	16	20	25	19	0	-4	15.7
Indian'la	Max..	..	29	14	30	47	53	52	48	36	45	56	41	30	34	39	48	48	35	39	30	32	29	28	35	44	45	41	35	36	40	38	38.6
	Min ..	..	10	2	-1	23	23	28	29	22	11	30	27	13	15	13	18	24	27	19	19	28	19	..	-2	18	27	30	31	21	15	11	18.9
Iowa C*	Max..	29	25	19	27	41	49	51	51	33	42	50	40	28	32	37	42	44	32	38	34	34	29	22	25	34	43	42	34	29	30	26	35.2
	Min ..	6	21	6	6	8	14	14	18	20	10	13	22	11	13	15	8	8	20	29	13	27	27	17	-10	4	12	12	27	25	0	-4	13.3
Iowa F*	Max..	26	16	14	27	42	49	48	43	28	44	46	36	29	32	35	45	46	31	36	30	32	26	19	29	34	37	37	33	30	32	25	33.5
	Min ..	15	9	2	-2	18	17	25	28	26	9	30	24	12	10	10	19	27	24	12	15	25	20	8	-6	15	20	25	28	19	3	1	15.7
Jefferson	Max..	39	42	26	34	52	55	58	62	54	47	55	48	29	35	39	49	49	36	41	30	32	37	30	40	50	49	43	36	47	40	46	42.7
	Min ..	15	8	1	-1	21	22	30	31	24	12	30	24	10	14	12	15	25	22	10	18	28	19	15	3	21	27	28	27	19	14	7	17.3
Keokuk	Max..	35	32	20	29	46	52	58	53	44	41	52	46	33	33	38	42	45	37	36	36	35	39	33	34	44	52	51	44	34	43	39	40.3
	Min ..	20	20	8	8	22	28	34	32	28	15	34	32	19	17	19	20	24	28	29	25	33	27	16	5	25	34	37	34	27	26	21	24.0
Keosauqua**	Max..	32	28	20	30	47	52	54	52	43	42	56	45	36	34	37	44	45	33	40	34	34	30	30	35	40	47	46	36	32	39	36	39.0
	Min ..	10	23	7	5	5	19	20	22	21	12	17	28	14	11	11	10	10	28	28	15	22	26	16	0	10	25	29	29	25	16	9	16.9
Larrabee	Max..	30	25	11	27	39	48	43	39	31	43	49	40	38	36	40	45	51	33	42	38	30	32	25	38	46	48	43	41	32	32	39	37.2
	Min ..	13	4	1	-4	21	24	24	24	16	8	28	16	10	7	14	20	31	20	11	20	26	12	7	6	21	22	23	16	13	13	10	15.2
Le Mars	Max..	29	26	10	27	37	45	40	39	31	45	48	41	29	36	39	45	51	35	39	36	32	31	29	40	44	46	45	38	35	34	34	36.6
	Min ..	14	6	-1	-2	20	23	21	29	22	17	28	23	13	18	17	22	30	19	14	24	23	13	13	14	21	20	28	12	13	11	6	17.1
Lenox	Max..	32	30	14	29	45	48	50	46	39	42	51	42	34	36	38	45	45	35	38	32	29	32	32	37	45	45	40	36	37	40	40	38.2
	Min ..	15	7	-2	-3	19	24	28	28	25	9	24	23	14	13	14	17	24	27	18	17	25	17	14	3	19	27	25	30	17	19	13	17.9
Leon	Max..	31	31	22	28	45	49	50	46	40	41	52	44	35	34	38	44	50	40	37	31	32	29	33	36	43	46	41	37	35	38	37	38.5
	Min ..	11	12	2	-2	22	23	27	28	26	12	29	28	11	17	15	16	22	27	21	17	27	20	15	4	20	27	28	30	20	20	15	19.0
Little Sioux	Max..	30	31	14	28	42	52	48	44	35	50	57	44	37	42	43	47	53	41	42	37	31	38	32	47	51	53	45	41	40	38	47	41.3
	Min ..	16	8	0	-2	16	23	29	33	23	10	26	23	13	20	18	26	30	23	14	23	23	17	16	12	19	21	31	15	12	13	20	18.6
Logan	Max..	34	28	14	29	40	47	46	45	37	45	52	40	34	39	40	46	49	39	40	38	30	38	30	43	48	45	45	41	38	38	43	39.3
	Min ..	15	8	0	-4	15	20	25	25	20	10	24	24	16	18	14	19	29	25	10	22	23	20	16	12	19	28	27	18	18	11	8	17.1
Maquoketa*	Max..	28	27	26	22	45	51	53	51	35	40	48	45	33	37	41	41	45	33	41	35	35	30	28	24	34	46	44	24	30	33	32	36.5
	Min ..	5	19	7	6	6	14	14	18	18	10	20	22	10	8	11	6	9	21	28	14	26	27	8	-7	4	7	7	29	36	7	-3	13.1
Marshall'n*	Max..	..	..	..	..	47	50	49	49	48	47	52	47	35	32	36	46	49	32	39	32	35	28	22	29	36	42	40	34	31	35	29	38.9
	Min ..	1	9	2	-1	-1	18	17	27	25	11	14	25	15	10	10	10	13	26	18	17	19	25	9	-1	10	18	25	29	21	8	1	13.9
Mason C.	Max..	25	22	12	24	39	48	46	44	37	40	44	38	26	30	35	46	45	35	37	32	32	30	20	33	34	36	40	40	30	32	30	34.3
	Min ..	10	10	3	0	23	25	30	31	20	15	28	25	16	12	15	20	26	26	13	18	30	19	12	2	17	24	21	27	18	10	9	17.9
Monticello	Max..	29	24	20	31	40	48	50	50	30	41	45	39	41	32	37	42	46	34	54	35	36	28	24	23	39	31	42	36	27	28	22	35.6
	Min ..	12	4	5	11	15	21	22	28	9	13	23	14	10	12	8	14	24	29	15	23	25	8	-11	-11	9	19	30	22	2	-4	-1	13.1
Mt. Ayr	Max.	31	27	17	31	50	53	42	48	38	43	56	44	40	37	48	49	48	37	41	30	31	35	32	40	49	49	43	36	38	45	44	40.5
	Min ..	16	12	1	0	21	23	25	29	23	9	25	28	15	16	15	20	24	25	20	18	23	19	12	4	21	25	28	31	19	20	18	18.9
Mt. Pleasant	Max..	32	31	21	26	42	50	51	51	40	41	52	46	30	33	37	41	42	38	40	35	35	32	31	30	38	46	46	40	32	36	35	38.1
	Min ..	16	16	6	4	18	22	25	26	26	10	30	26	13	12	14	13	20	25	25	19	31	25	11	0	18	26	29	31	15	13	7	18.3
Mt. Vernon.	Max..	30	26	18	27	43	50	53	52	38	42	47	39	34	34	41	45	44	34	42	32	33	29	19	25	35	41	38	35	30	24	30	35.8
	Min ..	14	13	8	6	18	21	26	26	22	9	28	24	14	11	14	16	19	26	28	20	29	19	8	-7	10	19	25	30	18	9	2	16.8
N. Hampton	Max..	25	27	14	24	36	48	46	43	38	40	42	35	24	29	35	43	45	45	36	32	33	32	22	25	28	35	37	36	34	27	22	33.5
	Min ..	13	9	4	5	18	17	25	26	20	8	24	22	14	10	13	15	22	22	11	15	28	18	4	-6	10	15	12	26	18	1	-4	14.0
Northwood	Max..	28	25	11	21	36	45	44	43	35	38	42	33	24	30	34	44	43	33	35	30	32	28	22	32	33	37	38	33	27	27	24	32.6
	Min ..	13	6	8	-4	18	20	23	28	17	11	27	22	16	10	11	16	23	25	17	16	27	18	4	-6	15	23	16	23	16	4	3	14.7
Odeboldt	Max..	29	26	10	25	36	47	46	41	36	50	40	43	36	36	41	46	48	43	40	35	30	34	26	39	48	45	40	39	34	35	44	37.8
	Min ..	14	6	0	-2	20	20	27	31	12	18	30	14	12	15	15	23	31	24	14	18	26	17	9	7	23	24	30	20	15	15	10	17.4
Ogden	Max..	27	27	15	26	43	52	50	47	37	45	52	46	27	33	37	46	48	39	39	29	29	22	29	34	39	45	36	36	33	33	35	37.0
	Min ..	14	8	2	-2	22	24	27	30	22	11	28	24	18	13	14	19	19	25	11	18	27	20	5	0	19	23	23	29	18	15	13	17.2
Olin	Max..	30	29	20	25	42	47	50	50	38	40	44	40	32	32	36	41	45	39	39	35	35	34	34	23	30	39	40	33	33	27	23	35.8
	Min ..	15	12	6	7	21	16	21	22	27	10	29	28	11	12	16	9	15	26	30	17	32	23	5	-9	9	15	25	32	24	6	-1	16.5
Omaha, Neb.	Max..	32	27	14	29	46	50	51	45	32	46	54	44	34	40	41	46	51	32	40	36	34	38	31	46	49	49	43	39	41	38	44	40.1
	Min ..	20	9	1	5	25	30	33	32	21	18	33	28	20	22	28	26	32	26	20	26	25	23	19	19	27	31	34	24	20	23	23	23.1
Onawa	Max..	29	28	18	28	49	52	49	41	35	50	56	42	36	40	42	46	55	41	43	37	32	41	32	49	52	55	46	40	43	44	44	41.8
	Min ..	15	6	-1	0	17	23	23	29	25	10	22	25	16	16	16	20	28	23	18	20	22	18	20	18	18	20	28	17	15	12	12	17.5
Osage	Max..	24	24	12	22	36	46	43	41	37	38	41	35	27	29	33	42	44	38	35	30	30	29	20	28	29	34	37	34	30	29	24	32.3
	Min ..	10	8	3	4	19	20	26	27	21	9	27	24	17	10	12	16	25	27	13	16	29	18	8	-4	13	17	17	24	17	3	2	15.4
Oskaloosa	Max..	30	30	18	28	44	51	53	49	38	43	54	42	29	32	38	45	48	39	39	32	35	30	26	31	39	43	43	36	33	34	34	37.6
	Min ..	16	12	4	2	23	17	29	28	22	11	30	26	13	12	15	11	21	29	24	18	30	19	5	-6	15	26	29	30	22	7	2	17.5
Pacific Jct.	Max..	34	30	16	30	48	46	49	47	34	46	51	40	35	40	40	46	49	35	39	37	32	37	32	43	49	49	44	39	39	37	43	39.7
	Min ..	19	9	0	-5	16	20	26	29	21	10	26	26	14	19	16	17	29	20	10	22	24	21	14	12	19	23	25	20	15	16	10	17.5
Pella	Max..	30	28	18	29	45	52	53	48	43	44	55	48	34	38	39	46	..	43	39	35	35	30	27	32	39	44	40	38	35	37	33	38.6
	Min ..	15	11	3	2	24	23	30	28	25	12	31	29	14	13	15	15	..	28	22	18	29	20	12	-1	19	28	30	30	27	14	7	19.3
Perry	Max..	31	29	13	28	44	52	51	47	35	45	55	38	27	33	37	47	50	34	38	30	31	32	28	37	48	44	43	37	35	38	40	37.8
	Min ..	14	3	2	-2	19	21	27	29	21	11	26	18	12	13	11	15	27	28	10	17	28	18	4	-3	17	24	26	30	19	12	10	15.9
Plover	Max..	30	28	13	24	41	48	44	41	31	41	45	40	30	33	41	45	47	41	38	31	29	35	28	35	47	48	42	35	28	31	31	36.2
	Min ..	15	5	0	-4	25	28	25	26	20	8	30	18	11	12	13	16	22	16	11	20	25	20	5	0	16	19	26	20	15	10	12	15.6
Pocahontas	Max..	28	26	12	26	42	48	46	42	33	38	48	35	27	34	40	47	49	35	40	32	30	36	30	37	47	48	42	36	32	35	31	33.5
	Min ..	9	6	0	-2	25	24	24	29	18	18	26	22	12	12	14	19	27	20	14	18	22	21	7	8	20	23	27	20	16	12	9	16.9
Red Oak	Max..	36	34	20	31	45	52	53	48	44	47	54	50	37	43	42	49	49	45	43	38	33	39	36	43	51	50	46	45	41	55	45	43.3
	Min ..	18	11	3	0	22	22	29	32	29	24	31	29	17	20	17	18	30	30	16	24	28	23	23	14	23	28	28	26	20	18	11	21.4
Ridge'y	Max..	27	25	24	23	40	53	51	45	37	40	47	38	30	35	41	47	45	39	40	37	35	30	23	27	34	43	40	35	32	28	28	36.1
	Min ..	14	10	5	7	20	23	28	27	16	10	28	21	10	10	13	18	23	29	17	15	30	20	5	-5	15	22	19	25	17	7	5	16.3
Rock R.	Max..	30	10	8	16	38	36	40	32	34	42	40	36	38	40	48	46	44	46	44	40	38	32	26	20	30	38	38	44	30	28	22	33.9
	Min ..	16	2	-2	0	18	20	22	20	22	26	28	22	24	26	28	28	28	26	18	22	26	15	10	8	10	12	10	10	10	12	10	17.0
R City	Max..	30	25	13	20	42	47	47	40	30	43	50	38	30	30	45	50	40	41	39	40	35	33	35	38	48	45	43	35	34	35	43	37.5
	Min ..	13	6	1	-1	19	21	26	24	21	15	26	20	11	16	16	21	22	24	24	28	26	20	7	5	21	26	23	26	16	15	12	17.9
Sac City.	Max..	29	27	12	30	41	47	47	42	35	45	52	40	32	34	40	45	48	40	39	32	31	35	28	38	47	45	42	34	34	36	40	37.6
	Min ..	18	6	0	-3	8	21	26	30	21	18	30	23	12	18	12	17	26	22	12	17	24	18	5	0	11	23	28	3	14	16	8	15.6
St.Cha'es	Max	31	30	17	37	54	57	55	54	35	48	61	48	36	36	46	54	50	35	48	29	34	39	26	43	52	51	42	37	40	53	50	42.8
	Min ..	15	10	2	0	23	27	30	32	23	12	31	23	13	13	19	20	27	27	19	17	27	18	5	4	23	31	30	32	20	16	15	19.4
Sheldon.	Max..	34	24	12	25	48	49	56	40	31	46	47	40	31	38	48	48	54	35	43	38	30	35	28	40	48	53	43	44	34	36	33	38.9
	Min ..	18	6	-1	-4	20	24	24	23	21	10	23	23	10	11	15	24	30	18	12	21	24	15	8	8	18	20	24	14	13	10	10	15.9
Sibley	Max..	27	11	10	27	41	57	46	37	26	40	46	33	30	37	42	48	52	30	43	37	27	31	19	..	44	51	40	41	..	33	24	35.5
	Min ..	-9	5	-1	-4	1	22	23	23	23	12	23	23	8	13	6	18	25	16	4	16	23	4	11	5	17	19	22	15	12	12	8	12.7
Sidney	Max..	30	28	8	27	40	44	46	39	34	42	50	44	34	37	37	44	41	37	27	34	33	35	32	40	40	42	44	42	37	37	39	36.9
	Min ..	14	6	-2	-3	19	21	25	28	20	9	26	27	16	16	14	18	27	20	12	18	20	20	16	12	21	28	27	32	18	22	16	18.2
Sigour'y	Max..	31	29	22	27	43	51	52	50	42	42	58	48	35	34	39	44	46	39	39	34	35	32	28	30	33	42	42	37	33	34	33	38.1
	Min ..	16	14	5	8	20	20	28	26	28	10	30	25	18	12	15	11	20	25	24	18	31	26	12	-4	16	22	26	33	22	10	4	18.1
Sioux C'r	Max..	27	26	10	26	37	47	41	37	29	45	46	39	29	37	40	45	52	33	40	33	28	29	..	30	44	46	40	37	32	33	30	36.1
	Min ..	2	10	-2	-2	23	22	21	27	20	11	30	23	11	11	16	22	30	18	13	23	21	14	..	11	20	21	29	17	12	13	10	16.6
Sioux C.	Max..	28	17	10	29	40	51	43	41	30	51	53	37	31	38	42	48	54	31	42	38	30	34	29	44	49	49	42	37	35	36	38	38.0
	Min ..	17	4	-3	3	22	28	27	26	17	15	36	20	15	22	21	24	30	23	17	25	22	18	16	17	23	21	22	17	16	16	10	18.9
Stocport	Max..	24	20	20	30	48	53	54	54	46	52	54	45	32	35	37	45	42	40	42	34	35	33	33	34	45	48	45	45	36	40	38	40.0
	Min ..	4	2	7	4	19	18	27	24	28	11	32	28	14	12	15	10	20	28	28	12	32	25	5	-1	15	30	30	32	25	12	8	17.9
Storm L.	Max..	28	13	11	28	41	48	46	41	29	43	48	34	29	35	11	46	48	28	40	34	29	34	18	38	47	50	41	38	33	35	38	35.9
	Min ..	0	4	2	-2	0	22	26	25	23	12	21	24	8	12	18	16	24	22	14	15	12	12	14	4	15	24	24	18	14	18	7	14.1
Thurm'n	Max..	34	32	13	30	43	47	50	47	36	45	53	42	35	38	30	45	48	37	38	35	33	38	33	44	49	50	44	39	40	38	40	39.8
	Min ..	15	9	1	-5	15	18	30	32	24	12	26	27	14	19	18	15	32	22	9	18	25	23	17	9	18	28	29	20	18	18	8	17.9
Tipton	Max..	38	29	20	25	41	50	50	50	40	41	46	42	31	35	38	42	43	38	37	34	33	34	24	24	33	42	42	38	34	31	30	36.6
	Min ..	18	17	8	8	20	25	28	30	26	14	30	27	16	15	19	20	28	28	29	24	32	28	10	-3	15	25	30	29	24	18	10	20.4
Vinton	Max	25	26	23	25	38	48	52	47	42	43	40	40	32	35	42	48	47	38	40	33	32	32	..	25	28	50	42	36	33	32	25	36.3
	Min ..	14	8	4	5	21	20	28	26	25	10	28	25	16	9	19	11	21	28	23	14	30	20	..	-5	12	25	28	28	20	8	-2	16.6
Wappello	Max..	32	39	36	39	39	50	56	55	41	41	59	59	31	31	40	43	48	37	36	36	34	34	30	..	36	43	49	43	36	32	32	40.4
	Min ..	20	19	10	8	19	21	30	28	27	14	30	28	17	15	18	18	23	27	28	23	33	27	13	..	17	23	29	35	25	13	8	21.4
Wash'on	Max ..	30	29	21	27	45	58	54	53	36	42	53	44	30	34	30	45	46	40	40	34	35	32	28	30	38	45	45	33	34	36	34	38.4
	Min ..	17	14	7	4	23	21	26	28	20	10	30	24	18	18	15	14	21	28	24	21	32	19	4	-4	17	26	30	34	22	12	4	18.4

DAILY MAXIMUM AND MINIMUM TEMPERATURES FOR DECEMBER, 1905—CONTINUED.

STATIONS.		DATE. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MEAN.
Washta ..	Max.	30	30	11	40	42	50	36	40	32	45	52	38	33	38	42	48	50	36	43	36	30	26	28	40	47	50	40	38	34	36	44	37.9
	Min ..	14	6	-1	8	17	17	17	23	25	10	20	22	11	15	10	22	32	22	7	24	22	18	14	1	17	18	15	14	14	6	2	15.0
Waterloo*	Max..	28	28	20	27	41	54	52	52	37	44	47	38	30	35	41	47	49	44	40	34	35	32	23	28	35	41	40	41	32	32	30	37.3
	Min ..	14	13	3	5	23	27	28	27	19	11	29	21	16	12	15	14	21	27	20	17	29	16	6	-4	13	20	21	26	20	5	-1	16.5
Waukee..	Max..	29	28	12	27	43	50	50	46	37	45	54	41	27	32	33	45	47	35	35	29	30	30	27	35	40	48	40	35	35	37	37	36.7
	Min ..	14	8	1	-1	23	23	28	29	22	11	28	27	12	13	14	18	23	26	25	18	28	18	6	0	18	26	26	31	20	15	12	18.1
Waverly.	Max..	27	27	15	24	36	49	49	45	39	42	45	37	26	31	36	45	47	34	37	32	34	30	21	28	32	38	39	35	30	30	20	34.2
	Min ..	15	11	4	6	23	17	27	28	21	11	28	26	19	13	14	15	23	28	17	17	17	15	5	-5	10	19	19	27	20	2	-1	15.8
W. Bend.	Max..	28	26	12	28	39	48	44	42	33	42	46	38	26	32	38	47	48	38	38	31	28	33	31	35	45	46	41	34	33	32	30	35.7
	Min ..	12	4	1	5	23	23	23	30	20	10	28	23	13	10	13	17	28	21	11	16	26	17	8	1	15	21	26	21	16	10	8	16.1
Whitten..	Max.	28	27	15	24	41	48	47	45	39	44	48	40	29	31	35	43	46	40	36	31	34	30	23	29	34	38	38	35	38	33	27	35 3
	Min ..	10	17	0	-4	20	18	25	25	21	6	26	22	11	9	10	14	21	24	14	15	28	20	6	-7	12	18	22	27	18	11	2	14.9
Wilton J.	Max..	33	30	22	25	40	48	50	50	39	41	49	42	38	32	36	40	44	38	38	36	36	34	30	25	33	42	44	38	32	32	28	36.9
	Min ..	15	16	6	5	16	18	26	23	27	9	27	24	10	10	15	10	18	23	27	17	31	24	8	-5	11	22	27	26	28	6	2	16.7
Wint'rset	Max..	31	29	14	28	43	49	49	46	37	42	53	41	29	33	39	45	45	39	32	29	33	39	31	35	42	43	38	35	35	38	37	37.1
	Min ..	12	8	0	-1	20	22	28	27	28	21	29	26	12	13	12	16	25	25	15	17	26	12	9	2	20	26	28	30	18	16	13	17.7
Woodb'n.	Max..	34	30	17	28	45	50	50	49	37	42	53	42	30	35	37	37	45	39	47	32	34	28	35	35	40	43	47	35	34	36	38	38.2
	Min ..																																
Zearing ..	Max..	27	27	14	24	43	51	50	45	39	45	54	43	31	35	39	46	48	37	37	30	32	30	22	31	37	42	39	34	34	35	33	36.9
	Min ..	13	8	8	-3	22	19	25	29	24	9	25	24	12	22	9	12	25	24	12	12	29	22	8	-9	11	23	25	30	19	6	4	15.9

* At those stations the thermometers are read in the morning; the maximum temperature then observed appears in the maximum column for the preceding day, on which it nearly always occurs.

DATES OF KILLING FROST.

	Killing Frost. Last in Spring.	First in Autumn.		Killing Frost. Last in Spring.	First in Autumn.
Afton	Apr. 18	Oct. 12	Jefferson		Oct. 1
Albia	Apr. 19	Oct. 12	Keokuk	Apr. 17	Oct. 12
Algona	May 26	Oct. 11	Keosauqua	Apr. 23	Oct. 12
Allerton	Apr. 18	Oct. 12	Knoxville	Apr. 18	
Alta	May 26	Oct. 11	Larrabee	May 26	Oct. 12
Alton		Oct. 11	Le Mars	May 26	Oct. 11
Amana	Apr. 23	Oct. 12	Lenox	Apr. 18	Oct. 11
Ames	Apr. 22	Oct. 11	Leon	Apr. 18	Oct. 12
Atlantic	May 26	Oct. 11	Little Sioux	Apr. 21	Oct. 21
Audubon	May 26	Oct. 11	Logan	May 5	Oct 11
Baxter	Apr. 27	Oct. 12	Maquoketa	Apr. 23	Oct. 12
Bedford	Apr. 22	Oct. 11	Marshalltown	Apr. 30	Oct. 12
Belle Plaine	Apr. 22	Oct. 12	Mason City	Apr. 30	Oct. 11
Bonaparte	Apr. 22	Oct. 12	Massena	Apr. 18	
Boone	Apr. 19	Oct. 12	Monticello	May 26	Oct. 11
Britt	May 26	Oct. 11	Mt. Ayr	Apr. 18	Oct. 11
Burlington	Apr. 18	Oct. 12	Mt. Pleasant	Apr. 19	Oct. 12
Carroll	May 26	Oct. 11	Mt. Vernon	Apr. 18	Oct. 12
Cedar Rapids	Apr. 19	Oct. 12	New Hampton	Apr. 30	Oct. 11
Chariton	Apr. 18	Oct. 12	Newton	Apr. 18	Oct. 12
Charles City	Apr. 30	Oct. 11	Northwood	Apr. 30	Oct. 11
Clarinda	Apr. 22	Oct. 11	Odebolt	May 8	Oct. 11
Clear Lake	Apr. 30	Oct. 11	Ogden	Apr. 30	Oct. 12
Clinton	Apr. 22	Oct. 12	Olin	Apr. 22	Oct. 12
Col. Springs	Apr. 18	Oct. 11	Onawa	Apr. 21	Oct. 12
Col. Junction	Apr. 18	Oct. 12	Osage	Apr. 30	Oct. 12
Corning	Apr. 21	Oct. 12	Oskaloosa	Apr. 22	Oct. 12
Corydon	Apr. 18	Oct. 12	Ottumwa		Oct. 12
Cresco	Apr. 30	Oct 11	Pacific Junction	Apr. 18	Oct. 11
Creston	Apr. 19	Oct. 12	Pella		Oct. 12
Davenport	Apr. 18	Oct. 12	Perry	Apr. 18	
Decorah	Apr. 22	Oct. 11	Plover	May 26	Oct. 12
Delaware	Apr. 30	Oct. 11	Pocahontas	Apr. 30	Oct. 12
Denison	May 26	Oct. 11	Red Oak	Apr. 19	Oct. 21
Des Moines	Apr. 18	Oct. 12	Ridgeway	Apr. 21	Oct. 11
De Soto	Apr. 22	Oct. 12	Rock Rapids	May 8	Oct. 18
Dows	May 26	Oct. 12	Rockwell City	May 8	Oct. 12
Dubuque	Apr. 16	Oct. 12	Sac City	May 12	
Earlham	May 26	Oct. 12	St. Charles	Apr. 18	Oct. 12
Elkader	Apr. 22	Oct. 12	Sheldon	May 26	Oct. 11
Elliott	May 5	Oct. 11	Sibley	May 26	Oct. 12
Estherville	May 26		Sidney	Apr. 18	Oct. 11
Fayette	May 26		Sigourney	Apr 22	Oct. 12
Forest City	Apr. 30	Oct. 11	Sioux Center	May 8	Oct. 11
Fort Dodge	Apr. 30	Oct. 12	Sioux City	Apr. 24	Oct. 20
Galva	May 26	Oct. 11	Stockport	Apr. 22	Oct. 12
Glenwood	May 28	Oct. 11	Storm Lake	Apr. 26	Oct. 11
Grand Meadow	Apr. 30	Oct. 11	Thurman	Apr. 22	Oct. 11
Greene	Apr. 30	Oct. 11	Tipton	Apr. 18	Oct. 12
Greenfield	May 5	Oct. 12	Toledo	Apr. 18	Oct. 12
Grinnell	Apr. 18	Oct. 12	Vinton	Apr. 28	
Grundy Center	Apr. 30	Oct. 12	Washington	Apr. 18	Oct. 11
Guthrie Center	Apr. 30	Oct. 12	Wapello	Apr. 18	
Hampton	Apr. 30	Oct. 11	Washta	May 26	Oct. 11
Hancock		Oct. 12	Waterloo	Apr. 30	Oct. 12
Hanlontown	May 26	Oct. 10	Waukee	Apr. 18	Oct. 12
Harlan	May 26	Oct. 11	Waverly	Apr. 30	Oct. 12
Hopeville	Apr. 18	Oct. 12	Webster City	May 26	
Humboldt	May 26	Oct. 12	West Bend	May 8	Oct. 12
Ida Grove	May 26		Whitten	May 26	Oct. 11
Independence	Apr. 30	Oct. 12	Wilton Junct	Apr. 18	Oct. 12
Indianola	Apr. 22	Oct. 12	Winterset	Apr. 18	Oct. 12
Inwood		Oct. 10	Woodburn		Oct. 12
Iowa City	Apr. 23	Oct. 11	Zearing	May 7	Oct. 12
Iowa Falls	Apr. 30	Oct. 12			

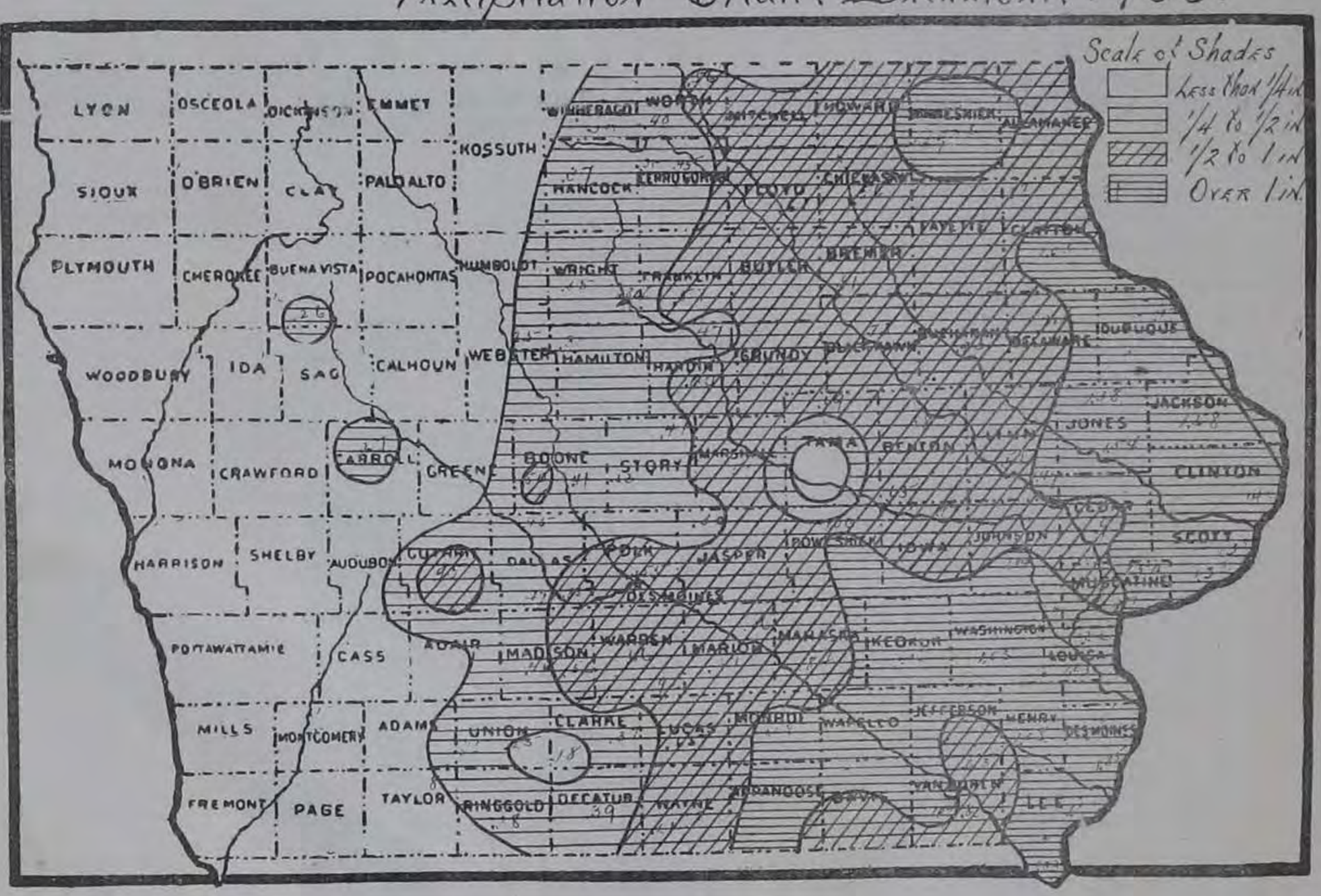
DAILY AND MONTHLY PRECIPITATION FOR DECEMBER, 1905.

STATIONS.	DAY OF MONTH.																													TOTAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Afton	....		T	....	....	....			....		....	....	....	....	....	....	....	....	....	..	.25	....	T		....	....	....	T	....	....	....	.25
Albia	....	T	..	....	....	....	....		....	..	....	.	....	....	....	....		....	....	....	.12	....	.02	T	....	....	....	..	.61	....	....	1.08
Algona	T	.08	....	....	....				....	....	..	....	....	....	....	....	....	T	..	.03	.28	....	.01	....	....	..	...	.26	.05	...	....	.61
Allerton	....	T	T	....	...	....	...	..	..	....	....	....	...	....	....	....	....	....	....	....	.01		.09	....	....	..	....	....	..	...	....	.15
Alta	.05			....	....	..	....	....	.	...	....	....	....	....	....	....	....	....	....	....		....	.15	....	....	....	....	....	....	..		.25
Alta [near]	.10	..		....	....	....	...	....		....		....	....	.	....	....	....	....	....	....	T	T	.03	..	....	....	....	....			....	.03
Alton	T		....	....	...	....		....	....	.	....	....	....	....	....	....	....	....	....	.04	.86	....	.01	....	....	...	....	.41	.15	....	....	.97
Amana	....	T	....	.	....	..	....	....	....	....		....	....	....	....	....	....	....	....	..	.21	....	.02	....	....	....	....	....	..	..	....	.23
Ames	....	....	....	....	....	....	....	....	....	....	....	..	....	...	..	....	....	....	....	T	..	....	....	....	....	....	....	..	.	.	....	.10
Atlantic	.10	..	...	....	....		....	....			....	..	....	..	....	....	....	....		....	.07	..	.01	..	....	....	....	....	....	....	....	.15
Audubon	...	.07		....	..	....	..	....	....	....	....	....	....	.	....	....	....	....	....	....	.30	....	...	....	....	....	....	....	....	....	....	.30
Baxter	T	....		....	....	....	....	....	....	....	....	....	..	....	....	....	....	..	..	....	.13	....	T	....	....	....	....	....	....	....	....	.15
Bedford	..	.02	....	..		....	....	...	....	....	....	....	..	....	....	....	....		....	T	.25	....	.05	....	....	....	....	.30	.05	....	....	.65
Belle Plaine	...	...	....	....	....		...	....	...	....	....	....		....	....	....	..	....	....	....	.25	....		....	....	....	....	.35	.11	....	....	.83
Bonaparte	..		....	....	...	..	....	....	..	....	....	....		..	....	....	....	....	..	.25	.12	....		....	....	....	....	....	T	....	....	.41
Boone	....	.04	T	....	....		....	....	....	....	..	..	....	....	....	....	....		....	..	.33	T	....	.04	....			....	....	....	....	.37
Britt	....	.05	T			....		....	..	....	....	....	....	....	....	....	..	....	....	....	.27	....	.02	....	....	..	....	....	....	....	....	.69
Buckingham	...	.05	..	..	T	....	...	....	...		....	....	..	..	....	....	..	T	....	....	.27	....	T	....	....	..	....	.87	....	....	....	1.35
Burlington	T	....		....	...	....	....	...	....	..	....	....	....	....	....	....	....	....	....	.26	.14	.	.05	....	....	....	....	.71	.19	....	....	.27
Carroll		.12	....	..	...	....	..	....	....	....	..	....	....	.	....	....	....	....	....	....	....	....	T	.15	....	....	..	....	....	....	....	.52
Cedar Rapids	....	T	T	T	T	....	....	....	....	....	....	....	....	....	....	....	....	T	....	T	.25	....	....	.02	....	....	....	T	.25	..	....	.65
Chariton	...	T	....	....	..	....	....	....		....	....	....	T	....	....	....	....	T	..	.04	.30	.10	..	....	..	....	....	.25		...		.61
Charles City	.02	T	T	T	T		....	....	....	....	....	....	....	....	....	....	....	T	....	T	.37	T	T	....	....	....	....	.18	..	....	....	.19
Clarinda	....	.04	....	....	..	..	....	....	....	....	..	..	..	....	....	....	..	....	....	.15	....	..	T	....	....	....	T	....	..	....	....	.50
Clear Lake	....	T	....		..	....	....		....	..	..	..	....	....	....	..	....	....	....	....	.30	.	....	....	....	..	....	....	....	....	....	1.42
Clinton	...	.01	....	..	..	....	....	....	....	....	..	....	..	....	....	....	..	....	....	.48	....	..	.01	....	....	....	....	....	.92		..	.03
College Springs	...	.03		..	....	....	....	....	....	...		....	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.22
Columbus Junct'n		.02	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.17	.25	....	.03	....	....	....	....	.52	.23	..	....	.20
Corning	....	.05	....	....	....	....		....	....	....	....	....	....	....	....	..	....	.	....	..	.15	....	.01	....		.	....	T	....	....	....	.68
Corydon	..	T	....	..		..	..	..	....	....	..	....	....	....	....	.	....	....	....	.02	.35	....	T	T	....	....	....	.21	.09	....	....	.35
Creston	..	.05	..	....	....	....	....	....	....		....	....	....	..	....	....	....	....		..	.30	....	....		....	....	....	..	.	.	....	.04
Cumberland	....		..	....	....	....	....	....	....	....	....	....	....	..	..		....	....	....	....	.04	....	....	....	....	....	....	....	....	....	....	....
Davenport	T	T	T	....	..		....		....	....	....	....	T	....	....	....	....	T	..	.46	T	T	T	....	....	....	....	.76	.10	....	....	1.32
Decorah	....	.05	.05	T	T	....	....	....	....	....	....	....	T	....	....	....	....	....	....	....	.46	....	....	....	....	....	....	.60	.10	....	....	1.20
Delaware	....	T	....	....		....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	.39	....	T	....	....	....	....	.55	....	....	....	.94
Denison	..	.10		....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	....	.02	....	....	....	....	....	....	....	....	.12
Des Moines	.02	T	T	..	..	....	....	..	....	....	....	....	....	....	....	....	....	T	..	.20	.15	....	.01	....	..	....	....	.14	....	....	....	.55
De Soto	..	.05	....	....	..	..		.	....	....	....	..	....	....	....	....	..	....	....	....	.30	.10	....	....	....	....	....	.02	....	....	....	.47
Dows		.02		....	....	....	....	..	....	....	....	..	....	....	....	....	....	....	....	....	.30	....	.02	....	....	....	....	....	....	....	....	.34
Dubuque	....	.01	.01	....	.02	....	....	....	....	..	....	....	....	....	....	....	....	T	..	.12	.23	....	T	T	....	....	....	.69	.08	....	....	1.17
Elkader	..	T	T	..	.05	....	..	....	....	....	....	.	....	....	....	....	....	....	....	....	.30	....	....	....	....	....	....	.70	....	....	....	1.05
Elliott	....	.13	....	....	...	....	....	....	....	....	..	....	....	....	....	....	..	....	....	T	....	....	T	....	....	....	....	....	....	....	....	.18
Estherville	....	T	....	....	....	....	....	....	....	....	....	....	..	....	....	..	....	....	....	....	....	..	T	....	....	....	....	....	....	....	....	T
Fayette	....	....	....	T	.08	....	..	.	....	....	..	....	....	....	....	....	....	....	....	..	.42	....	....	....	....	....	....	.40	.04	....	....	.94
Florence	....	.10	....	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	.25	....	T	....	....	....	....	....	....	....	....	.35
Forest City	....	.10	T	....	.	....		....	....	..	....	....	....	....	....	....	....	....	....	....	.10	.10	....	....	....	....	....	....	....	....	....	.80
Fort Dodge	.10	....	....	..	....	....	....	....	..	....	....	.	....	..	....	....	....	....	....	....	.15	....	T	....	....	....	....	....	....	....	....	.25
Fort Madison	T	....	.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.40	....	....	....	....	....	....	....	.70	....	....	....	1.10
Galva	....	.05	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	.03	..	....	....	....	....	....	....	....	....	.08
Glenwood	.05	....	....	.	....	....	....	....	....	....	.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.05
Grand Meadow	...	.04	.05	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	.15	.15	..	....	....	....	....	....	.50	....	....	.89
Greenfield		.01	...	....	.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	.17	..	T	....	....	....	....	....	....	....	....	.21
Grinnell [near]	..	.03		....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	.40	....	.07	....	....	....	....	....	.50	....	....	1.00
Grundy Center	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.41	....	T	....	....	....	....	.30	T	....	....	.71
Guthrie Center	....	.05	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.60	....	.80	....	....	....	....	....	....	....	....	.95
Hampton	.02	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	.34	.15	....	....	....	....	....	....	.06	....	....	....	.57
Hancock	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.08	....	....	....	....	....	....	....	....	.08
Hanlontown	T	P	.10	T	....	....	....	....	....	....	....	....	....	....	....	....	....	T	....	T	.30	T	T	....	....	....	....	....	....	....	....	.40
Harlan	....	.05	...	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	T	....	T	....	....	T	....	....	....	....	....	....	....	.05
Hopeville	....	T	....	..	....	....	....	....	....	....	....	.	..	....	....	....	....	....	....	T	.13	....	.01	....	....	....	....	.04	....	....	....	.18
Humboldt	.05	....	....	T	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.05	....	....	....	....	....	....	....	....	....	....	.10
Independence	....	.01	....	T	T	....		....	....	....	....	.	.	....	....	....	....	....	....	....	.50	.	.02	....	....	....	....	.40	....	....	....	.93
Indianola	....	.04	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	.08	.32	....	.18	....	....	....	....	.14	....	....	....	.66
Iowa City		T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	T	....	.25	T	....	.02	....	....	....	.10	.67	....	..	1.04
Iowa Falls	..	....	....	T	T		....	....	....	....	....	....	....	....	....	....	....	....	....	T	.40	T	....	.05	....	....	..	....	.02	.	....	.47
Jefferson	....	T	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	.03	....	.03	....	....	....	T	....	....	....	....	.06
Keokuk	.01	....	....	....	..	....	..	....	..	....	....	....	....	....	....	....	....	....	T	....	.45	T	....	....	....	....	....	.72	....	....	....	1.03
Keosauqua	....	T	..	T	....	..	..	..	....	....	....	....	....	....	....	....	....	....	....	.10	.30	....	.20	....	....	....	....	.12	.47	....	....	1.04
Knoxville	....	.05	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	....	.25	.15	....	.20	....	....	....	....	.20	....	....	....	.85
Lacona	..	.02	....	....	....	....	....	....	...		....	....	....	....	....	....	....	....	....	..	T	....	.12	....	....	....	....	.30	....	....	....	.22
Larrabee	.05	....	....	....	..	....			....	....	..	....	....	....	....	..	....	....	....	..	.44	.01	....	T	....	..	..	.22	.71	....	....	.17
Le Claire	....	T	T	....	....	....	..	..	....	....	....	....	....	....	....	....	..	....	....	....	T	....	.10	....	....	....	....	....	....	....	....	1.38
Le Mars	T	....	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	T	.15	....	T	....	..	....	....	....	....	....	....	.10
Lenox	....	.03	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	T	.17	....	.05	....	....	....	....	.17	T	....	....	.18
Leon	....	T	..	.	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	T	....	....	....	....	....	....	....	....	....	....	.39
Little Sioux	....	.05	....	....	....	..	..	....	....	....	....	....	....	....	....	....	....	....	....	....	T	....	.10	....	....	....	....	....	....	....	....	.05
Logan	T	.10	T	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	T	.50	T	....	....	....	....	....	.18	.90	....	....	.20
Maquoketa		....	....	.	....		....	.	....	....	....	....	....	..	..	....	....	....	....	....	.28	T	....	.04	..	....	....	....	.21	....	....	1.58
Marshalltown	....	.03	....	....	....	....	..	....	....	....	..	....	....	....	....	....	....	....	....	....	.45	....	....		....	....	....	....	....	....	....	.56
Mason City	....	T	....	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	.48	....	....	....	....	....	....	....	.90	....	....	....	.45
Monticello	.	....		..	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	.25	....	....	.05	....	....	....	....	.08	....	....	....	1.38
Mount Ayr	....	T	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	.28	.19	....	.04	....	....	....	....	.58	.19	....	....	.38
Mt. Pleasant	..	T	....	....	....	....	....	..	....	....	....	..	..	....	....	....	....	....	T	....	.65	....	.04	....	....	....	....	.40	.36	..	....	1.28
Mt. Vernon	....	.02	....	....	....	....		....	....	....	....	....	....	....	....	....	....	....	....	....	.39	.01	....	T	....	....	....	.12	.45	....	....	1.47
Muscatine	....	T	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.38	....	....	....	....	....	....	.16	.02	....	....	.97
New Hampton	....	T	T		T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.40	.03	T	....	....	....	....	....	....	....	....	.56
Northwood	....	.10	.03	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.06	....	....	....	....	....	....	....	....	.56
Odebolt	....	....	....	....	....	....	....	....	....	..	....	....	....	..	....	....	....	....	....	....	....	....	.10	....	....	....	....	....	....	....	....	.06
Ogden	....	T	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	..	.40	....	.03	....	....	....	....	....	....	....	....	.50
Olin	....	.01	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	.60	....	.03	....	....	....	....	.90	....	....	....	1.54
Omaha, Neb	.12	.02	....	..	....	..	....	....	T	....	....	....	....	....	....	..	..	.	T	..	T	....	T	....	....	....	....	....	....	....	....	.14
Onawa	.05	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.03	T	.02	....	....	....	....	....	....	....	....	.10
Osage		.04	T	....	..	....	....	....	....	....	..	..	....	....	....	....	....	....	....	....	.45	.02	....	....	....	....	....	.04	....	....	....	.55
Oskaloosa	.01	....	....	....	..	....	....	....	....	....	....	....	....	.	....	....	....	....	....	.05	.30	....	.08	....	....	....	....	.85	....	.05	....	.84
Pacific Junction	T	.07	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	....	....	....	....	....	....	....	....	....	....	.07
Pella	...	.02	....	....	....	....	....	...	....	....	....	....	....	....	....	....	....	....	....	....	.44	....	.05	....	....	....	....	.30	.05	....	....	.86
Perry		.10	....		....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	.30	....	.05	..	....	....	....	....	....	....	....	.45
Plover	.05	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.10	....	....	....	....	....	....	....	....	.15
Pocahontas	.18	....	....	....	..	....	...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.08	....	....	....	....	....	....	....	.21
Red Oak	....	.06	....	..		....		..	..	....	....	....	....	....	....	....	....	....	....	T	T		T	....	....	....	....	....	....	....	....	.06
Ridgeway	...	.03	.01	.01	...	...	....	....	....	....	..	....	T	....	....	....	....	....	....	.09	.66	....	....	....	....	....	....	.44	T	.02	.01	1.27
Rock Rapids	..	.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	....	....	....	....	....	....	....	....	....	T
Rockwell City	....	....	....	.05	....	...	....	.	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.05
Sac City	.02	....	....	....	..		....	....	..	....	....	....	....	....	....	....	....	....	....	.02	.33	...	.10	....	....	....	....	.02	....	....	....	.17
St. Charles	...	.05	....	..	...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	....	.10	T	....	....	....	....	....	....	....	.52
Sheldon	T	....	...	....	..	..	..	....	....	..	....	..	..	....	....	....	....	....	....	....	....	T	.17	....	....	....	....	....	....	....	....	.10
Sibley	....																															.17

DAILY AND MONTHLY PRECIPITATION FOR DECEMBER, 1905--Continued.

STATIONS.	DAY OF MONTH.																													TOTAL.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Sidney	....	.15	....	..	...	....	....	....	....	....	....	....	....	....	....	....	....	..	...	....	....	T	...	..	....	....	....	....	....	....	...	.15
Sigourney	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	..	....	.50	....	.08	..	....	....	....	.50	....	....	.	1.08
Sioux Center	T	....	....	....	....	....	....	....	....	....	....	....		....	....	....	....	....	....	....	.05	.10	.10	....	....	....	..		..	....	....	.25
Sioux City	.06	T	....	....	..	..	....	..	....	....	....	....	....	....	....	....	....	....	....	....	.01	..	T		....	....	....	....	....	....	....	.07
Stockport	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..	....	....	.10	.10	....	.03	....	....	....	....	.85	.05	....	....	.63
Storm Lake	....	.06	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....		.20	T	....	....	....	....	....	....	....	.26
Thurman	.10	....	.	...	....	....	....	....	....	..	...	...	....	.	....	.	....	....	....	..	T	....	...	....	....	....	..	...	...	....	....	.10
Tipton	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	..	....	....	.41	....	T	....	....	....	....	....	.52	....	....	.93
Vinton	....	.05	....	....	..	...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.30	....	....	....	..	....	.33	....	....	....	....	.68
Wapello	T	....	....	....	....	....	....	.	....	....	..	....	....	....	....	....	....	....	....	....	.46	....	T		....	....	....	.47	.30	....	..	1.23
Washington	....	T	....	....	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	.45	..	....		....	....	..	.33	.27	....	....	1.05
Washta	T	....	....	....	....	...	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	....	.10	....	....	....	....	....		..	..	.10
Waterloo	....	T	....	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	T	..	.42	....	.02	....	....	....	..	.29	....	....	....	.73
Waukee	....	.05	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.50	..	.20	..	....	....	....	.10	....	....	....	.85
Waverly	....	.08	....	T	.08	....	....	....	....	....	....	....	....	....	..	....	....	....	T	....	.45	....	T	..	....	....	....	.30		..	..	.81
West Bend	...	.05	..	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	....	.10	T	....	....	..	....		....		.15
Whitten	....	T	T	....	....	....	....	....	....	..	....		....	....	....	....	....	....	..	....	.40	....	T	....	....	....	....	.20	....	....	....	.60
Wilton Junction	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.47	.03	..	.05	....	..	..	T	.75	.20	....	....	1.50
Winterset	....	.02	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	T	.40	....	.02		....	....	....	.02	....	....	....	.46
Woodburn	....	T	....	...	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	.35	....	T	..	....	....	....	....	.02	..	....	.37
Zearing	....	T	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.36	....	T	..		..	....	.05	....		....	.41

Precipitation Chart December 1905.



APPENDIX.

ANNUAL SUMMARY, 1905.

CLIMATOLOGY OF THE YEAR 1905.

BAROMETER.—The mean pressure for the year was 30.04 inches. The highest observed pressure was 31.09 inches on January 25th ,at Sioux City; lowest pressure, 29.12 inches on January 1st at Keokuk. Range for the state 1.97 inches.

TEMPERATURE.—The mean temperature for the state was 47.3°, which is 0.4° below normal. The highest temperature reported was 104° on August 11th at Waukee. The lowest temperature reported was 41° below zero on Feb. 2nd, at Galva and Ida Grove. Range for the year 145°.

PRECIPITATION.—The average amount of rain and melted snow for the year, as shown by complete records of 107 stations, was 36.51 inches, which is 4.79 inches above the normal, and 7.77 inches above the average amount in 1904. The greatest amount recorded at any station for the year was 52.26 inches at Thurman. Least amount recorded 24.66 inches at Little Sioux. The greatest monthly rainfall was 14.89 inches at Keosauqua in June; least monthly amount, trace at Estherville, Rock Rapids in December. The greatest amount in any 24 consecutive hours was 12.10 inches, at Bonaparte, June 10th. The average number of days on which .01 of an inch or more of rain fell was 97.

WIND AND WEATHER.—The prevailing direction of wind was Northwest. Highest velocity reported, 59 miles an hour, in Sioux City, from the Northwest on May 3rd. Average daily movement, 201 miles. There were 164 clear days, 98 partly cloudy, and 103 cloudy days; as against 164 clear days 97 partly cloudy, and 105 cloudy days in 1904.

CLIMATE AND CROP REVIEW. 1905.

The mean temperature of the year 1905 was 47.3°, which is 0.4° below the normal. The daily average for the year was 1° above the mean of 1904. The average precipitation for the state, 36.51 inches, was 4.79 inches above normal, and 7.77 inches above the average in the preceding year.

January and February were colder than usual, the average for the former being 11.2°, and the latter 12.8°, or nearly 7° below normal. Considerable snow fell, and there was much stormy weather during those months. The fields generally were well covered by snow during the coldest periods, affording protection to winter grain and grasses.

The last week in February was generally moderate, and March was phenomenally warm, the mean temperature for the month being 9.1° above normal. Springlike conditions were continuous, except about 6 days in the second decade. The frost disappeared and the surface dried off rapidly. Much preparatory work was done the first half of the month, and considerable seeding of spring wheat, oats and barley was done in the latter half, Winter wheat, rye and clover showed but little damage from effects of freezing, and fruit buds were apparently unharmed. The season for farm work and growth of vegetation was about a week earlier than the average.

April brought unusually variable temperature, the average for the state being 1.8° below normal. Severe frosts were reported in all districts in every week, causing apprehension for safety of fruit buds. In portions of the southern section excessive moisture retarded plowing and seeding, but in the central and northern districts there was little hindrance to field work. At the close of April the season was somewhat earlier than usual in respect to growth of grass and foliage, and more than the usual amount of plowing and other farm work had been done. And during the last three days of the month corn planting operations were in progress in favored localities. About the usual acreage of oats, spring wheat and barley was sown in April.

The temperature in May was 2.1° below normal, and the rainfall was 1.82 inches above the average. The larger portion of the excess of moisture fell in the northern half of the State, in the first and second decades of the month. Frosts were noted in all districts about the 5th and 26th, and at numerous stations the temperature fell to 32° or below; but the damage to vegetation was light. During the first week in May conditions were generally favorable for preparing the ground and planting corn on the best drained lands. The weather was wet, cool and backward from about the 7th to the 17th, causing delay in planting operations and retarding germination of seed in the ground. The balance of the month was variable, with some more than the average amount of moisture; but fair progress was made in planting, and cultivating the early planted fields. Wheat, oats, barley, rye, meadows and pastures made good growth in May. The average conditions of grain and grasses were nearly normal at the close of the month.

June was about normal in temperature, and the rainfall was 1 inch above the state average. The distribution of rainfall was very unequal, ranging from 1.80 inches at Forest City to 14.89 at Keosauqua. The greatest excess was recorded in the southeast district, and in the northwest counties. The first week was warm and mostly dry, affording ideal conditions for growth of crops and cultivation of corn and potatoes. Some corn planting was done, in localities previously too wet, as late as the 12th to 15th of the month. The rainfall on the 9th and 10th was excessively heavy and destructive in VanBuren and adjoining counties: but the copious showers in other parts of the state were timely and beneficial to all crops. The third week was normal in temperature and amount of sunshine, with conditions favorable for cleaning out the weedy fields, and general farm work. The month closed with a showery period of three to four days. Haying operations were begun somewhat earlier than usual, and the first cutting of clover suffered damage by the wet weather. The corn crop was doing fairly well in the larger part of the state at the end of the month.

The daily mean temperature of July was 3.8° below normal and the rainfall was 1.44 inches below the average of previous years. The first half of the month brought the bulk of the wet weather and conditions were more favorable during the latter half for harvest of hay and grain. The conditions were not altogether favorable in the early part of the month for finishing the cultivation of corn. The fields were not generally clean as could be desired when laid by. The warmest period was from about the 13th to 20th during which corn made

rapid advancement. Spring wheat, rye and barley ripened under favorable conditions, and the work of harvesting was well advanced in the latter half of July. As a whole July was a favorable month. With but little damage from excess or deficiency of moisture. The crops of wheat, oats, barley and rye secured were better in quality and yield than was deemed possible in the early part of the season. At the close of the month corn gave promise of more than an average crop.

August was above normal in temperature and rainfall. The mean temperature, 74.3° was 2.3° above normal, and 3.7° degrees higher than the daily average in July. From the first week to the close of the month the temperature was near or above the normal line. The rainfall was generally timely, and not greatly in excess of local needs in any part of the state, the distribution being more than usually favorable. In the state the average number of clear days was 16, and 9 were partly cloudy, affording ample sunshine to hasten growth of all belated crops. At the close of the month the corn crop was generally in the full roasting ear stage or glazed, giving promise of reaching maturity in advance of the average date of killing frosts. Good progress was made during the month in threshing wheat oats and barley; but in many localities these grain suffered some damage from exposure to showers while in the shock. There was a heavy growth of aftermath in meadows, and the pastures were about as green as in springtime. The potato crop suffered materially from blight. The corn crop was seriously damaged by root worms in fields that had been planted two or more seasons in succession.

September was about 2° above normal in temperature, with a small excess of rainfall. The coldest period of the month was the first decade and the warmest and brightest was the third decade. The distribution of rainfall was quite unequal, more than half the state receiving less than 3.00 inches, the heaviest amounts being recorded in portions of the southwest and northwest districts. During the stormy period from the 14th to the 18th severe windstorms swept over considerable areas in all districts, aggregating over one-third of the state. Corn was prostrated to an unusual extent, resulting in material damages in regions that were most severely storm-swept. The extraordinary weather of the last decade was of inestimable value in bringing to maturity the late planted portion of the corn crop, affording ideal conditions for cutting fodder, threshing grain, putting up second crop of clover, aftermathand wild hay, fall plowing etc. At the close of the month fully 98 per cent of corn was well matured. And most of the corn planted as late as June 15 was well ripened. An increased acreage of winter wheat was sown in September, and made an excellent stand. About the usual acreage of winter rye was sown.

The first decade of October was warm and generally dry and clear, with conditions favorable for ripening all belated crops, and drying out the corn crop preparatory to husking, which was in progress in the latter part of the month. The last decade was also very dry and clear, altogether the month of October was notable for its large percentage of sunshine and agreeable weather. The first killing frosts were reported about the 11th and 12th in all districts, after all crops were well matured. Pastures were green, affording excellent grazing throughout the month. All minor crops, garden truck and fruit were harvested in due season, under favorable co ditions. Except some damage to flattened corn by wet weather from the 15th to 20th, the conditions during October were all that could be desired.

The average temperature in November was 3.2° above normal. There was a large excess of clear or partly cloudy weather, as compared with the average. Conditions were unusually favorable for gathering corn, and all kinds of field work usual to the season. The bulk of the corn crop was husked in good condition for cribbing or shipping. Pasturage was unusually good for grazing stock. Fall wheat and rye were looking well, and much fall plowing was in evidence in all parts of the state.

The closing month of the year was one of the fairest and most agreeable winter months ever known in this section. Altogether the crop season of 1905 will be remembered as one that contributed largely to the prosperity of the state and nation.

ERRATA IN ANNUAL SUMMARY, 1904.

FORT DODGE.—Mean temperature for Feb., recorded 13.4° on page 20, should have been 13.0°. Annual temperature recorded 45.1° on pages 15 and 20, should have been 45.0°.

INDEPENDENCE.—Mean temperature for Feb., recorded 9.8° on page 20, should have been left blank.

OSCEOLA.—Mean temperature for Dec., left blank on page 20, should have been 24.0°.

VINTON.—Mean temperature for Sept., recorded 95.3° on page 20, should have been 65 3°.

ALGONA.—Total precipitation for December recorded 1.27 inches on page 21, should have been 1.37 inches. Annual precipitation recorded 22.76 inches on pages 15 and 21, should have been 26.86 inches.

DAVENPORT.—Total precipitation for June recorded 2 28 inches on page 21, should have been 1.44 inches. Annual precipitation recorded 27 05 inches on pages 15 and 21, should have been 26. 21 inches.

FAYETTE.—Total precipitation for the months of Sept., Oct., Nov., and Dec. left blank on page 21, should have been 6 08 inches, 2.03 inches, Trace and 2.30 inches respectively. Annual precipitation left blank on pages 15 and 21, should have been 32.67 inches.

INDEPENDENCE.—Total precipitation for Feb., recorded 4.0 inch on page 21, should have been .45 inch. Annual precipitation recorded 21.62 inches on pages 15 and 21, should have been 21.67 inches.

OSCEOLA.—Total precipitation for Dec., left blank on page 21, should have been 1.50 inches.

STORM LAKE.—Annual precipitation recorded 24.19 inches on pages 16 and 22, should have been 26.46 inches.

TOLEDO.—Annual precipitation left blank on pages 16 and 22, should have been 22.86.

CLIMATOLOGICAL DATA FOR THE YEAR 1905.

STATION.	COUNTY.	Elevation, feet.	Length of record, years	TEMPERATURE.					PRECIPITATION.							Number rainy days.	SKY.			Prevailing direction of wind.
				Annual mean.	Highest.	Date.	Lowest.	Date.	Length of record, years.	Total for years.	Greatest m'thly.	Month.	Least monthly.	Month.	Total snowfall, unmelted.		No. clear days.	No. partly cloudy days.	No cloudy days.	
Afton	Union	1,212	11	48.9	98	July 16	- 25	Feb. 2	12	39.43	6.12	June	.25	Dec.	31.6	84	....	....	....	SW
Albia	Monroe	957	8	48.0	95	Aug. 10*	- 29	Feb. 13	8	51.45	9.06	June	1.04	Jan.	48.5	113	190	22	153	SW
Algona	Kossuth	1,213	30	45.1	95	July 16	- 31	Feb. 13	33	35.09	7.95	May	.20	Dec.	48.2	97	....	....	....	NW
Allerton	Wayne	.....	....	49.5	97	Aug. 11	- 33	Feb. 13	....	39.73	6.62	Aug.	.61	Dec.	34.7	114	221	62	82	NW
Alta	Buena Vista	1,513	18	45.1	96	Aug. 11	- 33	Feb. 2	15	40.34	8.75	May	.15	Dec.	38.9	115	145	134	86	S, NW
Alta, near	Buena Vista	.....	....	....	....	....	.....	.....	....	39.48	8.22	May	.25	Dec.	32.9	101	....	....	.....	.....
Amana	Iowa	721	27	47.8	94	Aug. 11*	- 32	Feb. 13	30	39.39	7.87	May	.89	Jan.	34.5	113	151	122	92	NW
Ames	Story	926	22	48.0	95	Aug. 11	- 31	Feb. 13	23	29.02	5.51	May	.23	Dec.	20.1	104	166	118	81	.....
Atlantic	Cass	1,164	13	47.6	93	Aug. 11	- 36	Feb. 2	15	40.03	9.23	Sept.	.10	Dec	40.8	74	100	92	173	S
Audubon	Audubon	.....	....	48.8	97	Aug. 11	- 35	Feb. 2	...	37.88	6.19	May	.15	Dec.	36.0	106	113	133	119	NW
Baxter	Jasper	998	6	47.2	95	July 17 / Aug. 11	- 32	Feb. 13	6	40.21	7.22	Aug.	.80	Dec.	36.0	86	160	68	137	NW
Bedford	Taylor	.....	6	48.8	98	Aug 10	- 32	Feb. 13	6	38.09	6.28	May	.15	Dec.	....	951	88	57	120	NW
Belle Plaine	Benton	828	14	46.7	95	June 4 / July 18	- 32	Feb. 13	16	41.35	8.28	May	65	Dec	55 6	108	141	113	111	SE
Bonaparte	Van Buren	.....	12	49.9	96	Aug. 11	- 31	Feb. 13	14	43.19	14.50	June	.79	Jan.	26 5	88	....	....	.....	.....
Boone	Boone	.....	....	47.1	96	Aug 11	- 27	Feb. 2	...	41.59	7.43	May	.41	Dec.	41.1	108	193	60	112	.....
Britt	Hancock	1,236	7	44.7	95	Aug. 11	- 34	Feb. 13	9	31.93	8.10	May	.37	Dec	39.8	115	67	226	72	SW, NW
Buckingham	Tama	.....	6	.....	....	.....	.....	.....	6	37.75	5.83	June	.69	Dec.	35.1	95	....	....	.....	.....
Burlington	Des Moines	544	8	51.2	94	July 18	- 27	Feb. 13	10	38.92	7.67	June	1.00	Jan.	.....	107	204	80	81	S
Carroll	Carroll	1,285	14	46.6	96	July 16 / Aug. 11	- 33	Feb. 2	16	31.56	6.29	May	.27	Dec.	40.4	93	209	40	116	.....
Cedar Rapids	Linn	783	2	47.5	98	July 18	- 27	Feb. 13	23	33.76	8.31	May	.52	Dec.	38.8	113	129	146	90	SW
Chariton	Lucas	1,043	9	48.6	95	Aug. 11	- 28	Feb. 13	11	49.04	9.70	June	.65	Dec.	33.0	76	189	92	84	SE
Charles City	Floyd	1,012	13	43.8	95	July 17 / Aug. 11	- 31	Feb. 2	15	32.72	7.07	May	.61	Dec.	41.7	118	114	126	125	NW
Clarinda	Page	1,069	14	48.7	101	July 16	- 29	Feb. 13*	16	37.10	6.32	May	.19	Dec.	32.9	110	199	48	118	NE
Clear Lake	Cerro Gordo	1,241	7	45.2	98	July 16	- 31	Feb. 13	7	27.86	7.58	May	.30	Jan. / Dec.	26.5	59	....	....	.....	NW
Clinton	Clinton	609	36	48 0	93	July 17	- 27	Feb. 13	33	37.63	5.95	May	.69	Jan.	36.3	101	147	116	102	SW
College Springs	Page	.....	12	49.7	96	July 18	- 30	Feb. 14	14	31.20	7.88	Sept.	.03	Dec.	25.1	76	.....	.....	.....	NW
Columbus Junc.	Louisa	595	4	49.0	94	Aug. 11*	- 28	Feb. 13	5	32.91	6.05	June	.78	Jan.	38.7	100	208	86	41	SE, NW
Corning	Adams	1,127	12	47.9	95	July 16*	- 33	Feb. 13	13	37.74	7.89	Sept.	.20	Dec.	34.8	71	156	135	74	S W
Corydon	Wayne	992	11	49.9	96	Aug. 11	- 31	Feb. 13	13	41.53	9.07	June	.68	Dec.	38 7	103	164	91	110	.....
Cresco	Howard	.....	33	...	93	Aug. 11	- 27	Feb. 2*	30	.....	6.60	May	.....	.....	.....	.....	.....	.....	.....	.....
Cumberland	Cass	.....	....	....	...	.....	.....	.....	7	39.59	8 22	Sept.	.04	Dec.	40.4	68	247	46	72	S, SW
Davenport	Scott	606	33	49.3	94	Aug. 12	- 25	Feb. 13	15	31.54	7.68	June	.63	Jan.	30.3	104	143	108	114	NW
Decorah	Winneshiek	875	10	45.1	98	July 17	- 26	Feb. 2	12	34.77	6.48	May	.91	Jan.	44 0	96	.....	.....	.....	.....
Delaware	Delaware	1,083	13	45 1	95	Aug. 11	- 31	Feb. 13	15	34.80	6.13	May	.74	Jan.	36.4	92	.....	.....	.....	NW
Denison	Crawford	1,180	10	47.1	97	Aug. 11	- 37	Feb. 2	11	25.87	5.53	May	.12	Dec	28.2	93	.....	.....	.....	S
Des Moines	Polk	861	27	48.6	94	Aug. 11	- 26	Feb. 13	27	37.50	5.73	June	.55	Dec.	42,9	120	105	156	105	SW, NW
De Soto	Dallas	886	6	48.3	92	July 16 / Aug. 11	- 32	Feb. 13	6	37.22	5.94	June	.47	Dec.	38.7	93	.....	.....	.....	SW
Dows	Wright	1,142	6	44.8	94	July 16	- 32	Feb. 13	6	37.74	8.15	May	.34	Dec.	50 2	112	167	81	117	NW
Dubuque	Dubuque	655	31	47.5	94	July 17 / Aug. 11	- 25	Peb. 13	33	29.78	4.33	June	.95	Jan.	45.3	119	134	110	121	NW
Earlham	Madison	.....	4	.....	94	Aug. 11	- 29	Feb. 2*	....	.....	6.96	June	.....	.....	.....	.....	.....	.....	.....	.....
Elkader	Clayton	727	23	46.7	101	Aug. 11	- 30	Feb. 15	26	32.91	6.35	May	.81	Jan.	43.0	90	161	135	69	SE
Elliott	Montgomery	.....	...	.....	99	July 16	.....	.....	.....	.....	6.39	Sept.	.....	.....	.....	.....	.....	.....	.....	.....
Estherville	Emmet	1,298	9	...	96	July 16	- 28	Feb. 2*	8	39.19	9.15	May	T	Dec.	35.5	95	.	.....	.	NW
Fayette	Fayette	.....	16	....	94	Aug. 10	- 30	Feb. 13*	16	.....	6.45	May	....	.....	...	...	...	...	...	.....
Florence	Wright	.....	...	.....	....	.....	...	.....	....	33.68	6.96	May	.35	Dec	40.5	97	81	219	65	N, S
Forest City	Winnebago	1,220	10	44.4	97	Aug. 12	- 31	Feb. 13	12	30.90	7.89	May	.30	Dec.	36 5	80	101	29	145	SW
Fort Dodge	Webster	1,126	....	45.7	97	July 16* / Aug. 11	- 28	Feb. 13*	....	33.98	7.63	Aug.	.25	Dec.	29.8	95	203	32	130	S
Fort Madison	Lee	516	53	.....	.....	.....	.....	.....	56	38.80	8.26	June	.94	Mar.	27.0	70	128	93	144	S
Galva	Ida	1,290	10	45 7	94	July 16	- 41	Feb. 2	12	35.17	8.05	May	.08	Dec.	41.2	.	....	.....	.....	S
Gilman	Marshall	1,052	....	....	...	.....	.....	.....	7	.....	5.52	May	.40	Dec.	.....	...	.....	.	.....	S
Glenwood	Mills	.	17	49.8	94	Aug. 11	- 29	Feb. 13	17	31.58	7.50	Sept.	.05	Dec.	24 5	59	79	224	62	SW
Grand Meadow	Clayton	1,080	13	44 7	92	July 16 / Aug. 11	- 29	Feb. 13	15	36.84	8 60	May	.88	Jan.	39.0	101	116	125	124	NW
Greene	Butler	924	7	....	93	Aug 11	- 29	Feb. 13	9	.....	7.51	May	.....	.....	.....	.....	.....	.....	.....	.....
Greenfield	Adair	.....	13	48 5	100	July 16	- 33	Feb. 13	15	42.66	8.74	June	.21	Dec.	35.3	103	215	71	79	S
Grinnell	Poweshiek	1,023	11	....	....	.....	- 26	Feb. 13	....	.....	.....	.....	.....	.....	....	...	...	.....	.....	SW
Grinnell, near	Poweshiek	.....	..	.....	95	Aug. 11	.....	.....	....	.....	.....	.....	.....	.....	....	.....	151	108	106	SW
Grundy Center	Grundy	976	13	46.0	94	July 17 / Aug. 11	- 34	Feb. 13	15	37.57	6.82	May	.71	Dec.	55.3	106	151	94	120	NW
Guthrie Center	Guthrie	1,077	8	43.0	98	Aug. 8	- 32	Feb. 2	10	35.70	5.61	June	.74	Jan.	.....	116	227	67	71	NW
Hampton	Franklin	1,155	14	46.5	99	Aug. 11	- 30	Feb. 13	16	37.56	8.50	May	.57	Dec.	47.3	95	99	204	62	NW
Hanlontown	Worth	.....	....	43 8	98	Aug. 11	- 31	Feb. 13	....	37.28	10 83	May	.40	Dec.	42 7	100	184	71	110	NW
Harlan	Shelby	1,192	7	47.0	95	July 16	- 37	Feb. 2*	7	32.84	4.70	Aug.	.05	Dec.	30.2	100	107	159	99	NW
Hopeville	Clarke	.....	13	....	....	.....	- 30	Feb. 13	15	.....	5.68	Sept.	.18	Dec.	....	....	....	....	.....	.....
Humboldt	Humboldt	1,095	12	46.1	96	July 17	- 32	Feb. 2	17	31.89	7.04	May	.10	Dec.	.....	84	191	81	93	NW
Ida Grove	Ida	1,220	....	.....	97	July 16*	- 41	Feb. 2	....	.....	6.36	May	T	Dec.	.....	.	....	...	..	.....
Independence	Buchanan	921	40	....	96	July 18	- 29	Feb. 13	33	.....	7.44	May	.93	Dec	52.8	.	....	.....	....	.....
Indianola	Warren	969	13	48.6	95	July 16* / Aug. 11	- 28	Feb. 2	11	40 39	6.98	June	.66	Dec.	39 9	108	.	.....	.....	.....
Inwood	Lyon	.....	....	.....	100	July 16	- 34	Feb. 2	...	.....	9.92	June	.....	.....	.....	.....	.....	.....	.....	.....
Iowa City	Johnson	685	45	47.0	96	Aug. 10	- 32	Feb. 13	43	37.88	6.68	June	1.04	Dec.	46.3	104	159	42	164	N
Iowa Falls	Hardin	1,117	11	44.7	95	Aug. 11	- 32	Feb. 13	13	32.52	7.73	May	.47	Dec.	43.5	107	172	65	128	NW
Keokuk	Lee	619	33	52.0	94	June 18 / July 18 / Aug. 11	- 27	Feb. 13	34	33 31	6.57	June	.60	Jan.	19 5	109	176	89	100	S W
Keosauqua	Van Buren	664	12	49.3	98	Aug. 11	- 28	Feb. 13	14	41.71	14.89	June	.78	Jan.	27.0	110	96	115	154	.....
Knoxville	Marion	.....	11	.....	....	.....	- 26	Feb. 13	8	.....	8.72	June	.85	Dec.	31.3	.....	.	.....	....	SW
Lacona	Warren	.....	....	.....	....	.....	.....	....	7	49.76	8.85	June	.92	Dec	.....	112	92	203	70	.....
Larrabee	Cherokee	1,866	15	46,3	99	July 17	- 36	Feb. 2	16	35 59	7 60	May	.17	Dec.	39.9	89	.....	...	.....	SW
Le Claire	Scott	576	....	.....	....	.....	.....	....	....	32.67	6.37	June	.79	Jan.	.....	96	.....	.....	.....	S
Le Mars	Plymouth	1,224	8	46.3	97	July 16 / Aug. 10	- 35	Feb. 2	10	39.97	8.87	May	.10	Dec.	23.7	70	157	135	73	S
Lenox	Taylor	1,250	9	48.4	95	July 16	- 37	Feb. 13	11	37.23	6.73	Sept.	.18	Dec.	23.0	92	216	87	62	N W
Leon	Decatur	1,120	..	49.6	94	Aug. 10	- 28	Feb. 13	....	40.51	5.49	Apr.	.39	Dec.	34.4	106	211	50	104	S
Little Sioux	Harrison	.....	....	49.2	98	Aug. 11	- 38	Feb. 2	..	24.66	4.64	Sept.	.05	Dec.	28 2	91	180	98	87	SE, NW
Logan	Harrison	928	37	48.7	97	July 16 / Aug 11	- 34	Feb. 2	6	33.92	6.52	Sept.	.20	Dec.	39.0	82	115	181	69	NW
Maquoketa	Jackson	688	11	45.8	97	Aug. 12	- 31	Feb. 13	13	36.85	5.78	May	.63	Jan.	43.8	103	194	47	124	NE

CLIMATOLOGICAL DATA FOR THE YEAR 1905—CONTINUED.

STATION.	COUNTY.	Elevation, feet.	Length of record, years	TEMPERATURE. Annual mean.	Highest.	Date.	Lowest.	Date.	PRECIPITATION. Length of record, years.	Total for year.	Greatest m'thly.	Month.	Least monthly.	Month.	Total snowfall, unmelted.	Number rainy days.	SKY. No. clear days.	No. partly cloudy days.	No. cloudy days.	Prevailing direction of wind.
Marshalltown ..	Marshall	947	11	47.0	103	Aug. 11	- 30	Feb. 13	12	37.64	6.11	May	.56	Dec.	38 1	121	156	40	169	NW
Mason City	Cerro Gordo..	1,132	..	45.7	98	Aug. 16*	- 27	Feb. 13	..	34.22	8.19	May	.45	Dec.	88.2	81	122	160	83	N,SW,NW
Massena	Cass.	.....	..	....	102	Aug. 11	- 31	Feb. 2	..	.....	7.57	Sept.	....	.....	....	...	...	...	...	.....
Monticello.....	Jones	.....	..	....	98	July 15	....	.....	..	.....	5.57	May	...	.....	....	..	...	...	...	.....
Mount Ayr.....	Ringgold	1,236	10	50.1	97	Aug. 9*	- 28	Feb, 13	12	45.98	7.00	June	.33	Dec.	89.7	105	...	...	...	SW
Mount Pleasant	Henry	729	22	49.6	97	July 17	- 27	Feb. 13	12	40.53	10.06	June	.88	Jan.	34.1	105	178	98	91	SW
Mount Vernon.	Linn	847	37	47.8	98	Aug. 11	- 30	Feb. 13	10	29.01	5.41	May	.90	Nov.	57.1	108	176	80	109	.....
Muscatine	Muscatine	.....	..	....	..	.....	....	.....	..	32.49	4.59	July	.93	Jan.	31.0	109	...	...	...	S
New Hampton .	Chickasaw ...	1,169	6	....	96	July 17 / Aug. 11	- 32	Feb. 13	9	....	7.35	May	.47	Jan.	....	...	...	...	...	.....
Newton.....	Jasper	944	16	...	94	July 16*	- 34	Feb. 13	16	.	8.25	May	....	.....	....	...	...	...	...	.....
Northwood....	Worth	1,222	8	44.2	96	Aug. 11	- 28	Feb. 2*	10	32.39	7.89	May	56	Dec.	55.0	111	133	136	96	NW
Odebolt	Sac..... ...	1,356	7	47.2	100	Aug. 11	- 34	Feb 2	8	32.54	6.92	May	.06	Dec.	....	77	227	64	74	.....
Ogden.....	Boone	1,088	10	....	95	July 16* / Aug. 11	- 32	Feb. 2	11	34.56	6.85	June	.50	Dec.	34.6	89	176	96	93	NW
Olin	Jones.	760	7	47.1	94	Aug. 12	- 28	Feb. 13	7	37.00	6.37	May	.85	Jan.	46.8	80	...	...	...	NW
Omaha, Neb....	Douglas	1,113	34	50.8	95	July 16	- 25	Feb. 2	35	29.88	5.94	Sept.	.14	Dec.	35.8	104	117	105	143	N, S
Onawa	Monona.....	1,053	6	49.6	93	July 16 / Aug. 10	- 30	Feb. 2	6	32.33	7.57	May	.10	Dec.	34.4	113	246	49	70	NW
Osage	Mitchell.	1,184	13	44.6	96	July 16* / Aug. 11	- 28	Feb. 2	18	31.78	7.42	May	.55	Dec.	39.6	112	137	88	140	NW
Oskaloosa.....	Mahaska ..	843	20	48.8	94	Aug. 11	- 31	Feb. 13	28	35.41	6 72	June	.73	Jan.	36.0	104	209	11	145	SW
Ottumwa.....	Wapello	649	10	....	99	Aug. 11	- 24	Feb. 2*	12	.....	6.86	Aug.	.85	Jan.	....	...	...	...	...	.....
Pacific Junction	Mills	960	7	48.7	96	July 16	- 37	Feb. 13	7	33.40	8.13	Sept.	.07	Dec.	....	93	164	134	67	S
Perry	Dallas.....	975	..	....	95	July 16 / Aug. 11	- 33	Feb. 13	..	....	6.97	June	.45	Dec.	....	...	...	...	...	.....
Plover	Pocahontas...	1,190	7	45.4	95	July 16* / Aug. 11	- 35	Feb. 13	9	.....	8.47	Aug.	.15	Dec.	38.8	...	...	...	...	....
Pocahontas.	Pocahontas...	.....	..	46.0	98	Aug. 11	- 30	Feb. 13	..	39.86	8.04	May	.21	Dec.	36.5	85	164	107	94	NW
Red Oak	Montgomery .	1,033	9	51.0	100	June 9	- 26	Feb. 13	9	34.95	8.26	Sept.	.06	Dec.	28.8	91	186	94	85	NW
Ridgeway	Winneshiek ..	1,215	8	46.8	97	Aug. 11	- 28	Feb. 13	8	36.93	6.88	May	1.27	Dec.	42.3	138	159	150	56	S
Rock Rapids....	Lyon	.....	..	45.6	96	July 16 / Aug. 10	- 33	Feb. 2	..	36.63	9.17	June	T	Dec.	35.5	59	...	...	...	.....
Rockwell City..	Calhoun	.....	9	46.7	95	July 18 / Aug. 11*	- 32	Feb. 12	10	35.22	7.05	May	.05	Dec.	36.0	70	215	57	93	.....
Sac City...	Sac	1,278	24	46.1	93	July 16 / Aug. 11	- 28	Feb. 2	30	.....	6.55	May	.17	Dec.	....	...	...	...	...	.....
Saint Charles..	Madison ...	1,070	4	49.6	95	Aug. 10	- 27	Feb. 13	5	36.71	6.63	July	.52	Dec.	39.2	120	189	89	87	NW
Sheldon.....	O'Brien	.....	6	46.1	100	July 16	- 35	Feb. 2	6	36.45	8.60	May	.10	Dec.	42.4	95	195	73	97	S
Sibley.....	Osceola	1,512	10	43.1	95	July 16	- 36	Feb. 2	12	37.46	7.96	May	.17	Dec.	29.6	108	191	84	140	NW
Sidney	Fremont	.....	..	....	96	July 16*	- ..	.....	..	.....	9.64	Sept.	.15	Dec.	..	...	...	...	...	.....
Sigourney ...	Keokuk	787	7	49.5	96	Aug. 11	- 30	Feb. 13	10	40.38	7.48	June	1.06	Dec.		...	...	...	...	NW
Sioux Center...	Sioux.	.....	7	45.2	96	July 16	- 32	Feb. 2	7	33.56	8.87	June	.25	Dec.	35.0	84	172	69	124	S
Sioux City.....	Woodbury....	1,165	15	47.2	100	July 16	- 30	Feb. 2	17	31 66	6.41	May	.07	Dec.	29 8	102	124	106	135	NW
Stockport.....	Van Buren ...	.....	..	....	93	Aug. 11	- 26	Feb. 13	4	40.81	14.57	June	.63	Dec.	32.5	101	...	...	...	NW
Storm Lake.....	Buena Vista..	1,440	9	44.1	95	July 16 / Aug. 11	- 34	Feb. 2*	17	33.18	7.50	May	.26	Dec	36.0	90	183	24	158	NW
Thurman.....	Fremont	.....	8	49 6	96	June 9	- 37	Feb. 13	9	52.26	13 18	Sept.	.10	Dec.	....	79	153	119	93	SW
Tipton	Cedar	807	8	49.6	98	Aug. 12	- 24	Feb. 13	8	.....	5.92	June	.93	Dec.	....	...	...	...	...	.....
Toledo	Tama	856	10	47.2	95	Aug. 12	- 28	Feb. 2*	11	38.09	5 90	May	.20	Dec.	48.3	98	153	121	91	NW
Vinton.....	Benton.....	810	14	....	93	July 17 / Aug. 12	- 30	Feb. 13	16	.....	.....	.....	.....	.....	39.6	...	...	...	...	.....
Wapello,.....	Louisa	588	6	....	93	July 18 / Aug. 11	- 22	Feb. 13	8	. .	46.7	June	.72	Jan.	....	...	...	...	...	.....
Washington	Washington ..	769	22	48.8	93	Aug. 11	- 29	Feb. 13	15	37.00	5.58	Aug.	.82	Jan.	....	84	...	...	...	SW
Washta	Cherokee . ..	1,157	..	....	99	Aug. 11	....	.....	8	30 80	6.83	May	.10	Dec.	27.2	67	200	82	83	S
Waterloo	Black Hawk ..	862	17	46.7	99	Aug. 11	- 27	Feb. 13	25	36.41	5 66	May	.73	Dec	34.7	108	186	133	96	NW
Waukee.....	Dallas	1,039	..	49.1	104	Aug. 11	- 32	Feb. 2	..	41.37	7.31	June	.85	Dec.	55.4	111	153	120	89	NW
Waverly	Bremer	942	8	45.2	94	Aug. 11	- 28	Feb. 13*	10	36.60	6.80	May	.81	Dec.	46.5	129	...	...	...	NW
Webster City...	Hamilton	.....	..	....	99	July 17	....	.....	..	.....	6.96	May	.30	Dec.	....	...	...	...	...	.....
West Bend.....	Palo Alto	1,197	10	45.3	94	July 16	- 32	Feb. 13	12	36.52	6.60	May	.15	Dec.	44 0	87	...	...	...	.....
Whitten	Hardin.....	1,036	6	46.0	96	July 16	- 33	Feb. 13	8	.....	6.66	May	.60	Dec.	49.0	...	...	...	...	.....
Wilton Junct'n.	Muscatine ...	683	9	48 6	96	July 16	- 33	Feb. 13	11	41.82	6.57	June	.74	Jan.	48.5	76	185	40	140	NW
Winterset.....	Madison	1,129	13	48.2	95	July 16	- 29	Feb. 2	15	. .	6.24	June	.46	Dec.	....	...	178	93	94	.....
Woodburn	Clarke	961	..	....	94	Aug. 5	- 30	Feb. 13	7	43 65	6.80	June	.87	Dec.	37.6	91	186	80	99	SW
Zearing..... ..	Story	.....	..	46.4	95	Aug. 11	- 35	Feb. 13	..	33 81	6.75	May	.41	Dec.	37.0	85	192	82	91	NW
Average	....	.....	..	47.3	..	.....	.....	.....	..	36.51	.....	.....	.....	.....	....	97	164	98	103	NW
Extr'mes & date	....	.....	..	....	104	Aug. 11	- 41	Feb. 2	..	.....	14.89	June	T	Dec.	....	...	...	...	...	.....

* And other dates.

MONTHLY MAXIMUM AND MINIMUM TEMPERATURES FOR 1905 WITH DATES.

STATIONS.		Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
		Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.
Afton	Max	48	1	62	28	78	27	84	9	87	29	93	18	93	16	94	* 5	88	* 1	87	5	61	*18	51	12
	Min	-17	25	-25	* 2	10	11	23	16	34	5	48	* 1	50	10	54	26	47	*20	20	28	0	30	- 1	* 4
Albia	Max	49	1	64	28	80	27	84	9	85	29	92	18	94	*12	95	*10	90	1	85	4	65	13	56	11
	Min	-14	*24	-29	13	10	11	25	* 7	38	* 1	50	1	53	*24	52	26	47	* 5	21	29	3	30	- 3	24
Algona	Max	39	4	50	28	76	31	76	* 1	80	8	91	4	95	16	94	10	84	27	82	4	60	*11	47	* 6
	Min	-20	25	-31	13	2	11	14	14	32	26	42	22	48	25	52	20	42	23	21	28	- 5	30	- 5	4
Allerton	Max	48	1	64	28	79	27	84	9	84	29	91	18	94	*16	97	11	93	1	86	5	66	13	57	11
	Min	-15	25	-33	13	9	11	20	15	36	5	50	1	49	24	54	26	48	* 4	22	*28	2	30	- 2	24
Alta	Max	44	4	59	28	78	27	79	8	80	1	90	* 4	95	16	96	11	84	*11	85	4	61	11	49	26
	Min	-26	25	-33	2	7	11	17	14	32	* 8	42	22	49	* 9	55	19	44	4	20	28	- 4	30	- 4	4
Amana	Max	45	1	48	28	70	29	80	9	83	29	91	* 4	93	*17	94	*11	90	1	82	4	60	*17	50	*7
	Min	-15	*26	-32	13	9	11	25	6	36	7	49	27	52	24	47	26	45	23	21	31	6	30	- 5	24
Ames	Max	47	1	61	28	76	27	77	1	80	1	91	* 4	93	*16	95	11	88	27	84	4	63	12	57	10
	Min	-18	31	-31	13	7	11	20	14	35	5	46	22	49	*10	52	26	43	23	20	28	- 1	30	4	* 8
Atlantic	Max	46	1	66	28	78	3	85	9	84	1	94	* 4	97	*17	98	11	89	27	85	* 4	62	*16	55	11
	Min	-26	14	-36	2	11	11	15	17	31	26	44	22	42	24	50	7	40	4	18	28	1	30	- 8	4
Audubon	Max	44	1	62	28	78	27	81	8	83	1	93	* 4	96	16	97	11	87	27	85	* 4	62	12	53	11
	Min	-24	14	-35	2	9	11	15	31	26	41	8	45	24	50	9	41	23	18	28	0	30	- 5	4	
Baxter	Max	44	1	58	28	76	27	78	9	82	29	90	* 4	95	17	95	11	86	27	82	4	67	16	53	11
	Min	-17	*10	-32	13	6	11	20	14	35	5	42	23	50	*10	52	*16	44	23	18	28	0	30	- 2	4
Bedford	Max	50	1	68	28	77	27	86	9	79	1	90	*15	95	16	96	10	93	1	85	5	62	16	51	6
	Min	-19	25	-32	13	12	11	19	17	33	5	49	22	47	24	56	20	45	4	18	31	1	30	- 4	4
Belle Plaine	Max	45	1	47	28	67	*22	72	1	83	29	95	4	95	18	94	12	88	1	80	* 4	70	4	49	11
	Min	-18	14	-32	13	8	11	21	14	37	5	48	22	52	*24	56	27	48	23	20	31	6	30	- 6	24
Bonaparte	Max	51	1	62	28	77	27	84	9	85	29	94	18	93	18	96	11	93	1	86	4	68	*13	57	11
	Min	-11	*14	-31	13	13	11	25	15	38	* 7	50	* 1	50	25	53	26	47	*19	23	28	6	30	- 3	24
Boone	Max	44	1	60	28	74	27	77	8	80	1	92	4	95	17	96	11	87	27	85	4	63	12	53	11
	Min	-16	25	-27	2	9	11	20	14	36	5	47	22	51	7	55	26	47	23	21	28	- 1	30	- 1	4
Britt	Max	39	1	47	23	75	31	75	* 1	80	3	92	4	94	*16	95	11	85	*11	85	4	63	*11	47	* 6
	Min	-21	30	-34	13	2	11	13	14	31	26	42	22	46	25	50	8	40	23	19	28	- 7	30	- 7	4
Burlington	Max	54	1	61	28	75	27	83	9	85	* 4	93	* 6	94	18	93	* 5	93	1	87	5	70	13	55	* 7
	Min	-10	*14	-27	13	12	11	26	7	40	12	52	* 8	53	24	57	26	48	23	25	28	8	30	3	24
Carroll	Max	46	1	66	28	80	27	83	8	83	1	95	4	96	16	96	11	85	27	84	4	64	*11	54	11
	Min	-20	25	-33	2	7	11	13	14	31	26	43	22	46	*10	50	26	42	23	18	28	- 1	30	- 6	4
Cedar Rapids	Max	44	1	50	28	71	27	81	9	82	* 5	94	4	98	18	97	11	92	1	87	4	60	*12	52	7
	Min	-12	*14	-27	13	10	12	28	7	38	1	49	27	54	*24	53	26	46	23	23	29	7	30	-10	24
Chariton	Max	47	1	64	28	77	* 5	83	9	83	29	90	* 5	93	18	95	11	91	1	85	5	65	13	53	6
	Min	-15	25	-28	13	9	11	24	* 7	35	5	50	* 1	50	24	53	26	47	*20	20	31	3	30	- 5	24
Charles City	Max	37	1	43	28	70	31	72	1	78	3	91	4	95	17	95	11	85	27	85	4	64	11	51	6
	Min	-24	30	-31	2	4	11	18	14	54	26	45	22	50	10	52	25	41	23	20	28	0	30	- 7	24
Clarinda	Max	48	1	68	28	79	* 3	90	9	84	1	96	18	101	16	100	11	94	1	89	4	65	*12	56	11
	Min	-19	*25	-29	*18	14	*11	18	16	33	5	48	22	49	24	57	* 7	45	20	21	31	3	30	- 2	4
Clear Lake	Max	41	1	..	..	66	27	72	* 1	84	31	91	4	98	16	95	11	82	28	85	4	57	12	44	* 6
	Min	-20	25	-31	13	5	11	18	14	37	* 5	45	22	50	* 9	54	26	47	*13	20	28	- 5	30	- 1	24
Clinton	Max	48	1	49	28	78	28	80	28	87	3	94	5	96	17	95	11	91	1	83	4	61	23	52	8
	Min	-10	10	-27	13	10	11	25	6	35	7	43	1	48	25	51	*20	41	5	20	*29	9	30	1	24
College Springs	Max	47	1	62	28	80	3	87	9	92	1	92	9	96	18	94	* 5	88	1	82	* 4	63	*13	52	11
	Min	-20	25	-30	14	..	..	22	17	35	5	50	22	50	24	59	26	45	4	23	31	4	30	3	8
Columbus Junction	Max	51	1	55	28	76	31	78	1	84	29	92	* 4	93	17	94	*11	91	1	84	4	63	*17	54	7
	Min	-11	14	-28	13	11	11	24	16	35	18	50	* 3	53	24	52	28	48	26	23	28	7	30	- 2	24
Corning	Max	45	1	63	28	76	26	83	9	81	1	92	5	95	*16	92	*10	88	1	83	4	70	17	52	11
	Min	-19	*14	-32	13	11	11	18	17	34	* 5	43	27	44	24	55	7	45	4	21	31	1	30	- 3	4
Corydon	Max	48	1	66	28	80	27	84	* 9	84	29	89	5	92	*16	96	11	92	1	88	5	67	13	57	11
	Min,	-15	25	-31	13	9	11	22	15	36	5	51	8	51	24	55	*26	49	* 4	21	*28	2	30	- 3	24
Cresco	Max	39	1	42	28	67	31	67	24	78	3	88	4	93	16	93	11	82	*27	84	4	..	..	..	..
	Min	-17	*10	-.7	* 2	2	11	19	14	34	26	44	22	50	24	51	25	43	14	19	29	..	..	..	..
Creston	Max	..	..	..	..	..	..	82	9	79	1	90	* 5	94	16	93	11	86	1	84	3	62	13	52	11
	Min	..	..	..	..	..	..	23	*15	35	5	48	28	48	7	58	26	48	* 4	22	31	1	30	-1	3
Davenport	Max	51	1	52	28	73	31	82	9	84	29	91	4	93	17	94	12	92	1	84	4	62	28	53	8
	Min	- 9	14	-25	13	14	11	28	16	43	26	49	27	54	24	55	26	50	25	25	28	10	30	3	24
Decorah	Max	34	1	47	28	72	31	20	14	33	3	89	5	98	17	94	11	83	*27	82	4	62	*11	47	* 6
	Min	-20	30	-26	2	4	11	20	14	33	7	45	8	48	25	49	26	42	23	16	28	2	30	- 8	24
Delaware	Max	42	1	45	28	68	28	71	* 1	80	3	91	4	92	17	95	11	85	1	80	4	58	12	48	7
	Min	-15	*10	-31	13	4	11	21	* 7	36	* 5	42	27	47	25	49	26	44	*20	20	*28	3	30	- 5	24
Denison	Max	46	* 1	64	28	81	27	81	8	83	1	91	4	95	17	97	11	89	27	87	4	64	3	54	11
	Min	-24	14	-37	2	3	11	13	*14	26	4	40	22	45	10	50	7	41	* 4	18	*28	- 1	30	- 6	4
Des Moines	Max	45	1	63	28	77	27	82	9	80	29	90	4	94	16	94	11	88	27	85	4	64	12	57	11
	Min	-15	25	-26	13	11	11	21	16	38	5	51	27	54	25	58	26	50	23	24	31	3	30	1	24
De Soto	Max	43	1	64	28	77	27	84	9	82	10	90	18	92	16	92	11	89	27	87	4	65	12	57	11
	Min	-19	25	-32	13	10	11	23	14	35	5	49	22	52	9	57	26	46	23	20	*28	0	30	- 5	5
Dows	Max	40	1	49	28	72	27	75	1	79	1	91	4	94	16	93	11	86	27	86	4	63	11	51	6
	Min	-19	*14	-32	13	5	11	14	14	31	26	39	23	46	25	49	26	40	23	20	*28	- 3	30	- 7	24
Dubuque	Max	44	1	49	28	73	28	73	9	80	3	91	4	94	17	94	11	87	27	83	4	63	11	52	7
	Min	-12	30	-25	13	8	11	29	7	40	9	49	3	52	25	57	26	49	23	23	29	7	30	- 1	24
Earlham	Max	44	1	63	28	78	3	80	9	80	29	90	18	92	*16	94	11	87	1	84	4	63	12	..	..
	Min	-17	*25	-29	* 2	13	10	19	17	31	5	43	8	47	24	50	27	40	24	17	28	7	29	..	..
Elkader	Max	38	1	51	28	70	27	76	9	84	3	95	4	98	*17	101	11	90	27	88	4	67	12	56	7
	Min	-21	30	-30	15	2	11	20	14	33	7	45	* 8	46	25	50	*25	39	23	16	29	4	30	-10	31
Elliott	Max	..	..	..	..	81	3	87	9	87	31	95	* 2	99	*16	98	10	89	1	81	5	61	*13	51	11
	Min	..	..	..	..	13	11	18	7	32	5	46	22	45	24	58	*20	44	4	22	*28	3	30	- 5	4
Estherville	Max	42	1	55	28	74	*27	76	1	79	* 1	91	4	96	16	95	10	85	11	88	* 4	63	11	52	26
	Min	-21	25	-28	* 2	2	11	15	14	31	26	40	22	46	25	54	20	42	* 5	..	..	-12	30	- 8	4
Fayette	Max	38	1	46	28	70	*27	74	1	80	3	91	4	93	17	94	10	87	27	83	4	..	..	..	..
	Min	-24	30	-30	*18	1	11	18	14	31	7	42	8	42	25	48	24	37	23	14	29	..	..	..	..
Forest City	Max	40	1	46	*23	74	31	78	8	80	3	91	4	96	16	97	12	88	*28	92	4	64	12	48	6
	Min	-19	25	-31	13	3	11	15	14	34	* 5	43	22	49	24	52	26	42	23	20	28	- 4	30	- 7	4
Fort Dodge	Max	41	* 1	58	28	75	27	78	8	82	1	92	4	97	*16	97	11	86	*27	87	4	63	11	50	6
	Min	-18	*25	-28	*13	8	11	14	14	35	* 1	44	22	49	25	55	*10	44	*29	22	28	- 2	30	- 3	4
Galva	Max	45	4	59	28	80	27	80	1	81	1	88	* 4	94	16	93	11	84	27	82	4	60	*11	50	11
	Min	-27	25	-41	2	8	11	14	14	30	26	38	22	48	10	49	7	42	4	18	28	- 3	30	- 4	4
Glenwood	Max	54	1	69	28	81	27	85	9	88	3	92	* 4	93	*16	97	11	86	27	85	4	65	15	54	11
	Min	-20	25	-29	13	13	11	22	17	32	28	44	22	50	*11	59	7	45	4	23	*28	2	30	- 2	4
Grand Meadow	Max	38	1	46	28	70	*28	70	* 9	77	31	89	* 4	92	*16	92	11	83	29	78	* 4	58	*11	45	* 7
	Min	-18	10	-29	13	1	11	18	14	36	* 5	46	23	50	24	52	25	45	*23	20	*28	1	30	- 5	24
Greene	Max	37	1	46	28	70	31	74	1	81	3	93	4	97	*16	98	11	86	27	85	4	..	..	..	..
	Min	-18	13	-29	13	6	11	14	14	33	26	44	22	49	*10	51	26	42	23	21	28	..	..	..	..
Greenfield	Max	45	1	63	28	78	27	85	9	84	10	97	4	100	16	97	12	87	1	85	4	63	13	51	11
	Min	-20	25	-33	13	7	11	19	15	32	5	45	21	47	24	54	2	44	4	20	31	- 2	30	- 4	4
Grinnell	Max	45	1	53	28	74	27	77	9	82	29	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Min	-15	25	-26	13	7	11	22	*14	38	26	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Grinnell (near)	Max	..	..	..	..	..	..	..	..	..	..	91	* 4	93	*17	95	11	90	1	84	4	61	17	52	* 6
	Min	..	..	..	..	..	..	..	..	..	..	47	22	49	24	52	26	45	23	19	28	0	30	- 4	24
Grundy Center	Max	38	1	48	28	74	27	76	1	80	3	91	4	94	17	94	11	87	27	83	4	62	11	51	6
	Min	-17	26	-34	13	5	11	18	14	33	26	45	22	49	24	50	26	42	23	20	*28	0	30	- 8	24
Guthrie Center	Max	48	5	62	28	78	27	78	* 1	82	1	92	* 4	96	16	94	26	87	27	83	4	65	12	53	11
	Min	-20	25	-32	2	8	11	21	14	33	26	46	* 8	49	*10	54	* 7	43	28	18	28	- 1	30	- 4	4

MONTHLY MAXIMUM AND MINIMUM TEMPERATURES WITH DATES FOR 1905—CONTINUED.

STATIONS.		Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
		Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.
Hampton	Max	41	1	50	28	72	31	78	1	80	* 1	95	4	97	*16	99	11	91	27	91	4	66	11	54	6
	Min	-17	25	-30	13	4	11	19	14	35	* 5	45	22	50	*24	53	26	45	23	22	28	- 1	30	- 2	4
Hanlontown	Max	39	1	47	*21	73	31	74	8	79	* 1	88	4	94	*16	98	11	84	*11	87	4	64	11	47	*11
	Min.	-21	30	-31	13	2	11	12	14	32	26	42	* 3	47	25	50	26	38	28	19	28	- 7	30	- 8	4
Harlan	Max	43	* 1	63	28	79	27	79	8	82	1	93	* 4	95	16	94	*10	85	27	83	4	60	12	53	11
	Min.	-24	14	-37	* 2	10	11	19	*14	32	26	44	22	45	24	52	7	41	4	19	*28	0	30	- 6	4
Hopeville	Max	46	1	64	28	77	27	85	9	80	*10	91	18	..	..	97	10	93	1	87	5	64	13	51	11
	Min.	-16	25	-30	13	10	11	24	16	35	5	49	*22	..	..	56	26	49	* 4	22	31	1	30	0	4
Humbolt	Max	45	2	54	28	75	27	76	* 1	82	1	88	13	96	17	94	11	84	27	83	8	60	* 4	48	6
	Min.	-20	*13	-32	2	5	11	15	14	33	26	43	22	48	25	55	25	43	23	20	28	- 2	30	- 4	4
Ida Grove	Max	..	..	60	27	..	..	71	27	83	* 1	93	* 4	97	*16	95	12	83	11	.	..	64	11	50	* 6
	Min	..	..	-41	2	..	..	12	14	33	* 7	46	27	41	9	48	6	38	5	..	..	- 3	30	- 7	4
Independence	Max	36	* 1	48	28	68	*27	73	* 1	78	3	90	4	96	18	..	..	..	..	81	* 4	61	12	50	* 6
	Min	-19	30	-29	13	5	11	19	14	35	* 7	45	22	47	25	..	..	..	..	19	31	3	30	- 4	31
Indianola	Max	49	1	64	28	79	27	85	9	82	29	92	18	95	*16	95	11	91	1	84	4	63	12	56	11
	Min.	-17	25	-28	2	8	11	24	* 7	36	26	48	22	52	24	55	26	47	23	20	28	1	30	- 2	24
Inwood	Max	50	1	62	28	80	27	76	* 1	82	1	92	* 3	100	16	96	9	89	11	94	4	..	..	..	..
	Min.	-30	25	-34	2	12	*11	10	14	29	4	38	21	45	* 9	53	*19	39	4	16	30	..	..	..	..
Iowa City	Max	48	1	55	28	78	*27	85	9	85	*10	94	18	95	*15	96	10	91	1	86	4	62	*11	51	* 7
	Min.	-16	30	-32	13	10	11	24	7	37	7	47	27	52	21	51	26	44	27	21	31	6	30	-10	24
Iowa Falls	Max	32	4	48	28	78	27	77	1	79	3	92	4	94	*16	95	11	85	27	81	* 4	62	11	49	6
	Min	-18	30	-32	13	6	11	19	14	33	26	46	* 8	47	25	49	26	40	23	19	28	0	30	- 6	24
Keokuk	Max	56	1	62	28	78	26	86	9	86	29	94	18	94	18	94	11	92	1	83	5	68	*13	53	7
	Min	-10	24	-27	13	14	11	28	16	43	26	52	27	55	24	56	26	50	26	26	28	8	30	5	24
Keesauqua	Max	52	1	62	28	79	27	80	9	87	*10	95	18	96	18	98	11	94	1	85	4	68	12	56	11
	Min	-10	*10	-28	*13	12	11	25	7	38	7	50	1	56	25	50	26	46	23	23	28	5	30	0	24
Knoxville	Max	48	1	69	20	79	27	84	9	85	29	92	4	..	..	93	11	88	* 1	83	* 4	63	12	56	11
	Min.	-14	25	-26	13	10	11	25	16	37	5	51	* 8	..	..	55	26	48	23	23	*28	3	30	0	24
Larrabee	Max	45	1	59	28	80	27	80	1	84	* 1	98	5	99	17	97	* 4	85	*14	84	* 4	65	17	51	17
	Min.	-29	25	-36	2	3	11	10	14	28	8	39	22	44	24	55	* 7	42	4	22	30	2	*29	- 4	4
Le Mars	Max	45	1	61	23	80	27	78	8	82	1	95	5	97	16	97	10	85	* 1	84	4	64	11	51	17
	Min	-24	26	-35	2	10	11	14	14	32	* 5	41	22	45	24	50	7	41	4	23	*28	- 6	30	- 2	4
Lenox	Max	47	1	63	28	77	27	85	9	80	* 1	92	5	95	16	92	*10	88	1	82	4	62	13	51	11
	Min	-32	25	-37	13	9	11	21	*15	33	5	45	*22	51	9	57	26	45	4	22	31	0	30	- 3	4
Leon	Max	47	1	62	28	77	27	82	9	81	29	92	18	93	*16	94	10	88	1	80	4	64	13	52	11
	Min	-15	25	-28	13	29	13	24	16	37	5	50	22	52	9	55	26	50	* 4	22	31	3	30	- 2	4
Little Sioux	Max	52	4	66	28	83	27	84	8	85	1	94	* 4	97	16	98	11	88	*27	86	* 3	66	11	57	11
	Min	-27	25	-38	2	14	11	14	15	35	8	45	22	47	* 9	51	7	44	4	21	31	- 1	30	- 2	4
Logan	Max	47	4	63	28	80	27	81	8	84	1	95	4	97	*16	97	11	86	27	82	4	62	16	52	11
	Min	-21	25	-34	2	13	11	20	*14	32	5	44	22	46	24	52	7	40	4	19	31	1	30	- 4	4
Maquoketa	Max	43	1	48	28	73	28	80	9	81	3	91	4	94	18	97	12	90	* 1	85	4	64	17	53	7
	Min	-15	*10	-31	13	7	11	24	6	34	7	41	27	44	25	46	26	39	23	16	29	5	30	- 7	24
Marshalltown	Max	41	1	57	28	76	27	79	1	82	3	94	4	97	*16	103	11	90	27	86	4	62	*11	52	11
	Min	-16	*14	-30	13	7	11	21	14	35	26	45	22	49	25	50	26	42	23	19	28	0	30	- 1	* 4
Mason City	Max	38	1	45	28	69	31	71	1	81	3	91	4	98	*16	96	*10	85	27	82	4	3	11	48	6
	Min.	-15	*13	-27	13	8	11	20	14	33	26	45	22	52	9	55	*25	44	23	22	28	62	30	0	4
Massena	Max	44	1	65	28	78	27	84	9	82	* 1	94	*14	100	16	102	1:	91	* 1	..	..	67	*12	..	..
	Min.	-19	25	-31	2	10	11	22	* 7	33	5	47	*22	48	9	52	7	43	* 4	..	..	0	30	..	..
Monticello	Max	..	..	..	..	79	27	.	..	87	24	96	17	98	15	96	12	87	1	85	7	60	*11	54	19
	Min	..	..	..	..	6	11	22	* 6	32	26	44	8	46	25	47	25	40	22	18	30	5	29	-11	*23
Mt. Ayr	Max	50	1	68	28	78	* 3	88	9	87	10	93	15	96	18	97	* 9	96	1	87	5	64	*13	56	11
	Min.	-17	25	-28	13	10	11	22	16	35	5	48	22	51	9	56	26	46	4	20	31	2	30	0	4
Mt. Pleasant	Max	52	1	58	28	75	27	82	9	87	29	94	* 4	97	17	95	9	93	1	83	4	64	13	51	7
	Min	-12	14	-27	13	11	11	25	7	40	*12	48	27	52	24	52	26	48	* 5	22	30	5	30	0	24
Mt. Vernon	Max	44	1	52	28	72	27	83	9	87	10	92	* 4	95	*17	98	11	91	1	86	4	66	12	53	7
	Min.	-17	15	-30	13	6	11	23	7-	35	5	46	27	51	* 6	55	25	45	*20	19	31	5	30	* 7	24
New Hampton	Max	38	1	41	28	70	31	72	1	79	3	90	4	96	17	96	11	..	..	81	7	62	11	48	6
	Min.	-18	*13	-32	13	3	11	19	14	34	7	47	23	51	24	54	26	..	..	20	*28	0	30	- 6	24
Newton	Max	43	1	55	28	71	*27	80	9	80	3	91	3	94	*16	93	11	86	1	82	4	61	11	..	..
	Min.	-18	25	-34	13	7	11	23	14	37	5	50	*23	53	*12	54	26	48	23	18	28	- 1	30	..	..
Northwood	Max	52	1	43	22	65	*27	78	24	80	3	90	4	94	*16	96	11	84	28	84	4	62	11	45	6
	Min	-19	13	-23	* 2	1	11	16	14	34	26	43	*23	49	*24	50	26	42	23	20	28	- 5	30	- 6	24
Odebolt	Max	50	1	60	28	79	27	81	8	83	1	94	4	99	16	100	11	85	29	85	4	61	11	-50	10
	Min.	-25	25	-34	2	8	11	17	14	29	8	43	22	46	10	56	* 7	44	4	20	28	0	30	- 2	4
Ogden	Max	43	1	62	28	75	27	79	8	80	* 1	92	17	95	*16	95	11	88	11	85	4	62	11	52	* 6
	Min.	-18	*14	-32	2	12	11	19	14	34	* 5	..	..	48	24	55	26	46	23	20	28	0	30	- 2	4
Olin	Max	43	1	43	28	69	*28	76	9	82	29	90	5	92	*17	94	12	89	1	80	* 4	..	..	50	* 7
	Min	-17	30	-28	13	10	11	25	* 6	35	7	46	27	..	..	48	26	43	*20	20	31	7	30	9	24
Omaha, Neb	Max	50	4	66	28	82	27	80	9	84	1	93	4	95	16	94	10	88	24	87	4	65	15	54	11
	Min.	-18	25	-25	2	17	11	24	14	38	5	51	22	54	9	62	7	51	4	27	31	4	30	1	3
Onawa	Max	47	1	69	28	84	27	84	8	87	1	95	* 5	98	16	98	10	89	28	88	3	69	* 2	56	11
	Min	-20	25	-30	2	14	11	18	14	35	5	46	23	50	* 9	55	7	44	4	23	31	- 1	30	- 1	3
Osage	Max	38	1	43	28	69	31	72	1	81	3	92	4	96	*16	96	11	85	27	84	4	61	11	46	6
	Min	-19	13	-28	2	1	11	16	14	34	26	42	22	49	9	51	25	43	23	20	*28	- 2	30	- 4	24
Oskaloosa	Max	48	1	60	28	79	27	84	9	83	29	92	5	93	18	94	11	89	1	83	4	62	13	54	11
	Min.	-16	*10	-31	13	10	11	25	* 7	39	* 7	52	22	51	25	53	26	45	23	23	*28	3	30	- 6	24
Ottumwa	Max	51	1	60	28	74	3	85	9	..	..	..	..	96	16	99	11	96	1	87	4	65	13	57	11
	Min	-12	25	-24	* 2	3	11	..	..	..	..	..	.	58	9	57	26	48	5	26	31	6	30	1	24
Pacific Junction	Max	44	* 1	67	28	82	27	84	9	84	* 1	94	5	96	16	93	10	87	23	83	4	62	15	51	11
	Min.	-22	25	-37	13	15	11	19	17	33	5	50	*22	47	24	53	7	39	1	20	31	1	30	- 5	4
Perry	Max	42	1	61	28	77	27	79	8	82	1	92	* 4	95	16	95	11	86	27	..	..	62	12	55	11
	Min	-19	25	-33	13	10	11	21	14	34	5	47	22	50	9	55	26	45	23	..	..	1	30	- 3	24
Plover	Max	42	4	55	28	75	27	78	1	82	2	93	9	95	*16	95	11	85	14	83	7	61	* 4	48	* 6
	Min	-22	13	-35	13	5	11	14	14	32	26	42	22	43	25	52	26	46	* 2	20	*28	0	29	- 4	4
Pocahontas	Max	43	4	53	28	74	*27	78	* 1	81	1	93	4	97	16	98	11	85	*11	86	4	62	11	49	17
	Min.	-21	25	-30	13	9	11	13	14	33	* 8	41	22	47	24	55	26	45	4	21	28	- 3	30	- 2	4
Red Oak	Max	45	4	60	27	81	4	..	..	86	*21	100	9	96	*16	94	10	92	1	86	4	65	*13	55	30
	Min	-15	25	-26	13	15	11	22	17	35	26	51	22	49	24	59	7	46	* 4	25	31	5	30	0	4
Ridgeway	Max	40	1	47	28	71	*27	73	24	82	3	90	* 4	96	16	97	11	91	30	88	* 4	64	12	53	6
	Min	-18	10	-28	13	1	11	20	14	36	* 5	48	23	52	9	53	25	45	25	20	28	0	30	- 5	24
Rock Rapids	Max	50	1	64	25	78	27	70	* 1	80	1	93	4	96	16	96	10	88	*26	87	5	68	16	48	15
	Min	-22	*15	-33	2	10	11	12	14	30	8	46	* 2	46	25	44	8	38	3	26	11	- 6	30	- 2	3
Rockwell City	Max	45	1	58	28	80	3	80	8	83	1	93	4	95	18	95	*11	88	28	83	4	68	12	50	*11
	Min.	-22	25	-32	*12	8	12	19	14	31	* 5	46	*23	48	24	55	28	48	23	20	28	3	30	- 1	4
Sac City	Max	45	4	57	28	77	27	78	8	81	1	90	3	93	16	93	11	84	27	83	4	60	*11	52	11
	Min	-23	25	-28	2	7	11	19	14	32	12	43	22	50	*11	56	19	43	23	20	28	- 1	30	- 3	4
St. Charles	Max	50	1	67	28	80	3	86	9	83	29	90	* 4	93	18	95	10	92	1	90	4	67	*12	91	11
	Min.	-16	25	-27	13	9	11	24	16	33	5	50	* 7	52	9	..	26	50	* 3	21	28	0	30	0	4
Sheldon	Max	46	1	63	28	80	27	79	1	82	1	94	5	100	16	99	11	88	11	94	4	66	11	56	7
	Min.	-27	25	-35	2	7	11	12	14	31	8	47	27	42	9	53	19	42	4	20	*28	-10	30	- 4	4
Sibley	Max	42	1	58	28	75	31	77	1	81	1	92	5	95	16	93	10	86	11	89	4	63	11	57	6
	Min	-26	25	-33	2	2	11	10	14	31	26	40	20	46	24	52	20	43	* 5	17	30	- 9	30	- 9	1
Sidney	Max	..	..	..	..	83	27	85	9	86	1	96	9	96	*16	94	* 9	90	1	83	4	60	16	50	11
	Mix.	..	..	..	..	16	11	24	16	36	5	50	23	51	9	60	26	49	* 3	18	31	- 1	30	- 3	4
Sigourney	Max	45	1	54	28	76	27	84	9	87	29	93	* 4	95	*17	96	11	92	1	84	4	61	*11	53	11
	Min	-17	14	-30	13	9	11	24	16	38	* 5	50	27	51	24	53	26	47	-20	21	28	4	30	- 4	24

MONTHLY MAXIMUM AND MINIMUM TEMPERATURES WITH DATES FOR 1905—CONTINUED.

STATIONS.		Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
		Temp.	Date.	Temp.	Date.	Temp	Dare	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.	Temp.	Date.
Sioux City	Max	47	1	64	28	82	27	78	8	83	1	95	5	100	16	96	10	87	11	86	4	67	11	54	17
	Min	-25	25	-30	2	13	11	20	14	35	5	44	22	48	10	54	7	44	4	24	28	- 5	30	- 3	3
Sioux Center	Max	44	1	60	28	78	27	75	* 1	79	1	91	5	98	16	94	10	86	17	84	4	63	11	52	17
	Min	-27	25	-32	2	16	*10	16	14	30	8	38	22	47	9	52	19	42	4	18	28	- 8	30	- 2	* 3
Stockport	Max	51	1	62	28	..	..	83	9	83	29	90	18	90	16	93	11	90	1	83	8	..	..	54	* 7
	Min	-12	14	-26	13	..	..	25	* 7	40	7	52	27	55	24	54	26	48	23	23	28	..	..	- 1	24
Storm Lake	Max	44	* 1	59	28	74	27	78	8	79	1	88	4	95	16	95	11	85	27	88	4	61	11	50	26
	Min	-26	25	-34	* 2	7	11	14	14	32	* 8	39	22	47	10	55	19	44	23	17	28	- 5	30	- 2	4
Thurman	Max	49	1	66	28	82	27	84	8	85	1	96	9	95	*16	93	10	88	1	85	4	68	*13	58	11
	Min	-21	14	-37	13	15	11	19	17	34	5	49	11	50	24	58	7	44	4	20	31	2	30	- 5	4
Tipton	Max	46	1	49	28	68	*27	81	9	82	29	93	4	96	*17	98	12	92	1	85	4	61	28	50	* 6
	Min	-10	*14	-24	13	13	11	28	*16	40	12	51	27	55	*24	57	26	49	*20	23	31	10	30	- 3	24
Toledo	Max	44	1	53	28	75	27	78	* 1	81	3	90	4	93	17	95	12	88	* 1	85	4	62	*11	52	* 6
	Min	-17	*10	-28	* 2	7	11	21	14	34	23	47	22	50	25	49	26	42	23	19	28	1	30	- 5	24
Vinton	Max	40	1	46	28	70	*22	77	9	..	..	90	* 4	93	17	93	12	89	29	82	* 4	63	13	52	7
	Min	-19	30	-30	13	8	11	22	14	..	..	48	27	49	25	46	26	42	23	20	29	9	30	- 5	24
Wapello	Max	49	1	..	..	72	26	80	9	82	4	90	* 4	93	18	93	11	.	..	82	4	68	*13	59	*11
	Min	- 8	25	-32	13	22	13	28	* 7	41	12	52	* 3	55	25	54	*17	..	..	26	28	10	30	8	* 4
Washington	Max	47	1	57	28	76	27	84	9	84	28	91	* 4	92	*16	93	11	90	1	84	4	64	13	54	7
	Min	-13	14	-29	13	11	11	24	7	39	* 5	49	27	52	24	54	26	46	23	22	28	6	30	- 4	24
Washta	Max	..	..	..	..	82	27	81	2	85	25	93	5	98	16	99	11	89	27	92	4	62	11	52	11
	Min	..	..	..	..	8	11	18	*15	28	26	86	22	40	25	45	1	36	4	17	*28	- 4	30	- 1	3
Waterloo	Max	40	1	45	*21	72	27	76	9	80	3	94	4	98	17	99	11	89	27	85	4	64	*11	54	6
	Min.	-16	*13	-27	13	7	11	19	14	35	26	47	22	51	*10	51	26	42	23	21	28	4	30	- 4	24
Waukee	Max	46	1	66	28	82	27	87	9	85	10	93	* 4	102	16	104	11	90	1	81	4	60	*12	54	11
	Min.	-18	25	-32	2	9	11	21	14	35	5	47	22	50	* 9	57	26	48	* 4	21	28	1	30	- 1	4
Waverly	Max	36	1	44	28	69	31	75	9	79	3	90	4	92	*16	94	11	87	27	81	* 4	61	11	49	* 6
	Min	-20	30	-28	*13	6	11	20	14	35	7	48	22	51	*24	58	26	42	23	20	31	3	30	- 5	24
Webster City	Max	..	..	..	..	74	26	77	1	82	20	95	4	99	17	98	*11	87	27	82	* 1	70	12	50	* 6
	Min	..	..	..	..	5	11	16	14	31	26	43	22	47	*10	50	26	40	23	17	28	10	*29	4	4
West Bend	Max	42	4	52	28	75	27	76	1	80	1	90	4	94	16	93	11	83	27	83	4	60	11	48	* 6
	Min.	-19	25	-32	13	4	11	12	14	32	8	42	22	47	24	54	*20	43	5	18	28	- 4	30	1	* 3
Whitten	Max	49	1	48	28	73	27	73	1	81	3	93	4	96	16	94	11	85	27	80	7	59	*11	48	* 6
	Min	-20	13	-33	13	5	11	21	17	33	* 5	44	22	48	24	50	26	41	23	17	31	- 1	30	- 7	24
Wilton Junction	Max	52	1	49	28	74	31	82	9	88	29	95	* 4	96	16	94	* 5	94	1	83	4	65	18	50	* 7
	Min.	-14	10	-33	13	9	11	25	* 6	36	7	45	27	48	25	48	26	45	23	20	28	5	30	- 5	24
Winterset	Max	45	1	59	28	74	* 3	82	9	81	29	92	* 4	95	16	93	*10	86	1	81	5	62	12	53	11
	Min.	-17	25	-29	2	9	11	23	16	35	* 5	48	22	50	* 9	55	26	46	23	20	28	0	30	- 1	4
Woodburn	Max	..	..	61	28	..	..	..	..	82	29	92	16	92	18	94	5	88	1	80	4	63	18	53	11
	Min	..	..	-30	*13	..	..	..	..	34	7	46	8	48	24	50	26	42	23	18	28	2	30	..	..
Zearing	Max	39	1	55	28	75	27	79	2	81	* 1	90	4	93	17	95	11	88	27	85	4	61	*11	54	11
	Min	-23	25	-35	13	7	11	19	14	31	* 3	47	22	51	24	47	26	41	23	18	28	- 1	30	- 9	24

* And other dates.

MONTHLY AND ANNUAL MEAN TEMPERATURES FOR 1905, WITH DEPARTURES FROM THE NORMAL.

STATIONS.	Jan.		Feb.		Mar.		Apr.		May.		June.		July		Aug.		Sept.		Oct.		Nov.		Dec.		Annual	
	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.
Afton	14.5	- 8.9	16.1	- 5.7	44.8	s 9.6	49.6	-1.7	60.4	-2.7	71.4	-0.2	71.6	-4.5	75.1	s1.2	66.6	s1.5	49.8	- 4.1	39.9	s 4.0	27.4	s2.6	8 9	-0.7
Albia	12 3	s12.9	12.5	- 7.2	43.0	s 5.5	49.0	-1.4	60.0	-2.2	70.6	s0.5	70.6	-4.5	75.0	s1.9	66.4	s2.2	49.1	- 5.5	40.0	s 1 0	27 0	s3.6	48.6	-1.6
Algona	8.0	- 8.5	11.0	- 6 0	38.4	s 8.4	45.7	-2.6	56.1	-3.4	68.0	-1 7	69.4	-4.3	73 1	s2.0	64.0	s1.5	46.4	- 4.2	36.4	s 4.5	25 2	s4.9	45 1	-0.8
Allerton	15 2	....	15.7	....	45.2	.....	50.0	....	60.8		71.6	..	71.2	....	75.6	....	67.8	....	52.0	....	41.0	.....	28.6	....	49 5	....
Alta	7.9	- 8.9	11.2	- 8.0	39 6	s10.2	44.8	-2.8	55.6	-3.0	67.6	-0.9	68.9	-8.8	73.8	s1.5	64.1	s0.9	46.2	- 4.6	38.6	s 5.0	25 1	s1.7	45.1	-0 7
Alton	....	....	.....	.....	.....	.....	....		55.4		67.8	...	69.5	..	73.5	....	64.6	...	47.2	.....	37.2	.....	26.6	.....	.....	.....
Amana	12.0	- 3.8	12.8	- 7.2	41.9	s10.5	48.8	s0.1	59.8	-0.2	70.8	s1 1	71.0	-3.0	74.2	s3.4	64.4	s3.7	50.1	s 0.5	38.4	s 5 2	27.1	s5.0	47.8	s1.3
Ames	14.5	- 2.6	13 5	- 8.1	44.0	s11.5	47.4	-1.7	58.4	-1.2	70.4	s0 4	70.4	-4.6	75.4	s1.2	65.7	s2 8	49.4	- 1.5	38.2	s 5.0	28.2	s6.4	48.0	s0.8
Atlantic	11.8	- 8.4	12.8	- 7.9	42.8	s 9.3	47.0	-2.8	58.4	-1.2	71.8	s2.1	70.2	-8.5	74.8	s3.9	66 3	65.7	48.4	- 3.6	38.6	s 4.1	28.2	s5.7	47.6	s0.4
Audubon	9.1	-10.3	12.3	- 6.9	42.7	s10.1	46.7	-3.2	57.8	-2.5	70.2	s1.4	69.5	-3.4	74.4	s2.5	65.5	s2.1	48.5	- 2.7	37.8	s 3.8	27.2	s4.1	44.8	-0.5
Baxter	10 4	-10.9	11.7	- 5 1	42.0	s 5.6	47 5	-1.8	58.2	-3.9	70.2	s2 7	70.2	-4.2	74 0	s2.4	66.5	s4.1	49.8	- 4 9	39.0	s 1.6	26.6	s4 2	7.2	-0.8
Bedford	14 2	-11.0	15 4	- 3.6	45.4	s10.1	49.8	-0,2	59 1	-3 7	71.4	s3.8	71.4	-2.5	75.5	s2.0	67.8	s4.5	49.4	- 7.7	39.0	- 0.9	26.6	s1 4	48.8	-0.5
Belle Plaine	10.2	- 8.2	10.8	- 9.8	39.9	s 7.4	48.8	s2.6	59.2	-0.1	69.8	t0.0	70.8	-2.8	73 8	s3.2	65.2	s1.5	48.8	- 1.8	38.5	s 4.1	25 2	s1, 2	46.7	-0 2
Bonaparte	16.2	- 7.4	15 2	- 7.7	44.8	s 7.6	50.4	-1.4	61.6	-1.3	71.4	-1 0	72.0	-4.4	75.2	s0.3	68.2	s0.5	53.2	- 2.5	41.1	s 2.9	29.2	s1.4	49.9	-1.1
Boone	12.2	....	14.7	.....	41.6	.	46.2	..	57 6	....	69.1		70.6	----	74.8	....	65.2	....	49.0	.....	37.8	... .	26.9		47.1	....
Britt	7.2	-10.5	10.8	- 6.2	38.4	s 9.6	44 8	-2.0	55 8	-8.3	68.4	s0.6	69 6	-3.3	72.6	s2.6	68 5	s1.9	46.4	- 5.8	35.5	s 2.4	23.8	s6.7	44 7	-0.6
Burlington	18 2	. ...	17.2	.....	45.2	....	52.8		62.8	..	73.2	..	72.8	....	76.0		68.9	...	54.3	....	42.0	....	31.3	...	51.2	....
Carroll	10.6	- 9.0	12.7	- 6 8	41.2	s 9.7	48.0	-3.0	57.2	-2.5	69.6	s0.1	69.4	-4.5	74.2	s3.0	64.2	s1.1	48.1	- 8,2	38.8	s 5.6	26 6	s3.6	46.6	-0.4
Cedar Rapids	10.6	- 7.7	10.6	- 9.9	39.9	s 7.1	48.8	s0 4	60.2	s0.2	71.0	s0.3	72 7	-3.1	75.4	s2.7	66.6	s3 0	50.6	- 0.9	37.7	s 1.9	25.6	s0.3	47.5	-0 5
Chariton	13.5	-11.9	14.8	- 7.4	44.2	s 8.5	49 2	-2 5	59.2	-3.5	70.4	t0.0	70.0	-5.1	74.5	s0.8	66.6	s1.0	51 4	- 3.4	40.6	s 2.0	28.3	s2 7	48.6	-1.6
Charles City	4.6	11.9	8 8	- 9.0	36.2	s 4.9	44.6	-1.1	55.1	-4.8	67.0	-2.5	69.0	-5.0	71 8	-0.2	64.8	-1.3	46.8	- 4.8	35.7	s 2.7	22.8	s1.8	43.8	-2.8
Clarinda	12.8	- 9.9	12.4	10 6	44.5	s 9.3	48.6	-3.4	59 7	-2.0	72.3	s0,5	72.3	-4.0	76.2	s1.8	67.4	s1.4	50.2	- 4.4	39.8	s 2.4	27.9	s1 4	48 7	-1 5
Clear Lake	7.6	- 9.9	8.6	- 4.7	37.2	s 6.0	46.2	-1.5	57.4	-3.9	69.4	s0.9	71.2	-2.7	74.2	s3.8	62.8	s1.2	47.6	- 4.2	35 5	s 1.6	24.4	s5.8	45 2	-0 7
Clinton	14.8	- 4.4	13.6	- 8.4	40.8	s 7.5	49 0	s0.4	60.6	-0.8	71.6	s1.7	71.8	-2.2	73.6	s2.4	65.8	s2.7	49.8	- 0.6	37.4	s 1.9	27.4	s2 3	48.0	s0.2
College Springs	15 4	- 8.8	14.9	- 8.9	47.2	s11.1	50.2	-0.5	59.2	-2.2	72.5	s1.0	71.8	-3.6	75.8	s1.6	67.6	s0.5	51.3	- 6.4	40.8	s 2.4	30.2	s3.2	49.7	-0 9
Columbus Junction	16.4	.....	16.0	....	44.0	.....	47.8	....	60 8	..	71.4	....	71.0	....	75.2	....	68.1	.	51.8	.....	38.0	.	28.4	....	49.0	....
Corning	12.8	- 9 5	13.3	- 8.9	44 8	s 9.1	48.0	-2.7	59.4	-1.6	70.8	s0.4	70 5	-4.0	74.0	s1.2	65.1	t0.0	49.4	- 4.6	39.8	s 2.1	27.8	s0.6	47 9	-1 5
Corydon	15.4	- 6.1	15 8	- 6 0	46.2	s10.1	50.6	-1.2	60.5	-1 3	71.4	s0.6	71 3	-4.5	75.2	s0.9	68.0	s1.5	52.7	- 2.4	41.9	s 3.8	29.4	s3.6	49.9	-0.1
Cresco	7.2	- 3.5	10.6	- 4.5	35.9	s 9.2	44 4	-0.3	55.0	-1.7	66.3	s4.1	68.0	-8.1	70.8	-0.4	63.3	s1.7	46.6	- 1.0						
Creston	...	.....	...	.....	..	.. .	47.0	...	57.9	....	68.8	....	69.8	....	74.2	..	66.0	...	49.9	....	39.5	.....	28.9	...	....	....
Davenport	15.7	- 4.8	14.6	-10.7	42.0	s 7.1	49.8	s0.1	61.0	s0.3	71.4	s0.5	72.0	-3.0	75.2	s2.4	67.9	s3.2	52.6	s 0.5	39.7	s 2.9	29.5	s1.7	49.3	s0.1
Decorah	6.6	- 9.9	11.2	- 3.8	36.8	s 6.5	46.1	-2.6	56.4	-3.8	68.6	s0.8	69 8	-2.8	71.8	s1.3	64.5	s2.6	47.2	- 3.5	36.7	s 4.4	25.2	s4.8	45.1	-0 5
Delaware	9 0	- 6.8	11.0	- 5.2	37.0	s 6.7	45.6	-0.4	57.2	-1.5	68.8	s0.2	69.0	-3 6	71.8	s2.0	64.2	s2.8	48.0	- 1.0	36.0	s 4.0	24.0	s2.8	45.1	t0 0
Denison	11.0	-10.1	13.2	- 5.4	42.2	s10 3	46.5	-2.7	57.1	-3.5	69.6	s0.7	69.2	-4.8	75.0	s2.9	66.0	s2.6	48.4	- 2.4	38.4	s 4 0	28.4	s6.5	47.1	-0.1
Des Moines	12 8	- 4.7	14.8	- 8.3	43.5	s 8.8	48.7	-1.8	59.1	-1.3	70.6	s0.5	71.0	-3.5	75.5	s3.5	67.3	s3.2	50.8	- 1.4	40.0	s 3.6	28.9	s2.1	48.6	s0.1
De Soto	12.7	.....	14.0	.....	43.8	...	48.5	....	59.5	...	70.4	....	70,1	....	74.6	....	67.4	....	50.9	.	39.8	....	27.6	..	48.3	....
Dows	7 2	-12 1	9.8	- 5.6	38.4	s 8.5	45.0	-3.4	55.8	-3.9	67.8	s0.1	68.4	-4.6	71.9	s1.9	63.9	s2.3	47.4	- 5 2	36.8	s 3.1	24.6	s4.8	44.8	-1.2
Dubuque	12.0	- 5.3	13.3	- 9.3	39.1	s 6.2	48.2	-0.4	59.0	-0.9	70.1	s0.6	71.4	-2 9	73.5	s1.9	67.0	s3.8	50.9	- 0.8	38.4	s 3.4	27.6	s1.7	47.5	-0.1
Earlham	12.7	. .	14.0	. .	43.9	.....	46.7	....	57.2	....	68.5	....	69.0	....	73.0	...	64.6	....	48.4	.....	38.7	.....				....
Elkader	10.2	- 4.2	11.8	- 6.3	38.2	s 7.3	47.8	-0.4	58.4	-2.5	70.4	s0.9	71.6	-2.4	73.8	s3.0	66.5	s4.5	49.4	- 0,1	37.2	s 4.6	25 1	s3.5	46.7	s0.7
Elliott	....	.....	..	.....	...	.....	49.1	....	59.6	....	73 7	....	72.1	....	76.6	..	67.5	..	49.6	....	39.8	.....	28.1	....	....	....
Estherville	6.6	- 9.7	9.0	- 7.0	37.1	s10.0	43.6	-4.7	54.6	-4.1	66.6	-2.0	68.8	-3.9	72.2	-3.8	62.8	s1.9	....	.....	35.9	s 6.8	24.4	s3.0	....	....
Fayette	4.2	-12.7	9.2	- 8.2	36.8	s 6.6	44.6	-3.6	55,1	-2.6	67.2	-1.9	68.4	-3.9	70.6	s1.1	63.7	s1.2	47.3	- 2 6	35.2	s 2.7	20.8	0.6	43.6	-1.9
Forest City	6.4	-11.8	8.1	- 6.9	36,6	s 8.2	44.4	-3.6	55.8	-3.8	67.2	-0.9	70.0	-2.9	73.4	s2.6	63.6	s1.3	46.4	- 4.1	35.8	s 4.6	24.8	s5.4	44.4	-1.0
Fort Dodge	8.4	.....	10.5	.....	39 3	....	45.6	....	56.5	....	69,0	....	70.4		74.4	....	63.8	....	48.3	.....	37.1	.....	25.2	....	45.7	....
Galva	8.8	- 9.7	12.5	- 5.3	41.4	s 8.9	46.1	-3,2	55.6	-5.1	67,6	-1.4	68.4	-5.6	72.2	s0.8	64.0	-0.5	47.2	- 4.1	38.6	s 5.8	26.5	s4 9	45.7	-1.2
Glenwood	15,0	- 7.7	16.1	- 7.1	46.6	s10.6	50.4	-3.1	59.8	-2.1	71.2	-1.8	70.6	-6.4	75.5	s1.4	67.5	-0.4	52.4	- 3.5	41.8	s 3.2	31,0	s1 9	49.8	-1.2
Grand Meadow	7.8	- 8.1	11.0	- 6.0	36.6	s 6.4	45.8	-1.7	56.1	-2.1	67.6	s0.6	69.0	-2.0	71.0	s2.0	64.2	s2.5	47.6	- 2.4	35.4	s 3.2	23.9	s2.4	44,7	-0.4
Greene	8.8	-12.0	11.3	- 5.0	38,2	s 7.3	46.4	-1.9	57.3	-3.3	69.4	t0.0	70,6	-4.5	73.6	s1.2	64.0	-0.1	48.1	- 5.5	....	....	....	....	....	....
Greenfield	12.4	- 9.3	14.2	- 7.1	44.2	s10.3	48.4	-2.2	60.4	-0.1	72.4	s1.8	71.6	-3.0	75.4	s2.8	66.1	s0.3	49.8	- 3.8	39.5	s 3.6	27.4	s2.9	48.5	-0.3
Grinnell	11.3	- 6.2	13.5	- 7.6	41.5	s 8.8	47.7	-2 7	59.1	-1.1	..	....	...	....	....	....	....	....	....	.....	....	....	....	....	....	....
Grinnell (near)	....	.	....	.....	....	.....	..	....	....	..	70.7	...	70.3	....	74.2	....	66.2	....	50.4	.....	38.7	.....	26.9	....	....	....
Grundy Center	8.8	- 8.1	10.8	- 6.8	39.3	s 7.8	46.7	-1.0	57.3	-1.4	69.0	-0,1	69.6	-2 6	73.2	s2.5	65.6	s2 7	49.0	- 2.4	38.0	s 5,2	25.2	s3.0	46.0	-0.1
Guthrie Center	12.8	- 9.2	13.8	- 6.1	43.0	s 9.4	47.9	-2.2	59.2	-1.8	71.2	s1,6	71.0	-3.0	75.1	s2.7	66.0	s2.5	49.2	- 3.3	38.6	s 2.0	27.8	s6,5	48.0	-0.1
Hampton	8.8	- 6.7	11 4	- 6.1	38.8	s10.2	46.8	-0.8	57,6	-0.8	69.5	s1.3	70.8	-1.9	74.6	s4.4	65.8	s3.5	49.5	- 1.1	38 0	s 5.9	26.5	s5.6	46.5	s1.1
Hanlonton	6.8	. ...	9.6	.....	36.8	.....	44,0	....	55.2	...	65.6		67.6		71.9	...	62.0		45,9	.....	35.8	.....	24.2	....	43 8	....
Harlan	10.8	-11,6	12,4	- 4.1	42.9	s 8.7	46.8	-2.0	58.0	-3.7	70.6	s1.9	69.8	-4.6	74.2	s2.3	65.6	s3.5	48.5	- 5.9	38.4	s 1.0	26.4	s4.2	47.0	-0.9
Hopeville	13.4	- 8.4	14.8	- 7.1	44.5	s10.2	49,2	-1.0	59.0	-1.4	70.9	s0.4	....	....	75.8	s2.7	67.8	s1, 2	51.2	- 3.4	40.4	s 4.9	29.4	s3.9	....	....
Humboldt	9.0	- 8.5	12,8	- 4.6	40.6	s10,9	46.8	-2.8	55.4	-1.9	67.2	-2,8	68.9	-5.0	73.4	s3.5	64.2	s1.9	49.8	s 0.1	38.4	s 4.9	26.6	s3.8	46.1	t0.0
Ida Grove	...	.....	12.9	....	....	....	45.2	....	57.1		70.0	...	71.6	...	73.0	....	62.3	...	....	.....	37.6	.....	27,4		....	....
Independence	8.2	- 5.5	10.3	-11.5	38,2	s 8.3	46.5	-0.7	57.4	-2.3	68.8	-0.3	69.2	-4.2	....	....	....	....	48.4	s 0.2	37.6	s 4.4	25.5	s3 8	..	....
Indianola	12.6	- 6.4	15.2	- 7.3	44.4	s 6.4	49.2	-2.5	59.5	-1.4	71.0	s0.6	70.6	-5.0	74.8	s2.1	66,8	s1.2	50.8	- 3 4	39,6	- 2.0	28.8	s3.6	48,6	-1.2
Inwood	7.7	. .	10.8	.....	38 6	...	44,4		56.5		67.3	....	68.7	....	73.8	....	64.7	....	47 3	. .	...	. .	....	....	....	....
Iowa City	11.2	- 7.9	10.4	-12.5	39.8	s 6,2	48.0	s1.7	60.0	-0.3	70.8	s1.5	71.6	-2,6	74.4	s2.8	66.0	s2.6	50.4	- 0.7	37.6	s 2.1	24.2	s0.1	47.0	-0.6
Iowa Falls	6.5	- 8.9	10.0	- 5.3	37.8	s 7.0	45.5	-2 0	55.9	-3.8	68.1	-0.4	69.3	-3.7	72.5	s2.3	63.4	s1 8	46.8	- 3.5	36.3	s 4.1	24.6	s1.1	44.7	-0.7
Keokuk	19.6	- 3.6	18 0	-10.3	46.8	s 9.2	52.6	s0.6	63 6	s1.0	74.0	s1.7	73.4	-3.5	76.9	s2.4	68.6	s2.2	54.8	s 0,7	42.7	s 3 9	32.2	s2.4	52.0	s0.6
Keosauqua	15.4	- 8.4	13.4	-10 7	43.4	s 5.4	50.4	-2.4	61.5	-1.7	71.8	-1.2	72.3	-4.5	75.8	s0.9	67.2	-0.2	51.8	- 4.3	41.1	s 1.8	28.0	s1.0	49.3	-2.0
Knoxville	14 0	-10.4	16.6	- 5.0	43.9	s 6 9	50.3	-2.2	60.8	-2.3	72.2	s0.1		..	75 0	s1.3	67.8	s1.9	52.2	- 1 9	40.6	s 3.4	28.9	s3.6	....	....
Larrabee	8.6	- 9.3	11 4	- 6.8	39.7	s10.5	45.6	-2.5	56.2	-2.3	69.8	s0.9	72.0	-1.0	75 0	s3.8	64.9	s1 8	48.6	- 1.9	37.6	s 5.7	26 2	s4.3	46.3	s0.3
Le Mars	9.3	-11.7	11.8	- 5.5	40.4	s 8.6	45.5	-4.2	56.3	-4.3	71.2	s2.3	70.1	-3.8	74.4	s2.4	64.8	s1.9	47.2	- 5 3	37.6	s 4.2	26 8	s5.3	46.3	-0.8
Lenox	12.4	-12.5	13.6	- 8.4	44.5	s 9.6	48.8	-2.4	59.3	-2.8	71 2	s1.0	71.0	-3.7	74.6	s1.4	66.8	s1.5	50 0	- 4.8	40.2	s 2.8	28 0	s3.8	48.4	-1.2
Leon	15.0	...	16.0	.....	45.8	....	50.3	....	60.9	....	72.1	....	71.6	....	75 8	....	67.0	..	51.2	.....	41.0	.....	28.8	....	49.6	....
Little Sioux	11.8	.....	14.2	.....	45.0	....	48.6	...	60.0	...	71.6	.	71.8	....	77.2	..	68.6	.	51.0	. .	41.0	.....	30.0	....	49.2	
Logan	13.7	- 5.5	15,2	- 8.4	43.2	s 9.1	48,6	-1.4	58.7	-2.5	72.0	s0,9	72.1	-2,9	76.1	s3.6	67.0	s3.0	50.0	- 2.3	39.4	s 3.8	28.2	s3.3	48.7	s0.1
Maquoketa	11.7	- 8.4	10.2	-11.4	37.9	s 3.9	47,4	-1.5	58.4	-2.7	68.4	s1.6	70.0	-5.1	72.2	s0.8	64.6	s0.8	48.0	- 6.4	35.7	- 1.4	24,8	-0.3	45.8	-2.8
Marshalltown	9.4	-10.7	10.1	- 9,9	39.8	s 7.6	47.0	-2.6	53.8	-1.8	69.6	s0.2	70.2	-3.6	74.8	s2.8	66.0	s1 8	52.4	- 0.6	40.4	s 4.7	26.4	s0.9	47.0	-0.9
Mason City	8.6	- 6.6	11.6	- 8.3	37.2	s 9.3	45.8	-3.6	56.6	-2.4	68.8	s1.2	70.6	0 8	73.8	s4.2	64.0	s1.0	47.8	- 1.6	37.2	s 7.8	26.1	s5.7	45 7	s0.9
Massena	13.2	.....	14 4	.....	44.6	....	50.0	....	60,0		72.0	..	72.2	...	77.0	....	68.1	....	....	. ...	39.3	.....	....	...	....	....
Monticello	....	.....	....	.....	41 3	s 9.4	....	....	58 6	-0.9	70.7	s2.2	71.0	-1.9	72.2	s2.1	64.0	s2.4	47.8	- 1.7	35.4	s 1,9	24 4	s2.3	....	....
Mt. Ayr	14.8	- 9.1	16.2	- 5.6	46.6	s11.1	51 6	s0,1	61.8	-1.1	72.2	s1.5	71.6	-4.1	75.8	s3.0	68.4	s1.7	52.0	- 3.3	40.8	s 2.9	29.7	s5.1	50.1	s0.1
Mt. Pleasant	15 6	- 2.4	15.2	- 8.6	44.2	s 9.7	50 0	-1.1	62.4	s1,0	72.7	s1.6	72.4	-2.9	75.4	s3.0	67.6	s4.0	51.8	s 1.2	39.6	s 4.9	28.4	s2.6	49 6	s1.1
Mt. Vernon	12.4	- 4.3	13.0	- 8.6	41.0	s11.1	49.0	s2.5	59.8	s0.4	70.2	s0.8	71.4	-2.0	75.0	s5.2	66.4	s4.7	50.9	s 3.6	37.8	s 4.6	26.3	s3.2	47.8	s1.7
New Hampton	7.2	-13.1	10.5	- 3 4	37.2	s 6.6	45.8	-2 8	56.6	-2.7	68.4	-0.2	70.3	-3.1	72.4	s1.7	....	....	42.4	-11.1	36.6	s 1.8	23.8	s5.9	....	....
Newton	11.4	- 6.3	12.8	- 7.6	41 2	s 8.0	47.8	-1.1	58.1	-2.8	69.8	-0.4	69.8	-5.7	73.7	s1.5	65.2	s2.3	49.6	- 2.2	37.4	s 2.9		..		....
Northwood	7.5	- 9.8	6.4	- 7.0	37.0	s 7.6	44.2	-3.5	56.2	-2.7	67.3	s0.5	69.3	-2.7	72.4	s2.7	63.3	s3.0	46.0	- 2.0	35.5	s 3.6	23.6	s4.5	44.2	-0.5
Odebolt	10.2	-12.4	13.2	- 4.4	42 0	s 9.0	47.0	-2.7	56.8	-5.1	71.4	s0.6	70,9	-5.2	75.7	s1.1	65,1	s2.0	48.2	- 7.2	38.9	s 2.9	27.6	s6.3	47.2	-1,3
Ogden	10.2	-11.3	13 6	- 5.8	41 8	s 8.6	47.4	-3.1	58.9	-3.5	....	....	70.3	-4.6	74.8	s1.8	66.4	s1 7	49.2	- 4.2	38.6	s 3.4	27.1	s3.7	....	....
Olin	12.3	-10.3	12.4	- 1.9	39.8	s 6.8	47.6	s0.9	59.0	-2.0	69.8	s0,2	71.5	-3.3	72.2	s2.4	65 8	s4.3	50.2	- 1 7	37.2	s 0.3	26.2	s3.4	47.1	-0 1
Omaha, Nebr	14.3	- 4.9	17.0	- 8.0	45.7	s10.2	49.7	-1.3	60.1	-1.6	72.2	s0.7	72.6	-3.6	77.6	s3.9	68.8	s4.0	51.8	- 1.1	42.6	s 6.0	31.6	s4.9	50.3	s0.8
Onawa	13.1	-11.0	15 9	- 3.6	43.8	s 6.6	49.6	-1.6	61.5	-3.2	72.6	s2.9	73.1	-2.9	77.5	s4.0	68.2	s4 1	50.8	- 5.4	40.6	s 2.5	29.6	s5.2	49.6	-0.1
Osage	6 6	- 7.4	11.2	- 3.2	37.0	s 9.6	45.3	-0.2	56.4	-0.7	67.4	s1,0	69.3	-1.7	72.5	s5 0	63.4	s4 0	46.7	- 0.2	35.8	s 6.6	23.8	s4,7	44.6	s1 5
Oskaloosa	12.6	- 6.4	13.8	- 7.5	45.2	s11.0	49.6	-0.7	60.4	t0.0	71.6	s1.7	71.0	-4.4	75.0	s3.2	67.2	s2.8	51.4	- 0.5	39.7	s 3.0	27.6	s1.8	48.8	s0.8
Ottumwa	14.9	- 9.9	16.2	- 6.7	45.2	s 7.6	....	....	....	....	....	....	72.4	-4.4	77.2	s2.2	68.8	s0.2	52.4	- 3.3	39.8	s 0.6	28.8	s1.4	....	....
Pacific Junction	13.4	.11 2	14.5	- 4.5	45.2	s 9.1	49.2	-1.2	60.6	-2.0	71.8	s2.3	70.8	-4.5	74.5	s1.1	67.0	s3.1	49.2	- 7.2	39.2	s 2.9	28.6	s3.8	48.7	-0.7
Perry	11.2	...	13.8	.....	42.8	.....	47.9	..	59 4	...	70.6	....	71.2	....	75.0	....	66.2	....	....	.....	38.4	.....	26.8		....	....
Plover	7.8	-13.2	10.4	- 6.3	39.4	s 9.0	44.9	-3.3	56.7	-3.7	68.1	-0.5	69.3	-5.2	74.9	s5.9	63.6	s0.2	47.4	- 4.9	36.6	s 2.8	25.9	s6.0	45.4	-1 3
Pocahontas	9.6	.....	12.2	.....	40.6	....	45.6	..	56.6	....	68.2	....	70.2	....	74.2	....	64.6	....	47.4	.....	37.5		25.2		46.0	...
Red Oak	16 6	- 9.5	15.4	- 7.4	46.3	s 9.5	49.0	-2 8	63.1	t0 0	74.5	s1,9	73. 1	-3.4	77.0	s2.8	69.2	s2.5	52.5	- 4.8	42.8	s 1.2	32.4	s7.6	51.0	-0.2
Ridgeway	10 2	-12.1	13.6	- 3 5	38 0	s 6.6	47.6	-1.0	57.4	-3.2	69.7	s0.5	71.6	-5.0	74.0	s1.2	66.4	s1.2	48.8	- 5.1	38.0	s 0.8	26 2	s5 0	46.8	-1.0
Rock Rapids	9.7	- 5.1	10,6	- 6.4	40.8	s11.0	43.2	-5.4	55.4	-1 8	67.6	-0.8	70.1	-2.7	74.6	s4.8	67.8	s4.8	44.2	- 3.3	38.2	s10.2	25 4

MONTHLY AND ANNUAL MEAN TEMPERATURES FOR 1905 WITH DEPARTURES FROM THE NORMAL—CONTINUED.

STATIONS.	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Annual	
	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp.	Dept.	Temp	Dept.	Temp.	Dept.
Sheldon	8.2	-13.6	11.0	- 3.2	39.9	s11.1	45.6	-2.6	55.3	-3.7	69.1	s2.6	70.1	-2.9	74.8	s3.4	65.7	s3.3	48.2	- 5.2	38.0	s 2.4	27.4	s8.4	46.1	-0.0
Sibley	6.0	-10.6	8.3	- 7.1	36.4	s 6.8	42.9	-5.1	53.2	-5.4	64.5	-2.6	67.4	-3.9	71.6	s2.5	62.6	s1.4	45.0	- 5.9	35.2	s 4.8	24.1	s5.0	43.1	-1.7
Sidney	....	....	....	....	47.2	....	50.8	....	62.0	....	74.0	....	73.1	...	77.0	....	67.9	....	49.9	.....	38.8	....	27.6	....	....	....
Sigourney	14.4	- 9.7	15.2	- 6.2	43.8	s 7.9	50.4	-1.8	61.4	-2.8	72.5	s0.2	72.6	-5.0	75.6	s1.4	67.6	s2.5	52.0	- 3.4	39.9	s 1.1	28.1	s3.2	49.5	-1.0
Sioux Center	8.9	-12.7	11.8	- 3.8	39.7	s 6.7	45.0	-3.3	54.6	-6.4	66.1	-2.9	69.4	-5.1	73.2	s1.0	63.9	s3.2	46.1	- 7.1	36 8	s 1.3	26.4	s8.7	45.2	-1.9
Sioux City	10.0	- 6.8	13.6	- 5.4	41.8	s10.2	46.2	-4.4	56.9	-1.5	69.0	-1.3	70.6	-3.7	75.4	s3.8	65.7	s0.5	49.2	- 1.8	39.6	s 5.3	28.4	s0.6	47.2	-0.3
Stockport	16.7	....	16.8	.	....	....	50.6	...	61.6	....	71.4	...	71.1	....	74.6	..	65.4	....	52.8	.....	...	.....	29.0	....	....	....
Storm Lake	6.2	-13.0	8.2	- 6.8	37.6	s 9.5	43.7	-2.7	54 6	-3.4	66.1	-1.9	68.0	-5.1	73.0	s1.5	63.4	-0.1	46.5	- 9.0	36.4	s 0.0	25.0	s4.8	44.1	-2.2
Thurman	13.6	-12.6	14.4	- 5.8	46.4	s 9 5	50.0	-1.8	61.1	-2.2	73.4	s1.2	73.2	-4.3	75.6	s1.2	67.4	s1.6	50.9	- 5 4	40.8	s 2.6	28.8	s5.6	49.6	-0.9
Tipton	15.4	- 4.8	15.2	- 6.2	41.8	s 5.9	50.7	s2.2	61.8	s1.1	72.6	s3.3	73.2	-1.4	75.6	s5.1	68.6	s3.9	52.4	- 0.6	39.7	s 3.7	28.5	s4.7	49.6	s1.4
Toledo	10.8	- 8.9	12.2	- 7.4	41.7	s 9.5	47.9	-2.7	58.6	-3.2	69.8	-0.9	69.4	-5.5	73.7	s1.3	66.1	s2.0	50.4	- 2.1	39.0	s 2.9	26.9	s3.7	47.2	-0.9
Vinton	11.2	- 7.7	11.3	- 8.6	41.2	s 9.1	47 6	-1.6	....	....	69.0	-0.7	69.9	-3.8	73.6	s2.9	65.8	s3.0	51.2	s 0.6	38.5	s 4.1	26.4	s2.5	....	....
Wapello	18.4	- 8.6	13.3	- 7.5	42.3	s 7.3	52.0	s0.1	61.4	-3.0	70.6	-0.9	72.0	-5.4	73.6	-1.3	....	..	52.9	- 3.3	41.6	- 0.4	30.9	s3.9	....	....
Washington	14.9	- 6.3	14.7	- 6.7	43.4	s 8.8	49.5	-1.4	60.6	-0.8	70.6	-2.6	70.6	-5.0	74.4	s1.2	66.6	s1.6	51.4	- 2.6	40.4	s 4.8	28.4	s4.4	48.8	-0.4
Wahsta	....	....	...	....	41.2	.....	46.2	....	56.6	...	68.3	....	69.0	....	73.8		65.2	...	48.0	.....	37.6	.....	26.4	....	....	....
Waterloo	8.2	- 9.6	12.0	- 6.2	39.0	s 8.8	47.0	-0.2	57.6	-2.4	69.0	s0.5	71.0	-3.0	74.4	s3.6	65.4	s3.0	49.9	s 0.2	39 6	s 4.4	26.9	s5.8	46.7	s0.4
Waukee	13.2	.....	15.7	.....	44.9	.....	49.4	....	60.4	....	71.7	....	72.6	....	78.0	....	67.0		49.6	.....	39.4	.....	27.4	....	49.1	....
Waverly	7.6	-12.1	10.6	- 7.4	37.9	s 6.7	45 8	-1.7	57.0	-4.4	68.1	-0.7	69.2	-4.7	72.0	s0.6	64.2	s1.7	47.6	- 5.8	37.2	s 2.7	25.0	s4.8	45.2	-1.7
Webster City		.....	....	.	41.7	.....	47.6	....	58.2	....	70.8	..	71.5	....	75.2	...	65.2	....	48.4	.....	38.7	.....	26.9	....	....	....
West Bend	8.6	- 9.0	12.0	- 4.5	39.4	s10.2	45.2	-1.6	55.9	-8.4	68.2	s0.4	69.0	-3.9	73.0	s3.3	63.4	s2.6	46.5	- 2.5	36.4	s 5.4	25.9	s6.0	45.3	s0.2
Whitten	9.1	-11.2	10.7	- 4.4	39.4	s 8.4	46.0	-2.1	57.8	-2.0	70.2	s1.9	70.4	-4.3	73.4	s2.5	65.4	s2.8	47.1	- 5.8	37.0	s 2.2	25 1	s5.8	46.0	-0.5
Wilton Junction	14.2	- 8.6	13.7	- 6.1	42.0	s 7.7	49.9	-1.0	61.2	-1.2	72.7	s1.6	71.9	-3.5	74.0	s1.1	66.9	s2.6	51.2	- 1.6	38.6	s 1.2	26 8	s1.2	48.6	-0.6
Winterset	13 6	- 7 9	14.9	- 6.7	43.6	s 9.5	48.3	-2.9	59.8	-1.5	71.8	s1.5	70.5	-3.8	74.4	s2.0	66.8	s1.6	49.0	- 4.7	38 2	- 0.2	27.4	s2 2	48.2	-0.9
Woodburn	...	....	14.8	.....	....	.....	....	..	59.4	....	71.1	..	70.6	....	74.0	....	65.8	..	49.4	.....	38.5	.....	....	....	....	....
Zearing	9.4	.. .	11.8	....	40 7	.	46 8	....	56.7	..	69.4	....	70.0	...	73 6	....	65.2	....	48 8	.....	37.6	....	26.2	...	46.4	....

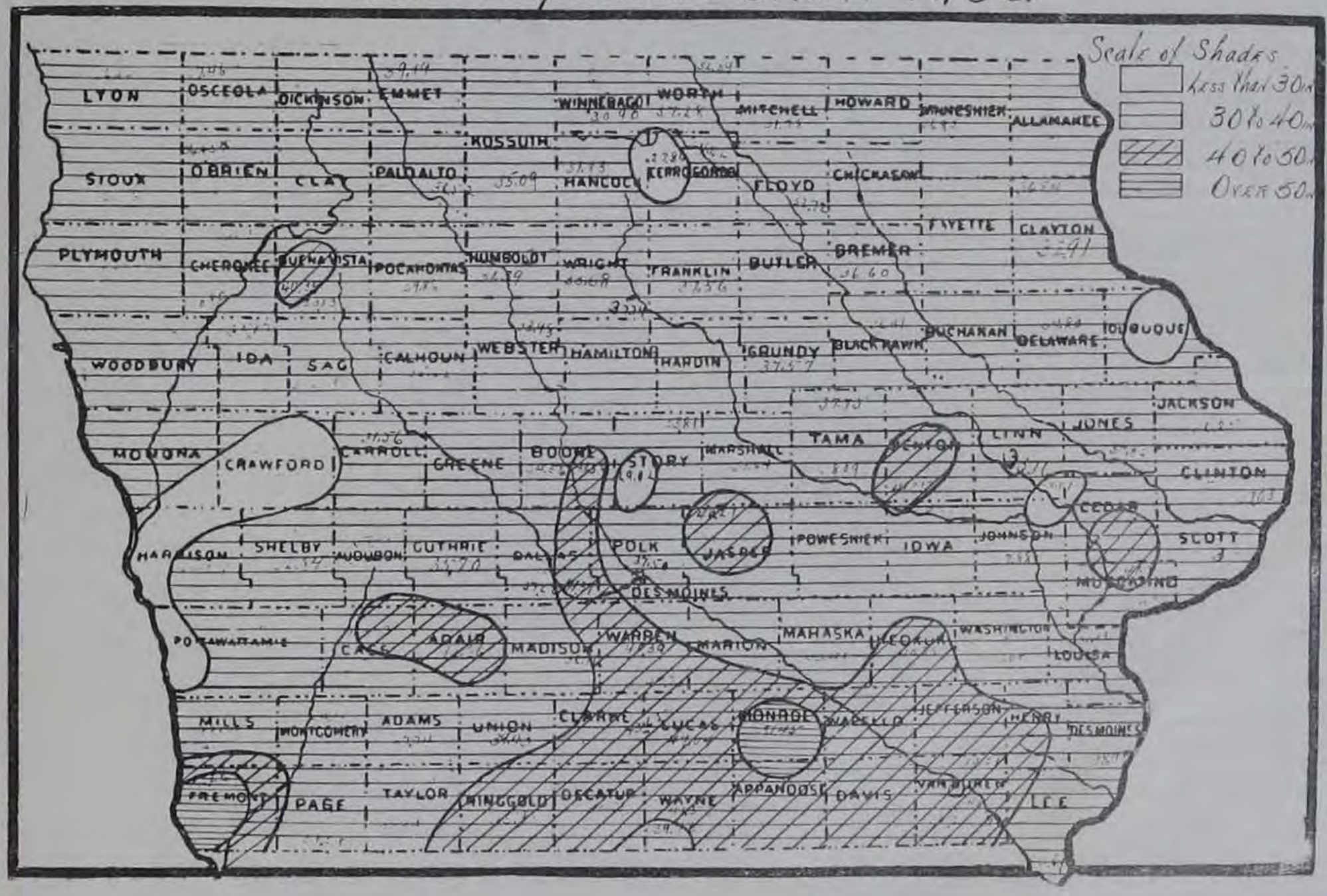
MONTHLY AND ANNUAL PRECIPITATION FOR 1905, WITH DEPARTURES FROM NORMAL.

STATIONS	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Annual.	
	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.
Afton	1.35	s .54	1.35	s .31	1.87	- .43	4.17	s .50	4.76	s .05	6.12	s 1.82	2.84	-1.96	4 67	s1.16	5.27	s1.40	3.66	s .70	3.12	†2.01	.25	-1.08	39.48	s 5.09
Albia	1.04	- .22	1.87	s .55	2.41	s .53	4.72	s1.77	4.76	s .64	9.06	s 5.49	7.08	s2.95	7.87	s3.89	4.92	s1.00	4.17	s1.38	3 47	s .53	.08	s .08	51.45	s18.89
Algona	1.03	s .23	1.60	s .50	2.01	s .45	2.08	- .48	7.95	s4.50	5.55	s 1.10	1.18	-2.49	4.89	s1.18	1.61	-1.55	3.62	s1.52	3 37	s2.11	.20	- 85	35.09	s 6.08
Allerton	1.01	.....	1.82	....	3.88	....	3.31	.....	8.81	.....	5.17	.....	3.62	.....	6.62	.....	4.67	....	3 33	.....	2.35	.....	.61	.....	39.73	.....
Alta	1.27	s 62	1.26	s .51	1.51	- .31	2.52	- .72	8.74	s4.52	5.73	s .07	1.47	-3.24	4.75	s .91	7.66	s4.99	2.08	—.09	3 20	s2.08	.15	- .88	40.34	s 8.41
Alta (near)	1.25	.....	1.00	.....	1.47	....	2.69	....	8.22	.....	7.23	.....	1.93	.....	2.96	.....	7.29	.....	2.08	....	3 11	.....	.25	.....	39.48	.....
Alton	....	....	....	....	....	....	....	....	8.80	....	7.20	....	1.55	....	3.65	....	5.20	....	1.41	....	3.41	.....	.03	....	.....	.....
Amana	0.89	- .55	1 93	s .66	2.88	s .88	3.22	s .34	7.87	s3.41	7.52	s3.08	2.65	-1.55	1.96	-1.62	1.89	-1.52	4.52	s1.78	3 14	s1.39	.97	- .52	39.39	s 5.73
Ames	0.64	- .33	0.67	- .17	3.80	s .82	1.38	-1.42	5.51	s1.28	4.23	- .52	2.14	-2 44	4.03	- .51	2.96	- 5.7	3.55	s1,0	2 93	s1.33	.23	- .79	29 02	- 2.29
Atlantic	1.55	s .79	2.10	s1 14	0.50	-1 46	3 72	s .68	3.03	-1.14	5.59	- .09	2.34	-2.01	1.54	s1 48	9 23	s3.56	4.79	s2.15	2.54	s1.68	.10	-1.28	40.08	s 8.50
Audubon	1.08	s .42	1.79	s .99	3.54	s1.76	3.51	s1.62	6.19	s2.27	5.95	s 2.18	2.88	-1.09	2 72	-1.23	4.51	s 1 14	3.17	s .94	2.42	s .94	.15	-1.10	37.88	s 9.14
Baxter	1.40	s .75	1.40	s .51	2.25	† 0.0	3.00	- .23	6.81	s .83	4.50	s .08	4.54	- .35	7.22	s3.20	2.81	- .80	3.98	s1.27	2.50	s1.69	.30	- 66	40.21	s 6 79
Bedford	0.95	s .13	1.56	s .75	1.62	- .91	2 84	† .00	6.28	s .10	2.96	--1.2	2.87	-2.73	3.64	-3.47	5.75	s2.21	2 16	- .67	3.33	s2.39	.15	- .77	33.09	- 4.18
Belle Plaine	1.65	s .13	2.97	s1.67	2.14	- .46	2.77	- .84	8 28	s3.84	4.49	s .26	5.98	†2.29	3.66	- .70	8.05	s .15	4 35	s2.07	2.41	s .58	.65	- .84	41.95	s 7.15
Bonaparte	0.79	- .78	1.42	s .18	3.03	- .65	4.60	s1.27	2.57	-1.46	14.50	†10.26	2.54	-1.06	7.93	s4.10	2.05	-1.96	2.09	s .27	1.84	- .16	.89	- .62	48.10	s 9.39
Boone	0.90	.....	1.37	.....	3.65	.....	4.23	.....	7.48	.....	6.59	.....	3.52	.....	6.45	.....	2.91	.....	3 60	.....	2.58	.....	.41	.....	41.59	.....
Britt	1.14	s .55	1.84	s .87	1.58	s .24	2 21	s .14	8.10	s4.41	8 56	- .92	1.97	-2.35	2.96	- .71	1.49	-2.56	3 85	s1.67	2.86	s1.88	.37	- .42	31 98	s 2.80
Buckingham	0.91	s .19	1.23	s .20	3.05	s .96	2.40	- .08	5.50	s1.68	5.88	s .67	5.17	s .77	2.72	-2.68	3.57	s .48	3.57	s1 78	3.81	s2.33	.69	- .31	37.75	s 6.51
Burlington	1.00	....	2.40	....	1 82	....	3.68	.....	3.07	.....	7.67	.....	8.30	....	6.61	....	2.90	....	3.03	.....	2.09	....	1.55	.....	38.92	.....
Carroll	1.57	s .71	1.75	s .67	1.87	- .48	2.99	- .53	6.29	s1.88	3.59	- 1.24	2.97	—.93	1.64	-2.13	2.51	- .61	3.68	s1.87	2.48	s1.33	27	- 81	31.56	- 0.77
Cedar Rapids	0.74	- .70	1.32	- .28	2.28	s .05	2.34	- .64	8.31	s3.79	3.70	- .22	2.78	-1 09	3.45	s .25	1.59	-1 88	4.19	s1.60	2.65	s1.28	.52	-1 09	33.76	s 1.54
Chariton	1.15	s .04	2 03	- .99	3.34	s1.84	4.35	s .84	5.51	s1.24	9.70	s 5.43	1 91	-1.35	7.74	s4.84	3.67	- .66	3 46	s .64	2.55	s1.14	.65	- .87	49.04	s14 74
Charles City	0.86	- .13	1.16	s .07	1.78	- .07	1.99	- .55	7.07	s3.02	5.29	s .16	1.19	-2.73	5.46	s2.62	2.00	-1.19	3.23	s .84	3.08	s .58	.61	- .75	32.72	s 1.87
Clarinda	0.87	- .10	1.18	s .16	1.76	- .14	2.91	- .40	6.32	s1.51	3 80	- 1.31	5.22	s .54	2.97	- .74	6.14	s3.58	2.33	- .46	3.41	s2.38	.19	-1.05	37.10	s 3.99
Clear Lake	0.30	- .22	1.40	s .55	1.60	s .38	1 15	- .76	7.53	s1 93	4.25	- .14	1.60	-3.15	3.78	- .23	.50	-3.08	3 25	s .37	2 20	s1.37	.30	- .35	27.86	- 3.38
Clinton	0.69	-1.16	2 44	s .33	3.09	s .07	3.69	s .76	5.95	s1 35	4.02	- .66	1.48	-2 6	4.11	s1.06	3 81	s .71	1.45	s2 04	2.48	s .58	1.42	- .31	37.68	s 2.08
College Springs	0.90	s .34	1.40	s .50	2.10	s .25	2.49	-2.18	4.82	- .62	2.56	- 1.87	2.64	-3.09	2 45	- .99	7.88	s5.42	2.50	- .81	3.13	s2.09	.08	-1.56	31.20	- 2.52
Columbus Junction	0.78	....	1.82	....	1.79	....	4.88	....	8 18	....	6.05	....	2.75	....	3.33	....	1.56	....	3 88	....	2.69	....	1.22	....	35.91	.....
Corning	0.97	s .23	2.00	s1.20	1 06	- .09	3.31	s .22	4.31	- .42	5.07	s .88	2.25	-2.22	4.29	s .89	7 89	s5.43	2.93	s .37	3.46	s2.50	.20	-1.04	37.74	s 7.32
Corydon	1.10	- .51	1.71	s .29	2.78	s .71	4.60	s1.48	3.84	-1.18	9.07	s 4.74	4.74	s 31	2.81	-1 20	3.04	— 82	4.99	s2.12	3.17	s .67	.68	- .94	41.53	s 5.75
Cresco	0.60	- .57	1.08	s .10	2.12	s .48	2.01	- .42	6 60	s2.84	4 67	- .29	1.83	-2.70	8.13	s .28	1.45	-2.24	1.93	s2.56	....	....	....	....	....	....
Creston	....	....	....	....	....	....	3.69	....	4.32	.....	6.22	....	3.42	....	5.48	....	6.37	....	1.95	.....	3.28	.....	.35	.....	.....	.....
Cumberland	1.00	s .26	2 25	s1.54	0.90	-1.56	3.52	s1.58	4 94	s .93	5.81	s 1.75	4.02	-1.15	3.78	1 02	8.22	s5.24	2.85	s .04	2.31	s1.67	.04	- .92	39.59	s 8.36
Davenport	0.63	-1.04	1.99	s .49	2.21	s .05	3.45	s .67	3.12	-1.20	7.68	s3.29	0,99	-2.67	1.93	-1.65	3.48	s .30	2 78	s .11	2.01	- .05	1.32	- .41	31.54	- 2.18
Decorah	0.91	- .18	1.18	s .20	2.09	s . 3	1.74	—.95	6.48	s2.11	6.31	s 2.05	3.32	s 11	3.07	s1.39	1.91	-1.53	3.40	s1.06	2.80	s1.21	1.26	- 10	34.47	s 5.50
Delaware	0.74	- .27	1.34	s .46	1.87	s .04	2.06	—.98	6.13	s2 01	5.35	s 1.07	1 75	-1 93	5.53	s2.67	2 62	- .62	3.15	s1.13	3.12	s1.51	.94	- .58	34.80	s 4.51
Denison	1.12	s .58	1.52	s .85	0.58	-1.05	3.20	-1.76	5.53	s1.93	2.22	- 1.36	3.68	- .64	1.15	-2.23	2.96	- .25	2.29	- .12	2.50	s1.60	.12	- .48	25.87	- 2.92
Des Moines	1.08	- .23	1.06	- .22	2.16	s .70	3.29	s 50	4 44	- .26	5,73	s .87	4 53	s1.00	5.21	s1.95	3.47	s .27	3.61	s .60	2.34	s .63	.55	- .89	37.50	s 4.89
De Soto	1.20	.....	1.85	.....	1.90	....	4.34	....	3 97	.....	5.94	....	4.78	....	4 50	.....	3.03	....	3 86	.....	1.43	.....	.47	.....	37.22	.....
Dows	1.20	s .56	2 90	s2.00	1.94	- .05	3.16	s .11	8.15	s3.08	5.64	s .56	1.75	-2 60	4.83	s 95	1.86	-2.41	3.82	s1.47	2.75	s .41	.34	- .55	37.74	s 8.53
Dubuque	0.95	- .73	1.58	s .12	2 27	† .00	3 07	s .23	4.06	s .07	4 33	- .87	1.51	-3.77	3.07	- .08	1.25	-2 84	3.88	s1.17	2.64	s .54	1.17	- .64	29.78	- 5.75
Earlham	0.91	.....	1.38	....	1 78	....	4.48	.....	4.01	.....	6.98	.....	3.49	.....	4.27	....	3.53	....	4.24	.....	1.98	....	....	.....	.....	.....
Elkader	0.81	- .54	1.12	† .00	1.70	- .13	2.40	- 45	6.35	s2.30	4.49	s .29	2.23	2.11	2 83	s .03	3.07	- .75	4.31	†1.56	2.55	s .87	1.05	- .88	33.91	s 0.19
Elliott	....	....	....	....	0 84	....	2.80	....	3.55	....	3.27	.....	3.18	....	2.61	....	6.39	.....	3.81	.....	1.11	.....	.13	....	.....	.....
Estherville	0.78	s .43	1.18	s .56	2.20	s .79	1.50	- .96	9.13	s3.02	3 48	s .89	3.05	- .83	5.05	s1.75	5.68	s2.58	3.06	s1.44	4.06	s2.89	T	- .59	39 19	s14.47
Fayette	....	....	1.43	s .27	1.75	- 51	2.62	- .58	6.45	s1.61	5.15	- 70	2.62	-1.08	5.08	s2.18	3.58	s .62	2.98	s .17	2 81	†1.16	.94	†0.45	.....	.....
Florence	0.73	.....	2.24	....	1.87	.....	1.61	.....	6.96	.....	5.01	.....	2.14	....	3.26	.....	1.57	....	4.85	.....	2.54	.....	.35	.....	33.68	.....
Forest City	0.80	s .16	1.95	s1.18	1.97	s .49	1.72	- .83	7.89	s4.09	1.80	- 3.26	3.30	- .13	3.42	s .21	1.98	-1.84	3.84	s1.47	2.93	s1.57	.80	- .61	30.90	s 2.45
Fort Dodge	0.80	.....	1.50	.....	1.65	.....	2.93	.....	4.82	.....	3.07	.....	2 06	.....	7.63	.....	2.54	.....	4.18	.....	2.55	.....	.25	.....	33.98	.....
Fort Madison	1.37	- .52	2.13	s .17	0.94	-2 04	4.22	s .93	3.92	- .94	8.26	s3.92	3.61	- .47	4.93	s1.27	2.38	-1.41	1.93	- .82	3.98	s1.82	1.10	- .90	38.80	s 1.01
Galva	1.53	s1.18	1.80	s .88	0.99	- .40	1.98	- .78	8 05	s4.75	5.00	s .77	2.60	-1 60	3.79	s .45	4.70	s .70	2 05	s .38	3.10	s1.77	.08	- .76	35.17	s 7.29
Gilman	1.60	s1.10	1 75	s .74	3 35	s1.40	2.40	- .10	5.52	s1.52	5.24	s .84	....	....	3.10	- .56	3.52	s .89	4.33	s2.04	2.61	s1.63	.40	- .50	.....	.....
Glenwood	0.75	- .10	1.60	s .92	0.39	- .87	1.80	- .75	3.09	-1 40	2.72	- 1.19	3.13	- .53	3.15	- .36	7.50	s5.37	4.40	s1.82	3.00	s2.40	.05	- .73	31.58	s 4.58
Grand Meadow	0.88	- .30	1.33	s .21	1.50	- .60	2.19	- .94	8.60	s3.45	5.38	s .10	3.19	-1.18	3.98	s1.43	3.36	s .19	2.98	s .36	2.68	s1.09	.89	- .67	36.84	s 3.19
Greene	0.69	- .02	0.94	- .02	2.06	s .42	2.81	s .93	7.51	s3.87	4.68	s .61	1.86	-2 23	5.01	s1.86	1.68	-1.66	3.85	s1.71	....	....	....	....	.....	.....
Greenfield	0.93	s .03	1.43	s .39	1.71	- .53	4.21	s1.08	4.94	s .34	8.74	s 3.63	2 81	-2 08	4 89	s1.57	6.06	s2.78	4.88	s2 08	2.85	s1.79	.21	-1.14	42.66	s 9.94
Grinnell	...	....	2.03	s1.16	3.38	s1.59	3.48	- .04	6.35	s1.70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grinnell (near)	....	....	....	....	....	....	....	....	....	....	5.95	....	5.96	....	6.74	....	2.07	....	4.68	.....	3.26	....	1.00	....	....	.....
Grundy Center	1.50	s .79	2.55	s1.88	2.71	s1.05	4.26	s .88	6.82	s1.87	4.24	- 1.60	4.46	s .28	2 81	- .76	1.54	-1.78	3.32	s .68	2.65	s1.37	.71	- .54	37 57	s 4.02
Guthrie Center	0.74	s .21	1.15	s .48	1.99	s .59	4.55	s2 08	4.79	s .22	5.61	s 1.55	3.58	-1.01	3.23	-1.43	3.68	s .22	3.32	s1.10	2.16	s1.11	.95	- .32	35.70	s 4.80
Hampton	0.69	- .41	1.48	s .37	2.06	- .20	3.86	- .08	8.50	s4.33	4.99	- .24	3.06	-1.08	8.96	s .81	2.57	- .93	3.46	s .88	2.86	s1.25	.57	- .75	37.56	s 3.90
Hanlontown	1.00	....	1.79	....	2.35	....	2.70	....	10.83	....	4.55	.....	3.04	....	2.39	.....	1.54	....	3.60	.....	3.09	.....	.40	.....	37.28	.....
Harlan	0.87	s .19	1.16	s .40	1.43	- .27	2.98	s .50	4.29	- .07	3.80	- 1.48	4.21	-1.50	4.70	s .09	3.54	- .46	2.75	- .28	3.06	s2.26	.05	-1.02	32.84	- 1.64
Hopeville	0.46	- .44	0.68	- .09	2.63	s .95	4.20	† .78	4.76	†0.00	4 64	† .29	....	....	3.25	- .04	5.68	s2.15	3.68	s1.25	2 92	s1.94	.18	- .93	.....	.....
Humboldt	0.60	- .05	0.75	s .05	3.40	s1.93	0.94	-1.80	7.04	s3.16	2.44	- 2 23	1.24	-2.70	6 01	s2.90	1.84	-1.60	4.11	s2.88	2.92	s1.46	.10	- .66	31.39	s 2.86
Ida Grove	....	....	1.10	.....	1.30	....	1.44	....	6.86	....	3.13	....	1 65	.....	2.60	.....	2.73	.....	....	....	....	....	.10	.....	....	.....
Independence	1.39	s .02	2.00	s .95	1.97	s .18	3.90	s1.69	7.44	s3 27	4.33	- .79	2.41	-2.31	....	....	....	....	3.98	s1.61	3.20	s1.68	.98	- .55	.....	.....
Indianola	1.33	s .18	1.68	s .93	1.90	s .71	3.26	- .04	4.02	- .68	6.98	s2.90	3.17	- .47	6.17	s2.01	3.88	s .88	4.13	s2.07	3.21	s1.91	.66	- .75	40 39	s 9.62
Inwood	1.00	.....	0.70	.....	3.70	.....	0.93	.....	6 20	.....	9.92	....	1.29	....	2.76	....	4.42	.....	1.47	.....	....	.....	....	.....	.....	.....
Iowa City	1.22	- .52	1.90	s .39	2.28	- .20	3.36	s 22	5.37	s1.03	6.68	s2.05	3.59	- .91	2 62	-1.64	1.54	-2.29	5.36	s2.82	2 92	s .60	1.04	- .62	37.88	s 0.93
Iowa Falls	1.19	s .26	1.54	s .59	1.47	- .14	2.83	- .32	7.73	s4.18	3.52	- 1.25	2.79	-1.05	2.62	- .78	2.81	- .51	3.15	s .85	3.49	s1.21	.47	- .69	32.52	s 2.35
Keokuk	0.60	-1.12	1.37	- .84	1.78	- .40	3.82	s .11	3.01	-1.06	6.57	s 2.03	2.89	-1.21	3 16	s .33	4.15	s .63	3 41	s .65	2.32	s .20	1.09	- .98	33.61	- 1.11
Keosauqua	0.78	- .14	2.02	s .60	2.15	- .33	3.98	s .14	3.77	- .57	14.89	s10.83	2.57	-1.40	3.92	s .43	2.20	-2.28	2.31	s .41	2.08	s .45	1.04	- .50	41.71	s 7.64
Knoxville	1.65	s .72	0.40	- .58	1.40	- 10	3 58	s .42	5.57	s2.21	8.72	s4.90	....	....	7.81	s3.29	2.68	- .83	4.41	s2.01	2.42	s1.38	.85	- .51	.....	.....
Lacona	1.82	s .40	2.68	s1 38	2.92	s .23	5.43	s2.59	5.43	- .49	8.85	s 4.51	4 22	- .65	6.71	s1.56	8.96	s .35	4.35	s1.68	2.52	s1.44	.92	- .78	49 76	s12.25
Larrabee	1.80	s .73	1.40	s .65	1.61	- .04	1.29	-1.70	7.60	s3.65	3.90	- 2.00	.63	-4.08	3.98	s .59	7.41	s4.53	2.61	s .77	3.74	s2.76	.17	- .90	35.59	s 5.01
Le Claire	0.79	....	1.56	....	2.53	.....	3.41	.....	8.96	.....	6.37	....	2.80	.....	1.86	.....	3.11	.....	3.01	....	2.39	.....	1.88	.....	32.67	.....
Le Mars	0.88	s .19	0.60	- .01	2.20	s .83	1.25	-2.37	8.87	s5.28	4.31	s .29	2.86	-2.04	3.88	s1.17	8.31	s5.12	1.78	- .07	4.93	s3.87	.10	- .99	39.97	s11.27
Lenox	0 60	- .03	1.41	s .76	1.40	- .45	3.68	s .66	5.42	s .71	5.93	s 1.80	1 81	-3.41	3.53	- .07	6.78	s3.76	3.82	s .33	3.22	s2.09	.18	-1.10	37.25	s 5.05
Leon	0.91	.....	1.85	.....	3.22	.....	5.49	....	5.89	.....	5.08	.... ..	2.76	....	4.60	.....	4.45	....	3.91	.....	2.46	.....	.39	....	40.51	.....
Little Sioux	1.24	....	0.89	....	0.69	.....	3.13	....	4.25	.....	3.18	.....	1.15	....	1 80	....	4 64	.....	1.54	....	2.60	.....	.05	.....	24.66	...
Logan	1.70	s .58	1.40	s .20	1.20	- .70	4.23	s1.86	4.26	s .07	2.53	- 3.17	4.20	- .71	1.74	-2.12	6.52	s3.41	1.85	- .68	3.09	s1.93	.20	-1.15	32.92	- 0.93
Maquoketa	0.63	- .69	1.61	s .11	2.94	s .65	3.30	s .77	5.78	s1.26	3.18	- 2.59	4.46	s .87	3.82	s .49	2.82	- .39	4.29	s1.35	2.99	s1.54	1.58	- .03	36.85	s 2.84
Marshalltown	0.92	- .02	1.49	s .71	3.11	s1.18	3.39	s '28	6.11	s1.37	4.69	- .25	4.60	s .15	3.21	- .36	3.34	s .67	3.45	s .98	2.77	s1.44	.56	- .92	37.64	s 5.23
Mason City	1.20	s .01	1.61	s1.05	1.75	s .41	1.68	-1.66	8.19	s4.24	4.80	- 2.24	2.25	- .54	5.00	s2.84	1.00	- .85	3.64	s1.63	2.65	s1.65	.45	- .21	34.22	s 5.83
Massena	0.68	....	1.08	.....	1.67	.....	4.04	.....	4.40	....	5.74	....	1.91	....	8.84	....	7 57	....	....	....	2.05	....	....	....	....	.....
Monticello	....	....	....	....	2.71	s .32	2.81	s .12	5.57	s1.66	3.80	- .69	2.24	-1.92	3 75	s .20	2.64	-1.08	4.28	s1.56	2.83	s .69	1.38	- .83	.....	.....
Mount Ayr	1.07	s .04	1.65	s .49	2.26	s .83	4.83	s1.68	6.74	s1.35	7.00	s 2.56	3.61	-1 50	4.87	s1.55	6.92	s3.75	3.75	s1.36	2.90	s1.62	.38	- .94	45.98	s12.29
Mount Pleasant	0.88	- .35	1.68	s .64	2 81	- .02	4.58	s1.54	4.01	- .33	10 06	s 5.85	2.91	- .83	6.10	s2.19	2.02	-1.84	2.04	- .04	2.65	s1 06	1.28	s .07	40.53	s 8.44
Mount Vernon	1.21	- .10	3.37	s1 30	2.20	s .17	2.40	- .63	5.41	s1.32	4.07	s .32	1.43	-3.20	1.56	-3 01	1.32	-1.49	4.67	s2.27	.90	- .22	1.47	- .19	29.01	- 3.46
Muscatine	0.93	- .88	1.87	- .71	2.20	- .59	3.41	† .00	3.20	-1.18	4.36	- .50	4.59	s 68	3.26	-1.02	1.33	-2.39	4.49	s1.45	2 28	- .02	.97	-1 31	32.49	- 6.47
New Hampton	0.47	- .36	0.97	- .10	1 69	s .04	2.33	s .40	7.35	s2.88	4.65	s .17	2.82	- .87	4 26	s1.76	....	....	3.28	s .73	2.38	s .59	.56	- .11	....	.....
Newton	1.46	s .54	2.00	s .98	2.76	s1.20	3.38	† .00	8.25	s3.79	5.82	s .85	6.12	s2.24	5.10	s1.23	3.47	s .24	5.07	s2.30	2.97	s1.17	....	....	.....	.....
Northwood	1 55	s .90	1.47	s .31	2 35	s .75	0.92	-1.89	7.89	s3 47	3.89	- .92	1.92	-2.07	2.97	- .65	1.89	-1.60	4.20	s1.57	2.78	s1.22	.56	- .35	32.39	s 1.24
Odebolt	0.94	s .62	0 88	s .13	1.43	- .56	2.83	s .12	6 92	s4.15	3 64	- .67	2.58	-2 54	2.82	- .87	4.69	s1.54	3.49	s .28	3.26	s2.14	.06	-1.04	32.54	s 3.80
Ogden	0.95	s .36	1.67	s1.08	2.43	s .91	2.53	- .42	5.40	s .24	6.35	s 1.47	2.91	-1.21	3.87	- .19	2.88	-1.42	3.33	s .67	2.24	s1 13	.50	- .51	34.56	s 2.11
Olin	0.83	- .23	2.20	s 87	2.52	s .07	2.88	s .70	6.37	s1.84	5.06	s 1.54	3.12	- 48	3.98	- .30	2 30	-1.08	4 08	s1.61	2.85	s1 65	1.54	s .08	37.00	s 6.27
Omaha, Neb	1.18	s .44	1.36	s .57	0.70	- .80	3.43	s .80	3 40	s .97	1.70	- 3.97	2.36	-2.89	3.03	- .31	5.94	s3.03	3.97	s1.50	2.72	s1.06	-14	- .87	29.88	- 1.81
Onawa	1.43	s .20	1.10	s .15	1.09	s .44	4.24	s1.25	7 57	s3.19	2.86	- 2.34	1.14	-3.49	2.08	-1.86	5.28	s2.46	1.28	-1.11	4.26	s3.13	.10	- .98	32.38	s 0.25
Osage	1.08	s .15	1.18	† .00	2.35	s .78	1 77	s .80	7.42	s3.19	5.52	s 1.00	1.49	-2.05	2.88	- .17	1.58	-1.97	8.45	s1.02	2.36	s1.21	.58	- .73	31.78	s 1.68
Oskaloosa	0.78	- .15	1.26	s .19	3.49	s1.60	3.84	s .56	3.34	- .23	6.72	s 2.59	3.62	- .43	3.80	s .66	2.31	- .79	8.70	s1.87	2.26	s .71	.84	- .44	35.41	s 5.64
Ottumwa	0.85	- .74	2.83	s1.59	3 88	s1.47	5 44	s2.36	.....	.....	.....	.....	2.40	-1.89	6.86	s8 18	3 37	- .95	7.13	s4 25	2.43	s .75	1 69	s .32	.....	.....

MONTHLY AND ANNUAL PRECIPITATION.—CONTINUED.

STATIONS.	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Annual.	
	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.	Prec.	Dept.
Pacific Junction	0.96	s .53	0.98	s .50	0.77	- .66	2.81	- .30	2.88	-2.16	3.40	- 1.03	4.17	- .40	3.47	- .98	8.13	s5.81	3.61	s1.15	2.70	s2.11	.07	- .89	33.40	s 3.68
Perry	1.28	....	1.85	....	2.49	...	4.18	..	6.06	.....	6.97	.....	4.05	.....	5.30	.....	2.40	.....	...	.....	3.46	....	.45	....	.....	.....
Plover	1.45	s .94	1.35	s .70	1.30	- .08	2.98	s1.15	6.60	s3.32	4.42	s .39	1.18	-3.95	8.47	s4.47	...	.....	2.86	s .55	5.30	s3.71	.15	- .60	....	.....
Pocahontas	1.15	.. .	1.55	....	1.75	.....	4.29	.....	8.04	.....	4.25	....	1.83	.....	5.87	.....	3.25	.....	3.35	... .	4.32	.....	.21	.....	39.86	.....
Red Oak	0.65	- .07	1.47	s .69	1.28	- .98	2.41	- .48	3.86	s .12	3.87	- 1.29	3.21	-1.59	3.96	s .87	8.26	s5.30	2.73	- .47	3.19	s2.15	.06	-1.16	34.95	s 3.14
Ridgeway	1.33	- .37	2.60	- .67	3.38	s .89	2.81	s .70	6.88	s1.73	5.26	s .74	1 85	-3.24	3.62	s .92	2.02	-2.11	3.58	- .30	2.98	s .98	1.27	-1.23	36.98	- 1.96
Rock Rapids	0.70	s .07	0.60	s .46	2.15	s .56	1.10	-2.65	5.35	s1.96	9.17	s 5.43	2.68	s .11	6.00	s4.24	2.73	s .48	2.50	s .75	3.70	s2.71	T	- .61	36.68	s13.46
Rockwell City	1.25	s .62	1.30	s .79	2.75	s .45	4.68	s2.27	7.05	s3.71	2.05	- 2.45	2.99	-1.01	4.20	s .66	2.70	- .37	3.22	s .64	2.98	s2.13	.05	-1.25	35.22	s 6.19
Sac City	1.17	s .22	1.57	s .75	....	.....	3.42	s .43	6.55	s2.92	2.07	- 2 82	8.65	- .16	3.46	s .10	2.37	- .92	2.59	- .08	....	.... .	.17	- .98	.....	.....
Saint Charles	1.24	.....	1.57	....	1.50	....	2.25	.....	5.05	.....	4.19	.....	6.63	.....	4.04	.. .	3.27	.....	3.16	.....	3.29	.... .	.52	.....	36.71	.....
Sheldon	1.34	s .95	1.30	s .62	3.15	s1.19	1.11	- .37	8.60	s4.98	6.79	s 2 62	1.20	-5.65	3.15	- .27	4.36	s .27	2.41	s .41	3.94	s3.23	.10	- .80	36.45	s 7.18
Sibley	0.88	s .34	0.60	s .18	1.58	s1.41	0.63	-2.06	7.96	s4.61	7.19	s 3.06	2.40	-1.51	4.63	s1.38	4.07	s .91	2.11	s .44	4.24	s3.87	.17	- .69	37.46	s11.39
Sidney	....	.....	....	.....	1.02	.....	1.99	.. .	5.96	.. .	2.50		3.72	....	5.43	.....	9.64	...	2.34	...	3.61	.....	.15	.....	.....	.....
Sigourney	1.11	- .13	2.11	s .76	3.38	s1.44	3.60	† .09	3.88	- .15	7.48	s 3.79	4.35	- .33	3.94	s .21	2.09	- .88	5.28	s2.21	2.25	s .75	1.06	- .85	40.38	s 7.82
Sioux Center	1.30	s1.03	0.60	- .18	2.20	s .95	1.01	-2.12	6 94	s3.12	8.87	s 4.57	.73	-4.65	2.76	-1.34	4.47	s .09	1.20	- .36	3.23	s2.66	.25	- .69	38.56	s 3.14
Sioux City	0.67	s .04	0.44	- .11	1.41	s .17	3.44	- .58	8.41	s4.74	2.55	- 1.25	1.41	-1.96	1.84	-1.35	6.37	s4.28	1.89	s .19	4.16	s3.34	.07	- .81	31.66	s 6.70
Stockport	0.94	.....	1.63	.....	2.00	.....	4.14	.....	8.45	.....	14.57	.....	1.88	....	5.44	..	2.36	.....	1.84	.....	1.93	.....	.68	.....	40.81	...
Storm Lake	1.48	s .78	1.31	s .66	1.18	- .20	2.48	s .13	7.50	s3.98	5.20	s .82	1.80	-2.98	2.67	- .25	3.95	s .98	2.85	s1.09	3.00	s2.04	.26	- .67	33.13	s 5.83
Thurman	0.91	s .20	1.14	- .18	1.39	- .39	2.34	-1.10	6.20	s1.49	5.98	- 1.56	6.30	s .82	7.60	s2.17	13.18	s9.97	2.94	-1.10	4.18	s3.09	.10	-1.68	52.26	s11.78
Tipton	...	.....	2.60	-1.37	2.63	- .47	3.28	- .49	4.08	-1.23	5.92	s 2.19	2.55	-1.87	4.75	- .50	2.06	-1.13	4.81	s2.88	1.64	- .13	.93	- .97	.....	.....
Toledo	0.97	s .16	1.51	s .82	3 80	s1.55	2.40	- .63	5.90	s2.19	4.45	s .85	5.30	s2.07	3.00	- .82	4.00	s .89	4.06	s2.19	3.00	s1 47	.20	- .94	38.09	s 9.80
Vinton	0.80	- .35	2.10	s1.09	2.40	s .62	2.22	- .70	.....	.....	.....	.....	2.44	- .95	1.05	-1.56	2.08	- .71	2.22	s .62	2.90	s1.75	.68	- .53	.....	.....
Wapello	0.72	s .01	2.06	s .60	3.03	- .49	3.84	s1.60	4.28	s .64	4.67	s 1.75	2.52	- .57	4.05	-1.20	...	....	2.04	- .18	1.96	s .50	1.23	- .11	....	.....
Washington	0.82	- .63	2.14	s .98	1.79	- .38	4.06	s1.44	4.05	s .62	5.36	s 2.13	3.39	- .15	5.58	s2.09	1.87	- .75	4.54	s2.41	2.35	s .96	1.05	- .42	37.00	s 8.80
Washta	1.15	s .74	1.00	s .38	0.73	- .52	2.27	s .54	6.88	s3.67	5.75	s 1.34	.69	-4.41	2.23	- .68	5.51	s1.60	1.92	- .05	2.57	s1 52	.10	-1.07	30.80	s 3.06
Waterloo	0.74	- .21	1.46	s .48	1.96	s .13	2.60	- .39	5.66	s1.28	5.53	s 1.03	4.85	s .11	4.41	s .81	2.99	- .50	3.88	s1.06	2.60	s1.20	.78	- .41	36.41	s 4.59
Waukee	1.65	....	2.38	.....	2.16	... .	3.60	.. .	5.01	.....	7.31	.....	3.53	...	5.39	.....	8.59	.....	3.83	.....	2.07	.....	.85	.....	41.37	.....
Waverly	1.14	s .31	1.53	s .41	1.83	- .13	2.66	- .39	6.80	s2.18	6 76	s 2.28	2.84	-1.00	5.49	s2.96	1.73	-1.47	3.04	s .40	1.97	s .49	.81	- .27	35.60	s 5.67
Webster City		....	....	.....	1.24	.....	1.87	... .	6.98	....	3.06	.....	3.03	.....	3.97	.....	2.04	.....	2.42	...	3.67	.....	.80	...	.....	.....
West Bend	1.75	s1 13	2.00	s1.19	1.71	s .07	3.48	s .67	6.60	s3.76	5.23	s 1.42	1.58	-2.26	5.83	s1.70	2.65	- .58	2.75	s .99	3.29	s1.90	.15	- .84	36.52	s 9.20
Whitten	1.30	s .73	3.10	s1 54	1.70	* .76	3.19	s1.18	6.66	s2.90	4.16	s 2.10	5.23	s1.46	1.61	-2.28	....	....	3.78	s1.16	1.82	s .58	.60	- .57	.....	.....
Wilton Junction	0.74	- .64	2.67	s1.27	3.40	s .69	4.11	s1.24	4.72	s .40	6.57	s 3.29	3.26	-2.01	3.53	- .68	4.60	s1.42	3.94	s1.87	2.78	s .98	1.50	s .05	41.82	s 7.88
Winterset		.....	0.85	- .04	1.55	- .49	4.10	s .44	3.63	- .94	6.24	s .40	3.65	-2.28	3.84	s .30	3.56	s .21	3.74	s1.37	2.57	s1.86	.46	- .91	..	..
Woodburn	1.15	s .14	1.87	s .66	3 67	s2.15	5.33	s2.74	6.06	* .67	6.80	s 2.81	5.60	s .19	2.75	-3.66	4.37	s 48	3.58	s1.67	2.15	s1.11	.87	- .89	43.65	s 8.07
Zearing	0.76	.	2.18	... .	3.20	.	2 64	.....	6.75	.....	4.62	.....	2.09	....	4 32	....	1.81	....	3.02	....	72.01	.....	.41	...	33 81	.....

Annual Precipitation Chart 1905.



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