U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

IOWA SECTION

In co-operation with

IOWA WEATHER AND CROP BUREAU
CHARLES D. REED, Senior Meteorologist

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GENERAL SUMMARY

The main characteristics of January, 1930, were abnormally low temperatures, numerous and sudden temperature changes, and heavy snowfall. Severe winter weather prevailed after the 6th.

The mean temperature for the State, 10.5°, was the lowest since 1918, with the exception of 10.2° last January. The maximum temperature for the month at all stations during the mild period, 3d-5th, was followed by severe winter weather. Previous low temperature records were equalled or broken at several stations in the eastern districts and particularly in the lower Des Moines River Valley. The lowest temperature in the State was 37° below zero at Decorah on the 22d, which equals the record established at that station on January 12, 1912, and is the lowest temperature recorded in the State for January since 1912. Cold waves passed over the State on the 7th, 15th and 18th. Unusual radiation cold waves occurred in eastern Iowa on the 10th and 22d. These are given special treatment elsewhere in this issue.

Precipitation averaged 25% above normal. The extreme southwest stations had the greatest excess, while some stations in the northern districts were below normal. There was no well defined precipitation period but most of the snow fell between the 10th and 20th. The snow did not drift to any great extent due to light winds during the snowstorms. With the exception of last year the snowfall this month was the greatest of record for January.

From the mild period until cold weather set in, winter wheat and grasses remained bare, but after that they were well protected by the heavy snows. Corn shelling and marketing was active during the mild period, but practically ceased during the cold, snowy weather, when farm work was limited to the care of livestock, which consumed much feed. Very little sickness existed among farm animals.

Ice harvest was in full swing during the last half of the month.

Aviation was not inconvenienced greatly by the heavy snows and cold weather. Landing fields were heavily covered with snow during the last half of the month, but were kept open to aviation by disking and rolling the runways. Air mail was carried successfully in spite of the abnormal weather conditions.

N. G. R.

TEMPERATURE

The mean temperature for the State, derived from the means of 9 districts of nearly equal area, and based on the records of 99 stations, was 10.5°, or 8.0° below normal. There was a deficiency in all of the divisions of the State. The greatest deficiency, 8.7°, was in the south-central district, and the least, 7.3°, in the northeast district. The highest monthly mean was 16.9° at Keokuk, and the lowest was 4.7° at Lake Park. The absolute range for the State was 95°, from 58° at Keokuk No. 2 on the 5th, to —37° at Decorah on the 22d. Temperatures of zero or lower occurred at all stations. The average number of days with maximum temperatures 32° or lower was 25, ranging from 26 days in the northwest, north-central and central districts, to 23 days in the southeast district. The average number of days with the minimum temperatures 32° or below, was 31. The average number of days with the minimum temperatures zero or below, was 16, ranging from 23 days at 8 stations in the northwest and north-central districts, to 7 days at Keokuk. The greatest daily range in temperature at any one station was 50° recorded at Washta on the 29th.

COMPARATIVE DATA FOR THE STATE—JANUARY

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1873	12.0	— 6.5	55	—38	2.53	+ 1.46	3.56	0.50					
1874	19.6	+ 1.1	64	—21	1.67	+ 0.60	4.72	0.22					
1875	4.9	—13.6	48	—30	0.82	— 0.25	1.61	0.38					
1876	23.5	+ 5.0	62	—16	1.49	+ 0.42	3.96	0.00					
1877	13.7	— 4.8	58	—31	1.09	+ 0.02	3.01	0.37					
1878	25.4	+ 6.9	55	—13	0.48	— 0.59	5.00	0.00					
1879	16.1	— 2.4	54	—30	0.48	— 0.59	1.48	0.00					
1880	32.0	+13.5	68	— 6	1.36	+ 0.29	4.52	0.20					
1881	9.6	— 8.9	48	—40	0.94	— 0.13	3.10	0.04					
1882	23.4	+ 4.9	60	—17	0.65	— 0.42	1.80	0.09					
1883	8.0	—10.5	46	—38	1.31	+ 0.24	2.85	0.35					
1884	13.3	— 5.2	52	—38	0.52	— 0.55	1.50	0.02					
1885	9.4	— 9.1	51	—42	1.28	+ 0.21	3.72	0.18					
1886	8.1	—10.4	52	—33	2.59	+ 1.52	4.85	0.68					
1887	8.8	— 9.7	55	—34	1.13	+ 0.06	2.92	0.04					
1888	5.4	—13.1	58	—43	1.30	+ 0.23	4.00	0.40					
1889	21.6	+ 3.1	62	—25	1.22	+ 0.15	2.30	0.50					
1890	18.0	— 0.5	64	—27	1.79	+ 0.72	3.46	0.35					
1891	26.0	+ 7.5	58	— 4	1.75	+ 0.68	3.99	0.61		4	13	7	11
1892	15.3	— 3.2	76	—38	1.09	+ 0.02	3.13	0.10	6.9	5	16	9	6
1893	9.3	— 9.2	54	—34	0.74	— 0.33	3.20	0.13	6.9	6	11	9	11
1894	19.3	+ 0.8	69	—37	1.09	+ 0.02	2.24	0.31	6.0	5	14	9	8
1895	13.6	— 4.9	68	—31	0.85	— 0.22	2.65	0.09	8.7	4	15	7	9
1896	23.4	+ 4.9	68	—20	0.48	— 0.59	2.10	T.	2.8	3	10	10	11
1897	17.2	— 1.3	66	—30	2.01	+ 0.94	6.16	0.15	8.2	7	12	7	12
1898	23.4	+ 4.9	52	—11	1.60	+ 0.53	5.32	T.	12.6	5	15	6	10
1899	19.8	+ 1.3	68	—34	0.28	— 0.79	1.15	T.	1.5	3	15	10	6
1900	25.6	+ 7.1	66	—20	0.53	— 0.54	2.47	T.	2.3	3	16	7	8
1901	23.7	+ 5.2	60	—21	0.74	— 0.33	2.34	0.04	6.2	4	14	9	8
1902	22.4	+ 3.9	63	—31	0.88	— 0.19	2.83	0.19	9.4	4	17	8	6
1903	23.0	+ 4.5	60	—12	0.28	— 0.79	1.46	T.	2.0	4	13	7	11
1904	14.0	— 4.5	57	—32	1.18	+ 0.11	3.68	0.02	6.1	6	12	8	11
1905	11.2	— 7.3	56	—30	0.91	— 0.16	1.82	0.12	11.1	7	14	7	10
1906	24.6	+ 6.1	69	—19	1.52	+ 0.45	4.71	0.28	11.3	5	14	6	11
1907	18.8	+ 0.3	68	—22	1.52	+ 0.45	5.30	0.10	6.0	7	8	7	16
1908	24.9	+ 6.4	60	—18	0.44	— 0.63	1.50	0.06	4.8	2	17	8	6
1909	21.2	+ 2.7	72	—25	1.66	+ 0.59	3.74	0.41	7.8	6	9	6	16
1910	18.1	— 0.4	56	—35	1.57	+ 0.50	3.15	0.55	12.6	6	13	7	11
1911	20.2	+ 1.7	66	—35	0.97	— 0.10	3.73	0.11	7.3	5	9	8	14
1912	4.2	—14.3	49	—47	0.53	— 0.54	1.90	T.	5.5	5	14	7	10
1913	20.9	+ 2.4	62	—25	0.77	— 0.30	2.05	0.04	7.2	5	14	9	8
1914	27.8	+ 9.3	64	—10	0.88	— 0.19	2.34	0.27	5.1	5	11	8	12
1915	17.5	— 1.0	59	—32	1.63	+ 0.56	3.15	0.10	7.3	8	13	8	10
1916	17.8	— 0.7	63	—34	2.62	+ 1.55	6.07	0.85	7.2	10	12	6	13
1917	17.0	— 1.5	60	—28	0.83	— 0.24	2.07	0.17	7.2	4	17	8	6
1918	8.6	— 9.9	53	—35	1.02	— 0.05	2.79	0.26	11.2	7	13	8	10
1919	26.8	+ 8.3	64	—32	0.24	— 0.83	0.86	T.	2.8	2	20	5	6
1920	16.7	— 1.8	58	—26	0.42	— 0.65	1.05	T.	4.6	4	12	8	11
1921	28.4	+ 9.9	67	— 9	0.51	— 0.56	1.92	0.10	4.1	4	11	7	13
1922	19.8	+ 1.3	57	—29	0.89	— 0.18	2.30	0.32	5.3	4	17	6	8
1923	26.7	+ 8.2	58	—10	0.85	— 0.22	2.34	T.	6.5	6	10	7	14
1924	13.9	— 4.6	59	—36	0.89	— 0.18	2.47	0.06	5.5	5	17	7	7
1925	19.4	+ 0.9	55	—24	0.40	— 0.67	1.23	0.05	4.2	3	17	7	7
1926	22.7	+ 4.2	58	—22	1.09	+ 0.02	2.68	0.31	5.0	7	11	8	12
1927	21.7	+ 3.2	59	—27	0.29	— 0.78	1.10	T.	3.0	4	14	8	9
1928	25.2	+ 6.7	70	—20	0.17	— 0.90	1.04	T.	0.9	3	15	8	8
1929	10.2	— 8.3	47	—29	2.06	+ 0.99	4.10	0.40	17.5	9	11	6	14
1930	10.5	— 8.0	58	—37	1.33	+ 0.26	2.51	0.41	14.7	8	14	8	9

T. indicates an amount too small to measure, or less than .005 inch rainfall and less than .05 inch snowfall.

PRECIPITATION

The average precipitation for the State, derived from the averages of 9 districts of nearly equal area, and based on the records of 108 stations, was 1.33 inches, or 0.26 inch above normal. The greatest district excess was in the southwest district, 0.58 inch, while the east-central district was exactly normal. The greatest precipitation deficiency, 0.54 inch, at any one station, was at West Bend. The greatest excess in the State was 1.09 inches at Thurman. Practically all of the precipitation was in the form of snow. The greatest amount at a single station was 2.51 inches at Keokuk, and the least was 0.41 inch at West Bend. The greatest amount occurring in 24 consecutive hours was 1.00 inch at Stockport on the 9th. The average number of days with precipitation 0.01 inch or more for the State was 7.

Climatological Data for January, 1930

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit							Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
Northwest District																				
Akron	Plymouth	1,153	4								0.72	+ 0.13	0.29	8.6	5	14	10	7	n.	Orlan C. Moore
Alta	Buena Vista	1,513	39	8.4	— 7.4	46	4†	—23	17	39	1.06	+ 0.30	0.63	11.0	6	14	12	5	nw.	D. E. Hadden
Alton	Sioux	1,305	25	6.7	— 8.8	44	4†	—26	22	41	1.06	+ 0.30	0.48	13.0	5	12	12	7	nw.	W. S. Slagle
Cherokee	Cherokee	1,196	10	8.2	— 7.0	47	4	—25	17	38	0.55	— 0.07	0.20	7.2	7	16	10	5	nw.	J. E. Wirth
Estherville	Emmet	1,298	35	6.6	— 6.5	48	4	—22	18	38	0.85	+ 0.27	0.30	8.5	5	20	7	4	nw.	A. O. Peterson
Hawarden	Sioux	1,181	4								0.69	+ 0.13	0.32	12.5	5	23	3	5	nw.	Earl V. Slife
Inwood (near)	Lyon	1,474	26	5.2	— 8.8	45	4	—30	17	39	0.67	+ 0.02	0.28	7.3	6	23	5	3	nw.	A. C. Hanson
Lake Park (near)	Dickinson	1,489	17	4.7	— 8.6	45	4	—27	17†	38	0.58	— 0.04	0.30	7.0	3	14	7	10	nw.	P. M. Lawrence
Le Mars	Plymouth	1,224	34	8.1	— 9.0	45	4†	—25	17	38	1.41	+ 0.84	0.80	14.1	6	19	5	7	nw.	Henry Newell
Marathon	Buena Vista	1,390	4								0.82		0.38	8.2	6	13	7	11	nw.	E. G. Smith
Pocahontas	Pocahontas	1,248	26	8.2	— 7.8	48	4	—23	18	35	0.73	— 0.05	0.40	8.9	7	14	10	7	w.	F. E. Hronek
Rock Rapids	Lyon	1,349	31	5.4	— 8.1	45	4	—27	17	39	0.98	+ 0.29	0.28	12.5	5	26	3	2	nw.	Nellie F. Medberry
Sanborn	O,Brien	1,553	16	5.8	— 8.8	46	4†	—28	17	39	0.88	+ 0.18	0.32	11.0	4	15	10	6	sw.	J. W. Dow
Sheldon	O,Brien	1,418	19	6.8	— 7.8	47	5	—25	17	36	1.07	+ 0.35	0.38	10.7	9	13	14	4	nw.	Ross E. Forward
Sioux Center	Sioux	1,461	31	6.2	— 8.9	45	4	—28	17	35	0.98	+ 0.24	0.48	12.2	5	13	11	7	nw.	F. C. Aue
Spencer	Clay	1,319	16	6.4	— 8.3	46	4†	—22	17	34	0.92	+ 0.22	0.28	9.4	7	15	11	5	nw.	E. W. Little
Storm Lake	Buena Vista	1,438	41	9.0	— 7.8	46	4†	—22	17	36	0.92	+ 0.22	0.50	11.0	7	14	14	3	nw.	L. B. Florey
Washta	Cherokee	1,157	32	9.3	— 7.3	48	4	—26	22	50	0.58	— 0.03	0.40	7.5	4	17	9	5	nw.	H. L. Felter
West Bend	Palo Alto	1,197	37	8.0	— 7.0	48	5	—24	18	39	0.41	— 0.54	0.12	5.0	6	15	11	5	nw.	Jos. Dorweiler
Means and extremes				7.1	— 8.0	48	4†	—30	17	50	0.84	+ 0.16	0.80	9.8	6	16	9	6	nw.	
North Central District																				
Algona	Kossuth	1,224	57	8.2	— 7.2	45	4†	—26	22	38						17	3	11	nw.	W. E. Laird
Allison	Butler	1,060	16																	W. P. Miller
Belmond	Wright	1,181	20	6.6	— 8.1	48	4†	—26	18†	41	0.96	— 0.30	0.52	14.7	8	9	5	17	nw.	H. F. Luick
Britt	Hancock	1,236	43	8.3	— 5.9	46	5	—25	18	37	1.14	+ 0.46	0.80	15.1	7	20	2	9	nw.	E. P. Healy
Charles City	Floyd	1,015	39	6.6	— 7.1	48	5	—31	22	41	1.41	+ 0.36	0.73	16.5	9	13	9	9	nw.	U. S. Weather Bureau
Forest City	Winnebago	1,226	36	7.5	— 6.8	48	5	—28	18	43	1.92	+ 1.04	0.65	20.0	9	15	3	13	nw.	Dr. M. B. Neil
Hampton	Franklin	1,145	5																	L. H. Davis
Humboldt	Humboldt	1,095	42	8.2	— 8.3	49	5	—23	18†	35	1.00	+ 0.19	0.60	10.0	3	10	11	10	nw.	H. C. Snitkey
Mason City	Cerro Gordo	1,148	33	5.6	— 8.6	47	5	—31	22	41	0.78	— 0.19	0.41	12.2	13	11	13	7	nw.	American Beet Sugar Co.
Northwood	Worth	1,222	34	5.6	— 7.1	47	5	—27	18	37	0.90	— 0.24	0.30	9.0	5	13	13	5	nw.	Charles Dwelle
Osage	Mitchell	1,163	36	6.0	— 7.3	47	5	—30	18	38	0.84	— 0.17	0.40	10.5	7				nw.	Dr. C. E. Juhl
Means and extremes				7.0	— 7.4	49	5	—31	22	43	1.12	+ 0.14	0.80	13.5	8	14	7	10	nw.	
Northeast District																				
Decorah	Winneshiek	872	37	7.0	— 8.2	48	6	—37	22	46	1.16	— 0.08	0.68	16.0	6	17	6	8	nw.	M. D. Whitney
Dubuque	Dubuque	700	57	11.8	— 7.3	48	5	—24	22	40	2.05	+ 0.75	0.66	21.1	15	10	6	15	nw.	U. S. Weather Bureau
Fayette	Fayette	1,003	42	9.1	— 6.3	48	5	—34	22	42	1.65	+ 0.40	0.78	16.5	7	15	10	6	nw.	R. Z. Latimer
Independence	Buchanan	956	66	10.8	— 6.1	49	5	—31	22	40	1.31	+ 0.14	0.41	13.1	10	11	8	12	nw.	Dr. Geo. Boody
Lansing	Allamakee	632	23																	Mrs. Mary Spinner
New Hampton	Chickasaw	1,169	33	8.5	— 6.0	48	5	—30	18	36	1.22	+ 0.24	0.48	13.2	8	12	9	10	nw.	D. W. Dawson
Oelwein	Fayette	1,036	7	9.6	— 6.8	47	5	—25	18†	47	1.12	— 0.04	0.48	14.0	4	12	9	10	nw.	John T. Ridler
Postville (near)	Clayton	1,192	31	7.8	— 7.4	45	5	—26	18	35	1.49	+ 0.26	0.60	15.0	9	11	11	9	sw.	F. L. Williams
Waterloo‡‡	Black Hawk	854	47	9.1	— 8.3	49	5	—33	22	38	1.26	+ 0.14	0.53	12.6	10	17	3	11	nw.	R. B. Slippy
Waverly	Bremer	936	34	7.6	— 8.6	48	5	—34	22	40	1.10	— 0.01	0.72	13.7	5	19	7	5	nw.	D. H. Murphy
Means and extremes				9.0	— 7.3	49	5	—37	22	46	1.37	+ 0.19	0.78	15.0	8	14	8	9	nw.	
West Central District																				
Audubon (near)	Audubon	1,297	35	10.1	— 7.0	51	4	—21	18	36	0.97	+ 0.14	0.40	10.6	8	16	9	6	nw.	George Kibby
Carroll	Carroll	1,265	40	10.3	— 7.1	48	4	—20	18	35	0.73	— 0.05	0.30	7.3	6	17	9	5	nw.	Mrs. Jos. J. Wolfe
Denison	Crawford	1,171	36	10.1	— 8.1	48	4	—19	17†	37	0.95	+ 0.29	0.36	12.0	6	10	15	6	nw.	V. L. Byers
Guthrie Center	Guthrie	987	35																	Floyd H. Bainter
Harlan	Shelby	1,192	31	10.4	— 7.7	51	4	—25	18	40	0.93	+ 0.13	0.30	9.3	7	13	8	10	nw.	Walter Bell
Jefferson	Greene	1,052	31	11.0	— 7.1	53	4	—21	17†	39	1.25	+ 0.39	0.60	12.5	6	19	3	9	nw.	W. I. Lyon
Little Sioux	Harrison	1,040	25	11.0	— 8.3	52	4	—20	22	38	0.70	— 0.05	0.22	6.8	9	7	16	8	n.	H. W. Kerr
Logan	Harrison	1,120	63	11.8	— 8.5	50	4	—19	18	38	1.01	+ 0.01	0.40	12.4	9	5	22	4	nw.	Amy Ann Stern
Onawa	Monona	1,051	29	12.3	— 6.5	50	4	—22	22	36	0.96	— 0.03	0.32	12.0	8	11	9	11	nw.	Mrs. H. E. Colby
Rockwell City	Calhoun	1,232	34																	A. W. McIsaac
Sac City	Sac	1,269	54	9.4	— 7.8	48	4	—20	17	32	1.10	+ 0.09	0.56	13.5	7	10	14	7	nw.	F. P. Kessler
Sioux City	Woodbury	1,135	41	10.4	— 7.4	48	4	—22	17	39	0.64	— 0.10	0.31	8.1	8	12	10	9	nw.	U. S. Weather Bureau
Means and extremes				10.7	— 7.5	53	4	—25	18	40	0.92	+ 0.07	0.60	10.4	7	12	11	8	nw.	
Central District																				
Ames	Story	926	53	11.2	— 7.3	51	4	—23	22	37	1.08	+ 0.18	0.40	13.5	10				n.	Iowa State College
Baxter	Jasper	998	30								1.01	+ 0.14	0.52	13.0	8	19	1	11	nw.	F. A. Kanne
Boone (near)	Boone	894	25	10.3	— 7.6	52	5	—34	22	44	1.28	+ 0.44	0.45	13.5	9	15	6	10	nw.	C. F. Henning
Des Moines	Polk	861	52	12.4	— 7.7	54	4	—20	22	38	1.41	+ 0.34	0.43	16.5	12	13	8	10	nw.	U. S. Weather Bureau
Fort Dodge	Webster	1,114	30	9.0	— 7.7	49	4†	—22	18	38	1.07	+ 0.23	0.48	14.0	6	21	2	8	nw.	Mrs. Emma Sampson
Grinnell	Poweshiek	1,031	36	10.8	— 9.4	50	4	—26	22	35	1.98	+ 0.83	0.51	21.5	11	16	6	9	nw.	R. E. Bates
Grundy Center	Grundy	976	39	9.6	— 8.9	54	5	—28	18†	40	1.36	+ 0.39	0.72	17.0	6	12	8	11	nw.	M. G. Heiberger
Iowa Falls	Hardin	1,127	37	8.6	— 7.1	49	5	—26	22	36	1.42	+ 0.18	0.70	14.2	6	16	5	10	nw.	C. H. Gilbert
Marshalltown	Marshall	947	38	10.9	— 9.1	51	5	—23	18	34	1.47	+ 0.30	0.80	19.4	10	14	6	11	nw.	C. C. Pigman
Monroe	Jasper	922	18	12.2	— 8.5	52	4	—26	18	38	1.19	+ 0.09	0.48	22.0	7	16	3	12	nw.	J. A. Dibel
Perry	Dallas	975	29	10.1	— 8.9	52	4†	—27	22	42	1.31	+ 0.29	0.57	11.9	9	14	10	7	nw.	Eugene N. Hastie
Toledo	Tama	847	36	10.0	— 9.3	50	4†	—29	22	38	1.18	+ 0.08	0.50	16.6	6	14	9	8	nw.	H. P. Giger
Van Meter	Dallas	872	11								1.39		0.35	17.0	8					Calvin K. Smith
Waukee	Dallas	1,032	27	11.1	— 7.7	52	4†	—23	18	36	1.58	+ 0.43	0.45	17.6	10	24	2	5	nw.	O. D. Ellsworth
Webster City	Hamilton	1,042	25	7.8	— 9.1	49	4†	—33	22	43	1.44	+ 0.38	0.64	17.9	10	11	12	8	nw.	Frank A. Bonebright
Means and extremes				10.3	— 8.4	54	4†	—34	22	44	1.34	+ 0.30	0.80	16.3	9	16	6	9	nw.	

Climatological Data for January, 1930—Continued

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit: Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Precipitation, in inches: Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Number of Days: Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy	Prevailing direction of wind	OBSERVERS
East Central District																				
Belle Plaine	Benton	866	40	10.8	— 8.0	51	5	—28	22	35	1.69	+ 0.13	0.66	17.1	11	11	12	8	nw.	O. C. Burrows
Cedar Rapids	Linn	737	48	11.3	— 7.6	50	5	—27	22	34	1.63	+ 0.23	0.49	12.3	10	13	0	18	nw.	J. T. Wurster
Clinton	Clinton	595	57	13.6	— 7.0	52	5	—26	22	35	1.46	— 0.36	0.28	18.7	16	17	1	13	s.	Dr. A. P. Bryant
Davenport	Scott	580	59	14.8	— 7.0	52	5	—18	18	41	2.05	+ 0.63	0.74	17.7	16	13	5	13	w.	U. S. Weather Bureau
Fairport	Muscatine	567	9	14.5	— 7.4	49	4	—27	22	35	2.12	+ 0.49	0.65	20.2	14	12	3	16	n.	Bureau of Fisheries
Iowa City	Johnson	733	70	12.1	— 7.9	51	5	—31	22	36	1.36	— 0.28	0.41	21.0	13	13	9	9	nw.	Prof. J. F. Reilly
Le Claire	Scott	567	30																	Margaret T. Disney
Maquoketa (near)	Jackson	692	25	10.8	— 7.8	50	5	—30	22	38	1.25	— 0.10	0.40	11.7	10	17	2	12	nw.	John Strodthoff
Muscatine	Muscatine	546	69																	William Molis
Olin	Jones	760	31	10.0	— 8.2	49	5	—35	22	42	1.32	— 0.11	0.32	16.5	9	19	1	11	sw.	Mrs. L. Stingley
Tipton (near)	Cedar	807	31	11.6	— 8.1	49	5†	30	22	36	1.63	+ 0.18	0.35	20.0	10	11	6	14	nw.	John Kroeplen
Williamsburg	Iowa	770	14	12.0	— 7.0	52	5	—28	22	36	0.92	— 0.48	0.39	9.0	6	21	6	4	nw.	Dr. F. C. Schadt
Means and extremes				12.2	— 7.6	52	5	—35	22	42	1.54	0.00	0.74	16.4	12	15	4	12	nw.	
Southwest District																				
Atlantic	Cass	1,110	39	10.8	— 8.5	54	4	—27	22	39	1.13	+ 0.29	0.31	13.2	7	13	12	6	nw.	Roy L. Fancolly
Bedford	Taylor	1,200	2								1.07	+ 0.13	0.25	13.5	6	8	12	11	nw.	Arthur L. Bishop
Clarinda	Page	1,009	40	13.0	— 9.4	57	4	—29	22	43	1.99	+ 1.03	0.50	20.5	8	9	18	4	nw.	Dr. H. C. Hawley
Corning	Adams	1,150	38																	C. A. Smith
Cumberland (near)	Cass	1,225	31								1.10	+ 0.33	0.30	14.0	5	16	9	6	nw.	Carl E. Pollock
Glenwood	Mills	1,100	32	13.0	— 8.9	54	4	—18	18	42	1.35	+ 0.64	0.40	13.5	7	12	11	8	nw.	George Mogridge
Lenox	Taylor	1,250	35	12.7	— 8.9	55	4	—22	18	39	1.42	+ 0.75	0.50	14.2	9	14	10	7	nw.	J. L. Hurley
Oakland	Pottawattamie	1,139	11	11.8f	— 8.1	54f	4	—21f	22	38f	0.93	+ 0.13	0.45	11.0	5					W. S. Matthews
Red Oak (near)	Montgomery	1,030	5								1.68	+ 0.87	0.48	21.0	5	8	15	8	nw.	B. R. Bridge
Riverton (near)	Fremont	920	4								1.01	+ 0.21	0.26	11.3	7	18	4	9	n.	Geo. C. Rader
Thurman	Fremont	960	33	12.5	—10.1	55	4	—33	22	43	1.77	+ 1.09	0.55	18.5	7	6	17	8	nw.	H. H. Askew
Omaha, Neb.		1,105	59	14.0	— 7.9	55	4	—16	17	43	1.73	+ 1.03	0.60	17.3	10	13	9	9	nw.	U. S. Weather Bureau
Means and extremes				12.7	— 8.6	57	4	—33	22	43	1.38	+ 0.58	0.60	15.3	7	12	12	7	nw.	
South Central District																				
Afton	Union	1,212	36	13.4	— 7.7	52	5	—19	17†	34	1.46	+ 0.60	0.36	18.0	8	17	6	8	nw.	S. R. Brown
Albia	Monroe	949	32	13.2	— 7.7	52	4	—21	18	35	1.38	+ 0.19	0.54	15.9	8	14	5	12	nw.	O. E. McBride
Centerville‡‡	Appanoose	1,013	25	12.6	—10.0	50	4	—21	22	37	1.99	+ 0.74	0.68	21.2	12	15	4	12	nw.	Thomas Wood
Chariton (near)	Lucas	1,042	35	11.7	— 9.3	51	4	—26	22	39	0.84	— 0.23	0.26	10.5	5	13	7	11	nw.	C. C. Burr
Corydon (near)	Wayne	1,050	37	12.1	— 9.8	51	4	—23	22	35	1.43	+ 0.16	0.40	18.9	11	15	7	9	nw.	J. C. Davis
Creston	Union	1,291	25	10.9	— 9.2	52	4†	—25	18	43	1.26	+ 0.21	0.29	13.1	9	12	10	9	n.	Mrs. N. Spangler
Earlham (near)	Madison	1,126	28	11.8	— 7.4	53	4	—30	22	45	1.76	+ 0.58	0.48	22.0	9	20	3	8	nw.	George Phillips
Indianola	Warren	972	39	12.5	— 7.2	55	4	—23	22	39	1.93	+ 0.78	0.60	19.3	8	11	11	9	nw.	Seth F. Shenton
Knoxville	Marion	920	35	12.2	— 9.2	53	4	—27	22	38	1.69	+ 0.46	0.50	17.0	11	17	7	7	nw.	W. J. Casey
Lacona	Warren	824	31								2.22	+ 0.57	0.50	22.0	11	13	11	7		J. B. Alter
Lamoni	Decatur	1,123	23	11.7	— 9.7	53	4	—24	22	38	1.07	+ 0.01	0.39	11.3	9	16	7	8	nw.	F. S. Parks
Melrose	Monroe	871	1								1.90		0.55	19.0	6	10	8	13	nw.	J. M. Carr
Mount Ayr	Ringgold	1,220	37	13.0	— 9.2	52	4	—25	22	43	1.51	+ 0.49	0.50	15.0	5	21	4	6	nw.	E. O. Gleason
Tingley	Ringgold	1,275	5	11.8	— 9.3	52	4	—23	18	38	1.30	+ 0.40	0.42	12.2	7	19	9	3	nw.	James A. Verploegh
Winterset	Madison	1,118	39	13.0	— 7.7	57	4	—20	18	38	1.35	+ 0.43	0.35	14.0	7	17	3	11	nw.	H. S. Ely
Means and extremes				12.3	— 8.7	57	4	—30	22	43	1.51	+ 0.39	0.60	16.2	8	15	7	9	nw.	
Southeast District																				
Bonaparte (near)	Van Buren	563	39	13.0	— 9.2	50	5†	—21	22	36	1.33	— 0.21	0.34	12.5	9	17	2	12	nw.	B. R. Vale
Burlington	Des Moines	544	34	16.0	— 8.2	50	5†	—19	18	34	2.20	+ 0.44	0.43	17.5	11	16	3	12	sw.	John W. Donnelly
Columbus Junction	Louisa	595	29	13.2	— 8.9	51	5	—26	22	37	1.88	+ 0.57	0.55	22.5	16	16	4	11	sw.	Miss Musa Todd
Fairfield	Jefferson	780	46	11.6	—10.0	50	5†	—29	22	37	2.22	+ 0.70	0.89	21.5	11	17	4	10	nw.	R. M. McKenzie
Keokuk	Lee	614	59	16.9	— 8.0	56	6	—17	18	42	2.51	+ 0.95	0.76	16.4	13	12	3	16	sw.	U. S. Weather Bureau
Keokuk No. 2	Lee	651	1	16.4		58	5	—22	22	30	2.27		0.60	23.0	12					J. N. D. Dickinson
Keosauqua	Van Buren	639	38	12.6	— 9.4	55	4	—36	22	44	1.58	+ 0.02	0.80	18.5	7	11	6	14	nw.	Dr. J. W. Rinabarger
Mt. Pleasant	Henry	730	49	14.4	— 8.1	52	5	—21	22	33	1.42	— 0.12	0.41	14.0	11	12	7	12	nw.	J. H. Jericho
Oskaloosa	Mahaska	835	54	12.2	— 8.5	53	4	—26	18†	40	1.73	+ 0.70	0.57	24.9	16	12	9	10	nw.	Roy R. Robinson
Ottumwa	Wapello	649	35	13.0	— 9.6	53	5	—36	22	48	1.68	+ 0.16	0.66	16.7	9	15	6	10	nw.	C. L. Mikesh
Sigourney (near)	Keokuk	790	31	11.6	— 8.9	52	5	—27	22	39	1.92	+ 0.66	0.63	19.6	10	15	4	12	nw.	W. E. Utterback
Stockport (near)	Van Buren	747	28	11.8	— 9.6	51	5	—35	22	44	2.23	+ 0.85	1.00	19.0	10	17	2	12	nw.	C. L. Beswick
Washington	Washington	757	48	14.1	— 6.9	53	5	—26	22	38	2.25	+ 0.77	0.75	21.6	12	14	3	14	nw.	D. D. Sherman
Wever	Lee	552	2																	H. G. Liddle
Means and extremes				13.6	— 8.5	58	5	—36	22	48	1.94	+ 0.48	1.00	19.1	11	15	4	12	nw.	
State means and extremes				10.5	— 8.0	58	5	—37	22	50	1.33	+ 0.26	1.00	14.7	8	11	8	9	nw.	

Temperature normals are based on the 46-year period July 3, 1875 to July 2, 1921; shorter records corrected to harmonize. Precipitation normals are based on the 50-year period ended December 31, 1927 at first order stations; upon all records of 10 years or more ending December 31, 1920 for most of the co-operative observing stations; and upon interpolations from normal maps for recently established stations.

Reference letters a, b, c, etc., appearing in the table indicate the number of days missing; for example b represents two days, etc.

†Also other dates.

‡‡Received too late to be included in means and summaries.

T. Precipitation is less than 0.01 inch rain or melted snow.

RIVERS

Moderately low stages prevailed on all the interior streams, with little fluctuation in their stages. The interior streams were frozen over the entire month.

On the Missouri River a peculiar situation existed in the river stages. At Sioux City the extreme stages were 5.0 feet and 6.8 feet, and the average stage was 5.6 feet or 0.4 foot below normal. At Omaha the extreme stages were 5.7 feet and 7.6 feet, and the average stage was 6.6 feet, or 1.1 feet above normal. The lowest stages for January at both stations occurred the first few days. Then a gradual rise in the stages occurred throughout the month, resulting in the crest stages on the last day of the month.

The Mississippi River stages remained low throughout the month. At Dubuque the stages varied only 0.5 foot, the highest stage being 4.0 feet and the lowest 3.5 feet, both occurring on several days. The mean stage was 3.7 feet, or 3.7 feet lower than the average for January, 1929. At Davenport the extreme stages were 2.7 feet and 5.9 feet, and the average was 4.5 feet, or 0.3 foot above normal. The lowest stage occurred on the 3d, and the crest stage on the 11th, with fluctuation throughout the month. At Keokuk the stages were generally low but with slightly higher stages the last 10 days.

Daily Precipitation for January, 1930

Stations	Drainage Basin	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	
Northwest District																																	
Akron	Big Sioux										T.	.09		.29	.27	T.	T.	.04			.03							T.					0.72
Alta	Raccoon		T.								T.	.18		.08	.63		.10				.04						.03					1.06
Alton	Floyd		T.				T.				T.	.16		.32	.48		T.	.05			.05				T.	T.	T.					1.06
Cherokee	Little Sioux		T.				T.				T.	.18		.07	.20	.03	.02	T.	T.	T.	T.	.02		T.	.03		T.					0.55
Estherville	Des Moines								T.			.20	.10	.20	.30						.05											0.85
Hawarden	Big Sioux										T.	.25	T.	.11	.21	T.	T.	.08			.04				T.			T.					0.69
Inwood (near)	Big Sioux		T.								T.	.20	.11	.28	.05			.02			.01			T.								0.67
Lake Park (near)	Little Sioux											.30	T.	.12	.16																	0.58
Le Mars	Floyd		T.				T.				T.	.20	.10	.20	.80	T.	T.	.10			.01				T.							1.41
Marathon	Raccoon		T.				T.		T.		T.	.13	.05	.38	.13	T.		.11		T.	.02			T.	T.	T.	T.					0.82
Pocahontas	Des Moines		T.								.02	.10	T.	.11	.40	T.	T.	.05			.03							.02					0.73
Rock Rapids	Big Sioux											.25	.20	.15	.28	.10								T.								0.98
Sanborn	Floyd						T.					.24	.08	.24	.32						T.				T.							0.88
Sheldon	Floyd		T.				T.				T.	.30	.02	.19	.38	.07	.01	.06			.03			T.	.01		T.	T.				1.07
Sioux Center	Floyd											.08	.10	.28	.48						.04											0.98
Spencer	Little Sioux						T.				.04	.25		.25	.28	.02					.04				.04							0.92
Storm Lake	Raccoon									T.	T.	.15		.09	.50	.05		.07			.03						.03					0.92
Washta	Little Sioux		T.								T.	.06		.08	.40			T.			T.						.04					0.58
West Bend	Des Moines						T.				.05	.08		.08							.04	.08					.08					0.11
North Central District																																	
Algona	Des Moines																																
Allison	Cedar																																
Belmond	Iowa		T.				T.			.08	T.	.18		.05	.52			.04		T.	.04			.02	T.		.03					0.96
Britt	Iowa									T.	T.	.08	.07	.10	.80	T.		.04						T.	.07	.02	T.					1.14
Charles City***	Cedar		T.				T.			.13		.23		.08	.73	.13	.02	.07	T.	T.	T.			.01	T.		.01	T.				1.41
Forest City	Cedar			T.		T.				T.	T.	.10	.10	.20	.65	.30						.10		.15	.20		.12					1.92
Hampton	Cedar																																
Humboldt	Des Moines						T.			T.	T.	.30	.10		.60						T.				T.		T.					1.00
Mason City	Cedar	T.					T.			.03	T.	.19	.02	.03	.38	.01	.02	.03		.01	.01	.02		.01	T.		.02					0.78
Northwood	Cedar			T.						T.			.20	.10	.20	.30								T.	.10		T.					0.90
Osage	Cedar									.08		.16	.08		.40							.04		.04			.04					0.84
Northeast District																																	
Decorah	Mississippi		T.				T.			.08		.20		.10	.68			.05			.05			T.	T.		T.					1.16
Dubuque***	Mississippi		.20				T.	.01	.04	.38		.46		.04	.61	.06	.01	.09		.04	.03			.01	.02		.02	T.				2.05
Fayette	Mississippi		.07							.23		.22	.07	.15	.78	.13	T.				T.			T.	T.		T.					1.65
Independence	Wapsipinicon		T.	.07			T.			.11		.11	.11	.07	.41	.12		.15		T.	.11	T.		T.	.05	T.	T.	T.				1.31
Lansing	Mississippi																																
New Hampton	Wapsipinicon		T.				T.			.10		.18		.08	.29	.48		.05		T.	T.	T.		.03			.01					1.22
Oelwein	Wapsipinicon			T.						.16		.32		T.	.48	.16										T.						1.12
Postville (near)	Mississippi		.05							.20		.20		.15		.60	.10	.10		.02					.07							1.49
Waterloo	Cedar		T.				T.			.15		.20	.05	.03	.53	.05		.08		.10	.05				.02		T.	T.				1.26
Waverly	Cedar									.08		.16		.12	.72									.02								1.10
West Central District																																	
Audubon (near)	Nishnabotna		T.				T.			.05	.02	.35		.03	.40			.05		.05	.02											0.97
Carroll	Raccoon									.05		.10		.20	.30		T.			T.	.05						.03					0.73
Denison	Missouri						T.			.04	T.	.08		.36	.32		T.			.07							.08					0.95
Guthrie Center	Raccoon																																
Harlan	Nishnabotna		T.				T.			.05	T.	.15		.20	.30		T.	.10		.08	T.				T.		.05					0.93
Jefferson	Raccoon		T.							.15	T.	.20		.10	.60		T.			.10					T.		.10					1.25
Little Sioux	Little Sioux									.05	.01	.22		.07	.18				.05	.10	.01							.01				0.70
Logan	Missouri		T.				T.			.06		.15	.08	.20	.40		T.	.02		.08	.01						T.	.01				1.01
Onawa	Missouri		T.							.20	T.	.16	.04	.08	.32	T.		.08		.04	T.				T.		.04	T.	T.			0.96
Rockwell City	Raccoon																																
Sac City	Raccoon		T.				T.			.04	.04	.10		.24	.56	T.	T.	.08		T.	T.				T.		.04					1.10
Sioux City***	Missouri		T.				T.		T.	T.	T.	.12	T.	.07	.31	T.	.04	.01		.04	.03			T.	T.	T.	.02	T.			T.		0.64
Central District																																	
Ames	Skunk		.08				.02			.24		.16		.16	.24			.04		.06	.04						.04					1.08
Baxter	Skunk		.04							.16		.08		.08	.52			.08			.04						.04					1.04
Boone (near)	Des Moines		.04				T.			.20	T.	.19		.08	.45			.18		.04	.03						.07					1.28
Des Moines***	Des Moines		.08				.01	T.	.08	.33	T.	.17		.17	.30	T.	.04	.08		.09	.01	T.			T.		.05	T.				1.41
Fort Dodge	Des Moines									.09	.04	.24		.10	.48			.12		T.							T.					1.07
Grinnell	Iowa		T.	.20			T.		.20	.14	.20	.13	.30	.12	.51			.12		T.	.04				T.		.02					1.98
Grundy Center	Cedar		.08				T.			.24		.16		.08	.72	T.		T.		.08				T.	T.		T.	T.				1.36
Iowa Falls	Iowa						T.			.25		.25		.08	.70			.10		T.				T.	T.		.04					1.42
Marshalltown	Iowa		.06				T.			.19		.15	T.	.02	.80	.02	T.	.17		.03	T.	.01			T.		.02	T.				1.47
Monroe	Des Moines		T.					T.	.11			T.		T.	.48	.14		.09		.14	.12				T.		.11					1.19
Perry	Raccoon		.03				T.			.23		.17		.05	.57			.10			.05	.03			T.		.08	T.				1.31
Toledo	Iowa		T.				T.		T.	.26		.16		T.	.50			.15		.05					T.		.06					1.18
Van Meter	Raccoon				T.		T.			.35	.08		.16	.32		.16		.16			.08						.08					1.39
Waukee	Raccoon		.08				T.			.42	T.	.15		.05	.45	.01		.14		.15	.06				T.		.07					1.58
Webster City	Des Moines		T.				T.			.24	.04	.24		.01	.61	T.	.08	.08		T.	.04	.02			T.		.02					1.41
East Central District																																	
Belle Plaine	Iowa		.04	T.			T.	T.	.03	.45		.15	T.	.02	.66	.04	T.	.21		.02	.04	T.			T.		.03					1.69
Cedar Rapids	Cedar		.06				T.	.03		.35		.44	.01	.04	.49	.02		.12		T.	.07	T.					T.	T.				1.63
Clinton	Mississippi	.07		.03			.06		.09	.26	T.	.26	.02	.02	.21	.02	.22			.04	.08	.04		T.	T.		.03	.01				1.46
Davenport***	Mississippi	.10	.03				.11	.15	.24	.58		.18	.01	.09	.12	.01	T.	.15		.11	.08	.01		T.	T.		.08	T.			T.	2.05
Fairport	Mississippi	.13		.08			.03	.06	.22	.65	.02	.18	.10	T.	.16			.14			.19	.08					.08					2.12
Iowa City	Iowa	T.	.05	.04			T.	.02	.03	.30		.19	.04	T.	.41	T.	T.	.14		.05	.04	.01			T.		.04					1.36
Le Claire	Mississippi																																
Maquoketa (near)	Maquoketa			.05					.06	.40		.15		T.	.24	.02		.21			.05	.01					.06					1.25
Muscatine	Mississippi																																
Olin	Wapsipinicon						T.		.08	.32		.16		T.	.32	.01		.16		T.	.08	.08					.08					1.32
Tipton (near)	Cedar			.16					.16	.35				.08	.08				.24		.24	.16			.08		.08					1.63
Williamsburg	Iowa		.02					T.	.04	.37					.39					.05	.05						T.					0.92

Daily Precipitation for January, 1930—Continued

Stations	Drainage Basin	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	Totals
Southwest District																																	
Atlantic	Nishnabotna		T.				T.		T.	.21	T.	.24		.02	.31		T.	.20		.13	T.						.02						1.13
Bedford	102						T.	.05	T.	.22		.20		T.	.25			.20		.15	T.						T.						1.07
Clarinda	Nodaway								.04	.40		.20		.10	.50			.45		.10	.20						T.						1.99
Corning	Nodaway																																
Cumberland(near)	Nodaway		T.				T.			.20		.20		T.	.30		T.	.20		.20	T.						T.						1.10
Glenwood	Missouri									.10		.20		T.	.40			.20	.20	.20	.05												1.35
Lenox	Missouri						T.	.04		.15		.10		.05	.50			.30		.20	.05						.03						1.42
Oakland	Nishnabotna		T.							.16		T.			.45			.16		.08	.08	T.					§T.						0.93
Red Oak (near)	Nishnabotna								T.	.32		.48			.40			.32			.16												1.68
Riverton (near)	Nishnabotna						T.		.02	.26	T.	.20		T.	.22			.21		.04	.06												1.01
Thurman	Missouri						T.		T.	.15	.02	.55		.05	.35	T.	T.	.40		.25	T.						T.						1.77
Omaha, Neb.***	Missouri		T.				T.		.02	.03	.01	.22		.31	.49		.20	.31		.12	.02							T.					1.73
South Central District																																	
Afton	Grand							.08		.35		.06		.08	.36			.36		.13	.04												1.06
Albia	Des Moines	T.	T.	T.			T.	T.	.02	.54	T.	.05		T.	.41	T.		.17		.08	.05	T.					.06						1.38
Centerville	Chariton	.10					.03	.15	.09	.68		.04		.01	.24		.02	.40			.20					T.	.03						1.99
Chariton (near)	Chariton						T.		T.	.26					.16			.11		.19	.12												0.84
Corydon (near)	Chariton	.04					T.	.04	.10	.40		.09		.05	.32			.27		.08	.02						.02						1.43
Creston	Missouri						T.	T.	.08	.29		.22		.05	.20		.01	.24		.16	.01	T.			T.	T.							1.26
Earlham (near)	Des Moines		T.			T.	T.			.40		.16	.08	.08	.48			.40		.08	.04	.04											1.76
Indianola	Des Moines		.05				T.	.08		.60		.10		.10	.60			T.		.20	T.	T.					.20	T.					1.93
Knoxville	Des Moines		.07				.02		.05	.30		.20		.10	.50			.20		.05	.10						.10	T.					1.60
Lacona	Des Moines						.02	.10		.40		.10		.10	.50			.45		.40	.05	.05				.05							2.22
Lamoni	Grand	T.					T.	.05	T.	.39		.05		.01	.20			.20		.12	.03	T.					.02						1.07
Melrose	Des Moines		T.					T.	.55				.35		.40			.30		.10	.20						T.						1.90
Mount Ayr	Grand									.32		.30			.21			.50		.15													1.51
Tingley	Platte	T.	T.				T.	.03	T.	.37		.07		.04	.24			.42		.13	T.						T.						1.30
Winterset	Des Moines		T.						T.	.35		.30		.10	.30			T.		.10	.10						.10	T.					1.35
Southeast District																																	
Bonaparte (near)	Des Moines	.23					.22	.04	.14	.34		.12		T.	.09			.07		T.	.08	T.								T.			1.33
Burlington	Mississippi	.26					.25	.05	.17	.43	.05	.29	T.	T.	.23	T.	T.	.19		T.	.09	T.					.19	T.		T.			2.20
Columbus Jct	Iowa	.09		.02			.06		.25	.55	.05	.19	.02	.01	.22			.15		.05	.15	.01					.05	.01					1.88
Fairfield	Skunk	.12	T.				.07		.20	.80		.17		T.	.15			.28		.11	.11	.01					.20						2.22
Keokuk***	Mississippi	.22					.36	.18	.30	.56		.36	T.	.18	.05		T.	.13		.02	.07						.07				.01		2.51
Keokuk No. 2	Mississippi	.20					.02	.30	.30	.60		.29		.02				.31			.04	.10	T.				.07				.02		2.27
Keosauqua	Des Moines	.04					.10	T.	.24	.80		T.		T.	T.			.16		.16							.08						1.58
Mt. Pleasant	Skunk	.11					.12	.07	.13	.41		.17			.06			.17		.02	.10						.06						1.42
Oskaloosa	Des Moines	T.	.02	.04			.05	T.	.02	.52	.01	.05	.02	.01	.55	.02		.13		.08	.09	.01			T.		.11						1.73
Ottumwa	Des Moines	.07		T.			.02	T.	.18	.66	T.	.08	T.	T.	.27			.23		T.	.12				T.		.05				T.		1.68
Sigourney (near)	Skunk	.01	T.	.05			T.		.05	.58		.10		T.	.31	T.		.32		.05	.25				T.		.20						1.92
Stockport (near)	Skunk	.16					.14		.12	1.00		.13	.08	T.	T.			.05		T.	.25	.10					.20						2.23
Washington	Skunk	.12		.02			.03		.25	.75		.10		.01	.20	T.		.20		.20	.12						.25				T.		2.25
Wever	Mississippi																																

Except as otherwise indicated, observations are generally made late in the afternoon, near sunset, and precipitation recorded is for 24 hours ending at the time of observation.

||||Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.

***Regular Weather Bureau Station: precipitation is for 24-hour period midnight to midnight.

**Incomplete.

*Precipitation included in the next following measurement.

§Interpolated.

T. Precipitation is less than .01 inch rain or melted snow.

PRESSURE, RELATIVE HUMIDITY, WIND AND SUNSHINE

Stations	Barometric Pressure, Inches (Sea Level) Mean	Highest	Date	Lowest	Date	Relative Humidity, % Mean 7 A. M.	12 Noon‡	7 P. M.	Lowest	Date	‡‡Wind Total movement	Average hourly velocity	Maximum Miles	From	Date	Sunshine % possible	Departure from normal
Chas. City	30.25	30.84	10	29.48	14	89	72	84	44	4†	4,273	5.7	18	sw.	12	59	+10
Davenport	30.24	30.75	10	29.45	14	88	77	81	33	5	7,199	9.7	35	sw.	14	57	+10
Des Moines	30.27	30.76	10	29.60	14	86	71	77	33	4	6,878	9.2	25	nw.	6	63	+ 8
Dubuque	30.23	30.79	10	29.40	14	80	69	81	39	5	4,226	5.7	16	n.	9	50	+ 1
Keokuk	30.28	30.76	10	29.54	14	85	64	76	29	5	5,530	7.4	26	sw.	14	57	+ 5
Sioux City	30.29	30.74	9	29.65	5	78	67	72	38	8	7,891	10.6	37	nw.	14	72	+18
Omaha,Nb	30.28	30.69	10	29.63	6	80	68	73	26	4	6,289	8.5	31	n.	6	68	+12
Means and extremes	30.26	30.84	10	29.40	14	84	70	78	26	4		8.1	37	sw.	14	61	+ 9
Normals and records	30.14	¶31.09	25th 1905	§28.71	3d 1906	84		77	¶23	19 1928			¶58	nw.	6th 1903	52	

¶Sioux City, §Dubuque, ‡Local mean time, †And other dates.

‡‡January 1, 1928, 3-cup anemometers replaced the 4-cup instruments used since the establishment of the Weather Bureau stations. The new instruments will more accurately indicate the true wind movement. The records of the 4-cup instruments were somewhat too high at moderate velocities and considerably too high at the higher velocities. Tables of true velocities corresponding to indicated velocities appear in the January, 1928 Climatological Data. For purposes of comparison the highest velocity of record in the lower line of the table has been converted into a 3-cup velocity.

SNOWFALL

The average snowfall for the State was 14.7 inches, or 8.0 inches above normal. The greatest total snowfall for the month at any one station was 24.9 inches at Oskaloosa, and the least, 5.0 inches at West Bend. The greatest snowfall in 24 hours was 10.0 inches at Stockport on the 9th.

MISCELLANEOUS PHENOMENA

Aurora: 3d.
Cold Waves: 7th, 10th, 15th, 18th, 22d.
Corona, lunar: 16th, 21st, 22d, 23d, 24th.
Fog: 2d, 22d, 23d, 26th, 27th, 29th.
Frost, hoar: 27th.
Halos, lunar: 7th, 10th, 14th, 15th.
Halos, solar: 15th, 16th, 18th, 19th, 21st, 22d, 23d, 25th, 31st.
Haze: 5th, 12th, 30th.
Gales: 6th, 12th, 14th, 17th.
Parhelia: 1st, 14th, 15th, 16th, 18th, 25th.
Sleet: 2d, 6th, 7th, 11th, 12th, 13th, 14th.

ERRATA

Report for December, 1929. Page 90, Denison; date of minimum temperature published 6th, should be 19th. Page 91, Maquoketa; date of maximum temperature published 1st, should be 30th. Page 91, Melrose; number of days partly cloudy published 7, should be 8; and number of days cloudy published 11, should be 10. Page 90, Onawa; amount of snowfall published 2.0 inches, should be 0.5 inch. Page 90, Postville; number of days with precipitation 0.01 inch or more published 3, should be 4. Page 90, Rockwell City; number of days clear published 18, should be 17; and number of days partly cloudy published 1, should be 2. Page 90, Storm Lake; total snowfall published 3.6 inches, should be 3.2 inches. Page 91, Thurman; date of maximum temperature published 1st, should be 30th. Page 90, means and extremes for west-central district; mean for total snowfall published 3.5, should be 3.4 inches.

Daily Maximum and Minimum Temperature for the Month of January, 1930

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
Northern Division																																	
Algona	Maximum	36	38	20	45	45	41	6	10	8	15	17	25	18	20	10	8	— 8	12	12	6	0	— 1	18	16	20	15	18	11	25	21	22	18.0
	Minimum	26	23	4	24	31	3	— 8	— 1	— 2	— 4	7	5	2	3	— 2	—20	—18	—22	— 7	—15	—13	—26	—10	7	—12	—16	— 2	— 2	— 9	2	3	— 1.6
Alta	Maximum	38	31	33	46	46	36	6	12	8	20	25	25	11	9	5	— 2	—10	11	9	— 1	— 5	2	22	23	15	18	16	13	28	19	28	17.3
	Minimum	27	17	5	25	31	— 3	— 8	— 2	— 4	— 5	10	3	2	2	— 3	—19	—23	—18	— 4	—13	—15	—16	— 6	8	— 6	— 5	— 3	— 1	— 3	7	6	— 0.5
Alton	Maximum	38	32	32	44	44	40	5	10	6	19	18	21	5	8	5	— 1	—10	8	5	0	— 3	0	23	22	18	17	15	10	22	16	22	15.8
	Minimum	28	20	3	25	30	— 1	— 8	— 3	— 8	— 8	13	3	0	— 1	— 2	—19	—23	—19	— 2	—23	—18	—26	—17	10	— 1	— 4	—11	— 3	—14	4	0	— 2.4
Belmond	Maximum	38	35	29	48	48	40	7	13	5	16	22	28	14	20	10	— 3	— 2	9	11	0	— 3	1	12	23	15	15	16	10	20	20	25	17.5
	Minimum	26	18	3	23	30	0	— 7	— 1	— 2	—10	9	— 1	0	10	— 3	—20	—24	—26	— 7	—24	—20	—25	—15	5	—18	—26	—12	— 4	—18	9	— 1	— 4.2
Charles City	Maximum	35	36	26	44	48	38	7	13	7	15	29	30	22	22	5	— 3	—10	8	9	0	— 4	2	18	22	13	10	17	11	14	22	22	17.1
	Minimum	25	16	7	22	31	— 3	— 6	1	— 3	— 8	13	2	2	5	— 3	—14	—26	—25	— 4	—17	—25	—31	—13	7	—21	—23	— 6	—10	—16	0	0	— 4.0
Decorah	Maximum	37	38	30	41	46	48	16	14	15	17	25	35	22	25	13	4	— 6	— 5	14	3	— 1	3	11	22	19	15	22	14	14	20	26	19.3
	Minimum	23	15	4	17	32	4	— 7	— 1	— 1	—17	— 2	9	— 1	10	0	—12	—26	—30	—10	—15	—21	—37	—17	— 2	—17	—31	—10	— 1	—24	4	— 2	— 5.4
Dubuque	Maximum	38	42	26	43	48	46	12	16	13	17	32	34	30	32	17	8	— 3	7	15	8	1	3	15	23	15	11	23	16	15	20	25	20.9
	Minimum	29	20	9	21	35	6	0	7	6	— 4	13	13	10	17	6	— 3	—23	—23	— 4	1	—10	—24	—19	12	—10	—18	8	0	—12	8	7	2.8
Forest City	Maximum	39	35	30	47	48	38	7	14	12	15	18	28	13	21	15	6	— 5	12	12	10	0	5	15	20	22	15	13	13	29	21	22	19.0
	Minimum	23	19	2	22	28	4	—10	— 4	— 4	— 5	7	1	— 3	6	— 1	—20	—21	—28	— 9	—15	—21	—27	—12	4	—15	—18	—12	— 3	—14	5	— 2	— 4.0
Independence	Maximum	41	42	41	46	49	45	28	14	14	15	23	34	20	27	22	14	— 4	12	12	10	10	2	11	21	11	10	21	12	23	19	20	21.5
	Minimum	32	38	7	14	28	11	— 3	5	7	— 7	4	17	1	14	6	—12	—16	—27	— 4	— 2	—13	—31	—11	— 2	— 6	—24	— 2	— 2	—17	2	0	0.2
Inwood	Maximum	38	27	34	45	44	34	5	11	5	18	17	18	5	7	4	4	—10	8	4	4	— 4	0	20	21	18	21	18	11	20	20	22	15.8
	Minimum	23	18	2	20	29	— 5	—10	— 8	—12	—12	12	— 5	— 6	—11	— 5	—23	—30	—17	— 7	—25	—26	—18	—11	9	—15	— 5	—11	— 5	—12	2	0	— 5.3
Lake Park	Maximum	38	28	31	45	44	34	7	10	6	18	18	21	2	6	3	— 4	—12	6	4	0	— 5	— 2	18	20	13	18	14	10	20	18	18	14.4
	Minimum	26	19	0	14	27	— 4	— 9	— 8	—10	—12	11	— 3	— 5	— 5	— 5	—22	—27	—27	— 9	—19	—24	—20	—11	8	—17	—11	0	— 7	—10	3	2	— 5.0
Mason City	Maximum	36	37	27	45	47	40	5	12	8	15	21	29	15	21	11	— 1	—11	7	7	3	— 3	— 2	15	20	— 4	13	17	10	18	21	21	16.2
	Minimum	28	19	4	19	31	— 1	— 8	— 1	— 1	— 6	7	— 1	— 3	10	— 1	—17	—24	—26	— 8	—23	—20	—31	—12	—16	—16	—26	—15	— 2	—19	3	— 3	— 5.1
New Hampton	Maximum	38	39	30	43	48	41	9	15	12	17	22	32	20	27	24	14	— 3	6	12	7	0	3	13	22	21	13	17	15	15	24	24	20.0
	Minimum	26	18	6	19	30	5	— 6	— 8	2	— 5	0	11	0	18	0	— 6	—26	—30	—12	—10	—20	—28	—18	3	—13	—23	— 3	— 5	—17	0	— 1	— 3.0
Northwood	Maximum	35	37	27	42	47	35	10	20	5	18	28	28	14	20	10	0	—14	7	4	— 2	— 4	0	15	20	5	14	17	9	16	21	22	16.0
	Minimum	22	17	4	17	30	— 2	— 9	— 3	— 3	— 6	3	0	— 1	— 2	—10	—16	—26	—27	— 4	—16	—19	—26	—10	— 5	—15	—22	—10	0	—16	4	1	— 4.8
Pocahontas	Maximum	39	32	33	48	47	37	6	13	7	17	22	24	15	12	6	— 3	—10	10	10	4	— 2	1	22	25	18	15	16	12	25	20	24	17.6
	Minimum	25	22	6	24	32	2	— 7	— 1	— 3	— 4	10	4	0	0	— 4	—18	—22	—23	— 7	—15	—15	—20	— 8	8	— 4	—12	— 6	— 2	—10	8	0	— 1.3
Postville	Maximum	35	37	21	39	45	39	6	11	10	15	29	29	23	27	20	4	— 4	8	14	4	— 3	4	15	20	13	10	18	15	14	19	24	18.1
	Minimum	25	21	4	17	28	5	— 5	—13	7	—10	11	5	4	20	1	— 8	—25	—26	— 9	— 7	—19	—24	—15	5	—17	—25	— 3	— 9	—18	3	2	— 2.4
Rock Rapids	Maximum	37	31	33	45	44	39	5	6	12	19	19	18	3	7	5	0	— 9	8	3	— 3	— 3	— 1	20	21	15	18	11	11	18	18	22	15.2
	Minimum	25	18	3	14	28	6	— 9	— 7	— 5	—12	11	— 2	— 2	— 9	0	—19	—27	—18	— 3	—23	—25	—23	—12	7	—13	— 5	—10	— 3	—12	1	— 2	— 4.3
Central Division																																	
Ames	Maximum	42	40	27	51	50	46	12	15	8	16	23	31	16	17	11	6	— 6	13	12	10	2	6	21	27	20	14	19	16	23	23	29	64.0
	Minimum	32	19	6	23	34	11	— 3	6	5	1	8	13	4	10	2	—15	—19	—22	— 4	— 6	—11	—23	— 6	10	— 7	—10	0	2	—14	9	— 1	5.4
Belle Plaine	Maximum	40	44	29	49	51	41	13	15	15	16	27	32	21	28	18	5	— 6	11	19	12	10	7	18	26	20	12	20	20	18	24	28	22.0
	Minimum	23	17	6	18	34	12	— 2	7	9	— 8	4	11	1	14	3	—14	—19	—24	—11	0	—15	—28	—15	9	— 9	—16	— 3	— 6	—15	8	— 2	— 0.4
Carroll	Maximum	37	34	34	48	47	42	8	14	10	17	21	28	16	11	10	4	—10	12	11	8	— 2	3	18	26	18	13	18	13	25	27	27	19.0
	Minimum	28	26	7	25	31	7	— 6	0	— 1	— 4	9	7	3	5	—12	—17	—19	—20	1	—11	—12	—15	— 6	8	— 1	— 3	— 6	3	— 7	13	6	1.6
Cedar Rapids	Maximum	39	42	31	47	50	45	15	16	16	18	29	33	23	31	19	7	— 6	9	17	13	5	6	16	24	20	13	20	18	18	25	26	22.1
	Minimum	27	10	7	16	32	11	— 1	8	10	—11	6	18	5	15	5	—10	—20	—24	—11	2	—12	—27	—12	11	—10	—18	3	— 3	—15	6	— 2	0.5
Davenport	Maximum	44	43	28	49	52	52	16	16	16	17	33	35	31	34	14	5	— 2	9	19	16	7	6	14	25	16	16	24	17	19	27	30	23.5
	Minimum	31	27	11	25	37	11	3	12	8	1	12	23	17	14	5	— 4	—16	—18	— 1	7	—10	—18	— 8	12	— 4	— 7	7	3	— 4	12	4	6.2
Des Moines	Maximum	38	41	33	54	52	45	11	16	10	18	33	33	19	19	10	— 4	— 8	14	15	8	1	7	21	27	20	13	20	17	24	26	32	21.5
	Minimum	26	21	11	28	36	7	— 1	7	3	5	9	8	7	9	— 4	—13	—19	—16	0	0	—10	—20	— 5	10	— 2	— 2	— 2	1	—12	12	4	3.2
Ft. Dodge	Maximum	38	33	29	49	49	44	8	13	9	17	23	28	13	15	10	— 1	— 9	11	13	5	0	2	19	25	18	15	18	14	22	22	24	18.6
	Minimum	28	21	3	25	32	6	— 6	0	0	— 4	10	6	2	8	— 3	—17	—21	—22	— 6	—18	—15	—21	—10	9	— 9	—13	— 2	— 3	—11	11	1	— 0.6
Grinnell	Maximum	45	42	32	50	48	41	13	14	15	17	24	32	21	23	15	4	— 7	10	14	14	2	— 6	15	25	22	12	21	18	18	24	29	21.0
	Minimum	31	14	3	20	34	12	— 3	6	8	— 2	5	18	2	12	0	—16	—16	—25	— 5	— 5	—14	—26	—14	8	— 2	— 9	— 7	— 4	—13	8	— 1	0.6
Guthrie Center	Maximum																																
	Minimum																																
Iowa City	Maximum	41	43	28	50	51	49	28	15	15	17	31	34	23	31	15	4	— 6	10	17	13	4	4	14	25	22	16	19	16	19	24	28	22.6
	Minimum	27	17	9	18	32	28	0	9	11	— 8	7	18	6	14	4	—10	—17	—24	— 8	3	—11	—31	—12	9	— 7	—16	— 3	— 1	—17	6	— 2	1.6
Iowa Falls	Maximum	39	38	30	47	49	42	8	13	8	13	20	29	17	22	14	2	—11	7	12	8	— 3	2	17	22	19	12	22	10	18	21	22	18.4
	Minimum	30	19	6	19	31	6	— 5	2	3	— 2	5	12	2	14	2	—17	—22	—25	— 6	—16	—16	—26	—11	9	—10	—23	— 5	0	—16	6	— 2	— 1.2
Little Sioux	Maximum	43	38	40	52	48	43	8	14	13	17	27	28	14	10	7	0	— 6	19	10	2	4	8	24	29	21	20	21	17	29	28	32	21.3
	Minimum	28	23	8	28	32	8	— 7	1	— 1	— 6	14	5	5	0	— 6	—17	—18	—17	— 3	—14	—15	—20	—10	8	0	2	— 9	— 5	— 9	13	6	0.8
Marshalltown	Maximum	40	39	29	49	51	42	9	13	13	17	24	31	18	24	14	2	—10	10	- 13	9	— 1	5	16	25	18	13	20	16	20	25	25	20.0
	Minimum	31	21	7	19	34	8	— 3	5	6	— 2	6	14	1	14	2	—15	—21	—23	— 2	— 3	—13	—13	— 9	9	— 4	—15	— 1	5	—10	11	3	1.8
Olin	Maximum	38	42	35	45	49	47	15	15	16	20	28	31	23	32	18	7	— 5	10	20	13	6	7	13	25	21	12	22	20	16	26	26	22.4
	Minimum	29	14	8	12	32	15	— 1	9	12	—17	— 5	8	8	16	5	—12	—22	—29	—21	1	—14	—35	—17	2	— 7	—25	— 6	— 9	—23	— 5	— 2	— 2.5
Sioux City	Maximum	41	35	39	48	46	35	7	12	9	18	21	24	8	7	5	— 8	— 7	15	10	— 1	0	5	25	25	21	21	18	14	27	21	26	18.4
	Minimum	28	18	11	27	31	— 4	— 7	1	— 4	— 4	15	5	2	— 3	— 9	—17	—22	— 8	— 5	—14	—12	—11	1	15	5	6	2	4	2	10	10	2.4
Southern Division																																	
Albia	Maximum	44	43	34	52	51	48	16	14	13	13	29	33	19	20	11	7	— 4	14	20	13	5	11	17	26	23	13	23	20	22	27	32	22.9
	Minimum	28	22	11	25	33	14	— 1	8	8	— 5	3	14	3	10	— 2	—13	—14	—21	— 2	4	—13	—20	—10	6	7	1	— 6	5	— 5	13	5	3.5
Atlantic	Maximum	39	40	36	54	50	44	9	14	11	17	28	29	15	13	9	1	— 8	17	14	8	1	5	17	26	22	21	21	20	25	27	31	21.2
	Minimum	25	20	8	26	31	8	— 5	6	— 2	— 8	11	3	6	3	— 6	—18	—20	—21	— 1	— 3	—16	—27	—10	7	4	4	— 8	— 2	—14	10	5	0.5
Burlington	Maximum	46	39	36	47	50	50	16	16	17	17	32	34	31	33	12	9	— 1	10	21	20	10	7	13	25	24	16	25	18	19	30	30	24.3
	Minimum	33	25	14	24	34	16	5	13	14	1	18	29	20	12	3	— 7	—12	—19	— 2	10	— 6	—17	— 8	8	4	— 1	3	6	4	10	5	7.7
Columbus Jct	Maximum	40	42	35	49	51	50	16	16	15	15	31	34	28	32	11	6	— 3	10	18	14	7	8	15	25	22	15	21	19	19	27	29	23.2
	Minimum	29	29	10	22	33	15	1	10	12	— 5	— 1	27	9	11	4	— 9	—15	—22	— 4	6	— 7	—26	—13	5	— 1	—11	— 3	1	—18	7	— 1	3.1
Corning	Maximum																																
	Minimum																																
Corydon	Maximum	42	42	33	51	49	46	15	14	13	14	29	32	18	19	8	5	— 5	10	17	15	3	5	15	24	22	14	21	18	20	27	32	21.5
	Minimum	31	20	21	25	31	14	— 1	7	5	— 7	3	16	6	6	— 5	—14	—10	—22	— 4	0	—12	—23	—10	5	4	3	— 7	3	—15	13	2	2.7
Creston	Maximum	39	40	32	52	52	41	10	14	12	16	28	30	16	13	8	2	— 5	18	16	12	2	8	19	28	22	18	22	18	24	25	33	21.5
	Minimum	30	20	10	27	31	8	— 4	5	— 1	— 3	8	12	5	3	— 8	—18	—24	—25	— 4	— 3	—16	—22	—13	2	3	— 5	— 7	— 3	—12	11	3	0.3
Fairfield	Maximum	42	41	35	49	50	50	15	14	15	13	31	34	24	28	13	5	— 6	10	17	13	4	7	15	25	23	12	17	16	16	25	32	22.1
	Minimum	30	16	11	23	33	14	2	9	5	— 9	1	22	8	11	— 1	—13	—17	—25	—11	3	—13	—29	—12	9	— 7	— 8	—10	— 1	—17	11	— 5	1.0
Keokuk	Maximum	50	45	33	51	55	56	15	15	18	19	35	35	32	34	13	4	— 3	11	21	21	6	12	17	25	20	18	28	22	24	33	35	25.8
	Minimum	32	24	17	30	37	14	7	13	9	1	17	28	22	8	3	— 7	—17	—17	1	6	— 5	—15	— 6	8	4	5	8	5	— 4	13	7	8.0
Knoxville	Maximum	42	43	32	53	51	46	14	14	14	14	27	26	18	16	12	2	— 5	14	17	12	5	11	18	27	22	11	21	20	22	27	32	21.9
	Minimum	32	22	11	26	35	14	— 1	7	8	—11	2	17	3	12	1	—13	—15	—25	— 4	1	—10	—27	—11	7	3	— 2	—10	2	—12	15	1	2.6
Lamoni	Maximum	43	45	35	53	51	45	14	13	12	16	29	31	17	16	8	5	4	15	17	13	1	2	18	25	23	16	23	18	23	27	31	22.2
	Minimum	26	22	11	26	30	12	— 3	5	2	— 7	5	13	6	3	— 7	—16	—20	—23	— 2	— 2	—16	—24	—11	2	3	5	— 6	— 1	— 8	10	3	1.2
Sigourney	Maximum	43	43	36	51	52	46	14	15	14	15	29	33	23	26	12	5	— 7	13	17	13	4	10	16	25	21	12	19	18	17	26	32	22.4
	Minimum	32	20	9	22	33	14	0	8	10	— 6	1	22	4	12	2	—14	—14	—26	— 8	3	—13	—27	—13	3	— 9	—11	—11	— 1	—20	8	— 2	0 9
Thurman	Maximum	40	42	39	55	49	48	13	15	14	18	30	30	20	15	9	6	6	18	17	13	3	9	21	28	26	21	25	25	32	29	36	24.3
	Minimum	30	20	13	30	32	12	— 2	7	4	—13	11	5	10	3	— 4	—13	—18	—22	— 8	— 1	—20	—33	—19	3	5	9	— 9	— 9	—11	14	— 3	0.7
Winterset	Maximum	42	43	35	57	52	45	12	14	14	16	26	30	16	14	10	2	— 8	18	17	12	5	8	19	26	20	15	23	22	24	26	32	22 2
	Minimum	32	25	10	27	33	12	— 3	6	4	— 3	8	11	5	8	— 5	—14	—18	—20	4	— 3	—12	—15	— 8	7	4	2	— 3	1	— 3	15	7	3.7
Omaha, Neb.	Maximum	42	40	42	55	49	43	7	14	8	16	29	28	13	10	8	— 2	— 6	19	13	3	2	9	24	28	21	20	22	19	32	25	33	21.5
	Minimum	34	23	17	34	34	0	— 3	7	1	0	15	10	6	2	— 2	—13	—16	—10	0	— 3	— 7	—10	2	13	8	10	3	10	8	18	15	6.6

RADIATION COLD WAVES

Two remarkable cold wave conditions occurred in Iowa on January 10th and 22d, 1930, if a cold wave for Iowa be defined as a fall in temperature in 24 hours, maximum to maximum, minimum to minimum, or between hours of similar names, such as 7 a. m. to 7 a. m., or 7 p. m. to 7 p. m., amounting to 20° or more, and reaching approximately zero or lower.

In most cold waves there is a large fall in temperature in the rear or western side of an area of low barometer, in which masses of cold air rush down from northern latitudes or slide down barometric surfaces from higher elevations in a blustery and boisterous manner, which gave rise to the mythical Boreas of the ancients. Then a high barometer area follows with a clear still night, and the fall in temperature is augmented by loss of heat from the surface of the earth by radiation into higher levels. This radiation is accentuated if a fresh, loose, dry, feathery snow insulates the earth and prevents the replenishment of the heat of the lower air from the surface of the comparatively warm soil.

Following an undrifted snow of several inches on preceding days, the sky cleared and the wind became light during the night of January 9th-10th. The usual first phase, consisting of a blustery movement of masses of cold air from north to south, was practically absent unless the preceding cold wave on the 6th could be said to fulfill those conditions, which it might, for there had been no noticeable recovery from that cold wave.

On the accompanying map (fig. 1) the top figures entered near each station show the fall in temperature, minimum to minimum, in the 24 hours ending at 7 p. m., January 10th, and the lower figures show the lowest temperature reached about 8 a. m., January 10th. Note the areas of falls of 20° or more centered at Ottumwa and Olin. Radiation falls of 30° are exceptional. In contrast, slight rises occurred from Des Moines northward over Story and Boone counties, though the rest of the State had falls.

Record breaking intense cold occurred as a result of radiation on the night of January 21st-22d, as shown on the map (fig. 2). The 24-hour falls in temperature were not so great, yet sufficient to be called "cold wave." Minimum temperatures of —36 at Ottumwa and Keosauqua, —35 at Stockport and Olin, and —33 at Waterloo, break long records for lowest temperature ever observed at these stations, while —37 at Decorah, the coldest in the State in January, 1930, just equals the low record for that station for 37 years. At Waverly, temperatures of —34 and Tipton, —30, established new station records.

In this case also, Boreal characteristics were not marked, the ground was covered with 10 to 15 inches of porous snow that had accumulated in several storms during the preceding 16 or 17 days, and the wind died down to almost absolute calm during the night.

Inspection of the Daily Weather Map shows that Decorah was probably the coldest place in North America, south of the Arctic Circle on that day. In fact, Tanana, in the interior of Alaska, near the Arctic Circle, reported only —22°

From other such occurrences at Ottumwa, it is believed that such radiation cold waves are more frequent there than most anywhere else in the State. The report of the Chief Signal Officer of the U. S. Army shows that on the morning of January 5, 1884, the temperature at Ottumwa was —3.5°, but it was —30 at Des Moines, —29 at Oskaloosa, —34 at Fort Madison, —24 at Keokuk, and —31.5 at Conception, Missouri. It is believed that the decimal point crept in by mistake and that the real temperature at Ottumwa was —35°.—(C.D.R.)

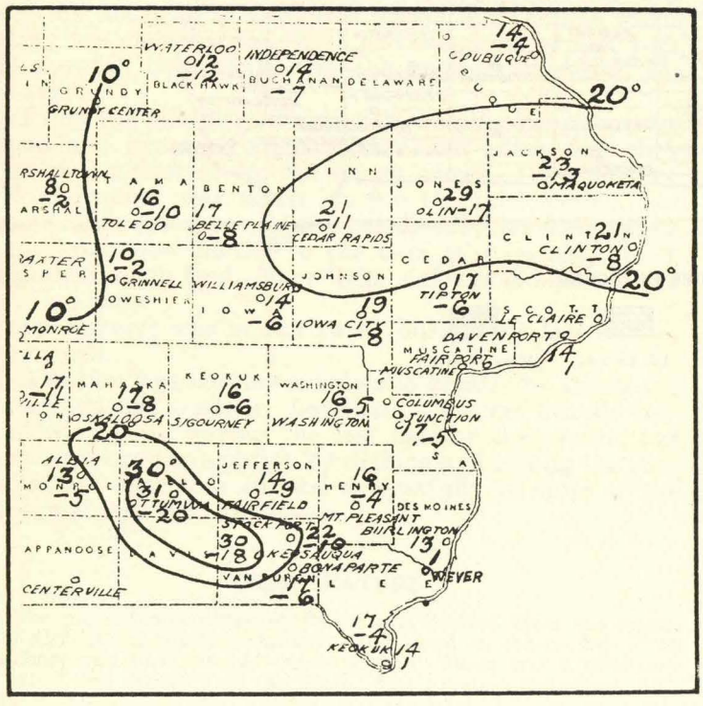


Fig. 1. Radiation cold wave night of January 9th-10th, 1930. Top figures near each station show number of degrees temperature fell in 24 hours; lower figures the minimum temperature reached.

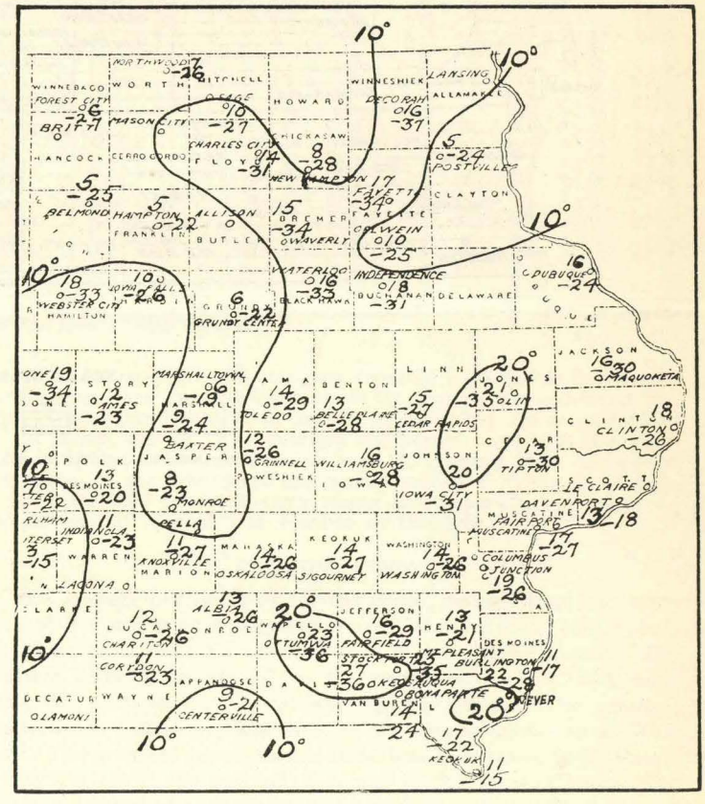
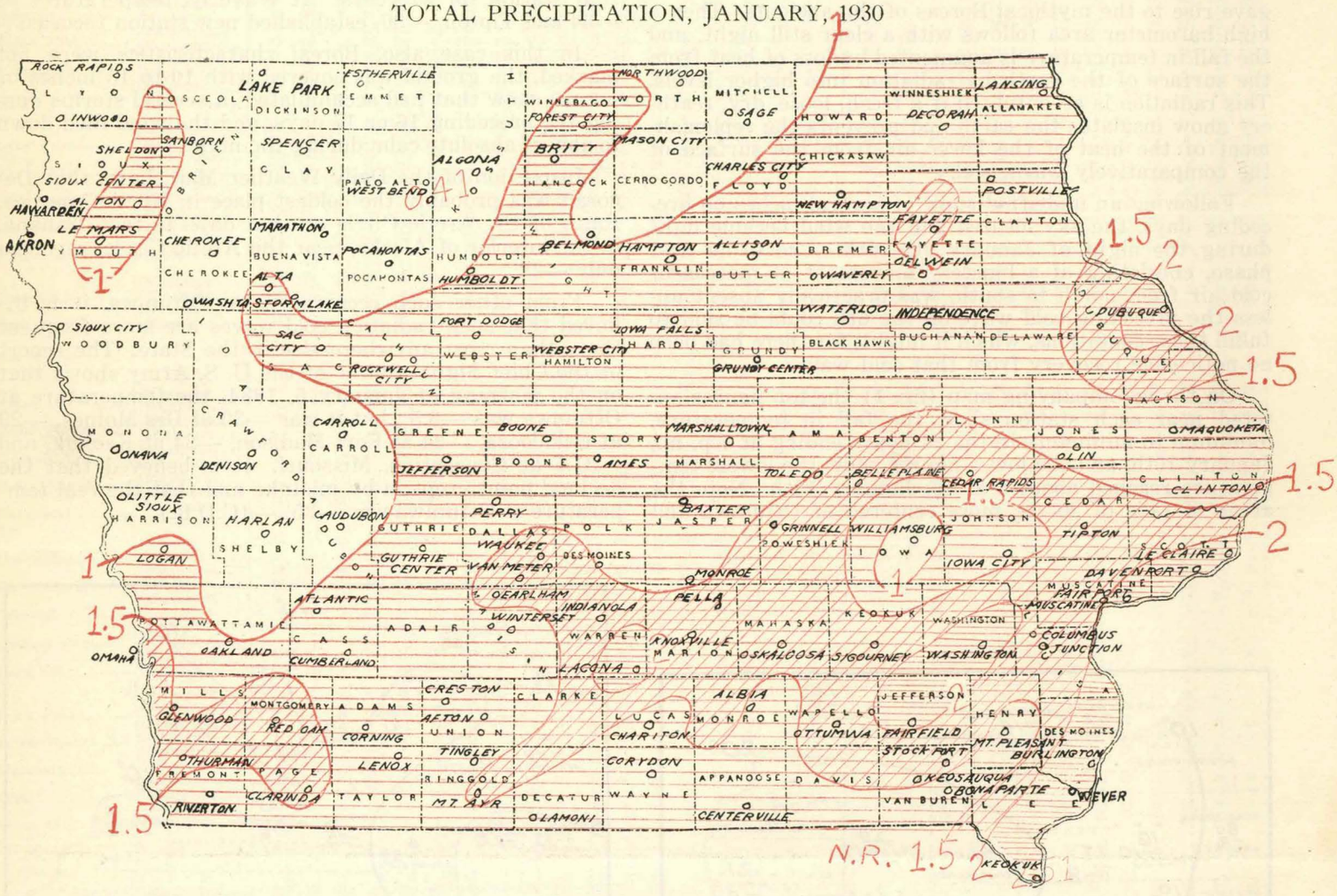


Fig. 2. Radiation cold wave night of January 21st-22d, 1930. Top figures show number of degrees temperature fell in 24 hours; lower figures the minimum temperatures reached, breaking all records at some stations.

TOTAL PRECIPITATION, JANUARY, 1930



SCALE OF SHADES IN INCHES

Less than 1.0	1.0 to 1.5	1.5 to 2.0	More than 2.0

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

IOWA SECTION

In co-operation with

IOWA WEATHER AND CROP BUREAU

CHARLES D. REED, Senior Meteorologist

VOL. XLI DES MOINES, IOWA, FEBRUARY, 1930 No. 2

GENERAL SUMMARY

Violent temperature fluctuations broke more records during the month of February, 1930, than ever before in the history of the State. This was in striking contrast with the winter weather of last month. February averaged 25.0° warmer than January, and 0.9° warmer than a normal March. Heretofore the greatest change from January to February was in 1877, 20.3° warmer. Cold Januarys are generally followed by cold Februarys.

The mean temperature for the State, 35.5°, was 12.9° above the normal, and 1.1° higher than the previous record, 34.4°, in 1878. A cold wave passed over the State on the 14th and 15th, and a minimum temperature of —34° was recorded at Webster City. Following the cold wave the temperature rose rapidly until the maximum was reached at most stations on the 24th. During the exceedingly mild period, 19th to 24th, all previous maximum temperature records were broken. The highest temperature was 80° at Mt. Ayr and Clarinda on the 24th, surpassing the previous record for the state, which was 78° at Glenwood on February 26, 1896. Previous maximum temperature records were equalled or broken in the central and most of the southern districts, and particularly in the central and south-central districts. The extreme range of 114° occurred in 9 days, 15th to 24th, and is the greatest State range of record for February in such a short time. Other temperature features are treated elsewhere in this issue.

Precipitation was below normal in most of the State except slight excesses in the lower Iowa and Cedar valleys, and east to the Mississippi River. Rain fell at an excessive rate in the vicinity of Davenport on the 24th. Some stations in the west and southwest portion of the State were one inch or more deficient in precipitation.

The snow cover was light and below normal. The snow which fell on the 14th over the central and southern portions of the State and the lower Des Moines River Valley, had an exceptionally wide ratio between snow depth and water content; in some localities the ratio was 41 to 1.

The ice harvest which was in full swing during the last half of January was completed by the end of the first week in February. In most cases ice houses were filled to full capacity.

From the agricultural standpoint the month was favorable. There was considerable marketing of grain and the moving of renters active. In the southern two-thirds of the State there was quite a little plowing. Winter wheat, grasses and clover greened a month early, with very little winter killing. Chick hatcheries were busy most of the month. In several localities bees were flying about the hives. Stock wintered well and did not use as much feed as during January. Very little sickness existed among farm animals and poultry. During the last ten days pussy willows, maple and elm trees were in bloom, lilac buds were well swollen, as were the buds of a few fruits. Tulips, irises and some other hardy perennials were two or three inches above ground by the end of the month.

Ice in the rivers moved unusually early throughout the State, with no serious damage by ice gorges and back water. The crest stages on all streams and rivers was during the mild period, 19th to 25th, due to melting snow and moving ice. The ice jammed in the upper Iowa River in the northeast part of the State, causing damage by inundation of farm land. February river conditions will be more fully treated in the March issue.

Building construction got an early start.

N. G. R.

TEMPERATURE

The mean temperature for the State, derived from the means of 9 districts of nearly equal area, and based on the records of 101 stations, was 35.5°, or 12.9° above normal. There was an excess in all of the divisions of the State. The greatest excess, 14.3°, was in the west-central district, and the least, 11.4°, in the northeast district. The highest monthly mean was 40.7° at Keokuk, and the lowest was 28.5° at Northwood. The absolute range for the State was 114°, from 80° at Mt. Ayr and Clarinda on the 24th, to —34° at Webster City on the 15th. Temperatures of zero or lower occurred at all stations. The average number of days with maximum temperature 32° or below was 4, ranging from 7 days in the north-central district, to 2 days in the west-central, southwest, south-central and southeast districts. The average number of days with the minimum temperature 32° or below, was 21. The average number of days with the minimum temperature zero or below, was 1, ranging from 3 days at Northwood and Decorah, to 1 day at 77 stations. The greatest daily range in temperature at any one station was 50°, at Spencer, on the 17th.

PRECIPITATION

The average precipitation for the State, derived from the averages of 9 districts of nearly equal area, and based on the records of 112 stations, was 0.67 inch, or 0.54 inch below normal. The greatest district deficiency was in the west-central district, 0.83 inch, while the east-central district was exactly normal. The greatest precipitation deficiency, 1.13 inches, at any one station, was at Iowa Falls. The greatest excess in the State was 1.01 inch at Williamsburg. The greatest amount at a single station was 2.45 inches at Fairport, and the least was 0.06 inch at Red Oak. The greatest amount occurring in 24 consecutive hours was 2.03 inches at Davenport on the 24th and 25th. The average number of days with precipitation 0.01 inch or more for the State was 5.

COMPARATIVE DATA FOR THE STATE—FEBRUARY

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1873	19.2	— 3.4	49	—25	1.17	— 0.04	2.52	0.30					
1874	21.2	— 1.4	59	—20	1.28	+ 0.07	2.88	0.16					
1875	6.4	—16.2	48	—31	1.72	+ 0.51	6.75	0.82					
1876	25.5	+ 2.9	68	—16	1.11	— 0.10	3.63	0.15					
1877	34.0	+11.4	63	— 5	0.21	— 1.00	0.65	0.00					
1878	34.4	+11.8	60	— 8	0.59	— 0.62	2.95	0.00					
1879	21.6	— 1.0	57	—20	0.68	— 0.53	1.90	0.10					
1880	27.4	+ 4.8	68	—12	0.64	— 0.57	2.15	0.02					
1881	17.0	— 5.6	57	—24	3.10	+ 1.89	6.35	0.97					
1882	33.5	+10.9	72	—12	0.91	— 0.30	1.85	0.10					
1883	17.7	— 4.9	62	—33	1.89	+ 0.68	6.13	0.06					
1884	18.3	— 4.3	56	—23	1.32	+ 0.11	3.50	0.30					
1885	12.5	—10.1	54	—32	0.82	— 0.39	2.50	0.10					
1886	21.2	— 1.4	56	—34	0.59	— 0.62	1.96	0.24					
1887	17.1	— 5.5	60	—25	2.14	+ 0.93	5.64	0.12					
1888	20.2	— 2.4	64	—34	1.01	— 0.20	3.10	0.15					
1889	17.8	— 4.8	62	—28	0.47	— 0.74	1.70	0.00					
1890	25.1	+ 2.5	68	—24	0.83	— 0.38	2.18	0.25					
1891	19.4	— 3.2	70	—31	1.16	— 0.05	2.41	0.55		3	13	7	8
1892	28.1	+ 5.5	68	—20	1.20	— 0.01	2.18	0.12	5.0	6	6	7	16
1893	16.0	— 6.6	60	—28	1.39	+ 0.18	2.91	0.06	8.1	6	10	8	10
1894	19.7	— 2.9	60	—19	0.89	— 0.32	2.41	T.	8.4	3	16	8	4
1895	16.4	— 6.2	73	—33	0.49	— 0.72	1.34	0.02	3.3	4	13	9	6
1896	27.4	+ 4.8	78	—13	0.71	— 0.50	2.40	0.04	5.4	4	12	9	8
1897	24.7	+ 2.1	61	—24	0.89	— 0.32	1.81	0.22	8.0	5	6	10	12
1898	24.2	+ 1.6	62	—18	1.20	— 0.01	3.65	0.10	7.8	5	10	9	9
1899	12.2	—10.4	75	—10	0.89	— 0.32	4.32	0.12	7.1	5	11	10	7
1900	14.8	— 7.8	60	—27	1.30	+ 0.09	4.57	0.18	9.9	6	10	8	10
1901	17.5	— 5.1	49	—21	1.01	— 0.20	3.00	0.12	9.7	4	15	7	6
1902	17.6	— 5.0	62	—21	0.73	— 0.48	2.39	0.02	2.6	4	13	8	7
1903	19.8	— 2.8	56	—21	1.18	— 0.03	3.25	0.30	7.9	4	13	7	8
1904	14.8	— 7.8	70	—26	0.41	— 0.80	1.99	T.	4.5	4	10	9	10
1905	12.8	— 9.8	69	—41	1.57	+ 0.36	2.97	0.44	15.5	7	14	6	8
1906	23.6	+ 1.0	66	—32	1.29	+ 0.08	2.91	0.20	6.1	5	14	7	7
1907	25.0	+ 2.4	65	—31	0.71	— 0.50	1.95	0.06	4.6	4	14	6	8
1908	24.3	+ 1.7	59	—16	1.69	+ 0.48	3.95	0.23	8.9	6	12	6	11
1909	26.2	+ 3.6	62	—26	1.54	+ 0.33	4.72	0.30	7.7	5	11	6	11
1910	17.8	— 4.8	58	—21	0.46	— 0.75	2.09	T.	4.0	3	14	8	6
1911	27.3	+ 4.7	71	—13	2.76	+ 1.55	5.46	0.50	7.0	6	12	6	10
1912	18.1	— 4.5	57	—30	1.21	0.00	3.25	0.04	11.2	5	10	9	10
1913	20.2	— 2.4	70	—24	0.82	— 0.39	2.39	0.07	7.3	4	14	7	7
1914	16.8	— 5.8	59	—29	0.87	— 0.34	1.99	0.32	9.2	6	10	9	9
1915	29.1	+ 6.5	62	— 8	2.93	+ 1.72	5.39	0.43	9.4	9	9	5	14
1916	19.0	— 3.6	62	—32	0.55	— 0.66	1.38	0.05	6.0	4	14	8	7
1917	15.2	— 7.4	68	—37	0.36	— 0.85	1.19	T.	3.5	3	14	8	6
1918	23.0	+ 0.4	70	—36	0.95	— 0.26	2.10	0.09	6.0	5	14	7	7
1919	24.9	+ 2.3	65	—16	2.42	+ 1.26	4.12	1.32	9.9	8	11	5	12
1920	24.0	+ 1.4	59	—22	0.56	— 0.65	1.75	0.04	4.1	5	9	6	14
1921	31.0	+ 8.4	76	— 5	0.77	— 0.14	2.00	T.	6.5	5	13	7	8
1922	23.7	+ 1.1	70	—20	1.59	+ 0.38	4.56	0.40	1.3	4	14	7	7
1923	20.1	— 2.5	61	—23	0.40	— 0.81	1.71	0.00	3.2	3	13	8	7
1924	25.8	+ 3.2	70	—15	1.27	+ 0.06	4.00	0.30	11.2	7	15	5	9
1925	28.4	+ 5.8	66	—16	0.82	— 0.39	3.69	T.	2.6	4	11	7	10
1926	31.2	+ 8.6	67	— 2	0.76	— 0.45	2.13	0.04	3.3	4	10	7	11
1927	30.6	+ 8.0	65	—17	1.15	— 0.06	3.60	0.13	4.4	5	13	6	9
1928	28.6	+ 6.0	65	—14	1.95	+ 0.74	3.97	0.62	4.4	7	15	5	9
1929	14.0	— 8.6	52	—35	1.31	+ 0.10	3.03	0.34	12.5	8	10	7	11
1930	35.5	+12.9	80	—34	0.67	— 0.54	2.45	0.06	2.8	5	11	10	7

T. indicates an amount too small to measure, or less than .005 inch rainfall and less than .05 inch snowfall.

Climatological Data for February, 1930

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit						Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
Northwest District																			
Akron	Plymouth	1,153	4								0.07	— 0.81	0.06	2.0	2	17	10	1	s.	Orlan C. Moore
Alta	Buena Vista	1,513	39	33.4	+13.7	65	19	—13	15	32	0.39	— 0.63	0.22	3.5	4	11	13	4	s.	D. E. Hadden
Alton	Sioux	1,305	25	32.6	+13.7	60	19†	—27	15	47	0.50	— 0.46	0.32	5.5	6	6	14	8	s.	W. S. Slagle
Cherokee	Cherokee	1,196	10	33.8	+14.3	63	19	—22	15	41	0.17	— 0.82	0.07	3.7	4	11	14	3	s.	J. E. Wirth
Estherville	Emmet	1,298	35	31.6	+13.7	63	20	—20	15	40	0.45	— 0.39	0.20	4.0	6	10	14	4	nw.	A. O. Peterson
Hawarden	Sioux	1,181	4								0.26	— 0.53	0.17	2.0	2	10	9	9	s.	Earl V. Slife
Inwood (near)	Lyon	1,474	26	31.6	+13.8	60	20	—20	15	41	0.27	— 0.60	0.12	1.5	4	16	7	5	nw.	A. C. Hanson
Lake Park (near)	Dickinson	1,489	17	30.2	+12.4	62	20	—20	15	37	0.33	— 0.59	0.17	1.5	3	9	4	15	sw.	P. M. Lawrence
Le Mars	Plymouth	1,224	34	35.2	+14.3	65	18	—18	15	42	0.56	— 0.24	0.30	3.0	4	19	4	5	nw.	Henry Newell
Marathon	Buena Vista	1,390	4								0.32		0.18	3.2	3	13	7	8	sw.	E. G. Smith
Pocahontas	Pocahontas	1,248	26	32.9	+13.2	66	19	—30	15	45	0.31	— 0.81	0.12	5.0	5	10	10	8	s.	F. E. Hronek
Rock Rapids	Lyon	1,319	31	31.0	+13.1	58	20	—22	15	40	0.54	— 0.14	0.20	5.0	5	21	3	4	s.	Nellie F. Medberry
Sanborn	O,Brien	1,553	16	31.0	+12.5	62	20	—19	15	37	0.14	— 0.86	0.10	1.0	2	8	14	6	s.	J. W. Dow
Sheldon	O,Brien	1,418	19	32.2	+13.7	61	20	—22	15	42	0.42	— 0.56	0.18	2.8	6	9	11	8	nw.	Ross E. Forward
Sioux Center	Sioux	1,461	31	31.7	+13.0	60	18†	—11	15	32	0.20	— 0.77	0.12	4.0	2	19	5	4	nw.	F. C. Aue
Spencer	Clay	1,319	16	32.3	+13.8	63	20	—25	15	50	0.35	— 0.56	0.12	5.5	4	8	11	9	sw.	E. W. Little
Storm Lake	Buena Vista	1,438	41	34.3	+13.9	65	19	—17	15	35	0.20	— 0.79	0.14	2.5	2	13	10	5	sw.	L. B. Florey
Washta	Cherokee	1,157	32	35.0	+14.2	66	19	—22	15	44	0.21	— 0.73	0.08	3.0	3	16	7	5	s.	H. L. Felter
West Bend	Palo Alto	1,197	37	32.6	+13.4	62	19†	—18	15	31	0.40	— 0.58	0.20	5.0	3	12	12	4	s.	Jos. Dorweiler
Means and extremes				32.6	+13.6	66	19	—30	15	50	0.32	— 0.60	0.32	3.3	4	13	9	6	s.	
North Central District																			
Algona	Kossuth	1,224	57																W. E. Laird
Allison	Butler	1,060	16																W. P. Miller
Belmond	Wright	1,181	20	31.0	+12.7	63	19	—28	15	36	0.29	— 0.82	0.17	5.0	4	3	2	23	nw.	H. F. Luick
Britt	Hancock	1,236	43	31.7	+14.1	61	19	—18	15	29	0.18	— 0.63	0.14	2.5	2	17	3	8	sw.	E. P. Healy
Charles City	Floyd	1,015	39	29.6	+12.5	61	21	—15	15	27	0.44	— 0.66	0.18	4.3	9	8	8	12	se.	U. S. Weather Bureau
Forest City	Winnebago	1,226	36	29.8	+11.2	62	19†	—17	15	31	0.52	— 0.42	0.20	5.0	4	8	6	14	sw.	Dr. M. B. Neil
Hampton	Franklin	1,145	5																	L. H. Davis
Humboldt	Humboldt	1,095	42	32.8	+12.3	65	19	—25	15	36	0.42	— 0.50	0.15	4.5	4	8	12	8	s.	H. C. Snitkey
Mason City	Cerro Gordo	1,148	33	29.8	+11.7	61	19	—18	15	29	0.38	— 0.57	0.17	5.0	9	3	20	5	nw.	American Beet Sugar Co.
Northwood	Worth	1,222	34	28.5	+12.2	60	20	—16	15	32	0.55	— 0.83	0.40	5.5	3	8	11	9	nw.	Charles Dwelle
Osage	Mitchell	1,163	36	29.0	+12.2	59	21	—14	15	29	0.69	— 0.37	0.25	5.5	5	7	9	12	se.	Dr. C. E. Juhl
Means and extremes				30.3	+12.2	65	19	—28	15	36	0.43	— 0.65	0.40	4.7	5	8	9	11	nw.	
Northeast District																			
Cedar Falls	Black Hawk	875									0.39	— 0.80	0.17	1.0	4	9	8	11	w.	E. J. Cable
Decorah	Winneshiek	872	37	30.0	+12.2	66	22	—20	15	41	0.58	— 0.47	0.29	4.0	6	4	15	9	nw.	M. D. Whitney
Dubuque	Dubuque	700	57	33.7	+11.5	65	24	— 5	15	31	1.19	— 0.19	0.37	3.6	9	4	13	11	nw.	U. S. Weather Bureau
Fayette	Fayette	1,003	42	31.1	+12.1	67	21	—16	15	31	0.55	— 0.73	0.17	2.5	7	11	11	6	sw.	R. Z. Latimer
Independence	Buchanan	956	66								0.57	— 0.48	0.34	0.7	4	7	9	12	sw.	Dr. Geo. Boody
Lansing	Allamakee	632	23																	Mrs. Mary Spinner
New Hampton	Chickasaw	1,169	33	29.5	+10.8	63	21	—17	15	31	0.40	— 0.65	0.15	3.7	10	6	8	14	s.	D. W. Dawson
Oelwein	Fayette	1,036	7	31.8	+11.5	65	21	—14	15	30	0.10	— 1.08	0.10	1.0	1	11	7	10	s.	John T. Ridler
Postville (near)	Clayton	1,192	31	29.5	+11.2	61	20	—16	15	28	0.60	— 0.54	0.22	3.5	6	8	14	6	sw.	F. L. Williams
Waterloo	Black Hawk	854	47	33.0	+12.1	65	21	—22	15	37	0.77	— 0.41	0.50	1.0	4	13	6	9	se.	R. B. Slippy
Waverly	Bremer	936	34	30.6	+10.6	63	21	—21	15	32	0.14	— 1.07	0.10	2.2	3	20	4	4	nw.	D. H. Murphy
Means and extremes				31.2	+11.4	67	21	—22	15	41	0.58	— 0.58	0.50	2.5	6	9	10	9	sw.	
West Central District																			
Audubon (near)	Audubon	1,297	35	36.3	+14.8	73	24	— 7	15	29	0.43	— 0.60	0.25	4.5	5	10	17	1	sw.	George Kibby
Carroll	Carroll	1,265	40	35.5	+13.6	72	24	—16	15	38	0.19	— 0.87	0.10	3.0	3	22	4	2	sw.	Mrs. Jos. J. Wolfe
Denison	Crawford	1,171	36	35.4	+13.0	69	24	—13	15	31	0.18	— 0.76	0.09	4.5	3	8	15	5	sw.	V. L. Byers
Guthrie Center	Guthrie	987	35	37.2	+13.6	77	24	—18	15	40	0.17	— 0.94	0.10	2.0	2	2	25	1	w.	Floyd H. Bainter
Harlan	Shelby	1,192	31	35.9	+13.0	71	24	— 6	15	34										Walter Bell
Jefferson	Greene	1,052	31	36.2	+13.7	76	24	—20	15	36	0.15	— 0.98	0.15	1.5	1	12	10	6	nw.	W. I. Lyon
Little Sioux	Harrison	1,010	25	38.1	+14.2	67	18†	— 7	15	36	0.51	— 0.51	0.32	2.0	3	12	9	7	sw.	H. W. Kerr
Logan	Harrison	1,120	63	39.8	+14.8	73	24	— 1	15	31	0.44	— 0.84	0.30	3.0	3	5	22	1	s.	Amy Ann Stern
Onawa	Monona	1,051	29	37.6	+14.4	68	18	— 4	15	37	0.18	— 1.01	0.11	3.0	3	4	21	3	w.	Mrs. H. E. Colby
Rockwell City	Calhoun	1,232	34								0.28	— 1.00	0.18	4.0	2	9	12	7	nw.	A. W. McIsaac
Sac City	Sac	1,269	54																	F. P. Kessler
Sioux City	Woodbury	1,135	41	36.4	+15.4	69	18	— 3	14	32	0.28	— 0.54	0.16	3.4	3	3	15	10	nw.	U. S. Weather Bureau
Means and extremes				36.8	+14.3	77	24	—20	15	40	0.28	— 0.83	0.32	3.1	3	9	15	4	sw.	
Central District																			
Ames	Story	926	53	36.2	+13.7	76	24	—18	15	36	0.69	— 0.25	0.40	3.2	4	18	5	5	s.	Iowa State College
Baxter	Jasper	998	30	37.0	+14.1	73	24†	—20	15	44	0.61	— 0.41	0.41	2.0	3	14	7	7	sw.	F. A. Kanne
Boone (near)	Boone	894	25	35.2	11.9	77	24	—25	15	39	0.51	— 0.49	0.27	1.5	3	12	9	7	s.	C. F. Henning
Des Moines	Polk	861	52	38.2	+14.5	78	24	—10	15	36	0.50	— 0.62	0.21	4.5	5	7	9	12	s.	U. S. Weather Bureau
Fort Dodge	Webster	1,114	30	34.0	+11.7	67	19	—22	15	38	0.35	— 0.50	0.13	4.0	4	15	8	5	sw.	Mrs. Emma Sampson
Grinnell	Poweshiek	1,031	36	35.2	+12.0	74	24	—16	15	38	0.84	— 0.38	0.30	2.0	7	15	4	9	nw.	R. E. Bates
Grundy Center	Grundy	976	39	33.1	+11.1	70	24	—18	15	34	0.83	— 0.11	0.20	4.0	6	14	10	4	w.	M. G. Heiberger
Iowa Falls	Hardin	1,127	37	32.3	+11.3	63	19†	—24	15	35	0.50	— 1.13	0.30	6.5	4	7	11	10	w.	C. H. Gilbert
Marshalltown	Marshall	947	38	35.0	+11.4	71	24	—14	15	34	0.57	— 0.64	0.28	2.5	6	10	7	11	nw.	C. C. Pigman
Monroe	Jasper	922	18	37.8	+13.2	77	24	—17	15	35	0.56	— 0.64	0.24	3.8	4	16	4	8	s.	J. A. Dibel
Perry	Dallas	975	29	36.1	+12.6	76	24	—29	15	44	0.42	— 0.90	0.18	3.5	4	11	9	8	sw.	Eugene N. Hastie
Toledo	Tama	847	36	34.7	+11.7	70	24	—21	15	36	1.38	+ 0.25	0.60	2.5	7	15	6	7	sw.	H. P. Giger
Van Meter	Dallas	872	11								0.50		0.30	3.5	3	15	0	13		Calvin K. Smith
Waukee	Dallas	1,032	27	37.2	+14.1	76	24	—21	15	38	0.46	— 0.77	0.18	3.4	4	21	4	3	sw.	O. D. Ellsworth
Webster City	Hamilton	1,042	25	32.6	+11.4	72	24	—34	15	45	0.39	— 0.75	0.16	4.1	6	12	10	6	nw.	Frank A. Bonebright
Means and extremes				35.3	+12.5	78	24	—34	15	45	0.60	— 0.54	0.60	3.4	5	13	7	8	sw.	

Climatological Data for February, 1930—Continued

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit: Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Precipitation, in inches: Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Number of Days: Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy	Prevailing direction of wind	OBSERVERS
East Central District																				
Belle Plaine	Benton	866	40	35.2	+12.3	69	24	—17	15	38	1.46	— 0.14	0.62	2.2	7	8	8	12	s.	O. C. Burrows
Cedar Rapids	Linn	737	48	35.0	+12.5	68	19†	—11	15	37	0.98	— 0.42	0.52	1.5	4	11	4	13	sw.	J. T. Wurster
Clinton	Clinton	595	57	35.8	+11.2	68	19	— 2	15	38	1.25	— 0.71	0.81	1.2	7	11	6	11	s.	Dr. A. P. Bryant
Davenport	Scott	580	59	37.2	+12.3	69	19	— 2	15	29	2.38	+ 0.80	2.03	0.6	8	5	11	12	sw.	U. S. Weather Bureau
Fairport	Muscatine	567	9	37.8	+12.6	70	24†	— 9	15	35	2.45	+ 0.70	1.02	5.4	9	10	5	13	sw.	Bureau of Fisheries
Iowa City	Johnson	733	70	35.9	+11.7	69	21†	—13	15	36	1.86	+ 0.35	1.35	2.0	9	10	11	7	nw.	Prof. J. F. Reilly
Le Claire	Scott	567	30																	Margaret T. Disney
Maquoketa (near)	Jackson	692	25	34.2	+12.4	65	19	— 7	15	36	1.03	— 0.32	0.47	0.6	5	9	8	11	w.	John Strodthoff
Muscatine	Muscatine	546	69																	William Molis
Olin	Jones	760	31	34.0	+11.9	65	19†	—10	15	33	0.60	— 1.05	0.45	*1.0	3	9	8	11	sw.	Mrs. L. Stingley
Tipton (near)	Cedar	807	31	34.4	+10.6	66	21†	—11	15	36	1.69	+ 0.20	1.10	3.5	7	1	14	13	w.	John Kroeplen
Williamsburg	Iowa	770	14	36.8	+14.0	69	19†	—14	15	36	2.31	+ 1.01	1.37	0.8	5	16	10	2	nw.	Dr. F. C. Schadt
Means and extremes				35.6	+12.1	70	24†	—17	15	38	1.60	0.00	2.03	1.9	6	9	8	11	sw.	
Southwest District																				
Atlantic	Cass	1,110	39	37.6	+13.7	76	24	— 8	15	38	0.27	— 0.87	0.15	2.0	3	11	13	4	sw.	Roy L. Fancolly
Bedford	Taylor	1,200	2								0.74	— 0.62	0.35	2.0	4	15	3	10	nw.	Arthur L. Bishop
Clarinda	Page	1,009	40	40.6	+12.8	80	24	— 2	15	43	0.49	— 0.65	0.24	6.5	5	11	13	4	nw.	Dr. H. C. Hawley
Corning	Adams	1,150	38	39.9	+14.8	79	20†	— 7	15	43	0.11	— 1.07	0.06	1.2	2	10	16	2	sw.	C. A. Smith
Cumberland (near)	Cass	1,225	31								0.17	— 0.92	0.12	2.0	2	13	12	3	nw.	Carl E. Pollock
Glenwood	Mills	1,100	32	40.6	+14.1	70	18†	— 2	15	40	0.27	— 0.60	0.25	2.5	2	6	16	6	nw.	George Mogridge
Lenox	Taylor	1,250	35	39.4	+13.9	79	24	— 5	15	38	0.57	— 0.42	0.25	1.2	5	13	11	4	sw.	J. L. Hurley
Oakland	Pottawattamie	1,139	11			72	24	— 4	15	41										W. S. Matthews
Red Oak (near)	Montgomery	1,030	5								0.06	— 1.07	0.06	2.0	1	9	16	3	nw.	B. R. Bridge
Riverton (near)	Fremont	920	4								0.46	— 0.72	0.30	1.0	3	15	1	12	s.	Geo. C. Rader
Thurman	Fremont	960	33	40.6	+12.7	71	19	— 1	15	40	0.35	— 1.03	0.20	2.0	2	5	17	6	nw.	H. H. Askew
Omaha, Neb		1,105	59	40.8	+15.3	70	18	4	15	33	0.21	— 0.68	0.16	1.6	3	9	14	5	nw.	U. S. Weather Bureau
Means and extremes				39.9	+14.1	80	24	— 8	15	43	0.34	— 0.78	0.35	2.2	3	11	12	5	nw.	
South Central District																				
Afton	Union	1,212	36	40.4	+14.8	79	24	— 5	15	37	0.63	— 0.54	0.22	2.0	5	16	8	4	sw.	S. R. Brown
Albia	Monroe	949	32	39.3	+13.9	79	24	—11	15	39	0.73	— 0.63	0.45	7.0	5	11	6	11	nw.	O. E. McBride
Centerville	Appanoose	1,013	25	39.4	+12.3	78	24	— 8	15	38	0.49	— 1.01	0.34	0.6	5	11	10	7	sw.	Thomas Wood
Chariton (near)	Lucas	1,042	35	39.2	+14.1	78	24	—12	15	39	1.01	— 0.12	0.62	2.0	4	11	11	6	sw.	C. C. Burr
Corydon (near)	Wayne	1,050	37	39.0	+12.8	77	24	—10	15	37	0.65	— 0.75	0.25	1.0	5	14	5	9	nw.	J. C. Davis
Creston	Union	1,291	25	38.1	+13.4	78	24	— 5	15	37	0.33	— 1.01	0.14	2.0	4	11	10	7	s.	Mrs. N. Spangler
Earlham (near)	Madison	1,126	28	37.1	+13.8	77	24	—15	15	40	0.17	— 1.24	0.08	2.0	3	17	6	5	sw.	George Phillips
Indianola	Warren	972	39	38.8	+14.2	79	24	—15	15	39	1.20	— 0.01	0.40	6.0	5	9	11	8	se.	Seth F. Shenton
Knoxville	Marion	920	35	39.0	+13.3	78	24	—17	15	38	1.07	— 0.18	0.35	3.5	4	11	8	9	nw.	W. J. Casey
Lacona	Warren	824	31								0.76	— 0.92	0.28	2.0	6	10	14	4		J. B. Alter
Lamoni	Decatur	1,123	23	38.8	+11.4	79	24	— 4	15	40	1.78	+ 0.54	1.51	0.3	4	16	4	8	sw.	F. S. Parks
Melrose	Monroe	871	1								0.64		0.50	0.5	3	11	12	5	sw.	J. M. Carr
Mount Ayr	Ringgold	1,220	37	40.0	+13.6	80	24	— 4	15	40	0.91	— 0.39	0.40	1.0	4	16	8	4	s.	E. O. Gleason
Tingley	Ringgold	1,275	5	39.4	+13.3	78	24	— 4	15	36	0.70	— 0.48	0.36	0.4	5	11	11	6	sw.	James A. Verploegh
Winterset	Madison	1,118	39	39.2	+14.4	79	24	—12	15	36	0.25	— 0.83	0.07	3.0	5	18	7	3	nw.	H. S. Ely
Means and extremes				39.1	+13.5	80	24	—17	15	40	0.75	— 0.55	1.51	2.2	4	13	9	6	sw.	
Southeast District																				
Bonaparte (near)	Van Buren	563	39	38.3	+11.5	76	24	—11	15	41	0.38	— 0.88	0.20	1.0	4	16	3	9	s.	B. R. Vale
Burlington	Des Moines	544	31	39.2	+10.5	76	24	— 3	15	32	1.42	— 0.39	0.73	2.0	6	16	2	10	sw.	John W. Donnelly
Columbus Junction	Louisa	595	29	37.3	+11.0	75	24	— 9	15	35	1.53	+ 0.13	1.26	1.6	6	10	13	5	sw.	Miss Musa Todd
Fairfield	Jefferson	780	46	37.4	+11.9	77	24	—13	15	40	1.45	— 0.14	0.80	3.0	6	14	8	6	nw.	R. M. McKenzie
Keokuk	Lee	614	59	40.7	+12.4	78	24	0	15	38	1.01	— 0.54	0.48	1.0	5	6	12	10	s.	U. S. Weather Bureau
Keokuk No. 2	Lee	651	1	40.6		78	24	— 2	15	39	1.57		0.60	1.2	5					J. N. D. Dickinson
Keosauqua	Van Buren	639	38	38.4	+11.1	78	24	—10	15	42	0.52	— 0.95	0.30	2.2	3	7	15	6	w.	Dr. J. W. Rinabarger
Mt. Pleasant	Henry	730	49	38.8	+12.3	75	24	— 8	15	38	1.23	— 0.21	0.77	1.0	5	8	12	8	sw.	J. H. Jericho
Oskaloosa	Mahaska	835	54	38.0	+13.3	78	24	—16	15	39	1.47	+ 0.32	0.68	4.4	9	8	11	9	sw.	Roy R. Robinson
Ottumwa	Wapello	649	35	39.8	+13.1	78	24	—15	15	43	0.85	— 0.60	0.57	1.7	5	12	8	8	nw.	C. L. Mikesh
Sigourney (near)	Keokuk	790	31	37.6	+12.9	77	24	—14	15	41	0.90	— 0.50	0.41	3.2	6	13	6	9	nw.	W. E. Utterback
Stockport (near)	Van Buren	747	28	38.0	+12.3	76	24	—12	15	43	1.25	— 0.14	0.51	2.0	6	13	7	8	s.	C. L. Beswick
Washington	Washington	757	48	38.3	+12.8	76	24	—12	15	37	1.59	+ 0.30	0.56	2.5	7	11	9	8	e.	D. D. Sherman
Wever	Lee	552	2	38.2		78	24	— 8	15	36	0.65		0.30	1.0	5	9	8	11	w.	H. G. Liddle
Means and extremes				38.6	+12.2	78	24	—16	15	43	1.13	— 0.30	1.26	2.0	6	11	9	8	sw.	
State means and extremes				35.5	+12.9	80	24	—34	15	50	0.67	— 0.54	2.03	2.8	5	11	10	7	sw.	

Temperature normals are based on the 46-year period July 3, 1875 to July 2, 1921; shorter records corrected to harmonize. Precipitation normals are based on the 50-year period ended December 31, 1927 at first order stations; upon all records of 10 years or more ending December 31, 1920 for most of the co-operative observing stations; and upon interpolations from normal maps for recently established stations.

Reference letters a, b, c, etc., appearing in the table indicate the number of days missing; for example b represents two days, etc.

†Also other dates.

‡‡Received too late to be included in means and summaries.

T. Precipitation is less than 0.01 inch rain or melted snow.

SNOWFALL

The average snowfall for the State was 2.8 inches, or 4.2 inches below normal. The greatest total snowfall for the month at any one station was 7.0 inches at Albia, and the least, 0.3 inch at Lamoni. The greatest snowfall in 24 hours was 6.0 inches at Albia, on the 14th.

MISCELLANEOUS PHENOMENA.

Aurora: 23d.

Birds (Migration of): Belmond, robins on 23d; Boone, bluebirds on 19th, robins on 20th, blackbirds on 25th, gulls along the river on 28th; Corydon, wild geese on 20th, robins on 22d; Earlham, wild ducks on 18th, bluebirds on 21st, robins on 22d; Oskaloosa, robins on 23d, meadowlarks on 23d; Stockport, robins on 18th, bluebirds on 19th, meadowlarks on 22d, blackbirds on 23d.

Cold Waves: 14th-15th.

Corona, lunar: 6th.

Fogs: 1st, 2d, 3d, 17th, 18th, 24th.

Frogs Croak: Corydon on 23d; Oskaloosa on 23d.

Gales: 9th, 11th, 13th, 26th, 28th.

Glaze: 17th.

Hail, light: 23d, 24th, 25th, 26th, 28th.

Halos, lunar: 6th, 7th, 8th, 10th, 11th, 12th, 13th, 18th, 20th.

Daily Precipitation for February, 1930

Stations	Drainage Basin	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	
Northwest District																																	
Akron	Big Sioux													T.	.06			T.					T.		T.				.01				0.07
Alta	Raccoon	T.	T.										.01	.03	.11			.03							.02	T.			.22				0.39
Alton	Floyd													.05	.32		T.	.02							.02	T.			.08				0.50
Cherokee	Little Sioux													.02	.06			.02							T.	T.			.07				0.17
Estherville	Des Moines													.05	.05		.05	.05							.05				.20				0.45
Hawarden	Big Sioux												T.	T.	.09								.17										0.26
Inwood (near)	Big Sioux												.12	.05	.04			T.					T.		T.				.06				0.27
Lake Park (near)	Little Sioux													.03	.13	T.									.17								0.33
Le Mars	Floyd													.02	.30			.21							.03	T.							0.56
Marathon	Raccoon														.18		T.								T.	T.	.08	.06					0.32
Pocahontas	Des Moines													.03	.09			.09							.02				.08				0.31
Rock Rapids	Big Sioux												.10	.05	.06								.13						.20				0.54
Sanborn	Floyd			T.												T.		T.	T.						T.	.04			.10				0.14
Sheldon	Floyd				T.			T.					.05	.02	.08	T.		.05							.04	T.			.18				0.42
Sioux Center	Floyd														.12										T.				.08				0.20
Spencer	Little Sioux												T.	.02	.11										.10				.12				.35
Storm Lake	Raccoon													T.	.14														.06				0.20
Washta	Little Sioux													T.	.08			.07											.06				0.21
West Bend	Des Moines													.04	.20		T.						T.		T.				.16				0.40
North Central District																																	
Algona	Des Moines																																
Allison	Cedar													.02	.05	T.	.05	T.							T.	T.	T.		.17				0.29
Belmond	Iowa																.04												.14				0.18
Britt	Iowa																																
Charles City***	Cedar	.04	.03										.08	.03	.02	T.	.04	.01							T.	.01	T.		.18				0.44
Forest City	Cedar								T.					.20	.15	T.	.15	.02							T.								0.52
Hampton	Cedar																																
Humboldt	Des Moines													.02	.15			.10								T.			.15				0.42
Mason City	Cedar	T.	.01					T.	T.	T.			.01	.01	.01	.02	.02	.11							.02	T.	T.		.17				0.38
Northwood	Cedar		T.	T.										.10		T.	.05	T.							T.	T.			.40				0.55
Osage	Cedar		.04											.04			.12	.25								T.			.24				0.69
Northeast District																																	
Cedar Falls	Cedar						T.			T.	T.		T.	T.	.02		T.								.12	.08			.17				0.39
Decorah	Mississippi	.03								T.			T.	.06			.10	.05								.05		T.	.29				0.58
Dubuque***	Mississippi	.09	.07		T.	T.				T.			.01	.02	.01		.16						T.		.31	.37	T.		.15				1.19
Fayette	Mississippi	.06	.05							T.				.02	T.		.06								.04	.15			.17				0.55
Independence	Wapsipinicon	T.	T.										T.	T.	.07		T.								.34	.09			.07				0.57
Lansing	Mississippi																																
New Hampton	Wapsipinicon	.01	.06										.03	.02	.02	.01	.03	.03							T.	.01			.15				0.40
Oelwein	Wapsipinicon	T.															T.								T.	T.			.10				0.10
Postville (near)	Mississippi												T.	.05	.05		.12	T.							.04	.22			.12				0.60
Waterloo	Cedar							T.						T.	.07		T.								.10	.50			.10				0.77
Waverly	Cedar													.01	.03		.10												T.				0.14
West Central District																																	
Audubon (near)	Nishnabotna		.05											T.	.25			.02							.01	T.			.10				0.43
Carroll	Raccoon														.10			.03											.06				0.19
Denison	Missouri													T.	.08			.01											.09				0.18
Guthrie Center	Raccoon														.07			.10															0.17
Harlan	Nishnabotna								T.					T.	.15										T.				T.				0.15
Jefferson	Raccoon									T.				T.	.15	T.		.04						T.	.32	T.			T.				0.51
Little Sioux	Little Sioux												.02		.30														.12				0.44
Logan	Missouri		.04												.11														.03				0.18
Onawa	Missouri								T.						18			T.							T.				.10				0.28
Rockwell City	Raccoon																																
Sac City**	Raccoon																																
Sioux City***	Missouri		T.		T.				T.				T.	T.	.16	T.		.02							T.	T.			.10				0.28
Central District																																	
Ames	Skunk													.01	.08										.40				.20				0.69
Baxter	Skunk														.08										.41				.12				0.61
Boone (near)	Des Moines													T.	.07	T.	T.								.27				.17				0.51
Des Moines***	Des Moines		.01		T.				T.	T.			T.	T.	.11	T.	T.	.09						T.	.21	T.			.08				0.50
Fort Dodge	Des Moines												.06		.07			.09											.13				0.35
Grinnell	Iowa												.04	T.	.10	.08		.06							.12	.30			.14				0.84
Grundy Center	Cedar													T.	.04	T.	.16	.12							.20	.16			.15				0.83
Iowa Falls	Iowa		T.											.05	.10		.05												.30				0.50
Marshalltown	Iowa		T.		T.								.01	T.	.08		T.	.10					T.		.28	.01			.09				0.57
Monroe	Des Moines		T.						T.				T.	T.		.14		T.							.14	.24			.04				0.56
Perry	Raccoon													T.	.09			.06							.18	T.			.09				0.42
Toledo	Iowa												.08	T.	.10		.03	.18							.60	.25			.14				1.38
Van Meter	Raccoon														T.	.30		.10							.10								0.50
Waukee	Raccoon												T.		.13	.04	T.								.18	T.			.11				0.46
Webster City	Des Moines		T.											.04	.08		T.	.05							.03	.03			.16				0.39
East Central District																																	
Belle Plaine	Iowa								T.				.07	T.	.15	.02		.16							.62	.30			.14				1.46
Cedar Rapids	Cedar		T.											T.	.06	T.	T.	T.							.52	.30			.10				0.98
Clinton	Mississippi		.07										.02		.01		.06								.55	.37			.17				1.25
Davenport***	Mississippi		.01		T.	T.		T.	T.				T.	T.	.05		.01	.03				T.	.02		1.82	.35			.06				2.38
Fairport	Mississippi		.03												.12	.25	.17						.02		1.02	.75	.02		.07				2.45
Iowa City	Iowa		.01										.02	T.	.03	T.	.03	.11					.01		1.35	0.19			.11				1.86
Le Claire	Mississippi																																
Maquoketa (near)	Maquoketa													T.	.03			.02							.47	.34			.17				1.03
Muscatine	Mississippi																																
Olin	Wapsipinicon													T.	.10		T.	T.							.05	.45							0.60
Tipton (near)	Cedar			.13											.06	.06	.05								1.10	.13			.16				1.69
Williamsburg	Iowa														.08		T.	.16							1.37		.56		.14				2.31

Daily Precipitation for February, 1930—Continued

Stations	Drainage Basin	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	Totals
Southwest District																																	
Atlantic	Nishnabotna			.05					T.					T.	.15	T.												.07				0.27
Bedford	102			.35	T.										.14	T.												.20				0.74
Clarinda	Nodaway			.24											.09	.04												.02				0.49
Corning	Nodaway														.06													.10				0.49
Cumberland (near)	Nodaway			.05									T.		.12			T.										.05				0.11
																												T.				0.17
Glenwood	Missouri			.02										T.	.25													T.				0.27
Lenox	Missouri			.25					.02				T.	T.	.10			T.								.15		.05				0.57
Oakland	Nishnabotna																																
Red Oak (near)	Nishnabotna			T.										T.	.06																	0.06
Riverton (near)	Nishnabotna			.30											.06	T.						.10			T.			T.				0.46
Thurman	Missouri			.15											.20								T.			T.		T.				0.35
Omaha, Neb.***	Missouri			.01					T.				T.	T.	.16										T.	T.		.04				0.21
South Central District																																	
Afton	Grand			.15									.03		.17											.22		.06				0.63
Albia	Des Moines												T.	T.	.14	.02		.11							T.	.45		.01				0.73
Centerville	Chariton			.05					T.				T.	T.	.05			.02								.34		.03				0.49
Chariton (near)	Chariton			.11									T.	T.	.17			.11								.62		T.				1.01
Corydon (near)	Chariton			.18											.12			.07								.25		.03				0.65
Creston	Missouri			.08					T.				T.		.14	T.										.09		.02				0.33
Earlham (near)	Des Moines			T.									T.	T.	.06			.08										.03				0.17
Indianola	Des Moines			T.									T.	.20	.40	T.		.20							.24	.16		T.				1.20
Knoxville	Des Moines			T.					T.					T.	.35										.35	.34		.03				1.07
Lacona	Des Moines			.01											.20			.10							.10	.28		.07				0.76
Lamoni	Grand			.19											.04											1.51		.04				1.78
Melrose	Des Moines														.04			.10								.50						0.64
Mount Ayr	Grand			.22											.15											.40		.14				0.91
Tingley	Platte			.18	.02								T.	T.	.11			T.								.36		.03				0.70
Winterset	Des Moines			T.					T.				.03	T.	.07			.06								.01		.05				0.25
Southeast District																																	
Bonaparte (near)	Des Moines			T.									T.	T.	.03	.02		.13					T.		T.	.20		T.				0.38
Burlington	Mississippi			T.					T.				T.		.08	.09		.09					T.		.42	.73		.01				1.42
Columbus Jct.	Iowa												T.	T.	.03	.03	T.	.20				T.			.47	.79		.01				1.53
Fairfield	Skunk			T.					T.						.70	.10	T.	.30							.01	.27		.07				1.45
Keokuk***	Mississippi			T.					T.				T.		.05	T.		.19					T.	.28	T.	.48		.01				1.01
Keokuk No. 2	Mississippi														.02	.10		.60							.29	.56						1.57
Keosauqua	Des Moines												T.	T.	.20	.02		T.								.30		T.				.52
Mt. Pleasant	Skunk														.04		T.	.23							.16	.77		.03				1.23
Oskaloosa	Des Moines			.01									.02	T.	.16	.05	.03	.14							.31	.68		.07				1.47
Ottumwa	Des Moines			T.	T.				T.				T.	T.	.05	.01		.20								.57		.02				0.85
Sigourney (near)	Skunk			T.					T.					T.	.07	.02	T.	.03							.30	.41		.07				0.90
Stockport (near)	Skunk														.10	.08		.43							.10	.51		.03				1.25
Washington	Skunk							T.					.01	T.	.13	.10		.22							.56	.52		.05				1.59
Wever	Mississippi			T.											.05	.05		.15					T.		.10	.30		T.				0.65

Except as otherwise indicated, observations are generally made late in the afternoon, near sunset, and precipitation recorded is for 24 hours ending at the time of observation.

||||Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.

***Regular Weather Bureau Station: precipitation is for 24-hour period midnight to midnight.

**Incomplete.

*Precipitation included in the next following measurement.

§Interpolated.

T. Precipitation is less than .01 inch rain or melted snow.

PRESSURE, RELATIVE HUMIDITY, WIND AND SUNSHINE

Stations	Barometric Pressure, Inches (Sea Level) Mean	Highest	Date	Lowest	Date	Relative Humidity, % Mean 7 A. M.	12 Noon‡	7 P. M.	Lowest	Date	‡‡Wind Total movement	Average hourly velocity	Maximum Miles	From	Date	Sunshine % possible	Departure from normal
Chas. City	29.98	30.63	15	29.48	24	89	73	79	52	23	4,188	6.2	22	nw.	9	48	— 5
Davenport	30.01	30.60	15	29.55	24	83	69	72	41	23	6,873	10.2	38	nw.	9	45	— 7
Des Moines	29.99	30.64	15	29.40	24	80	63	64	32	23	6.193	9.2	31	nw.	9	61	+ 4
Dubuque	29.99	30.61	15	29.53	24	88	70	78	46	8	4,035	6.0	22	nw.	10	43	—10
Keokuk	30.03	30.64	15	29.56	24	77	59	63	36	20†	4,852	7.2	25	nw.	9	60	— 5
Sioux City	29.98	30.59	15	29.44	24	81	62	62	27	13	7,523	11.2	42	nw.	9	64	+ 7
Omaha, Nb	29.99	30.62	15	29.34	24	75	54	60	29	9	4,895	7.3	29	nw.	9	76	+18
Means and extremes	29.99	30.64	15	29.34	24	82	64	68	21	9		8.2	42	nw.	9	57	+ 2
Normals and records	30.10	§31.07	21st 1918	*28.69	28th 1902	83	74	¶13	22d 1880				§56	nw.	4th 1917	55	

§Sioux City *Davenport ¶Des Moines ‡Local mean time †And other dates.

‡‡January 1, 1928, 3-cup anemometers replaced 4-cup instruments. See Climatological Data, January, 1928, page 7.

Halos, solar: 3d, 6th, 8th, 15th, 16th, 19th, 20th, 27th.

Haze: 4th, 22d.

Ice Moved in Rivers: 20th, 21st, 22d.

Paraselene: 18th.

Rainbows: 8th.

Sleet: 2d, 3d, 8th, 12th, 16th, 17th, 28th.

Thunderstorms: 21st, 22d, 23d, 24th, 25th.

THE WINTER OF 1929-1930

The mean temperature for the three winter months was 23.6°, which is 1.9° above the normal for the State, and 6.0° above the mean of 1928-1929. The winter was characterized by a nearly normal December, a very cold January, 8.0° below normal, and the warmest February on record. Out of 57 winters for which State-wide average temperatures are available, 37 have been as cold or colder and 19 have been warmer. The coldest winter of record was 1874-75, with a mean of 11.8°, and the warmest was 1877-78, with a mean of 32.2°. The highest temperature during the winter was 80 at Mt. Ayr and Clarinda on the 24th of February, and the lowest was —37° at Decorah on January 22.

The average monthly precipitation for the State was 0.80 inch, and the average total was 2.39 inches, or 1.03 inches less than the normal. December precipitation averaged 0.39 inch, which was 0.75 below normal, January was 1.33 inches, or 0.26 inch above normal, and February 0.67 inch, or 0.54 inch below normal.

The average snowfall for the winter was 21.3 inches, which is 0.6 inch below normal, and 11.0 inches less than the winter of 1928-29. December and February snowfall was below normal and January was above.

The average number of days with 0.01 inch or more of precipitation, was 18, or 4 days less last winter. The average number of clear days was 37, partly cloudy 24, and cloudy 29, as compared with 33 clear days, 20 partly cloudy and 37 cloudy days during the winter of 1928-1929.

N. G. R.

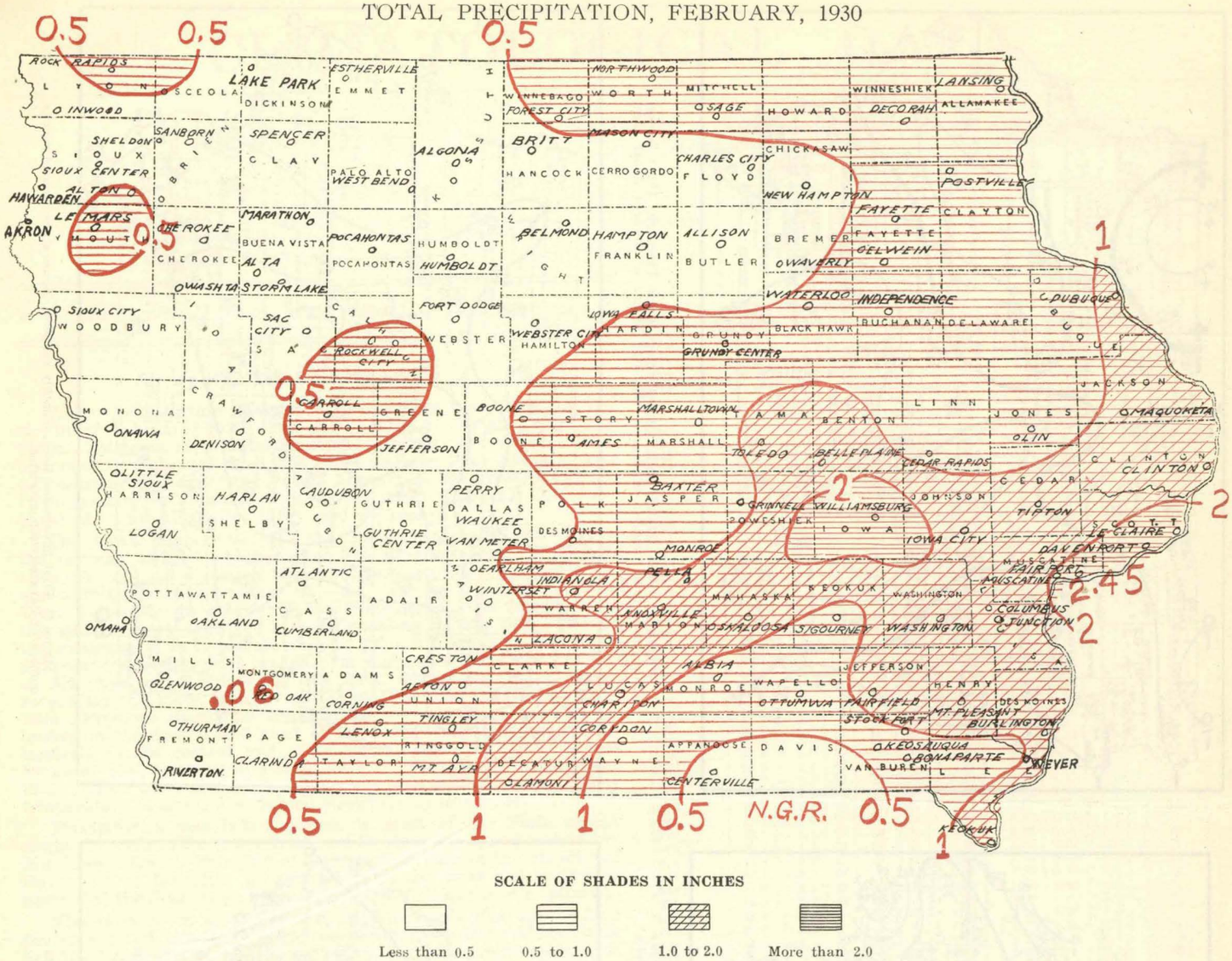
COLD JANUARYS INDICATE COLD FEBRUARYS

In 12 out of 14 cases in the last 58 years, 1873-1930 inclusive, when January state mean temperatures have been 5° or more below the 58-year average (18.0°), the mean temperature of February has been below the 58-year average of that month (22.0°). In other words, at the close of a January, 5° or more colder than the

Daily Maximum and Minimum Temperature for the Month of February, 1930

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
Northern Division																																	
Algona	Maximum																																
	Minimum																																
Alta	Maximum	34	43	36	32	30	44	39	41	40	43	48	36	29	15	19	38	51	60	65	62	58	58	60	56	39	32	39	38				42.3
	Minimum	9	31	25	22	25	29	24	24	29	18	33	29	14	2	—13	17	27	36	38	41	45	33	32	39	27	22	15	17				24.6
Alton	Maximum	33	40	40	33	44	42	39	41	41	43	47	42	31	17	20	38	50	57	60	60	59	58	58	48	46	30	33	38				42.4
	Minimum	0	23	24	23	27	22	26	24	30	17	32	29	15	2	—27	16	30	30	33	32	47	33	28	42	27	22	15	19				22.9
Belmond	Maximum	32	38	35	33	35	37	37	37	37	34	42	39	28	12	8	29	45	55	63	61	59	58	59	57	56	35	33	40				40.5
	Minimum	2	24	27	21	23	20	19	15	25	12	28	27	11	0	—28	7	20	28	38	35	48	37	27	44	30	24	18	17				21.4
Charles City	Maximum	29	36	32	32	28	33	35	35	36	28	40	36	27	10	9	26	42	50	56	59	61	57	54	56	50	34	34	38				38.0
	Minimum	5	24	27	24	24	21	16	8	24	11	25	20	4	0	—15	9	19	23	34	38	46	34	28	45	28	25	24	22				21.2
Decorah	Maximum	32	38	37	33	30	33	33	39	35	30	42	39	34	15	9	30	43	43	53	60	65	66	50	53	54	38	36	40				39.6
	Minimum	14	14	25	24	23	21	16	— 2	25	9	25	25	5	— 6	—20	3	17	26	36	40	46	43	25	39	32	23	19	25				20.4
Dubuque	Maximum	35	41	39	35	30	37	32	37	37	29	44	41	32	15	12	23	46	54	63	59	63	60	60	65	64	40	38	43				41.9
	Minimum	17	26	28	28	21	21	24	17	26	16	26	28	10	3	— 5	12	16	23	44	50	48	43	31	46	34	27	26	29				25.5
Forest City	Maximum	34	39	38	35	31	29	38	35	35	35	43	40	28	16	11	26	48	52	62	62	58	59	55	55	55	34	33	38				40.1
	Minimum	6	20	23	18	17	21	15	9	22	11	24	16	10	— 2	—17	4	17	24	33	36	45	35	29	41	28	20	18	25				19.6
Independence	Maximum																																
	Minimum																																
Inwood	Maximum	33	40	40	33	34	42	38	41	40	42	43	45	31	14	21	40	50	59	58	60	56	55	55	47	43	29	30	36				41.2
	Minimum	3	29	20	20	24	29	26	25	29	15	32	27	11	— 5	—20	15	30	22	35	31	44	22	27	34	24	17	12	18				22.0
Lake Park	Maximum	30	37	33	34	30	38	38	40	38	41	42	37	28	11	17	32	47	55	56	62	56	53	51	46	42	28	29	35				38.8
	Minimum	2	26	24	19	24	27	22	19	27	12	29	26	10	— 1	—20	16	24	32	36	31	45	33	28	40	27	17	16	17				21.7
Mason City	Maximum	29	37	36	31	30	33	35	35	36	30	41	37	27	13	8	27	41	51	61	60	59	58	54	54	56	31	33	38				38.6
	Minimum	1	22	25	23	20	22	18	6	24	11	24	26	12	0	—18	5	18	28	38	38	43	39	25	41	30	23	20	25				21.0
New Hampton	Maximum	28	38	38	33	31	33	34	36	35	32	40	38	27	13	9	25	42	52	56	59	63	59	55	55	56	36	36	36				39.1
	Minimum	8	18	26	22	22	18	17	5	25	9	20	23	6	— 5	17	4	11	22	34	38	43	40	28	40	31	24	19	26				19.9
Northwood	Maximum	31	37	36	33	32	32	35	34	35	29	41	34	25	13	10	27	41	50	59	60	59	57	54	53	50	28	25	35				37.7
	Minimum	7	22	25	20	20	25	18	9	25	10	22	25	6	— 3	—16	— 3	18	28	27	37	44	34	25	40	25	21	10	20				19.3
Pocahontas	Maximum	35	41	35	33	32	42	39	38	39	38	47	38	30	17	15	36	50	61	66	63	58	58	57	64	52	33	35	40				42.6
	Minimum	0	18	21	22	24	28	24	22	28	18	30	30	16	6	—30	15	25	28	36	37	45	36	29	45	31	25	17	25				23.2
Postville	Maximum	31	40	35	34	30	34	32	35	34	28	39	39	26	18	8	20	41	48	55	61	58	59	56	53	53	39	34	34				38.4
	Minimum	13	18	23	24	21	20	18	9	22	9	13	26	10	— 5	—16	7	17	20	37	42	42	33	29	40	30	26	20	28				20.6
Rock Rapids	Maximum	31	39	36	36	36	41	39	40	40	41	41	41	32	14	18	37	45	55	55	58	55	55	55	48	45	35	30	37				40.5
	Minimum	— 4	25	25	20	25	27	25	22	27	15	30	26	10	7	—22	15	28	30	30	29	43	32	25	36	25	16	14	17				21.4
Central Division																																	
Ames	Maximum	35	42	40	32	33	43	40	38	38	38	46	44	42	27	18	40	50	63	66	61	62	62	64	76	63	40	37	47				46.0
	Minimum	6	25	24	25	27	25	24	23	32	21	32	33	19	10	—18	10	27	29	38	47	45	42	30	46	34	28	21	31				26.3
Belle Plaine	Maximum	36	40	42	35	34	45	35	37	39	36	48	42	37	25	14	36	50	60	68	62	66	61	66	69	62	43	38	41				45.2
	Minimum	13	24	20	26	26	24	24	14	31	18	28	30	16	9	—17	9	20	27	37	46	46	46	28	48	34	25	19	31				25.1
Carroll	Maximum	36	43	38	33	33	45	40	41	41	42	47	42	33	25	22	43	52	63	65	61	60	60	62	72	58	38	35	44				45.5
	Minimum	6	28	26	23	26	28	25	25	30	20	31	22	20	5	—16	13	28	33	40	46	46	35	32	45	29	24	16	29				25.5
Cedar Rapids	Maximum	37	40	40	36	32	41	34	38	39	35	48	42	35	24	14	31	48	60	68	60	68	59	64	66	65	44	42	42				44.7
	Minimum	15	25	20	27	27	25	26	14	30	18	27	30	18	8	—11	8	18	25	35	45	42	45	27	48	36	26	21	31				25.2
Davenport	Maximum	39	42	44	35	33	43	33	37	39	34	47	43	36	22	16	29	50	56	69	65	66	60	65	69	64	50	41	44				45.4
	Minimum	26	30	28	28	25	26	26	20	30	22	29	30	20	12	— 2	12	25	29	45	48	50	44	38	49	35	30	26	32				29.0
Des Moines	Maximum	38	46	40	32	33	47	39	40	40	42	51	43	38	22	17	45	53	66	70	64	65	60	65	78	54	43	40	50				47.2
	Minimum	17	32	29	27	27	30	27	25	32	26	37	30	22	6	—10	16	29	30	44	51	51	44	32	50	33	29	22	26				29.1
Ft. Dodge	Maximum	34	41	34	33	36	43	39	39	38	38	46	41	31	20	16	37	50	62	67	62	59	59	59	66	60	36	34	45				43.8
	Minimum	5	28	22	22	24	27	24	23	29	13	32	30	12	5	—22	15	25	31	30	43	49	36	27	47	31	25	18	28				24.2
Grinnell	Maximum	33	38	38	36	32	40	36	36	36	37	46	46	37	27	13	40	47	61	62	61	66	62	67	74	70	42	39	45				45.2
	Minimum	16	25	22	27	23	25	22	17	30	15	29	32	17	10	—16	6	23	23	39	48	46	45	29	49	35	26	20	20				25.1
Guthrie Center	Maximum	38	46	40	35	35	47	40	41	42	45	48	46	43	34	19	46	55	67	68	63	62	62	66	77	65	42	39	35				48.1
	Minimum	3	29	25	25	25	31	27	23	32	21	33	33	18	10	—18	16	28	27	43	49	47	36	28	47	32	26	18	25				26.4
Iowa City	Maximum	37	41	41	36	33	42	35	37	38	35	48	41	36	24	15	31	48	60	68	62	69	60	65	69	68	45	40	42				45.2
	Minimum	21	26	22	27	28	27	26	15	31	20	27	31	19	10	—13	9	20	27	40	47	45	46	29	49	37	26	22	31				26.6
Iowa Falls	Maximum	33	38	37	32	33	37	35	37	37	33	45	41	34	20	10	27	45	55	63	59	62	60	63	62	62	39	32	42				41.9
	Minimum	5	24	16	24	23	25	20	15	27	13	29	29	13	5	—24	6	18	28	36	44	46	40	28	45	30	25	19	27				22.7
Little Sioux	Maximum	41	52	42	38	37	52	46	50	47	48	47	44	34	28	20	51	61	67	66	66	65	62	65	67	48	41	37	43				48.8
	Minimum	5	30	29	25	25	28	30	30	30	20	44	30	20	7	— 7	18	31	36	41	46	50	32	30	47	28	21	15	27				27.4
Marshalltown	Maximum	34	39	38	34	32	42	34	35	38	38	45	40	35	23	10	36	49	60	64	61	66	61	61	71	67	40	36	42				44.0
	Minimum	12	27	22	26	25	27	21	21	30	17	29	31	19	8	—14	8	23	28	43	48	47	44	31	47	33	27	21	30				26.1
Olin	Maximum	40	44	40	38	33	41	32	37	37	32	45	42	35	24	15	26	46	55	65	58	65	62	65	65	65	43	40	40				43.9
	Minimum	14	21	19	26	26	23	25	9	30	18	26	30	18	8	—10	10	15	25	32	41	37	42	24	45	40	25	22	32				24.1
Sioux City	Maximum	39	49	47	37	37	50	43	46	39	48	52	42	31	19	23	45	57	69	68	63	63	59	58	51	37	34	36	39				45.8
	Minimum	7	36	28	23	29	33	29	31	30	25	35	28	18	— 3	— 3	21	37	39	41	43	47	36	32	36	25	21	16	15				27.0
Southern Division																																	
Albia	Maximum	40	44	44	35	34	47	39	39	42	43	52	44	39	28	16	48	56	66	73	64	68	62	67	79	73	50	44	46				49.4
	Minimum	21	28	32	27	25	29	25	24	32	23	33	32	20	13	—11	9	27	33	47	49	49	48	37	51	35	26	21	32				29.2
Atlantic	Maximum	36	46	40	37	34	50	44	46	44	46	49	43	38	26	19	50	57	66	66	64	62	61	64	76	58	44	41	49				48.4
	Minimum	7	29	31	25	24	28	27	28	31	21	33	29	17	12	— 8	12	30	29	39	46	49	37	29	51	30	24	12	29				26.8
Burlington	Maximum	39	42	44	38	36	44	38	35	40	38	48	46	38	33	21	43	48	61	70	66	67	63	65	76	66	56	40	45				48.1
	Minimum	25	29	30	29	28	29	30	22	23	24	29	35	24	18	— 3	12	27	29	44	45	49	53	36	53	42	29	25	34				30.4
Columbus Jct.	Maximum	38	40	44	38	34	43	36	35	38	37	47	42	37	29	18	38	50	62	70	65	68	62	66	75	70	51	40	44				47.0
	Minimum	21	28	23	26	27	27	28	15	32	20	26	31	19	13	— 9	7	22	27	42	47	48	53	32	49	38	27	22	32				27.6
Corning	Maximum	38	46	44	41	36	50	52	49	44	42	51	52	42	35	20	53	61	69	70	79	63	63	63	79	68	49	46	52				52.0
	Minimum	12	30	33	26	19	26	29	25	29	19	35	29	18	11	— 7	12	33	26	43	49	49	38	28	57	32	23	19	34				27.8
Corydon	Maximum	36	43	42	36	36	44	39	39	41	41	51	46	38	32	18	48	54	65	70	64	66	62	65	77	68	48	41	47				48.5
	Minimum	20	30	31	27	25	28	27	23	33	23	32	33	21	16	—10	11	29	30	44	48	50	49	34	52	36	27	22	31				29.4
Creston	Maximum	36	45	42	35	34	48	41	45	41	45	53	43	39	25	19	49	55	69	69	66	62	62	62	78	55	46	41	50				48.4
	Minimum	15	28	31	26	24	27	27	25	29	20	33	31	19	11	— 5	14	29	32	41	44	48	39	34	51	33	24	20	27				27.8
Fairfield	Maximum	37	40	40	36	34	42	35	36	40	38	50	43	37	25	16	46	50	64	72	67	69	61	67	77	69	52	40	44				47.4
	Minimum	21	28	26	28	26	28	27	15	32	22	29	32	18	11	—13	6	23	24	43	48	45	50	29	51	37	28	23	33				27.5
Keokuk	Maximum	40	44	43	36	36	48	34	42	43	42	53	47	41	29	18	48	51	67	73	68	70	60	64	78	67	55	41	50				49.6
	Minimum	27	31	33	29	28	31	30	24	32	26	30	33	26	18	0	15	30	29	49	52	50	46	39	54	36	30	27	36				31.8
Knoxville	Maximum	40	43	42	36	33	47	40	41	42	42	52	46	40	28	14	48	56	68	73	66	67	64	66	78	72	46	40	47				49.2
	Minimum	15	29	28	28	27	30	26	25	25	23	34	33	21	14	—17	10	27	32	47	50	51	48	33	48	36	28	22	32				28.8
Lamoni	Maximum	39	42	40	37	33	45	39	44	42	46	54	47	39	28	18	51	56	70	73	67	66	63	64	79	55	48	42	51				49.2
	Minimum	15	26	31	25	23	27	27	25	32	22	33	30	20	14	— 4	11	30	32	42	47	50	33	37	51	34	26	22	31				28.3
Sigourney	Maximum	39	46	42	38	34	44	37	35	39	38	50	44	38	28	16	44	51	65	72	64	68	62	66	77	69	50	42	45				48.0
	Minimum	15	26	24	28	26	26	26	19	32	20	28	32	20	14	—14	6	23	24	44	50	46	52	31	48	37	27	22	32				27.3
Thurman	Maximum	38	48	40	38	37	52	49	54	52	48	50	48	48	31	23	54	58	69	71	64	66	66	64	70	59	46	42	49				51.2
	Minimum	12	32	34	28	27	29	32	32	28	24	33	35	26	23	— 1	20	30	29	34	48	53	36	29	54	32	24	22	32				29.9
Winterset	Maximum	38	45	44	36	33	48	39	40	42	44	52	48	40	29	15	50	58	68	70	65	63	63	64	79	68	45	40	50				49.1
	Minimum	19	30	32	27	26	31	27	26	32	23	34	33	21	12	—12	14	30	36	42	48	50	40	40	50	34	27	18	32				29.4
Omaha, Neb.	Maximum	42	51	44	35	38	55	48	54	47	52	50	44	36	27	23	54	61	70	70	67	67	62	65	70	42	44	40	45				50.1
	Minimum	18	39	35	27	29	35	32	36	32	29	38	30	25	8	4	21	37	44	47	50	53	39	39	40	29	28	20	21				31.6

TOTAL PRECIPITATION, FEBRUARY, 1930



SCALE OF SHADES IN INCHES

Less than 0.5 | 0.5 to 1.0 | 1.0 to 2.0 | More than 2.0

average, a prediction that February will be colder than the average would be verified 86% of the time. These averages differ slightly from the adopted normals.

However, February, 1930, was remarkably abnormal in that the preceding January, colder by 7.5° than the 58-year average, was followed by the warmest February in a century, 13.5° warmer than the 58-year average. The rule has been broken only once before, in 1918, when a cold January was followed by a February only 1.0° above the average.

Warm Januarys are not followed by warm Februarys so consistently, the frequency being only 11 out of 17 cases, or 65%.

C. D. R.

VIOLENT TEMPERATURE FLUCTUATIONS

February, 1930, was the warmest in a century in most of Iowa, excepting only some stations along the Mississippi River. At a good many stations in central and southwest Iowa previous high records were exceeded by 5 or more degrees. While no single station has a record of 100 years, there has not been a time in 110 years when there were not two or more temperature records in every month which can be compared with other records in the vicinity. The months of February in 1825, 1834 and 1851, were notably warm.

Heretofore, in most of the State, the warmest Februarys were in 1926 or 1921, but along the Mississippi, 1882 was and is still the warmest, while along the Missouri River, 1877 was the warmest till this year. The map (fig. 1) shows near each station the mean temperature of 1930 and the second figures show how much this is above the previous high record, except a few stations in eastern Iowa, where a minus sign before the figures shows how much lower the mean was than the previous high record. Also, in southern and central Iowa, in about half the area of the State, records were broken for highest temperature ever observed in February. In figure 2 the highest temperature of the month is shown near each station and below it the number of degrees this was higher or lower than the previous absolute maximum. The heavy lines mark the areas where records were broken. Minus signs show where the temperature was below the record. Heretofore, in the western third of the State, most of the stations had their highest temperature of record on February 26, 1896, if their records extended back that far, while in the eastern two-thirds the warmest day whatever the length of record, was February 15, 1921.

In the midst of the mildness a sharp cold wave swept southeastward across the State on the 14th-15th. Figure 3 shows near each station the fall in temperature in 24 hours, minimum to minimum, and the second figure shows the lowest temperature reached on the morning of the 15th throughout the State. At Webster City the cold wave was most severe, with a fall of 40° to a minimum of —34°, and in many counties from Cherokee and Clay southeast to Van Buren, the temperature fell 30° or more to far below zero.

This was followed by a rapid change to the record breaking high temperatures in half of the State on the afternoon of the 24th. Where the cold wave and the record warm area overlapped in Hamilton, Boone and portions of adjacent counties, there was a change to warmer, amounting to more than 100° in 9 days, and about 8 hours, the greatest being 106° at Webster City, 105° at Perry, and 102° at Boone. Figure 4 shows near each station the monthly range in temperature for February, 1930, and the number of days between the lowest and highest temperatures. In the extreme west and extreme east the range was only about 70° but it occurred in 3 or 4 days. The extreme range for the State, from —34° at Webster City on the 15th, to 80° at Clarinda and Mt. Ayr, on the 24th, amounted to 114°. Only in February, 1899, has this record for monthly range in temperature been exceeded in any month, and then only by one degree, in a period two days longer.

C. D. R.

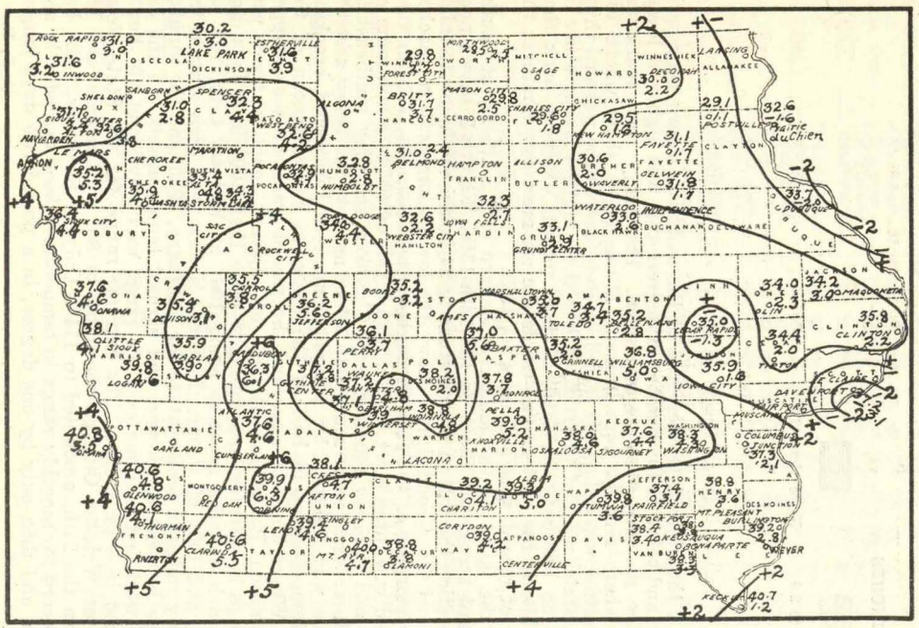


Figure 1. First figures show mean monthly temperature February, 1930; second figures and lines show excess over all previous high records; minus signs show lower than previous high record.

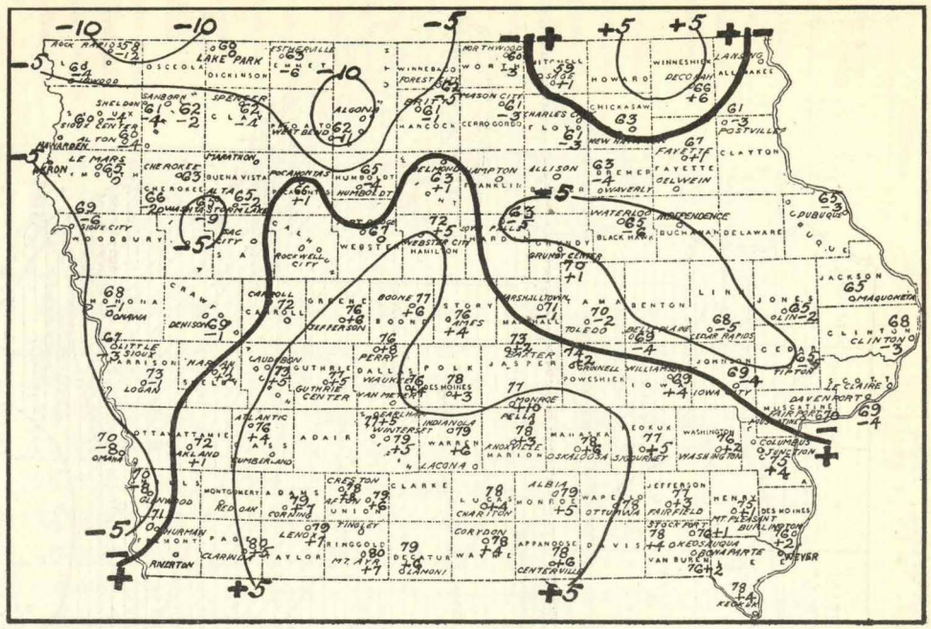


Figure 2. First figures show highest temperature February, 1930; second figures and lines, number of degrees this was higher or lower (minus) than previous high record.

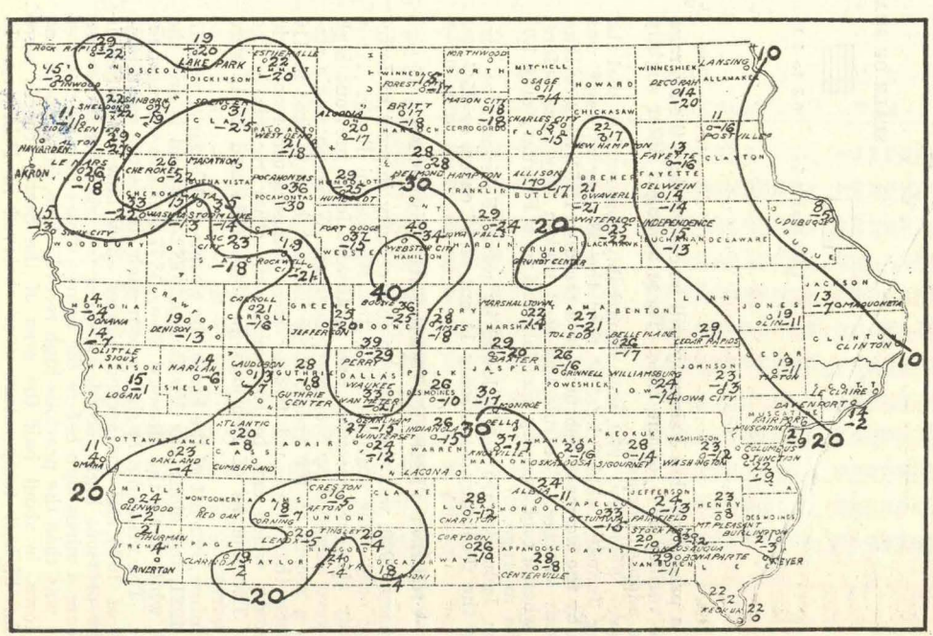


Figure 3. Cold wave February 14th-15th; first figures and lines, fall in temperature in 24 hours; second figures, minimum reached.

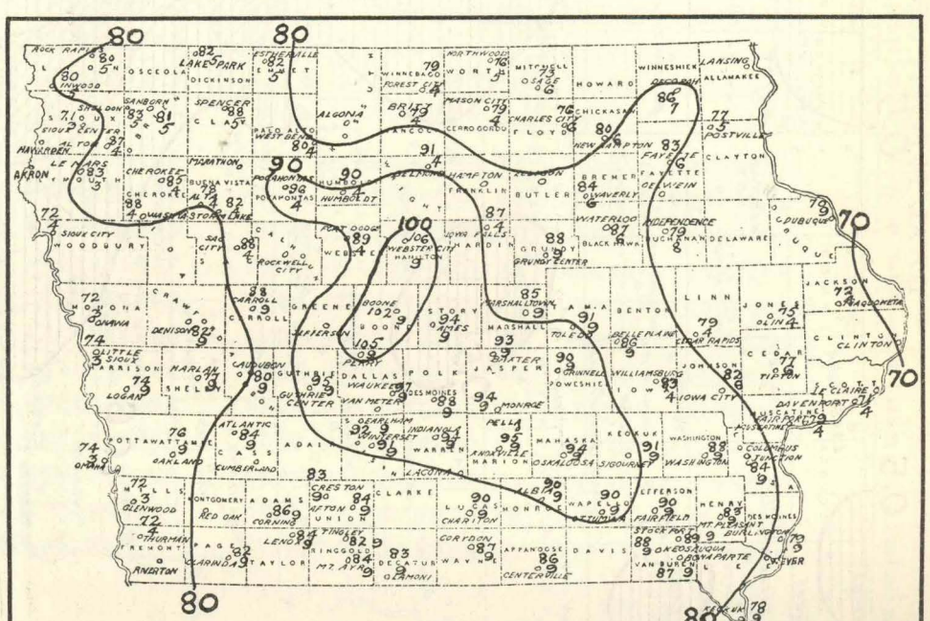


Figure 4. First figures and lines, monthly range of temperature; second figures, number of days between extremes.

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

IOWA SECTION
In co-operation with
IOWA WEATHER AND CROP BUREAU
CHARLES D. REED, Senior Meteorologist

VOL. XLI DES MOINES, IOWA, MARCH, 1930 No. 3

GENERAL SUMMARY

The main characteristics of March, 1930, were the high wind movement and a large deficiency in precipitation.

The mean temperature for the State, 37.3°, was 2.7° above the normal, and only 1.8° higher than that of last month. At several stations in the south and west portions February averaged warmer than March. The maximum temperature occurred at all stations about the middle of the month, the highest reported being 80° at Little Sioux and Onawa. The only zero weather occurred during a cold wave that passed over the western and northern portions of the State attending a high pressure area that moved down the Missouri Valley on the 1st and 2d.

Precipitation was below normal at all stations except Algona, Carroll and Mt. Ayr. Most of the stations except in the southwest portion of the State were one inch or more deficient in rainfall. Comparing the March mean precipitation with that of previous records, it is interesting to note that only six times since 1873 has the total mean precipitation been less than it was this month. Also, only seven times previous since 1873 for March, has the greatest total precipitation at any one station been less than was recorded this month.

The snow cover was light and below normal. The heaviest snowfall in the State occurred in Monroe, Appanoose, Mahaska and Black Hawk counties, on the 24th and 25th.

The favorable weather permitted much outdoor work. Plowing was possible early in the month over nearly all portions of the State, and much seeding of oats and other small grains was done, and started very early. Grasses stood the winter well, as did fruits. There apparently was little or no winter killing aside from a negligible amount to clover. Soil was in excellent condition for working, but its moisture content was considerably lower than usual. Farm work averaged about two or three weeks ahead of normal by the end of the month, but many farmers had neglected to start field work. At the close of the month wheat and pastures were green and in good condition. About 95% of the sod ground had been plowed. Stalk fields were clear and ready for the plow. There has been considerable baling of corn stalks in northwest Iowa, to be shipped to the Maizewood Factory at Dubuque. Very little sickness existed among the farm animals and poultry. The weather was favorable for the raising of chicks, although the chick hatcheries were not run to full capacity. Some potatoes were planted and truck gardening was active. Many of the early flowers were in bloom by the end of the month.

For the most part, March was very pleasant. About the usual number of storms passed near and over the State. A heavy local hailstorm occurred at Harlan on the 16th. Many stones as large as hens' eggs were reported. The only damage of any consequence consisted mainly of broken glass in greenhouses. A tornado occurred in Webster County on the 16th between 7:00 and 8:00 p. m., crossing most of Dayton and Lost Grove townships and causing about $3,600 damage to buildings.

The unusually dry weather during February and March, and the exceedingly dry atmospheric conditions, resulted in an unusually large number of fires. Many cities in the State reported record number of fires in their localities. Roads were generally good the entire month, and in many places very dusty. Building construction was well under way and progressed rapidly with very little interference.

A meteor of more than ordinary brilliancy was observed in the northeast, from Mt. Pleasant, about 9:15 p. m. on the 23d.

The wind movement for March was unusually large. At Des Moines the total movement, 9,073 miles, was the greatest for any month, with the exception of April, 1892, when the total movement was 9,612 miles. The 4-cup anemometer was in use at that time, while the record of the current month was with a 3-cup instrument. Part of the increased velocity is due to the change in location and exposure of the anemometer. At most of the other first order Weather Bureau stations, the wind movement did not closely approach the record. The exceedingly high velocity was mentioned by cooperative observers over the State on an unusually large number of days. N. G. R.

COMPARATIVE DATA FOR THE STATE—MARCH

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1873	34.0	— 0.6	72	—18	1.42	— 0.35	3.70	0.33	.....	.....	.....	.....	.....
1874	31.7	— 2.9	68	— 4	1.43	— 0.34	2.80	0.17	.....	.....	.....	.....	.....
1875	26.9	— 7.7	80	—10	1.62	— 0.15	3.80	0.45	.....	.....	.....	.....	.....
1876	27.2	— 7.4	75	— 6	3.24	+ 1.47	5.78	1.16	.....	.....	.....	.....	.....
1877	27.3	— 7.3	72	—14	2.28	+ 0.51	6.54	0.20	.....	.....	.....	.....	.....
1878	45.6	+11.0	80	—20	3.36	+ 1.59	6.70	0.35	.....	.....	.....	.....	.....
1879	37.2	+ 2.6	80	— 3	1.18	— 0.59	4.50	0.20	.....	.....	.....	.....	.....
1880	33.6	— 1.0	80	—21	1.26	— 0.51	3.90	0.15	.....	.....	.....	.....	.....
1881	27.1	— 7.5	56	0	1.91	+ 0.14	4.50	0.75	.....	.....	.....	.....	.....
1882	36.3	+ 1.7	78	4	1.82	+ 0.05	4.52	0.50	.....	.....	.....	.....	.....
1883	30.6	— 4.0	72	—13	0.55	— 1.22	1.40	0.00	.....	.....	.....	.....	.....
1884	32.0	— 2.6	72	—16	2.57	+ 0.80	5.90	0.70	.....	.....	.....	.....	.....
1885	31.3	— 3.3	65	—16	0.24	— 1.53	1.25	0.00	.....	.....	.....	.....	.....
1886	30.6	— 4.0	74	— 9	1.72	— 0.05	4.47	0.40	.....	.....	.....	.....	.....
1887	33.5	— 1.1	76	— 8	0.93	— 0.84	3.50	0.00	.....	.....	.....	.....	.....
1888	26.4	— 8.2	78	—12	3.04	+ 1.27	6.20	0.29	.....	.....	.....	.....	.....
1889	39.7	+ 5.1	80	8	0.47	— 1.30	2.40	0.00	.....	.....	.....	.....	.....
1890	28.1	— 6.5	75	—24	1.49	— 0.28	3.67	0.32	.....	.....	.....	.....	.....
1891	26.8	— 7.8	66	—19	2.60	+ 0.83	4.58	1.33	.....	10	6	8	17
1892	31.9	— 2.7	84	— 6	2.22	+ 0.45	4.58	0.57	3.9	6	11	8	12
1893	31.8	— 2.8	84	— 8	2.14	+ 0.37	4.40	0.64	4.0	8	9	11	11
1894	41.0	+ 6.4	84	— 5	2.03	+ 0.26	4.52	0.26	2.7	6	13	10	8
1895	34.4	— 0.2	94	—11	0.83	— 0.94	2.60	0.22	2.9	4	16	8	7
1896	30.9	— 3.7	81	—12	1.10	— 0.67	3.99	0.16	5.4	5	12	9	10
1897	32.0	— 2.6	72	—22	2.39	+ 0.62	6.16	0.29	5.5	8	9	8	14
1898	37.5	+ 2.9	72	— 2	1.94	+ 0.17	6.21	0.33	3.7	6	12	9	10
1899	23.0	—11.6	75	—16	1.62	— 0.15	5.90	0.37	8.0	6	7	12	12
1900	30.7	— 3.9	81	—13	2.06	+ 0.29	5.15	0.45	6.6	5	12	9	10
1901	31.2	— 0.4	76	— 8	2.64	+ 0.87	5.25	0.70	12.6	7	10	8	13
1902	39.1	+ 4.5	79	—12	1.45	— 0.32	4.33	0.13	1.3	7	9	11	11
1903	38.8	+ 4.2	82	6	1.38	— 0.39	3.90	0.15	3.9	7	11	7	13
1904	34.8	+ 0.2	78	3	2.18	+ 0.41	4.57	0.50	4.4	7	8	8	15
1905	41.5	+ 6.9	84	1	2.04	+ 0.27	3.70	0.89	4.1	7	8	8	15
1906	27.1	— 7.5	65	—14	2.34	+ 0.57	4.55	0.58	8.9	10	8	7	16
1907	40.6	+ 6.0	92	— 7	1.35	— 0.42	5.05	0.23	4.1	6	14	7	10
1908	37.9	+ 3.3	85	— 8	1.58	— 0.19	3.74	0.45	1.1	6	13	7	11
1909	32.5	— 2.1	71	—15	1.53	— 0.24	5.00	0.28	9.8	6	12	10	9
1910	48.9	+14.3	92	—10	0.17	— 1.60	1.37	0.00	T.	1	23	6	2
1911	39.4	+ 4.8	83	2	0.93	— 0.84	4.84	T.	1.9	5	16	9	6
1912	24.9	— 9.7	70	—19	2.01	+ 0.24	5.25	0.60	19.1	7	15	6	10
1913	31.9	— 2.7	78	—23	2.48	+ 0.71	5.88	0.74	5.3	9	11	10	10
1914	34.7	+ 0.1	78	— 5	1.69	— 0.08	3.84	0.23	1.8	7	12	8	11
1915	29.3	— 5.3	61	— 5	0.96	— 0.81	2.12	0.17	8.8	5	8	9	14
1916	35.2	+ 0.6	80	—18	1.57	— 0.20	5.80	0.23	2.9	6	11	9	11
1917	34.6	0.0	85	—12	1.84	+ 0.07	4.35	0.57	6.2	6	14	8	9
1918	42.9	+ 8.3	85	0	0.63	— 1.14	2.12	0.03	2.6	3	19	7	5
1919	37.5	+ 2.9	78	—11	2.33	+ 0.56	5.40	0.81	1.1	6	15	8	8
1920	38.0	+ 3.4	80	—21	3.02	+ 1.25	5.70	0.47	2.4	7	15	7	9
1921	42.8	+ 8.2	86	4	1.57	— 0.20	6.62	0.17	0.2	7	14	8	9
1922	38.3	+ 3.7	74	— 5	1.97	+ 0.20	3.73	0.76	3.4	7	12	6	13
1923	29.4	— 5.2	78	—22	2.87	+ 1.10	5.08	0.71	18.5	7	13	9	9
1924	31.9	— 2.7	72	3	2.65	+ 0.88	4.76	1.26	10.5	8	8	8	15
1925	40.1	+ 5.5	82	— 6	0.93	— 0.84	2.34	0.10	2.9	4	17	9	5
1926	32.1	— 2.5	78	— 4	1.06	— 0.71	2.62	0.20	8.1	6	12	9	10
1927	39.6	+ 5.0	75	0	1.92	+ 0.15	3.64	0.62	2.9	9	11	7	13
1928	38.9	+ 4.3	88	1	1.44	— 0.33	2.75	0.36	3.0	5	15	8	8
1929	39.1	+ 4.5	83	— 5	1.44	— 0.33	4.92	0.30	3.5	5	12	8	11
1930	37.3	+ 2.7	80	— 4	0.89	— 0.88	2.42	0.04	1.3	5	14	8	9

T. indicates an amount too small to measure, or less than .005 inch rainfall and less than .05 inch snowfall.

Climatological Data for March, 1930

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit: Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Precipitation, in inches: Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Number of Days: Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy	Prevailing direction of wind	OBSERVERS
Northwest District																				
Akron	Plymouth	1,153	4								0.07	— 1.19	0.06	1.0	2	19	6	6	nw.	Orlan C. Moore
Alta	Buena Vista	1,513	39	34.4	+ 1.4	75	16	0	2	41	0.18	— 1.37	0.07	0.5	6	17	10	4	n.	D. E. Hadden
Alton	Sioux	1,305	25	34.9	+ 2.9	72	16	0	2	40	0.16	— 0.94	0.16	2.0	1	12	13	6	nw.	W. S. Slagle
Cherokee	Cherokee	1,196	10	35.6	+ 3.7	76	16	1	2	40	0.30	— 0.98	0.30	T.	1	15	14	2	nw.	J. E. Wirth
Estherville	Emmet	1,298	35	33.6	+ 2.0	75	16	0	2	41	0.48	— 0.79	0.23	2.7	7	14	14	3	nw.	A. O. Peterson
Hawarden	Sioux	1,181	4								0 08	— 1.20	0.06	0.5	2	16	7	8	nw.	Earl V. Slife
Inwood (near)	Lyon	1,474	26	33.9	+ 1.2	73	15	— 1	2	41	0.04	— 1.16	0.04	0.5	1	16	11	4	nw.	A. C. Hanson
Lake Park (near)	Dickinson	1,489	17	33.2	+ 1.8	73	16	— 2	2	39	0.19	— 1.10	0.17	0.2	2	11	6	14	nw.	P. M. Lawrence
Le Mars	Plymouth	1,224	34	36.2	+ 2.9	74	15†	1	2	44	0.20	— 1.05	0.10	2.0	3	24	3	4	s.	Henry Newell
Marathon	Buena Vista	1,390	4								0.36		0.18	0.4	4	16	9	6	nw.	E. G. Smith
Pocahontas	Pocahontas	1,248	26	35.1	+ 2.8	75	16	2	2	44	0.99	— 0.38	0.45	1.2	8	15	11	5	nw.	F. E. Hronek
Rock Rapids	Lyon	1,349	31	34.2	+ 2.7	72	15	— 2	2	41	0.06	— 1.26	0.03	0.8	2	24	3	4	n.	Nellie F. Medberry
Sanborn	O,Brien	1,553	16	33.6	+ 2.0	73	16	— 4	2	41	0.39	— 1.01	0.35	0.4	3	12	11	8	sw.	J. W. Dow
Sheldon	O,Brien	1,418	19	34.6	+ 3.0	72	15†	0	2	41	0.16	— 1.14	0.09	1.4	5	13	14	4	nw.	Ross E. Forward
Sioux Center	Sioux	1,461	31	35.0	+ 3.5	73	15	— 1	2	42	0.20	— 1.06	0.10	2.0	3	16	4	11	nw.	F. C. Aue
Spencer	Clay	1,319	16	35.2	+ 2.8	76	16	— 1	2	39	0.29	— 1.03	0.07	2.6	8	14	12	5	nw.	E. W. Little
Storm Lake	Buena Vista	1,442	41	34.6	+ 2.0	71	16	1	2	40	0.59	— 0.71	0.32	T.	3	13	13	5	nw.	Russel M. Edwards
Washta	Cherokee	1,157	32	37.4	+ 4.1	78	16	2	2	47	0.10	— 0.91	0.05	T.	2	23	4	4	n.	H. L. Felter
West Bend	Palo Alto	1,197	37	35.0	+ 3.0	75	16	1	2	40	0.72	— 0.84	0.43	1.3	4	13	16	2	nw.	Jos. Dorweiler
Means and extremes				34.8	+ 2.6	78	16	— 4	2	47	0.29	— 1.01	0.45	1.0	4	16	10	5	nw.	
North Central District																				
Algona	Kossuth	1,224	57								1.69	+ 0.18	0.74	1.0	5	21	2	8	nw.	W. E. Laird
Allison	Butler	1,060	16																	W. P. Miller
Belmond	Wright	1,181	20	35.0	+ 3.7	76	16	3	2	43	0.91	— 0 42	0.50	0.3	4	6	7	18	nw.	H. F. Luick
Britt	Hancock	1,236	43	35.8	+ 4.3	74	16	2	2	42	0.54	— 0.71	0.54	T.	1	17	7	7	nw.	E. P. Healy
Charles City	Floyd	1,015	39	33.8	+ 3.1	74	16	3	2	34	0.90	— 0.87	0.46	T.	7	15	10	6	nw.	U. S. Weather Bureau
Forest City	Winnebago	1,226	36	34.6	+ 2.8	76	16	— 1	2	41	1.03	— 0.40	0.50	1.5	5	13	7	11	nw.	Dr. M. B. Neil
Hampton	Franklin	1,142	5	34.8		70	16	2	2	41	0.97	— 0.78	0.44	2.9	5	21	1	9	n.	Howard J. Haydon
Humboldt	Humboldt	1,095	42	35.9	+ 2.7	72	16	4	2	45	0.46	— 0.98	0.22	T.	4	13	12	6	nw.	H. C. Snitkey
Mason City	Cerro Gordo	1,118	33	34.0	+ 3.1	73	16	1	2	37	0.80	— 0.57	0.38	1.1	6	9	18	4	nw.	American Beet Sugar Co.
Northwood	Worth	1,222	34								1.45	— 0.40	0.50	5.0	6				nw.	Charles Dwelle
Osage	Mitchell	1,163	36	33.8	+ 3.9	69	16	1	2	35	0.98	— 0.61	0.38	1.0	5	13	11	7	nw.	Dr. C. E. Juhl
Means and extremes				34.7	+ 3.5	76	16	— 1	2	45	0.96	— 0.57	0.74	1.3	5	14	8	9	nw.	
Northeast District																				
Cedar Falls	Black Hawk	875									0.86		0.60	8.2	5	9	16	6	nw.	E. J. Cable
Decorah	Winneshiek	872	37	33.3	+ 2.0	78	16	— 2	2	39	0.92	— 0.88	0.36	2.0	4	13	10	8	nw.	M. D. Whitney
Dubuque	Dubuque	700	57	35.6	+ 1.6	74	16	6	2	35	1.23	— 0.80	0.63	5.4	8	13	9	9	nw.	U. S. Weather Bureau
Fayette‡‡	Fayette	1,003	42	35.1	+ 3.8	77	16	2	2	39	0.96	— 1.15	0.76	0.6	4	17	10	4	nw.	R. Z. Latimer
Independence	Buchanan	956	66	36.4	+ 2.3	75	16	3	2	40	1.09	— 0.63	0.48	3.0	5	17	9	5	nw.	Dr. Geo. Boody
Lansing	Allamakee	632	23								0.80	— 1.24	0.30	1.6	6					Mrs. Mary Spinner
New Hampton	Chickasaw	1,169	33	35.2	+ 3.9	76	16	1	2	41	0.86	— 1.06	0.62	0.3	5	12	10	9	nw.	D. W. Dawson
Oelwein	Fayette	1,036	7	35.6	+ 2.6	75	16	3	2	36	1.09	— 0.73	0.80	1.0	3	18	7	6	nw.	John T. Ridler
Postville (near)	Clayton	1,192	31	33.9	+ 3.3	74	16	0	2	32	0.81	— 1.11	0.42	1.5	5	13	16	2	nw.	F. L. Williams
Waterloo	Black Hawk	854	47	36.8	+ 2.4	77	16	4	2	43	1.09	— 0.58	0.65	5.6	5	22	6	3	se.	R. B. Slippy
Waverly	Bremer	936	34	35.2	+ 2.3	77	16	3	2	39	0.48	— 1.30	0.45	1.7	2	23	5	3	nw.	D. H. Murphy
Means and extremes				35.2	+ 2.7	78	16	— 2	2	43	0.92	— 0.96	0.80	3.0	5	15	10	6	nw.	
West Central District																				
Audubon (near)	Audubon	1,297	35	37.6	+ 3.8	77	16	3	2	44	0.77	— 0.68	0.45	2.0	4	18	10	3	nw.	George Kibby
Carroll	Carroll	1,265	40	36 6	+ 0.6	76	16	2	2	45	2.20	+ 0.51	0.89	1.0	5	22	5	4	nw.	Mrs. Jos. J. Wolfe
Denison	Crawford	1,171	36	37.6	+ 2.6	76	16	3	2	45	0.64	— 0.89	0.28	1.0	4	15	11	5	ne.	V. L. Byers
Guthrie Center	Guthrie	987	35	38.2	+ 3.0	79	16	5	2	50	1.10	— 0.40	1.00	0	2	6	22	3	w.	Floyd H. Bainter
Harlan	Shelby	1,192	31	37.3	+ 2.0	78	16	4	2	50	0.66	— 0.67	0.38	0.8	4	13	10	8	nw.	Walter Bell
Jefferson	Greene	1,052	31	37.5	+ 1.7	78	16	5	2	48	1.05	— 0.41	0.85	1.0	2	14	9	8	nw.	W. I. Lyon
Little Sioux	Harrison	1,040	25	38.8	+ 2.7	80	16	5	2	48	0.90	— 0.42	0.29	2.0	5	9	18	4	nw.	H. W. Kerr
Logan	Harrison	1,120	63								0.20	— 1.46	0.14	1.0	3	10	19	2	ne.	Amy Ann Stern
Onawa	Monona	1,051	29	39.4	+ 4.1	80	16	3	2	50	0.47	— 1.15	0.22	4.0	3	15	5	11	nw.	Mrs. H. E. Colby
Rockwell City	Calhoun	1,232	34	35.9	+ 2.1	78	16	2	2	50	1.45	— 0.16	0.90	2.0	4	21	3	7	nw.	A. W. McIsaac
Sac City	Sac	1,209	54	36.5	+ 3.4	76	16	3	2	47	1.08	— 0.35	0.30	3.5	6	13	11	7	nw.	F. P. Kessler
Sioux City	Woodbury	1,135	41	36.2	+ 3.5	74	16	3	2	40	0.12	— 1.03	0.06	0.5	4	10	10	11	nw.	U. S. Weather Bureau
Means and extremes				37.4	+ 2.5	80	16	2	2	50	0.89	— 0.59	1.00	1.6	4	14	11	6	nw.	
Central District																				
Ames	Story	926	53	38.7	+ 3.7	78	16	6	2	45	1.00	— 0.42	0.70	2.0	3	21	2	8	nw.	Iowa State College
Baxter	Jasper	998	30								1.38	— 0.46	0.70		3	18	6	7	nw.	F. A. Kanne
Boone (near)	Boone	894	25	37.4	+ 1.4	78	16	6	2	52	1.17	— 0.27	0.81	1.5	3	14	6	11	nw.	C. F. Henning
Des Moines	Polk	861	52	38.1	+ 2.2	77	16	7	2	43	1.12	— 0.66	0.87	0.7	4	12	10	9	nw.	U. S. Weather Bureau
Fort Dodge	Webster	1,114	30	36.3	+ 2.0	77	16	3	2	45	0.88	— 0.72	0.25	5.0	6	15	8	8	nw.	Mrs. Emma Sampson
Grinnell	Poweshiek	1,031	36	37.3	+ 2.0	75	16	6	2	48	0.48	— 1.35	0.20	2.0	4	21	7	3	nw.	R. E. Bates
Grundy Center	Grundy	976	39	36.6	+ 1.9	78	16	2	2	43	1.00	— 0.80	0.58	T.	3	17	6	8	nw.	M. G. Heiberger
Iowa Falls	Hardin	1,127	37	36 2	+ 2.1	77	16	4	2	44	1.05	— 0.82	0.70	6.0	5	13	14	4	nw.	C. H. Gilbert
Marshalltown	Marshall	947	38	37.2	+ 1.6	77	16	5	2	43	0.87	— 0.99	0.69	1.5	3	13	13	5	nw.	C. C. Pigman
Monroe	Jasper	922	18	39.4	+ 3.1	76	16	6	2	47	1.19	— 0.61	0.54	3.4	5	17	8	6	w.	J. A. Dibel
Perry	Dallas	975	29	38.2	+ 2.8	76	16	6	2	48	0.81	— 0.93	0.58	1.5	3	14	10	7	nw.	Eugene N. Hastie
Toledo	Tama	847	36	38.2	+ 2.8	79	16	4	2	48	1 46	— 0.34	1.08	3.2	6	14	14	3	nw.	H. P. Giger
Van Meter	Dallas	872	11								0.56		0.30	1.0	3					Calvin K. Smith
Waukee	Dallas	1,032	27	38 6	+ 3.4	78	16	5	2	49	1.31	— 0.34	0.94	0	3	19	9	3	nw.	O. D. Ellsworth
Webster City	Hamilton	1,042	25	36.0	+ 2.0	78	16	3	2	49	0.85	— 0.65	0.46	3.5	3	14	12	5	nw.	Frank A. Bonebright
Means and extremes				37.6	+ 2.5	79	16	2	2	52	1.01	— 0.70	1.08	2.2	4	16	9	6	nw.	

Climatological Data for March, 1930—Continued

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit: Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Precipitation, in inches: Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Number of Days: Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy	Prevailing direction of wind	OBSERVERS
East Central District																				
Belle Plaine	Benton	866	40	37.8	+ 2.9	79	16	6	2	50	1.10	— 1.18	0.61	3.3	7	16	10	5	nw.	O. C. Burrows
Cedar Rapids	Linn	737	48	37.8	+ 3.1	78	16	5	2	44	0.84	— 1.46	0.46	3.0	4	16	1	14	nw.	J. T. Wurster
Clinton	Clinton	595	57	37.8	+ 2.0	76	16	9	2	40	0.98	— 1.84	0.54	2.6	7	15	3	13	n.	Dr. A. P. Bryant
Davenport	Scott	580	59	38.4	+ 2.3	72	16	8	2	34	1.02	— 1.29	0.72	0.5	4	12	10	9	nw.	U. S. Weather Bureau
Fairport	Muscatine	567	9	39.4	+ 2.4	70	16	9	2	37	1.35	— 1.11	0 90	1.3	4	14	6	11	nw.	Bureau of Fisheries
Iowa City	Johnson	733	70	38.4	+ 2.8	76	16	7	2	42	0.90	— 1.50	0.79	T.	4	15	11	5	nw.	Prof. J. F. Reilly
Le Claire	Scott	576	30								1.01	— 1.35	0.67	0.6	4					Margaret T. Disney
Maquoketa (near)	Jackson	692	25	35.9	+ 2.4	75	16	9	2	40	0.71	— 1.61	0.26	1.4	6	17	7	7	nw.	John Strodthoff
Muscatine	Muscatine	546	69								1.31	— 1.29	0.90	0.5	4					William Molis
Olin	Jones	760	31	36.5	+ 2.0	77	16	7	2	47	0.56	— 1.70		0	2	22	3	6	nw.	Mrs. L. Stingley
Tipton (near)	Cedar	806	31	38.0	+ 2.5	76	16	7	2	40	0.30	— 2.29	0.30	0	2	3	18	10	nw.	John Kroeplen
Williamsburg	Iowa	770	14	38.5	+ 4.1	79	16	6	2	45	0.73	— 1.38	0.46	1.3	4	22	6	3	nw.	Dr. F. C. Schadt
Means and extremes				37.8	+ 2.6	79	16	5	2	50	0.90	— 1.50	0.90	1.2	4	15	8	8	nw.	
Southwest District																				
Atlantic	Cass	1,110	39	38.2	+ 2.2	78	16	5	2	49	0.90	— 0.69	0.83	0.8	3	18	9	4	nw.	Roy L. Fancolly
Bedford	Taylor	1,200	2								0.97	— 0.85	0.85	0	3	18	3	10	nw.	Arthur L. Bishop
Clarinda	Page	1,009	40	40 0	+ 1.9	78	16	6	2	52	0.87	— 0.85	0.78	T.	2	21	7	3	nw.	Dr. H. C. Hawley
Corning	Adams	1,150	38	39.2	+ 2.7	78	15	6	2	53	0.30	— 1.60	0.20	0.2	2	20	8	3	nw.	C. A. Smith
Cumberland (near)	Cass	1,225	31								0.89	— 0.65	0.87	T.	2	21	7	3	nw.	Carl E. Pollock
Glenwood	Mills	1,100	32	40.7	+ 2.8	78	16	6	2	44	0.94	— 0.40	0.68	T.	3	17	10	4	nw.	George Mogridge
Lenox	Taylor	1,250	35	39.5	+ 2.9	78	16	5	2	50	0.84	— 0.70	0.53	0.4	3	18	9	4	nw.	J. L. Hurley
Oakland	Pottawattamie	1,139	11	39.6	+ 3.4	79	16	6	2	48	0.66	— 0.81	0.66	0	1	20	3	8	nw.	W. S. Matthews
Red Oak (near)	Montgomery	1,030	5								0.70	— 0.90	0.70	0	1	20	8	3	nw.	B. R. Bridge
Riverton (near)	Fremont	920	4								0.88	— 0.72	0.84	0.5	3	17	4	10	nw.	Geo. C. Rader
Thurman	Fremont	960	33	10.8	+ 2.8	79	16	7	2	47	0.42	— 1.06	0.42	T.	1	13	14	4	nw.	H. H. Askew
Omaha, Neb		1,105	59	39.4	+ 2.4	79	16	6	2	41	0.65	— 0.72	0.60	0.7	4	17	9	5	nw.	U. S. Weather Bureau
Means and extremes				39.7	+ 2.7	79	16	5	2	53	0.75	— 0.83	0.87	0.2	2	18	8	5	nw.	
South Central District																				
Afton	Union	1,212	36	39.9	+ 3.4	79	16	6	2	39	1.16	— 0.73	0.81	1.5	4	19	8	4	nw.	S. R. Brown
Albia	Monroe	949	32	39.8	+ 3.6	76	16	7	2	44	1.55	— 0.41	0.77	8.1	4	17	5	9	nw.	O. E. McBride
Centerville	Appanoose	1,013	25	39.0	+ 1.1	73	16	8	2	44	1.79	— 0.14	0 53	9.4	5	18	10	3	nw.	Thomas Wood
Chariton (near)	Lucas	1,042	35	39.2	+ 3.2	75	16	7	2	39	1.24	— 0.50	0.60	2.0	3	16	12	3	sw.	C. C. Burr
Corydon (near)	Wayne	1,050	37	38.6	+ 2.0	75	16	6	2	43	1.89	— 0.12	0.83	4.5	3	17	7	7	nw.	J. C. Davis
Creston	Union	1,291	25	38.0	+ 2.4	78	16	4	2	49	1.16	— 0.30	0.94	0.8	5	13	12	6	n.	Mrs. N. Spangler
Earlham (near)	Madison	1,126	28	38.2	+ 3.2	78	16	5	2	44	0.78	— 0.93	0.50	0.5	4	20	6	5	nw.	George Phillips
Indianola	Warren	972	39	39.1	+ 2.8	79	16	6	2	50	1.13	— 0.50	0.64	T.	2	13	13	5	nw	Seth F. Shenton
Knoxville	Marion	920	35	39.6	+ 3.0	77	16	8	2	47	1.14	— 0.66	0.66	2.0	3	15	8	8	nw.	W. J. Casey
Lacona	Warren	824	31								1.41	— 0.89	0.80	1.0	5	14	14	3		J. B. Alter
Lamoni	Decatur	1,123	23	38.7	+ 1.8	75	16	6	2	38	1.49	— 0.38	1.03	1.2	4	18	6	7	nw.	F. S. Parks
Melrose	Monroe	871	1								1.20		0.50	8.0	5	9	14	8	nw.	J. M. Carr
Mount Ayr	Ringgold	1,220	37	39.8	+ 2.8	75	16	7	2	49	2.42	+ 0.52	1.10	0	5	25	4	2	nw.	E. O. Gleason
Tingley	Ringgold	1,275	5	39.0	+ 2.7	74	12†	6	2	47	0.97	— 0.83	0.64	1.0	5	22	6	3	nw.	James A. Verploegh
Winterset	Madison	1,118	39	39.6	+ 3.4	77	16	5	2	48	1.09	— 0.66	0.70	0.5	3	21	4	6	nw.	H. S. Ely
Means and extremes				39.1	+ 2.7	79	16	4	2	50	1.36	— 0.46	1.10	2.7	4	17	9	5	nw.	
Southeast District																				
Bonaparte (near)	Van Buren	563	39	38 8	+ 1.4	74	16	8	2	43	1.17	— 1.08	0.70	0.4	4	18	5	8	nw.	B. R. Vale
Burlington	Des Moines	544	34	40.2	+ 1.3	72	16	9	2	37	0.77	— 1.74	0.41	T.	5	17	7	7	sw.	John W. Donnelly
Columbus Junction	Louisa	595	29	38.8	+ 1.8	76	16	7	2	41	1.20	— 0 81	1.00	0.4	6	16	11	4	nw.	Miss Musa Todd
Fairfield	Jefferson	780	46	38.4	+ 1.7	77	16	8	2	44	1.22	— 2.11	0.68	1.7	5	15	8	8	n.	R. M. McKenzie
Keokuk	Lee	614	59	40.0	+ 1.1	73	16	11	2	37	0.67	— 1.71	0.59	0.2	4	13	6	12	w.	U. S. Weather Bureau
Keokuk No. 2	Lee	651	1	10.8		74	16	10	2	40	0.97		0.67	0.2	4					J. N. D. Dickinson
Keosauqua	Van Buren	639	38	38.9	+ 1.0	76	16	9	2	44	1.29	— 0.98	0.75	1.4	4	14	10	7	sw.	Dr. J. W. Rinabarger
Mt. Pleasant	Henry	730	49	39.2	+ 1.6	75	16	9	2	40	1.00	— 1.20	0.47	T.	5	11	14	6	nw.	J. H. Jericho
Oskaloosa	Mahaska	835	54	38.6	+ 2.8	77	16	6	2	44	1.33	— 0.58	0.53	7.3	5	14	10	7	nw.	Roy R. Robinson
Ottumwa	Wapello	649	35	40.4	+ 1.6	76	16	10	2	46	0.80	— 1.17	0.30	3.0	4	14	11	6	nw.	C. L. Mikesh
Sigourney (near)	Keokuk	790	31	39.0	+ 2.9	76	16	8	2	44	0.78	— 1.23	0.66	1.4	3	17	6	8	nw.	W. E. Utterback
Stockport (near)	Van Buren	747	28	39.0	+ 2.6	75	16	9	2	44	1.05	— 1.12	0.62	0.5	4	18	9	4	nw.	C. L. Beswick
Washington	Washington	757	48	39.6	+ 3.1	78	16	7	2	44	0.84	— 1.35	0.60	2.0	4	11	14	6	nw.	D. D. Sherman
Wever	Lee	552	2	40.2		74	16	12	2	40	0.26		0.16	T.	2	17	6	8	w.	H. G. Liddle
Means and extremes				39.4	+ 2.1	78	16	6	2	46	0.95	— 1.24	1.00	1.3	4	15	9	7	nw.	
State means and extremes				37.3	+ 2.7	80	16	— 4	2	53	0.89	— 0.88	1.10	1.6	4	16	9	6	nw.	

Temperature normals are based on the 46-year period July 3, 1875 to July 2, 1921; shorter records corrected to harmonize. Precipitation normals are based on the 50-year period ended December 31, 1927 at first order stations; upon all records of 10 years or more ending December 31, 1920 for most of the co-operative observing stations; and upon interpolations from normal maps for recently established stations.

Reference letters a, b, c, etc., appearing in the table indicate the number of days missing; for example b represents two days, etc.

†Also other dates.

‡‡Received too late to be included in means and summaries.

T. Precipitation is less than 0.01 inch rain or melted snow.

TEMPERATURE

The mean temperature for the State, derived from the means of 9 districts of nearly equal area, and based on the records of 101 stations, was 37.3°, or 2.7° above normal. There was an excess in all of the divisions of the State. The greatest excess, 3.5°, was in the north-central district, and the least, 2.1°, in the southeast district. The highest monthly mean was 40.8° at Thurman and Keokuk No. 2, and the lowest was 33.2° at Lake Park. The absolute range for the State was 84°, from 80° at Little Sioux and Onawa on the 16th, to —4° at Sanborn on the 2d. Temperatures of zero or lower occurred at 12 stations. The average number of days with the maximum temperature 32° or below was 2, ranging from 3 days in the northwest and west-central districts, to 1 day in central, east-central, southwest, south-central and southeast districts. The average number of days with the minimum temperature 32° or below, was 27, ranging from 29 days in the north-central district, to 24 days in the southeast district. There was only 1 day with minimum temperature of zero or below being recorded at 13 stations. The greatest daily range in temperature at any one station was 53°, at Corning, on the 11th.

Daily Precipitation for March, 1930

Stations	Drainage Basin	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	
Northwest District																															
Akron	Big Sioux	T.	T.											T.					.01		T.				T.						.06	0.07
Alta	Raccoon															.05	.07	T.	.01		T.			T.	T.	.01	.02				.02	0.18
Alton	Floyd	T.												T.		T.			T.		T.				T.		T.	T.			.16	0.16
Cherokee	Little Sioux	T.						.30			T.	T.		T.		T.	T.	T.	T.		T.	T.		T.	T.	T.	T.				T.	0.30
Estherville	Des Moines	.02														.23	.03				.03			.02	.05						.10	0.48
Hawarden	Big Sioux	T.					T.												.02		T.				T.		T.				.06	0.08
Inwood (near)	Big Sioux	T.	T.											T.							.01			T.	T.		T.					0.04
Lake Park (near)	Little Sioux	T.										T.				.17					.02										T.	0.19
Le Mars	Floyd	T.									T.			T.			T.		.05		.10				T.		T.	T.			.05	0.20
Marathon	Raccoon										T.	T.			.11		.18			T.				.03	T.	T.	.04					0.36
Pocahontas	Des Moines	T.									T.	T.				.35	.45	.05			.01			.01	.06	T.	.02				.01	0.99
Rock Rapids	Big Sioux															.03					.03				T.		T.					0.06
Sanborn	Floyd											T.		T.		.35			T.		.02										.02	0.39
Sheldon	Floyd	T.						T.			T.	T.		.01		.02					.03			T.	T.	T.	.01				.09	0.16
Sioux Center	Floyd													.05							.05										.10	0.20
Spencer	Little Sioux	T.						.02						T.		.05	T.	.03			.03			.02		.02	.05				.07	0.29
Storm Lake	Raccoon	T.						T.			T.	T.				.32	.26	T.	.01		T.	T.		T.	T.	T.	T.				T.	0.59
Washta	Little Sioux							.05								.05	T.		T.					T.			T.					0.10
West Bend	Des Moines															.43		.18			T.			T.	.08						.03	0.72
North Central District																															
Algona	Des Moines															.49	.74	.34							.02						.01	1.60
Allison	Cedar																															
Belmond	Iowa	T.									T.	T.				.35		.50	.03		T.				.03		T.				T.	0.91
Britt	Iowa	T.									T.					.54		T.	T.		T.				T.		T.				T.	0.54
Charles City***	Cedar	T.						T.			.01	T		T.		.35	.39	.07	T.		T.		.01	.02	T.						.05	0.90
Forest City	Cedar	T.									T.	.05				.38		.50			.02			T.	T.						.08	1.03
Hampton	Cedar	T.									T.	.22				.22	.40	.04			T.				.09		T.				T.	0.97
Humboldt	Des Moines	T.									T.					.22		.15	.06						.03	T.	T.					0.46
Mason City	Cedar	T.									T.	.01				.38		.34	T.		.01			.01	T.		T.				.02	0.80
Northwood	Cedar	T.														.40		.50			.05			.10	.10						.30	1.45
Osage	Cedar	.04									T.	T.				.26		.38			.25			T.							.05	0.98
Northeast District																															
Cedar Falls	Cedar										.01	.02					T.	.60	.21				.02		T.							0.86
Decorah	Mississippi	T.					T.				.01					.36		.30			T.			.25	T.						T.	0.92
Dubuque***	Mississippi	.02		T.							.16	T.						.63	.02					.03	T.		T.		.03	.02	.32	1.23
Fayette	Mississippi	T.									.08	T.				.06		.76						.06	T.						T.	0.96
Independence	Wapsipinicon	.07									.03	T.						.44	.48					.07	T.	T.				T.			1.09
Lansing	Mississippi	.12									.01	.02					.14	.30															0.80
New Hampton	Wapsipinicon	.01									.01					.21		.62			.01												0.86
Oelwein	Wapsipinicon																	.80						.20		.09							1.09
Postville (near)	Mississippi										.16					.08		.42					T.	.10	.05								0.81
Waterloo	Cedar	T.									.03	.06						.65	.30					.05		T.							1.09
Waverly	Cedar	T.									.01	.02				T.		.45							T.								0.48
West Central District																															
Audubon (near)	Nishnabotna															.05		.45	.25				.02			T.	T.	T.					0.77
Carroll	Raccoon															.37	.62	.89	.25					.07	T.		T.						2.20
Denison	Missouri	T.						T.								.07	.22	.28	.07					T.	T.	T.	T.						0.64
Guthrie Center	Raccoon																	1.00							.10								1.10
Harlan	Nishnabotna	T.	T.					T.								.05	.15	.38	.08					T.	T.	T.	T.	T.					0.66
Jefferson	Raccoon	T.										T.				T.	T.	.85	.20				T.	T.	T.	T.	T.	T.					1 05
Little Sioux	Little Sioux	T.						T.								.12	.21	.21	.29			.01		T.	T.		T.						0.90
Logan	Missouri	T.						T.								T.		.14	T.					.04		.02							0.20
Onawa	Missouri							T.								.05	T.	.20	.22			T.					T.						0.47
Rockwell City	Raccoon															.35	.10	.90							.10		T.						1.45
Sac City	Raccoon											T.				.25	.28	.15	.30		T.			.05		T.	.05				T.		1.08
Sioux City***	Missouri	T.						T.								T.	.06	.01	.03		T.	T.	T.		T.	T.	T.				.02		0.12
Central District																															
Ames	Skunk																	.70	.20						.10								1.00
Baxter	Skunk																	.70	.50						.18								1.38
Boone (near)	Des Moines	T.										T.						.81	.14					T.	.22		T.						1.17
Des Moines***	Des Moines	T.									T.	T.			T.		.36	.52							.22	T.	T.				.02		1.12
Fort Dodge	Des Moines	.02														.25	.19	.21	.18						T.		T.				.03		0.88
Grinnell	Iowa	T.										T.						.12	.20						.09	.07	T.				T.		0.48
Grundy Center	Cedar	T.									T.							.58	.20					.22	T.		T.						1.00
Iowa Falls	Iowa										T.	T.				.05	.05	.35	.35						.25								1.05
Marshalltown	Iowa	T.									T.	T.				T.		.69	.13					T.	.05	T.	T.	T.					0.87
Monroe	Des Moines	T.									T.	T.						.54	.27						.27	.07	T.				.04		1.19
Perry	Raccoon	T.										T.						.58	.20						.03	T.	T.	T.					0.81
Toledo	Iowa	T.	T.								.03	.06						1.08	.12					T.	.10	.07	T.				T.		1.46
Van Meter	Raccoon																	.30	.10							.16							0.56
Waukee	Raccoon	T.										T.						.91	.20						.17	T.	T.						1.31
Webster City	Des Moines	T.										T.				.18		.46	.21						T.		T.						0.85
East Central District																															
Belle Plaine	Iowa	T.	.01								.03	.01						.61	.23					T.	.13	.08	T.						1.10
Cedar Rapids	Cedar	T.									T.	T.						.46	.28					T.	T.	.05					.05		0.84
Clinton	Mississippi		.03	.01							.01	T.						.19	.35					.36					.03				0.98
Davenport***	Mississippi	T.	.01	T.							T.	T.						.55	.19					.27	T.	T.			T.		T.		1.02
Fairport	Mississippi		T.															.10	.90					.33	.02								1.35
Iowa City	Iowa	T.	T.								.01	T.						.54	.25					T.		.10							0.90
Le Claire	Mississippi		T.									T.					T.	.67	T.					.01	.32					.01		1.01
Maquoketa (near)	Maquoketa		.01								.10							.26	.11					.21		T.				.02		0.71
Muscatine	Mississippi	.03																.06	.90					T.	.32	T.						1.31
Olin	Wapsipinicon	T.	T.									T.						*	.56					T.		T.			T.			0.56
Tipton (near)	Cedar																	.20	.10														0.30
Williamsburg	Iowa	T.																.46							.14	.02	.11						0.73

Daily Precipitation for March, 1930—Continued

Stations	Drainage Basin	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	
Southwest District																															
Atlantic	Nishnabotna															T.		.83	.05					.02	T.	T.	T.	T.					0.90
Bedford	102																	.75	.10						.12								0.97
Clarinda	Nodaway															T.		.78	.09						T.								0.87
Corning	Nodaway																.10	.20															0.30
Cumberland (near)	Nodaway	T.														T.		.87	.02					T.	T.	T.	T.	T.					0.89
Glenwood	Missouri							T.								.16	.10	.68															0.94
Lenox	Missouri																	.53	.03						.28	T.		T.					0.84
Oakland	Nishnabotna							T.										.66															0.66
Red Oak (near)	Nishnabotna						T.											.70								T.							0.70
Riverton (near)	Nishnabotna																	.84	T.					.02	.02								0.88
Thurman	Missouri	T.						T.								T.	T.	.42				T.		T.	T.	T.							0.42
Omaha, Neb.***	Missouri	T.						T.							.02		.47	.15				T.	T.	T.	.01		T.						0.65
South Central District																															
Afton	Grand																	.81	.18						.12	.05							1.16
Albia	Des Moines	T.	T.									T.						.72	.06						.45	.32	T.						1.55
Centerville	Chariton	T.										T.						.42	.49					.02	.33	.53	T.						1.79
Chariton (near)	Chariton																	.52	.12						.60								1.24
Corydon (near)	Chariton											T.						.83	.35						.71		T.						1.89
Creston	Missouri																	.94	.13						.06	.02	.01						1.16
Earlham (near)	Des Moines											T.						.50	.21						.03	.04	T.	T.					0.78
Indianola	Des Moines																	.64	T.						.49	T.	T.						1.13
Knoxville	Des Moines	T.										T.						.66	.28							.20	T.						1.14
Lacona	Des Moines											.01						.80	.10						.40	.10							1.41
Lamoni	Grand																	1.03	.15						.24	.07							1.49
Melrose	Des Moines																	.34	.02	.04					.50	.30	T.						1.20
Mount Ayr	Grand	1.10																.85	.25						.11	.11							2.42
Tingley	Platte															.02		.64	.08						.10	.13	T.	T.					0.97
Winterset	Des Moines											T.						.70	.25						.14	T.	T.						1.09
Southeast District																															
Bonaparte (near)	Des Moines	T.										T.						.70	.40					.06		.01	T.	T.					1.17
Burlington	Mississippi	.03	T.									.03						.26	.41					.04									0.77
Columbus Jct.	Iowa	T.	.01								T.	.03						.39	.61					.15		.01							1.20
Fairfield	Skunk	T.										T.						.68	.38					.01	.05	.10	T.						1.22
Keokuk***	Mississippi	T.										T.						.42	.18					.06	T.	T.	T.	.01					0.67
Keokuk No. 2	Mississippi																	.20	.67					T.	.08		.02						0.97
Keosauqua	Des Moines																	.75	.30						.08	.16							1.29
Mt. Pleasant	Skunk										T.	.02						.47	.42					.07		.02		T.					1.00
Oskaloosa	Des Moines	T.	T.									T.						.53	.37					T.	.31	.08	T.	.04		T.			1.33
Ottumwa	Des Moines	T.	T.									T.						.28	.22					T.	.11	.19		T.					0.80
Sigourney (near)	Skunk	T.	T.								T.	T.						.27	.39					T.	T.	.12				T.			0.78
Stockport (near)	Skunk																	.47	.30					.08		.05	T.	T.					1.05
Washington	Skunk	T.	T.								T.	T.						.12	.48					.02		.22	T.						0.84
Wever	Mississippi	T.																.10	.16					T.	T.	T.							0.26

Except as otherwise indicated, observations are generally made late in the afternoon, near sunset, and precipitation recorded is for 24 hours ending at the time of observation.

||||Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.

***Regular Weather Bureau Station: precipitation is for 24-hour period midnight to midnight.

**Incomplete.

*Precipitation included in the next following measurement.

§Interpolated.

T. Precipitation is less than .01 inch rain or melted snow.

PRESSURE, RELATIVE HUMIDITY, WIND AND SUNSHINE

Stations	Barometric Pressure, Inches (Sea Level)					Relative Humidity, %					‡‡Wind					Sunshine	
						Mean							Maximum				
	Mean	Highest	Date	Lowest	Date	7 A. M.	12 Noon‡	7 P. M.	Lowest	Date	Total movement	Average hourly velocity	Miles	From	Date	% possible	Departure from normal
Chas. City	29.95	30.46	2	29.57	4	77	48	57	23	30	6,042	8.1	25	w.	16	70	+13
Davenport	29.92	30.43	14	29.56	11	72	45	49	16	31	9,532	12.8	37	nw.	11	61	+ 6
Des Moines	29.95	30.53	2	29.56	6	73	45	46	18	4	9,073	12.2	37	nw.	11	74	+18
Dubuque	29.91	30.49	14	29.52	4	78	52	59	28	31	6,072	8.2	26	n.	25	58	+ 6
Keokuk	29.95	30.46	2	29.55	7	67	42	41	18	4	7,237	9.7	30	nw.	11†	59	0
Sioux City	30.00	30.69	2	29.48	6	73	43	46	21	30	10,343	13.9	42	nw.	10	77	+19
Omaha, Nb	29.97	30.67	2	29.47	6	67	39	38	8	3	7,656	10.3	33	n.	11	78	+19
Means and extremes	29.95	30.69	2	29.47	6	72	45	48	8	3		10.7	42	nw.	10	68	+11
Normals and records	30.04	§30.82	29th 1921	*28.79	29th 1924	80		67	*5	18th 1918			§53	w.	16th 1920	57	

§ Sioux City * Davenport ‡ Local mean time † And other dates.

‡‡January 1, 1928, 3-cup anemometers replaced 4-cup instruments. See Climatological Data, January, 1928, page 7.

PRECIPITATION

The average precipitation for the State, derived from the averages of 9 districts of nearly equal area, and based on the records of 119 stations, was 0.89 inch, or 0.88 below normal The greatest district deficiency was in the east-central district, 1.50 inches, while the least deficiency was in the south-central district, 0.46 inch. The greatest precipitation deficiency, 2.29, at any one station, was at Tipton. The greatest excess in the State was 0.52 inch at Mt. Ayr. The greatest amount at a single station was 2.42 inches at Mt. Ayr, and the least was 0.04 inch at Inwood. The greatest amount occurring in 24 consecutive hours was 1.10 inches at Mt. Ayr, on February 28 and March 1. The average number of days with precipitation 0.01 inch or more for the State was 4.

SNOWFALL

The average snowfall for the State was 1.6 inches, or 3.6 inches below normal. The greatest total snowfall for the month at any one station was 9.4 inches at Centerville, and 8 stations received none. The greatest snowfall in 24 hours was 5.2 inches at Centerville on the 25th.

MISCELLANEOUS PHENOMENA

Aurora: 3d, 23d.

Birds (Migration of): Boone, bluebirds on 24th, fox sparrows on 17th, phoebes on 16th, robins on 24th, song sparrows on 12th; Earlham, blackbirds on 4th, turtle doves on 28th; Independence, blackbirds on 7th, robins on 9th.

Cold Waves: 1st, 2d.

Dust storm: 2d, 25th.

Gales: 1st, 2d, 10th, 11th, 16th, 20th, 25th, 26th.

Hail, light: 13th, 15th, 16th, 23d.

Hail, moderate: 15th, 17th.

Hail, heavy: 16th.

Halos, lunar: 6th, 9th, 12th.

Halos, solar: 2d, 3d, 6th, 7th, 9th, 13th, 16th, 21st, 23d, 27th, 28th, 30th, 31st.

Haze, dense: 6th, 21st.

Meteor: 23d.

Parhelia: 2d, 7th, 13th, 21st.

Rainbows: 17th, 23d.

Sleet: 11th, 17th, 18th, 22d, 23d, 24th, 25th, 26th, 31st.

Thunderstorms: 14th, 15th, 16th, 17th, 23d.

Tornado: 16th.

Daily Maximum and Minimum Temperature for the Month of March, 1930

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
Northern Division																																	
Algona	Maximum	20	20	45	50	45	46	45	44	50	47	41	50	51	43	65	71	40	33	50	38	32	41	56	34	34	39	37	38	40	50	42	43.1
	Minimum	11	3	13	17	20	32	31	18	28	32	32	27	27	26	34	34	28	25	22	14	16	25	25	24	20	21	19	19	23	20	26	23.0
Alta	Maximum	19	22	40	50	49	49	40	50	55	45	44	68	44	50	70	75	39	39	57	41	34	47	63	43	38	31	41	44	46	56	41	46.1
	Minimum	8	0	12	19	18	32	24	16	30	32	31	27	27	26	37	39	27	24	21	15	15	23	30	31	22	17	22	17	20	20	25	22.8
Alton	Maximum	20	19	37	45	42	55	46	48	54	46	41	64	49	50	67	72	43	38	57	50	35	49	59	55	43	32	39	42	45	54	45	46.6
	Minimum	10	0	12	13	20	32	28	15	25	33	34	27	27	27	39	43	29	25	18	15	17	21	30	31	25	18	23	17	24	14	27	23.2
Belmond	Maximum	21	23	38	55	43	49	42	46	55	46	44	69	47	45	69	76	67	37	51	43	33	45	58	45	37	32	41	43	43	51	46	46.5
	Minimum	12	3	13	16	19	29	29	18	27	32	30	26	29	25	33	43	28	25	20	17	17	25	35	32	22	20	20	18	25	15	25	23.5
Charles City	Maximum	22	22	35	51	40	47	44	44	53	45	44	65	40	44	66	71	40	34	49	37	35	43	53	35	37	32	40	41	35	51	36	43.0
	Minimum	8	3	15	18	23	29	28	22	29	33	31	28	29	27	32	40	32	26	21	20	17	26	34	30	23	22	22	21	23	19	27	24.5
Decorah	Maximum	41	25	32	49	40	50	46	43	55	46	45	62	52	44	63	78	66	30	43	39	32	44	49	35	36	31	39	40	35	52	39	44.5
	Minimum	14	— 2	12	13	20	21	30	20	23	24	28	25	27	23	32	39	31	25	16	23	9	25	32	27	22	20	21	21	24	15	24	22.1
Dubuque	Maximum	32	20	36	52	41	47	50	45	58	49	43	64	43	43	64	74	62	36	46	41	35	43	41	35	34	33	42	43	35	50	60	45.1
	Minimum	15	6	16	22	26	25	31	26	27	35	33	29	30	27	33	46	29	26	20	24	19	25	32	29	24	24	26	25	25	28	28	26.2
Forest City	Maximum	37	24	37	52	44	47	40	46	53	47	44	67	50	44	67	76	65	37	52	50	35	44	55	50	36	35	45	44	42	53	44	47.2
	Minimum	20	— 1	12	13	19	27	29	16	25	32	28	26	25	25	31	36	26	24	16	14	12	22	33	32	19	18	18	17	23	16	26	21.9
Independence	Maximum	36	24	37	53	54	47	50	45	59	58	46	48	46	42	62	75	74	39	46	47	34	45	52	52	36	35	42	43	40	50	49	47.3
	Minimum	16	3	15	17	23	34	35	24	24	34	30	26	31	25	32	39	34	31	17	27	18	25	34	28	23	21	23	22	26	20	30	25.4
Inwood	Maximum	19	18	35	44	44	52	44	50	57	41	44	65	44	49	73	68	39	40	59	48	35	51	61	51	41	34	43	46	50	54	43	46.5
	Minimum	7	— 1	9	14	16	28	27	17	24	31	31	27	25	29	39	39	26	22	18	13	15	21	23	28	22	16	20	13	23	14	25	21.3
Lake Park	Maximum	19	19	35	43	42	49	40	46	53	43	41	61	42	45	67	73	56	38	57	39	32	46	61	47	37	31	39	42	45	51	39	44.5
	Minimum	6	— 2	12	15	28	31	25	15	25	33	31	27	24	25	32	38	26	22	18	11	12	22	36	28	28	17	18	18	21	17	23	22.0
Mason City	Maximum	32	21	33	49	41	48	41	45	53	45	43	63	46	44	66	73	65	35	49	44	34	43	54	45	37	32	40	42	41	50	44	45.1
	Minimum	11	1	14	16	20	27	29	18	26	30	30	26	26	21	31	42	29	26	19	22	13	24	33	29	20	20	20	19	27	14	25	22.8
New Hampton	Maximum	38	25	36	51	40	48	48	45	54	48	45	65	52	44	66	76	68	37	49	45	36	45	55	46	39	36	43	43	38	52	49	47.2
	Minimum	15	1	14	14	21	26	31	20	26	33	29	24	28	25	31	38	31	27	17	22	13	24	32	28	22	20	20	19	24	17	28	23.2
Northwood	Maximum																																
	Minimum																																
Pocahontas	Maximum	25	23	40	53	40	53	41	49	54	47	44	69	48	48	68	75	53	40	53	43	42	47	61	45	37	32	41	45	45	53	44	47.0
	Minimum	11	2	8	16	19	30	30	27	24	33	32	25	28	25	35	4	29	26	21	15	17	22	32	30	22	18	21	19	24	12	25	23.2
Postville	Maximum	35	26	32	49	40	44	46	49	55	46	55	61	50	44	61	74	62	35	44	38	35	40	46	32	34	32	39	38	39	49	41	44.2
	Minimum	20	0	12	15	21	32	22	27	28	32	29	30	27	24	30	42	30	24	18	22	14	24	30	29	21	20	20	20	22	19	28	23.6
Rock Rapids	Maximum	21	19	35	42	43	53	46	48	56	47	45	62	50	48	72	66	46	39	60	53	36	51	59	50	38	35	41	44	46	52	47	46.8
	Minimum	8	— 2	10	10	17	32	25	17	24	32	32	26	25	26	35	37	26	23	20	12	15	20	27	30	24	16	20	15	25	14	25	21.5
Central Division																																	
Ames	Maximum	41	25	41	59	52	51	47	47	62	59	45	72	68	50	72	78	70	37	52	50	34	47	60	59	37	35	44	46	45	52	50	51.2
	Minimum	15	6	16	21	23	30	32	22	26	33	35	27	32	27	33	45	29	27	24	25	21	25	38	32	25	23	23	21	28	18	30	26.2
Belle Plaine	Maximum	41	28	41	59	43	50	53	49	64	53	46	73	54	48	70	79	65	38	57	44	39	48	59	47	39	39	46	50	41	54	62	50.9
	Minimum	16	6	15	15	20	28	30	24	25	32	29	23	30	26	32	43	32	26	18	29	20	25	38	27	24	22	24	19	25	17	30	24.8
Carroll	Maximum	30	23	43	58	47	55	45	49	61	54	45	72	60	51	70	76	56	36	52	49	31	47	62	46	37	33	41	46	47	55	50	49.3
	Minimum	11	2	14	21	19	20	30	16	32	32	29	27	30	25	36	47	27	24	22	21	18	22	35	31	23	20	22	18	25	20	26	24.0
Cedar Rapids	Maximum	42	27	40	57	45	50	54	50	63	53	47	70	57	47	69	78	65	40	51	43	40	48	57	45	40	39	45	49	39	55	62	50.5
	Minimum	18	5	16	15	23	22	30	26	22	31	30	26	34	26	32	38	31	28	20	29	20	24	35	31	25	23	26	22	27	22	25	25.2
Davenport	Maximum	38	24	38	53	45	50	51	48	59	52	45	64	48	47	65	72	60	37	49	51	38	48	50	39	34	38	43	48	35	59	65	47.9
	Minimum	18	8	18	24	27	30	33	30	32	36	34	30	31	29	32	49	32	28	25	28	22	26	35	31	28	25	29	26	29	30	37	28.8
Des Moines	Maximum	26	26	43	60	47	53	49	49	65	51	47	72	44	51	71	77	45	36	52	42	37	50	60	44	38	34	43	47	44	55	52	48.7
	Minimum	14	7	18	22	26	31	30	23	28	37	32	29	33	28	34	45	27	27	26	28	23	27	44	32	27	25	26	24	29	23	29	27.5
Ft. Dodge	Maximum	29	24	40	56	46	52	43	48	58	47	44	70	55	48	71	77	57	39	52	46	32	46	59	50	38	33	42	45	43	51	47	48.0
	Minimum	12	3	14	17	18	33	31	18	27	32	33	25	30	26	35	46	27	26	30	19	18	27	30	30	23	21	21	19	26	18	27	24.6
Grinnell	Maximum	44	24	38	58	48	53	49	47	63	54	45	71	64	48	69	75	67	35	50	48	37	47	57	52	36	35	42	45	42	53	44	49.7
	Minimum	15	6	15	14	19	28	30	21	26	33	32	23	31	26	31	43	31	26	18	31	19	27	38	29	25	23	23	20	27	19	22	24.9
Guthrie Center	Maximum	30	26	45	65	49	55	48	50	66	65	47	73	67	57	72	79	75	37	53	50	32	50	61	53	37	36	42	42	47	56	52	52.2
	Minimum	14	5	15	15	18	18	30	18	32	23	31	25	31	28	35	47	25	26	22	24	21	20	40	33	23	22	24	19	26	14	27	24.2
Iowa City	Maximum	40	25	39	56	45	51	54	47	63	53	45	68	57	49	67	76	66	37	49	46	39	48	56	51	37	37	43	48	39	53	67	50.0
	Minimum	18	7	17	17	24	28	31	28	25	35	32	26	33	28	32	43	32	29	22	31	21	25	38	30	25	24	27	24	27	22	31	26.8
Iowa Falls	Maximum	35	24	38	56	42	50	46	46	57	49	44	69	53	47	70	77	68	35	51	43	35	46	57	43	37	34	42	46	41	52	48	47.8
	Minimum	13	4	14	16	21	26	33	20	25	35	31	25	31	25	33	54	27	25	20	22	19	23	37	27	23	22	22	19	27	17	27	24.6
Little Sioux	Maximum	28	28	47	62	50	59	49	52	65	53	50	76	58	58	74	80	42	38	58	48	34	53	65	48	41	34	43	47	50	59	61	51.9
	Minimum	12	5	16	19	17	35	31	15	33	30	34	28	34	30	41	42	27	25	24	23	23	27	33	33	23	21	25	18	28	16	26	25.6
Marshalltown	Maximum	38	24	35	54	44	51	46	47	63	53	44	70	58	48	71	77	68	34	49	46	35	44	55	49	36	32	41	43	39	53	46	48.2
	Minimum	15	5	15	20	23	29	32	22	29	34	33	27	32	26	32	48	29	27	22	27	19	25	38	29	25	23	23	20	28	20	32	26.1
Olin	Maximum	42	24	37	51	44	49	52	47	60	52	44	65	52	45	65	77	65	38	51	46	38	46	52	43	36	38	44	48	39	53	63	48.6
	Minimum	18	7	17	14	22	22	29	24	21	30	30	22	32	25	30	30	31	24	28	30	18	25	35	30	25	24	26	21	22	20	25	24.4
Sioux City	Maximum	18	22	42	49	47	56	39	52	57	48	46	68	41	54	73	74	37	39	60	43	35	51	60	43	40	33	41	44	47	58	38	46.9
	Minimum	9	3	17	21	23	36	25	19	29	33	35	32	29	29	41	37	30	26	26	18	19	26	35	33	28	20	25	21	25	18	27	25.6
Southern Division																																	
Albia	Maximum	43	24	40	58	49	55	52	49	64	56	47	71	65	52	71	76	65	36	51	45	43	51	58	57	35	35	40	42	69	55	66	52.3
	Minimum	16	7	16	20	22	30	29	26	30	32	32	27	30	27	32	46	30	27	23	30	23	27	40	30	25	23	24	22	41	24	34	27.3
Atlantic	Maximum	31	26	46	61	50	56	44	50	61	52	49	73	58	55	73	78	67	39	53	45	34	54	65	48	40	35	44	48	50	58	48	51.3
	Minimum	14	5	16	17	18	30	29	15	28	30	34	24	29	26	36	47	28	26	22	26	22	24	38	35	24	23	24	17	26	13	28	25.0
Burlington	Maximum	45	25	38	55	49	52	52	50	61	55	45	66	56	49	68	72	63	39	51	52	40	50	58	52	36	37	41	50	43	54	70	50.8
	Minimum	23	9	18	23	25	29	33	33	30	41	34	29	36	30	33	47	39	30	25	37	25	26	39	31	27	25	27	25	29	29	34	29.7
Columbus Jct.	Maximum	43	26	38	56	46	52	52	48	62	54	45	67	57	49	68	76	68	36	50	47	39	48	52	50	36	38	42	48	38	54	68	50.1
	Minimum	19	7	16	19	23	24	30	30	36	37	31	26	34	28	31	45	35	28	23	32	22	24	37	30	26	23	27	23	27	25	34	27.5
Corning	Maximum	46	29	47	60	62	54	51	65	56	51	74	71	51	72	78	70	39	54	54	41	51	64	41	40	43	49	50	60	51	54	48	54.1
	Minimum	15	6	16	14	19	32	11	30	33	31	21	30	28	37	43	29	26	20	30	24	25	35	25	24	24	11	26	14	30	22	26	24.4
Corydon	Maximum	46	26	42	55	44	51	50	46	63	53	45	69	60	51	69	75	62	35	49	45	40	50	58	51	35	36	40	46	41	53	66	50.1
	Minimum	16	6	16	19	23	27	32	22	30	37	34	26	32	28	33	40	32	27	23	31	24	27	41	31	26	26	25	21	28	24	34	27.2
Creston	Maximum	29	27	44	60	48	53	48	50	64	52	55	73	56	52	72	78	65	35	52	44	38	52	60	49	37	35	41	47	47	54	59	50.8
	Minimum	14	4	15	17	20	30	28	17	27	32	28	24	30	27	35	44	29	26	21	27	22	23	42	33	24	23	23	19	26	21	33	25.3
Fairfield	Maximum	42	24	38	56	46	52	54	46	65	55	47	69	58	49	69	77	66	38	50	50	41	49	55	46	36	35	40	47	39	57	68	50.5
	Minimum	19	8	16	19	23	27	29	30	21	33	30	26	31	28	32	45	33	28	23	30	23	25	39	28	25	24	26	23	27	18	28	26.4
Keokuk	Maximum	41	25	40	54	48	51	52	48	61	56	47	67	54	47	68	73	58	38	49	54	41	48	60	44	37	35	41	48	38	53	70	49.9
	Minimum	19	11	19	23	27	31	34	34	32	37	34	30	34	30	34	50	34	29	26	32	27	28	40	32	27	27	27	26	30	29	40	30.1
Knoxville	Maximum	45	28	42	59	48	53	50	49	65	59	47	73	62	51	70	77	70	36	51	46	38	50	60	55	37	35	42	48	44	54	61	51.8
	Minimum	17	8	17	19	22	29	32	23	23	29	32	26	32	28	34	49	33	27	24	31	23	26	41	32	27	25	26	24	30	21	36	27.3
Lamoni	Maximum	33	26	43	57	48	54	49	49	66	53	48	73	56	55	71	75	65	37	52	41	41	52	61	50	37	35	41	48	46	55	65	51.0
	Minimum	14	6	16	20	21	31	30	19	28	32	30	36	31	27	34	45	29	26	23	28	23	26	41	31	25	23	23	20	26	22	33	26.4
Sigourney	Maximum	44	26	38	57	47	51	52	49	64	54	47	69	69	49	69	76	66	37	51	46	40	49	58	54	37	36	42	49	42	54	66	51.2
	Minimum	18	8	16	18	22	28	30	27	28	34	33	25	30	29	32	44	33	28	23	31	21	25	40	29	25	24	26	23	28	19	33	26.8
Thurman	Maximum	38	28	46	60	50	57	49	54	66	61	50	71	66	58	73	79	72	38	55	54	35	58	61	54	42	40	44	48	50	58	56	53.9
	Minimum	15	7	18	14	21	34	31	18	35	33	31	24	32	30	41	53	31	28	25	31	30	26	40	36	27	27	27	19	25	14	33	27.6
Winterset	Maximum	40	28	45	60	54	53	49	50	65	60	47	74	67	53	70	77	70	37	52	49	37	51	62	57	38	35	43	49	48	57	54	52.6
	Minimum	13	5	16	20	20	30	31	18	33	31	28	26	30	25	34	46	33	27	24	30	22	26	43	33	25	25	25	20	27	22	38	26.6
Omaha, Neb.	Maximum	22	27	46	61	50	59	44	52	66	51	49	75	46	57	74	79	38	37	57	48	36	54	61	48	40	35	42	46	48	59	47	50.1
	Minimum	11	6	19	27	24	37	26	21	36	37	38	38	33	32	43	38	28	28	29	27	24	29	39	33	27	25	27	26	30	26	29	28.8

RIVER CONDITIONS FOR MARCH, 1930

Extremely low stages prevailed on all interior streams, with little fluctuation in their stages. The interior streams were free from ice over the entire month, except at Charles City the ice left the Cedar River above the dam on the 10th, with no rise in the river stage.

The Missouri River stages averaged nearly normal, with considerable fluctuation in the stages throughout the month. At Sioux City the extreme stages were 4.0 feet and 8.9 feet, and the average stage was 7.1 feet, or 0.9 foot below normal. At Omaha the extreme stages were 5.5 feet and 11.9 feet, and the average stage was 9.9 feet, or 1.5 feet above normal.

The Mississippi River stage fluctuation was not as great as that on the Missouri River. At Dubuque the crest stages, 8.2 feet, recorded on the first two days of the month, after which the river fell rather steadily to the lowest reading, 6.0 feet on the 20th, and remained practically stationary until the end of the month. The mean stage was 6.8 feet, or 1.2 feet above normal. At Davenport the extreme stages were 5.1 feet and 7.8 feet, and the average stage was 6.0 feet, or 0.5 foot above normal. At Keokuk the stages, contrary to the usual course of action for the month of March, were on a downward trend. Beginning with the crest stage, 8.6 feet, on the 1st, the river fell steadily to a little above 3 feet on the 31st. Navigation on the Mississippi River officially opened at Dubuque on the 15th and at Davenport on the 11th.

RIVER CONDITIONS FOR FEBRUARY, 1930

Moderate stages prevailed on all the interior streams, with moderate fluctuation in the stages, from the 20th to the end of the month, due to melting snow and ice in the drainage basins. The ice moved out on most of the interior streams during the mild period (19th to 25th). At Des Moines the extreme stages were 0.9 foot and 4.9 feet, and the average stage was 2.4 feet, or 0.6 foot below normal.

The Missouri River stages remained close to normal, with slight fluctuation. At Sioux City the extreme stages were 6.0 feet and 7.6 feet, and the average stage was 6.7 feet, or 0.1 foot below normal. The ice started to move out on the afternoon of the 21st, which is unusually early, but it has broken up as early or earlier on three other occasions, viz., on February 17, 1907, February 21, 1916, and February 5, 1928, all of which were preceded by higher temperatures in January than prevailed during the present year. At Omaha the extreme stages were 7.3 feet and 9.8 feet, and the average stage was 8.0 feet.

On the Mississippi River the ice began moving on the 20th, and a general break up occurred on the 21st, 22d and 23d, causing considerable fluctuations in stages. At La Crosse, Wisconsin, the ice moved out on the 23d, the earliest date in the history of that station. At Dubuque the stages varied 4.4 feet, the crest stage being 8.0 feet on the 28th, and the lowest 3.6 feet on the 1st and 2d. Ice moved out on the 21st and caused some damage to bathing beach equipment.

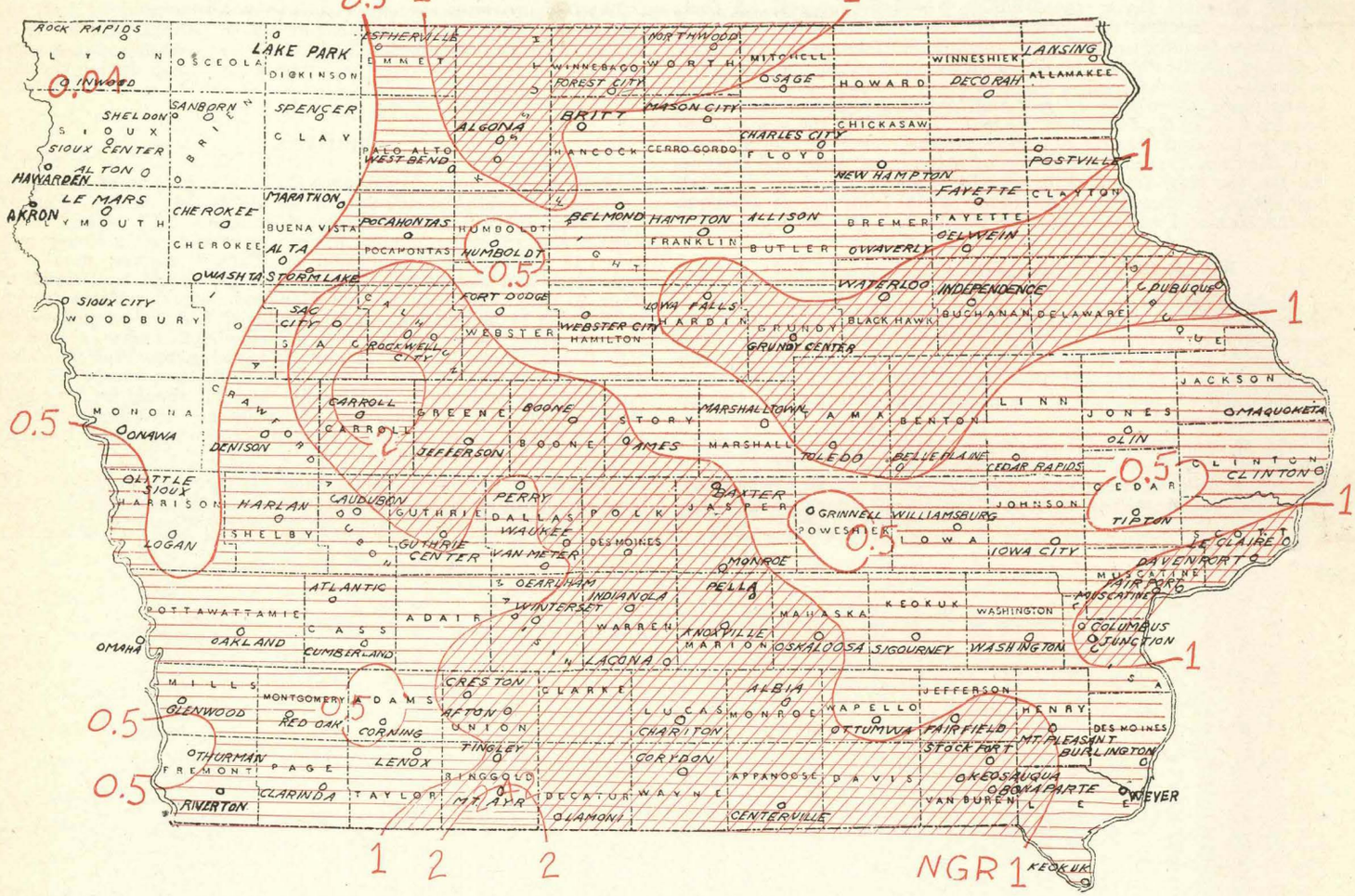
At Davenport the extreme stages were 4.0 feet and 7.4 feet, and the average was 5.1 feet, or 0.1 foot above normal. Ice broke up on the 20th at Davenport. At Keokuk the extreme stages were zero and 8.7 feet. The river was almost continuous during the last half of the month.

ERRATA

Report for January, 1930, page 2, Le Mars; date of maximum temperature published 45° on 4th, should be 46° on 1st. Page 2, Cherokee; prevailing wind direction published NW, should be N. Page 2, Sioux Center; number of days clear and partly cloudy published 13 and 11, should be 12 and 12. Page 2, Algona; number of days clear and cloudy published 17 and 11, should be 18 and 10. Page 2, Britt; monthly precipitation and departure from normal published 1.14 inches and +0.46, should be 1.18 inches and +0.50. Page 4, Britt; total precipitation published 1.14 inches, should be 1.18 inches. Page 2, New Hampton; monthly snowfall published 13.2 inches, should be 13.3 inches. Page 2, Baxter; number of days partly cloudy and cloudy published 1 and 11, should be 2 and 10. Page 3, Knoxville; monthly snowfall published 17.0 inches, should be 17.2 inches. Page 3, Lamoni; monthly snowfall published 11.3 inches, should be 11.5 inches.

Report for February, 1930. Page 11, Davenport; greatest 24-hour precipitation published 2.03 inches, should be 2.04 inches.

TOTAL PRECIPITATION, MARCH, 1930



SCALE OF SHADES IN INCHES

Less than 0.5	0.5 to 1.0	1.0 to 2.0	More than 2.0

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

IOWA SECTION
In co-operation with
IOWA WEATHER AND CROP BUREAU
CHARLES D. REED, Senior Meteorologist

VOL. XLI DES MOINES, IOWA, APRIL, 1930 No. 4

GENERAL SUMMARY

The main characteristics of April, 1930, were the record breaking temperature, a severe dust storm, and unusually dry weather during the first ten days of the month.

The mean temperature for the State, 52.1°, was 3.2° above normal. The chief feature relative to temperature conditions was the abnormally warm period, 3d-13th. The peak of maximum temperature records was reached on the 9th, 10th and 11th. It was during this period that July weather prevailed over almost the entire State, and 46 stations in the southern half and the extreme eastern portions reported the highest temperature ever experienced for the month of April.

Precipitation averaged below normal. With only a few exceptions, the entire south half and the extreme northwestern portions of the State were deficient in precipitation, the remaining portions being in excess of the normal. During the first ten days of the month there was no rain of any consequence.

The first half of the month was very favorable for outdoor work and much was done. The soil was in excellent condition to work, and preparations for corn planting made unusual progress, with few weather handicaps to add to the expense. Some corn planting was done before the 15th in a few scattered localities in southern Iowa and extending as far north as Hamilton and Marshall counties. The cool and rainy weather during the third week of the month retarded germination and much of it had to be replanted. Oats that were sown early in the month came up to a good stand but made slow progress, due to the frequent heavy frosts and freezes which followed the mild period. The color of the oats was generally rather pale. Spring wheat and barley were doing fairly well by the end of the month, and winter wheat looked good generally. Pastures, meadows, alfalfa and sweet clover were benefited by the rains and doing well. Livestock was on pasture in much of the State somewhat earlier than usual, but the pastures were not yet able to entirely sustain livestock. The dry, sunny and mostly warm weather during the first half of the month was generally favorable for young pigs, lambs and chicks, but the young animals did not thrive so well during the last two weeks. Plums, apples and currants were in full bloom in the south half of the State, and in some localities they were a little past the blooming stage. Some of the early fruits and strawberry buds were damaged by the freeze on the morning of the 19th. Gardening was much farther advanced than usual. Rhubarb was very plentiful. In many favored localities where cloudy weather prevailed during the nights of frost and freezing temperatures, the fruits were protected enough so there may be a large quanitity of the early crops. Potato planting was finished and truck gardening was in full swing. The early flowers were in full bloom most of the month.

A severe dust storm, which occurred on the 5th and 6th, was also a notable feature. The dust and red sand came from the northwest, covered the entire State, and filled the air to an unusual height. The strong winds also picked up considerable local dirt from roads and plowed fields. At the Des Moines Airport a visibility of one-half mile and a ceiling of 300 feet were reported. Commercial aviation was suspended during the storm. In places the dust was drifted along the road similar to snow. No severe damage occurred other than discomfort to persons working in the open, and dust blowing into dwellings and buildings.

A light local hailstorm occurred in Oto Township, Woodbury County, on the 30th. Many stones as large as walnuts were reported. The only damage of any consequence consisted of a few broken glass in greenhouses and hot beds in the vicinity of Danbury.

General outdoor activities were about normal. Dirt roads were in good condition most of the month. Building was not handicapped by weather conditions.

A partial eclipse of the sun occurred on the 28th. In some localities the eclipse was visible for short intervals through rifts in the clouds. In most of the State the clouds completely obscured the sun's disk. N. G. R.

COMPARATIVE DATA FOR THE STATE—APRIL

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1873	43.2	— 5.7	83	24	3.13	+ 0.17	5.65	1.24					
1874	41.9	— 7.0	76	16	1.90	— 1.06	3.15	0.65					
1875	43.0	— 5.9	77	10	2.20	— 0.76	4.00	0.89					
1876	48.1	— 0.7	78	24	3.06	+ 0.10	6.80	0.85					
1877	47.5	— 1.4	91	14	3.33	+ 0.37	8.61	1.10					
1878	52.4	+ 3.5	82	26	3.14	+ 0.18	5.87	1.32					
1879	50.3	+ 1.4	88	12	1.13	— 1.83	3.70	0.00					
1880	47.9	— 1.0	92	15	2.08	— 0.88	5.65	0.35					
1881	42.5	— 6.4	84	10	2.26	— 0.70	5.40	0.45					
1882	48.8	— 0.1	91	20	3.73	+ 0.77	8.08	1.60					
1883	49.9	+ 1.0	90	24	2.25	— 0.71	5.00	0.58					
1884	46.8	— 2.1	86	18	2.54	— 0.42	5.40	0.83					
1885	47.5	— 1.4	80	16	2.94	— 0.02	7.82	0.73					
1886	50.3	+ 1.4	88	4	2.70	— 0.26	6.90	0.70					
1887	51.1	+ 2.2	94	9	1.38	— 1.58	2.65	0.10					
1888	48.8	— 0.1	90	20	2.65	— 0.31	7.80	0.40					
1889	50.3	+ 1.4	86	10	2.35	— 0.61	6.03	0.25					
1890	51.2	+ 2.3	88	2	1.73	— 0.23	5.15	0.25					
1891	50.6	+ 1.7	93	13	2.15	— 0.81	5.06	0.59		8	14	7	9
1892	45.4	— 3.5	88	14	4.75	+ 1.79	8.38	2.43	5.7	9	8	9	13
1893	45.5	— 3.4	96	15	4.21	+ 1.25	8.51	1.24	6.0	10	8	9	13
1894	51.7	+ 2.8	93	12	3.07	+ 0.11	6.91	0.55	0.2	9	11	11	8
1895	54.2	+ 5.3	98	8	2.62	— 0.34	5.88	0.28	2.1	5	14	8	8
1896	54.5	+ 5.6	94	10	5.02	+ 2.06	9.67	2.35	4.5	11	11	10	9
1897	47.9	— 1.0	89	19	5.35	+ 2.39	9.86	2.22	T.	11	9	9	12
1898	48.1	— 0.8	91	14	2.56	— 0.40	4.82	0.27	T.	8	13	9	8
1899	48.9	0.0	89	1	2.40	— 0.56	5.76	0.56	2.0	7	12	11	7
1900	52.2	+ 3.3	89	19	2.67	— 0.29	6.62	0.43	0.9	6	12	9	9
1901	49.9	+ 1.0	92	15	1.79	— 1.17	3.47	0.66	2.0	5	14	8	8
1902	48.2	— 0.7	96	9	1.71	— 1.25	4.15	0.40	T.	5	14	11	5
1903	49.8	+ 0.9	86	17	2.98	+ 0.02	6.00	0.74	0.8	9	11	9	10
1904	44.1	— 4.8	86	13	3.63	+ 0.67	8.97	1.52	1.4	7	15	6	9
1905	47.5	— 1.4	90	10	3.03	+ 0.07	5.49	0.63	1.2	8	12	8	10
1906	52.5	+ 3.6	94	22	2.42	— 0.54	5.55	0.53	0.6	8	14	9	7
1907	41.5	— 7.4	80	10	1.32	— 1.64	3.22	0.24	2.7	6	12	8	10
1908	50.5	+ 1.6	91	8	2.24	— 0.72	4.59	0.67	0.3	8	14	8	8
1909	43.8	— 5.1	86	14	4.58	+ 1.62	9.43	0.83	3.1	12	9	9	12
1910	52.5	+ 3.6	99	15	1.48	— 1.48	4.86	0.10	3.0	7	14	7	9
1911	46.7	— 2.2	86	3	3.09	+ 0.13	6.04	1.33	3.6	9	11	8	11
1912	49.9	+ 1.0	84	20	2.66	— 0.30	5.66	0.78	1.1	8	13	8	9
1913	50.2	+ 1.3	88	16	3.28	+ 0.32	7.43	1.12	2.7	9	15	5	10
1914	48.6	— 0.3	88	11	2.52	— 0.41	5.03	0.37	0.3	8	10	8	12
1915	57.2	+ 8.3	95	18	1.41	— 1.55	4.02	0.05	T.	7	15	10	5
1916	47.1	— 1.8	90	11	2.62	— 0.34	5.92	1.13	1.1	10	10	9	11
1917	45.5	— 3.4	88	17	4.55	+ 1.59	7.84	2.05	3.8	11	9	7	14
1918	44.8	— 4.1	79	12	2.32	— 0.64	4.20	1.01	3.5	9	12	8	10
1919	48.4	— 0.5	81	20	4.78	+ 1.82	9.00	1.94	0.7	14	8	8	14
1920	42.4	— 6.5	78	22	4.59	+ 1.63	7.13	1.93	2.0	12	8	9	13
1921	52.4	+ 3.5	88	14	3.34	+ 0.38	6.69	0.99	3.6	10	13	7	10
1922	49.9	+ 1.0	87	21	3.06	+ 0.10	6.70	1.04	1.0	9	11	9	10
1923	48.4	— 0.5	85	11	2.09	— 0.87	4.26	0.47	0.8	8	15	7	8
1924	50.5	+ 1.6	90	— 8	1.38	— 1.58	4.53	0.38	1.4	7	16	8	6
1925	56.5	+ 7.6	95	21	2.20	— 0.76	5.31	0.71	T.	8	14	9	7
1926	46.1	— 2.8	95	9	0.91	— 2.05	2.29	0.06	1.5	4	16	7	7
1927	49.2	+ 0.3	91	15	4.84	+ 1.88	9.06	2.09	2.6	14	9	7	14
1928	44.3	— 4.6	88	6	2.24	— 0.72	4.37	0.22	4.9	8	12	9	9
1929	51.2	+ 2.3	93	9	4.62	+ 1.66	7.97	1.81	1.1	11	12	8	10
1930	52.1	+ 3.2	96	5	2.67	— 0.29	4.59	1.05	0.3	9	14	7	9

T. indicates an amount too small to measure, or less than .005 inch rainfall and less than .05 inch snowfall.

Climatological Data for April, 1930

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit							Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
Northwest District																				
Akron	Plymouth	1,153	4								1.28	— 1.35	0.32	0	8	13	9	8	se.	Orlan C. Moore
Alta	Buena Vista	1,513	39	51.3	+ 4.2	89	10	17	1	40	3.44	+ 0.35	1.15	0	9	15	4	11	e.	D. E. Hadden
Alton	Sioux	1,305	25	50.4	+ 3.4	83	9	5	1	45	1.70	— 0.79	0.52	0	8	9	8	13	ne.	W. S. Slagle
Cherokee	Cherokee	1,196	10	51.2	+ 4.8	86	10	14	1	43	2.98	— 0.01	0.70	T.	10	16	6	8	n.	J. E. Wirth
Estherville	Emmet	1,298	35	49.6	+ 4.7	83	9	18	1	49	2.53	— 0.10	0.80	1.0	11	18	7	5	s.	A. O. Peterson
Hawarden	Sioux	1,181	4								2.09	— 0.68	0.75	T.	9	7	5	18	se.	Earl V. Slife
Inwood (near)	Lyon	1,474	26	49.0	+ 2.3	86	9	15	1	49	1.54	— 0.99	0.39	0	9	17	2	11	nw.	A. C. Hanson
Lake Park (near)	Dickinson	1,489	17	48.1	+ 2.5	84	9	16	1	45	1.91	— 0.47	0.44	0	9	16	3	11	se.	P. M. Lawrence
Le Mars	Plymouth	1,224	34	51.4	+ 3.6	81	9	10	1	48	2.25	— 0.57	0.45	0	12	16	3	11	se.	Henry Newell
Marathon	Buena Vista	1,390	4								2.40		1.19	0	10	13	6	11	ne.	E. G. Smith
Pocahontas	Pocahontas	1,248	26	50.6	+ 3.5	90	10	16	1	48	2.56	— 0.16	1.24	0.5	10	14	8	8	se.	F. E. Hronek
Rock Rapids	Lyon	1,349	31	49.4	+ 3.1	85	9	15	1	47	1.80	— 1.00	0.63	T.	9	18	4	8	n.	Nellie F. Medberry
Sanborn	O,Brien	1,553	16	49.2	+ 2.7	83	9†	14	1	46	3.23	+ 0.23	0.80	0.5	11	10	7	13	ne.	J. W. Dow
Sheldon	O,Brien	1,418	19	50.4	+ 3.4	85	9	10	1	45	2.27	— 0.68	0.75	0.2	11	11	8	11	se.	Ross E. Forward
Sioux Center	Sioux	1,461	31	50.2	+ 3.7	84	10	12	1	44	2.33	— 0.49	0.69	0	9	11	9	10	ne.	F. C. Aue
Spencer	Clay	1,319	16	51.0	+ 4.0	87	10	10	1	45	2.91	+ 0.01	0.78	T.	11	15	4	11	se.	E. W. Little
Storm Lake	Buena Vista	1,442	41	50.2	+ 2.8	88	10	16	1	43	3.07	+ 0.14	1.17	0	10	9	13	8	se.	Russel M. Edwards
Washta	Cherokee	1,157	32	51.6	+ 4.1	89	10	15	1	50	2.87	+ 0.25	0.98	0	10	16	3	11	n.	H. L. Felter
West Bend	Palo Alto	1,197	37	50.8	+ 3.4	90	10	14	1	45	2.78	— 0.09	1.23	0.2	9	16	6	8	nw.	Jos. Dorweiler
Means and extremes				50.3	+ 3.5	90	10	5	1	50	2.42	— 0.35	1.24	0.1	10	14	6	10	se.	
North Central District																				
Algona	Kossuth	1,224	57	49.7	+ 2.1	90	10	17	1	36	4.03	+ 1.41	0.95	0	9	17	0	13	ne.	W. E. Laird
Allison	Butler	1,060	16	50.2	+ 2.9	90	10	25	22†	39	3.49	+ 0.91	1.12	1.5	9	17	3	10	se.	George H. Bell
Belmond	Wright	1,181	20	49.6	+ 2.9	90	10	14	1	45	3.13	— 0.13	0.90	0	11	9	5	16	nw.	H. F. Luick
Britt	Hancock	1,236	43	50.2	+ 4.0	89	10	15	1	41	3.35	+ 0.78	0.71	T.	10	19	2	9	ne.	E. P. Healy
Charles City	Floyd	1,015	39	49.4	+ 3.0	90	10	17	1	40	3.47	+ 0.95	1.50	0.5	10	15	7	8	se.	U. S. Weather Bureau
Forest City	Winnebago	1,226	36	49.6	+ 3.3	89	10	12	1	43	2.91	+ 0.43	0.84	1.6	10	11	5	14	se.	Dr. M. B. Neil
Hampton	Franklin	1,142	5	49.7		90	10	16	1	42	3.03	— 0.16		0.2	10	19	0	11	nw.	Howard J. Haydon
Humboldt	Humboldt	1,095	42	51.8	+ 3.7	92	10	17	1	45	2.97	+ 0.29	0.98	T.	7	13	8	9	s.	H. C. Snitkey
Mason City	Cerro Gordo	1,118	33	48.2	+ 1.7	90	10	14	1	45	2.90	+ 0.35	0.91	0	9	15	8	7	ne.	American Beet Sugar Co.
Northwood	Worth	1,222	34	48.9	+ 3.8	89	10	16	1	40	3.45	+ 0.71	0.90	1.0	11	13	7	10	ne.	Charles Dwelle
Osage	Mitchell	1,163	36	48.8	+ 2.9	89	10	17	1	38	2.79	+ 0.33	1.08	0	8	10	10	10	nw.	Dr. C. E. Juhl
Means and extremes				49.6	+ 3.0	92	10	12	1	45	3.23	+ 0.53	1.50	0.4	9	14	5	11	ne.	
Northeast District																				
Cedar Falls	Black Hawk	875									3.93		1.60	3.1	8	13	11	6	nw.	E. J. Cable
Decorah	Winneshiek	872	37	48.0	+ 0.7	90	10	18	1	51	2.76	+ 0.21	0.96	0.5	10	14	7	9	se.	M. D. Whitney
Dubuque	Dubuque	700	57	50.6	+ 2.0	92	10	26	1	36	4.34	+ 1.49	2.08	2.0	11	14	7	9	nw.	U. S. Weather Bureau
Fayette	Fayette	1,003	42					17	1†											R. Z. Latimer
Independence	Buchanan	956	66	50.3	+ 1.6	89	10	20	1	39	4.02	+ 1.51	1.61	2.0	10	16	7	7	nw.	Dr. Geo. Boody
Lansing	Allamakee	632	23								2.04	— 0.52	0.90	1.9	10					Mrs. Mary Spinner
New Hampton	Chickasaw	1,169	33	49.6	+ 2.6	91	10	15	1	43	3.07	+ 0.47	1.33	0.8	7	15	6	9	e.	D. W. Dawson
Oelwein	Fayette	1,036	7	50.2	+ 2.6	90	10	21	1	41	4.10	+ 1.32	1.55	0	5	17	4	9	s.	John T. Ridler
Postville (near)	Clayton	1,192	31	47.0	+ 0.7	88	10	15	1	39	4.13	+ 1.12	2.24	2.5	8	13	13	4	nw.	F. L. Williams
Waterloo	Black Hawk	854	47	51.0	+ 2.2	92	10	16	1	45	4.04	+ 1.51	1.60	2.0	9	20	3	7	se.	R. B. Slippy
Waverly	Bremer	936	34	50.0	+ 2.4	91	10	16	1	44	3.91	+ 0.91	1.49	3.0	8	20	5	5	n.	D. H. Murphy
Means and extremes				49.6	+ 2.0	92	10	15	1	51	3.63	+ 0.88	2.24	1.8	9	16	7	7	nw.	
West Central District																				
Audubon (near)	Audubon	1,297	35	52.7	+ 5.1	92	10	23	1	39	1.55	— 1.57	0.48	0	8	13	8	9	nw.	George Kibby
Carroll	Carroll	1,265	40	52.0	+ 3.5	89	10	18	1	41	2.63	— 0.32	1.08	T.	8	14	6	10	se.	Mrs. Jos. J. Wolfe
Denison	Crawford	1,171	36	52.5	+ 3.3	88	10	20	1	42	2.55	— 0.28	0.96	0	8	12	5	13	se.	V. L. Byers
Guthrie Center	Guthrie	987	35	53.1	+ 3.7	92	10	22	1	48	1.36	— 1.77	0.51	0	4	7	16	7	w.	Floyd H. Bainter
Harlan	Shelby	1,192	31	52.4	+ 3.4	91	10	22	1	44	1.20	— 1.68	0.25	0	8	12	5	13	se.	Walter Bell
Jefferson	Greene	1,052	31	52.1	+ 3.6	89	10	20	1	42	2.48	— 0.37	1.05	0	7	9	8	13	sw.	W. I. Lyon
Little Sioux	Harrison	1,040	25	54.0	+ 3.5	91	10	21	1	45	1.67	— 1.00	0.42	0	9	10	10	10	nw.	H. W. Kerr
Logan	Harrison	1,120	63	53.8	+ 3.0	93	10	25	1	41	1.69	— 1.10	0.51	0	10	11	10	9	ne.	Amy Ann Stern
Onawa	Monona	1,051	29	53.1	+ 3.0	88	10	19	1	46	3.00	+ 0.33	1.13	0	8	11	5	14	se.	Mrs. H. E. Cobly
Rockwell City	Calhoun	1,232	34	51.0	+ 2.8	89	10	16	1	50	3.30	+ 0.25	0.76	T.	7	17	4	9	nw.	A W. McIsaac
Sac City	Sac	1,209	54	51.8	+ 4.0	90	10	20	1	50	2.81	— 0.13	1.00	0	8	10	8	12	se.	F. P. Kessler
Sioux City	Woodbury	1,135	41	52.8	+ 5.0	84	10	23	1	37	2.00	— 0.70	0.74	0.1	12	9	5	16	se.	U. S. Weather Bureau
Means and extremes				52.6	+ 3.6	93	10	16	1	50	2.19	— 0.69	1.13	T.	8	11	8	11	se.	
Central District																				
Ames	Story	926	53	52.6	+ 3.8	90	10	22	1	44	3.05	+ 0.07	1.10	0.5	7	17	3	10	s.	Iowa State College
Baxter	Jasper	998	30	52.7	+ 3.7	91	11	20	1	41	3.07	+ 0.01	0.98	0.4	10	16	4	10	nw.	F. A. Kanne
Boone (near)	Boone	894	25	51.6	+ 2.6	92	10	21	1†	50	2.69	— 0.19	1.07	T.	9	13	9	8	ne.	C. F. Henning
Des Moines	Polk	861	52	53.6	+ 3.5	92	10	28	1	38	2.35	— 0.56	1.04	0.2	10	8	9	13	e.	U. S. Weather Bureau
Fort Dodge	Webster	1,114	30	51.3	+ 3.7	90	10	17	1	41	3.12	+ 0.38	1.52	0	10	14	4	12	ne.	Mrs. Emma Sampson
Grinnell	Poweshiek	1,031	36	51.8	+ 2.4	91	10	24	1	38	3.42	— 0.29	1.47	0	9	18	6	6	se.	R. E. Bates
Grundy Center	Grundy	976	39	50.8	+ 1.7	91	10	16	1	39	3.63	+ 0.40	1.05	2.0	8	15	6	9	nw.	M. G. Heiberger
Iowa Falls	Hardin	1,127	37	50.6	+ 2.8	91	10	15	1	44	3.88	+ 0.76	2.00	2.5	10	15	3	12	e.	C. H. Gilbert
Marshalltown	Marshall	947	38	52.1	+ 2.5	91	10	22	1	39	2.40	— 0.44	1.00	1.2	10	16	7	7	nw.	C. C. Pigman
Monroe	Jasper	922	18	53.6	+ 3.5	92	10	25	1†	42	2.99	— 0.26	1.13	0	7	17	2	11	s.	J. A. Dibel
Perry	Dallas	975	29	52.2	+ 3.1	92	10	23	2	48	1.86	— 1.13	0.93	0	7	12	8	10	nw.	Eugene N. Hastie
Toledo	Tama	847	36	52.0	+ 2.4	92	10	21	1	45	3.27	+ 0.01	1.52	0.5	9	13	9	8	ne.	H. P. Giger
Van Meter	Dallas	872	11								1.66		0.60	0	6					Calvin K. Smith
Waukee	Dallas	1,032	27	53.4	+ 4.0	92	10	24	1	49	1.62	— 2.18	0.82	0	6	19	4	7	sw.	O. D. Ellsworth
Webster City	Hamilton	1,042	25	50.8	+ 2.3	91	10	15	1	48	3.37	+ 0.58	1.30	0.5	9	18	4	8	nw.	Frank A. Bonebright
Means and extremes				52.1	+ 3.0	92	10	15	1	50	2.82	— 0.28	2.00	0.5	8	15	6	9	nw.	

Climatological Data for April, 1930—Continued

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit							Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
East Central District																				
Belle Plaine	Benton	866	40	52.2	+ 2.8	93	10	22	1	45	2.75	— 0.66	1.44	0.5	10	17	6	7	nw.	O. C. Burrows
Cedar Rapids	Linn	737	48	52.2	+ 3.0	93	10	21	2	48	3.09	— 0.16	1.12	0	11	14	2	14	nw.	J. T. Wurster
Clinton	Clinton	595	57	52.2	+ 2.4	94	10	22	2	41	4.11	+ 1.07	1.15	T.	10	18	3	9	ne.	Dr. A. P. Bryant
Davenport	Scott	580	59	53.3	+ 3.4	91	11	31	1	35	2.96	+ 0.27	0.87	T.	10	13	8	9	nw.	U. S. Weather Bureau
Fairport	Muscatine	567	9	54.0	+ 3.3	90	10	26	2	38	2.80	— 0.18	0.76	0	11	13	6	11	s.	Bureau of Fisheries
Iowa City	Johnson	733	70	52.4	+ 2.5	93	10	27	2	42	3.11	— 0.07	0.73	T.	11	15	6	9	nw.	Prof. J. F. Reilly
Le Claire	Scott	576	30								3.80	+ 0.92	0.76	T.	11					Margaret T. Disney
Maquoketa (near)	Jackson	692	25	49.8	+ 2.5	93	10	18	2	44	4.20	+ 1.38	1.25	0.3	12	19	3	8	nw.	John Strodthoff
Muscatine	Muscatine	546	69								2.47	— 0.81	0.42	0	10					William Molis
Olin	Jones	760	31	50.8	+ 1.6	93	10	20	2	46	2.94	+ 0.13	1.21	0	8	16	5	9	nw.	Mrs. L. Stingley
Tipton (near)	Cedar	806	31	52.0	+ 2.0	94	10	21	2	40	4.45	+ 1.21	1.05	0	7	8	13	9	nw.	John Kroeplen
Williamsburg	Iowa	770	14	52.6	+ 3.6	93	10	25	1†	42	1.90	— 1.45	0.46	0	8	19	5	6	nw.	Dr. F. C. Schadt
Means and extremes				52.2	+ 2.8	94	10	18	2	48	3.22	+ 0.14	1.44	0.1	10	15	6	9	nw.	
Southwest District																				
Atlantic	Cass	1,110	39	53.4	+ 3.6	94	10	23	1†	50	1.84	— 1.30	0.56	0	9	12	7	11	s.	Roy L. Fancolly
Bedford	Taylor	1,200	2								2.58	— 0.28	0.98	0	10	13	6	11	sw.	Authur L. Bishop
Clarinda	Page	1,009	40	55.2	+ 4.1	96	10	22	1	45	2.69	— 0.22	0.71	0	11	11	17	2	e.	Dr. H. C. Hawley
Corning	Adams	1,150	38	54.6	+ 5.3	92	11	22	1	58	1.18	— 1.95	0.50	0	5	12	14	4	se.	C. A. Smith
Cumberland (near)	Cass	1,225	31								2.02	— 0.72	0.56	0	9	14	5	11	se.	Carl E Pollock
Glenwood	Mills	1,100	32	55.7	+ 4.4	94	10	26	1	44	2.16	— 0.73	0.56	0	11	13	5	12	se.	George Mogridge
Lenox	Taylor	1,250	35	54.6	+ 4.4	94	10	22	1	45	1.90	— 1.34	1.09	0	11	11	10	9	se.	J. L. Hurley
Oakland	Pottawattamie	1,139	11	53.8	+ 3.7	93	10	26	8	46	1.70	— 1.16	0.44	0	9	13	4	13	sw.	W. S. Mathews
Red Oak (near)	Montgomery	1,030	5								4.21	+ 1.15	1.00	0	13	12	10	8	nw.	B. R. Bridge
Riverton (near)	Fremont	920	4								2.64	— 0.34	0.99	0	11	15	3	12	ne.	Geo. C. Rader
Thurman	Fremont	960	33	56.2	+ 4.2	95	10	25	1	45	2.15	— 1.00	0.74	0	8	12	7	11	n.	H. H. Askew
Omaha, Neb.		1,105	59	55.9	+ 4.7	93	10	28	1	34	2.37	— 0.14	0.66	0	9	12	5	13	e.	U. S. Weather Bureau
Means and extremes				54.9	+ 4.3	96	10	22	1	58	2.29	— 0.67	1.09	0	10	12	8	10	se.	
South Central District																				
Afton	Union	1,212	36	54.2	+ 4.0	94	10	24	1†	41	2.38	— 1.12	1.28	0	9	15	5	10	sw.	S. R. Brown
Albia	Monroe	949	32	53.6	+ 2.9	91	10	26	1	38	1.63	— 1.45	0.72	0	9	16	3	11	nw.	O. E. McBride
Centerville	Appanoose	1,013	25	53.2	+ 1.2	90	10	27	1	34	1.45	— 2.05	0.48	0	11	12	9	9	nw.	Thomas Wood
Chariton (near)	Lucas	1,042	35	53.4	+ 3.9	91	10	24	1	37	1.05	— 2.25	0.44	0	4	12	11	7	nw.	C. C. Burr
Corydon (near)	Wayne	1,050	37	53.8	+ 3.3	90	10	26	1	39	1.43	— 1.98	0.91	0	6	13	2	15	ne.	J. C. Davis
Creston	Union	1,291	25	52.8	+ 3.3	91	10	24	1	39	2.60	— 0.83	1.06	0	9	9	10	11	s.	Mrs. N. Spangler
Earlham (near)	Madison	1,126	28	52.5	+ 3.8	92	10	25	1	47	2.20	— 1.15	1.15	0	5	16	2	12	sw.	George Phillips
Indianola	Warren	972	39	54.0	+ 3.5	92	10	26	1	39	2.88	— 0.28	1.50	0	7	13	10	7	se.	Seth F. Shenton
Knoxville	Marion	920	35	53.4	+ 2.8	92	10	26	24	38	1.64	— 1.76	0.58	0	5	12	10	8	nw.	W. J. Casey
Lacona	Warren	824	31								1.82	— 1.25	0.60	0	8	11	13	6		J. B. Alter
Lamoni	Decatur	1,123	23	53.9	+ 3.4	91	10	22	1	37	1.94	— 1.48	0.71	0	11	14	6	10	se.	F. S. Parks
Melrose‡‡	Monroe	871	1								1.00		0.40	0	4	13	6	11	sw.	J. M. Carr
Mount Ayr	Ringgold	1,220	37	54.0	+ 3.8	91	10	25	1	42	2.70	— 0.66	1.14	0	8	16	6	8	s.	E. O. Gleason
Tingley	Ringgold	1,275	5	54.3	+ 4.6	92	10	24	1	38	2.45	— 0.93	1.31	0	8	14	6	10	ne.	James A. Verploegh
Winterset	Madison	1,118	39	53.4	+ 3.1	90	10	24	1	40	2.72	— 0.86	1.32	0	9	16	4	10	nw.	H. S. Ely
Means and extremes				53.5	+ 3.3	94	10	22	1	47	2.06	— 1.28	1.50	0	8	13	7	10	nw.	
Southeast District																				
Bonaparte (near)	Van Buren	563	39	54.0	+ 3.2	91	10	26	2	40	1.62	— 1.58	0.54	0	6	16	6	8	nw.	B. R. Vale
Burlington	Des Moines	544	34	55.7	+ 3.6	93	10	30	2	40	2.43	— 0.67	1.27	0	9	14	9	7	sw.	John W. Donnelly
Columbus Junction	Louisa	595	29	53.2	+ 2.0	93	10	24	2	40	2.48	— 0.50	0.76	0	9	17	9	4	nw.	Miss Musa Todd
Fairfield	Jefferson	780	46	53.0	+ 2.9	92	10	26	2†	43	1.64	— 2.02	0.48	0	8	14	5	11	n.	R. M. McKenzie
Keokuk	Lee	614	59	56.8	+ 4.5	92	10	31	2	33	1.97	— 1.02	1.13	0	6	11	9	10	n.	U. S. Weather Bureau
Keokuk No. 2	Lee	651	1	57.0		93	10	29	2	37	2.06		0.82	0	7					J. N. D. Dickinson
Keosauqua	Van Buren	639	38	54.0	+ 2.9	92	11	22	2	42	1.71	— 1.68	1.00	0	6	12	11	7	nw.	Dr. J. W. Rinabarger
Mt. Pleasant	Henry	730	49	54.5	+ 3.0	92	10	27	2	39	2.33	— 0.64	0.63	0	9	12	11	7	nw.	J. H. Jericho
Oskaloosa	Mahaska	835	54	53.2	+ 3.1	92	10	27	1†	38	4.59	+ 1.74	1.54	T.	9	10	11	9	se.	Roy R. Robinson
Ottumwa	Wapello	649	35	54.4	+ 2.2	92	10	26	2	44	1.85	— 1.06	0.58	0	8	13	8	9	nw.	C. L. Mikesh
Sigourney (near)	Keokuk	790	31	53.0	+ 3.0	92	10	27	2	39	3.59	+ 0.31	1.18	0	8	14	5	11	ne.	W. E. Utterback
Stockport (near)	Van Buren	747	28	52.5	+ 2.7	91	10†	24	2	42	2.20	— 0.92	0.54	0	9	17	5	8	nw.	C. L. Beswick
Washington	Washington	757	48	54.4	+ 3.7	94	10	27	2	40	1.63		0.78	0	5	13	7	10	e.	D. D. Sherman
Wever	Lee	552	2	56.4		93	10	28	8	38	2.48		0.80	0	8	13	8	9	w.	H. G. Liddle
Means and extremes				54.4	+ 3.4	91	10	22	2	44	2.33	— 0.77	1.54	T.	8	14	8	8	nw.	
State means and extremes				52.1	+ 3.2	96	10	5	1	58	2.67	— 0.29	2.24	0.3	9	14	7	9	nw.	

Temperature normals are based on the 46-year period July 3, 1875 to July 2, 1921; shorter records corrected to harmonize. Precipitation normals are based on the 50-year period ended December 31, 1927 at first order stations; upon all records of 10 years or more ending December 31, 1920 for most of the co-operative observing stations; and upon interpolations from normal maps for recently established stations.

Reference letters a, b, c, etc., appearing in the table indicate the number of days missing; for example b represents two days, etc.

†Also other dates.

‡‡Received too late to be included in means and summaries.

T. Precipitation is less than 0.01 inch rain or melted snow.

TEMPERATURE

The mean temperature for the State, derived from the means of 9 districts of nearly equal area, and based on the records of 106 stations, was 52.1° or 3.2° above normal. There was an excess in all of the divisions of the State. The greatest excess, 4.3°, was in the north-central district, and the least, 2.0°, in the northeast district. The highest monthly mean was 57.0° at Keokuk No. 2, and the lowest was 48.0° at Decorah. The abosolute range for the State was 91°, from 5° at Afton on the 1st, to 96° at Clarinda on the 10th. The average number of days with the maximum temperature 90° or above, was 1, ranging from no days at 26 stations to 3 days at Wever. Maximum temperature of 32° or higher occurred at all stations. The average number of days with the minimum temperature 32° or below, was 8, ranging from 2 days at 6 stations to 12 days at 5 stations. The greatest daily range in temperature at any one station was 58° at Corning, on the 8th.

Daily Precipitation for April, 1930

Stations	Drainage Basin	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	
Northwest District																																	
Akron	Bix Sioux											T.				.13		.32	.10		.29	.01						.10		.25	.08		1.28
Alta	Raccoon												.05	.50		.24		.75	.12	T.	1.15							.05		.36	.22		3.44
Alton	Floyd											T.		T.		.11	T.	.42	T.	.32	.20						.02	.03		.40	.20		1.70
Cherokee	Little Sioux	T.											T.	.11		.17	.07	.69	.12	.70	.49						T.	.07		.26	.30		2.98
Estherville	Des Moines	.10										.10	.05	T.		.65	.03	.20	.25		.80							.05		.25	.05		2.53
Hawarden	Big Sioux											T.			T.	.09		.51	.11	.46	.29						.12	.10	T.	.31	.10		2.09
Inwood (near)	Big Sioux											.03	T.			.01		.30	.34	.01	.36							.13		.18	.09		1.54
Lake Park (near)	Little Sioux											.19				.30		.30	.15	.44	.15							.22		.09	.07		1.91
Le Mars	Floyd	.01										.06	T.	.03		.23	T.	.34	.07	.39	.36						.04	.08	T.	.45	.16		2.25
Marathon	Raccoon											.07	.03		.15	T.	.36	.07		1.19							.09	T.	.16	.17	.11		2.40
Pocahontas	Des Moines	.05										.05		.02		.45	.06	.35		.66	.58									.16	.18		2.56
Rock Rapids	Big Sioux											.08		.02				.63	.18	.20	.33						.03			.18	.15		1.80
Sanborn	Floyd	.50										.15		.10		.06		.47	.16	.80	.35							.06		.19	.39		3.23
Sheldon	Floyd											.01	.01	.34		.11	T.	.48	.05	.49	.26						T.	.06		.19	.27		2.27
Sioux Center	Floyd											T.				.40		.40	.12	.35	.34						.05	.07		.25	.35		2.33
Spencer	Little Sioux	.04										.10	.02			.11	T.	.35	.17	.78	.70							.10		.45	.09		2.91
Storm Lake	Raccoon											.03		.44		.25	.16	.41	.03	.73	.44						T.	T.		.39	.19		3.07
Washta	Little Sioux	T.										.09		.28		.29	.02	.68		.45	.53						T.	.12		.25	.16		2.87
West Bend	Des Moines	.02										.10				.20	.68			.68	.55							.01		.26	.28		2.78
North Central District																																	
Algona	Des Moines															.83	.21	.95	.15	.90	.12							.02		.45	.40		4.03
Allison	Cedar	.14												.61		.83	.04	.10	.03	.36	.12							T.			.26		3.49
Belmond	Iowa											.05		.02		.90	.13	.10	.05	.13	.70	.62								.03	.70		3.13
Britt	Iowa	T.										.37				.71	.05	.48	.12	.46	.49	.03								.10	.54		3.35
Charles City***	Cedar											.02		.27		1.50	.10	.13	.08	.57	.13							T.		.15	.22		3.47
Forest City	Cedar	.16											.26			.76	.04	.31	.16		.84							.02		.01	.35		2.91
Hampton	Cedar	.02												.23		.74	.18	.19	.02	*	1.32							.03			.30		3.03
Humboldt	Des Moines	T.										T.	T.	T.		.83	.04	.98		.45	.13									.46	.08		2.97
Mason City	Cedar											.13	.02	T.		.91	.26	.26	.08	.46	.33							T.		T.	.45		2.90
Northwood	Cedar	.10										.12	.03			.10	.70	.90		.40	.18							.10		.02	.80		3.45
Osage	Cedar	.20										.06				1.08		.55	.07	.25	.33							T.			.25		2.79
Northeast District																																	
Cedar Falls	Cedar	.26												.34		.80	.24		T.	.20	1.60							.03			.46		3.93
Decorah	Mississippi	.06											.10		.02	.58	.96	.41	.36	.02	.23								.02				2.76
Dubuque***	Mississippi	.16										.11		.04		2.08	.38	.21	T.	.24	.90							.07		.11	.04		4.34
Fayette	Mississippi																																
Independence	Wapsipinicon	.22												.30		1.61	.17	.02	.01	.11	1.40							.08			.10		4.02
Lansing	Mississippi	.19											.14			.22	.90	.19	.11	.08	.18	.02	T.						T.		.01		2.04
New Hampton	Wapsipinicon	.15										T.				1.33	.26	T.	.05	.11	.85							T.			.32		3.07
Oelwein	Wapsipinicon													.80		1.10	.25				1.55										.40		4.10
Postville (near)	Mississippi	.25										T.		.10		2.21	.24		.10	.04	1.04							T.			.12		4.13
Waterloo	Cedar	.20												.44		.60	.96	.16			1.60	.01						T.	.02		.05		4.04
Waverly	Cedar	.18												.80		.90	.14	.03		.30	1.19							T.			.37		3.91
West Central District																																	
Audubon (near)	Nishnabotna													.10		.48	.11	.11		.15	.25						T.	T.		.20	.15		1.55
Carroll	Raccoon	.02											T.		T.	.56	.02	.54			1.08							.06	T.	.10	.25		2.63
Denison	Missouri											T.	T.	.10		.44		.30		.10	.46							.10		.27	.48		2.55
Guthrie Center	Raccoon															.30					.43									.51	.12		1.36
Harlan	Nishnabotna												T.	.12		.21	.05	.08		.19	.13		T.				T.	T.	T.	.17	.25		1.20
Jefferson	Raccoon													.20		.55		.06		.24	.81						T.			.45	.17		2.48
Little Sioux	Little Sioux											T.		.02		.14		.41		.29	.13					.08	.13			.30	.17		1.67
Logan	Missouri												.04			.41	.06	.11	T.	.16	.09					.05	.06			.51	.20		1.69
Onawa	Missouri											T.	T.	T.		.57	T.	1.13		.25	.38						.10	.10		.23	.21		3.00
Rockwell City	Raccoon	T.														.76	.10	.65		.65	.33									.30	.51		3.30
Sac City	Raccoon											T.		.10		.35	.22	.40		.40	.60									.09	.65		2.81
Sioux City***	Missuri											.04		T.	.15	T.	.11	.34	.02	.38	.20					T.	.10	.05	.12	.27	.02		2.00
Central District																																	
Ames	Skunk	.05														.90	.40	.30		.10	1.10										.20		3.05
Baxter	Skunk	.04												.50		.98	.28	.04		.10	.73							.09		.18	.20		3.07
Boone (near)	Des Moines	.02												.07	.19	.61	.44	.15	T.		1.07									.02	.12		2.69
Des Moines***	Des Moines											T.	.07	.11	T.	1.04	.24	.04	T.	.05	.57						T.	.03	T.	.15	.05		2.35
Fort Dodge	Des Moines	.03												.04		.86	.02	.34	.02		1.52							.01		.03	.25		3.12
Grinnell	Iowa											T.		.32	.02	.85	.58			.02	1.45							.04	.01		.13		3.42
Grundy Center	Cedar	.20										T.		.25		.80	.30			.50	1.05							.03			.50		3.63
Iowa Falls	Iowa	.25										T.		.34		.34	.42	.35	.05		2.00										.09		3.88
Marshalltown	Iowa	.08											T.	.02	.12	.32	.50	.24	T.		.98	.02						T.	.03		.09		2.40
Monroe	Des Moines											T.	T.	.77		.64	.23	T.		T.	1.13							T.	.05	.11	.06		2.99
Perry	Raccoon												T.	.04		.93	T.	.03		.03	.46							T.		.23	.14		1.86
Toledo	Iowa	.15										T.		.20	T.	.80	.13	.02		.10	1.52							.10	T.	T.	.25		3.27
Van Meter	Raccoon													.18		.60	.37	.10			.37										.04		1.66
Waukee	Raccoon												T.	.28		.82	T.	T.	T.	.09	.31							T.		.10	.02		1.62
Webster City	Des Moines	.03										T.		.12		.95	T.	.10	.10	.37	1.30							.02		T.	.38		3.37
East Central District																																	
Belle Plaine	Iowa	.07										.03		.23		.59	.14	.01		.09	1.44							.08	T.		.07		2.75
Cedar Rapids	Cedar	.05											.09		.18	.23	.62	.25			1.12	.30						09	.02		.14		3.09
Clinton	Mississippi	T.											.05	.53		1.15	.53	.06		.10	1.02							.24	.01		.42		4.11
Davenport***	Mississippi	T.					T.					.12	.04	.38		.78	.43	.16	T.	.08	.66							.22	T.	T.	.09		2.96
Fairport	Mississippi												.15	.36	.03	.60	.32	.06			.76	.03						.08	.02		.39		2.80
Iowa City	Iowa	T.											.15	.63	.05	.16	.47	.35			.61	.12						.03	.21		.33		3.11
Le Claire	Mississippi	T.	T										.21		.30	.41	.76	.52	.35		.47	.33						.05	.25	T.	.12		3.80
Maquoketa (near)	Maquoketa	.07										.02	.20	.23		.76	.53	.04		.13	1.25							.25	.04		.68		4.20
Muscatine	Mississippi												.07		.30	.40	.42	.36	.02		.27	.20							.12		.31		2.47
Olin	Wapsipinicon	T.										.06	.30	.14		1.05	.03			.11	1.10							.15					2.94
Tipton (near)	Cedar													.42		.92	.82	.06			1.05							.23			.95		4.45
Williamsburg	Iowa											.14	.04	.30		.42	.32			.06	.40							T.			.22		1.90

Daily Precipitation for April, 1930—Continued

Stations	Drainage Basin	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	Totals
Southwest District																																	
Atlantic‖‖‖	Nishnabotna													.18	T.	.56	.01	.24	T.	.05	.45	T.						.05		.14	.16		1.84
Bedford	102												.08	.40		.98	T.	.23		.23	.05					.16	.04			.32	.09		2.58
Clarinda‖‖‖	Nodaway													.32	.03	.71	.46	.33			.08			.02		.28		.06		.10	.30		2.69
Corning	Nodaway													.20			.50			.05										.20	.23		1.18
Cumberland (near	Nodaway													.13		.56	.02	.37		.06	.42						T.	.06		.26	.14		2.02
Glenwood	Missouri												T.	.18		.56	.10	.02		.04	.18					.31	.01	.06		.27	.40		2.16
Lenox	Missouri												.02	.19		1.09	.08	.06		.05	.11					.03	T.	.08	T.	.01	.18		1.90
Oakland	Nishnabotna												.05	.12		.41	.09				.25					.23	.02			.30	.20		1.70
Red Oak (near)	Nishnabotna												.10	.25		1.00	.18	.14	1.00		.53					.14	.16	.18	.06	.14	.33		4.21
Riverton (near)	Nishnabotna												.48	.17		.99	.04	T.		T.	.02		T.			.20	.26	.05	.05	.14	.24		2.64
Thurman	Missouri													.18		.74				T.	.17					.25	.13		.13	.26	.29		2.15
Omaha, Neb.***	Missouri												.14	.06	.66		.10	T.	T.	.25	T.					.30	.07		T.	.63	.16		2.37
South Central District																																	
Afton	Grand													.12		1.28	.28	.04		.10	.21							.04		.20	.11		2.38
Albia‖‖‖	Des Moines												T.	.21	.10	.72	.05	.09			.14	.11							.13	.08	T.		1.63
Centerville	Chariton											T.	.02	.06	.02	.48	.13			.01	.09						.19	.02	.25	.18		1.45
Chariton (near)	Chariton													.44	T.	.36	.11	T.		T.	T.	.14					T.	T.	T.	T.		1.05
Corydon (near)	Chariton											T.	T.	.22		.91	.06			T.	.17						.03		.04	T.		1.43
Creston‖‖‖	Missouri												T.	.14	T.	1.06	.08	.03		T.	.65	.02					.02		.02	.58		2.60
Earlham (near)	Des Moines															1.15	.09	.05		T.	.35									.56	T.		2.20
Indianola	Des Moines												T.	.27		.67	.12	.16		T.	1.50						.08		.08			2.88
Knoxville	Des Moines											T.	T.	.40		.58	.20			T.	.34						T.	T.	T.	.12		1.64
Lacona	Des Moines												02	.43		.60	.28				.44						.01		.02	.02		1.82
Lamoni‖‖‖	Grand												.17	.15	.19	.71	.14	.25	.01		.05	.07					.02	T.		.18		1.94
Melrose	Des Moines												*	.20	.40				*	.30							*	.10	T.	T.		1.00
Mount Ayr	Grand													.36		1.14	.04	.40			.13					T.		.14		.35	.14		2.70
Tingley	Platte												T.	.34		1.31	.05	.17	T.	.05	.11					T.	T.	T.		.21	.21		2.45
Winterset	Des Moines												T.	.05		1.32	.38	.03		.08	.65							.02		.16	.03		2.72
Southeast District																																	
Bonaparte (near)	Des Moines												T.	.35		.16	.54			T.	.13							.09	T.	T.	.35		1.62
Burlington‖‖‖	Mississippi													.02	.06	.17	.32	.27		T.	.55	.72						T.	.30		.02		2.43
Columbus Junction	Iowa													.24		.76	.63	.02		.01	.30	T.						.13	.01		.38		2.48
Fairfield	Skunk													.15	.01	.48	.43			T.	.07							.04		.26	.20		1.64
Keokuk***	Mississippi													T.		.88	.31	T.			.23							.17	T.	.30	.05		1.97
Keokuk No. 2	Mississippi													.01		.22	.82	T.			.38							.21	.01		.41		2.06
Keosauqua	Des Moines													.02		.45	.55				.15							T.		.42	.12		1.71
Mt. Pleasant	Skunk												.02	.51		.20	.63	.02			.25							.14	.02		.54		2.33
Oskaloosa	Des Moines	T.									T.	1.10	T.	.49		.60	.39			.03	.11							.11	T.	.22	1.54		4.59
Ottumwa	Des Moines												T.	.11		.39	.50			T.	.09							.13	.01	.04	.58		1.85
Sigourney (near)	Skunk											T.	.08	.24		.53	1.06			T.	.31							1.18	.01		.18		3.59
Stockport (near)	Skunk											T.		.31	.41	.45	.54				.05	.06						.08		.18	.12		2.20
Washington	Skunk												T.	.22		.30	.78			T.	.18							.15					1.63
Wever	Mississippi													.05	.08	.11	.75				.80							.17	.10		.42		2.48

Except as otherwise indicated, observations are generally made late in the afternoon, near sunset, and precipitation recorded is for 24 hours ending at the time of observation.

‖‖‖Precipitation measured in the morning; amount then recorded is for preceding 24 hours, except amount measured on April 1, is for preceding 12 hours.

‖‖Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.

***Regular Weather Bureau Station: precipitation is for 24-hour period midnight to midnight.

**Incomplete.

*Precipitation included in the next following measurement.

T. Precipitation is less than .01 inch rain or melted snow.

PRESSURE, RELATIVE HUMIDITY, WIND AND SUNSHINE

Stations	Barometric Pressure, Inches (Sea Level) Mean	Highest	Date	Lowest	Date	Relative Humidity, % Mean 7 A. M.	12 Noon‡	7 P. M.	Lowest	Date	‡‡Wind Total movement	Average hourly velocity	Maximum Miles	From	Date	Sunshine % possible	Departure from normal
Chas. City	30.03	30.29	24	29.56	17	76	46	51	17	10	4,987	6.9	19	s.	10	64	+ 6
Davenport	30.01	30.28	8	29.60	17	73	47	48	17	10	7,864	10.9	37	sw.	11	63	+ 6
DesMoines	30.00	30.28	22	29.59	17	74	44	47	11	10	6,805	9.4	31	s.	17	64	+ 5
Dubuque	30.02	30.28	8	29.59	17	76	52	53	23	10	4,645	6.5	27	nw.	6	62	+ 5
Keokuk	30.02	30.32	8	29.64	17	67	43	48	16	5†	5,310	7.4	26	sw.	17	69	+12
Sioux City	30.01	30.30	22	29.62	17	71	50	50	13	4	7,738	10.7	39	nw.	5	56	0
Omaha, Nb	29.99	30.27	22	29.57	17	64	48	47	10	5	4,954	6.9	30	nw.	5	65	+ 6
Means and extremes	30.01	30.32	8	29.56	17	72	47	49	10	5		8.4	39	nw.	5	63	+ 6
Normals and records	29.98	§30.78	9th 1918	*28.90	20th 1898	76		57	¶10	25† 1902			¶60	n.	25th 1902	57	

§Dubuque *Davenport ¶Sioux City ‡Local mean time †And other dates.

‡‡January 1, 1928, 3-cup anemometers replaced 4-cup instruments. See Climatological Data, January, 1928, page 7.

PRECIPITATION

The average precipitation for the State, derived from the averages of 9 districts of nearly equal area, and based on the records of 119 stations, was 2.67 inches, or 0.29 inch below normal. The greatest district deficiency was in the south-central district, 1.28, and the northeast district had the greatest district excess, 0.88 inch. The greatest precipitation deficiency, 2.25 inches at any one station, was at Chariton. The greatest excess in the State was 1.74 inches at Oskaloosa. The greatest amount at a single station was 4.59 inches at Oskaloosa, and the least was 1.05 inches at Chariton. The greatest amount occurring in 24 consecutive hours was 2.24 inches at Postville on the 15th. The average number of days with 0.01 inch or more of precipitation for the State was 9, ranging from 8 days in the west-central, central and south-central districts, to 10 days in the northwest, east-central and southwest districts. For individual stations the range was from 4 days at Guthrie Center to 13 days at Red Oak.

MISCELLANEOUS PHENOMENA

Aurora: 7th.

Birds (Migration of): Webster City, martins on 4th; Earlham, mocking bords on 26th; Riverton, wrens on 28th.

Coronas, Lunar: 10th, 13th.

Dust Storm: 4th, 5th, 6th, 7th, 9th, 10th.

Eclipse of Sun, partial: 28th.

Fog: 3d, 12th, 14th, 15th, 16th, 17th, 21st, 28th, 29th.

Frost, light: 3d, 7th, 19th, 21st, 22d, 23d, 24th.

Frost, heavy: 2d, 3d, 19th, 22d, 23d, 24th, 25th, 26th.

Frost, killing: 1st, 2d, 3d, 4th, 6th, 7th, 8th, 19th, 22d, 23d, 24th, 25th.

Gales: 4th, 5th, 6th, 8th, 9th, 10th, 11th, 14th, 17th.

Hail, light: 12th.

Hail, moderate: 17th, 18th, 30th.

Halos, lunar: 9th, 11th, 12th.

Halos, solar: 4th, 5th, 8th, 10th, 12th, 17th, 19th, 22d, 25th, 26th, 29th.

Rainbows: 4th, 9th, 10th, 12th, 16th, 25th, 26th, 29th.

Haze: 12th.

Sleet: 1st, 19th.

Thunderstorms: 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 29th, 30th.

Daily Maximum and Minimum Temperature for the Month of April, 1930

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
Northern Division																																	
Algona	Maximum	45	64	62	70	64	67	61	64	78	90	68	73	75	62	43	42	64	58	50	48	47	50	51	53	58	63	53	57	79	68	.....	60.9
	Minimum	17	29	31	56	42	36	30	29	42	56	53	44	42	41	39	36	37	35	29	37	39	28	27	25	28	49	49	45	50	55	.....	38.5
Alta	Maximum	54	66	73	82	63	75	59	73	84	89	68	81	77	68	56	42	48	60	43	50	47	52	58	59	62	59	58	57	72	70	.....	63.5
	Minimum	17	30	37	43	43	35	30	33	46	60	50	44	54	42	40	36	37	53	32	38	37	33	30	29	33	36	45	45	49	56	.....	39.1
Alton	Maximum	50	65	71	80	70	75	63	70	83	82	70	73	73	69	59	42	41	59	55	57	51	54	58	57	58	53	56	55	69	70	.....	62.9
	Minimum	5	29	28	37	43	35	32	29	46	56	53	42	53	42	41	32	37	34	33	37	36	32	29	27	34	38	45	47	50	56	.....	37.9
Belmond	Maximum	49	61	65	78	67	73	61	66	79	90	70	89	74	63	56	41	62	60	46	49	49	53	58	55	59	63	58	58	78	67	.....	63.2
	Minimum	14	27	30	36	41	35	33	23	43	57	47	44	47	41	38	36	37	36	26	38	38	24	23	22	23	30	45	44	50	55	.....	36.1
Charles City	Maximum	46	57	63	74	65	69	56	64	75	90	65	73	72	62	48	40	66	59	48	46	50	50	54	54	57	61	53	57	80	68	.....	60.7
	Minimum	17	27	35	31	45	38	36	28	41	51	52	47	51	44	37	37	37	37	31	38	34	27	27	28	28	32	46	46	51	59	.....	38.0
Decorah	Maximum	45	54	60	70	65	66	60	63	74	90	80	70	71	63	52	40	61	57	55	49	50	49	52	52	57	61	55	58	78	70	.....	60.9
	Minimum	18	23	33	19	45	37	34	28	39	55	46	46	48	40	34	31	35	36	29	39	33	24	19	22	23	24	42	44	50	56	.....	35.2
Dubuque	Maximum	40	56	61	69	67	66	55	60	75	92	81	72	67	61	43	41	70	58	56	43	56	48	54	52	54	60	51	57	78	71	.....	60.5
	Minimum	26	28	40	35	49	44	40	34	40	56	55	52	52	42	39	38	39	41	36	41	37	30	31	31	33	35	45	46	50	57	.....	40.7
Forest City	Maximum	50	61	65	78	75	72	68	66	79	89	75	68	74	69	59	41	56	60	50	48	48	55	54	55	57	62	59	57	76	66	.....	63.1
	Minimum	12	25	32	35	39	34	32	32	41	55	52	44	52	39	35	33	34	32	27	35	35	22	25	26	30	33	43	42	49	55	.....	36.0
Independence	Maximum	42	56	60	71	69	67	67	61	75	89	88	75	74	67	59	42	68	58	57	43	53	50	55	52	55	60	60	56	78	67	.....	62.5
	Minimum	20	25	35	32	44	40	36	30	38	50	51	48	56	42	37	37	38	38	30	40	37	27	29	28	30	32	43	44	50	56	.....	38.1
Inwood	Maximum	54	70	73	82	67	78	62	68	86	79	68	65	76	62	54	41	39	61	46	54	51	43	60	58	60	51	55	54	65	70	.....	61.7
	Minimum	15	29	24	42	40	29	25	29	48	50	50	39	51	41	41	35	33	32	33	37	33	29	27	26	29	39	41	41	49	54	.....	36.4
Lake Park	Maximum	52	65	70	82	65	74	57	70	84	77	67	71	74	63	56	39	40	57	41	54	46	56	57	57	59	54	59	54	65	69	.....	61.1
	Minimum	16	32	27	37	40	32	30	29	42	50	41	46	49	34	38	35	34	33	29	35	29	27	25	23	27	34	35	44	49	55	.....	35.1
Mason City	Maximum	42	59	63	75	65	69	60	63	77	90	69	71	75	64	55	40	65	58	47	49	49	51	55	53	57	61	54	56	77	67	.....	61.2
	Minimum	14	29	30	30	40	36	34	22	38	50	48	44	52	40	35	35	36	35	26	37	37	23	23	23	23	27	43	44	50	55	.....	35.3
New Hampton	Maximum	45	57	64	75	66	70	59	63	75	91	79	75	74	69	57	43	68	61	56	47	52	51	56	55	58	61	58	59	80	76	.....	63.3
	Minimum	15	25	30	32	42	35	32	25	38	49	50	48	52	41	35	35	36	36	27	39	33	22	23	26	30	30	42	43	49	56	.....	35.9
Northwood	Maximum	48	51	63	76	63	68	58	65	78	89	65	69	75	64	55	45	60	58	48	48	47	50	55	54	59	62	63	57	77	66	.....	61.2
	Minimum	16	28	31	48	41	36	33	28	38	52	49	46	51	40	35	35	36	35	28	38	37	23	26	26	29	31	31	45	50	56	.....	36.6
Pocahontas	Maximum	50	64	69	80	71	75	64	70	83	90	71	78	78	78	60	42	52	60	48	50	48	55	59	56	59	64	58	57	74	75	.....	64.6
	Minimum	16	26	31	35	45	34	29	26	47	42	51	42	41	40	40	36	38	35	29	38	35	30	28	27	28	33	47	45	50	56	.....	36.7
Postville	Maximum	41	53	57	70	67	65	57	60	73	88	61	70	65	59	45	38	62	67	52	45	51	50	52	50	58	49	49	58	76	65	.....	58.4
	Minimum	15	24	31	31	31	35	34	25	40	55	47	46	49	39	35	35	35	34	30	35	35	25	25	24	29	29	42	43	49	55	.....	35.5
Rock Rapids	Maximum	53	68	72	82	70	76	62	70	85	77	71	72	75	67	61	45	41	58	49	56	53	56	60	57	60	47	57	55	57	69	.....	62.7
	Minimum	15	28	27	35	41	32	28	25	46	45	50	40	50	40	40	35	35	33	30	36	37	28	27	24	29	33	44	45	49	55	.....	36.1
Central Division																																	
Ames	Maximum	50	61	69	78	73	74	73	67	79	90	87	79	77	67	61	45	64	62	59	47	51	53	59	56	57	64	64	58	79	71	.....	65.8
	Minimum	22	26	35	34	48	38	36	28	40	50	50	46	57	48	41	38	40	38	32	41	40	33	28	29	29	37	47	46	51	57	.....	39.5
Belle Plaine	Maximum	48	62	67	75	72	73	62	67	78	93	91	82	72	63	57	46	71	64	56	45	58	53	60	56	59	57	56	58	82	74	.....	65.2
	Minimum	22	27	35	30	41	39	36	26	43	51	60	47	56	46	41	37	41	41	34	41	35	30	27	26	28	35	44	45	51	59	.....	39.1
Carroll	Maximum	51	63	70	80	70	75	73	70	81	89	82	78	75	65	57	44	54	62	56	52	51	52	59	57	57	59	58	55	70	71	.....	64.6
	Minimum	18	30	36	45	42	37	32	30	47	58	51	44	54	41	40	36	39	35	34	39	37	32	30	30	35	37	44	45	50	56	.....	39.5
Cedar Rapids	Maximum	48	62	69	74	72	72	61	66	78	93	89	80	72	64	56	41	72	62	57	45	58	54	60	58	61	65	55	58	82	73	.....	65.3
	Minimum	25	21	32	26	42	39	38	27	40	52	61	51	58	46	40	38	40	40	31	42	37	31	26	29	26	31	44	45	52	59	.....	39.0
Davenport	Maximum	48	57	65	69	70	69	59	62	74	91	91	82	74	62	47	49	74	60	50	47	60	51	56	54	59	63	53	56	81	74	.....	63.9
	Minimum	31	31	39	41	47	43	39	35	44	56	58	57	58	45	39	38	45	41	36	43	38	35	33	33	37	37	45	46	50	61	.....	42.7
Des Moines	Maximum	49	61	69	76	69	74	61	67	79	92	87	82	70	61	54	48	65	62	49	47	51	52	59	56	59	64	56	59	80	76	.....	64.6
	Minimum	28	29	41	38	53	44	38	32	43	54	58	52	58	50	42	39	40	39	38	44	40	34	33	32	35	39	48	47	52	59	.....	42.6
Ft. Dodge	Maximum	50	60	68	80	69	74	60	68	81	90	74	78	75	68	60	43	63	61	51	51	49	53	59	57	59	64	56	57	76	68	.....	64.1
	Minimum	17	28	34	41	41	35	31	27	46	60	50	44	56	41	40	37	38	37	30	40	34	31	27	26	27	36	48	45	50	57	.....	38.5
Grinnell	Maximum	48	56	64	75	61	70	70	65	76	91	90	84	71	65	59	44	68	61	58	48	54	49	58	56	58	64	61	59	82	75	.....	64.8
	Minimum	24	28	33	37	36	36	32	32	42	53	60	46	56	46	42	33	40	38	30	41	34	31	27	28	30	35	45	44	49	55	.....	38.8
Guthrie Center	Maximum	56	65	70	80	75	75	76	70	82	92	87	82	85	70	58	45	58	62	58	52	52	51	60	58	57	60	59	57	75	74	.....	66.7
	Minimum	22	25	34	32	42	34	32	32	47	62	60	46	53	43	42	38	41	38	36	41	37	28	27	27	30	40	46	42	51	57	.....	39.5
Iowa City	Maximum	46	59	64	71	71	69	63	64	76	93	90	81	66	63	56	14	74	60	57	47	60	53	58	54	59	64	58	57	81	74	.....	64.4
	Minimum	28	27	33	31	43	41	39	28	41	51	66	51	66	46	41	38	42	40	31	42	39	33	28	29	29	35	46	46	51	60	.....	40.4
Iowa Falls	Maximum	47	60	65	77	66	72	70	66	78	91	74	79	74	67	58	42	68	61	48	45	50	52	59	56	57	63	57	57	84	74	.....	63.9
	Minimum	15	27	34	33	42	35	34	25	41	53	48	46	52	42	38	36	38	37	28	39	39	29	26	25	26	34	45	44	51	56	.....	37.3
Little Sioux	Maximum	53	68	76	82	73	79	69	73	84	91	76	84	77	74	58	51	52	64	55	55	53	51	61	62	54	52	59	58	71	76	.....	66.4
	Minimum	21	35	32	48	39	34	34	33	52	54	43	56	49	45	38	37	37	36	40	41	38	32	30	36	42	42	45	48	52	58	.....	41.5
Marshalltown	Maximum	46	58	62	76	66	70	67	63	78	91	86	83	75	65	60	41	68	60	53	44	53	54	60	54	56	52	58	58	82	72	.....	64.1
	Minimum	22	29	36	37	47	39	36	31	44	58	59	47	58	46	40	37	39	38	32	40	38	31	29	29	30	36	45	44	50	57	.....	40.1
Olin	Maximum	46	57	64	71	72	69	61	61	75	93	91	78	66	65	54	42	74	60	60	44	60	52	58	55	59	61	58	58	79	70	.....	63.9
	Minimum	26	20	30	25	35	35	36	23	33	47	54	56	56	54	40	38	40	40	31	41	40	30	25	25	25	28	44	45	50	57	.....	37.6
Sioux City	Maximum	53	70	74	82	68	78	61	71	84	84	67	77	75	69	58	44	43	61	45	53	50	50	59	59	55	50	55	56	68	74	.....	63.1
	Minimum	23	34	37	48	47	43	35	39	50	63	51	43	57	47	41	38	33	35	38	40	39	36	35	32	44	44	46	49	51	59	.....	42.5
Southern Division																																	
Albia	Maximum	49	60	68	73	71	71	63	66	78	91	89	87	72	65	63	48	68	63	57	50	60	55	61	58	62	66	58	59	80	77	.....	66.3
	Minimum	26	29	37	41	43	40	35	32	42	59	65	49	55	42	42	38	43	38	34	42	37	30	30	30	31	37	47	45	50	57	.....	40.9
Atlantic	Maximum	53	64	74	80	72	78	69	73	82	94	88	85	74	70	59	49	57	65	53	51	57	57	65	62	55	53	59	60	76	76	.....	67.0
	Minimum	23	28	28	34	43	35	32	23	46	57	61	46	55	43	44	38	40	36	38	42	38	28	30	26	35	42	44	47	50	58	.....	39.7
Burlington	Maximum	51	61	65	71	72	71	65	67	77	93	91	89	78	65	60	58	76	61	62	58	62	53	58	56	60	67	58	61	82	75	.....	67.4
	Minimum	31	30	36	39	44	45	40	37	45	53	63	59	56	50	47	41	51	42	38	47	42	36	34	34	36	37	49	47	50	60	.....	44.0
Columbus Jct.	Maximum	49	60	64	71	71	70	66	66	76	93	92	87	74	65	59	47	74	61	58	51	60	53	58	54	58	65	58	58	81	73	.....	65.7
	Minimum	29	24	34	51	44	40	40	30	41	54	62	51	53	47	41	39	44	40	33	43	41	33	29	29	31	33	47	46	48	58	.....	40.6
Corning	Maximum	54	61	74	79	79	80	72	81	79	81	92	91	86	75	80	62	59	61	62	59	66	56	64	61	55	57	56	60	75	75	.....	69.8
	Minimum	22	29	29	40	35	35	28	23	26	44	62	66	46	52	47	39	42	37	38	43	35	32	32	28	35	36	45	47	49	58	.....	39.3
Corydon	Maximum	48	60	67	73	69	71	66	69	77	90	87	87	70	63	69	49	62	63	56	54	60	64	61	57	61	63	56	59	83	75	.....	66.3
	Minimum	26	27	39	36	44	41	36	31	41	51	60	50	55	48	43	39	45	39	36	43	39	31	32	31	32	39	48	47	52	59	.....	41.3
Creston	Maximum	49	60	69	77	69	74	65	67	79	91	87	83	71	68	58	47	60	64	57	51	55	52	59	56	54	52	54	57	74	74	.....	64.4
	Minimum	24	26	36	38	45	36	33	31	42	58	61	47	56	47	43	38	41	37	39	43	37	31	34	33	39	44	45	46	51	58	.....	41.3
Fairfield	Maximum	48	59	66	71	71	70	62	65	76	92	91	88	72	63	59	49	72	61	60	56	60	52	59	56	60	65	60	61	82	73	.....	66.0
	Minimum	28	26	36	28	43	41	36	30	43	54	55	52	51	51	43	39	43	40	33	43	37	30	26	27	28	34	48	46	49	58	.....	39.9
Keokuk	Maximum	50	55	66	68	72	71	61	64	75	92	90	88	79	66	72	68	77	63	63	65	66	53	59	56	59	65	55	64	81	76	.....	68.0
	Minimum	32	31	35	39	48	47	41	40	46	59	65	63	59	55	46	43	47	43	40	44	44	38	39	37	36	38	48	49	51	61	.....	45.5
Knoxville	Maximum	50	60	67	74	70	72	70	66	79	92	90	85	74	62	60	47	68	63	59	49	57	53	60	57	60	65	58	59	80	75	.....	66.0
	Minimum	27	28	40	36	46	41	38	28	43	56	65	50	56	45	43	38	43	39	33	38	38	30	29	26	29	36	48	46	50	58	.....	40.8
Lamoni	Maximum	52	62	71	76	70	74	66	69	80	91	90	85	73	70	63	51	62	63	57	55	60	54	61	58	56	56	56	60	80	75	.....	66.5
	Minimum	22	28	35	41	44	35	33	33	43	54	64	49	54	47	48	38	42	36	39	43	37	31	33	31	37	43	45	46	50	57	.....	41.3
Sigourney	Maximum	50	60	67	72	72	72	65	65	76	92	91	87	68	64	58	46	68	62	57	50	58	55	60	56	61	65	58	57	81	74	.....	65.6
	Minimum	28	27	35	33	42	40	36	28	43	53	66	49	55	47	41	38	42	40	33	42	37	32	30	29	29	35	48	46	49	58	.....	40.4
Thurman	Maximum	52	66	74	80	75	79	78	73	83	95	86	86	76	73	70	54	55	67	66	63	60	56	61	64	59	51	55	60	73	76	.....	68.9
	Minimum	25	26	31	39	50	35	41	28	50	57	64	50	56	50	53	42	43	40	43	44	35	34	33	36	44	43	47	49	54	59	.....	43.4
Winterset	Maximum	52	62	70	78	70	76	65	70	80	90	88	85	79	65	60	46	62	64	60	50	55	54	63	59	58	62	56	58	77	76	.....	66.3
	Minimum	24	29	35	40	48	37	35	30	41	56	65	45	55	45	45	38	41	36	36	43	40	30	30	29	34	40	45	46	40	58	.....	40.6
Omaha, Neb.	Maximum	52	67	75	81	71	79	61	72	81	93	81	80	74	72	59	50	52	64	62	54	55	54	60	62	51	51	57	59	72	76	.....	66.0
	Minimum	28	36	41	50	50	46	40	43	52	63	59	53	59	53	43	41	39	39	42	43	42	36	40	40	44	44	46	49	54	58	.....	45.8

WIND VELOCITY CONVERSION TABLE

In Miles Per Hour

To convert 4-cup anemometer records into 3-cup anemometer equivalents.

4-cup record	0	1	2	3	4	5	6	7	8	9
	3-cup equivalents									
0			2	3	4	5	6	7	8	9
10	9	10	11	12	13	14	14	15	16	17
20	18	18	19	20	21	22	23	23	24	25
30	26	26	27	28	29	30	30	31	32	33
40	33	34	35	36	36	37	38	39	40	40
50	41	42	43	44	44	45	46	47	47	48
60	49	50	51	51	52	53	54	54	55	56
70	57	57	58	59	60	60	61	62	63	64
80	64	65	66	67	67	68	69	70	71	71
90	72	73	74	74	75	76	77	78	78	79

(Combination of Tables 1 and 2, published in Climatological Data, January 1, 1928, page 7.)

SNOWFALL

The average snowfall for the State was 0.3 inch, or 1.6 inches below normal. The greatest total snowfall for the month at any one station was 3.1 inches at Cedar Falls. There were 15 stations that received only a trace of snow for the month, and 76 stations received none. The greatest snowfall in 24 hours was 3.1 inches at Cedar Falls on the 1st.

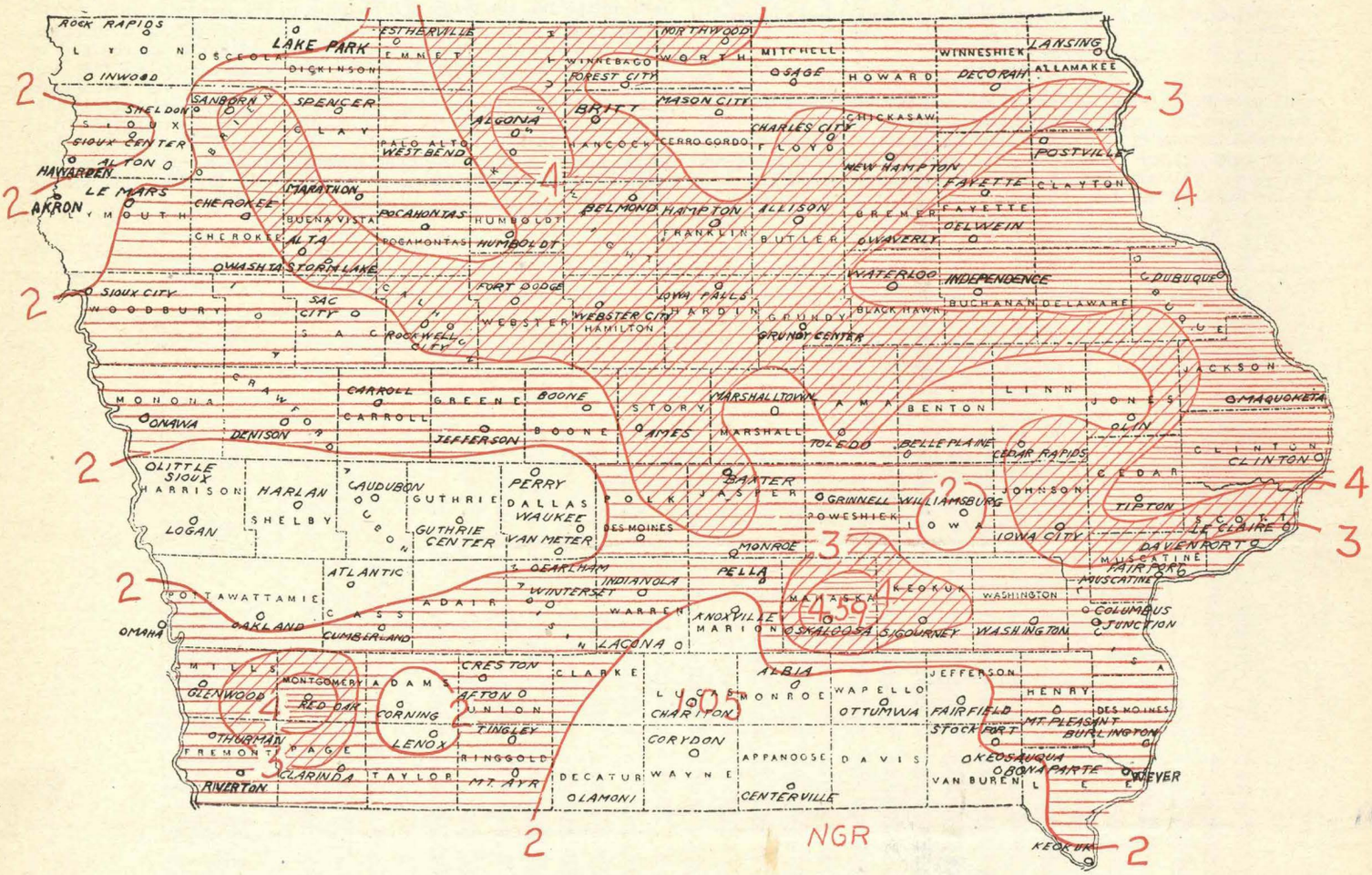
RIVERS

Moderately low stages prevailed on all the interior streams, with little fluctuation. At Des Moines the extreme stages were 1.7 feet and 3.4 feet, and the average stage was 2.2 feet, or 2.4 feet below normal.

The Missouri River stages averaged nearly normal. At Sioux City the extreme stages were 6.3 feet and 9.6 feet, and the average stage was 7.2 feet, or 1.7 feet below normal. At Omaha the extreme stages were 9.1 feet and 12.1 feet, and the average stage was 9.8 feet, or 1.4 feet above normal.

On the Mississippi River stages were exceptionally low. At Dubuque the average stage was 5.1 feet, or considerably lower than the average for March, and nearly four feet lower than the past average for April. Starting at the maximum for the month, or 6.1 feet on the 1st, the stage fell steadily to the lowest reading of the month, 4.4 feet on the 14th and 15th. It then rose until the 21st, after which date it remained practically stationary to the end of the month. At Davenport the extreme stages were 3.7 feet and 5.5 feet, and the average stage was 4.6 feet, or 3.2 feet below normal. At Keokuk the stages fell rather steadily until the middle of the month when heavy rains occurred in the drainage district. There was then a rising tendency until the 27th, when the flow again began to decrease. The average stage for the month was slightly over 3 feet, which is exceptionally low for this season of the year.

TOTAL PRECIPITATION, APRIL, 1930



SCALE OF SHADES IN INCHES

Less than 2.0	2.0 to 3.0	3.0 to 4.0	More than 4.0

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

IOWA SECTION
In co-operation with
IOWA WEATHER AND CROP BUREAU
CHARLES D. REED, Senior Meteorologist

VOL. XLI DES MOINES, IOWA, MAY, 1930 No. 5

GENERAL SUMMARY

The chief characteristics of May, 1930, were the unusually late frosts and the record number of tornadoes.

Temperatures averaged nearly normal, which rarely occurs. The minimum temperatures at all stations occurred after the 17th. The maximum temperatures also occurred mostly toward the close of the month. Stations in the lower Des Moines and Iowa River valleys recorded the highest monthly mean temperatures.

Precipitation averaged below normal. With only a few exceptions, the entire State was below normal, except the extreme northwestern portion, the eastern half of the southwest district, and the upper Cedar River Valley. There were no well defined precipitation periods during the month, but the heaviest daily falls occurred during the period, 6th to 12th.

May was not entirely favorable for agriculture. Heavy, general rains in the week ending the 12 h delayed corn planting and the cool, cloudy week that followed caused slow germination and growth and lengthened the exposure to attacks of grubs, wire-worms, cutworms, squirrels, mice, rotting, etc., which necessitated much replanting. However, the warm dry April preceding had advanced the preparation of an excellent seed bed ahead of the normal, and planting went forward rapidly whenever there were a few favorable hours. On the 15th, 57 per cent of the planting had been done, or 6 per cent more than the normal, and on June 1, 97 per cent, or 3 per cent above normal. Reckoned in days, planting was two days earlier than usual on the 15th, and three days earlier on June 1.

In southern Iowa considerable corn had been cultivated twice and in some localities the third plowing had been started. Winter wheat was heading in the southern counties, shooting in the central counties, and looked well generally. Oats were beginning to head in sections as far north as Marshall County, and mostly doing well but needed rain. Hay crops were in serious need of rain by the end of the month. Alfalfa had made good growth and cutting was started in many localities. Strawberries and gardens were in good condition considering they had withstood the cool weather and being frequently nipped by frost. Young animals and chicks did not do so good during the first half of the month, but greatly improved during the last half. Some serious but scattered outbreaks of hog cholera existed and steps to immunize pigs by vaccination had been taken.

Frosts were frequent during the last half of May. The last killing frost of the season occurred on the 17th and 18th at nearly all the stations. Heavy frost occurred on the 17th, 24th and 30th, and light frosts were frequent even to the end of the month. While the frosts occurred unusually late, they were not unprecedented.

For the most part, May was a very stormy month. An unusual large number of severe storms occurred and several were very destructive. During May there were 19 tornadoes, having a total path of 120 miles. This is the greatest number of tornadoes recorded in any month since careful records have been compiled. The tornadoes causing the greatest damage are treated in detail elsewhere in this issue.

N. G. R.

COMPARATIVE DATA FOR THE STATE—MAY

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1873	56.5	— 3.6	86	38	5.99	+ 1.41	9.10	3.42					
1874	64.1	+ 4.0	94	41	1.88	— 2.70	4.49	0.50					
1875	60.5	+ 0.4	91	26	2.94	— 1.64	6.70	1.63					
1876	61.1	+ 1.0	90	32	2.84	— 1.74	7.38	1.09					
1877	60.3	+ 0.2	92	29	4.30	— 0.28	11.00	1.60					
1878	55.7	— 4.4	88	32	5.01	+ 0.43	11.95	2.14					
1879	62.9	+ 2.8	93	26	4.38	— 0.20	8.70	1.40					
1880	66.3	+ 6.2	96	37	4.06	— 0.52	8.45	1.47					
1881	66.7	+ 6.6	95	35	3.73	— 0.85	9.30	0.40					
1882	54.3	— 5.8	83	24	5.42	+ 0.84	12.55	1.50					
1883	54.6	— 5.5	90	31	6.25	+ 1.67	11.68	1.30					
1884	59.6	— 0.5	88	33	3.15	— 1.43	6.36	1.00					
1885	57.4	— 2.7	86	27	3.44	— 1.14	9.33	1.05					
1886	62.5	+ 2.4	96	30	3.38	— 1.20	7.63	1.30					
1887	64.6	+ 4.5	96	34	1.55	— 3.03	5.84	0					
1888	53.8	— 6.3	88	22	6.58	+ 2.00	10.85	2.00					
1889	59.2	— 0.9	92	22	4.06	— 0.52	8.54	1.40					
1890	56.5	— 3.6	96	26	3.64	— 0.94	6.44	1.60					
1891	58.3	— 1.8	94	21	3.18	— 1.40	7.10	1.46		8	11	9	8
1892	54.0	— 6.1	88	29	8.77	+ 4.19	12.64	4.87	T.	16	5	9	17
1893	56.6	— 3.5	96	26	3.45	— 1.13	5.82	1.65	0	9	13	9	9
1894	61.1	+ 1.0	96	22	1.87	— 2.71	4.77	0.33	0	6	17	10	4
1895	61.7	+ 1.6	104	24	3.19	— 1.39	5.79	0.84	0	9	11	12	8
1896	65.5	+ 5.4	100	34	6.69	+ 2.11	11.79	3.40	0	12	11	12	8
1897	58.5	— 1.6	96	20	1.92	— 2.66	3.59	0.21	0	5	16	10	5
1898	59.6	— 0.5	92	26	4.67	+ 0.09	7.82	2.22	0	12	9	10	12
1899	60.2	+ 0.1	90	27	6.23	+ 1.65	11.47	3.09	0	13	9	12	10
1900	63.2	+ 3.1	98	22	3.31	— 1.27	6.98	0.96	0	8	14	10	7
1901	60.7	+ 0.6	95	28	2.35	— 2.23	4.57	0.72	0	7	16	9	6
1902	63.8	+ 3.7	97	25	5.39	+ 0.81	18.04	0.87	0	13	10	12	9
1903	61.6	+ 1.5	91	24	8.55	+ 3.97	15.45	2.88	0	16	9	12	10
1904	59.6	— 0.5	93	27	3.78	— 0.80	8.15	1.50	0	8	13	10	8
1905	58.3	— 1.8	88	28	5.95	+ 1.37	10.83	2.57	0	14	12	11	8
1906	60.8	+ 0.7	95	24	3.51	— 1.04	10.72	0.89	0	11	13	10	8
1907	53.5	— 6.6	96	14	3.48	— 1.10	7.68	0.71	1.0	10	11	10	10
1908	59.4	— 0.7	93	13	8.34	+ 3.76	14.33	1.33	0	15	9	11	11
1909	57.9	— 2.2	97	18	4.34	— 0.24	7.85	1.86	0.1	9	12	12	7
1910	55.4	— 4.7	89	18	3.41	— 1.17	6.91	1.29	T.	10	15	7	9
1911	64.9	+ 4.8	98	23	3.76	— 0.82	8.73	0.42	.0.7	9	16	9	6
1912	62.7	+ 2.6	97	29	3.33	— 1.25	6.41	0.72	0	10	14	11	6
1913	59.4	— 0.7	102	30	6.24	+ 1.66	10.25	3.14	0	13	11	8	12
1914	62.2	+ 2.1	98	25	3.31	— 1.27	6.90	0.30	T.	10	14	11	6
1915	56.1	— 4.0	99	25	7.34	+ 2.76	13.21	3.82	T.	14	9	9	13
1916	59.9	— 0.2	94	27	4.93	+ 0.35	10.44	2.14	T.	12	13	10	8
1917	55.1	— 5.0	95	18	3.87	— 0.71	7.33	1.69	0.6	10	15	8	8
1918	64.9	+ 4.8	98	25	6.87	+ 2.29	11.98	2.72	T.	13	13	11	7
1919	58.2	— 1.9	93	30	3.11	— 1.47	7.14	0.73	0	9	13	11	7
1920	59.4	— 0.7	89	29	3.26	— 1.32	5.73	0.62	0	8	14	9	8
1921	63.3	+ 3.2	99	25	4.23	— 0.35	9.41	1.32	0	10	14	10	7
1922	63.4	+ 3.3	91	34	3.53	— 1.05	8.36	0.47	0	12	13	10	8
1923	59.6	— 0.5	90	20	2.84	— 1.74	6.55	1.07	T.	10	14	10	7
1924	54.1	— 6.0	94	26	1.71	— 2.87	3.28	0.78	0.1	9	13	9	9
1925	57.8	— 2.3	102	20	1.16	— 3.42	2.62	0.30	T.	6	19	8	4
1926	64.5	+ 4.4	97	25	2.76	— 1.82	6.83	0.52	0	9	15	11	5
1927	58.4	— 1.7	91	30	4.69	+ 0.11	9.07	0.86	T.	11	10	10	11
1928	62.6	+ 2.5	93	26	2.47	— 2.11	6.19	0.61	0	8	17	8	6
1929	57.7	— 2.4	91	24	2.47	— 2.11	5.79	0.82	T.	8	11	12	8
1930	60.2	+ 0.1	91	26	3.72	— 0.86	7.20	1.61	T.	11	14	7	10

T. indicates an amount too small to measure, or less than .005 inch rainfall and less than .05 inch snowfall.

Climatological Data for May, 1930

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit: Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Precipitation, in inches: Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Number of Days: Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy	Prevailing direction of wind	OBSERVERS
Northwest District																				
Akron	Plymouth	1,153	4								5.99	+ 2.24	2.10	0	10	13	9	9	nw.	Orlan C. Moore
Alta	Buena Vista	1,513	39	58.3	— 0.3	87	20†	31	17	41	3.76	— 1.15	1.00	0	13	15	5	11	s.	D. E. Hadden
Alton	Sioux	1,305	25	58.6	0.0	86	21	30	17	45	4.35	— 0.47	1.62	0	11	12	7	12	s.	W. S. Slagle
Cherokee	Cherokee	1,196	10	58.0	0.0	85	21	31	17	40	4.96	+ 0.29	1.61	0	13	14	6	11	s.	J. E. Wirth
Estherville	Emmet	1,298	35	58.0	+ 1.0	85	21	28	17	44	3.88	— 0.59	1.05	0	12	15	10	6	nw.	A. O. Peterson
Hawarden	Sioux	1,181	4								6.14	+ 2.39	2.34	0	10	11	4	16	se.	Earl V. Slife
Inwood (near)	Lyon	1,474	26	57.6	— 0.1	86	21	28	17	40	4.54	+ 0.34	1.22	0	10	17	4	10	s.	A. C. Hanson
Lake Park (near)	Dickinson	1,489	17	57.0	— 0.5	85	21	28	17	40	4.65	+ 0.62	1.40	0	8	15	3	13	sw.	P. M. Lawrence
Le Mars	Plymouth	1,224	34	58.6	— 0.4	86	21	31	17	45	6.05	+ 1.52	2.41	0	11	16	3	12	s.	Henry Newell
Marathon	Buena Vista	1,390	4								5.23		2.24	0	12	16	1	14	sw.	E. G. Smith
Pocahontas	Pocahontas	1,248	26	58.4	— 0.4	89	21	31	17	44	3.43	— 1.00	1.01	0	8	12	6	13	se.	F. E. Hronek
Rock Rapids	Lyon	1,349	31	58.2	+ 0.2	85	21	28	17	44	5.83	+ 2.28	3.02	0	7	16	5	10	s.	Nellie F. Medberry
Sanborn	O,Brien	1,553	16	56.6	— 1.5	90	3	26	17	40	4.82	+ 0.03	2.43	0	11	13	6	12	sw.	J. W. Dow
Sheldon	O,Brien	1,418	19	57.7	— 0.5	84	21	28	17	44	5.27	+ 0.52	2.86	0	9	14	6	11	s.	Ross E. Forward
Sioux Center	Sioux	1,461	31	57.4	— 0.8	84	21	29	17	36	5.23	+ 0.52	2.50	0	6	14	6	11	s.	F. C. Aue
Spencer	Clay	1,319	16	59.0	+ 0.5	88	21	30	17	45	4.31	+ 0.11	1.60	0	13	13	6	12	sw.	E. W. Little
Storm Lake	Buena Vista	1,442	41	57.8	— 1.3	84	20†	31	17	40	3.87	— 0.62	1.65	0	8	12	8	11	se.	Russel M. Edwards
Washta	Cherokee	1,157	32	58.6	+ 0.3	88	21	32	24†	48	3.18	— 1.44	1.40	0	9	16	3	12	s.	H. L. Felter
West Bend	Palo Alto	1,197	37	59.2	— 0.1	88	21	29	17	43	1.95	— 2.24	0.62	0	9	16	6	9	sw.	Jos. Dorweiler
Means and extremes				58.1	— 0.2	90	3	26	17	48	4.60	+ 0.22	3.02	0	10	14	6	11	s.	
North Central District																				
Algona	Kossuth	1,207	57																	Leon M. Merritt
Allison (near)	Butler	1,000	16	59.0	+ 0.3	87	21	30	17	38	3.35	— 1.13	1.06	0	13	15	5	11	s.	George H. Bell
Belmond	Wright	1,181	20	58.4	— 0.2	87	21	29	17	39	3.73	— 1.48	1.07	0	10	11	7	13	nw.	H. F. Luick
Britt	Hancock	1,236	43	58.8	+ 0.8	86	21	36	30	40	4.07	— 0.83	1.19	0	11	19	4	8	sw.	E. P. Healy
Charles City	Floyd	1,015	39	58.5	+ 0.7	87	21	32	17	33	5.63	+ 1.30	1.86	0	12	12	7	12	se.	U. S. Weather Bureau
Forest City	Winnebago	1,226	36	57.7	— 0.4	85	21	27	17	40	4.03	— 0.61	0.90	0	13	15	5	11	se.	Dr. M. B. Neil
Hampton	Franklin	1,142	5	58.4		87	21	29	17	43	2.85	— 2.15	0.75	0	11	13	7	11	nw.	Howard J. Haydon
Humboldt	Humboldt	1,095	42	59.2	— 0.8	88	21	30	17	41	3.47	— 0.85	1.24	0	8	14	6	11	s.	H. C. Snitkey
Mason City	Cerro Gordo	1,148	33	57.4	— 0.6	86	21	28	17	39	2.49	— 2.20	0.88	0	11	13	9	9	nw.	American Beet Sugar Co.
Northwood	Worth	1,222	34	58.0	+ 0.7	84	21	29	17	38	3.16	— 1.93	0.60	0	11	13	3	15	se.	Charles Dwelle
Osage	Mitchell	1,163	36	58.2	+ 0.4	87	21	29	17	36	3.74	— 0.94	1.16	0	12	12	9	10	nw.	Dr. C. E. Juhl
Means and extremes				58.4	0.0	88	21	27	17	43	3.65	— 1.04	1.86	0	11	14	6	11	nw.	
Northeast District																				
Cedar Falls	Black Hawk	875									5.76		2.05	0	14	11	9	11	nw.	E. J. Cable
Decorah	Winneshiek	872	37	57.5	— 0.9	85	21	28	17	38	4.09	— 0.57	1.71	0	11	11	7	13	se.	M. D. Whitney
Dubuque	Dubuque	700	57	60.3	0.0	88	21	37	17	35	4.33	+ 0.11	1.75	0	12	11	11	9	se.	U. S. Weather Bureau
Fayette	Fayette	1,003	42	59.4	+ 1.4	86	21	31	17	41	3.08	— 1.78	0.66	0	12	14	10	7	nw.	R. Z. Latimer
Independence	Buchanan	956	66	59.2	— 0.4	85	21	34	17	36	3.42	— 0.85	0.84	0	13	13	8	10	sw.	Dr. Geo. Boody
Lansing	Allamakee	632	23								3.94	— 1.06	1.20	0	13					Mrs. Mary Spinner
New Hampton	Chickasaw	1,169	33	58.6	+ 0.3	86	21	29	17	37	4.54	— 0.29	1.30	0	12	9	13	9	s.	D. W. Dawson
Oelwein	Fayette	1,036	7	59.0	+ 0.3	86	21	32	17	34	4.90	+ 0.18	0.85	0	13	11	10	10	s.	John T. Ridler
Postville (near)	Clayton	1,192	31	56.7	— 0.7	83	21	31	17	34	3.34	— 1.72	1.27	0	10	12	15	4	sw.	F. L. Williams
Waterloo	Black Hawk	854	47	60.3	+ 0.1	88	21	33	17	37	4.55	+ 0.46	1.11	0	12	15	5	11	se.	R. B. Slippy
Waverly	Bremer	936	34	59.5	+ 0.7	86	21	31	17	35	5.04	+ 0.60	1.56	0	16	18	8	5	se.	D. H. Murphy
Means and extremes				58.9	0.0	88	21	28	17	41	4.27	— 0.31	2.05	0	13	12	10	9	se.	
West Central District																				
Audubon (near)	Audubon	1,297	35	59.3	0.0	87	21	34	17	37	2.87	— 1.51	0.77	0	11	15	7	9	sw.	George Kibby
Carroll	Carroll	1,265	40	59.2	— 0.7	87	21	32	17	39	3.61	— 0.95	0.97	0	11	18	1	12	se.	Mrs. Jos. J. Wolfe
Denison	Crawford	1,200	36	59.8	— 0.3	91	27	33	17†	46	2.43	— 1.85	1.12	0	10	15	6	10	sw.	J. McMinimee
Guthrie Center	Guthrie	987	35	60.6	+ 1.1	87	5†	35	17†	42	3.43	— 1.27	0.98	0	6	10	13	8	n.	Floyd H. Bainter
Harlan	Shelby	1,192	31	58.7	— 1.4	87	21	35	17	39	3.62	— 0.94	1.36	0	9	10	9	12	nw.	Walter Bell
Jefferson	Greene	1,052	31	59.6	— 0.2	87	21	33	17	38	3.69	— 0.86	1.79	0	7	16	2	13	sw.	W. I. Lyon
Little Sioux	Harrison	1,040	25	61.2	+ 0.1	89	21	36	17	40	3.77	— 0.67	1.45	0	11	9	13	9	nw.	H. W. Kerr
Logan	Harrison	1,120	63	60.4	— 0.9	88	21	35	17	40	2.55	— 1.69	1.02	0	11	10	16	5	sw.	Amy Ann Stern
Onawa	Monona	1,051	29	59.5	— 1.4	84	27	35	17	40	3.20	— 1.63	0.90	0	8	12	5	14	nw.	Mrs. H. E. Colby
Rockwell City	Calhoun	1,232	34	58.5	— 0.3	87	21	31	17	40	4.11	— 0.82	1.50	0	7	17	2	12	nw.	A. W. McIsaac
Sac City	Sac	1,209	54	58.7	0.0	88	21	32	17	41	3.60	— 0.56	1.92	0	8	15	2	14	s.	F. P. Kessler
Sioux City	Woodbury	1,135	41	59.6	— 0.8	88	21	35	17	39	5.88	+ 1.83	2.22	0	10	8	10	13	nw.	U. S. Weather Bureau
Means and extremes				59.7	— 0.3	91	27	31	17	46	3.56	— 0.91	2.22	0	9	13	7	11	nw.	
Central District																				
Ames	Story	926	53	60.8	0.0	87	21†	34	17	39	3.60	— 0.91	2.10	0	8	15	4	12	s.	Iowa State College
Baxter	Jasper	998	30	60.9	+ 0.4	88	21†	33	17	38	4.18	— 1.18	2.02	0	9	16	4	11	nw.	F. A. Kanne
Boone (near)	Boone	894	25	59.8	— 0.1	88	21	32	30	44	2.72	— 2.31	0.83	0	14	14	6	11	s.	C. F. Henning
Des Moines	Polk	861	52	61.1	— 0.2	87	21	38	17	33	3.36	— 1.20	1.17	0	9	9	6	16	s.	U. S. Weather Bureau
Fort Dodge	Webster	1,114	30	59.6	+ 0.4	87	21	31	17	39	4.20	— 0.38	0.94	0	13	15	4	12	sw.	Mrs. Emma Sampson
Grinnell	Poweshiek	1,031	36	59.8	— 1.0	87	21	32	17	35	3.82	— 1.15	1.09	0	12	13	8	10	sw.	R. E. Bates
Grundy Center	Grundy	976	39	59.2	— 1.4	87	21	31	17	39	4.60	— 0.34	1.75	0	11	14	6	11	nw.	M. G. Heiberger
Iowa Falls	Hardin	1,127	37	59.6	+ 0.8	90	21	32	17	36	3.88	— 0.73	0.92	0	12	14	3	11	w.	C. H. Gilbert
Marshalltown	Marshall	947	38	60.6	— 0.3	86	27	34	17	34	3.33	— 1.16	1.24	0	12	12	8	11	sw.	C. C. Pigman
Monroe	Jasper	922	18	61.0	— 0.1	87	27	35	30	35	3.12	— 1.83	0.89	T.	13	15	4	12	s.	J. A. Dibel
Perry	Dallas	975	29	60.1	— 0.7	88	21	34	17	40	2.63	— 2.21	0.80	0	12	11	7	13	sw.	Eugene N. Hastie
Toledo	Tama	847	36	60.2	— 0.7	88	21	33	17	37	3.67	— 1.02	0.90	0	12	14	8	9	sw.	H. P. Giger
Van Meter	Dallas	872	11								2.99		1.12	0	7					Calvin K. Smith
Waukee	Dallas	1,032	27	60.2	— 0.5	88	27	35	17	38	3.06	— 1.61	0.81	0	11	17	4	10	sw.	O. D. Ellsworth
Webster City	Hamilton	1,042	25	59.0	— 0.7	88	21	30	17†	43	3.47	— 0.80	0.96	0	9	15	5	11	se.	Frank A. Bonebright
Means and extremes				60.1	— 0.3	90	21	30	17†	44	3.51	— 1.24	2.10	T.	11	14	5	12	se.	

Climatological Data for May, 1930—Continued

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit							Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
East Central District																				
Belle Plaine	Benton	866	40	60.8	+ 0.4	88	21	32	17	38	5.32	+ 0.51	1.85	0	14	12	10	9	sw.	O. C. Burrows
Cedar Rapids	Linn	737	48	61.2	+ 0.5	90	21	32	17	40	5.28	+ 0.58	3.10	0	13	12	0	19	sw.	J. T. Wurster
Clinton	Clinton	595	57	62.4	+ 1.3	88	21	35	17	37	2.25	— 2.35	1.06	0	13	12	9	10	s.	Dr. A. P. Bryant
Davenport	Scott	580	59	62.8	+ 1.5	88	21	39	18	33	2.13	— 1.81	0.83	0	9	9	13	9	sw.	U. S. Weather Bureau
Fairport	Muscatine	567	9	62.8	+ 0.9	87	21†	37	17	36	2.47	— 1.71	0.70	0	13	12	11	8	s.	Bureau of Fisheries
Iowa City	Johnson	733	70	61.8	+ 1.5	87	9†	35	17	35	3.09	— 1.44	1.10	0	13	10	13	8	se.	Prof. J. F. Reilly
Le Claire	Scott	576	30								2.42	— 1.99	1.09	0	11					Margaret T. Disney
Maquoketa (near)	Jackson	692	25	59.8	+ 0.8	86	21	30	17	40	3.57	— 0.93	1.58	0	11	15	3	13	sw.	John Strodthoff
Muscatine	Muscatine	546	69								1.82	— 2.60	0.55	0	11					William Molis
Olin	Jones	760	31	60.1	— 0.2	86	21	32	17	38	3.85	— 0.84	0.80	0	8	15	7	9	sw.	Mrs. L. Stingley
Tipton (near)	Cedar	806	31	62.0	+ 1.2	90	21	32	24	38	2.76	— 2.13	0.78	0	8	8	15	8	s.	John Kroeplen
Williamsburg	Iowa	770	14	61.9	+ 2.1	88	21	33	30	38	3.67	— 0.93	1.78	0	10	17	7	7	se.	Dr. F. C. Schadt
Means and extremes				61.6	+ 1.0	90	21	30	17	40	3.22	— 1.30	3.10	0	11	12	9	10	sw.	
Southwest District																				
Atlantic	Cass	1,110	39	59.6	— 1.1	89	27	33	24†	44	3.26	— 0.97	1.50	0	11	12	9	10	sw.	Roy L. Fancolly
Bedford	Taylor	1,200	2								4.66	+ 0.07	1.30	0	12	16	3	12	nw.	Authur L. Bishop
Clarinda	Page	1,009	40	61.5	— 1.4	90	27	36	30	43	4.92	— 0.03	2.01	0	13	18	10	3	w.	Dr. H. C. Hawley
Corning	Adams	1,150	38	60.4	— 0.1	90	26	35	29†	46	7.20	+ 2.16	3.66	0	8	13	13	5	sw.	C. A. Smith
Cumberland (near)	Cass	1,225	31								3.26	— 0.92	0.88	0	11	15	3	13	sw.	Carl E Pollock
Glenwood	Mills	1,100	32	61.3	0.0	88	21	38	17†	38	3.60	— 1.01	1.64	0	11	16	5	10	se.	George Mogridge
Lenox	Taylor	1,250	35	61.8	— 0.1	91	27	37	17†	39	5.06	+ 0.38	1.32	0	11	17	4	10	s.	J. L. Hurley
Oakland	Pottawattamie	1,139	11	61.6	+ 0.4	87	21	36	30	37	2.25	— 2.06	0.92	0	7	17	0	14	sw.	W. S. Mathews
Red Oak (near)	Montgomery	1,030	5								3.03	— 1.72	0.66	0	9	15	7	9	s.	B. R. Bridge
Riverton (near)	Fremont	920	4								4.16	— 0.64	1.46	0	10	11	8	12	s.	Geo. C. Rader
Thurman	Fremont	960	33	61.8	— 0.9	88	21	38	30	38	3.24	— 1.71	0.77	0	7	16	2	13	s.	H. H. Askew
Omaha, Neb.		1,105	59	61.6	— 0.8	89	21	38	18	36	2.74	— 1.03	0.88	0	10	14	7	10	s.	U. S. Weather Bureau
Means and extremes				61.2	— 0.5	91	27	33	24†	46	3.95	— 0.62	3.66	0	10	15	6	10	s.	
South Central District																				
Afton	Union	1,212	36	61.2	— 0.2	87	27	38	17†	37	4.80	+ 0.03	1.28	0	12	14	7	10	sw.	S. R. Brown
Albia	Monroe	949	32	61.7	+ 0.4	87	27	38	17†	33	3.85	— 1.14	1.22	0	10	13	9	9	nw.	O. E. McBride
Centerville	Appanoose	1,013	25	61.2	— 0.2	83	27†	38	18	33	3.20	— 1.39	1.07	0	12	14	6	11	sw.	Thomas Wood
Chariton (near)	Lucas	1,042	35	61.2	+ 1.1	86	27	37	18†	37	3.19	— 1.33	0.99	0	7	12	13	6	sw.	C. C. Burr
Corydon (near)	Wayne	1,050	37	60.8	— 0.5	84	9†	38	18	33	4.03	— 0.64	1.67	T.	10	14	6	11	sw.	J. C. Davis
Creston	Union	1,291	25	59.9	— 0.8	88	27	37	17†	35	3.92	— 0.62	1.24	0	13	10	10	11	s.	Mrs. N. Spangler
Earlham (near)	Madison	1,126	28	60.4	+ 0.2	85	21†	35	24†	39	3.27	— 1.17	1.13	0	9	16	4	11	sw.	George Phillips
Indianola	Warren	972	39	62.0	+ 0.5	88	27	38	17†	36	3.32	— 1.13	0.76	0	9	15	5	11	s.	Seth F. Shenton
Knoxville	Marion	920	35	61.6	+ 0.1	87	21†	38	17	33	3.46	— 0.79	0.97	0	10	13	12	6	se.	W. J. Casey
Lacona	Warren	824	31								3.30	— 1.53	1.32	0	12	14	11	6		J. B. Alter
Lamoni	Decatur	1,123	23	60.4	— 0.8	86	27	36	18	36	3.66	— 1.29	1.32	0	11	16	6	9	se.	F. S. Parks
Melrose	Monroe	871	1								4.92		1.10	0	10	10	4	17	sw.	J. M. Carr
Mount Ayr	Ringgold	1,220	37	60.2	— 1.1	86	27	37	17†	36	4.21	— 1.26	0.98	0	9	18	6	7	s.	E. O. Gleason
Tingley	Ringgold	1,275	5	60.9	+ 0.5	86	27	37	18	37	5.27	+ 0.30	1.95	0	10	16	5	10	se.	James A. Verploegh
Winterset	Madison	1,118	39	61.2	— 0.4	88	27	36	30	37	4.25	— 0.27	1.05	0	11	18	4	9	sw.	H. S. Ely
Means and extremes				61.0	— 0.1	88	27	35	24†	39	3.91	— 0.78	1.95	T.	10	14	7	10	sw.	
Southeast District																				
Bonaparte (near)	Van Buren	563	39	62.4	+ 1.1	87	27	37	18†	34	2.62	— 2.01	0.76	0	9	18	2	11	sw.	B. R. Vale
Burlington	Des Moines	544	34	64.6	+ 1.7	90	9†	38	18	34	2.39	— 2.14	0.90	0	11	18	5	8	sw.	John W. Donnelly
Columbus Junction	Louisa	595	29	61.6	— 0.6	86	21†	37	17†	35	1.61	— 2.70	0.52	0	10	15	13	3	se.	Miss Musa Todd
Fairfield	Jefferson	780	46	61.6	+ 0.5	87	9†	36	30	39	2.73	— 2.71	0.68	0	12	12	7	12	sw.	R. M. McKenzie
Keokuk	Lee	614	59	63.8	0.0	89	21	38	17	30	2.18	— 1.75	0.51	0	13	15	7	9	s.	U. S. Weather Bureau
Keokuk No. 2	Lee	651	1	64.8		90	21	39	18	34	2.98		0.55	0	12					J. N. D. Dickinson
Keosauqua	Van Buren	639	38	62.2	+ 0.9	87	27	35	19	37	3.22	— 1.66	1.10	0	8	13	12	6	se.	Dr. J. W. Rinabarger
Mt. Pleasant	Henry	730	49	63.3	+ 0.8	89	21	38	18†	33	1.65	— 2.97	0.67	0	7	15	10	6	sw.	J. H. Jericho
Oskaloosa	Mahaska	835	54	61.3	+ 0.1	88	27	36	17	34	4.08	— 0.17	1.54	T.	14	13	9	9	se.	Roy R. Robinson
Ottumwa	Wapello	649	35	63.4	+ 0.4	89	27	39	18	36	3.13	— 1.52	0.99	0	10	16	4	11	sw.	C. L. Mikesh
Sigourney (near)	Keokuk	790	31	61.6	+ 0.8	87	27	37	17	33	4.30	+ 0.03	1.56	0	10	14	7	10	sw.	W. E. Utterback
Stockport (near)	Van Buren	747	28	62.4	+ 1.9	87	26†	37	18†	39	2.90	— 1.76	0.66	0	11	16	9	6	s.	C. L. Beswick
Washington	Washington	757	48	63.2	+ 1.7	88	27	37	17	41	2.45	— 1.71	0.80	0	7	13	9	9	nw.	D. D. Sherman
Wever	Lee	552	2	64.0		90	21	39	18†	33	2.78		0.80	0	9	13	8	10	s.	H. G. Liddle
Means and extremes				62.9	+ 1.1	90	9†	35	19	41	2.79	— 1.74	1.56	T.	10	15	8	8	sw.	
State means and extremes				60.2	+ 0.1	91	27	26	17	48	3.72	— 0.86	3.66	T.	11	14	7	10	sw.	

Temperature normals are based on the 46-year period July 3, 1875 to July 2, 1921; shorter records corrected to harmonize. Precipitation normals are based on the 50-year period ended December 31, 1927 at first order stations; upon all records of 10 years or more ending December 31, 1920 for most of the co-operative observing stations; and upon interpolations from normal maps for recently established stations.

Reference letters a, b, c, etc., appearing in the table indicate the number of days missing; for example b represents two days, etc.

†Also other dates.

‡‡Received too late to be included in means and summaries.

T. Precipitation is less than 0.01 inch rain or melted snow.

TEMPERATURE

The mean temperature for the State, derived from the means of 9 districts of nearly equal area, and based on the records of 105 stations, was 60.2° or 0.1° above normal. The greatest excess, 1.1°, was in the southeast district, and the greatest deficiency, 0.5°, in the southwest district. The highest monthly mean was 64.8° at Keokuk No. 2, and the lowest 56.6° at Sanborn. The absolute range for the State was 65°, from 26° at Sanborn on the 17th, to 91° at Denison and Lenox on the 27th. The average number of days with the maximum temperature 90° or above, was zero, ranging from no days at 95 stations to 2 days at Burlington. At no station was there a daily maximum temperature lower than 32°. The average number of days with the minimum temperature 32° or below, was zero, ranging from 3 days at Estherville, to no days at 60 stations. The greatest daily range in temperature at any one station was 48° at Washta on the 24th.

Daily Precipitation for May, 1930

Stations	Drainage Basin	Day of Month																													To-tals
		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	
Northwest District																																	
Akron	Bix Sioux	.12					.28	2.10		1.85	1.09	.22	.02						.17	.02									.12				5.99
Alta	Raccoon	.05	.30		.13		.05	.54	.20	.72	1.00	.32	.31		T.					.07				.04					T.	.03			3.76
Alton	Floyd	.05					1.08	1.62		.68	.61	.16	.03	.01					.08				.01						.02				4.35
Cherokee	Little Sioux	.80			.02		.12	.77	T.	1.61	.53	.90	.03	.01	T.	T.		T.	.10	.01		T.	.05						.01				4.96
Estherville	Des Moines	.06	.65		.03	.02	.30	.45	.10	.27	1.05	.43	.32			T.				.20													3.88
Hawarden	Big Sioux	.03				.03	.34	2.00		1.48	1.57	.50	.10					T.	.08	.01													6.14
Inwood (near)	Big Sioux	.11					.01	1.22	.28	1.11	.96	.54	.19	.01	T.				T.	.08													4.54
Lake Park (near)	Little Sioux	.14					.50	1.20		.72	1.40	.50	.07						.12														4.65
Le Mars	Floyd	.32			.01		1.43	2.41		.95	.52	.18	.04						.09	.04									.06				6.05
Marathon	Raccoon	.24		.05			.53	.26	.37	2.24	1.21	.12	.02	T.	T.			T.	.06	.03	.10		T.										5.23
Pocahontas	Des Moines		.12				.20	1.01		.97	.90	.08							.12				.03					T.				3.43
Rock Rapids	Big Sioux						.15	2.18		2.22	.80	.35	.08						.05														5.83
Sanborn	Floyd	.10			.02		.47	1.96		.86	.47	.68	.07	.03					.12				.04										4.82
Sheldon	Floyd	.19					.45	2.86		.87	.67	.09	.02		.01			T.	.11	T.			T.										5.27
Sioux Center	Floyd	.18					.35	2.50		1.40	.60	.20								T.								T.					5.23
Spencer	Little Sioux	.20	.35		.03		.35	.50	.01	.38	1.60	.78	.05		T.					.02		.02	.62										4.31
Storm Lake	Raccoon	.29			.09		.34	.53	T.	.66	1.65	.27	T.	T.					.04				T.					T.					3.87
Washta	Little Sioux	.05	.02				.15	.98		1.40	.38		T.						.09				.06					.05					3.18
West Bend	Des Moines	.14	.02				.08	.36		.52	.62	.06							.10				.05										1.95
North Central District																																	
Algona	Des Moines		1.10				.10	.72	.17			.20					.02	.10															**
Allison	Cedar	.12	.11		.42		.51	.55		.15	.34	.48			.02				.12				.50	.02			.01						3.35
Belmond	Iowa		.12		.08		.22	.85		.75	.72				.12				.07			.05	.75										3.73
Britt	Iowa	.04	.49		.14		.17	1.02		.06	1.04	.04			.05								.99	.03									4.07
Charles City	Cedar	.57			.38		1.85	.22		.29	T.	1.54	.01	T.	.02				.01			.03	.53				.18	T.					5.63
Forest City	Cedar	.43	.28		T.	.07		.61	.38	.27	.15	.73		T.	.03	T.			.02	.06		.10		.90									4.03
Hampton	Cedar	.35			.05		.75	.25		.10	.37	.13	T.	T.	.06				.10			T.	.65			.04							2.85
Humboldt	Des Moines	.05					.18	.36	T.	1.24	.90	.04	T.	T.	T.				.04				.66										3.47
Mason City	Cedar	.13			.09	T.	.21	.67		.10	.37	.31	.03	T.	.10	T.			.10			T.	.38				T.						2.49
Northwood	Cedar	.40			.20	.08	.10	.55			.60	.53	.02	T.	.03				.10				.55										3.16
Osage	Cedar		.13		.53		.45	.55		.09	.05	1.16	.03		.03				.06			.03	.63										3.74
Northeast District																																	
Cedar Falls	Cedar	.13	.05		.03		2.05	.35		.09	.10	1.61		.06	.04				.34	.02			.60	.29									5.76
Decorah	Mississippi	.15	.27			.09	1.71	.13		.05	.67	.32	T.	T.	T.				.07				.53					.10					4.09
Dubuque	Mississippi	1.14			.01		.71	.10	.02		T.	.08	.32	T.	T.			.09	.09				1.68	.07				.02					4.33
Fayette	Mississippi	.03	.05		.04		.66	.40		.15	.26	.37							.27		.08		.25	.52				T.					3.08
Independence	Wapsipinicon		.16		.06		.60	.20		.79	.08	.25			.03	.04			.36	.01			.03	.81									3.42
Lansing	Mississippi	.15	.46			.22		.96	.21			.32	.13	.12	.05	.05				.01		T.		1.20					.06				3.94
New Hampton	Wapsipinicon	.65	.24			.08	1.30	.40		.67	.25	.43		T.	T.	.05			T.			T.	.07	.30				.10					4.54
Oelwein	Wapsipinicon	.45			.20		.45	.20		.70	.55	.20	.20	.35					.20			.55	.20	.65									4.90
Postville (near)	Mississippi	.06			.06		.60	.48		.12	.44	.26							T.				.85	.42				.05					3.34
Waterloo	Cedar	.74	.05			.02		1.08	.15	.02		1.11	T.	.05		.11			.20	.05				.97									4.55
Waverly	Cedar	.06	.08		.02		1.40	.58		.32	.02	1.54		.02	.02	.11			.22		.08	.02	.27	.28									5.04
West Central District																																	
Audubon (near)	Nishnabotna						.60	.41		.35	.77	.23	.07					.02	.16	.02			.20				T.		.04				2.87
Carroll	Raccoon	.18					T.	.82	.07	.66	.97	.52	.15						.04					.09					.02	.09			3.61
Denison	Missouri				.02		.49	.23		.23	1.12	.11							.02	.01			.04	T.					.16				2.43
Guthrie Center	Raccoon						.42	.86		.56	.98								.23				.38										3.43
Harlan	Nishnabotna				T.		.91	.39	T.	.47	1.36	.13	T.	T.				.06	.04				.17						.09				3.62
Jefferson	Raccoon						.45	.68		.40	1.79	.02						T.	.04	T.			.31							T.			3.69
Little Sioux	Little Sioux	.08					.86	.54		.37	1.45	.13		.01				.07	.03				.06						.17				3.77
Logan	Missouri	.01	.06		.02		1.02	T.		.70	.32	.14						.03	.05	T.			.09						.11				2.55
Onawa	Missouri	.10	.05		.05		.50	.90	T.	.40	.80	T.							T.	T.			T.						.40				3.20
Rockwell City	Raccoon	.10					.20	.77		1.20	1.50	.10	T.										.24						T.				4.11
Sac City	Raccoon	.08					.22	.35		.80	1.92	.13	T.						.03				T.						.07				3.60
Sioux City	Missouri	.15			T.	.66	.66	1.61	.13	1.18	.85	.39	T.	T.				T.	.03	T.	T.	T.	T.						.22				5.88
Central District																																	
Ames	Skunk		.20		.40		.50	1.60			.40								.10				.30						.10				3.60
Baxter	Skunk		.16		.14		1.72	.30			.45								.33				.50	.53					.05				4.18
Boone (near)	Des Moines	.14	.03		.08	.06		.83	.42		.05	.50	.04			.02			.04	.01				.41						.09				2.72
Des Moines	Des Moines	.16			.28	T.	1.15	.07		T.	.56	T.		T.	T.	T.		.38	T.	.01			.69						.06				3.36
Fort Dodge	Des Moines	.60	.04		.04	.01		.65	.94	.59	.45	.45	.07						.04					.30						.02				4.20
Grinnell	Iowa		.10		.50		.74	.18	.07		.42	.12						.03	.54				.24	.85					.03				3.82
Grundy Center	Cedar				.70	T.	1.75	.40			.46	.48		.10	.04			.05	.22	T.			.20	.20					T.				4.60
Iowa Falls	Iowa	.39	.15			.08		.92	.48			.90	.05		.04	.05			.13	.04				.65										3.88
Marshalltown	Iowa	.06	.19		.18	.04		1.24	.12		.20	.22	T.	T.	T.	T.			.21	.06				.72						.09				3.33
Monroe	Des Moines	T.	.25		.14		.42	.13	.27		.26	.05		.08				.02	.53	T.			.61	.28					.08				3.12
Perry	Raccoon	.01	.03		.11	T.	.47	.80	T.	.11	.32	.01		T.	T.			T.	.07	T.			.62	.07					.01				2.63
Toledo	Iowa	T.	.28		.15		.65	.25			.17	.63	T.	.03	.03			T.	.48				.55	.35					.10				3 67
Van Meter	Raccoon					.12		1.12	.20			.70							.40	.03				.42										2.99
Waukee	Raccoon	T.	.13		.24		.75	.81			.25	.01				T.		.01	.43	T.			.30	.07					.06				3.06
Webster City	Des Moines	.03	.04		.18		.25	.63		.53	.96								.10				.75						T.				3.47
East Central District																																	
Belle Plaine	Iowa		.50		.20	T.	.80	.19	.18	T.	.22	.91		T.	.01	.01		.01	.36	T.			1.04	.81					.05				5.32
Cedar Rapids	Cedar	.02	.52			.05		.79	.18			.12		.09	.01	.01			.27	.08				3.10						.04				5.28
Clinton	Mississippi	.16	05		.07	T.	.24	.12			.06	.03				.01		.03	.26	.10				1.06					.06					2.25
Davenport	Mississippi	.29			T.	T.	T.	.27	T.		.06	.24	T.	T.	T.	T.		.27	.16	T.			.10	.73				.01	T.				2.13
Fairport	Mississippi	.33	.03		.06		.50	.23			.01	.10				.03			.45	.01	.01			.70				.01						2.47
Iowa City	Iowa	.15	.37		T.	.08		1.10	.03		.01	.14		.01	T.	.06			.33	.19				.53						.09				3.09
Le Claire	Mississippi	.09	.22			T.		.34	.13		T.	.06	T.			.02			.40	.02				1.09	.04					.01				2.42
Maquoketa (near)	Maquoketa	.31	.36		.03		1.58	.19	.07		.01	.07							.25	.07				.63										3.57
Muscatine	Mississippi	.29	.22			.05		.07	.08		.05					T.			.38	.07				.55	T.				.02	.04				1.82
Olin	Wapsipinicon	.80	.73		.10		.75	.27			.15				T.				.30					.75										3.85
Tipton (near)	Cedar		.20				.60	.18											.50	.10			.60	.52					.06				2.76
Williamsburg	Iowa	.02			.12		.39	.12				.71		.05	T.				.42				.60	1.18					.06				3.67

Daily Precipitation for May, 1930—Continued

Stations	Drainage Basin	Day of Month																													To-tals
		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	
Southwest District																																	
Atlantic|||	Nishnabotna	.02			T.			.80	.02	.17	1.00	.50	.31						.13	.10	T.			.17						.04			3.26
Bedford	102	.08			T.		1.30	.86	.03	T.	.38	.11		.04				.50	.49	.02			.67	.18								4.66
Clarinda|||	Nodaway	.03	.04		.02		.17	2.01	.20	.08		.25	.05					.01	.72	.04				1.30								4.92
Corning	Nodaway						2.30	1.36	.05	1.86	.10					1.15		.10				.28										7.20
Cumberland (near	Nodaway	T.			T.		.58	.60	.06	.32	.88	.16	.08					.10*	.28				.13						.07			3.26
Glenwood	Missouri				.04		.98	.66	.04	.14	.57	.50						.14	.42				.05						.06			3.60
Lenox	Missouri	.02			T.		1.03	.74	.05		.85	.18						.30	.55	.02			1.17	.15								5.06
Oakland	Nishnabotna						.33	.92		.25								.13	.31				.18						.10			2.25
Red Oak (near)	Nishnabotna	.33					.63	.66			.20	.43						.25	.33				.14						.06			3.03
Riverton (near)	Nishnabotna	.08			T.		1.46	.90	.01		.28	.34						.55	.45	.01			.08									4.16
Thurman	Missouri	T.					.62	.75			.20	.43						.37	.77				.10					T.				3.24
Omaha, Neb.***	Missouri	T.			T.		.65	.12	.03	.33	.67	.38	T.					.22	.11	T.			.13				T.	.10				2.74
South Central District																																	
Afton	Grand	.04			.11		1.28	.28			.35			.08				.28	.52	.03			1.05	.65					.13			4.80
Albia|||	Des Moines	.08	.94		.08	T.		.50	.03		T.	.28				T.			.60	.09				1.22						.03		3.85
Centerville	Chariton	.30	.15		.06		.43	.12	.07	T.	.32							.02	.65	.01			.15	.92					T.			3.20
Chariton (near)	Chariton	.24	.75		T.		.85		T.		.28	T.						.10	.47	T.			.50	T.					T.			3.19
Corydon (near)	Chariton	.39	T.		T.		.76	.03	.01		.52	T.						T.	.61	.03				*	1.67				.01			4.03
Creston|||	Missouri	.03	.01		.04	.01		1.16	.36	T.	.05	.28	.02	T.					.58	.06	T.			1.24					.08	T.		3.92
Earlham (near)	Des Moines	T.	.10		.03		1.13	.69			.53	T.						.03	.50				.17	.09					T.			3.27
Indianola	Des Moines	.22	.06		.57		.72	.15			.29							.16	.39				.76						T.			3.32
Knoxville	Des Moines	.05	.23		.15		.54	.05	.25		.35					T.		T.	.47				.97	.40					T.			3.46
Lacona	Des Moines	.05			.10		.52	.03				.01	.41	.01				.12	.68	.05			.40	.92								3.30
Lamoni|||	Grand	.03	.13		.11	.21	T.	1.22	.10		.29	.47						T.	.49	.01				.60					T.	T.		3.66
Melrose	Des Moines	.96			.20		1.10	.10	.10		.30							.62	.10				.55	.89								4.92
Mount Ayr	Grand	.10			.10	.80		.09	.18		.98								.94				.67	.35								4.21
Tingley	Platte	.18			.10		1.15	.04	T.	T.	.86	T.	.02					.33	.64				1.60	.35								5.27
Winterset	Des Moines	.21	.22		.11		1.05	.85			.68			T.				.10	.33	.02			.33	.35					T.			4.25
Southeast District																																	
Bonaparte (near)	Des Moines	.57			.11		T.	.19	.06		.16	.35						T.	.76	.04				.38					T.				2.62
Burlington|||	Mississippi	.02	.57		T.	.10		.02	.06			.12				T.			.56	.03				.88	.02				.01				2.39
Columbus Junction	Iowa	.32	.08		.08		.02	T.	.02		.03			T.	T.			T.	.52	.12				.41				T.	.01				1.61
Fairfield	Skunk	.39	.11		.10		.18	.01			.18	.45			T.			.06	.68	.02				.52					.03				2.73
Keokuk***	Mississippi	26	.09		.51		T.	.12		.01	.39	T.		.01	T.	T.		.19	.12	.01			.02	.44					.01				2.18
Keokuk No. 2	Mississippi	.29	.18		.55			.19	.02		.25	.37	T.					.11	.26	.24				.50					T.	.02			2.98
Keosauqua	Des Moines	.45	.15		.05		.22		.05			.70							1.10					.50									3.22
Mt. Pleasant	Skunk	.49					T.	.09			.04	.29						T.	.67	.03									.04				1.65
Oskaloosa	Des Moines	.16	.56		.28	T.	.55	.07	.06		.16	.11		T.	T.			.03	.51	.03			.71	.83					.02				4.08
Ottumwa	Des Moines	.21	.11		.10		.61	.15			.03	.34						T.	.56				T.	.99					.03				3.13
Sigourney (near)	Skunk	.39	.49		.08	T.	.44	.05				.74		T.	T.			.01	.51				.25	1.31					T.				4.30
Stockport (near)	Skunk	.45			.19		.11	.08	.07		.15	.64						T.	.66	.19				.34					.02				2.90
Washington	Skunk	.80	.05*		.06	T.	.45	T.						T.	T.			T.	.45	.32				.32					T.				2.45
Wever	Mississippi	.35	.07		.15							.29		T.				.80	.54	.03				.53					02				2.78

Except as otherwise indicated, observations are generally made late in the afternoon, near sunset, and precipitation recorded is for 24 hours ending at the time of observation.

\|\|\|Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.

***Regular Weather Bureau Station: precipitation is for 24-hour period midnight to midnight.

**Incomplete.

*Precipitation included in the next following measurement.

T. Precipitation is less than .01 inch rain or melted snow.

PRESSURE, RELATIVE HUMIDITY, WIND AND SUNSHINE

Stations	Barometric Pressure, Inches (Sea Level)					Relative Humidity, %					‡‡Wind					Sunshine	
						Mean							Maximum				
	Mean	Highest	Date	Lowest	Date	7 A. M.	12 Noon‡	7 P. M.	Lowest	Date	Total movement	Average hourly velocity	Miles	From	Date	% possible	Departure from normal
Chas.City.	29.95	30.40	24	29.28	7	76	55	60	27	30	5,141	6.9	23	sw.	21	61	— 1
Davenport	29.97	30.43	25	29.43	7	76	51	52	25	31	8,509	11.4	40	nw.	1	61	— 1
DesMoines	29.94	30.37	24	29.22	7	78	56	56	26	30	7,698	10.3	36	nw.	1	60	— 2
Dubuque....	29.95	30.45	25	29.39	7	77	56	56	31	30	4,875	6.6	23	s.	7	62	+ 4
Keokuk.....	29.98	30.40	25	29.44	7	73	50	54	27	31	6,106	8.2	37	sw.	7	69	+ 3
Sioux City.	29.93	30.36	24	29.28	7	75	55	53	21	23	9,438	12.7	52	s.	6	57	— 1
Omaha,Nb	29.93	30.37	24	29.23	7	72	53	52	21	24	5,504	7.4	24	nw.	7	70	+ 8
Means and extremes.	29.95	30.45	25	29.22	7	75	54	55	21	23		9.1	52	s.	6	63	+ 1
Normals and records....	29.95	*30.58	4th 1910	11 17 §29.02	1875	77		59	§10	3d 1889			¶67	nw.	1st 1894	62	

*Dubuque §Omaha ‖Also Sioux City, 9th, 1927 ¶Sioux City ‡Local meantime.

‡‡January 1, 1928, 3-cup anemometers replaced 4-cup instruments. See Climatological Data, January, 1928, page 7.

PRECIPITATION

The average precipitation for the State, derived from the averages of 9 districts of nearly equal area, and based on the records of 119 stations, was 3.72 inches, or 0.86 inch below normal. The greatest district deficiency was in the southeast district, 1.74 inches, and the northwest district had the greatest district excess, 0.22 inch. The greatest precipitation deficiency, 2.97 inches, at any one station, was at Mt. Pleasant. The greatest excess in the State was 2.28 inches at Rock Rapids. The greatest amount at a single station was 7.20 inches at Corning and the least was 1.61 inches at Mt. Pleasant. The greatest amount in 24 consecutive hours was 3.66 inches at Corning on the 6th and 7th. The average number of days with 0.01 inch or more of precipitation for the State was 11, ranging from 9 days in the west-central district to 13 days in the northeast district. For individual stations the range was from 6 days at Sioux Center and Guthrie Center, to 16 days at Waverly.

MISCELLANEOUS PHENOMENA

Aurora: 4th, 5th, 29th, 30th, 31st.
Birds (Migration of): Washta, orioles on 1st, brown thrush on 2d.
Coronas, Lunar: 3d, 9th.
Dust Storm: 21st, 23d.
Fog: 19th, 29th.
Frost, light: 16th, 17th, 18th, 24th, 28th, 29th, 30th, 31st.
Frost, heavy: 17th, 24th, 30th.
Frost, killing: 17th, 18th.
Gales: 1st, 2d, 3d, 5th, 6th, 7th, 9th, 10th, 11th, 12th, 13th, 14th, 21st, 22d, 27th, 31st.
Hail, light: 1st, 2d, 5th, 6th, 8th, 9th, 11th, 17th, 22d, 27th.
Hail, moderate: 1st, 6th, 9th.
Hail, heavy: 1st, 9th.
Halos, lunar: 3d, 9th, 10th.
Halos, solar: 1st, 8th, 13th, 17th, 26th, 28th.
Haze: 23d.
Sleet: 17th.
Snow: 17th.
Thunderstorms: 1st, 2d, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 17th, 18th, 19th, 21st, 22d, 23d, 26th, 27th.
Tornadoes: 1st, 5th, 6th, 8th, 9th.

Daily Maximum and Minimum Temperature for the Month of May, 1930

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
Northern Division																																	
Algona	Maximum																																
	Minimum																																
Alta	Maximum	80	72	82	80	82	72	60	73	79	75	67	58	48	50	52	46	55	43	59	87	87	72	65	79	79	81	83	66	65	75	79	69.4
	Minimum	55	45	53	57	56	58	40	38	55	56	53	46	42	42	44	39	31	38	43	46	62	52	43	38	48	54	57	46	44	38	43	47.2
Alton	Maximum	80	76	83	80	82	75	62	67	80	73	68	57	54	52	55	51	50	47	60	85	86	81	67	79	77	81	81	71	65	70	76	70.0
	Minimum	55	43	55	61	54	53	42	37	53	58	54	46	41	42	45	37	30	39	43	48	63	54	43	34	46	56	59	48	42	33	45	47.1
Belmond	Maximum	78	72	80	76	83	78	66	72	81	79	72	62	54	53	56	53	51	48	58	82	87	78	65	70	78	78	83	67	62	71	75	70.0
	Minimum	55	46	44	54	60	61	45	41	57	60	57	48	45	45	44	33	29	38	44	13	60	50	45	34	45	51	60	45	37	33	44	46.9
Charles City	Maximum	79	70	79	76	83	82	67	72	80	76	73	61	53	52	58	51	54	47	59	79	87	72	63	66	75	76	76	62	59	70	75	68.8
	Minimum	58	49	47	57	61	61	45	43	59	65	57	50	48	47	44	36	32	40	45	46	61	49	43	37	48	48	53	44	40	37	43	48.2
Decorah	Maximum	77	73	72	73	84	81	69	75	82	73	77	62	56	53	55	55	55	57	64	79	85	79	64	56	70	71	76	64	60	70	73	69.0
	Minimum	58	47	39	56	61	59	48	40	55	63	61	48	42	45	45	43	28	39	40	44	60	49	46	32	40	45	47	44	34	33	35	46.0
Dubuque	Maximum	76	71	76	76	83	81	69	83	84	81	80	68	58	56	59	62	52	50	61	73	88	83	64	62	69	71	76	60	62	67	73	70.1
	Minimum	57	54	48	57	66	57	51	48	63	66	58	52	51	50	49	41	37	38	44	47	63	52	50	42	47	47	49	46	45	41	48	50.5
Forest City	Maximum	80	74	78	75	83	77	65	65	78	78	69	64	56	52	55	50	55	50	56	82	85	78	68	67	77	77	77	68	58	69	77	69.1
	Minimum	56	44	47	53	55	61	58	37	53	60	56	47	44	44	42	42	27	38	41	42	56	59	43	33	43	48	53	41	38	36	39	46.3
Independence	Maximum	76	73	76	75	81	80	67	76	81	77	75	65	64	61	57	58	50	48	58	75	85	82	82	63	72	73	76	73	61	66	71	70.2
	Minimum	60	49	45	52	61	59	48	40	57	63	61	49	48	47	44	42	34	37	43	44	57	58	46	41	45	45	50	45	43	36	42	48.1
Inwood	Maximum	82	76	82	83	85	76	61	66	75	68	67	53	54	51	54	50	49	44	62	84	86	77	61	77	80	82	82	68	69	72	77	69.5
	Minimum	53	43	52	53	52	54	41	40	49	56	51	45	41	40	43	37	28	40	40	48	64	50	38	33	47	56	57	49	38	32	45	45.6
Lake Park	Maximum	81	75	83	81	84	69	64	65	75	68	67	58	51	48	50	49	50	48	53	82	85	76	63	74	78	79	78	62	63	72	78	68.0
	Minimum	50	45	50	58	51	49	42	40	50	60	57	46	46	43	43	34	28	40	43	46	63	53	44	34	45	52	55	43	40	35	44	46.1
Mason City	Maximum	78	71	78	75	82	80	66	70	79	74	71	60	54	52	55	50	55	50	58	80	86	77	62	66	76	75	78	66	60	70	74	68.6
	Minimum	57	46	42	51	61	61	46	41	55	60	55	49	44	46	42	41	28	39	43	43	61	48	44	32	44	48	55	43	35	31	42	46.2
New Hampton	Maximum	78	74	77	75	84	79	68	75	79	78	74	66	57	57	60	55	64	53	64	78	86	78	63	66	73	76	79	68	64	71	72	70.7
	Minimum	56	47	43	54	60	58	47	40	55	62	60	50	46	46	43	40	29	39	43	42	60	53	45	34	44	45	50	45	37	34	39	46.6
Northwood	Maximum	80	68	79	74	83	78	68	70	80	74	72	59	54	52	55	50	55	48	58	81	84	74	62	66	75	75	78	63	64	71	75	68.5
	Minimum	56	46	46	54	59	60	50	40	57	61	59	49	46	45	43	40	29	40	44	43	61	47	46	37	45	47	58	44	41	37	41	47.5
Pocahontas	Maximum	81	81	81	81	84	75	62	69	79	73	67	61	55	52	55	52	54	48	56	85	89	80	64	78	79	80	85	70	65	72	78	70.7
	Minimum	53	45	48	48	49	59	42	37	38	58	56	48	44	43	45	43	31	39	44	43	69	53	46	34	44	53	57	46	40	35	39	46.1
Postville	Maximum	74	70	74	76	81	75	66	74	79	74	75	61	56	52	56	57	51	45	59	74	83	74	60	59	67	64	70	58	58	70	68	66.5
	Minimum	56	52	42	52	62	60	48	43	59	62	57	49	47	45	44	34	31	35	43	43	61	49	46	35	41	44	50	40	39	36	49	46.9
Rock Rapids	Maximum	83	75	83	81	84	76	65	65	80	70	69	53	54	50	54	54	53	52	61	84	85	79	66	76	79	81	81	72	66	73	78	70.4
	Minimum	48	45	50	59	53	55	42	41	49	57	53	45	41	41	44	34	28	40	42	48	63	53	38	32	46	55	58	47	38	33	44	45.9
Central Division																																	
Ames	Maximum	80	77	79	79	83	81	65	74	83	77	69	67	66	56	62	56	51	48	60	81	87	80	67	74	77	77	87	82	65	70	76	72.1
	Minimum	62	50	47	57	68	60	50	45	60	63	60	51	47	46	47	44	34	39	45	42	62	50	48	37	47	52	57	50	40	37	41	49.6
Belle Plaine	Maximum	80	76	80	80	86	81	69	82	85	78	76	71	59	57	64	60	51	49	62	80	88	81	67	72	80	78	87	76	67	71	74	73.1
	Minimum	64	50	46	56	55	60	54	44	61	64	59	51	48	47	45	40	32	38	44	42	58	52	47	36	48	48	59	46	38	37	39	48.6
Carroll	Maximum	79	76	79	79	80	76	65	69	77	72	66	63	60	52	57	53	54	46	56	84	87	81	68	76	75	77	85	75	65	70	75	70.2
	Minimum	61	46	50	58	63	57	45	38	55	57	51	47	44	42	45	42	32	38	43	45	62	50	45	40	54	54	57	49	43	38	46	48.3
Cedar Rapids	Maximum	80	74	80	78	85	80	69	84	88	79	80	71	65	58	62	62	53	50	62	78	90	85	66	70	78	79	81	73	69	71	77	73.5
	Minimum	63	52	44	56	64	60	57	44	58	64	61	53	51	48	46	40	32	39	44	42	60	55	48	36	45	50	57	40	37	39	49	49.0
Davenport	Maximum	77	73	80	78	84	83	72	86	86	78	82	75	64	58	63	64	54	50	59	75	88	85	65	67	77	79	85	58	67	68	75	72.7
	Minimum	60	56	53	57	67	67	56	56	65	67	61	57	50	48	48	45	40	39	44	50	61	60	50	46	51	49	52	46	44	41	50	52.8
Des Moines	Maximum	78	76	80	80	83	72	67	78	83	78	68	69	58	55	60	58	49	49	57	79	87	74	68	76	75	76	87	66	66	69	74	70.8
	Minimum	60	53	51	59	66	60	47	47	66	64	57	53	48	46	48	44	38	40	46	46	65	50	50	43	48	56	61	50	45	41	45	51.4
Ft. Dodge	Maximum	81	74	81	80	83	80	64	70	80	75	75	63	57	57	55	52	52	46	57	83	87	78	78	73	78	79	84	70	65	70	76	71.1
	Minimum	59	47	50	57	61	61	45	40	55	58	59	49	45	45	46	41	31	39	44	44	64	50	45	34	47	55	57	46	38	35	42	48.0
Grinnell	Maximum	79	75	79	80	82	79	66	78	83	81	74	70	66	53	61	59	53	50	62	77	87	82	65	71	77	72	76	60	65	65	74	71.0
	Minimum	62	45	48	55	64	60	51	44	62	74	59	51	46	46	44	41	32	37	44	43	61	52	46	36	46	53	51	42	41	35	39	48.7
Guthrie Center	Maximum	80	75	81	82	87	72	69	73	80	78	67	67	65	55	56	56	50	47	56	82	87	85	68	77	78	78	87	82	66	75	76	72.2
	Minimum	62	46	45	61	65	60	49	43	56	60	57	49	45	43	46	43	35	38	45	45	64	49	46	35	50	53	58	52	40	38	40	49.0
Iowa City	Maximum	78	75	80	79	85	80	69	84	87	80	80	73	66	58	63	62	52	50	59	76	87	86	65	69	78	78	85	72	67	69	76	73.2
	Minimum	64	54	47	56	64	62	54	50	61	66	61	54	51	48	47	41	35	38	43	45	59	62	48	37	46	48	52	48	41	37	41	50.3
Iowa Falls	Maximum	81	71	80	78	85	76	67	75	83	79	73	64	57	54	57	52	51	48	60	81	90	81	65	71	79	78	83	68	63	70	76	70.8
	Minimum	61	48	45	55	62	61	47	41	58	60	56	49	47	46	44	42	32	38	44	45	60	49	46	36	50	54	59	46	38	35	42	48.3
Little Sioux	Maximum	81	80	83	83	84	76	60	70	82	75	67	66	62	55	59	58	52	46	61	85	89	82	68	80	78	81	86	76	67	71	78	72.3
	Minimum	62	46	61	63	62	56	45	41	56	62	54	48	44	42	46	40	36	40	43	49	64	53	42	40	54	57	58	51	45	41	49	50.0
Marshalltown	Maximum	79	73	80	77	84	78	66	78	85	78	72	69	63	52	62	55	48	47	60	76	84	84	68	73	78	78	86	76	65	70	76	71.6
	Minimum	63	50	51	55	64	61	51	45	62	64	60	51	47	46	44	43	34	38	41	46	46	54	46	39	47	51	60	49	41	37	46	49.5
Olin	Maximum	76	74	78	76	84	78	69	83	84	77	78	73	63	60	65	65	51	50	61	75	86	85	67	69	75	78	83	66	69	70	75	72.4
	Minimum	63	52	44	54	60	60	50	45	57	63	56	52	48	49	47	38	32	38	42	42	57	62	48	35	45	45	48	45	35	33	37	47.8
Sioux City	Maximum	81	78	81	82	81	77	59	65	80	70	64	59	50	52	57	51	50	45	66	83	88	63	67	79	78	80	83	66	66	69	77	69.3
	Minimum	58	50	60	63	58	59	42	43	52	55	50	50	43	42	46	39	35	40	43	50	63	51	46	40	56	59	62	50	48	41	49	49.8
Southern Division																																	
Albia	Maximum	78	75	81	80	84	75	67	81	86	80	70	71	66	55	59	66	58	48	59	77	85	82	71	73	78	77	87	79	71	70	75	73.0
	Minimum	60	51	53	56	65	58	51	50	63	63	58	48	50	45	46	41	38	38	44	44	61	46	41	47	51	57	52	42	38	45	50	50.4
Atlantic	Maximum	78	80	82	81	84	73	65	74	82	76	64	68	59	55	61	64	48	47	56	81	86	77	72	77	76	76	89	72	68	70	75	71.5
	Minimum	61	45	50	62	63	59	46	42	57	58	52	48	45	42	45	41	36	38	44	43	61	51	41	33	48	52	56	52	38	33	37	47.1
Burlington	Maximum	77	75	82	83	86	84	74	88	90	82	82	75	68	56	63	67	59	52	58	78	90	89	77	71	81	80	87	80	69	68	79	75.8
	Minimum	62	52	52	59	65	64	59	54	65	67	63	54	55	50	49	46	42	38	45	49	58	64	49	45	49	53	57	53	45	41	47	53.3
Columbus Jct	Maximum	77	74	78	79	83	81	72	84	85	78	80	73	67	56	62	62	54	51	58	73	86	83	80	67	75	76	86	76	66	65	73	72.9
	Minimum	61	53	46	56	64	64	56	49	62	64	59	53	52	48	48	42	37	37	43	44	59	63	48	40	44	51	54	48	40	38	40	50.4
Corning	Maximum	77	89	82	80	89	74	63	87	79	64	70	74	59	65	68	51	58	59	88	81	71	71	79	80	78	90	72	69	69	80	78	74.0
	Minimum	60	46	53	56	61	60	43	45	59	54	48	42	43	42	44	48	38	36	42	48	49	45	36	49	47	55	56	42	35	35	38	46.9
Corydon	Maximum	72	75	79	80	83	76	66	79	84	79	67	70	63	55	59	64	52	46	56	76	84	80	64	70	74	75	84	74	66	65	72	70.6
	Minimum	61	51	50	60	64	61	52	52	65	62	58	48	50	46	48	44	40	38	45	43	60	50	46	48	52	50	57	51	44	40	44	51.0
Creston	Maximum	75	74	78	80	81	71	64	74	78	73	63	70	65	57	58	64	48	47	55	78	85	74	68	74	73	74	88	74	67	67	73	70.0
	Minimum	60	50	52	62	65	59	47	48	63	61	55	48	46	43	46	46	37	37	45	43	60	50	46	41	48	50	55	54	41	39	43	49.8
Fairfield	Maximum	77	81	78	81	85	81	69	84	87	80	76	73	65	55	60	64	55	50	59	76	87	85	65	70	78	78	86	78	67	68	76	73.4
	Minimum	60	52	45	56	65	63	56	50	62	63	60	51	50	48	48	42	37	37	44	44	58	53	47	39	47	48	53	51	39	36	37	49.7
Keokuk	Maximum	79	75	78	82	83	82	70	86	86	80	82	75	68	57	59	67	51	53	58	77	89	86	67	73	79	79	86	70	68	67	75	73.8
	Minimum	62	58	52	58	68	66	58	56	64	65	60	55	52	50	51	47	38	38	46	50	62	56	49	46	52	59	61	50	46	45	46	53.7
Knoxville	Maximum	78	75	79	80	84	79	65	79	83	80	71	70	67	55	60	63	55	48	60	77	87	81	67	73	76	75	87	80	67	67	74	72.3
	Minimum	63	52	48	57	65	62	52	50	64	63	59	52	49	46	47	42	38	39	45	45	63	53	48	40	47	53	60	52	42	39	45	51.0
Lamoni	Maximum	77	77	80	79	81	74	65	85	82	76	63	70	62	58	59	68	52	45	59	78	84	79	68	75	75	75	86	77	67	67	74	71.5
	Minimum	59	48	52	61	64	57	50	50	61	60	54	45	47	43	46	42	38	36	43	42	61	49	45	42	49	50	56	53	42	38	45	49.3
Sigourney	Maximum	77	74	78	81	84	80	67	82	78	86	75	72	65	55	61	65	52	49	61	77	86	83	65	72	78	76	87	75	68	70	75	72.7
	Minimum	62	51	47	57	63	62	54	50	64	61	59	52	50	47	48	43	37	38	44	44	58	53	48	40	47	50	57	52	42	39	43	50.4
Thurman	Maximum	82	81	80	83	83	78	61	75	82	77	67	72	68	55	62	67	56	47	60	83	88	81	70	77	77	78	87	83	68	68	77	73.3
	Minimum	61	48	55	64	65	60	49	48	61	61	52	48	44	42	48	39	39	40	45	47	63	51	45	39	52	56	57	56	44	38	41	50.4
Winterset	Maximum	76	77	80	80	83	78	64	79	83	80	65	70	60	56	59	63	52	47	58	80	87	80	68	77	75	77	88	83	68	70	75	72.2
	Minimum	60	48	52	60	64	59	50	45	64	63	59	55	46	43	46	47	38	42	45	44	60	50	44	40	50	52	58	51	40	36	45	50.2
Omaha, Neb.	Maximum	81	80	81	84	82	76	61	73	82	72	64	70	54	55	59	62	49	46	60	84	89	73	69	78	77	79	88	67	67	70	77	71.3
	Minimum	65	58	60	64	66	59	45	49	56	58	51	49	46	42	48	42	39	38	44	48	65	50	48	46	57	59	64	52	47	44	50	51.9

RIVERS

All rivers, both interior and boundary, averaged below normal in stage; and fluctuations were small for the time of year.

SNOWFALL

The only snow reported was a trace, which melted as it fell, at Monroe, Oskaloosa and Corydon, on the 17th. The normal May snowfall for the State is 0.1 inch.

GROUP OF TORNADOES

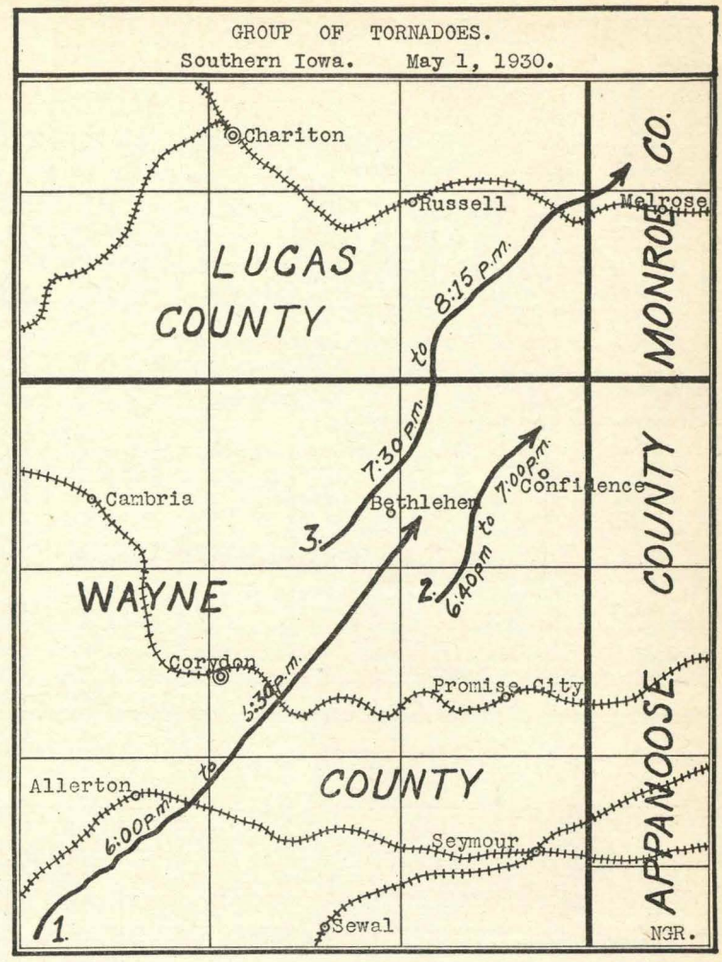
An unusually large number of tornadoes occurred in Iowa on May 1, 1930. Three of these tornadoes had approximately parallel paths from southwest to northeast only about 2 to 4 miles apart, and occurred in succession or relays. They crossed portions of Wayne, Lucas and Monroe counties between 6:00 P. M. and 8:15 P. M.; left destructive paths totaling 37½ miles in length; killed 1 and injured 25 persons; and caused property damage amounting to $144,200.

The accompanying map shows the territory crossed by these tornadoes. Tornado No. 1 originated in Warren Township, Wayne County, northeast of Clio, at 6:00 P. M. and proceeded in a northeasterly direction, crossing Jackson and Corydon townships, and dissipated at 6:30 P. M. about ½ mile southeast of Bethlehem in Wright Township. The destructive path varied from about 25 to 200 feet in width and was about 12½ miles in length. The estimated amount of damage done was $46,500. No one was killed, but seven persons were injured by flying debris.

About 10 minutes after No. 1 dissipated, tornado No. 2 originated in South Fork Township about 4½ miles to the south of where No. 1 broke up. It moved northeast into Wright Township and continued its destruction for 20 minutes; the path was about 150 feet wide and 7½ miles long. This tornado injured 3 persons and did $8,000 damage.

Tornado No. 3, which was the most severe of the 3, began at 7:30 P. M. in Union Township, about 3 miles southwest of Bethlehem, and moved in a sinuous but generally northeastward direction. It passed across Union and Wright townships of Wayne County, Washington Township of Lucas County, and dissipated at 8:15 P. M. in Jackson Township, Monroe County. The path was from 50 to 200 feet wide and about 17½ miles long. It caused $89,700 damage, killed 1, Mrs. Louis Bishop, and injured 15 persons.

N. G. R.



IOWA STORMS, MAY, 1930

Date	County	Township	Nature of Storm	Time	Storm Moved From	Width of Path	Length of Path Miles	Area of Sq. Miles	Size of Hailstones Inches	Damage	Persons Killed	Persons Injured
1	Wayne	Warren, Corydon, Wright, Jackson	Tornado	6:00 p. m. to 6:30 p. m.	SW to NE	25 to 200 ft.	12½	.....	.....	$46,500	.....	7
1	Wayne, Lucas Monroe	Union, Wright, Washington, Jackson	Tornado	7:30 p. m. to 8:15 p. m.	SW to NE	50 to 200 ft.	17½	.....	.....	89,700	1	15
1	Wayne	Wright, South Fork	Tornado	6:40 p. m. to 7:00 p. m.	SW to NE	150 ft.	7½	.....	.....	8,000	.....	3
1	Wayne	Walnut	Hail	6:00 p. m.	SW to NE	.....	.....	.....	Walnuts	200	.....	.....
1	Monroe	Franklin	Hail and Wind	7:30 p. m.	SW to NE	.....	.....	.....	2¼" diam.	600	.....	.....
1	Monroe	Bluff Creek	Hail	7:00 p. m.	W to E	.....	.....	.....	Marbles	500	.....	.....
1	Black Hawk	Orange	Wind	8:30 p. m.	W to E	.....	.....	.....	.....	4,000	.....	.....
1	Clay	Summit	Hail	4:45 p. m.	NW to SE	.....	.....	.....	Marbles	150	.....	.....
1	Clay	Peterson	Tornado	5:30 p. m.	NW to SE	.....	5	.....	.....	1,150	.....	.....
1	Clay	Riverton, Sioux, Gillets Grove	Tornado and Hail	5:40 p. m. to 6:00 p. m.	NW to SE	.....	6½	.....	Marbles	20,000	.....	.....
1	Decatur	Garden Grove	Hail	7:00 p. m.	SW to NE	.....	.....	.....	Hen eggs	5,000	.....	.....
1	Decatur	Long Creek	Wind and Hail	8:00 p. m.	SW to NE	.....	.....	.....	Walnuts	550	.....	.....
1	Delaware	Hazel Green	Wind	6:30 p. m.	W to E	.....	.....	.....	.....	3,035	.....	.....
1	Emmet	Estherville	Hail	5:30 p. m.	NW to SE	.....	.....	.....	Walnuts	500	.....	.....
1	Fayette	Smithfield	Tornado	7:30 p. m.	NW to SE	.....	.....	.....	.....	400	.....	.....
1	Hancock	Concord, Magor,	Wind	7:30 p. m.	NW to SE	.....	.....	.....	.....	5,100	.....	.....
1	Harrison	St. Johns, Taylor	Tornado and Hail	7:15 p. m.	NW to SE	.....	8½	.....	Marbles	10,000	.....	.....
1	Jones	Rome	Wind	9:00 p. m.	SW to NE	.....	.....	.....	.....	5,000	.....	.....
1	Linn	Linn, Marion	Wind and Hail	8:30 p. m.	NW to SE	.....	.....	.....	Marbles	400	.....	.....
1	Linn	Brown, Putnam, Franklin	Wind and Hail	9:30 p. m.	SW to NE	.....	.....	.....	Marbles	2,500	.....	.....
1	Mahaska	West Des Moines, Lincoln	Wind and Hail	7:00 p. m.	SW to NE	.....	.....	.....	Marbles	200	.....	.....
1	Marshall	Liscomb	Wind and Flood	1:00 p. m.	SW to NE	.....	.....	.....	.....	2,500	.....	.....
1	Mitchell	Liberty	Tornado and Hail	6:00 p. m.	W to E	.....	1	.....	Peas	100	.....	.....
1	Osceola	Horton	Wind and Hail	4:00 p. m.	SW to NE	.....	.....	.....	Walnuts	200	.....	.....
1	Tama	Lincoln	Wind and Hail	9:00 p. m.	NW to SE	.....	.....	.....	Marbles	100	.....	.....
1	Woodbury	Liberty	Tornado and Hail	5:00 p. m.	NW to SE	40 rods	20	.....	Hen eggs	10,000	.....	.....
1	Lee	Jackson	Wind	10:00 a. m.	S to N	.....	.....	.....	.....	1,000	.....	.....
1	Scott	Davenport	Wind	p. m.	.....	.....	.....	.....	.....	500	.....	.....
1	Cerro Gordo	Mason	Tornado	8:00 p. m.	SW to NE	.....	1	.....	.....	5,000	.....	.....
1	Dubuque	Jefferson	Wind	3:30 p. m.	SW to NE	.....	.....	.....	.....	500	.....	.....
1	Fayette	Union	Tornado	7:30 p. m.	NW to SE	.....	1	.....	.....	1,000	.....	.....
1	Hamilton	Cass	Tornado	6:30 p. m.	NW to SE	.....	½	.....	.....	800	.....	.....
1	Jackson	Bellevue	Wind	9:00 p. m.	.....	.....	.....	.....	.....	600	.....	.....
2	Cherokee	Cherokee	Hail	6:15 p. m.	NW to SE	.....	.....	.....	Marbles	100	.....	.....
2	Clarke	Knox	Hail	5:30 p. m.	SW to NE	.....	.....	.....	Walnuts	100	.....	.....
2	Floyd	Rockford	Wind	10:00 p. m.	SW to NE	.....	.....	.....	.....	8,500	.....	.....
5	Woodbury	Woodbury, Concord, Sioux City	Wind and Hail	7:30 p. m.	SW to NE	.....	.....	.....	Hen eggs	6,000	.....	1
5	Cedar	Iowa	Wind and Hail	10:00 a. m.	NW to SE	.....	.....	.....	Peas	100	.....	.....
5	Clarke	Ward	Tornado and Hail	7:30 p. m.	NW to SE	.....	3	.....	Marbles	3,000	.....	.....
5	Decatur	Garden Grove	Wind	12:00 noon	NW to SE	.....	.....	.....	.....	2,000	.....	.....
5	Jones	Ricland	Wind	2:00 p. m.	SW to NE	.....	2	.....	.....	1,000	.....	.....

(Table continued on next page)

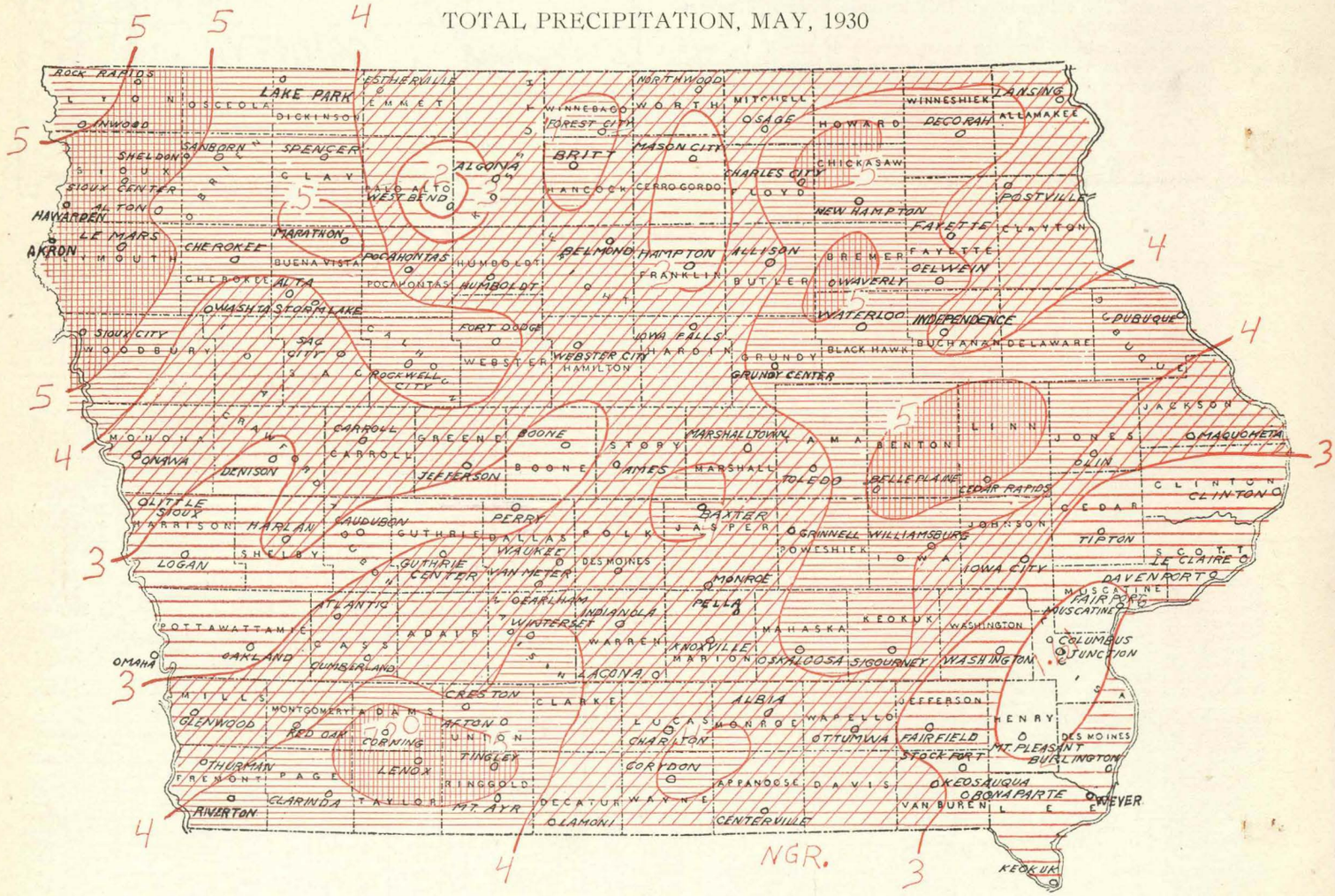
IOWA STORMS, MAY, 1930

(Continued from preceding page)

Date	County	Township	Nature of Storm	Time	Storm Moved From	Width of Path Miles	Length of Path Miles	Area of Sq. Miles	Size of Hailstones Inches	Damage	Persons Killed	Persons Injured
5	O'Brien	Lincoln, Franklin, Hartley	Hail	9:15 p. m.	W to E				Hen eggs	500		
5	Taylor	Polk	Wind	7:00 p. m.	W to E					100		
5	Ringgold	Lost Creek, Riley	Wind and Flood	11:00 a. m.	W to E					4,300		
6	Allamakee	Post	Wind	2:00 p. m.	S to N					1,000		
6	Appanoose	Vermillion, Douglas	Wind	12:30 p. m.	SW to NE					375		
6	Benton	Cedar, Iowa, Kane	Wind and Hail	2:30 p. m.	SW to NE				Peas	1,800		
6	Tama	Salt Creek	Wind	2:30 p. m.	W to E					100		
6	Black Hawk	Washington	Wind and Hail	1:00 p. m.	NW to SE				Marbles	100		
6	Bremer	Sumner	Wind and Hail	1:30 p. m.	NW to SE				Walnuts	1,000		
6	Buchanan	Sumner, Liberty	Wind	2:30 p. m.	SW to NE					[illegible]		
6	Decatur	Franklin, Center, Decatur	Wind, Hail and Flood	11:00 a. m.	SW to NE				Hazelnuts	15,000		
6	Decatur	Fayette	Tornado and Hail	11:00 a. m.	SW to NE		5			5,000		
6	Fayette	Harlan	Wind	3:00 p. m.	SW to NE					500		
6	Iowa	Troy	Wind and Hail	1:30 p. m.	SW to NE				Peas	350		
6	Johnson	East Lucas, West Lucas Oxford, Washington Sharon, Union, Hardin	Wind and Hail	2:00 p. m. to 2:30 p. m.	SW to NE				Peas	2,500		
6	Linn	Boulder	Wind	4:00 p. m.	SW to NE					1,000		
6	Linn	Putnam	Wind and Hail	3:00 p. m.	SW to NE				Walnuts	65		
6	Mahaska	Garfield, Lincoln, Madison	Tornado	12:25 p. m.	SW to NE		5			4,000		
6	Monroe	Bluff Creek	Wind and Hail	1:00 p. m.	W to E					1,200		
6	Plymouth	Westfield, Portland, America, Preston, Johnson Washington, Grant	Wind and Hail	8:30 p. m.	SW to NE				Walnuts	1,500		
6	Poweshiek	Jackson, Scott, Bear Creek, Warren	Tornado	2:00 p. m.	S to N		12			75,000		2
6	Ringgold	Riley	Wind	10:00 a. m.	SW to NE					5,000		
6	Tama	York, Clark	Wind	2:00 p. m.	S to N					3,500		
6	Winneshiek	Bloomfield, Springfield	Wind and Hail	3:00 p. m.	SW to NE				Walnuts to Tennis balls	23,000		
6	Delaware	Union, South Fork	Wind	2:30 p. m.	SW to NE					4,000		

(Continued in Next Issue)

TOTAL PRECIPITATION, MAY, 1930



SCALE OF SHADES IN INCHES

Less than 2.0 | 2.0 to 3.0 | 3.0 to 4.0 | 4.0 to 5.0 | More than 5.0

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

IOWA SECTION
In co-operation with
IOWA WEATHER AND CROP BUREAU
CHARLES D. REED, Senior Meteorologist

VOL. XLI DES MOINES, IOWA, JUNE, 1930 No. 6

GENERAL SUMMARY

Damaging downpours of rain, with attendant floods and much wind squall damage were the outstanding features of the weather of June, 1930.

Sioux City experienced a loss of $300,000 in connection with one of the heaviest deluges of record in the interior sections of the United States on Friday morning, the 13th. Rain fell at an excessive rate from 6:05 to 6:40 a. m., amounting to 2.80 inches; 2.85 inches were recorded from 5:34 a. m. to 6:54 a. m., the total duration of the storm. This broke all previous rainfall records for the month of June at Sioux City, for all intervals of time up to 24 hours. The greatest amount in 5 minutes was 0.76; 10 minutes, 1.25; 15 minutes, 1.75; and 30 minutes, 2.73. The heavy rains which fell in the south-central and southeastern districts on the 14th and 15th caused floods in rivers and arroyos and did over a million dollars of damage. The extent of the damage done by the rain which occurred at Washington, Iowa, was not as great as might be expected, although the heaviest total precipitation for 24 hours for the State, 9.63 inches occurred at that station. The total damage by high winds, rain, hail, tornadoes and floods, was approximately $3,561,675. Seven tornadoes did approximately $39,050 damage, injured two persons, and left clearly marked paths totaling about 39 miles.

In large areas in central, northern and western Iowa, precipitation was deficient. June temperatures averaged practically normal but alternated frequently above and below normal, except for a rather continuously cool week from the 5th to the 12th.

Farm work progressed a little above normal in most sections, and crops appeared in excellent condition, with the exception of localities where bad storms had occurred. N. G. R.

TEMPERATURE

The mean temperature for the State, derived from the means of 9 districts of nearly equal area, and based on the records of 103 stations, was 69.0°, or 0.3° below normal. The east-central district, with a departure of 0.6°, was the only district with an excess, and the greatest deficiency was 0.7° in the southwest district. The highest monthly mean was 72.6° at Keokuk No. 2, and the lowest 65.4° at Postville. The absolute range for the State was 64°, from 37° at Denison on the 8th, to 101° at Little Sioux on the 22d and Keokuk No. 2 on the 23d. The average number of days with the maximum temperature 90° or above, was 3, ranging from no days at Mason City and Northwood to 8 days at Tipton. At no station was there a maximum or minimum temperature lower than 32°. The greatest daily range in temperature at any one station was 44° at Inwood, (near) on the 2d.

PRECIPITATION

The average precipitation for the State, derived from the averages of 9 districts of nearly equal area, and based on the records of 117 stations, was 5.83 inches, or 1.33 inches above normal. The greatest district deficiency was in the west-central district, 0.44 inch; and the southeast district had the greatest district excess, 3.59 inches. The greatest deficiency at any station, 1.87 inches, was at Marshalltown and Onawa. The greatest excess was 9.58 inches at Washington. The greatest amount at a single station was 13.49 inches at Washington, and the least was 2.48 inches at Spencer. The greaest amount in 24 consecutive hours was 9.63 inches at Washington on the 14th and 15th. The average number of days with 0.01 inch or more of precipitation for the State was 10, ranging from 8 days in the south-central, west-central and southwest districts, to 12 days in the east-central. For individual stations the range was from 5 days at Onawa and Corning, to 15 days at Dubuque and Davenport.

COMPARATIVE DATA FOR THE STATE—JUNE

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1873	74.5	+ 5.2	96	56	4.68	+ 0.18	8.40	1.20	.....	.....	.....	.....	.....
1874	71.4	+ 2.1	98	47	5.83	+ 1.33	8.55	2.60	.....	.....	.....	.....	.....
1875	67.5	— 1.8	92	45	7.81	+ 3.31	10.80	1.63	.....	.....	.....	.....	.....
1876	67.6	— 1.7	92	41	4.09	— 0.41	10.34	0.25	.....	.....	.....	.....	.....
1877	66.9	— 2.4	92	40	6.80	+ 2.30	13.12	3.21	.....	.....	.....	.....	.....
1878	66.7	— 2.6	94	44	6.34	+ 1.84	11.60	2.78	.....	.....	.....	.....	.....
1879	69.4	+ 0.1	92	40	5.12	+ 0.62	10.60	1.47	.....	.....	.....	.....	.....
1880	71.0	+ 1.7	96	42	4.40	— 0.10	11.12	1.03	.....	.....	.....	.....	.....
1881	70.4	+ 1.1	100	40	7.37	+ 2.87	17.37	2.75	.....	.....	.....	.....	.....
1882	68.1	— 1.2	98	33	7.48	+ 2.98	15.41	2.93	.....	.....	.....	.....	.....
1883	67.6	— 1.7	96	38	6.69	+ 2.19	14.20	1.30	.....	.....	.....	.....	.....
1884	70.2	+ 0.9	95	36	3.65	— 0.85	8.80	0.70	.....	.....	.....	.....	.....
1885	67.9	— 1.4	89	42	5.08	+ 0.58	11.04	1.31	.....	.....	.....	.....	.....
1886	69.3	0.0	98	34	1.73	— 2.77	3.42	0.10	.....	.....	.....	.....	.....
1887	72.1	+ 2.8	103	40	2.93	— 1.57	7.92	0.96	.....	.....	.....	.....	.....
1888	69.4	+ 0.1	102	34	2.93	— 1.57	6.01	0.96	.....	.....	.....	.....	.....
1889	66.7	— 2.6	98	33	4.75	+ 0.25	9.87	1.69	.....	.....	.....	.....	.....
1890	72.2	+ 2.9	106	39	6.67	+ 2.17	16.53	1.57	.....	11	12	10	8
1891	69.1	— 0.2	99	37	5.39	+ 0.89	19.88	1.68	.....	11	8	10	12
1892	69.2	— 0.1	102	42	5.19	+ 0.69	14.16	0.67	.....	10	12	11	7
1893	71.2	+ 1.9	100	40	3.91	— 0.59	7.56	1.36	.....	8	15	11	4
1894	73.2	+ 3.9	104	34	2.67	— 1.83	6.20	0.57	.....	7	16	10	4
1895	69.7	+ 0.4	102	34	4.32	— 0.18	9.26	0.98	.....	10	11	11	8
1896	69.1	— 0.2	100	40	3.11	— 1.39	7.89	0.81	.....	9	12	13	5
1897	69.1	— 0.2	103	29	3.81	— 0.69	9.38	1.03	.....	10	10	12	8
1898	71.4	+ 2.1	99	42	4.72	+ 0.22	12.48	1.90	.....	9	13	10	7
1899	70.7	+ 1.4	100	42	5.04	+ 0.51	11.99	1.10	.....	10	12	13	5
1900	69.7	+ 0.4	102	38	3.98	— 0.52	12.35	0.67	.....	5	17	10	3
1901	72.3	+ 3.0	106	30	3.71	— 0.79	7.84	1.05	.....	9	15	11	4
1902	65.2	— 4.1	97	32	7.16	+ 2.66	16.04	1.46	.....	14	8	11	11
1903	64.6	— 4.7	96	30	2.86	— 1.64	6.04	0.75	.....	10	13	10	7
1904	67.1	— 2.2	94	35	3.45	— 1.05	8.35	0.44	.....	7	13	10	7
1905	69.9	+ 0.6	100	36	5.53	+ 1.03	14.89	1.80	.....	10	12	11	7
1906	67.9	— 1.4	99	37	3.92	— 0.58	8.27	1.48	.....	8	15	10	5
1907	66.5	— 2.8	98	36	5.35	+ 0.85	9.33	2.07	.....	11	11	9	7
1908	67.1	— 2.2	94	35	5.66	+ 1.16	11.88	1.77	.....	13	12	10	8
1909	69.1	— 0.2	96	40	6.41	+ 1.91	13.30	2.80	.....	13	12	10	8
1910	69.5	+ 0.2	105	33	1.99	— 2.51	5.51	0.05	.....	7	18	7	5
1911	75.7	+ 6.4	108	36	1.82	— 2.68	6.28	0.06	.....	5	20	8	2
1912	66.2	— 3.1	101	34	2.74	— 1.76	5.71	0.78	.....	7	15	9	6
1913	71.5	+ 2.2	102	33	3.31	— 1.19	8.95	0.74	.....	7	19	8	3
1914	72.2	+ 2.9	101	40	5.57	+ 1.07	13.24	1.17	.....	13	12	14	4
1915	65.1	— 4.2	91	31	4.16	— 0.34	9.99	1.72	.....	11	12	12	6
1916	64.5	— 4.8	96	38	3.71	— 0.79	7.96	1.41	.....	10	13	11	6
1917	66.0	— 3.3	100	32	6.65	+ 2.15	13.82	3.04	.....	12	13	10	7
1918	70.8	+ 1.5	104	38	5.29	+ 0.79	10.19	1.55	.....	11	16	10	4
1919	71.9	+ 2.6	98	41	6.13	+ 1.63	12.25	1.82	.....	13	12	12	6
1920	70.7	+ 1.4	99	40	3.56	— 0.94	8.48	1.25	.....	9	16	10	4
1921	74.7	+ 5.4	100	40	3.76	— 0.74	8.85	0.56	.....	9	16	10	4
1922	72.2	+ 2.9	104	38	1.82	— 2.68	7.19	0.28	.....	6	19	8	3
1923	70.9	+ 1.6	100	40	4.93	+ 0.43	7.69	2.43	.....	12	14	10	6
1924	66.8	— 2.5	96	35	8.10	+ 3.60	14.92	4.00	.....	14	11	14	5
1925	70.4	+ 1.1	98	38	6.64	+ 2.14	13.30	2.99	.....	12	15	9	6
1926	66.2	— 3.1	105	32	4.52	+ 0.02	12.09	1.05	.....	8	16	9	5
1927	66.4	— 2.9	101	35	2.42	— 2.08	7.05	0.55	.....	9	16	7	7
1928	64.5	— 4.8	88	31	5.38	+ 0.88	10.31	2.31	.....	12	10	10	10
1929	67.6	— 1.7	99	38	3.08	— 1.42	8.47	0.82	.....	9	14	9	7
1930	69.0	— 0.3	101	37	5.83	+ 1.33	13.49	2.48	.....	10	16	10	4

T. indicates an amount too small to measure, or less than .005 inch rainfall and less than .05 inch snowfall.

Climatological Data for June, 1930

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit: Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Precipitation, in inches: Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Number of Days: Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy	Prevailing direction of wind	OBSERVERS
Northwest District																				
Akron	Plymouth	1,153	4								3.73	— 0.56	1.30	0	6	19	11	0	se.	Orlan C. Moore
Alta	Buena Vista	1,513	39	68.5	+ 0.7	99	22	43	7	35	4.68	— 0.48	1.70	0	7	15	14	1	s.	D. E. Hadden
Alton	Sioux	1,305	25	67.8	— 0.6	97	22	41	8	40	5.10	+ 1.14	1.20	0	10	10	17	3	se.	W. S. Slagle
Cherokee	Cherokee	1,196	10	67.4	— 0.1	96	22	41	8	36	3.44	— 1.00	1.15	0	8	20	8	2	s.	J. E. Wirth
Estherville	Emmet	1,298	35	67.6	+ 0.7	97	22	43	8	43	4.85	+ 0.51	2.80	0	8	22	6	2	s.	A. O. Peterson
Hawarden	Sioux	1,181	4								4.97	+ 0.54	1.77	0	7	19	6	5	nw.	Earl V. Slife
Inwood (near)	Lyon	1,474	26	66.9	— 0.8	97	22	41	7	44	5.43	+ 0.12	1.50	0	9	22	5	3	nw.	A. C. Hanson
Lake Park (near)	Dickinson	1,489	17	65.7	— 1.6	93	21	43	7	39	4.73	+ 0.83	2.86	0	8	13	8	9	sw.	P. M. Lawrence
Le Mars	Plymouth	1,224	34	67.6	— 1.0	98	22	40	7	41	3.03	— 1.35	0.82	0	10	23	4	3	s.	Henry Newell
Marathon	Buena Vista	1,390	4								6.86		3.02	0	8	16	8	6	sw.	E. G. Smith
Pocahontas	Pocahontas	1,248	26	68.6	+ 0.3	98	22	42	8	35	3.46	— 1.18	1.24	0	9	17	11	2	s.	F. E. Hronek
Rock Rapids	Lyon	1,349	31	67.1	— 0.8	96	22	40	7	40	4.85	+ 0.23	2.25	0	7	24	3	3	s.	Nellie F. Medberry
Sanborn	O,Brien	1,553	16	66.8	— 0.9	94	22	41	7	38	4.99	+ 0.26	2.51	0	10	13	7	10	se.	J. W. Dow
Sheldon	O,Brien	1,418	19	67.0	— 0.5	96	22	42	7†	40	5.17	+ 0.77	1.91	0	11	13	15	2	nw.	Ross E. Forward
Sioux Center	Sioux	1,461	31	67.1	— 0.4	97	22	41	7	37	4.51	+ 0.45	1.45	0	8	16	13	1	se.	F. C. Aue
Spencer	Clay	1,319	16	68.4	— 0.1	100	22	40	1	44	2.48	— 1.72	0.67	0	8	13	15	2	sw.	E. W. Little
Storm Lake	Buena Vista	1,442	41	67.8	— 0.7	95	22	41	7	29	6.69	+ 1.69	2.77	0	8	12	16	2	se.	Russel M. Edwards
Washta	Cherokee	1,157	32	67.2	— 0.9	98	22	39	8	41	4.98	+ 0.40	1.98	0	9	16	13	1	s.	H. L. Felter
West Bend	Palo Alto	1,197	37	68.2	— 0.2	95	22	41	8	34	3.71	— 0.58	2.03	0	11	16	13	1	sw.	Jos. Dorweiler
Means and extremes				67.5	— 0.4	100	22	39	8	44	4.61	+ 0.13	3.02	0	9	17	10	3	s.	
North Central District																				
Algona	Kossuth	1,207	57	68.1	— 0.5	93	21	45	8	33	3.46	— 1.05	1.14	0	9	13	13	4	s.	Leon M. Merritt
Allison (near)	Butler	1,000	16	68.0	— 0.1	94	23	44	7	38	6.35	+ 2.60	2.84	0	9	21	3	6	s.	George H. Bell
Belmond	Wright	1,181	20	67.6	— 0.9	93	22	41	8	34	5.72	+ 0.96	1.18	0	13	11	9	10	sw.	H. F. Luick
Britt	Hancock	1,236	43	67.9	+ 0.5	93	22	44	8	32	5.35	+ 0.82	1.55	0	13	20	1	9	sw.	E. P. Healy
Charles City	Floyd	1,015	39	67.8	+ 1.3	91	23	44	8	30	9.30	+ 4.67	3.92	0	11	10	13	7	nw.	U. S. Weather Bureau
Forest City	Winnebago	1,226	36	66.3	— 1.5	91	23	44	8	34	5.81	+ 1.26	1.51	0	10	12	13	5	nw.	Dr. M. B. Neil
Hampton	Franklin	1,142	5	67.5		93	23	45	7	32	6.49	+ 1.55	2.27	0	10	26	1	3	sw.	Howard J. Haydon
Humboldt	Humboldt	1,095	42	68.0	— 1.3	93	22†	41	8	34	4.29	— 0.09	1.61	0	9	16	13	1	s.	H. C. Snitkey
Mason City	Cerro Gordo	1,148	33	66.0	— 1.6	88	23	39	8	33	6.30	+ 1.16	1.59	0	12	12	13	5	nw.	American Beet Sugar Co.
Northwood	Worth	1,222	34	67.0e	+ 0.3	89e	21	44e	7	30e	8.72	+ 3.86	2.75	0	12	12	13	5	nw.	Charles Dwelle
Osage	Mitchell	1,163	36	67.2	0.0	90	21†	44	7	34	7.34	+ 2.59	2.80	0	14	9	14	7	s.	Dr. C. E. Juhl
Means and extremes				67.4	— 0.4	94	23	39	8	38	6.28	+ 1.16	3.92	0	11	15	10	5	s.	
Northeast District																				
Cedar Falls	Black Hawk	875									5.93		1.50	0	13	13	11	6	sw.	E. J. Cable
Decorah	Winneshiek	872	37	66.8	— 1.2	92	23†	38	8	37	5.77	+ 1.25	1.98	0	11	14	6	10	nw.	M. D. Whitney
Dubuque	Dubuque	700	57	69.0	— 0.4	94	23	47	8	28	5.21	+ 0.90	2.08	0	15	10	12	8	nw.	U. S. Weather Bureau
Fayette	Fayette	1,003	42	68.4	+ 1.1	94	23	40	8	35	9.70	+ 4.86	3.13	0	10	17	6	7	se.	R. Z. Latimer
Independence	Buchanan	956	66	67.6	— 0.7	90	23	47	8	28	7.36	+ 2.74	3.16	0	13	10	14	6	sw.	Dr. Geo. Boody
Lansing	Allamakee	632	23								7.63	+ 3.15	2.72	0	12					Mrs. Mary Spinner
New Hampton	Chickasaw	1,169	33	67.5	— 0.2	91	23	42	7†	33	5.89	+ 1.32	1.50	0	10	9	12	9	nw.	D. W. Dawson
Oelwein	Fayette	1,036	7	68.4	+ 0.6	93	23	44	7	30	8.75	+ 4.29	3.45	0	9	13	12	5	s.	John T. Ridler
Postville (near)	Clayton	1,192	31	65.4	— 0.3	91	3	42	7	30	6.68	+ 2.02	2.13	0	7	15	10	5	sw.	F. L. Williams
Waterloo	Black Hawk	854	47	69.4	0.0	95	23	47	7†	33	5.07	+ 0.94	1.18	0	12	18	7	5	se.	R. B. Slippy
Waverly‡‡	Bremer	936	34	68.9	+ 0.7	95	23	42	8	34	7.10	+ 2.83	2.73	0	10	26	2	2	n.	D. H. Murphy
Means and extremes				67.8	— 0.2	95	23	38	8	37	6.80	+ 2.31	3.45	0	11	13	10	7	sw.	
West Central District																				
Audubon (near)	Audubon	1,297	35	69.4	+ 1.1	97	21†	43	7	33	4.16	+ 0.14	2.28	0	6	17	13	0	s.	George Kibby
Carroll	Carroll	1,265	40	68.4	0.0	95	22	43	8	32	3.47	— 1.31	0.85	0	7	23	5	2	nw.	Mrs. Jos. J. Wolfe
Denison	Crawford	1,200	36	69.0	— 0.1	100	22	37	8	39	2.59	— 1.50	0.82	0	8	9	20	1	se.	J. McMinimee
Guthrie Center	Guthrie	987	35	69.1	+ 0.1	97	22	39	8	35	4.93	+ 0.47	2.65	0	7	10	17	3	n.	Floyd H. Bainter
Harlan	Shelby	1,192	31	68.5	— 0.6	97	21	40	8	33	4.15	— 0.48	1.40	0	6	14	12	4	s.	Walter Bell
Jefferson	Greene	1,052	31	67.8	— 1.4	94	22	40	8	39	3.05	— 1.15	0.90	0	9	16	11	3	sw.	W. I. Lyon
Little Sioux	Harrison	1,040	25	70.1	0.0	101	22	43	8	32	3.13	— 0.13	0.87	0	8	12	16	2	s.	H. W. Kerr
Logan	Harrison	1,120	63	70.2	+ 0.4	100	22	40	8	37	3.37	— 1.81	0.90	0	11	7	23	0	sw.	Amy Ann Stern
Onawa	Monona	1,051	29	69.2	0.8	100	22	42	8	33	2.81	— 1.87	1.05	0	5	16	10	4	sw.	Mrs. H. E. Colby
Rockwell City	Calhoun	1,232	34	67.8	1.6	95	22	40	7	36	5.76	+ 1.03	3.27	0	8	23	4	3	nw.	A. W. McIsaac
Sac City	Sac	1,209	54	68.4	— 0.9	97	22	40	8	34	5.33	+ 0.58	3.20	0	8	15	12	3	s.	F. P. Kessler
Sioux City	Woodbury	1,135	41	69.7	+ 0.2	99	22	45	7	32	5.67	+ 1.68	2.94	0	9	11	15	4	se.	U. S. Weather Bureau
Means and extremes				69.0	— 0.3	101	22	37	8	39	4.04	— 0.44	3.27	0	8	14	13	3	s.	
Central District																				
Ames	Story	926	53	69.6	— 0.3	95	22†	45	7†	42	3.30	— 1.07	1.00	0	7	15	11	4	s.	Iowa State College
Baxter	Jasper	998	30	69.2	— 0.4	95	23†	45	7	33	4.14	— 0.45	1.03	0	8	21	4	5	sw.	F. A. Kanne
Boone (near)	Boone	894	25	68.4	— 0.6	94	22†	39	8	37	3.60	— 0.93	0.79	0	9	15	13	2	s.	C. F. Henning
Des Moines	Polk	861	52	70.2	— 0.4	95	22	47	8	28	3.69	— 1.07	1.36	0	10	6	16	8	s.	U. S. Weather Bureau
Fort Dodge	Webster	1,114	30	68.0	— 1.0	94	22	42	8	35	5.62	+ 1.20	3.31	0	9	16	8	6	sw.	Mrs. Emma Sampson
Grinnell	Poweshiek	1,031	36	69.0	— 0.6	94	23†	43	8	32	7.49	+ 2.94	2.59	0	8	20	7	3	sw.	R. E. Bates
Grundy Center	Grundy	976	39	68.6	— 1.1	94	23	44	7	33	4.70	— 0.38	1.08	0	9	16	8	6	sw.	M. G. Heiberger
Iowa Falls	Hardin	1,127	37	68.2	+ 0.3	94	23	43	8	35	7.08	+ 1.62	3.50	0	8	16	9	5	nw.	C. H. Gilbert
Marshalltown	Marshall	947	38	70.1	— 0.2	96	23	46	8	33	2.70	— 1.87	0.70	0	10	17	9	4	sw.	C. C. Pigman
Monroe	Jasper	922	18	70.0	+ 0.2	95	29	44	7	33	7.54	+ 3.04	2.56	0	9	20	6	4	s.	J. A. Dibel
Perry	Dallas	975	29	68.8	1.7	96	22	41	8	37	2.80	— 1.62	0.83	0	8	13	14	3	sw.	Eugene N. Hastie
Toledo	Tama	847	36	69.0	— 0.9	93	23†	43	8	32	4.10	— 0.42	1.31	0	10	19	7	4	sw.	H. P. Giger
Van Meter	Dallas	872	11								3.76		2.30	0	7					Calvin K. Smith
Waukee	Dallas	1,032	27	69.5	0.0	95	22	44	8	31	4.81	+ 0.72	2.15	0	9	21	6	3	sw.	O. D. Ellsworth
Webster City	Hamilton	1,042	25	67.8	— 1.4	95	22	38	8	38	8.11	+ 3.86	4.20	0	10	18	10	2	se.	Frank A. Bonebright
Means and extremes				69.0	— 0.6	96	22†	38	8	42	4.89	+ 0.31	4.20	0	9	17	9	4	sw.	

Climatological Data for June, 1930—Continued

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit							Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
East Central District																				
Belle Plaine	Benton	866	40	69.8	+ 0.6	95	29	42	8	38	4.61	+ 0.26	1.64	0	10	16	9	5	s.	O. C. Burrows
Cedar Rapids	Linn	737	48	70.6	+ 1.5	95	23	45	8	33	7.36	+ 3.01	3.11	0	10	13	3	14	nw.	J. T. Wurster
Clinton	Clinton	595	57	70.2	— 0.2	96	23	42	8	35	7.49	+ 3.10	4.40	0	12	14	11	5	s.	Dr. A. P. Bryant
Davenport	Scott	580	59	71.0	+ 0.5	96	23	50	8	27	9.14	+ 5.03	5.00	0	15	11	10	9	nw.	U. S. Weather Bureau
Fairport	Muscatine	567	9	70.8	+ 0.4	91	23†	48	9	35	9.39	+ 5.12	4.03	0	12	14	8	8	s.	Bureau of Fisheries
Iowa City	Johnson	733	70	69.7	+ 0.6	94	23	44	8	33	8.35	+ 3.86	4.85	0	12	12	11	7	sw.	Prof. J. F. Reilly
Le Claire	Scott	576	30								7.60	+ 3.44	3.51	0	15					Margaret T. Disney
Maquoketa (near)	Jackson	692	25	68.4	+ 0.8	94	23	41	8	36	5.19	+ 0.39	1.23	0	14	17	8	5	nw.	John Strodthoff
Muscatine	Muscatine	546	69								9.27	+ 4.84	5.50	0	13					William Molis
Olin	Jones	760	31	69.8	+ 0.3	95	23	42	8	35	5.41	+ 1.23	1.35	0	11	17	9	4	sw.	Mrs. L. Stingley
Tipton (near)	Cedar	806	31	70.2	— 0.5	97	23	42	8	39	8.20	+ 4.10	4.90	0	8	4	22	4	s.	John Kroeplen
Williamsburg	Iowa	770	14	70.4		96	23	45	8	35	8.81	+ 4.31	6.02	0	7	24	4	2	sw.	Dr. F. C. Schadt
Means and extremes				70.1	+ 0.6	97	23	41	8	39	7.57	+ 3.23	6.02	0	12	14	10	6	s.	
Southwest District																				
Atlantic	Cass	1,110	39	68.5	— 0.9	96	21†	38	8	39	3.20	— 1.86	1.01	0	9	12	15	3	se.	Roy L. Fancolly
Bedford	Taylor	1,200	2								5.91	+ 1.82	1.40	0	9	18	5	7	se.	Authur L. Bishop
Clarinda	Page	1,009	40	69.2	— 2.2	95	22†	41	8	34	5.54	+ 0.83	1.60	0	12	17	13	0	nw.	Dr. H. C. Hawley
Corning	Adams	1,150	38	69.4	— 0.1	97	23	39	8	39	4.48	+ 0.35	2.85	0	5	17	13	0	sw.	C. A. Smith
Cumberland (near)	Cass	1,225	31								3.88	— 0.44	1.21	0	8	19	8	3	s.	Carl E Pollock
Glenwood	Mills	1,100	32	70.4	0.0	96	21	42	8	32	4.75	— 0.12	1.86	0	7	19	8	3	sw.	George Mogridge
Lenox	Taylor	1,250	35	70.4	— 0.4	96	21†	42	8	34	5.96	+ 1.79	2.40	0	7	19	5	6	nw.	J. L. Hurley
Oakland‡‡	Pottawattamie	1,139	11	69.6	— 0.6	97	22	41	8	34	4.80	0.0	2.04	0	7	17	10	3	sw.	W. S. Mathews
Red Oak (near)	Montgomery	1,030	5								5.01	+ 0.36	1.63	0	9	14	15	1	s.	B. R. Bridge
Riverton (near)	Fremont	920	4								5.80	+ 0.94	1.73	0	6	17	5	8	s.	Geo. C. Rader
Thurman	Fremont	960	33	70.7	— 1.4	96	22	43	8	30	4.59	— 0.61	1.09	0	7	21	4	5	s.	H. H. Askew
Omaha, Neb.		1,105	59	71.6	0.0	100	22	50	8	28	1.56	— 3.00	0.84	0	5	17	10	3	s.	U. S. Weather Bureau
Means and extremes				70.9	— 0.7	100	22	38	8	39	4.61	— 0.01	2.85	0	8	17	9	4	s.	
South Central District																				
Afton	Union	1,212	36	70.4	+ 1.0	96	22	45	7	30	7.22	+ 2.29	4.14	0	8	18	7	5	sw.	S. R. Brown
Albia	Monroe	949	32	69.6	— 0.8	94	22	45	7	39	6.40	+ 2.08	2.00	0	11	14	10	6	nw.	O. E. McBride
Centerville‡‡	Appanoose	1,013	25	70.0	— 0.5	93	22	43	8	32	5.17	+ 0.77	1.90	0	8	18	7	5	sw.	Thomas Wood
Chariton (near)	Lucas	1,042	35	69.2	+ 0.4	93	22	44	7	39	4.91	+ 0.53	2.06	0	7	15	11	4	sw.	C. C. Burr
Corydon (near)	Wayne	1,050	37	69.0	— 1.0	92	23†	46	7†	31	4.19	— 0.45	1.53	0	8	21	3	6	sw.	J. C. Davis
Creston	Union	1,291	25	68.5	— 0.2	93	22†	44	7	28	7.04	+ 2.09	2.47	0	11	11	13	6	s.	Mrs. N. Spangler
Earlham (near)	Madison	1,126	28	67.4	— 1.1	94	22	40	8	34	3.28	— 1.15	0.96	0	6	21	6	3	sw.	George Phillips
Indianola	Warren	972	39	70.2	+ 0.2	95	22	46	7	30	6.80	+ 2.36	2.97	0	9	17	10	3	sw.	Seth F. Shenton
Knoxville	Marion	920	35	70.0	— 0.5	95	29	45	8	30	6.38	+ 2.28	2.55	0	7	17	5	8	se.	W. J. Casey
Lacona	Warren	824	31								6.25	+ 1.68	3.05	0	9	10	17	3		J. B. Alter
Lamoni	Decatur	1,123	23	68.7	— 0.9	94	22	42	7	31	3.91	— 0.94	1.11	0	8	20	5	5	nw.	F. S. Parks
Melrose	Monroe	871	1								4.82		1.87	0	10	16	9	5	sw.	J. M. Carr
Mount Ayr	Ringgold	1,220	37	69.0	— 1.0	91	22	43	8	31	6.49	+ 1.75	2.18	0	7	21	4	5	sw.	E. O. Gleason
Tingley	Ringgold	1,275	5	69.2	— 0.6	95	22	44	7	35	6.60	+ 1.93	2.39	0	7	21	5	4	se.	James A. Verploegh
Winterset	Madison	1,118	39	69.2	— 1.2	94	22†	44	7†	33	6.15	+ 1.28	2.10	0	9	24	4	2	se.	H. S. Ely
Means and extremes				69.2	— 0.6	96	22	40	8	39	5.75	+ 1.20	4.14	0	8	17	8	5	sw.	
Southeast District																				
Bonaparte (near)	Van Buren	563	39	69.7	— 0.4	92	22†	44	8	32	8.45	+ 4.09	4.41	0	10	23	3	4	s.	B. R. Vale
Burlington	Des Moines	544	34	72.2	+ 0.5	98	22	48	8	34	6.20	+ 1.91	4.22	0	12	22	4	4	sw.	John W. Donnelly
Columbus Junction	Louisa	595	29	68.5	— 2.2	92	23	44	8	31	10.69	+ 6.39	3.00	0	10	13	15	2	sw.	Miss Musa Todd
Fairfield	Jefferson	780	46	69.4	— 0.4	95	22†	42	8	34	6.53	+ 1.70	4.07	0	10	7	17	6	sw.	R. M. McKenzie
Keokuk	Lee	614	59	72.2	— 0.3	97	22	46	8	28	4.06	— 0.07	1.32	0	10	10	12	8	s.	U. S. Weather Bureau
Keokuk No. 2	Lee	651	1	72.6		101	23	44	8	32	4.44		1.35	0	11					J. N. D. Dickinson
Keosauqua‡‡	Van Buren	639	38	70.2	0.0	95	23	41	8	34	7.67	+ 3.20	4.32	0	7	6	18	6	nw.	Dr. J. W. Rinabarger
Mt. Pleasant	Henry	730	49	70.7	— 0.9	96	23	46	8	31	12.28	+ 7.25	7.59	0	9	11	15	4	se.	J. H. Jericho
Oskaloosa	Mahaska	835	54	69.0	— 0.6	94	23†	44	1	36	7.47	+ 3.49	4.10	0	11	13	8	9	nw.	Roy R. Robinson
Ottumwa	Wapello	649	35	71.2	— 0.5	95	22	44	8	33	7.26	+ 3.25	4.19	0	11	20	4	6	sw.	C. L. Mikesh
Sigourney (near)	Keokuk	790	34	69.6	— 0.1	93	23†	46	8	32	9.33	+ 5.07	4.90	0	9	18	6	6	sw.	W. E. Utterback
Stockport (near)	Van Buren	747	28	70.4	+ 0.7	95	23	42	8	31	7.57	+ 3.08	2.78	0	10	20	4	6	s.	C. L. Beswick
Washington	Washington	757	48	70.2	0.0	94	23	46	8	32	13.49	+ 9.58	9.63	0	11	14	13	3	s.	D. D. Sherman
Wever	Lee	552	2	72.0		96	22†	46	8	36	5.27		2.65	0	8					H. G. Liddle
Means and extremes				70.6	0.0	101	23	42	8	36	7.93	+ 3.59	9.63	0	10	16	9	5	sw.	
State means and extremes				69.0	— 0.3	101	22†	37	8	44	5.83	+ 1.33	9.63	0	10	16	10	4	s.	

Temperature normals are based on the 46-year period July 3, 1875 to July 2, 1921; shorter records corrected to harmonize. Precipitation normals are based on the 50-year period ended December 31, 1927 at first order stations; upon all records of 10 years or more ending December 31, 1920 for most of the co-operative observing stations; and upon interpolations from normal maps for recently established stations.

Reference letters a, b, c, etc., appearing in the table indicate the number of days missing; for example b represents two days, etc.

†Also other dates.

‡‡Received too late to be included in means and summaries.

T. Precipitation is less than 0.01 inch rain or melted snow.

RIVERS

Considerable fluctuation occurred on the interior streams and flood stages were reached at many places, caused by heavy rains during the middle of the month, which inundated the farm land and did approximately one million dollars worth of damage, most of which was in southeastern Iowa.

The Missouri River stages averaged more than two feet below normal at both Sioux City and Omaha, with little fluctuation.

On the Mississippi River, stages averaged nearly normal, with only slight fluctuations at Dubuque and Davenport. At Keokuk the Mississippi rose rapidly from a stage of 4.5 feet on the 14th to 14.0 feet in the afternoon of the 18th. The crest equalled the official flood stage, but the water receded rather rapidly after the 19th, and had reached a stage of 7.5 feet by the 23d, after which there was little fluctuation.

Daily Precipitation for May, 1930

Stations	Drainage Basin	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	
Northwest District																																	
Akron	Bix Sioux			1.30	1.05	.28								.23					.03	T.						.84							3.73
Alta	Raccoon			.88	.50	.10	.38							T.	1.70					.02						1.10	T.				T.		4.68
Alton	Floyd		.33	1.20	1.02	.37							T.	.98	T.				T.	.11			.23			.81	.04			.01			5.10
Cherokee	Little Sioux		.04	.26	.77	.10								.35	.80					.09						1.03	T.			T.	T.		3.44
Estherville	Des Moines			2.80	.45	.15	.10							.05	.85											.35					.10		4.85
Hawarden	Big Sioux			.95	1.44	.33								.30			T.			.16			.01			1.77				.01			4.97
Inwood (near)	Big Sioux			1.50	.79	.35	.27								T.					.50			.14			1.21	.57			.10			5.43
Lake Park (near)	Little Sioux		.11	2.75	.46	.57								.23								.10			.49					.02			4.73
Le Mars	Floyd		.26	.42	.82	.46	.01							.32	.02					.07						.63	.02			T.			3.03
Marathon	Raccoon		1.95	.28	.08	.28							.02	3.02			T.					.35			.88					T.			6.86
Pocahontas	Des Moines			.10	.31	.59							.08	.22	1.24								.10			.72				.10			3.46
Rock Rapids	Big Sioux			2.25	1.13	.33									.04					.36						.67	.07						4.85
Sanborn	Floyd			2.51	.73	.22								.30	.03					.06			.13			.46	.45			.10			4.99
Sheldon	Floyd		.30	1.61	.78	.60							T.	.07	.01		T.		T.	.23			.06			1.21	.22			.08			5.17
Sioux Center	Floyd			1.25	.81	.52								.15	T.					.16			.12			1.45	.05			T.			4.51
Spencer	Little Sioux			.55	.35	.27								.15	.35											.67	.06			.08			2.48
Storm Lake	Raccoon		2.00	.21	.44	.33							T.	1.02	1.75					T.						.92	.02			T.	T.		6.69
Washta	Little Sioux		.13	.09	1.62	.22								1.01	.97					.05		T.				.84	.05			T.	T.		4.98
West Bend	Des Moines		.04	.12	.34	.38	.01						.20	.86	1.17											.40	.14			.05			3.71
North Central District																																	
Algona	Des Moines		T.	.47	.24	.34	.03						.66	.29	.85							T.				.48				.10	T.		3.46
Allison (near)	Cedar				.50	.46	.67							2.84	.47								.02			.46				.60	.33		6.35
Belmond	Iowa		.08	1.18	1.18	.27	.25				.05		.45	.40	.87								.05			.75				.09	.10		5.72
Britt	Iowa			.61	.64	.22	.24					.09	.73	.33	1.55			.08					.06			.68				.08	.04		5.35
Charles City***	Cedar		T.	.15	1.13	.75	.47				T.		1.07	.33	.50		T.					.82	3.10			.42				.56	T.		9.30
Forest City	Cedar		T.	.36	.29	.26	.87							1.17	1.51		T.	.08					.55			.58					.14		5.81
Hampton	Cedar		T.		.63	1.00	.32				.15		1.27	1.00	.89								.05			.30				.88	T.		6.49
Humboldt	Des Moines		.27	.32	.43	.30					T.		.43	.64	.97								.29			.64	T.			T.	T.		4.29
Mason City	Cedar	T.		.41	1.22	.07	.50	T.			T.		1.14	.32	1.27		.05						.54			.30				.40	.08		6.30
Northwood	Cedar			.31	.53	.78	.17				.01		1.70	.20	2.75		T.						1.25			.65				.32	.05		8.72
Osage	Cedar		.06	.06	2.80	.19	.75	.07			.07		.07	.31	1.26								.75			.49				.40	.06		7.34
Northeast District																																	
Cedar Falls	Cedar		.01	.02	.64	.90	.60				.15	.10		1.50	.53		T.						.18			.40				.30	.60		5.93
Decorah	Mississippi					.98	.42	.03			.05		.02	1.98	.85			.04					.61			.19				.57			5.77
Dubuque***	Mississippi				.99	1.19	.09		.05	.35	.03	.01	.05	.26	1.16	T.	.08	T.					.32			.10				.45	.08		5.21
Fayette	Mississippi				.62	1.35	.38							3.13	1.09								1.18			.25			.13	.69	.88		9.70
Independence	Wapsipinicon				.49	.61	.32				.06	.02		3.16	.55	.05	.06						.71			.33				.95	.05		7.36
Lansing	Mississippi					2.72	.70	.05		T.				1.90	.90	.14		.01					.19	.30	.12		.12				.48		7.63
New Hampton	Wapsipinicon			.04	.55	1.34						.18		1.50	.40								.88			.43				.45	.12		5.89
Oelwein	Wapsipinicon				.70	.80	.40							3.45	.60		.10						1.55			.45				.70			8.75
Postville (near)	Mississippi				1.05	.82	.37			T.				2.13	.42		T.						.98								.91		6.68
Waterloo	Cedar		T.	T.	T.	1.18	.76				.05	.40	T.	.14	1.10	.10		.01					.23			.60				.25	.25		5.07
Waverly	Cedar				.50	.62	.53					.29		2.73	.48								.55			.41				.75	.24		7.10
West Central District																																	
Audubon (near)	Nishnabotna			.01	.29								T.	2.28	1.10					T.						.22				.26			4.16
Carroll	Raccoon		.25	.02		.54								.61	.63											.57				T.	.85		3.47
Denison	Missouri				.16	.01							.75	.06	.82					.01		T.				.70					.08		2.59
Guthrie Center	Raccoon		.13	.16	.68	.25								2.65	.70											.36							4.93
Harlan	Nishnabotna			T.	.24	T.							.90	.50	.86					T.		T.				.90				T.	.75		4.15
Jefferson	Raccoon		.31		.30	.09	.08						.26	.64	.66					T.		T.				.63					.08		3.05
Little Sioux	Little Sioux			.14	.66	.32							T.	.05	.87					.01		T.				.69				.39			3.13
Logan	Missouri		.18	.09	.22	.03							.21	.40	.90					.01		.04				.82	T.			T.	.47		3.37
Onawa	Missouri		T.	.23	.56	.07									.90											1.05							2.81
Rockwell City	Raccoon		.40	.10	.64	T.							.40	2.42	.85							.15				.80							5.76
Sac City	Raccoon		.40		.50	.08							.14	2.40	.80					T.						.91					.10		5.33
Sioux City***	Missouri		.39	.72	.51	.02							T.	2.92	02				T.	T.		T.			1.13	.01				.04			5.67
Central District																																	
Ames	Skunk		.50		.30	.70	.20							.50	.60											.50							3.30
Baxter	Skunk		.09		.63	1.03	.48							.43	1.00											.41					.04		4.14
Boone (near)	Des Moines			.47	.02	.64	.39					T.		.61	.79											.63	T.			.01	.04		3.60
Des Moines***	Des Moines	T.	.20		.78	.75	.21				T.		.04	.06	1.36		.01			T.		T.				.22				.06			3.69
Fort Dodge	Des Moines			.24	.10	.73	.58							.70	2.61								.03			.57					.06		5.62
Grinnell	Iowa				1.96	.63	1.44							1.25	1.31	.49		.01								.40							7.49
Grundy Center	Cedar		.10	T.	.50	.90	.43				T.			1.08	.47		T.									.42				.60	.20		4.70
Iowa Falls	Iowa			.06		1.67	.93							.94	2.56											.48				.07	.37		7.08
Marshalltown	Iowa		T.	.14		.70	.60						T.	.12	.53	.06					T.					.43	.01			.04	.07		2.70
Monroe	Des Moines		.62		2.27	.68	.38							.43	2.56	.18	T.			T.						.34					.08		7.54
Perry	Raccoon		T.	.01	.30	.19	.29				.17	T.	T.	.64	.83		T.									.37					T.		2.80
Toledo	Iowa		.04		1.06	.25	.92							.12	.68	.34	T.	T.								.55				.04	.10		4.10
Van Meter	Raccoon					.80	1.50							.30	.50	.30										.10	.20				T.		3.70
Waukee	Raccoon		.02		.57	2.15	.52						T.	35	.86	.02	T.			T.						.30				T.	.02		4.81
Webster City	Des Moines		T.	T.	1.51	.48	.24				.05		1.37	2.83	.63											.48				.24	.28		8.11
East Central District																																	
Belle Plaine	Iowa		.03		.95	.95	.34				.10		T.	.03	1.47	.17		T.								.47					.10		4.61
Cedar Rapids	Cedar					1.92	.31	.02					T.	T.	.24	2.87		.03	T.				1.50			.28				.04	.06		7.36
Clinton	Mississippi				.17	.88	.67		T.				.08		1.50	2.92	.02	.08					.22				.25			.10	.59		7.49
Davenport***	Mississippi				1.18	.46	.42	T.		.05	T.	.05	.19	.49	4.43	.59	.05	.35					.22			.26	T.			.05	.35		9.14
Fairport	Mississippi					2.04		.57				.02	.03	.74	.60	4.03							.10			.23	.18			.03	.82		9.39
Iowa City	Iowa					.97	.52	.02			T.		.01	.26	.37	4.66		.02					.98			.25				.02	.24		8.35
Le Claire	Mississippi					.82	.70	.06			T.		.12	.06	.22	3.51	.02	.14	.20				.13	.69		.06	.27				.60		7.60
Maquoketa (near)	Maquoketa				.23	.73	.38			.03		.13	.02	.17	.88	1.23	.05						.46			.04				.59	.25		5.19
Muscatine	Mississippi					1.00	.75				.07		.04	.40	.20	5.50	T.	.10	.04				.28			.22	.15			T.	.52		9.27
Olin	Wapsipinicon				.65	1.09	.30			.01			.03		.95	1.35	.10						.23							.45	.25		5.41
Tipton (near)	Cedar				.25	1.80				.15				.30	.95	3.95										.17					.63		8.20
Williamsburg	Iowa				1.05	.90	.62								5.05	.97										.18				.04			8.81

Daily Precipitation for June, 1930—Continued

Stations	Drainage Basin	Day of Month																													To-tals
		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	
Southwest District																																	
Atlantic‖‖	Nishnabotna			T.	.04	.85	.16							.82	.97	.15				.67						.16	.01				.04		3.20
Bedford	102		.03		1.02	1.18	.05								.81	.10				.67						1.40					.65		5.91
Clarinda‖‖	Nodaway		.02	.02	.04	1.12	.11								.57	1.03				.04	.57					1.30	.03				.69		5.51
Corning	Nodaway					.38									2.85					.15	.05					1.05							4.48
Cumberland (near	Nodaway		T.	.10	.76	.46					T.			.73	1.21	.03				T.			T.			.55					.04		3.88
Glenwood	Missouri				1.16	1.12	.04								1.73	.13				.15						.42							4.75
[illegible]nox	Missouri	T.	.14		1.02	1.33									2.40	.07				.17						.83					T.		5.96
Oakland	Nishnabotna			.02	1.37	.37								.37	1.98							.10				.29							4.80
Red Oak (near)	Nishnabotna		.06	.04	1.10	.53	.52								1.53					.23						.86					.14		5.01
Riverton (near)	Nishnabotna	T.		T.	.18	.41									1.20					1.25						1.73			T.		1.03		5.80
Thurman	Missouri				1.05	.49									.83	.32				.33						1.09					.48		4.59
Omaha, Neb.***	Missouri			.03	.23	.19							T.	T.	.84					T.		T.				.27		T.		T.			1.56
South Central District																																	
Afton	Grand		.04		1.22	1.10								.01	4.14					.16						.38					.14		7.22
Albia‖‖	Des Moines					2.00	.34						.01	.21	.84	1.91		.05			.10					.72	.18			T.	.04		6.40
Centerville	Chariton				.92	.73						.02			1.10	.80				.33						.43					.84		5.17
Chariton (near)	Chariton				.82	1.02	T.					T.			1.86	.20				.15						.66					.20		4.91
Corydon (near)	Chariton				.26	1.27						T.			.96	.29	.09			.20						.63					.49		4.19
Creston‖‖	Missouri		.01	.05		1.81	.52						T.	.09	1.67	2.47					.10	T.				.17	.13				.02		7.04
Earlham (near)	Des Moines		.57		.81	.41								.15	.96											.38							3.28
Indianola	Des Moines		.07		1.75	1.05	.40							.02	2.97	.04				T.						.43					.07		6.80
Knoxville	Des Moines				1.35	1.15	.35					T.			2.55	.35	T.			T.						.58					.05		6.38
Lacona	Des Moines				1.25	1.05	.20					.01	.01		3.05	.33										.33					.02		6.25
Lamoni‖‖	Grand					1.04	.02						T.		.94	.17					.38				.75	.05					.56		3.91
Melrose	Des Moines				.42	1.45	.20					.10			1.30	.22				.20	.10					.58					.25		4.82
Mount Ayr	Grand				.25	1.08									2.18	.39				.80						.94					.85		6.49
Tingley	Platte				.86	1.47						T.			2.39	.13				.38						1.00					.37		6.60
Winterset	Des Moines	T.	2.10		.75	1.05	.09					T.		.24	1.52	.02				T.						.35					.03		6.15
Southeast District																																	
Bonaparte (near)	Des Moines				T.	1.27	.10					T.	.14	.11	.81	4.44	T.			.20	.03				T.	.57				T.	.78		8.45
Burlington‖‖	Mississippi					.07	.32			T.			.13	.02	.06	4.16	.03	.02			.05					.49	.22				.63		6.20
Columbus Junction	Iowa				.90	1.21	.87			.01		.05	T.	1.43	3.00	2.42	T.									.25					.55		10.69
Fairfield	Skunk				.20	.63	.33					.40	.04		2.78	1.29	T.			.04						.36					.46		6.53
Keokuk***	Mississippi					.27	.01					.08	.15	T.	.08	.64		T.		.31	T.					1.32				.01	1.19		4.06
Keokuk No. 2	Mississippi					.23	.19					.06	.14	.02		.84				.29	.14					1.13	.22				1.18		4.44
Keosauqua	Des Moines				.50	.25	.15					T.			3.60	.72				.26						.54					1.65		7.67
Mt. Pleasant	Skunk				.13	1.12	.37					.03			2.59	5.00	.02			T.						.69					2.33		12.28
Oskaloosa	Des Moines			T.	.32	1.06	.38					.05		.72	3.53	.57	.13			T.						.58				.02	.11		7.47
Ottumwa	Des Moines				.12	1.09	.20					.07		.01	3.49	.70				.08						.57				.03	.90		7.26
Sigourney (near)	Skunk				.64	1.16	.36	T.				.02		.76	4.90	.54	T.	T.		T.						.46		T.		T.	.49		9.33
Stockport (near)	Skunk					.45	.11					.07	.11	.06	1.49	2.78	T.			.26						.75					1.49		7.57
Washington	Skunk				.32	1.30	.50					T.	.08	.85	6.35	3.28	T.			T.			.02			.22				.02	.55		13.49
Wever	Mississippi					.20	.25					.06			.20	2.65				.25						1.06					.60		5.27

Except as otherwise indicated, observations are generally made late in the afternoon, near sunset, and precipitation recorded is for 24 hours ending at the time of observation.

‖‖Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.

***Regular Weather Bureau Station: precipitation is for 24-hour period midnight to midnight.

**Incomplete.

*Precipitation included in the next following measurement.

T. Precipitation is less than .01 inch rain or melted snow.

PRESSURE, RELATIVE HUMIDITY, WIND AND SUNSHINE

Stations	Barometric Pressure, Inches (Sea Level)					Relative Humidity, %					‡‡Wind					Sunshine	
						Mean							Maximum				
	Mean	Highest	Date	Lowest	Date	7 A. M.	12 Noon‡	7 P. M.	Lowest	Date	Total movement	Average hourly velocity	Miles	From	Date	% possible	Departure from normal
Chas. City	29.90	30.24	8	29.52	12	80	54	64	34	15	3,979	5.5	27	nw.	29	65	— 3
Davenport	29.92	30.22	8	29.59	23	74	54	55	26	1	6,355	8.8	36	s.	22	68	— 1
DesMoines	29.90	30.23	8	29.56	13	79	52	53	32	27	6,234	8.7	35	s.	13	70	+ 4
Dubuque	29.90	30.20	8	29.52	23	80	57	59	34	1	4,115	5.7	19	s.	12	68	+ 4
Keokuk	29.94	30.23	8	29.66	23	72	52	52	27	8	4,913	6.8	24	w.	30	72	0
Sioux City	29.89	30.24	8	29.43	13	76	48	46	24	1	7,314	10.2	42	sw.	3	76	+13
Omaha, Nb	29.90	30.23	8	29.49	13	72	45	46	24	15	4,869	6.8	33	n.	25	83	+15
Means and extremes	29.91	30.24	8	29.43	13	76	52	54	24	1		7.5	42	sw.	3	72	+ 5
Normals and records	29.93	*30.61	10th 1913	§29.04	5th 1880	79		60	¶13	7th 1926			¶68	w.	22 1917	67	

*Dubuque §Omaha ¶Sioux City ‡Local meantime.

‡‡January 1, 1928, 3-cup anemometers replaced 4-cup instruments. See Climatological Data, January, 1928, page 7.

ERRATA

Report for March, 1930. Page 18, Waterloo; total snowfall published 5.6 inches, should be 6.6 inches. Page 18, Waverly; number of days precipitation 0.01 inches or more published 2, should be 3.

Report for April, 1930, Page 27, Clarinda; mean temperature published 55.2° should be 55.4°, Departure from normal published +4.1°, should be +4.3°. Page 28, Allison (near); precipitation on 20th published 0.12, should be 1.12. Page 28, Sioux City; precipitation on 19th published 0.38, should be 0.58. Page 28, Baxter; precipitation on 27th published 0.09, should be 0.02.

Report for May, 1930, Page 34, Logan; total precipitation published 2.55 inches, should be 3.27; departure from normal precipitation published —1.69, should be —0.97; greatest precipitation in 24 hours published 1.02, should be 1.74; number of days with precipitation 0.01 inch or more was published 11, should be 12. Page 36, Logan; precipitation on 7th, published trace, should be 0.72 inch; total precipitation published 2.55, should be 3.27.

Report for May, 1930, Page 35, Clarinda; mean temperature published 61.5°, should be 61.4°; departure published —1.4°, should be —1.5°.

MISCELLANEOUS PHENOMENA

Aurora: 1st, 16th, 26th.

Coronas, Lunar: 2d, 3d.

Dust Storm: 12th.

Flood: 1st, 2d, 3d, 4th, 5th, 7th, 8th, 10th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 21st.

Fog, light: 8th, 11th, 12th, 13th, 18th, 20th, 21st.

Fog, dense: 8th, 13th.

Frost, light: 7th.

Gales: 1st, 2d, 3d, 12th, 13th, 24th, 25th, 26th, 28th, 29th, 30th.

Hail, light: 1st, 2d, 3d, 4th, 8th, 9th, 13th, 20th, 22d, 25th, 26th, 29th, 30th.

Hail, moderate: 5th, 10th, 21st, 23d, 24th, 25th, 26th.

Hail, heavy: 10th, 13th, 20th, 22d, 24th.

Halos, solar: 4th, 7th, 10th, 11th, 14th, 19th, 23d, 27th.

Meteor: 23d.

Rainbows: 5th, 15th, 16th.

Thunderstorms: 2d, 3d, 4th, 6th, 12th, 13th, 14th, 18th, 21st, 22d, 24th, 25th, 26th, 28th, 29th 30th.

Tornadoes: 2d, 13th, 14th, 20th, 22d, 24th, 25th.

Daily Maximum and Minimum Temperature for the Month of June, 1930

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
Northern Division																																	
Algona	Maximum	80	88	82	75	71	62	65	73	78	79	77	82	83	83	79	72	70	74	78	85	93	92	88	83	83	82	85	85	80	74	.....	79.4
	Minimum	54	55	66	62	54	49	48	45	48	47	54	57	56	55	59	54	52	47	59	57	65	71	72	61	61	57	59	61	65	54	.....	56.8
Alta	Maximum	82	89	82	75	69	65	65	76	80	82	79	81	91	81	78	70	78	82	79	88	96	99	86	89	80	81	90	87	78	74	.....	81.1
	Minimum	55	55	62	61	55	50	43	44	48	52	52	56	56	55	56	53	50	49	59	55	64	72	65	58	59	56	58	60	65	54	.....	55.9
Alton	Maximum	82	86	78	76	71	68	68	72	77	78	76	82	90	83	79	74	77	79	78	84	94	97	86	85	83	83	86	88	81	77	.....	80.6
	Minimum	58	46	61	62	54	49	42	41	48	47	51	57	51	58	51	53	49	50	60	55	66	70	70	52	58	57	54	62	67	52	.....	55.0
Belmond	Maximum	80	86	83	77	71	64	67	75	78	80	77	82	83	80	80	73	70	75	79	85	92	93	92	85	83	80	85	85	85	74	.....	80.0
	Minimum	53	57	57	63	53	50	45	41	45	48	49	57	61	56	61	54	50	44	54	55	60	68	71	55	61	55	56	56	62	55	.....	55.1
Charles City	Maximum	79	84	84	76	65	61	67	74	77	79	77	81	83	76	80	72	64	72	78	84	89	84	91	83	83	79	83	82	86	73	.....	78.2
	Minimum	50	60	64	63	54	52	45	44	49	53	55	58	62	60	62	57	55	56	54	58	64	66	64	59	64	58	59	60	60	57	.....	57.4
Decorah	Maximum	78	84	84	82	65	65	70	75	80	78	78	83	80	77	78	72	65	74	78	85	88	84	92	92	82	78	81	79	86	74	.....	78.9
	Minimum	53	56	59	64	60	50	42	38	44	45	52	55	58	57	63	56	54	54	54	50	56	64	67	55	62	51	50	54	59	55	.....	54.6
Dubuque	Maximum	79	85	85	83	68	61	66	73	72	77	73	80	84	75	80	75	68	72	75	82	89	84	94	84	83	80	83	80	88	80	.....	78.6
	Minimum	53	65	66	64	61	52	48	47	53	49	55	58	66	66	65	59	57	55	53	58	62	69	71	64	63	64	63	55	64	60	.....	59.5
Forest City	Maximum	80	87	82	75	72	63	66	72	77	79	77	83	81	81	81	72	67	72	79	83	89	87	91	83	82	79	83	83	81	73	.....	78.7
	Minimum	49	53	56	60	57	48	45	44	46	49	49	55	54	55	58	53	50	47	52	55	60	66	70	52	59	53	56	58	56	52	.....	53.9
Independence	Maximum	78	82	84	82	66	64	64	70	74	76	74	81	82	80	78	73	66	70	73	80	85	83	90	84	81	79	80	80	84	85	.....	77.6
	Minimum	52	58	64	64	59	52	49	47	49	52	53	53	63	63	62	58	54	56	52	56	60	65	72	60	61	60	60	55	63	58	.....	57.7
Inwood	Maximum	85	91	85	75	63	69	66	71	76	79	77	80	91	83	77	75	78	80	79	81	96	97	81	86	81	81	86	87	79	74	.....	80.3
	Minimum	58	47	59	61	53	45	41	43	49	47	50	56	50	54	51	48	44	50	58	56	65	67	66	52	56	53	55	58	60	53	.....	53.5
Lake Park	Maximum	81	89	75	72	64	62	63	70	76	78	76	79	84	79	75	71	71	76	76	86	93	83	85	79	81	85	87	84	81	71	.....	77.7
	Minimum	55	50	57	60	53	47	43	46	47	53	52	56	50	55	54	52	49	48	58	54	58	65	53	54	57	56	55	61	60	54	.....	53.7
Mason City	Maximum	79	86	82	76	68	61	67	72	76	79	75	81	82	79	77	70	66	72	79	83	87	85	88	84	81	78	83	81	83	72	.....	77.7
	Minimum	53	57	58	61	54	52	43	39	43	49	49	56	55	56	60	55	52	49	50	56	60	65	63	54	61	57	55	55	58	55	.....	54.3
New Hampton	Maximum	79	83	85	79	70	65	70	75	78	80	77	82	83	81	80	76	67	75	80	86	86	84	91	83	84	82	83	84	85	75	.....	79.6
	Minimum	50	56	60	63	60	51	42	42	46	48	51	55	60	59	62	56	52	55	51	54	59	65	67	55	62	56	55	56	60	54	.....	55.4
Northwood	Maximum	78	86	80	73	71	58	66	74	79	81	77	81	81	80	78	70	65	73	79	84	89	83	88	81	81	78	82	83	80	72	.....	77.7
	Minimum	50	56	60	62	54	50	44	45	50	52	52	56	56	56	61	56	53	53	53	59	67	66	70	57	62	57	58	57	60	54	.....	56.2
Pocahontas	Maximum	82	88	86	76	73	66	66	74	80	79	77	87	87	81	80	75	73	79	79	85	95	98	89	88	82	83	89	87	82	75	.....	81.4
	Minimum	54	53	63	62	55	51	44	42	45	48	50	57	54	56	57	54	51	46	57	54	63	76	73	56	61	57	56	59	67	50	.....	55.7
Postville	Maximum	76	80	91	80	65	62	63	70	72	74	74	78	79	77	76	70	62	68	72	78	83	80	88	76	79	74	79	76	81	76	.....	75.3
	Minimum	53	59	61	63	59	50	42	45	47	48	52	55	61	60	61	60	55	52	50	54	59	64	64	57	56	57	57	55	55	55	.....	55.5
Rock Rapids	Maximum	84	90	78	74	64	67	68	74	78	79	79	81	88	84	73	74	76	80	79	85	95	96	89	87	81	83	87	87	81	75	.....	80.5
	Minimum	56	55	58	62	52	47	40	42	48	46	50	56	48	50	48	50	46	48	58	55	65	66	67	52	57	55	53	63	66	53	.....	53.7
Central Division																																	
Ames	Maximum	81	83	85	82	73	65	65	73	88	78	75	85	86	82	82	75	71	77	77	84	94	95	95	87	84	83	88	88	94	78	.....	81.8
	Minimum	50	59	61	65	60	53	45	45	46	50	50	58	65	59	60	57	53	49	57	56	60	74	76	59	62	59	58	59	62	58	.....	57.5
Belle Plaine	Maximum	84	86	87	86	69	64	68	76	79	81	76	85	88	81	84	77	70	79	79	84	92	91	94	88	90	83	87	87	86	95	84	82.4
	Minimum	46	64	61	66	63	53	47	42	46	53	51	58	66	63	61	55	54	56	51	54	58	68	73	57	64	59	54	57	62	56	.....	57.3
Carroll	Maximum	79	85	83	80	71	66	65	71	76	77	74	85	86	82	82	75	74	78	76	83	93	95	94	85	82	81	88	85	88	75	.....	80.5
	Minimum	56	59	62	63	54	51	45	43	47	49	52	55	63	55	58	54	52	50	59	55	62	74	74	56	60	55	57	60	56	55	.....	56.4
Cedar Rapids	Maximum	82	87	89	87	70	64	70	77	81	83	75	86	88	83	82	79	72	79	79	87	91	87	95	87	90	83	88	86	94	84	.....	82.8
	Minimum	49	61	62	64	62	54	49	45	50	53	51	58	67	64	62	58	54	53	52	54	58	65	76	61	64	61	59	57	67	59	.....	58.2
Davenport	Maximum	81	86	86	86	70	62	67	75	76	78	73	82	87	79	79	76	71	76	76	84	89	88	96	84	85	81	87	85	91	83	.....	80.6
	Minimum	54	67	66	66	62	55	52	50	55	54	58	58	65	64	64	62	56	58	60	58	65	68	71	65	67	65	63	59	69	63	.....	61.3
Des Moines	Maximum	80	78	86	77	71	66	65	71	76	78	70	84	88	77	83	75	72	78	72	83	91	95	95	85	85	83	87	87	94	80	.....	80.4
	Minimum	54	63	64	66	56	54	49	47	49	53	56	59	68	64	62	60	55	54	60	56	68	75	69	63	64	61	61	63	66	61	.....	60.0
Ft. Dodge	Maximum	80	86	85	78	74	63	64	72	79	79	77	82	85	78	80	73	71	74	79	85	91	94	91	85	82	80	87	86	87	75	.....	80.1
	Minimum	53	57	63	64	54	51	46	42	44	49	50	58	60	56	58	54	51	47	58	54	61	73	72	55	62	57	55	60	60	55	.....	56.0
Grinnell	Maximum	74	84	85	83	72	69	66	72	78	79	74	85	86	88	82	76	71	72	74	82	90	91	94	82	90	85	87	85	94	84	.....	81.1
	Minimum	47	60	61	63	60	52	46	43	46	52	51	57	62	62	58	55	52	53	52	53	60	67	69	60	64	60	58	54	64	62	.....	56.8
Guthrie Center	Maximum	80	81	87	85	71	67	64	72	77	78	73	85	87	81	81	80	72	78	80	82	93	97	95	87	87	85	88	86	92	78	.....	81.6
	Minimum	56	57	62	63	56	51	42	39	42	44	49	57	67	57	59	55	51	50	59	59	63	74	73	55	71	56	53	56	67	54	.....	56.6
Iowa City	Maximum	81	87	87	86	68	63	67	75	77	80	72	84	87	76	81	77	71	76	76	84	90	88	94	86	88	80	85	85	91	83	.....	80.8
	Minimum	48	63	62	64	62	55	49	44	52	53	51	58	65	65	62	58	55	55	53	55	59	67	72	61	64	62	59	57	67	62	.....	58.6
Iowa Falls	Maximum	81	86	85	81	70	63	66	74	81	78	77	86	85	78	79	74	70	74	78	84	90	91	93	86	82	81	84	86	87	75	.....	80.2
	Minimum	53	58	62	62	53	53	45	43	47	50	50	51	62	58	63	51	53	47	55	56	60	69	69	57	63	57	57	57	65	56	.....	56.1
Little Sioux	Maximum	83	87	84	77	71	69	67	75	78	79	77	86	94	84	84	79	76	82	81	87	98	101	91	88	84	84	87	90	85	77	.....	82.8
	Minimum	53	61	62	63	57	48	44	43	51	47	54	60	65	56	52	53	50	57	65	57	66	72	75	56	61	54	57	66	63	55	.....	57.4
Marshalltown	Maximum	81	85	87	82	70	65	67	73	78	80	75	85	87	81	84	76	68	77	77	84	94	95	96	87	86	84	87	88	94	79	.....	81.7
	Minimum	52	62	63	68	61	52	47	46	48	54	53	58	66	63	59	57	53	51	55	55	61	69	75	59	63	59	60	60	68	58	.....	58.5
Olin	Maximum	80	86	86	87	69	63	68	77	79	81	74	82	84	80	83	79	77	78	80	85	90	84	95	86	88	84	87	81	88	85	.....	81.5
	Minimum	48	59	61	63	60	53	46	42	51	46	51	57	72	65	63	55	54	53	50	53	55	68	72	61	62	61	55	54	65	65	.....	57.3
Sioux City	Maximum	83	86	80	78	62	67	67	73	76	79	75	82	93	82	81	75	76	80	80	86	93	99	84	87	82	83	86	89	79	74	.....	80.6
	Minimum	60	51	62	62	51	50	45	47	54	51	55	59	61	62	59	56	53	56	65	60	70	75	66	58	61	60	59	67	65	58	.....	58.8
Southern Division																																	
Albia	Maximum	80	86	86	84	71	68	68	73	78	79	72	84	87	80	83	77	71	78	70	81	91	94	93	86	84	82	85	90	92	84	.....	81.2
	Minimum	50	59	62	64	60	52	45	46	49	52	54	57	65	63	59	58	53	50	58	56	65	72	73	60	62	60	59	64	53	60	.....	58.0
Atlantic	Maximum	79	86	81	78	73	70	68	72	76	82	72	86	85	83	79	79	76	80	72	79	96	96	92	87	87	86	87	89	94	81	.....	81.7
	Minimum	52	54	63	63	57	50	40	38	43	43	49	56	65	57	55	53	48	51	60	54	64	69	73	54	62	54	51	59	71	51	.....	55.3
Burlington	Maximum	86	90	90	88	75	67	66	74	77	83	71	86	91	80	82	82	73	78	73	86	91	98	97	90	86	82	86	92	93	87	.....	83.3
	Minimum	52	63	62	66	64	55	50	48	55	55	56	58	66	65	64	62	57	58	58	57	65	71	75	66	65	65	62	60	71	64	.....	61.2
Columbus Jct	Maximum	80	86	86	87	69	65	64	70	75	76	72	82	84	79	76	75	69	73	72	79	84	88	92	82	80	79	82	83	85	82	.....	78.5
	Minimum	50	61	63	65	62	54	51	44	52	52	48	51	62	63	62	60	55	56	54	53	60	68	72	63	63	63	59	58	70	62	.....	58.5
Corning	Maximum	87	84	96	80	77	80	70	72	75	78	71	70	85	86	88	78	75	81	76	80	94	95	97	86	89	88	88	85	92	84	.....	82.9
	Minimum	48	56	60	61	59	50	42	39	42	44	50	48	59	63	59	55	50	53	60	58	65	69	74	55	60	55	53	63	73	53	.....	55.9
Corydon	Maximum	79	84	84	82	71	64	63	69	78	76	68	84	86	81	78	75	68	73	68	77	88	91	92	83	79	80	83	85	92	80	.....	78.7
	Minimum	51	53	64	64	61	54	46	46	49	52	55	58	68	64	59	58	54	52	58	58	66	72	74	62	63	60	60	62	72	60	.....	59.2
Creston	Maximum	78	83	84	74	71	67	62	69	73	76	68	83	85	78	82	73	72	78	68	78	91	93	93	84	84	83	85	84	92	80	.....	79.0
	Minimum	50	58	62	65	58	50	44	45	49	53	51	55	65	63	59	58	52	54	58	58	65	70	72	59	62	58	58	62	70	57	.....	58.0
Fairfield	Maximum	82	88	87	82	73	66	64	72	78	80	72	84	89	78	80	75	68	76	73	82	91	95	95	86	82	80	84	87	92	83	.....	80.8
	Minimum	48	60	62	65	62	53	46	42	45	52	52	57	67	64	61	58	55	52	51	53	61	70	72	62	63	62	58	58	69	62	.....	58.1
Keokuk	Maximum	82	87	88	87	78	67	65	74	78	80	65	84	88	87	81	77	72	79	74	82	90	97	97	88	80	83	85	88	87	84	.....	81.8
	Minimum	57	65	68	71	59	53	49	46	52	57	58	61	69	67	66	63	58	58	58	61	67	73	76	68	66	66	64	63	74	65	.....	62.6
Knoxville	Maximum	80	84	85	82	73	69	64	72	77	77	73	85	87	83	83	77	69	75	71	82	91	94	93	85	85	83	87	87	95	85	.....	81.1
	Minimum	53	60	65	64	61	53	47	45	47	50	54	58	67	64	60	59	55	50	58	55	64	68	76	61	63	60	61	61	70	59	.....	58.9
Lamoni	Maximum	80	85	85	79	74	68	62	71	76	82	65	84	87	81	83	76	72	80	68	79	92	94	93	85	83	82	86	85	92	82	.....	80.4
	Minimum	50	58	61	62	58	49	42	44	48	51	51	56	65	62	57	57	52	51	56	55	63	70	72	59	60	57	57	62	68	56	.....	57.0
Sigourney	Maximum	81	87	86	85	73	65	65	75	79	81	69	84	86	80	83	76	69	77	70	83	90	92	93	86	84	81	87	86	93	82	.....	80.9
	Minimum	51	59	61	63	61	53	47	46	47	54	50	57	64	64	60	59	55	53	54	53	62	70	74	61	63	62	58	60	68	60	.....	58.3
Thurman	Maximum	81	88	87	83	75	70	70	72	75	78	70	88	90	84	83	80	76	81	73	81	94	96	91	86	85	83	85	87	91	78	.....	82.0
	Minimum	55	58	64	67	60	50	45	43	50	49	55	60	69	60	57	58	52	56	60	60	67	67	70	67	64	61	67	63	73	55	.....	59.4
Winterset	Maximum	79	78	85	80	72	68	65	72	78	80	72	84	88	82	83	78	73	78	74	83	93	94	94	86	87	84	89	88	93	82	.....	81.4
	Minimum	52	55	62	64	59	50	44	44	49	50	54	55	64	63	59	55	50	50	60	55	65	71	70	55	60	55	56	60	69	55	.....	57.0
Omaha, Neb.	Maximum	82	86	84	78	71	69	68	73	76	79	71	88	90	79	85	77	76	82	75	85	96	100	90	88	85	86	87	89	88	80	.....	82.1
	Minimum	59	63	64	65	54	50	51	50	54	54	58	60	64	58	62	61	55	60	62	60	69	76	71	63	64	61	67	68	64	63	.....	61.0

IOWA STORMS, MAY, 1930
(Continued from May issue)

Date	County	Township	Nature of Storm	Time	Storm Moved From	Width of Path	Length of Path Miles	Area of Sq. Miles	Size of Hailstones Inches	Damage	Persons Killed	Persons Injured
6	Woodbury	Woodbury, Concord, Sioux City	Wind and Hail	3:00 a. m.	SW to NE				Walnuts	10,000		
7	Clinton	Lincoln, Camanche	Wind	5:00 a. m.	SW to NE					2,000		
7	Iowa	Greene	Wind	3:00 p. m.	S to N					500		
7	Lucas	Union	Hail	6:00 p. m.	SW to NE				Pigeon eggs	200		
7	Tama	Lincoln	Hail and Flood	11:00 a. m.	SW to NE				Marbles	100		
7	Clayton	Garnaville	Wind	3:00 p. m.	SW to NE					150		
7	Delaware	Hazel Green, Union, Delhi	Wind and Hail	3:30 p. m.	SW to NE				Peas	1,500		
8	Wayne	Grand River	Tornado and Hail	5:30 p. m.	SW to NE		4		Hazelnuts	200		
9	Buena Vista	Hayes, Washington, Storm Lake	Tornado and Hail	2:30 a. m. to 2:40 a. m.	SW to NE		8		Walnuts	15,000, Tornado		1
9	Buchanan	Sumner	Hail	7:00 a. m.	SW to NE				Hazelnuts	250		
9	Calhoun	Elm Grove	Wind and Hail	3:30 a. m.	NW to SE				Marbles	200		
9	Cass	Grove, Massena	Wind and Hail	1:30 a. m.	NW to SE				Hazelnuts	100		
9	Lyon	Cleveland, Rock, Riverside	Wind and Hail	6:00 p. m.	NW to SE				Walnuts	1,050		
9	Floyd	Union	Wind and Hail	6:30 p. m.	SW to NE				Walnuts	175		
9	Sioux	Buncombe, Logan, Eagle, Washington, Center, Garfield, Plato, Rock, Lincoln, Welcome	Wind and Hail	6:20 p. m.	SW to NE				Baseballs	8,000		
9	Humboldt	Weaver, Corinth, Ruthland, Grove, Lake, Vernon	Wind and Hail	2:30 p. m.	SW to NE				Pigeon eggs	400		
9	Black Hawk	Washington	Wind and Hail	7:00 a. m.	NW to SE				Marbles	50		
9	Guthrie	Baker	Wind and Hail	2:00 a. m.	NW to SE				Hen eggs	200		
9	Plymouth	Portland	Hail	6:00 p. m.	S to N				Baseballs	2,000		
9	Woodbury	Arlington, Sloan	Wind	1:30 a. m. to 2:30 a. m.	SW to NE					1,200		
9	Wright	Pleasant	Tornado	4:00 a. m.	SW to NE		⅓			1,000		
10	Butler	Beaver	Wind and Hail	12:00 noon	W to E				Marbles	25		
10	Crawford	Charter Oak, Willow	Wind	3:30 p. m. to 4:30 p. m.	W to E					5,000		
13	Fayette	Pleasant Valley, Illyran	Wind							1,000		
20	Black Hawk	Mt. Vernon, Bennington, Payner, Fox, Lester East Waterloo	Wind, Hail and Flood	5:00 p. m. to 6:00 p. m.	NW to SE				Walnuts to Hen eggs	1,500, Wind 33,700, Hail 20,500, Flood		
22	Linn	Marion	Rain and Flood	3:30 p. m.	SW to NE					1,000		
22	Dubuque	New Wine, Dodge, Taylor	Rain and Flood	p. m.						7,000		
22	Delaware	Elk, Oneida	Rain and Flood	p. m.						3,000		

IOWA STORMS, JUNE, 1930

1	Dickinson	Richland	Wind and Hail	4:00 a. m.	S to N				Marbles	$700		
2	O'Brien	Center	Rain and Flood	11:00 p. m.						$1,200		
2	Adair	Richland, Orient	Hail	11:15 a. m.	SW to NE			36	½	$23,000		
2	Adams	Colony, Douglas, Washington	Hail	11:15 a. m.	SW to NE			9	½	$6,000		
2	Boone	Union	Wind and Hail	3:00 p. m. to 4:00 p. m.	SW to NE				¾	$7,000		
2	Cass	Massena	Wind and Hail	12:00 noon	SW to NE				Marbles	$500		
2	Ida	Galva	Rain and Flood	7:00 p. m.	W to E					$10,000		
2	Jasper	Des Moines	Tornado, Wind and Hail	3:00 p. m.	SW to NE		2		Marbles	(Tornado $2,000 (Wind, Hail $4,000		
2	Marion	Perry, Swan, Red Oak	Wind, Hail, Flood	3:00 p. m. to 3:30 p. m.	SW to NE				Walnuts	(Hail $11,100 (Flood $6,000		
2	Polk	Allen, Camp	Wind and Hail	3:30 p. m.	NW to SE				Walnuts	$17,000		
2	Warren	Greenfield	Wind and Hail	12:50 p. m.	SW to NE				Walnuts	$5,000		
2	Warren	Richland	Wind and Hail	3:30 p. m.	W to E				1 to 1½	$20,000		
2	Woodbury	Miller	Wind and Hail	4:30 p. m.	NW to SE				⅝	$4,080		
3	Floyd	Rock Grove, Rudd, Rockford	Wind and Hail	7:00 p. m. to 8:00 p. m.	S to N				Hickory nuts	(Wind $2,200 (Hail $1,000		
3	Clay	Waterford, Summit	Rain and Flood	12:00 a. m.	SW to NE					Flood $2,500		
3	Dickinson	Westport, Okoboji	Rain and Flood	12:00 a. m.	SW to NE					Flood $1,000		
3	O'Brien	Hartley	Rain and Flood	12:00 a. m.	SW to NE					Flood $500		
3	Hamilton	Marion, Clear Lake, Scott, Ellsworth, Hamilton, Lyon, Lincoln, Liberty, Rose Grove, Independence, Blairsburg, Williams	Rain and Hail	p. m.					Hickory nuts	$10,000		
3	Howard	New Oregon	Wind and Hail	8:30 p. m.					Walnuts	$400		
3	Woodbury	Sioux City, Woodbury, Concord	Wind, Rain, Hail	7:00 p. m.					Hickory nuts	$1,400		1
4	Howard	Howard Center	Wind	12:00 p. m.	SW to NE					$75		
4	Pottawattamie	Valley	Wind and Hail	3:30 p. m.	SW to NE				Hickory nuts	$100		
4	Adair	Grand River	Hail	12:00 noon	SW to NE				¼	Slight damage		
5	Buena Vista	Fairfield	Rain and Flood	8:00 p. m.	SW to NE					$5,000		
5	Hancock	Magor	Rain and Flood	p. m.	SW to NE					$3,000		
5	Kossuth	Greenwood, Seneca, German, Harrison, Swea	Rain, Hail, Flood	12:10 p. m. to 2:30 p. m.					Marbles	$8,420		
7	Cedar	Iowa	Rain and Flood	3:00 p. m.	SW to NE					$53,000		
7–8	Louisa	Oakland, Union, Columbus City, Concord, Wapello, Grand View, Jefferson, Elliott	Rain and Flood							$110,000		
7–8	Wapello	Columbia, Cass, Center, Agency, Dahlonega, Keokuk, Washington	Wind, Rain, Flood							$95,000		
7–8	Muscatine	Moscow, Goshen, Bloomington, Pike Lake, Orono, Cedar, Fruitland	Rain and Flood							$55,000		
7	Johnson	Pleasant Valley	Rain and Flood							$10,000		
8	Madison	Scott	Rain and Hail	11:00 a. m.	SW to NE				½	$500		
8	Warren	White Oak	Rain and Flood	5:30 p. m.						$60,000	3	6
9	Webster	Gowrie	Wind and Hail	1:00 a. m.	SW to NE				Hazel nuts	$3,500		
11	Guthrie	Stuart	Wind and Hail	3:30 p. m.	W to E				¼	$100		
11	Sac	Wheeler	Hail	8:00 a. m.	NW to SE				¾	$5,000		
11	Webster	Newark	Wind and Flood	10:00 a. m.	SW to NE					Crops $5,000		
12	Carroll	Maple River, Grant	Rain and Flood	p. m.	W to E					$5,000		
12	Crawford	Denison	Rain and Flood	p. m.	W to E					$6,000		
12	Calhoun	Twin Lakes	Rain and Flood	9:00 a. m.	SW to NE					$8,000		
12	Howard	Howard Center	Wind	6:30 a. m.	W to E					$200		

(Continued on next page)

IOWA STORMS, JUNE, 1930—Continued

Date	County	Township	Nature of Storm	Time	Storm Moved From	Width of Path	Length of Path Miles	Area of Sq. Miles	Size of Hailstones Inches	Damage	Persons Killed	Persons Injured
12	Poweshiek	Sugar Creek, Union, Washington, Pleasant	Wind	2:00 a. m.	SW to NE					$3,000		
12	Woodbury	Sioux City	Rain and Flood	p. m.						$4,000		
12	Black Hawk	Waterloo, East Waterloo	Wind	p. m.						$2,500		
12	Worth	Grove	Wind, Rain, Flood	p. m.						$300		
13	Worth	Grove	Rain and Flood	a. m.						$500		
13	Bremer	Washington, Jackson	Rain and Flood							$10,000		
13	Black Hawk	Washington	Wind, Rain, Flood	10:00 a. m.	S to N					$500		
13	Buena Vista	Hayes	Wind, Rain, Flood	8:00 p. m.	NW to SE					$3,500		
13	Cherokee	Diamond	Rain and Flood	8:00 a. m.	W to E					$8,000		
13	Clarke	Madison, Washington	Wind, Rain, Flood	7:00 a. m.	W to E					$12,000		
13	Calhoun	Sherman, Center, Twin Lakes, Butler	Rain and Flood							Bridges $6,000 Crops $10,000		
13	Clayton	Garnavillo	Rain and Flood	4:00 p. m.	SW to NE					$7,000		
13	Crawford	Soldier, Charter Oak, Morgan	Tornado	10:05 p. m.	SW to NE		8			$15,050		
13	Fayette	Fairfield, Harlan, Jefferson	Rain and Flood							$5,000	1	
13	Hamilton	Williams	Wind, Rain, Flood	8:00 a. m. to 11:00 a. m.	SW to NE				Hazel nuts	Hail $100 Flood $5,200		
13	Ida	Hayes, Garfield	Hail and Flood	7:40 a. m. to 8:30 a. m.	NW to SE				Walnuts	Hail $32,000 Flood $1,200		
13	Ida	Galva, Silver Creek	Flood, Wind, Hail	6:00 a. m. to 9:00 a. m.					Marbles	Hail $10,000 Flood $36,600		
13	Ida	Maple, Grant	Wind, Hail, Flood	7:00 a. m.	W to E				Walnuts	Wind $4,500 Hail $42,000 Flood $3,200		
13	Ida	Hayes, Grant	Rain, Wind, Hail	6:00 p. m.	NW to SE				2	$7,000		
13	Ida	Hayes, Grant	Rain, Wind, Hail	10:00 p. m.	NW to SE				½	$2,000		
13	Kossuth	Harrisoon	Rain, Hail, Flood		W to E					Hail $1,400 Flood $1,000		
13	Keokuk	Richland, Clear Creek, Jackson, East Lancaster West Lancaster, Sigourney, Plank, Warren	Rain and Flood							Flood $45,000		
13	Mahaska	Monroe	Rain and Flood		NW to SE					$8,000		
13	Muscatine	Throughout County	Flood							Bridg's&Culv. $20,000 Railroads $3,000		
13	Monona	Maple	Wind, Rain, Flood	10:00 p. m.	SW to NE					Wind $10,000 Flood $10,000		
13	Monona	Cooper Maple	Tornado, Hail and Flood	11:00 p. m.	SW to NE		7		Peas	Wind $2,000 Tornado $6,000 Flood $4,000		
13	Palo Alto	Vernon	Wind and Hail	7:30 p. m.	SW to NE				½ to 1	Wind $200 Hail $2,300		
13	Pocahontas	Lizard	Wind, Hail, Flood	10:00 a. m.	SW to NE				¾	Wind $1,500 Hail $85,000 Flood $10,000		
13	Sac	Wheeler, Levey, Viola	Wind, Hail, Flood	8:00 p. m.	SW to NE				½	Hail $14,000 Flood $19,000		
13	Sac	Eureka	Flood	Night						$10,000		
13	Warren	White Breast	Flood							$15,000		
13	Warren	Along Flooded Streams	Flood							Bridges $50,000 Roads $10,000 Railroads $5,000		
13	Washington	Highland, Jackson, Washington, Oregon, Iowa	Flood							$55,000		
13	Winneshiek	Jackson	Rain and Flood	9:00 p. m.	SW to NE					$9,000		
13	Webster	Deer Creek, Badger, Douglas, Cooper, Elkhorn, Pleasant Valley, Otho	Rain and Flood	7:00 a. m.						$20,100		1
13	Woodbury	Grange, West Fork	Wind, Rain, Flood	6:00 a. m. to 7:00 a. m.	NW to SE				Walnuts	Wind $4,300 Hail $46,500 Flood $40,000		
13	Woodbury	Liston	Wind, Hail, Flood	7:00 a. m. to 8:00 a. m.	NW to SE				¾	Wind $15,000 Hail $60,000 Flood $7,000		
13	Woodbury	Oto, Rock, Banner, Floyd, Miller, Grant, Liberty, Concord, Sioux City, Arlington	Wind, Hail, Flood	6:30 a. m. to 8:00 a. m.	NW to SE				½ to 1	Wind $21,000 Hail $200,950 Flood $220,100		1
13	Wright	Lincoln, Grant, Iowa	Tornado	11:00 p. m.	SW to NE		14			$8,000		1
13–14	Jefferson	Along flooded streams	Flood							Bridges $15,000 Roadbed $10,000		
13–14	Johnson	Along flooded streams	Flood							Bridges $12,500 Roads $2,500		
13–14	Marion	Along flooded streams	Flood							Bridge $600 Small struct. $1,000		
13–16	Henry	Along flooded streams	Flood							Bldgs. $6,000 Livestock $150 Bridges $3,750 R. R. Fills $5,000 Crops $175,000		
13–14	Crawford	Along flooded streams	Flood							Bridges $2,000		
13–16	Louisa	Along flooded streams	Flood							Highways $3,000 Bridges $6,400		
13–14	Wapello	Along flooded streams	Flood							R. R. Grades $3,500 Crops $18,000 Bridges $3,500		
13–14	Des Moines	Along flooded streams	Flood							Grades and Bridges $1,500		
13–14	Washington	Along flooded streams	Flood							Bridges $20,000		
14	Adams	Grant	Flood							R. R. Grades $10,000		
14	Black Hawk	Washington	Wind and Flood		W to E					Crops $4,000		
14	Cedar	Center, Fremont, Springdale, Fairfield	Flood							$500 Crops $40,500		
14	Cedar	Red Oak	Wind and Flood		NW to SE					erosion		
14	Clark	Osceola-Doyle	Flood							Crops $1,500		
14	Clay	Lonetree	Flood							Crops $12,000 Crops $500		
14	Clinton	Lincoln	Flood							Crops $1,000		
14	Davis	Perry	Flood							Property $1,000		
14–16	Des Moines	Along flooded streams	Flood							Crops $500 Crops $25,000		
14	Des Moines	Yellow Springs	Wind and Flood	3:00 p. m. to 12:00 p. m.	NW to SE					Bldgs $400		

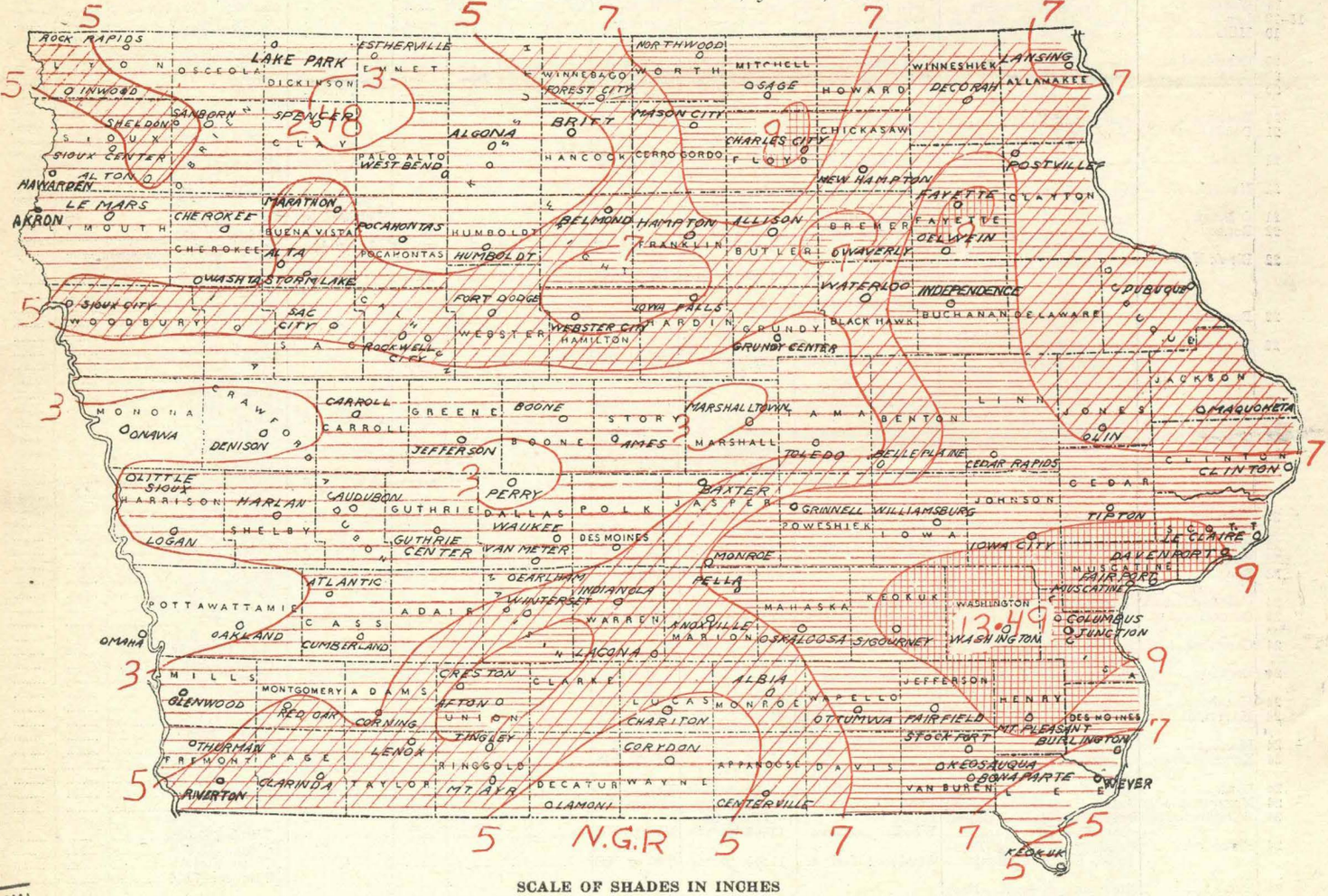
IOWA STORMS, JUNE, 1930—Continued

Date	County	Township	Nature of Storm	Time	Storm Moved From	Width of Path	Length of Path Miles	Area of Sq. Miles	Size of Hailstones Inches	Damage	Persons Killed	Persons Injured
14	Iowa	Pilot, Greene	Wind and Flood		SW to NE					Bldgs. $1,500 By Flood, Crops $2,800		
14	Iowa	Southern eight townships	Flood, Erosion							Crops and erosion $100,000		
14	Jefferson	Penn	Wind and Flood							Crops		
14–16	Jefferson	Liberty	Flood							By Flood $5,000 Crops $5,000		
14	Johnson	Hardin, East Lucas, West Lucas	Flood							Crops $5,000 Erosion $5,000 Property $1,000		
14	Johnson	Clear Creek	Wind and Flood							Crops,		
12–14	Keokuk	Entire county	Flood, Erosion		SW to NE					by Flood $2,000 Bridges, $30,000 and Roads. Farm land erosion considerable		
14–16	Keokuk	Washington, Liberty, Warren, Fayette	Flood							Crops $30,000		
14	Louisa	Union	Wind and Flood		W to E					Crops $10,000		
14	Madison	Ohio	Wind and Flood		NW to SE					Crops $1,000 Livestock $1,200 Bldgs. $700		
14	Mahaska	Prairie	Wind and Flood	3:45 p. m.	NW to SE					Bldgs. $400		
14	Mahaska	Along flooded streams	Flood							Crops $40,000		
14	Marion	Summit, Swan	Flood							Livestock $2,000 Crops $21,200		
14	Muscatine	Fulton, Wapsinonoc, Montpelier, Goshen	Flood							Crops $40,000		
14	Poweshiek	Jackson	Flood							Livestock $3,000 Crops $8,000		
14	Union	Along flooded streams	Flood							Crops $25,000		
14	Story	Washington	Tornado	12:30 a. m.	SW to NE	700′	¾	.5		Bridges $2,000 Property $2,000		
14	Scott	Along flooded streams	Flood							Crops $10,000		
14–16	Van Buren	Van Buren, Harrisburg, Washington	Flood							Livestock $2,000 Crops $12,000 Bridges $1,000		
14	Wapello	Pleasant, Richland	Flood							Crops $30,000		
14	Wapello	Entire County	Erosion							Damage considerable		
14	Washington	Dutch Creek, Marion	Flood							Crops $60,000 Livestock $2,000		
14–16	Warren	Squaw, White Oak, Lincoln, Otter	Flood							Crops $65,000 Bridges $7,000 Livestock $2,850 Bldgs. $1,500	3	3
14	Woodbury	Woodbury, Sioux City	Flood							Household		
15–18	Lee	Green Bay, Washington	Flood							damage $300,000 Crops $50,000		
19	Mills	Ingraham	Flood							Crops $5,000		
20	Crawford	Morgan, Otter Creek	Heavy Hail	8:00 a. m.					Large	Crops $25,000 Bldgs. $5,000		
20	Emmet	Denmark	Hail							Property $3,000		
20	Ida	Garfield, Grant	Tornado	10:00 p. m.			1			$5,000		
21	Buchanan	Hazelton	Wind and Hail	1:00 a. m.	NW to SE				½	Hail $2,000 Wind $500		
21	Des Moines	Lama	Flood							Crops $1,000		
21	Floyd	Rockford, Charles, Ulster	Wind, Flood, Hail	12:00 p. m.	NW to SE				Hen eggs	Hail 4,000 Flood $2,000		
21	Henry	Center, Salem	Flood							Crops $30,000 Livestock $2,500		
21	O'Brien	Dale	Wind and Hail	1:15 a. m.	W to E				Peas to Hickory nuts	Hail $1,000		
22	Benton	Eden, Canton, Polk, Benton, Bruce, Fremont	Wind, Hail and Erosion	1:00 to 2:00 a. m.	NW to SE				¼ to ½	Bldgs. $6,000 Crops $4,000		
22	Black Hawk	Bennington, Lester, Poyner	Wind, Hail, Flood	1:00 a. m.	NE to SW				½	Wind $1,000 Hail $35,000 Flood $2,000		
22	Bremer	Jefferson	Wind, Hail and Erosion	1:00 a. m. and 6:00 a .m.					¼	Wind $500 Hail $500 Erosion $2,000		
22	Buchanan	Jefferson, Byson, Washington, Westbury	Wind, Hail, Flood	1:30 a. m.	NE to SW				½	Wind $1,000 Hail $17,500 Erosion $2,750		
22	Cherokee	Liberty	Wind and Hail		SW to NE				¼	Crops $3,000 Bldgs. $500		
22	Chickasaw	Dayton	Wind	4:00 a. m.	W to E					Slight		
22	Delaware	Bremen	Wind and Flood	5:30 a. m.						Slight		
22	Dubuque	New Wine	Wind	6:20 a. m.	NW to SE					Very Slight		
22	Howard	Howard, Center, Vernon Springs	Wind	1:00 a. m.	SW to NE					Crops $5,000 Livestock $1,000 Propuerty $1,000	3	
22	Johnson	Big Grove	Wind and Erosion	3:00 a. m.	N to S					Wind $100		
22	O'Brien	Dale	Wind, Light Hail	1:30 a. m.	SW to NE				¼	Erosion $300 Slight to crops		
22	Winneshiek	Jackson	Wind and Erosion	4:00 a. m.	NW to SE					Crops $1,000		
23	Sioux	Grant	Hail	10:00 p. m.	W to E					Crops $3,000		
23	Sac	Cook	Wind	11:00 a. m.	NE to SW					Slight		
24	Calhoun	Lincoln, Center, Greenfield	Hail and Wind	11:30 p. m.						Crops $7,000		
24	Carroll	Ewoldt	Wind	11:55 p. m.	NW to SE					Property $1,500 Crops $500		
24	Cherokee	Marcus, Cherokee	Wind and Hail	9:30 p. m. to 12:00 p. m.	NW to SE				¼	Wind to Bldgs.$1,000 Hail to crops $7,500		
24	Decatur	Fayette, New Buddah	Hail						½ to 1½	Crops 1,000 Bldgs. $500		
24	Hamilton	Independence	Wind, Rain, Hail	12:30 p. m.	SW to NE				¾	Bldgs. $3,000		
24	Harrison	Jefferson	Wind	11:00 p. m.	NW to SE					Crops $8,000 Crops $10,000		
24	Ida	Griggs	Wind and Rain	11:30 p. m.						Bldgs. $300		
24	Kossuth	German	Wind	11:30 p. m.	NE to SW					Crops slight Crops $2,500		
24	Lyon	Lyon	Wind, Light Hail	9:00 p. m.	NW to SE				Peas	Crops and Bldgs.		
24	Monona	Grant	Wind	11:00 p. m.	N to S					slight		
24	O'Brien	Baker, Caledonia, Union, Carroll, Dale	Wind	11:00 to 12:00 p. m.	NW to SE					Bldgs. $800 Wind $50,000		
24	Plymouth	Meadow, America, Portland, Elgin, Fredonia	Wind and Hail	11:00 p. m.	SW to NE				¼	Bldgs. $5,000 Crops slight		
24	Sioux	Sherman, Nassua, East Orange, West Branch, Reading, Floyd, Holland, Washington, Duncombe, Logan	Wind and Hail	10:00 to 12:00 p. m.	NW to SE				Peas	Chickens $200 Wind $55,000		

IOWA STORMS, JUNE, 1930—Continued

Date	County	Township	Nature of Storm	Time	Storm Moved From	Width of Path Miles	Length of Path Miles	Area of Sq. Miles	Size of Hailstones Inches	Damage	Persons Killed	Persons Injured
24	Woodbury	Sioux City	Rain and Wind	10:30 p. m.	.....	.....	.....	.....	.....	Property $2,500	.....	14
24	Wright	Iowa	Wind and Hail	12:00 p. m.	SW to NE	.....	.....	.....	Peas	Slight	.....	.....
25	Benton	Canton, Fremont	Wind and Hail	2:00 a. m.	NE to SW	.....	.....	.....	Walnuts	Bldgs. $2,000; Crops $400	.....	.....
25	Boone	Dodge, Marcy	Wind	1:00 a. m.	SW to NE	.....	.....	.....	.....	Crops $7,000	.....	.....
25	Butler	Pittsford, Monroe	Wind, Hail, Rain	1:00 a. m.	SW to NE	.....	.....	.....	½	Hail $2,500; Rain $1,000; Wind, Slight	.....	.....
25	Clayton	Garnavillo	Wind	3:00 a. m.	W to E	.....	.....	.....	.....	Crops, Slight	.....	.....
25	Dallas	Grant	Wind	1:10 a. m.	NW to SE	.....	.....	.....	.....	Crops, Slight	.....	.....
25	Decatur	Fayette, Burrel, New Buda	Wind and Hail	6:30 to 7:00 a. m.	W to E	.....	.....	.....	Hickory nuts to hen eggs	Bldgs. $250; Crops $750	.....	.....
25	Hardin	Grant	Tornado	1:30 p. m.	W to E	20′	6	.....	.....	$1,000	.....	.....
25	Lyon	Wheeler	Light Hail	8:30 p. m.	W to E	.....	.....	.....	½	Crops $800	.....	.....
25	Marshall	Liscomb	Wind	1:30 a. m.	SW to NE	.....	.....	.....	.....	Crops $1,000	.....	.....
25	O'Brien	Franklin, Floyd	Hail	9:00 p. m.	NW to SE	.....	.....	.....	½ to ¾	Crops $1,000	.....	.....
25	Page	Amity	Wind and Hail	3:00 a. m.	W to E	.....	.....	.....	.....	Crops $1,500	.....	.....
25	Polk	Des Moines	Wind	1:30 a. m.	NW to SE	.....	.....	.....	.....	Property $600	.....	.....
25	Poweshiek	Jackson	Rain	.....	.....	.....	.....	.....	.....	Crops $500	.....	.....
25	Sac	Jackson	Light Hail, Wind	1:00 a. m.	W to E	.....	.....	.....	Peas	Crops Slight	.....	.....
25	Sioux	Grant	Light Hail	9:00 p. m.	NW to SE	.....	.....	.....	.....	Crops Slight	.....	.....
26	O'Brien	Franklin	Wind and Hail	9:00 p. m.	NW to SE	.....	.....	.....	Pigeon eggs	Crops $4,000	.....	.....
28	Chickasaw	Richland	Wind and Hail	.....	NW to SE	.....	.....	.....	Large peas	Slight	.....	.....
29	Black Hawk	Mt. Vernon	Wind and Hail	10:00 p. m.	SW to NE	.....	.....	.....	.....	Crops $5,000; Bldgs. $500	.....	.....
29	Black Hawk	Bennington	Hail	10:30 p. m.	N to S	.....	.....	.....	¼	Crops $5,000	.....	.....
29	Black Hawk	Bennington	Wind	5:30 p. m.	NW to SE	.....	.....	.....	.....	Bldgs. $2,000	.....	.....
29	Bremer	Fremont, Maxfield	Wind and Hail	10:00 to 11:00 p. m.	W to E	.....	.....	.....	.....	Crops $6,000; Bldgs. $500	.....	.....
29	Buchanan	Hazelton	Wind, Light Hail	10:30 a. m.	W to E	.....	.....	.....	.....	Crops $5,000	.....	.....
29	Fayette	Union	Wind and Rain	5:00 p. m.	.....	.....	.....	.....	.....	Crops $4,000; Property $1,000	.....	.....
29	Fremont	Benton, Madison, Sidney, Washington	Wind and Hail	8:00 p. m.	NW to SE	.....	.....	.....	½ to 1½	Crops $20,000; Bldgs. $500	.....	.....
29	Grundy	Colfax	Light Hail, Wind	.....	SW to NE	.....	.....	.....	Peas	Crops slight	.....	.....
29	Hamilton	Rose Grove	Hail	9:00 p. m.	SW to NE	.....	.....	.....	¾	Crops $9,000	.....	.....
29	Howard	Howard Center	Wind	5:00 p. m.	NW to SE	.....	.....	.....	.....	Crops $2,000	.....	.....
29	Winneshiek	Bluffton, Lincoln	Wind, Light Hail	5:00 p. m.	NW to SE	.....	.....	.....	Hazel nuts	Crops $5,000	.....	.....
30	Black Hawk	Cedar Falls	Wind	5:45 p. m.	.....	.....	.....	.....	.....	Property $1,000	.....	.....
30	Fremont	Riverton	Wind and Hail	8:45 p. m.	NE to SW	.....	.....	.....	Peas to Pigeon eggs	Crops $4,000	.....	.....

TOTAL PRECIPITATION, JUNE, 1930



SCALE OF SHADES IN INCHES

Less than 3.0 | 3.0 to 5.0 | 5.0 to 7.0 | 7.0 to 9.0 | More than 9.0

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

IOWA SECTION
In co-operation with
IOWA WEATHER AND CROP BUREAU
CHARLES D. REED, Senior Meteorologist

VOL. XLI DES MOINES, IOWA, JULY, 1930 No. 7

GENERAL SUMMARY

The weather during July was noteworthy because of high maximum temperatures and a prolonged dry spell with its effect on vegetation.

The average temperature for the State was more than four degrees above normal, due to three periods of exceedingly high temperatures. Only three times since 1873 has the July mean exceeded that of this month. At Keokuk No. 2 the thermometers registered 112° on the 27th, which came within one degree of equaling the state record for July, which was 113° in 1901 at Sigourney on the 22d. The absolute range in temperature for the State was 72°, which came within one degree of the record, 73°, in 1911. At 14 stations July maximum temperature records were broken on the 27th. While crops suffered untold damage from the heat, it was reliably reported that a 40-acre field of corn on peat land in the vicinity of Sac City was completely killed by frost on the morning of the 15th.

With only two exceptions, this month, with average rainfall of 1.49 inches, was the driest July of record. The driest was 1886, with an average of 0.50, and the next driest, 1894, with 0.63. The number of days with precipitation, 0.01 inch or more, averaged 4; only 1894 with 3, had less, though records of this feature are not available in 1886. Akron, with only a trace, was the driest station. Only in 1886 was this record surpassed, when three stations in Jefferson and Wayne counties had none.

The most severe drouth was in the southern and western portions of the State. Berries were the first affected, and in some localities the crop was reduced as much as 50% to 75%; next the truck crops, and some were utterly ruined and others seriously injured. Later, pastures and corn became involved. Small grains were matured and harvested generally before any great effects were noticeable, except some slight shrinking of many late oats. Corn tassels and occasional top leaves were burned white, and the silk dried up, except in the northeast portion of the State. Second growth hay and pastures rapidly dried up, and over much of the State turned brown. Livestock were put on winter feed in many localities, due to the scarcity of pasturage.

All kinds of building construction advanced above normal this month, except road paving was hampered because the water supply became locally exhausted. In stretches of road construction it had to be piped as far as 7 or 8 miles.

N. G. R.

COMPARATIVE DATA FOR THE STATE—JULY

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1873	74.0	+ 0.3	96	54	2.78	— 1.05	7.73	0.85					
1874	77.8	+ 4.1	101	56	3.04	— 0.79	6.15	0.55					
1875	72.8	— 0.9	97	56	6.05	+ 2.22	9.70	1.60					
1876	74.2	+ 0.5	95	54	6.15	+ 2.32	11.92	1.84					
1877	74.0	+ 0.3	97	54	2.35	— 1.48	7.58	0.38					
1878	76.5	+ 2.8	104	52	5.13	+ 1.30	13.20	0.90					
1879	76.0	+ 2.3	102	55	2.20	— 1.63	8.66	0.00					
1880	73.8	+ 0.1	98	48	4.16	+ 0.33	10.40	1.30					
1881	75.9	+ 2.2	100	50	5.33	+ 1.50	16.31	0.28					
1882	69.1	— 4.6	94	46	3.66	— 0.17	7.30	0.85					
1883	72.9	— 0.8	100	46	5.14	+ 1.31	13.99	1.26					
1884	71.0	— 2.7	96	50	5.41	+ 1.58	11.51	0.70					
1885	74.6	+ 0.9	102	48	4.73	+ 0.90	11.45	0.68					
1886	76.2	+ 2.5	104	48	0.50	— 3.33	2.20	0.00					
1887	77.0	+ 3.3	105	45	2.85	— 0.98	8.43	0.87					
1888	75.9	+ 2.2	103	38	4.31	+ 0.48	8.45	1.17					
1889	72.6	— 1.1	102	40	4.00	+ 0.17	8.25	1.15					
1890	75.2	+ 1.5	110	45	2.04	— 1.79	6.16	0.06					
1891	68.5	— 5.2	99	41	4.22	+ 0.39	8.20	1.67		8	13	13	5
1892	73.0	— 0.7	104	38	5.29	+ 1.46	12.86	1.71		9	16	10	5
1893	75.0	— 1.3	102	47	3.33	— 0.50	8.84	1.49		7	19	10	2
1894	76.4	+ 2.7	109	39	0.63	— 3.20	3.50	T.		3	22	8	1
1895	72.1	— 1.6	104	35	3.40	— 0.43	10.10	0.45		7	15	12	4
1896	73.6	— 0.1	104	42	6.90	+ 3.07	12.67	1.61		9	14	11	6
1897	75.6	+ 1.9	106	42	3.26	— 0.57	7.60	1.01		6	18	10	3
1898	73.4	— 0.3	102	42	2.98	— 0.85	12.88	0.55		7	19	9	3
1899	73.1	— 0.6	101	38	3.07	— 0.76	8.66	0.42		7	16	10	5
1900	73.4	— 0.3	102	37	6.15	+ 2.32	18.45	1.80		9	16	10	5
1901	82.4	+ 8.7	113	46	2.34	— 1.49	5.97	0.27		5	21	9	1
1902	73.1	— 0.6	99	41	8.67	+ 4.84	13.57	4.82		13	14	10	7
1903	72.9	— 0.8	100	40	4.83	+ 1.00	12.72	0.94		9	17	9	5
1904	70.6	— 3.1	100	38	4.41	+ 0.58	11.97	1.28		10	16	9	6
1905	70.6	— 3.1	102	40	2.91	— 0.92	7.08	0.69		9	14	10	7
1906	70.9	— 2.8	102	42	3.04	— 0.79	7.05	0.26		8	18	10	3
1907	73.7	0.0	102	41	7.27	+ 3.44	13.66	3.97		13	16	11	4
1908	73.0	— 0.7	100	42	3.66	— 0.17	9.21	0.70		8	16	10	5
1909	72.3	— 1.4	102	46	4.77	+ 0.94	12.20	1.20		10	15	8	8
1910	74.5	+ 0.8	108	43	1.86	— 1.97	5.69	0.12		7	19	8	4
1911	75.5	+ 1.8	111	38	2.27	— 1.56	6.62	0.08		7	18	10	3
1912	74.6	+ 0.9	103	38	3.71	— 0.12	7.56	1.17		10	17	10	4
1913	76.1	+ 2.4	108	45	1.82	— 2.01	6.23	T.		5	21	8	2
1914	76.6	+ 2.9	109	43	2.27	— 1.56	6.50	0.44		5	20	8	3
1915	69.5	— 4.2	92	40	8.32	+ 4.49	15.83	3.68		14	10	12	9
1916	79.7	+ 6.0	105	48	1.78	— 2.05	6.87	0.10		5	23	7	1
1917	74.3	+ 0.6	106	38	2.27	— 1.56	6.06	0.23		7	21	8	2
1918	73.1	— 0.6	105	40	3.17	— 0.66	8.05	0.26		8	19	8	4
1919	77.4	+ 3.7	104	41	2.86	— 0.97	7.82	0.39		6	22	8	1
1920	72.3	— 1.4	102	45	4.22	+ 0.39	7.49	1.11		9	19	9	3
1921	77.9	+ 4.2	104	41	2.53	— 1.30	7.45	0.42		7	19	9	3
1922	71.5	— 2.2	98	40	6.31	+ 2.48	11.72	3.13		11	14	12	5
1923	76.5	+ 2.8	102	47	1.75	— 2.08	5.54	0.29		5	19	9	3
1924	70.2	— 3.5	99	41	3.67	— 0.16	8.90	0.57		9	16	11	4
1925	74.1	+ 0.4	105	40	2.66	— 1.17	7.93	0.80		8	19	10	2
1926	74.8	+ 1.1	109	38	3.72	— 0.11	9.08	0.82		10	15	10	6
1927	72.9	— 0.8	102	45	1.96	— 1.87	4.80	0.09		7	18	10	3
1928	73.9	+ 0.2	98	43	4.43	+ 0.60	9.32	0.65		8	18	10	3
1929	74.1	+ 0.4	98	43	4.31	+ 0.48	12.30	1.47		9	16	10	5
1930	77.9	+ 4.2	112	40	1.49	— 2.34	5.58	T.		4	21	8	2

T. indicates an amount too small to measure, or less than .005 inch rainfall and less than .05 inch snowfall.

TEMPERATURE

The mean temperature for the State, derived from the means of 9 districts of nearly equal area, and based on the records of 104 stations, was 77.9°, or 4.2° above normal. The greatest district excess, 6.1°, was in the west-central district and the least district excess, 2.1°, was in the northeast district. The highestly monthly mean was 81.5° at Little Sioux, and the lowest, 71.2° at Postville. The absolute range for the State was 72°, from 112° at Keokuk No. 2 on the 27th, to 40° at Earlham (near), and Decorah, on the 15th. The average number of days with the maximum temperature 100° or above, was 6.3, ranging from 13 days at Glenwood and Chariton, to none at 9 northeast stations. The average number of days with the maximum temperature 90° or above, was 18, ranging from 6 days at Postville, to 24 days at Spencer and Lenox. The greatest daily range in temperature at any one station was 51° at Britt on the 16th.

Climatological Data for July, 1930

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit							Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
Northwest District																				
Akron	Plymouth	1,153	4								T.	— 3.81	T.	0	0	24	7	0	s.	Orlan C. Moore
Alta	Buena Vista	1,513	39	78.4	+ 6.0	107	27	48	14	41	1.21	— 3.01	0.90	0	4	22	9	0	s.	D. E. Hadden
Alton	Sioux	1,305	25	77.8	+ 4.3	104	27	45	1†	42	0.39	— 3.15	0.33	0	4	19	11	1	s.	W. S. Slagle
Cherokee	Cherokee	1,196	10	78.0	+ 6.9	104	27	44	14	41	1.12	— 2.70	1.08	0	3	22	9	0	s.	J. E. Wirth
Estherville	Emmet	1,298	35	78.6	+ 6.7	108	27	45	14	42	0.25	— 3.91	0.25	0	1	28	3	0	s.	A. O. Peterson
Hawarden	Sioux	1,181	4								0.12	— 3.51	0.12	0	1	15	10	6	s.	Earl V. Slife
Inwood (near)	Lyon	1,474	26	77.8	+ 5.2	110	27	43	14	45	0.18	— 3.19	0.08	0	4	25	6	0	s.	A. C. Hanson
Lake Park (near)	Dickinson	1,489	17	76.6	+ 4.6	106	27	44	14	41	0.33	— 2.47	0.33	0	1	17	9	5	sw.	P. M. Lawrence
Le Mars	Plymouth	1,224	34	78.0	+ 4.7	104	27	44	1†	38	0.36	— 3.72	0.33	0	2	26	5	0	s.	Henry Newell
Marathon	Buena Vista	1,390	4								1.37		1.37	0	1	27	2	2	sw.	E. G. Smith
Pocahontas	Pocahontas	1,248	26	78.2	+ 5.5	110	27	45	14†	43	0.30	— 3.15	0.15	0	3	24	7	0	sw.	F. E. Hronek
Rock Rapids	Lyon	1,349	31	76.2	+ 3.6	106	27	44	1†	44	0.80	— 2.57	0.42	0	4	29	2	0	s.	Nellie F. Medberry
Sanborn	O,Brien	1,553	16	76.6	+ 3.8	105	27	44	14	40	0.77	— 2.73	0.60	0	4	17	10	4	se.	J. W. Dow
Sheldon	O,Brien	1,418	19	77.1	+ 4.1	106	27	44	1	42	0.28	— 3.82	0.18	0	3	19	11	1	s.	Ross E. Forward
Sioux Center	Sioux	1,461	31	77.6	+ 4.6	106	27	47	14	44	0.69	— 3.14	0.45	0	2	22	7	2	se.	F. C. Aue
Spencer	Clay	1,319	16	79.9	+ 5.6	110	27	43	14	43	0.32	— 3.18	0.19	0	3	21	9	1	sw.	E. W. Little
Storm Lake	Buena Vista	1,442	41	77.7	+ 4.2	104	27	44	14	37	1.22	— 2.85	0.86	0	2	15	16	0	sw.	Russel M. Edwards
Washta	Cherokee	1,157	32	77.2	+ 4.9	105	27	41	15	49	1.34	— 2.89	1.30	0	2	22	8	1	s.	H. L. Felter
West Bend	Palo Alto	1,197	27	78.0	+ 4.8	107	27	44	14	42	0.85	— 2.62	0.43	0	4	23	8	0	sw.	Jos. Dorweiler
Means and extremes				77.6	+ 4.9	110	27	41	15	49	0.63	— 3.09	1.37	0	3	22	8	1	s.	
North Central District																				
Algona	Kossuth	1,207	57	77.1	+ 4.1	106	27	48	1†	38	0.82	— 2.24	0.31	0	3	18	10	3	sw.	Leon M. Merritt
Allison (near)	Butler	1,000	16	75.8	+ 3.0	99	10	50	1†	37	4.99	+ 1.37	1.85	0	9	23	8	0	sw.	George H. Bell
Belmond	Wright	1,181	20	76.4	+ 2.8	101	10†	46	1	41	3.03	— 0.59	1.51	0	8	20	7	4	sw.	H. F. Luick
Britt	Hancock	1,236	43	76.2	+ 5.0	105	27	47	1†	51	1.34	— 2.64	0.74	0	7	30	1	0	sw.	E. P. Healy
Charles City	Floyd	1,015	39	75.0	+ 2.7	99	10	49	15	37	1.13	— 2.64	0.39	0	7	18	10	3	se.	U. S. Weather Bureau
Forest City	Winnebago	1,226	36	74.8	+ 2.6	102	17	45	15	39	2.11	— 1.46	1.52	0	7	21	8	2	se.	Dr. M. B. Neil
Hampton	Franklin	1,142	5	75.6		100	10†	45	15	38	5.58	+ 1.93	3.79	0	8	29	0	2	s.	Howard J. Haydon
Humboldt	Humboldt	1,095	42	77.2	+ 3.1	107	27	45	15	41	2.02	— 1.72	1.11	0	3	22	8	1	sw.	H. C. Snitkey
Mason City	Cerro Gordo	1,148	33	73.7	+ 1.3	99	10†	43	15	39	3.20	— 0.32	1.24	0	6	21	9	1	se.	American Beet Sugar Co.
Northwood	Worth	1,222	34	74.6	+ 3.4	100	27	48	15	38	3.83	0.00	1.75	0	4	18	11	2	se.	Charles Dwelle
Osage	Mitchell	1,163	36	74.5	+ 2.6	99	11†	48	1†	40	2.20	— 1.07	0.93	0	5	17	12	2	sw.	Dr. C. E. Juhl
Means and extremes				75.5	+ 3.0	107	27	43	15	51	2.75	— 1.05	1.85	0	6	21	8	2	sw.	
Northeast District																				
Cedar Falls	Black Hawk	875									5.32		1.81	0	7	22	8	1	sw.	E. J. Cable
Decorah	Winneshiek	872	37	73.2	+ 1.0	99	20	40	15	42	2.10	— 1.95	0.77	0	7	22	7	2	nw.	M. D. Whitney
Dubuque	Dubuque	700	57	76.0	+ 1.9	99	20	51	15	30	0.94	— 3.00	0.66	0	7	18	4	9	s.	U. S. Weather Bureau
Fayette	Fayette	1,003	42	74.4	+ 2.5	100	20	46	15	42	3.41	— 0.42	1.42	0	6	24	6	1	sw.	R. Z. Latimer
Independence	Buchanan	956	66	75.0	+ 2.0	99	20	49	15	35	3.21	— 0.93	1.18	0	7	20	9	2	sw.	Dr. Geo. Boody
Lansing	Allamakee	632	23								2.04	— 1.99	0.69	0	7					Mrs. Mary Spinner
New Hampton	Chickasaw	1,169	33	73.6	+ 1.4	98	20	44	15	41	1.15	— 2.62	0.38	0	6	16	13	2	sw.	D. W. Dawson
Oelwein	Fayette	1,036	7	76.0	+ 3.8	103	27	47	15	34	3.50	— 0.42	1.95	0	5	23	6	2	s.	John T. Ridler
Postville (near)	Clayton	1,192	31	71.2	+ 1.2	94	20	45	15	30	2.77	— 1.62	1.05	0	7	24	7	0	sw.	F. L. Williams
Waterloo	Black Hawk	854	47	76.4	+ 2.7	104	20	46	15	38	4.46	+ 0.48	1.71	0	5	25	5	1	sw.	R. B. Slippy
Waverly	Bremer	936	34																	D. H. Murphy
Means and extremes				74.5	+ 2.1	104	20	40	15	42	2.89	— 1.09	1.95	0	6	22	7	2	sw.	
West Central District																				
Audubon (near)	Audubon	1,297	35	80.1	+ 7.4	104	18†	49	14	38	0.65	— 3.02	0.58	0	2	23	8	0	sw.	George Kibby
Carroll	Carroll	1,265	40	79.0	+ 5.8	104	26†	48	14	37	1.52	— 2.06	0.91	0	3	30	1	0	sw.	Mrs. Jos. J. Wolfe
Denison	Crawford	1,200	36	80.0	+ 6.6	107	18	44	15	47	2.26	— 1.49	1.88	0	5	15	16	0	sw.	J. McMinimee
Guthrie Center	Guthrie	987	35	80.3	+ 6.7	108	27	44	15	44	1.18	— 3.04	0.88	0	2	22	9	0	w.	Floyd H. Bainter
Harlan	Shelby	1,192	31	78.4	+ 5.3	103	9†	45	15	46	1.65	— 2.23	1.52	0	2	20	10	1	sw.	Walter Bell
Jefferson	Greene	1,052	31	78.7	+ 5.4	104	27	45	15	39	1.41	— 2.27	1.10	0	2	25	4	2	sw.	W. I. Lyon
Little Sioux	Harrison	1,040	25	81.5	+ 7.1	106	27	48	1	36	2.92	— 1.28	2.69	0	4	21	9	1	sw.	H. W. Kerr
Logan	Harrison	1,120	63	80.2	+ 6.0	106	18†	48	1†	38	0.74	— 3.67	0.72	0	2	11	20	0	sw.	Amy Ann Stern
Onawa	Monona	1,051	29	79.4	+ 5.1	104	17†	50	14	37	0.90	— 3.25	0.55	0	2	21	6	4	s.	Mrs. H. E. Colby
Rockwell City	Calhoun	1,232	34	78.0	+ 4.9	107	27	46	1†	37	0.51	— 3.28	0.35	0	3	29	2	0	sw.	A W. McIsaac
Sac City	Sac	1,209	54	79.5	+ 6.6	108	27	44	15	45	0.83	— 2.81	0.55	0	3	20	9	2	s.	F. P. Kessler
Sioux City	Woodbury	1,135	41	80.5	+ 6.2	104	27	50	1	32	0.72	— 2.82	0.70	0	2	16	9	6	s.	U. S. Weather Bureau
Means and extremes				79.6	+ 6.1	108	27	44	15	47	1.28	— 2.60	1.88	0	3	21	9	1	sw.	
Central District																				
Ames	Story	926	53	79.4	+ 5.4	108	27	45	15	45	0.50	— 3.36	0.40	0	2	23	6	2	s.	Iowa State College
Baxter	Jasper	998	30																	F. A. Kanne
Boone (near)	Boone	894	25	77.2	+ 3.7	108	27	41	15	47	0.96	— 2.76	0.91	0	4	15	16	0	s.	C. F. Henning
Des Moines	Polk	861	52	80.4	+ 5.0	106	27	50	15	34	0.56	— 2.94	0.33	0	3	14	14	3	s.	U. S. Weather Bureau
Fort Dodge	Webster	1,114	30	78.1	+ 4.1	107	27	47	15	39	0.64	— 3.27	0.29	0	5	25	5	1	sw.	Mrs. Emma Sampson
Grinnell	Poweshiek	1,031	36	77.6	+ 3.3	105	27	49	15	36	2.26	— 2.11	1.25	0	5	27	4	0	sw.	R. E. Bates
Grundy Center	Grundy	976	39	77.0	+ 2.9	105	27	47	15	40	1.40	— 2.33	0.60	0	6	26	5	0	sw.	M. G. Heiberger
Iowa Falls	Hardin	1,127	37	76.8	+ 4.5	103	27	45	15	41	2.28	— 1.66	0.90	0	7	23	4	4	sw.	C. H. Gilbert
Marshalltown	Marshall	947	38	79.4	+ 4.1	107	27	48	15	38	1.28	— 2.73	0.65	0	5	20	9	2	sw.	C. C. Pigman
Monroe	Jasper	922	18	79.7	+ 4.7	105	27	52	1†	36	0.88	— 2.68	0.63	0	3	27	3	1	s.	J. A. Dibel
Perry	Dallas	975	29	79.0	+ 4.8	106	27	46	15	41	1.23	— 2.81	1.16	0	3	18	13	0	sw.	Eugene N. Hastie
Toledo	Tama	847	36	77.4	+ 3.2	104	27	44	15	38	1.28	— 2.26	0.72	0	7	21	10	0	sw.	H. P. Giger
Van Meter	Dallas	872	11								1.18		0.65	0	3					Calvin K. Smith
Waukee	Dallas	1,032	27	79.6	+ 5.5	107	27	42	15	39	1.06	— 3.48	0.78	0	4	26	5	0	sw.	O. D. Ellsworth
Webster City	Hamilton	1,042	25	76.6	+ 2.6	107	27	42	15	45	1.06	— 2.28	0.52	0	4	23	8	0	sw.	Frank A. Bonebright
Means and extremes				79.0	+ 4.8	108	27	41	15	47	1.18	— 2.67	1.25	0	4	22	8	1	sw.	

Climatological Data for July, 1930—Continued

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit: Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Precipitation, in inches: Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Number of Days: Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy	Prevailing direction of wind	OBSERVERS
East Central District																				
Belle Plaine	Benton	860	40	77.4	+ 3.9	105	27	48	14	42	2.72	— 1.23	1.54	0	5	22	7	2	sw.	O. C. Burrows
Cedar Rapids	Linn	737	48	77.8	+ 3.8	104	11†	47	15	42	1.36	— 2.54	1.12	0	5	20	5	6	sw.	J. T. Wurster
Clinton	Clinton	595	57	76.7	+ 1.9	102	20†	48	15	37	0.68	— 3.21	0.36	0	7	23	3	5	s.	Dr. A. P. Bryant
Davenport	Scott	580	59	78.6	+ 3.3	105	27	56	14	30	1.94	— 1.39	1.15	0	6	15	10	6	sw.	U. S. Weather Bureau
Fairport	Muscatine	567	9	77.4	+ 2.4	99	25	52	15	31	1.88	— 1.73	0.95	0	6	16	8	7	s.	Bureau of Fisheries
Iowa City	Johnson	733	70	77.1	+ 3.3	103	27	49	15	37	1.74	— 2.38	1.23	0	5	18	11	2	sw.	Prof. J. F. Reilly
Le Claire	Scott	576	30								1.13	— 2.40	0.71	0	6					Margaret T. Disney
Maquoketa (near)	Jackson	692	25	74.4	+ 3.2	101	20†	42	15	44	0.99	— 2.80	0.44	0	8	21	5	5	sw.	John Strodthoff
Muscatine	Muscatine	546	69								2.23	— 1.48	1.00	0	6					William Molis
Olin	Jones	760	31	75.3	+ 1.3	104	27	45	15	42	1.12	— 2.73	0.70	0	4	25	2	4	sw.	Mrs. L. Stingley
Tipton (near)	Cedar	806	31	76.4	+ 1.9	102	27	47	2†	39	1.49	— 2.34	1.01	0	4	11	15	5	w.	John Kroeplen
Williamsburg	Iowa	770	14	78.6		107	27	47	15	42	2.59	— 1.36	1.93	0	5	25	5	1	sw.	Dr. F. C. Schadt
Means and extremes				77.0	+ 3.0	107	27	42	15	44	1.66	— 2.13	1.93	0	6	20	7	4	sw.	
Southwest District																				
Atlantic	Cass	1,110	39	79.5	+ 5.3	105	18†	42	15	46	1.28	— 2.26	1.21	0	5	20	11	0	sw.	Roy L. Fancolly
Bedford	Taylor	1,200	2								1.01	— 2.94	0.63	0	3	22	5	4	sw.	Arthur L. Bishop
Clarinda	Page	1,009	40	78.4	+ 2.9	107	27	47	15	41	0.93	— 3.40	0.46	0	6	27	4	0	s.	Dr. H. C. Hawley
Corning	Adams	1,150	38	79.6	+ 5.5	105	20†	44	15	42	1.13	— 3.00	0.75	0	2	23	8	0	sw.	C. A. Smith
Cumberland (near)	Cass	1,225	31								1.26	— 2.42	0.67	0	4	22	7	2	sw.	Carl E Pollock
Glenwood	Mills	1,100	32	81.3	+ 6.0	107	18†	48	1	36	1.69	— 1.91	1.07	0	4	24	7	0	se.	George Mogridge
Lenox	Taylor	1,250	35	80.8	+ 5.7	107	27	50	15	39	0.45	— 3.76	0.35	0	2	27	4	0	s.	J. L. Hurley
Oakland	Pottawattamie	1,139	11	80.0	+ 5.7	106	18	45	15	41	1.64	— 2.20	1.60	0	3	20	8	3	sw.	W. S. Mathews
Red Oak (near)	Montgomery	1,030	5								1.57	— 2.48	0.78	0	4	19	11	1	s.	B. R. Bridge
Riverton (near)	Fremont	920	4								0.68	— 3.26	0.38	0	2	23	5	3	s.	Geo. C. Rader
Thurman	Fremont	960	33	79.9	+ 4.3	107	27	49	15	37	0.70	— 3.47	0.55	0	2	24	5	2	s.	H. H. Askew
Omaha, Neb.		1,105	59	83.0	+ 6.3	109	27	56	14	31	1.03	— 2.51	0.72	0	7	24	6	1	s.	U. S. Weather Bureau
Means and extremes				80.3	+ 5.2	109	27	42	15	46	1.11	— 2.81	1.60	0	4	23	7	1	s.	
South Central District																				
Afton	Union	1,212	36	80.4	+ 6.6	106	27	51	14†	41	0.85	— 3.12	0.48	0	2	24	7	0	sw.	S. R. Brown
Albia	Monroe	949	32	78.7	+ 4.2	110	27	45	15	39	0.82	— 3.32	0.50	0	3	20	2	9	sw.	O. E. McBride
Centerville	Appanoose	1,013	25	78.8	+ 3.9	106	27	45	15	36	0.18	— 3.75	0.14	0	4	20	7	4	sw.	Thomas Wood
Chariton (near)	Lucas	1,042	35	80.6	+ 7.3	110	27	45	15	42	0.72	— 3.59	0.52	0	2	21	9	1	sw.	C. C. Burr
Corydon (near)	Wayne	1,050	37	78.8	+ 4.2	106	27	48	15	35	0.77	— 3.04	0.50	0	4	22	7	2	sw.	J. C. Davis
Creston	Union	1,291	25	78.0	+ 6.6	102	18	48	15	35	1.88	— 2.12	0.91	0	6	19	12	0	se.	Mrs. N. Spangler
Earlham (near)	Madison	1,126	28	78.8	+ 6.0	104	18	40	15	44	1.47	— 2.19	1.23	0	2	26	3	2	sw.	George Phillips
Indianola	Warren	972	39	80.1	+ 5.3	108	27	46	15	40	1.04	— 2.75	0.57	0	5	23	8	0	sw.	Seth F. Shenton
Knoxville	Marion	920	35																	W. J. Casey
Lacona	Warren	824	21								0.71	— 3.07	0.38	0	2	19	10	2		J. B. Alter
Lamoni	Decatur	1,123	23	78.5	+ 4.6	107	27	48	15	39	0.47	— 3.47	0.46	0	2	21	9	1	sw.	F. S. Parks
Melrose	Monroe	871	1								0.72		0.40	0	3	24	5	2	sw.	J. M. Carr
Mount Ayr	Ringgold	1,220	37	77.9	+ 3.6	104	27	48	15	35	0.73	— 3.09	0.36	0	5	29	1	1	s.	E. O. Gleason
Tingley	Ringgold	1,275	5	78.7	+ 5.3	106	27	51	14	38	0.91	— 3.23	0.63	0	2	23	8	0	sw.	James A. Verploegh
Winterset	Madison	1,118	39	79.6	+ 4.7	106	27	50	1†	37	1.06	— 3.34	0.85	0	4	24	6	1	sw.	H. S. Ely
Means and extremes				79.1	+ 5.1	110	27	40	15	44	0.88	— 3.09	1.23	0	3	22	7	2	sw.	
Southeast District																				
Bonaparte (near)	Van Buren	563	39	77.5	+ 3.1	106	27	48	15	36	0.96	— 2.90	0.47	0	4	24	4	3	sw.	B. R. Vale
Burlington	Des Moines	544	34	80.2	+ 4.2	109	27	53	15	37	0.81	— 2.60	0.35	0	5	23	5	3	sw.	John W. Donnelly
Columbus Junction	Louisa	595	29	76.4	+ 1.4	104	27	47	15	34	0.79	— 2.78	0.70	0	5	24	6	1	sw.	Miss Musa Todd
Fairfield	Jefferson	780	46	78.0	+ 3.6	108	27	45	15	41	1.11	— 2.71	0.71	0	4	18	10	3	sw.	R. M. McKenzie
Keokuk	Lee	614	59	80.5	+ 3.6	107	27	55	15	31	0.30	— 3.11	0.24	0	4	14	13	4	sw.	U. S. Weather Bureau
Keokuk No. 2	Lee	651	1	81.0		112	27	53	15	36	0.43		0.35	0	4					J. N. D. Dickinson
Keosauqua	Van Buren	639	38	78.8	+ 4.1	108	27	46	15	35	1.70	— 2.29	1.70	0	2					Dr. J. W. Rinabarger
Mt. Pleasant	Henry	730	49	78 8	+ 3.1	107	27	49	15	35	0.91	— 2.75	0.73	0	5	18	12	1	sw.	J. H. Jericho
Oskaloosa	Mahaska	835	54	78.5	+ 4.8	107	27	47	15	39	2.44	— 1.28	1.87	0	4	20	7	4	sw.	Roy R. Robinson
Ottumwa	Wapello	649	35	79.0	+ 2.7	108	27	47	15	40	1.02	— 2.54	0.50	0	3	19	10	2	sw.	C. L. Mikesh
Sigourney	Keokuk	785	34	78.2	+ 4.1	108	27	46	15	39	2.11	— 1.74	1.61	0	3	21	8	2	s.	John B. Slate
Stockport (near)	Van Buren	747	28	78.4	+ 4.6	108	27	44	15	41	0.76	— 3.83	0.42	0	6	23	5	3	s.	C. L. Beswick
Washington	Washington	757	48	79.3	+ 4.8	106	27	51	15	37	0.83	— 2.51	0.63	0	5	23	7	1	s.	D. D. Sherman
Wever	Lee	552	2	78.8		108	27	45	15	43	0.79		0.44	0	4	19	9	3	w.	H. G. Liddle
Means and extremes				78.8	+ 3.8	112	27	44	15	43	1.07	— 2.66	1.87	0	4	21	8	2	sw.	
State means and extremes				77.9	+ 4.2	112	27	40	15	51	1.49	— 2.34	1.95	0	4	21	8	2	sw.	

Temperature normals are based on the 46-year period July 3, 1875 to July 2, 1921; shorter records corrected to harmonize. Precipitation normals are based on the 50-year period ended December 31, 1927 at first order stations; upon all records of 10 years or more ending December 31, 1920 for most of the co-operative observing stations; and upon interpolations from normal maps for recently established stations.

Reference letters a, b, c, etc., appearing in the table indicate the number of days missing; for example b represents two days, etc.

†Also other dates.

‡‡Received too late to be included in means and summaries.

T. Precipitation is less than 0.01 inch rain or melted snow.

PRECIPITATION

The average precipitation for the State, derived from the averages of 9 districts of nearly equal area, and based on the records of 118 stations, was 1.49 inches, or 2.34 inches below normal. The greatest district deficiency was in the northwest and south-central districts, 3.09; and the north-central district had the least deficiency, 1.05 inches. The greatest deficiency at any station, 3.91 inches, at Estherville, and the greatest excess, was 1.93 at Hampton. The greatest amount at a single station was 5.58 inches at Hampton, and the least was a trace at Akron. The greatest amount in 24 consecutive hours was 1.95 inches at Oelwein on the 8th. The average number of days with 0.01 inch or more of precipitation for the State was 4, ranging from 6 days in the north-central, northeast and east-central districts, to 3 days in the northwest, west-central and south-central districts. For individual stations the range was from none at Akron to 9 days at Allison.

Daily Precipitation for July, 1930

Stations	Drainage Basin	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	
Northwest District																																	
Akron	Bix Sioux																													T.		T.
Alta	Raccoon				.08	.23																.85	.05								T.	1.21
Alton	Floyd			.02		.03			T.											T.		.33								.01		0.39
Cherokee	Little Sioux			.01	.03	T.	T.												T.	T.	T.	1.08								T.		1.12
Estherville	Des Moines								.25																							0.25
Hawarden	Big Sioux																													.12		0.12
Inwood (near)	Big Sioux			.08					T.													.02			T.				T.	.07	.01	0.18
Lake Park (near)	Little Sioux			.33																												0.33
Le Mars	Floyd																				T.	.33								.03		0.36
Marathon	Raccoon																					1.37										1.37
Pocahontas	Des Moines			.01	.14	T.														T.		.15										0.30
Rock Rapids	Big Sioux			.42		.30															.06	.02										0.80
Sanborn	Floyd			.07		.02			.08													.60										0.77
Sheldon	Floyd			.18		T.			T.										.02		T.	.08		T.						T.		0.28
Sioux Center	Floyd			.24					T.													.45								T.		0.69
Spencer	Little Sioux			.12					T.											.01		.19		T.								0.32
Storm Lake	Raccoon				T.	.36														T.	T.	.86										1.22
Washta	Little Sioux					.04														T.	T.	1.30					T.			T.		1.34
West Bend	Des Moines			.11	.05				.26											T.		.43										0.85
North Central District																																	
Algona	Des Moines			.26	T.				.31													.25										0.82
Allison (near)	Cedar				.54	1.63	.03		.37				.15									.12				1.85	.14	.16				4.99
Belmond	Iowa			.06	1.45	.05			.40													.06				.48	.50	.03				3.03
Britt	Iowa			.16	.74	.09			.09											T.		.14				.02	.10					1.34
Charles City***	Cedar		T.	.03	.26	.11			.39											T.	T.	.03	T.		T.		.22	.09					1.13
Forest City	Cedar	.03			1.52	.07				.14				T.							.05		.03				.27						2.11
Hampton	Cedar			.10	.32	.83			.25				.09									.15					2.95	.89					5.58
Humboldt	Des Moines				1.11				T.													.82					.09					2.02
Mason City	Cedar		T.	.02	.98	.13			.63				T.						.20						T.				1.24				3.20
Northwood	Cedar			.15	1.75				1.71										T.	T.				T.		T.	.22						3.83
Osage	Cedar			T.	.41				.93																.05	.47	.34						2.20
Northeast District																																	
Cedar Falls	Cedar			T.	.59	1.15	.02		.74				T.									.40				1.81	.61					5.32
Decorah	Mississippi				.61				.39	.21												.04		.08		.50	.27					2.10
Dubuque***	Mississippi				.07	.13			.01										T.	T.	T.	.04				.65	.02	.02				0.94
Fayette	Mississippi				.22				1.42				1.16									.21				.35	.05					3.41
Independence	Wapsipinicon				.68	.16			.77													.05				1.18	.34	.03				3.21
Lansing	Mississippi				.40	.19			.40	.29															.11		.59	.06					2.04
New Hampton	Wapsipinicon				.30	.38			.25													.03				.17		.02				1.15
Oelwein	Wapsipinicon				.40				1.95				.20									.30				.65						3.50
Postville (near)	Mississippi				.52	1.05			.34				.26									.10				.08	.42					2.77
Waterloo	Cedar					1.71		T.		.75												.12				.63	1.25	T.				4.46
Waverly	Cedar																															
West Central District																																	
Audubon (near)	Nishnabotna				T.								T.	T.								.58				.07				T.		0.65
Carroll	Raccoon				.58																	.91					.03					1.52
Denison	Missouri				.36		.01						T.							T.	.16	1.72				T.	.01					2.26
Guthrie Center	Raccoon				.88																	.30										1.18
Harlan	Nishnabotna						T.						.13									1.52				T.	T.			T.		1.65
Jefferson	Raccoon				1.10								T.									.31				T.				T.		1.41
Little Sioux	Little Sioux			.19									T.	T.								2.69				.01		T.		.03		2.92
Logan	Missouri			.02			T.							T.								.72				T.		T.				0.74
Onawa	Missouri			.55			T.															.35					T.					0.90
Rockwell City	Raccoon				.35	.08																.08								T.		0.51
Sac City	Raccoon				.55	.06																.22								T.		0.83
Sioux City***	Missouri		T.	T.	.02		T.						T.						T.			.70					T.			T.		0.72
Central District																																	
Ames	Skunk				.40																	.10										0.50
Baxter	Skunk																															
Boone (near)	Des Moines				.27	.64		T.					.01		T.							.04					T.		T.			0.96
Des Moines***	Des Moines				.30		T.						T.	T.						T.	.01	.25				T.	T.			T.	T.	0.56
Fort Dodge	Des Moines				.17	.08																.07	.03					.29				0.64
Grinnell	Iowa				.40	.85	.04															.47					.50					2.26
Grundy Center	Cedar				.20	.15			.60													.12					.30	.03				1.40
Iowa Falls	Iowa				.05	.27				.36										T.		.54	.16				.34	.56				2.28
Marshalltown	Iowa				T.	.65				.03				19	T.					T.		.40	.01				T.	T.				1.28
Monroe	Des Moines				.32	.31							T.	T.								.25										0.88
Perry	Raccoon				1.16								T.								.03	.04				T.						1.23
Toledo	Iowa				.30	.42			.10				T.	T.								.24				.10	.11	.01	T.			1.28
Van Meter	Raccoon					.65																.11	.42			T.						1.18
Waukee	Raccoon				.78								T								T.	.18				.05	.05					1.06
Webster City	Des Moines					.52			T.													.50					.02		.02			1.06
East Central District																																	
Belle Plaine	Iowa				.47	1.51			.02				.01									.68					T.	T.				2.72
Cedar Rapids	Cedar					1.12	.04																.15					.03	.02				1.36
Clinton	Mississippi				.05	.31				.05												.15				T.	.02	.07	.03				0.68
Davenport***	Mississippi				.18	1.14	.04		T.	T.												T.					.03	.02	.53				1.94
Fairport	Mississippi				.20	.95	.12															.02						.04	.55				1.88
Iowa City	Iowa			T.		1.23	.18							T.									.18					.09	.06				1.74
Le Claire	Mississippi	.07				.71	.07																T.					.12	.15	.01			1.13
Maquoketa (near)	Maquoketa				.27	.15			.01	.02												.08					.06	.38	.02				0.99
Muscatine	Mississippi					1.00	.70	.15															T.					.07	.06	.25			2.23
Olin	Wapsipinicon				.45	.25				.40												.02										1.12
Tipton (near)	Cedar				.23	1.01																.15						.10				1.49
Williamsburg	Iowa				.40	1.53				.11												.17								.38		2.59

Daily Precipitation for July, 1930—Continued

Stations	Drainage Basin	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	Totals
Southwest District																																	
Atlantic‖‖	Nishnabotna					.02							.01	.01								.62	.62							T.			1.28
Bedford	102												.18									.63				.20							1.01
Clarinda‖‖	Nodaway							.01						.23	.22							.35	.11									.01	0.93
Corning	Nodaway																					.75				.38							1.13
Cumberland (near	Nodaway				T.		T.						.05								.52	.67				T.			T.	.02	T.		1.26
Glenwood	Missouri			.32									.30								.20	.87							T.				1.69
Lenox	Missouri																					.35				.10							0.45
Oakland	Nishnabotna												.04								.25	1.35											1.64
Red Oak (near)	Nishnabotna			.76			T.						.03								.04	.74							T.				1.57
Riverton (near)	Nishnabotna			.30									T.	T.								.38											0.68
Thurman	Missouri			.15									T									.55							T.				0.70
Omaha, Neb.***	Missouri			.01	.19		.07						.03								.14	.58				T.			T.	.01	T.		1.03
South Central District																																	
Afton	Grand													T.								.37				.48				T.			0.85
Albia‖‖	Des Moines				.20	.50	T.															.12							T.				0.82
Centerville	Chariton				.02		T.						.01									.14							T.	.01			0.18
Chariton (near)	Chariton				.20																	.52											0.72
Corydon (near)	Chariton				.50								.01									.23								.03			0.77
Creston‖‖	Missouri					.04								.03								.75	.15			.51	.37		T.				1.88
Earlham (near)	Des Moines				.24								T								T.	1.23				T.				T.			1.47
Indianola	Des Moines				.39	.02	T.						T.									.57				.02		.04					1.04
Knoxville	Des Moines																																
Lacona	Des Moines				.33																	.38											0.71
Lamoni‖‖	Grand													.01								T.	.46										0.47
Melrose	Des Moines				.22		.40						T.									.10											0.72
Mount Ayr	Grand				.05	.05							.05									.36				.22							0.73
Tingley	Platte				T.		T.						T	T.								.63				.28			T.	T.	T.		0.91
Winterset	Des Moines				.15								.01	T.								.85				.05		T.		T.	T.		1.06
Southeast District																																	
Bonaparte (near)	Des Moines				.40	.47	T.			.07			T.									T.					T.			.02			0.96
Burlington‖‖	Mississippi					.28	.35	.02						T.									T.					.01		.15			0.81
Columbus Junction	Iowa				.10	.60																T.					.01	.04	.04				0.79
Fairfield	Skunk				.71	.30	.02			.08			T.									T.					T.	T.		T.			1.11
Keokuk***	Mississippi				.23	.02	T.						.02	T.								T.	T.					.03		T.			0.30
Keokuk No. 2	Mississippi				.35	.03							T.	03								T.	T.					.02		T.			0.43
Keosauqua	Des Moines				1.35	.35																								T.			1.70
Mt. Pleasant	Skunk				.52	.21																T.					.07		.09	.02			0.91
Oskaloosa	Des Moines				.36	1.51							T.	T.								.56				T.		.01		T.			2.44
Ottumwa	Des Moines				.44	.50	.08						T.									T.						T.	T.	T.			1.02
Sigourney	Skunk				.94	.67																.50							T.				2.11
Stockport (near)	Skunk				.42	.14	.04			.03			T.									.02							.11	T.			0.76
Washington	Skunk			T.	.40	.23	.03			T.												.03					T.		.14				0.83
Wever	Mississippi			.06	.20	.44	T.																				T.		.09				0.79

Except as otherwise indicated, observations are generally made late in the afternoon, near sunset, and precipitation recorded is for 24 hours ending at the time of observation.

‖‖Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.

***Regular Weather Bureau Station: precipitation is for 24-hour period midnight to midnight.

**Incomplete.

*Precipitation included in the next following measurement.

T. Precipitation is less than .01 inch rain or melted snow.

PRESSURE, RELATIVE HUMIDITY, WIND AND SUNSHINE

Stations	Barometric Pressure, Inches (Sea Level) Mean	Highest	Date	Lowest	Date	Relative Humidity, % Mean 7 A. M.	12 Noon‡	7 P. M.	Lowest	Date	‡‡Wind Total movement	Average hourly velocity	Maximum Miles	From	Date	Sunshine % possible	Departure from normal
Chas. City	29.96	30.27	30	29.68	12	75	47	54	25	31	3,493	4.7	22	s.	17	76	+ 1
Davenport	29.94	30.23	15	29.67	12	69	48	45	26	1	4,752	6.4	30	sw.	4	76	+ 2
DesMoines	29.94	30.23	30	29.66	20	66	40	37	22	17†	5,844	7.9	33	nw.	4	81	+ 8
Dubuque	29.96	30.24	14	29.62	12	74	50	50	29	30	3,792	5.1	20	n.	27	81	+11
Keokuk	29.99	30.23	15	29.75	12	64	42	43	23	18	4,017	5.4	21	se.	5	81	+ 4
Sioux City	29.93	30.31	14	29.72	27	66	40	37	23	16	6,458	8.7	27	se.	3	81	+ 9
Omaha, Nb	29.93	30.28	30	29.70	18	60	39	36	16	16	4,349	5.8	20	se. °	2†	81	+ 6
Means and extremes	29.95	30.31	14	29.62	12	68	43	43	16	16		6.3	33	nw.	4	80	+ 7
Normals and records	29.97	*30.47	7th 1892	§29.29	9th 1926	79	57	¶13	25th 1894				‖52	ne.	13th 1905	73	

*Davenport §Sioux City ¶Des Moines ‖Omaha ‡Local mean time †And other dates °Also other dates and directions.

‡‡January 1, 1928, 3-cup anemometers replaced 4-cup instruments. See Climatological Data, January, 1928, page 7.

ERRATA

Report for June, 1930. Page 43, Williamsburg; total precipitation published 8.81 inches, should be 9.19 inches; precipitation departure published +4.31, should be +4.69; number of days with precipitation 0.01 inch or more published 7 days, should be 8. Page 44, Williamsburg; precipitation on the 30th published none, should be 0.38; total precipitation for month published 8.81, should be 9.19. Page 43, east-central district; precipitation mean published 7.57 inches, should be 7.60; district precipitation departure published +3.23, should be +3.26.

RIVERS

The lack of moisture was reflected in the interior streams and unusually low stages prevailed with very little fluctuation. Many of the small streams were completely dry the last half of the month. The Missouri River midsummer rise failed to materialize by August 1. Instead, the river fell gradually throughout the month and averaged more than 2.5 feet below normal along the Iowa boundary. The Mississippi River fell rapidly throughout the month.

MISCELLANEOUS PHENOMENA

Aurora: 10th, 22d, 24th, 25th.

Birds (migration southward): Webster City, martins on 31st.

Coronas, Lunar: 2d, 9th, 16th, 29th.

Dust Storm: 19th.

Fog, light: 25th.

Frost, killing: (40 acres of corn on peat ground near Sac City) 15th.

Gales: 8th, 16th, 18th, 20th.

Hail, light: 4th, 5th, 27th.

Hail, moderate: 1st, 2d, 5th, 20th, 25th, 26th, 27th.

Hail, heavy: 25th, 26th.

Halos, lunar: 9th, 16th.

Halos, solar: 2d, 3d, 17th, 22d, 30th.

Haze: 3d, 17th, 23d.

Hot Winds: 9th, 17th, 18th, 19th, 25th, 26th, 27th.

Rainbows: 4th, 21st, 25th, 26th.

Thunderstorms: 2d, 3d, 4th, 5th, 8th, 12th, 19th, 20th, 21st, 25th, 26th, 27th, 28th.

Tornadoes: 5th, 19th, 20th, 26th.

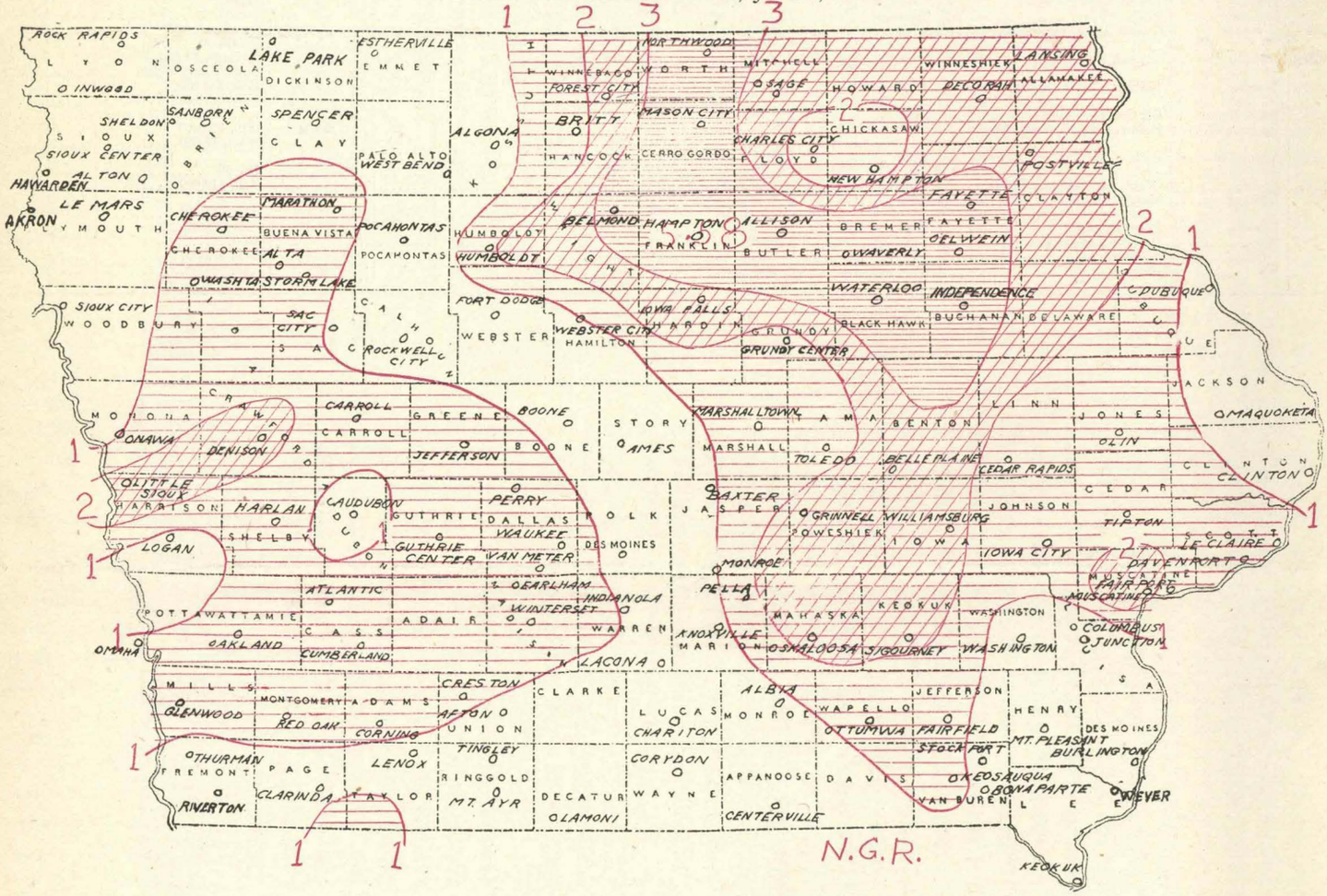
Daily Maximum and Minimum Temperature for the Month of July, 1930

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
Northern Division																																	
Algona	Maximum	78	79	74	84	94	87	94	88	98	104	101	94	78	71	86	98	101	90	92	97	88	84	88	97	96	95	106	95	90	87	92	90.5
	Minimum	48	52	60	64	67	70	65	68	68	74	73	75	62	48	49	61	71	67	68	70	67	57	58	64	68	74	72	66	58	58	54	63.7
Alta	Maximum	80	86	82	85	98	94	97	101	103	102	102	90	77	78	90	100	100	92	101	95	82	85	90	98	96	99	107	85	90	84	92	92.3
	Minimum	50	55	61	68	67	72	67	74	70	72	72	67	61	48	49	63	72	70	69	74	64	58	61	63	69	74	68	66	61	60	58	64.6
Alton	Maximum	80	84	81	87	98	93	95	103	102	102	101	93	77	77	89	98	98	92	97	90	84	89	89	95	95	100	104	94	92	85	93	92.3
	Minimum	45	56	62	70	67	70	68	73	66	69	68	75	62	45	47	65	74	65	65	68	67	52	61	65	68	72	68	64	54	61	51	63.3
Belmond	Maximum	77	80	79	82	92	87	92	88	98	101	100	95	80	74	84	96	100	95	100	101	85	87	90	95	95	94	101	85	89	86	91	90.3
	Minimum	46	52	58	61	68	67	61	67	67	74	70	74	60	56	55	55	60	65	75	76	65	55	55	62	65	72	70	68	57	55	50	62.6
Charles City	Maximum	74	75	74	79	89	87	88	85	92	99	98	93	77	72	80	93	98	87	93	98	83	82	88	93	93	92	97	82	86	81	87	86.9
	Minimum	51	53	59	60	68	66	62	68	70	76	74	69	56	55	49	56	65	68	70	69	65	60	59	65	67	71	71	65	58	57	54	63.1
Decorah	Maximum	73	77	75	82	90	86	88	88	93	97	93	93	80	79	79	91	95	91	95	99	85	83	88	93	94	95	97	83	85	81	87	87.6
	Minimum	49	45	53	57	64	66	55	62	65	68	71	64	60	47	40	57	65	62	65	65	63	56	48	61	61	65	71	63	60	50	45	58.8
Dubuque	Maximum	71	76	78	79	81	88	88	83	93	90	93	99	78	71	78	88	95	93	96	99	80	82	89	92	94	84	98	86	83	80	84	86.1
	Minimum	56	53	57	62	66	69	64	96	69	72	73	69	59	54	51	60	69	76	81	78	68	63	63	69	69	73	74	70	65	64	58	65.8
Forest City	Maximum	75	77	73	83	89	86	88	86	93	101	100	91	76	73	83	96	102	89	91	99	83	83	88	97	96	94	101	92	89	84	91	88.7
	Minimum	46	50	55	60	65	68	60	70	67	72	68	73	58	48	45	58	68	65	68	65	64	55	55	60	63	66	70	63	56	57	52	61.0
Independence	Maximum	71	74	75	78	84	83	85	84	90	95	95	97	87	81	76	88	95	90	95	99	88	81	86	90	91	90	94	94	90	78	81	86.6
	Minimum	52	51	57	59	61	68	62	65	70	73	72	81	63	52	49	53	63	69	75	68	69	59	57	61	67	70	71	70	61	60	55	63.4
Inwood	Maximum	78	85	81	89	97	92	96	104	102	103	104	86	81	79	83	100	98	94	95	88	86	91	94	100	100	103	110	91	93	85	95	93.1
	Minimum	45	56	60	70	66	67	67	70	67	71	69	70	58	43	52	63	71	64	66	70	62	50	63	63	70	71	69	60	54	59	50	62.5
Lake Park	Maximum	77	81	75	89	96	90	93	98	102	100	99	87	74	73	87	97	95	95	92	87	80	86	89	98	95	101	106	83	90	87	93	90.2
	Minimum	55	48	58	69	68	67	65	68	76	70	71	69	49	44	46	61	71	63	66	67	65	57	61	64	67	77	70	60	56	68	55	62.9
Mason City	Maximum	74	75	70	81	89	86	87	86	96	99	97	92	76	71	82	95	99	87	92	97	82	85	89	94	94	93	99	89	86	81	83	87.3
	Minimum	46	49	50	59	65	68	57	60	68	75	70	74	61	46	43	57	70	62	65	63	63	54	53	64	66	68	66	66	53	53	48	60.1
New Hampton	Maximum	79	75	74	80	89	87	87	85	91	97	96	96	81	74	78	91	96	88	93	98	82	84	88	92	93	91	97	90	86	83	88	87.4
	Minimum	46	48	55	59	65	66	59	64	67	73	69	68	61	48	44	52	61	65	66	66	65	55	54	61	62	68	67	66	53	55	47	59.8
Northwood	Maximum	77	74	71	79	89	87	89	84	95	98	98	89	76	73	80	92	97	89	90	97	82	82	87	94	93	94	100	88	86	82	89	87.1
	Minimum	49	52	57	58	59	70	69	61	69	74	73	71	61	50	48	54	67	64	67	68	66	57	57	66	65	69	68	66	56	56	55	62.0
Pocahontas	Maximum	80	83	80	84	95	91	95	93	103	103	103	95	80	78	88	100	104	95	98	99	82	86	93	97	98	102	110	93	92	86	93	92.9
	Minimum	48	62	61	68	67	68	65	73	69	76	69	75	64	45	45	60	69	67	66	71	65	58	58	60	68	67	69	67	61	57	51	63.5
Postville	Maximum	72	70	71	76	83	81	82	79	86	91	89	90	74	70	72	84	90	85	90	94	79	78	83	85	89	85	91	79	80	80	79	81.8
	Minimum	50	48	54	58	67	65	57	60	64	70	71	64	58	49	45	58	67	67	71	71	61	56	53	64	68	69	67	66	54	52	54	60.6
Rock Rapids	Maximum	78	85	81	89	96	91	94	100	99	100	100	84	76	76	90	98	94	95	92	84	83	88	90	97	97	103	106	89	90	85	92	91.0
	Minimum	44	55	60	65	63	66	66	70	67	69	67	73	62	44	46	66	70	59	64	67	64	51	55	55	68	68	69	63	53	60	50	61.3
Central Division																																	
Ames	Maximum	77	82	82	85	92	92	96	92	102	104	103	99	91	74	86	99	102	103	103	103	89	88	93	96	94	104	108	90	92	88	92	93.6
	Minimum	52	52	60	60	68	67	67	71	75	72	73	75	63	51	45	54	68	67	76	73	72	60	56	60	69	77	75	74	65	61	54	65.2
Belle Plaine	Maximum	76	80	81	83	90	92	90	87	99	102	102	98	83	73	82	93	98	102	102	102	90	85	91	93	97	98	105	89	88	84	87	91.0
	Minimum	53	49	59	62	66	67	65	68	70	75	70	72	67	48	65	51	63	70	71	67	70	58	55	59	67	74	74	72	60	58	51	63.7
Carroll	Maximum	78	82	82	85	93	87	93	96	102	103	102	94	83	75	87	100	101	101	101	102	82	86	90	95	91	104	104	92	91	86	94	92.3
	Minimum	51	55	60	66	69	72	68	74	72	71	72	77	58	48	50	64	73	70	75	72	66	58	61	62	72	76	75	70	64	61	58	65.8
Cedar Rapids	Maximum	78	80	81	80	84	93	91	84	100	102	104	99	89	75	82	93	99	101	103	104	91	88	91	95	97	101	104	92	89	87	90	91.8
	Minimum	53	48	60	61	67	65	62	66	69	75	72	70	68	54	47	51	61	67	77	71	71	60	56	60	65	77	75	74	63	60	51	63.7
Davenport	Maximum	74	75	81	81	82	91	90	87	95	100	99	100	80	72	77	88	94	100	100	99	86	84	89	93	94	101	105	94	86	85	87	89.3
	Minimum	58	56	59	66	68	67	70	67	76	75	75	70	62	56	56	60	70	74	80	76	69	62	65	68	73	80	79	71	66	66	61	67.8
Des Moines	Maximum	79	81	82	82	93	95	95	94	102	103	101	97	82	74	83	96	101	104	102	102	83	86	89	93	94	103	106	90	90	85	90	92.2
	Minimum	55	56	61	67	70	71	72	75	76	78	76	74	64	54	50	62	73	76	81	77	70	64	60	64	71	83	82	72	69	66	59	68.6
Ft. Dodge	Maximum	77	82	82	87	93	87	93	90	101	101	101	97	79	73	86	98	101	94	96	99	84	86	92	97	95	101	107	98	90	84	91	91.7
	Minimum	48	55	60	66	67	71	65	74	70	72	70	76	64	49	47	60	71	67	71	73	69	58	58	62	69	75	70	70	64	57	52	64.5
Grinnell	Maximum	87	80	78	82	87	83	90	84	100	103	100	99	85	74	82	93	98	103	103	102	87	83	89	92	93	102	105	95	88	84	86	90.9
	Minimum	56	50	52	62	66	66	68	69	72	75	71	71	61	51	49	57	64	70	78	72	69	60	58	60	68	69	75	74	63	63	54	64.3
Guthrie Center	Maximum	80	83	82	85	93	92	96	99	103	105	104	101	95	80	88	101	102	107	104	107	86	85	91	95	92	104	108	94	92	92	92	94.8
	Minimum	47	55	61	66	75	66	67	76	71	73	73	78	65	49	44	62	72	67	80	75	69	57	56	61	67	79	77	74	65	58	54	65.8
Iowa City	Maximum	74	78	80	78	85	93	91	85	96	100	97	98	83	76	80	90	96	99	100	98	90	84	89	93	95	98	103	91	86	85	88	89.6
	Minimum	55	51	60	63	66	65	67	67	73	75	72	72	67	52	49	53	60	69	73	72	71	59	59	62	69	79	73	73	63	59	54	64.6
Iowa Falls	Maximum	75	79	79	84	92	88	92	86	97	100	101	97	81	72	84	97	101	96	98	101	83	84	92	96	96	97	103	90	88	83	86	90.3
	Minimum	47	51	57	62	68	68	64	68	70	73	70	75	62	52	45	56	70	68	74	69	69	56	57	63	65	70	72	70	62	59	54	63.4
Little Sioux	Maximum	81	86	87	92	99	98	99	102	104	105	103	94	84	76	89	101	104	104	105	99	87	86	88	93	94	101	106	94	90	82	92	94.5
	Minimum	48	61	63	70	76	72	71	73	72	76	76	78	68	50	57	66	75	72	78	77	68	60	65	65	75	78	75	72	65	66	56	68.5
Marshalltown	Maximum	77	81	82	80	90	88	94	90	101	104	103	100	88	72	83	96	100	102	104	101	86	86	91	94	96	104	107	96	89	84	88	92.3
	Minimum	52	54	59	63	67	70	68	70	74	76	76	78	65	50	48	58	68	74	80	75	70	60	60	63	71	78	77	73	63	61	56	66.4
Olin	Maximum	74	77	77	81	84	92	89	84	95	101	100	98	82	74	81	89	95	99	99	100	83	85	90	93	95	95	104	97	88	86	90	89.6
	Minimum	54	46	54	61	65	63	60	65	69	71	72	65	65	50	45	47	56	64	70	67	70	55	54	58	61	74	75	72	58	57	48	61.0
Sioux City	Maximum	81	84	85	88	99	94	97	104	103	103	103	88	80	79	90	99	101	92	97	92	84	88	88	94	94	100	104	85	90	81	90	92.2
	Minimum	50	61	65	71	70	76	73	77	78	80	79	71	61	51	58	67	76	73	71	76	69	60	67	67	74	79	74	70	65	65	58	68.8
Southern Division																																	
Albia	Maximum	79	80	79	77	90	96	95	91	101	102	101	96	80	74	82	92	98	102	103	102	98	85	91	95	98	105	110	97	89	89	94	92.6
	Minimum	50	55	59	50	60	68	69	72	73	74	73	76	63	53	45	56	67	72	75	75	70	55	59	59	70	78	80	75	64	60	55	64.8
Atlantic	Maximum	85	85	87	90	101	96	99	100	104	104	102	94	89	79	88	100	102	105	104	105	85	88	88	93	93	102	105	88	93	86	93	94.6
	Minimum	45	53	62	69	72	65	65	72	71	68	70	73	63	46	42	61	68	71	77	71	67	56	56	62	70	74	75	73	63	59	58	64.4
Burlington	Maximum	78	79	85	79	86	94	97	94	99	101	103	100	84	76	81	93	99	103	103	102	88	84	92	97	98	107	109	96	86	87	90	92.6
	Minimum	59	56	61	66	68	71	70	69	76	76	78	75	72	58	53	56	65	70	76	71	75	62	63	64	74	76	78	74	68	64	61	67.9
Columbus Jct	Maximum	71	73	77	74	81	90	87	83	93	96	95	97	82	76	76	86	94	98	100	99	90	81	88	91	92	99	104	92	83	83	88	87.7
	Minimum	56	50	60	63	67	65	69	66	74	74	74	74	70	54	47	52	66	70	75	73	71	60	57	58	69	76	75	74	64	58	60	65.2
Corning	Maximum	82	92	83	88	97	97	96	98	103	104	101	91	98	92	86	96	100	103	104	105	81	85	88	92	92	101	105	100	88	84	92	94.3
	Minimum	47	65	59	69	74	65	65	71	71	71	70	75	65	51	44	60	67	68	76	70	70	58	55	59	70	74	73	72	64	59	58	65.0
Corydon	Maximum	74	78	79	77	90	93	92	93	98	99	99	97	81	78	79	91	97	101	100	100	94	80	87	91	95	102	106	99	85	86	89	90.6
	Minimum	54	55	60	66	73	71	69	72	74	74	74	76	68	53	48	56	67	72	72	72	73	60	60	60	71	77	81	77	65	63	60	66.9
Creston	Maximum	79	80	81	81	94	92	94	96	100	100	99	92	82	74	78	94	99	102	101	101	85	83	86	90	90	99	101	90	87	82	90	90.4
	Minimum	53	54	60	68	73	66	68	71	73	73	72	75	65	52	48	59	68	68	71	70	70	60	58	59	70	74	77	73	65	63	62	65.7
Fairfield	Maximum	75	80	80	75	87	95	94	91	97	100	100	99	80	74	80	93	99	102	103	101	91	84	93	95	98	105	108	95	88	88	90	91.6
	Minimum	55	50	58	63	67	55	67	71	73	73	73	75	68	53	45	52	63	72	75	71	70	58	55	59	69	75	80	73	64	61	53	64.4
Keokuk	Maximum	76	76	81	81	86	96	95	95	98	101	103	100	81	72	78	89	97	101	102	101	89	82	88	94	96	106	107	97	85	90	90	91.4
	Minimum	59	57	61	65	69	74	72	72	78	77	79	78	70	60	55	58	68	75	77	76	71	64	65	65	75	79	82	77	70	65	65	69.6
Knoxville	Maximum																																
	Minimum																																
Lamoni	Maximum	78	80	83	81	95	96	96	96	100	100	100	88	82	74	83	95	99	102	102	103	88	82	87	93	97	104	107	92	88	87	91	91.9
	Minimum	54	54	59	64	72	68	65	69	69	71	70	74	65	52	48	56	65	68	73	71	70	59	59	60	69	76	74	65	62	61	65	65.1
Sigourney	Maximum	78	78	81	82	89	95	92	89	100	102	102	101	85	72	80	92	98	102	103	102	88	86	91	93	96	104	108	95	88	85	92	91.9
	Minimum	53	52	59	63	66	67	70	71	74	74	73	75	65	51	46	53	62	67	72	69	68	57	58	60	67	76	78	72	63	63	56	64.5
Thurman	Maximum	81	84	84	93	97	95	99	99	102	101	100	95	85	78	85	96	102	105	104	103	84	84	86	91	96	103	107	100	88	84	91	93.6
	Minimum	50	56	63	69	74	70	68	74	69	73	72	72	66	51	49	64	71	72	76	76	69	60	59	60	74	76	76	69	62	58	54	66.2
Winterset	Maximum	82	82	84	82	95	96	97	97	103	103	101	97	86	78	87	97	100	104	102	102	91	86	88	93	92	101	106	99	90	86	92	93.5
	Minimum	50	55	60	65	68	69	66	72	66	72	75	74	65	50	50	60	70	73	77	75	68	60	60	60	71	75	71	70	65	60	62	65.6
Omaha, Neb.	Maximum	82	85	86	94	99	95	99	102	104	103	102	94	83	76	86	97	104	107	106	102	83	84	88	91	95	104	109	92	89	82	89	93.9
	Minimum	58	64	66	72	79	77	73	79	80	81	81	73	65	56	60	68	79	76	79	78	70	67	68	68	76	83	83	75	71	68	65	72.2

IOWA STORMS, JULY, 1930

Date	County	Township	Nature of Storm	Time	Storm Moved From	Width of Path Miles	Length of Path Miles	Area of Sq. Miles	Size of Hailstones Inches	Damage	Persons Killed	Persons Injured
4	Wayne	Wright	Wind and Hail	1:00 p. m.	NW to SE					Wind $100 Hail $200		
4	Dallas	Spring Valley	Hail	6:00 a. m. to 10:00 a. m.						Slight		
5	Butler	Jackson, West Point	Wind and Hail	p. m.						Slight		
5	Grundy	Felix	Hail	3:00 a. m.	W to E	2	5	10		$3,000		
5	Mahaska	Lincln	Tornado	5:00 a. m.	SW to NE		1½			$1,000		
5	Linn	Franklin	Hail and Rain	4:30 a. m.	SW to NE	½	4	2	½	$1,500		
5	Lyon	Rock, Riverside	Hail							Slight		
5	Scott	Davenport	Wind, Rain, Hail							Slight		
11	Clayton	Garnavillo	Wind	6:15 p. m.	W to E					Trees, $250		
19	Tama	Lincoln, Spring Creek	Tornado	6:00 p. m.	NE to SW		3			$5,000		
20	Delaware	Coffins Grove	Tornado	6:00 p. m	SW to NE		2			$1,200		
20	Delaware	Coffins Grove, Delaware	Wind	5:00 p. m. to 6:00 p. m.	W to E					$8,000		
20	Tama	Crystal, Howard	Tornado, Wind, Hail	6:00 p. m.	SW to NE		4			Tornado, $2,000; Wind $1,000; Hail, $5,000		
25	Benton	Harrison, Taylor, Jackson, Cedar	Wind and Hail	6:00 p. m.	SW to NE				¼ to ½	Hail, $30,000 Wind, $10,000		
25	Black Hawk	Big Creek	Hail									
25	Buchanan	Homer, Cono, Sumner, Liberty	Wind and Hail	6:00 p. m.	SW to NE	5	5	25	Walnuts	Hail, $25,000 Wind, $8,000		
26	Allamakee	Post	Wind	10:30 p. m. to 11:00 p. m.	NW to SE					$25.00		
26	Boone	Grant, Pilot Mound, Dodge	Wind and Hail	9:00 a. m.					½	Hail, $10,000		
26	Hancock	Magor, Amsterdam, Twin Lakes	Wind and Hail	6:30 p. m. to 7:00 p. m.	SW to NE			30	1	Hail, $50,000		
26	Kossuth	Luverne	Wind and Hail	6:30 p. m.	SW to NE			6	Walnuts	Hail $10,000		
26	Story	Howard, LaFayette	Tornado	9:30 a. m.	E to W		1			$500		
27	Wright	Norway	Wind and Hail	7:00 p. m.	SW to NE			4	Walnuts	Hail, $7,000		
27	Ida	Hayes	Wind and Hail	7:00 p. m.	W to E	1	4	4	⅜	Hail, $5,000		

TOTAL PRECIPITATION, JULY, 1930



SCALE OF SHADES IN INCHES

Less than 1	1 to 2	2 to 3	More than 3

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

IOWA SECTION
In co-operation with
IOWA WEATHER AND CROP BUREAU
CHARLES D. REED, Senior Meteorologist

VOL. XLI DES MOINES, IOWA, AUGUST, 1930 No. 8

GENERAL SUMMARY

August weather was noteworthy because of record breaking maximum temperatures, and a continuation of the prolonged dry spell with its effect on vegetation.

The average temperature for the state was nearly three degrees above normal, due to the exceedingly high temperatures during the first week of the month and the near normal temperatures the rest of the month. Sunday, August 3, 1930 "the hot Sunday" will long be remembered as the hottest August day in most of Iowa. The highest temperature, 113° at Sac City, exceeded by 5° the all time record at that station and equaled the state record for all months including August, which was 113° at Clarinda and Knoxville on the 4th in 1918 and the same temperature at Sigourney, July 22, 1901. At twenty-five stations mostly in the northwest counties, all-time heat records were broken while sixty-five stations established new records for August, mostly in the eastern and northern counties. During July and August, the number of days per station with temperatures 100° or higher averaged 8.8, compared with 13.4 days in 1901, the record year; however, 5 stations exceeded the 1901 record. (See maps on page 65.)

The hot, dry weather was very detrimental to crops. Corn was further damaged. It is estimated that the yield per acre was reduced four bushels making a total reduction of nine bushels due to the adverse weather of July and August. Pastures were absolutely bare over much of the State. Much livestock was put on full winter rations because of lack of pastures. The truck crops, except melons and cucumbers, were ruined in the drier portions of the State, and the blackberry crop was greatly curtailed. The lack of bee pasture caused the bees to attack the grapes and greatly damaged them. Apples were small and falling badly.

The rainfall was unevenly distributed with a great variation in the number of rainy days. For the state as a whole the number of days with 0.01 inch or more averaged nearly normal, but ranged from 2 at some stations to 15 at others. Harlan reported rainfall on 17 consecutive days, including 8 days when only traces occurred.

The lack of rain caused a serious shortage of stock water, interfered with paving operations and caused a great many wells to go dry, making it necessary to haul or pump water long distances. Fish in ponds and small streams died in large numbers due to the lack of water or the stagnant condition.

Farm operation was greatly interrupted over most of the State. Fall plowing and preparation for seeding winter wheat, rye, alfalfa, clover and timothy, have been greatly delayed and made next to impossible by the continued drouth and hard baked and cracked soil

N. G. R.

TEMPERATURE

The mean temperature for the state, derived from the means of 9 districts of nearly equal area, and based on the records of 103 stations, was 74.4°, or 2.7° above normal. The greatest district excess, 3.9°, was in the northwest district, and the least district excess, 2.3° was in the northeast and southwest districts. The highest monthly mean was 78.8° at Keokuk No. 2, and the lowest, 69.3° at Postville (near). The absolute range for the state was 72°, from 113° at Sac City on the 3d, to 41° at Earlham (near) on the 12th Decorah on the 11th and 22d, and Oelwein on the 20th. The average number of days with the maximum temperature 100° or above was 2.5, ranging from 8 days at Keokuk No. 2, to none at [illegible] the greatest excess was 3.57 inches at Storm Lake. The greatest

COMPARATIVE DATA FOR THE STATE—AUGUST

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1873	75.7	+ 4.0	102	54	4.17	+ 0.73	8.40	0.00					
1874	74.3	+ 2.6	99	55	3.12	— 0.32	9.16	0.85					
1875	68.9	— 2.8	92	41	4.04	+ 0.60	7.60	1.07					
1876	73.2	+ 1.5	96	46	5.15	+ 1.71	10.04	1.50					
1877	71.9	+ 0.2	100	53	4.36	+ 0.92	12.65	0.10					
1878	74.4	+ 2.7	100	50	3.22	— 0.22	9.15	0.43					
1879	72.0	+ 0.3	100	42	2.70	— 0.74	7.50	0.45					
1880	72.5	+ 0.8	104	41	4.77	+ 1.33	9.88	0.77					
1881	76.5	+ 4.8	104	48	2.71	— 0.73	6.85	0.32					
1882	71.5	— 0.2	96	43	1.61	— 1.83	6.90	0.07					
1883	69.2	— 2.5	98	42	2.58	— 0.86	8.95	0.22					
1884	68.5	— 3.2	93	44	4.09	+ 0.65	8.34	1.98					
1885	66.9	— 4.8	98	40	5.90	+ 2.46	12.68	2.79					
1886	74.2	+ 2.5	103	34	2.02	— 1.42	7.13	0.30					
1887	70.8	— 0.9	103	34	2.75	— 0.69	8.85	0.51					
1888	70.4	— 1.3	110	40	4.37	+ 0.93	8.40	0.95					
1889	71.3	— 0.4	104	37	1.87	— 1.57	9.95	0.12					
1890	68.1	— 3.6	102	34	3.25	— 0.19	6.44	1.03					
1891	69.1	— 2.6	106	34	4.24	+ 0.80	13.02	1.23		8	13	12	6
1892	71.4	— 0.3	102	40	2.24	— 1.20	4.69	0.65		5	18	9	4
1893	69.4	— 2.3	101	30	2.32	— 1.12	6.22	0.40		5	19	9	3
1894	74.6	+ 2.9	108	38	1.58	— 1.86	4.53	T.		4	21	8	2
1895	71.9	+ 0.2	103	37	4.43	+ 0.99	10.63	0.67		7	17	9	5
1896	71.7	0.0	104	34	3.52	+ 0.08	12.25	0.86		8	15	11	5
1897	68.9	— 2.8	104	35	1.86	— 1.58	4.98	0.47		6	15	11	5
1898	71.2	— 0.5	103	40	3.44	0.00	10.55	0.58		6	17	9	5
1899	74.4	+ 2.7	100	41	3.68	+ 0.24	10.45	1.12		7	17	10	4
1900	77.4	+ 5.7	103	44	4.65	+ 1.21	10.43	1.26		6	18	10	3
1901	73.8	+ 2.1	105	40	1.29	— 2.15	4.46	T.		5	20	9	2
1902	69.1	— 2.6	98	37	6.58	+ 3.14	15.47	1.57		11	11	11	9
1903	69.1	— 2.6	101	41	6.64	+ 3.20	17.74	2.55		11	12	10	9
1904	69.1	— 2.6	97	35	3.43	— 0.01	6.75	0.66		7	17	8	6
1905	74.3	+ 2.6	104	44	4.05	+ 0.61	8.47	1.04		9	16	9	6
1906	74.1	+ 2.4	101	33	3.95	+ 0.51	10.51	0.92		9	17	9	5
1907	71.1	— 0.6	99	37	4.33	+ 0.89	9.67	1.05		9	17	9	5
1908	70.0	— 1.7	101	38	4.77	+ 1.33	10.55	1.35		9	17	9	5
1909	76.1	+ 4.4	103	33	1.81	— 1.63	8.21	T.		5	21	8	2
1910	71.9	+ 0.2	104	36	3.88	+ 0.44	11.22	0.37		8	15	10	6
1911	71.7	0.0	107	34	3.32	— 0.12	9.47	0.44		9	16	10	5
1912	71.0	— 0.7	101	40	3.78	+ 0.34	7.90	0.89		10	15	10	6
1913	76.6	+ 4.9	108	40	2.68	— 0.76	7.13	0.08		6	17	10	4
1914	73.7	+ 2.0	103	40	2.19	— 1.25	4.90	0.42		7	17	10	4
1915	65.9	— 5.8	91	30	2.81	— 0.63	9.14	0.27		8	16	8	7
1916	74.0	+ 2.3	106	35	2.58	— 0.86	6.23	0.19		7	18	9	4
1917	69.4	— 2.3	102	31	2.29	— 1.15	6.31	0.70		7	19	8	4
1918	76.0	+ 4.3	113	38	3.61	+ 0.17	8.38	0.54		8	16	10	5
1919	71.5	— 0.2	103	38	2.59	— 0.85	5.72	0.97		7	19	9	3
1920	69.3	— 2.4	98	39	3.35	— 0.09	8.52	0.44		7	18	8	5
1921	72.1	+ 0.4	102	37	5.04	+ 1.60	9.04	2.20		8	16	11	4
1922	73.8	+ 2.1	102	42	3.06	— 0.38	9.80	0.33		8	19	8	4
1923	70.6	— 1.1	102	38	5.42	+ 1.98	13.14	1.46		12	15	9	7
1924	71.7	0.0	100	40	5.35	+ 1.91	12.38	1.90		10	16	10	5
1925	72.4	+ 0.7	99	39	3.47	+ 0.03	8.36	0.31		8	18	9	4
1926	73.5	+ 1.8	103	47	3.80	+ 0.36	7.33	1.64		10	16	10	5
1927	67.9	— 3.8	99	35	2.36	— 1.08	5.68	0.67		8	15	10	6
1928	72.7	+ 1.0	100	37	6.42	+ 2.98	12.80	2.16		9	19	8	4
1929	71.9	+ 0.2	102	37	2.44	— 1.00	9.27	0.78		6	18	9	4
1930	74.4	+ 2.7	113	41	2.42	— 1.02	6.71	0.48		8	15	11	5

T. indicates an amount too small to measure, or less than .005 inch rainfall and less than .05 inch snowfall.

pendence, Postville (near) and Fairport. The average number of days with the maximum temperature 90° or above, was 12, ranging from 18 days at Estherville and Lenox, to 1 day at Postville (near). The greatest daily range in temperature at any one station was 46° at Decorah on the 24th.

PRECIPITATION

The average precipitation for the state, derived from the averages of 9 districts of nearly equal area, and based on the records of 118 stations, was 2.42 inches, or 1.02 inches below normal. The greatest district deficiency was in the central district, 1.95 inches; and the southwest district had the only district excess, 0.92 inch. The greatest deficiency at any station was 3.42 inches at Perry, and

Climatological Data for August, 1930

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit							Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
Northwest District																				
Akron	Plymouth	1,153	4								2.89	— 0.03	1.73	0	8	14	15	2	se.	Orlan C. Moore
Alta	Buena Vista	1,513	39	74.6	+ 4.3	108	3	50	11	33	2.39	— 1.19	0.97	0	6	13	13	5	se.	D. E. Hadden
Alton	Sioux	1,305	25	74.0	+ 3.1	107	3	48	11	37	1.62	— 1.48	0.75	0	8	6	17	8	se.	W. S. Slagle
Cherokee	Cherokee	1,196	10	74.0	+ 4.0	109	3	49	11	35	1.10	— 2.10	0.55	0	8	11	16	4	s.	J. E. Wirth
Estherville	Emmet	1,298	35	74.6	+ 5.8	107	3	45	11	44	2.10	— 1.09	1.05	0	6	13	15	3	s.	A. O. Peterson
Hawarden	Sioux	1,181	4								2.96	+ 0.18	1.87	0	8	5	10	16	se.	Earl V. Slife
Inwood (near)	Lyon	1,474	26	74.7	+ 4.2	110	3	50	11	40	0.87	— 1.72	0.46	0	6	14	13	4	e.	A. C. Hanson
Lake Park (near)	Dickinson	1,489	17																	P. M. Lawrence
Le Mars	Plymouth	1,224	34	74.6	+ 3.6	108	3	51	11	33	2.45	— 0.23	1.45	0	6	18	10	3	s.	Henry Newell
Marathon	Buena Vista	1,390	4								2.02		0.79	0	6	18	6	7	sw.	E. G. Smith
Pocahontas	Pocahontas	1,248	26	74.9	+ 4.3	111	3	47	11	35	2.63	— 0.74	0.60	0	6	13	13	5	s.	F. E. Hronek
Rock Rapids	Lyon	1,349	31	73.7	+ 4.0	107	3	44	11	40	0.95	— 1.40	0.24	0	7	25	5	1	s.	Nellie F. Medberry
Sanborn	O,Brien	1,553	16	73.8	+ 3.3	108	3	47	10	35	1.01	— 2.20	0.38	0	4	10	13	8	e.	J. W. Dow
Sheldon	O,Brien	1,418	19	73.8	+ 3.3	107	3	48	11	38	1.25	— 1.75	0.39	0	7	12	11	8	se.	Ross E. Forward
Sioux Center	Sioux	1,461	31	74.0	+ 3.5	109	3	51	11	40	1.56	— 1.26	0.70	0	6	11	16	4	s.	F. C. Aue
Spencer	Clay	1,319	16	75.9	+ 5.3	111	3	48	11	40	2.77	— 0.63	0.95	0	8	15	13	3	se.	E. W. Little
Storm Lake	Buena Vista	1,442	41	73.8	+ 2.4	109	3	51	11	29	6.71	+ 3.57	2.11	0	7	17	7	7	se.	Russel M. Edwards
Washta	Cherokee	1,157	32	74.4	+ 3.6	107	3	47	23	41	0.48	— 2.46	0.17	0	5	18	13	0	e.	H. L. Felter
West Bend	Palo Alto	1,197	37	73.6	+ 3.0	107	3	50	11	40	1.50	— 2.19	0.46	0	6	17	10	4	sw.	Jos. Dorweiler
Means and extremes				74.3	+ 3.9	111	3	44	11	44	2.07	— 1.01	2.11	0	7	14	12	5	se.	
North Central District																				
Algona	Kossuth	1,207	57	74.0	+ 3.7	110	3	51	11†	34	1.91	— 1.64	0.73	0	5	18	5	8	se.	Leon M. Merritt
Allison (near)	Butler	1,000	16	73.0	+ 2.5	100	3	49	11	38	1.83	— 1.55	1.42	0	5	20	5	6	e.	George H. Bell
Belmond	Wright	1,181	20	72.4	+ 2.6	105	3	47	11	38	2.87	— 0.21	2.25	0	5	10	14	7	sw.	H. F. Luick
Britt	Hancock	1,236	43	73.2	+ 3.3	108	3	50	11†	36	2.64	— 1.13	1.84	0	6	22	2	7	sw.	E. P. Healy
Charles City	Floyd	1,015	39	72.4	+ 3.3	101	3	50	11	32	1.45	— 2.03	1.11	0	6	14	11	6	se.	U. S. Weather Bureau
Forest City	Winnebago	1,226	36	72.4	+ 2.2	105	3	49	11†	37	1.03	— 2.34	0.65	0	5	14	11	6	se.	Dr. M. B. Neil
Hampton	Franklin	1,142	5	72.2		103	3	44	21	38	1.74	— 1.71	1.01	0	5	21	5	5	sw.	Howard J. Haydon
Humboldt	Humboldt	1,095	42	73.9	+ 2.1	111	3	47	11	39	2.15	— 1.15	1.57	0	4	16	8	7	se.	H. C. Snitkey
Mason City	Cerro Gordo	1,148	33	71.0	+ 1.4	103	3	45	11†	38	3.58	— 0.16	2.72	0	4	16	11	4	se.	American Beet Sugar Co.
Northwood	Worth	1,222	34	72.9	+ 4.4	102	3	48	21	35	0.66	— 3.30	0.22	0	5	13	11	7	sw.	Charles Dwelle
Osage	Mitchell	1,163	36	72.2	+ 3.5	103	3	48	11†	34	1.53	— 1.60	1.10	0	5	11	12	8	sw.	Dr. C. E. Juhl
Means and extremes				72.7	+ 2.9	111	3	44	21	39	1.94	— 1.53	2.72	0	5	16	9	6	se.	
Northeast District																				
Cedar Falls	Black Hawk	875									0.90		0.65	0	2	15	8	8	se.	E. J. Cable
Decorah	Winneshiek	872	37	70.8	+ 2.3	101	3	41	11†	46	2.35	— 0.95	1.36	0	8	18	9	4	nw.	M. D. Whitney
Dubuque	Dubuque	700	57	74.2	+ 2.5	103	3	53	22	31	1.92	— 1.32	1.58	0	5	10	13	8	n.	U. S. Weather Bureau
Fayette	Fayette	1,003	42	72.6	+ 3.2	104	3	44	22	42	1.55	— 1.99	1.35	0	4	20	6	5	sw.	R. Z. Latimer
Independence	Buchanan	956	66	72.4	+ 1.1	99	3	51	11†	32	0.49	— 2.72	0.25	0	3	14	12	5	sw.	Dr. Geo. Boody
Lansing	Allamakee	632	23								1.16	— 1.79	0.30	0	9					Mrs. Mary Spinner
New Hampton	Chickasaw	1,169	33	71.8	+ 2.0	102	3	45	11	39	2.14	— 1.36	2.00	0	3	15	9	7	se.	D. W. Dawson
Oelwein	Fayette	1,036	7	72.3	+ 2.1	103	3	41	20	37	1.85	— 1.47	0.95	0	2	26	4	1	s.	John T. Ridler
Postville (near)	Clayton	1,192	31	69.3	+ 1.5	95	3	46	11†	32	2.01	— 1.44	1.55	0	6	13	18	0	sw.	F. L. Williams
Waterloo	Black Hawk	854	47	73.8	+ 2.3	105	3	46	21	40	0.75	— 2.56	0.65	0	2	22	6	3	se.	R. B. Slippy
Waverly	Bremer	936	34	74.2	+ 3.6	103	3	50	11†	38	2.18	— 1.06	1.17	0	4	28	3	0	e.	D. H. Murphy
Means and extremes				72.4	+ 2.3	105	3	41	11†	46	1.57	— 1.74	2.00	0	4	18	9	4	se.	
West Central District																				
Audubon (near)	Audubon	1,297	35	75.4	+ 4.6	104	3†	55	11	31	2.27	— 1.36	0.65	0	11	16	14	1	se.	George Kibby
Carroll	Carroll	1,265	40	73.8	+ 2.7	111	3	50	22†	35	1.93	— 1.92	0.59	0	8	19	9	3	se.	Mrs. Jos. J. Wolfe
Denison	Crawford	1,200	36	74.3	+ 2.8	111	3	49	23	38	2.12	— 1.69	1.49	0	8	8	17	6	se.	J. McMinimee
Guthrie Center	Guthrie	987	35	74.8	+ 3.1	109	3	43	24	45	1.20	— 2.66	0.45	0	10	7	21	3	e.	Floyd H. Bainter
Harlan	Shelby	1,192	31	73.2	+ 2.2	106	3	52	23†	35	4.99	+ 1.33	1.66	0	12	11	9	11	se.	Walter Bell
Jefferson	Greene	1,052	31	73.6	+ 2.9	105	3	46	11	34	2.03	— 1.15	1.20	0	5	20	3	8	sw.	W. I. Lyon
Little Sioux	Harrison	1,040	25	75.2	+ 2.6	108	3	54	25	31	5.90	+ 2.16	2.08	0	14	6	20	5	sw.	H. W. Kerr
Logan	Harrison	1,120	63	74.6	+ 1.9	108	3	53	23	34	4.25	+ 0.56	1.62	0	15	4	24	3	se.	Amy Ann Stern
Onawa	Monona	1,051	29	74.0	+ 1.9	103	3	54	14†	35	4.04	— 0.02	2.15	0	6	8	12	11	sw.	Mrs. H. E. Colby
Rockwell City	Calhoun	1,232	34	74.2	+ 3.1	107	3	45	11	36	4.48	+ 0.86	2.40	0	6	21	6	4	se.	A W. McIsaac
Sac City	Sac	1,209	54	74.2	+ 2.6	113	3	47	11	36	3.08	— 0.31	1.63	0	5	16	8	7	s.	F. P. Kessler
Sioux City	Woodbury	1,135	41	75.6	+ 3.6	105	3	56	25	29	0.89	— 2.24	0.35	0	8	4	14	13	s.	U. S. Weather Bureau
Means and extremes				74.4	+ 2.8	113	3	43	24	45	3.10	— 0.54	2.40	0	9	12	13	6	se.	
Central District																				
Ames	Story	926	53	75.5	+ 3.7	106	3	50	11	37	0.91	— 2.53	0.40	0	7	17	8	6	s.	Iowa State College
Baxter	Jasper	998	30																	
Boone (near)	Boone	894	25	74.8	+ 3.9	108	3	42	11	45	0.58	— 2.98	0.26	0	7	15	14	2	ne.	C. F. Henning
Des Moines	Polk	861	52	75.8	+ 2.7	105	3	53	11	31	1.00	— 2.52	0.43	0	12	6	14	11	e.	U. S. Weather Bureau
Fort Dodge	Webster	1,114	30	74.0	+ 3.2	107	3	48	11	39	3.13	— 0.47	1.37	0	6	17	8	6	sw.	Mrs. Emma Sampson
Grinnell	Poweshiek	1,031	36	74.9	+ 2.3	107	3	52	11†	36	1.66	— 2.04	0.47	0	10	20	10	1	sw.	R. E. Bates
Grundy Center	Grundy	976	39	74.4	+ 2.5	105	3	45	22	38	0.97	— 2.33	0.40	0	5	23	6	2	sw.	M. G. Heiberger
Iowa Falls	Hardin	1,127	37	73.4	+ 2.3	106	3	47	11	39	1.83	— 1.58	0.56	0	8	16	9	6	e.	C. H. Gilbert
Marshalltown	Marshall	947	38	75.4	+ 2.6	106	3	49	11	35	0.55	— 2.45	0.22	0	5	15	9	7	sw.	C. C. Pigman
Monroe	Jasper	922	18	74.8	+ 1.4	106	3	53	11	34	3.25	— 0.15	1.00	0	7	21	4	6	s.	J. A. Dibel
Perry	Dallas	975	29	73.9	+ 2.0	107	3	42	11	43	0.65	— 3.42	0.27	0	7	17	9	5	se.	Eugene N. Hastie
Toledo	Tama	847	36	74.3	+ 2.2	107	3	46	11	40	0.53	— 2.40	0.38	0	5	19	9	3	ne.	H. P. Giger
Van Meter	Dallas	872	11								1.94		1.20	0	6					Calvin K. Smith
Waukee	Dallas	1,032	27	74.8	+ 2.3	106	3	48	11	35	1.28	— 2.08	0.62	0	10	20	9	2	sw.	O. D. Ellsworth
Webster City	Hamilton	1,042	25	73.4	+ 1.8	107	3	45	11	42	1.80	— 1.02	1.14	0	5	21	7	3	ne.	Frank A. Bonebright
Means and extremes				74.6	+ 2.6	108	3	42	11	45	1.43	— 1.95	1.37	0	7	17	9	5	sw.	

Climatological Data for August, 1930—Continued

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit: Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Precipitation, in inches: Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Number of Days: Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy	Prevailing direction of wind	OBSERVERS
East Central District																				
Belle Plaine	Benton	866	40	73.6	+ 2.1	107	3	46	11	41	1.15	— 2.08	0.35	0	10	14	13	4	se.	O. C. Burrows
Cedar Rapids	Linn	737	48	74.5	+ 2.7	108	3	47	11	41	1.28	— 2.22	0.91	0	4	16	2	13	se.	J. T. Wurster
Clinton	Clinton	595	57	74.7	+ 2.0	103	3	50	23	40	1.52	— 2.11	0.58	0	7	15	8	8	sw.	Dr. A. P. Bryant
Davenport	Scott	580	59	75.6	+ 2.5	103	3	56	22	29	2.42	— 1.07	1.62	0	10	10	8	13	ne.	U. S. Weather Bureau
Fairport	Muscatine	567	9	74.6	+ 1.6	99	3†	52	11†	32	2.37	— 1.58	1.71	0	12	11	7	13	s.	Bureau of Fisheries
Iowa City	Johnson	733	70	74.1	+ 2.1	107	3	49	11	38	1.91	— 2.19	0.76	0	11	12	10	9	se.	Prof. J. F. Reilly
Le Claire	Scott	576	30								1.57	— 1.46	0.49	0	9					Margaret T. Disney
Maquoketa (near)	Jackson	692	25	72.6	+ 3.0	103	3	43	22†	45	0.67	— 2.47	0.18	0	6	19	6	6	nw.	John Strodthoff
Muscatine	Muscatine	546	69								1.71	— 2.43	0.95	0	10					William Molis
Olin	Jones	760	31	72.9	— 1.3	107	3	44	23	46	1.07	— 2.53	0.72	0	2	17	11	3	ne.	Mrs. L. Stingley
Tipton (near)	Cedar	806	31	74.0	+ 1.8	104	3	48	11†	41	2.82	— 1.00	0.72	0	7	14	16	1	e.	John Kroeplen
Williamsburg	Iowa	770	14	75.9		109	3	52	23	40	2.72	— 0.78	1.86	0	8	20	6	5	se.	Dr. F. C. Schadt
Means and extremes				74.2	+ 2.4	109	3	43	22†	46	1.77	— 1.82	1.86	0	8	15	9	7	se.	
Southwest District																				
Atlantic	Cass	1,110	39	75.0	+ 2.3	107	3†	48	23	40	3.52	+ 0.05	0.83	0	14	12	16	3	se.	Roy L. Fancolly
Bedford	Taylor	1,200	2								3.58	+ 0.02	0.88	0	9	14	12	5	se.	Arthur L. Bishop
Clarinda	Page	1,009	40	75.8	+ 1.2	107	3	50	11	40	3.73	+ 0.20	0.82	0	12	15	15	1	s.	Dr. H. C. Hawley
Corning	Adams	1,150	38			106	3			36	4.66	+ 0.88	2.56	0	5	8	23	0	ne.	C. A. Smith
Cumberland (near)	Cass	1,225	31								4.05	+ 0.60	1.11	0	10	9	16	6	se.	Carl E Pollock
Glenwood	Mills	1,100	32	75.8	+ 1.8	108	3	50	11	34	5.26	+ 1.90	1.38	0	12	11	11	9	se.	George Mogridge
Lenox	Taylor	1,250	35	77.4	+ 3.7	107	3	55	11†	35	3.70	+ 0.34	0.93	0	10	16	9	6	se.	J. L. Hurley
Oakland	Pottawattamie	1,139	11	74.7	+ 1.8	106	3	52	11	35	5.71	+ 2.24	1.52	0	13	14	9	8	se.	W. S. Mathews
Red Oak (near)	Montgomery	1,030	5								6.53	+ 2.89	1.72	0	13	5	23	3	s.	B. R. Bridge
Riverton (near)	Fremont	920	4								3.31	— 0.37	1.33	0	7	15	9	7	s.	Geo. C. Rader
Thurman	Fremont	960	33	76.2	+ 1.8	109	3	50	11	38	3.17	— 0.90	1.32	0	8	10	13	8	s.	H. H. Askew
Omaha, Neb.		1,105	59	76.7	+ 2.3	111	3	60	11	31	6.28	+ 3.23	2.68	0	14	6	19	6	e.	U. S. Weather Bureau
Means and extremes				75.9	+ 2.3	111	3	48	23	40	4.46	+ 0.92	2.68	0	11	11	15	5	se.	
South Central District																				
Afton	Union	1,212	36	75.4	+ 2.8	106	3	48	11	35	4.67	+ 1.29	1.07	0	13	12	13	6	sw.	S. R. Brown
Albia	Monroe	949	32	75.4	+ 2.8	110	3	48	11	38	3.03	— 0.30	1.87	0	4	8	8	15	ne.	J. M. Stevenson
Centerville	Appanoose	1,013	25	74.7	+ 1.5	107	3	51	23†	33	3.45	— 0.03	2.18	0	10	16	7	8	sw.	Thomas Wood
Chariton (near)	Lucas	1,042	35	75.6	+ 3.7	109	3	52	11†	39	2.30	— 1.39	1.22	0	6	18	9	4	sw.	C. C. Burr
Corydon (near)	Wayne	1,050	37	75.0	+ 1.8	107	3	53	23	36	3.24	0.00	1.61	0	11	9	14	8	ne.	J. C. Davis
Creston	Union	1,291	25	75.1	+ 3.1	103	3	55	21	31	3.05	— 0.21	0.80	0	12	6	20	5	e.	Mrs. N. Spangler
Earlham (near)	Madison	1,126	28	73.4	+ 2.0	105	3	41	12	37	4.33	+ 0.50	1.89	0	10	17	9	5	se.	George Phillips
Indianola	Warren	972	39	75.8	+ 2.7	106	3	51	11	36	3.03	— 0.81	0.88	0	13	11	16	4	sw.	Seth F. Shenton
Knoxville	Marion	920	35																	W. J. Casey
Lacona	Warren	824	31								1.55	— 1.90	0.50	0	14	5	26	0		J. B. Alter
Lamoni	Decatur	1,123	23	75.6	+ 3.2	108	3	53	22	37	3.72	— 0.06	1.73	0	11	20	6	5	se.	F. S. Parks
Melrose	Monroe	871	1								3.04		1.55	0	7	11	13	7	se.	J. M. Carr
Mount Ayr	Ringgold	1,220	37	75.4	+ 2.4	105	3	54	21†	42	3.80	+ 0.40	1.26	0	12	21	7	3	s.	E. O. Gleason
Tingley	Ringgold	1,275	5	75.4	+ 3.2	106	3	55	11†	34	2.80	— 0.68	0.86	0	9	17	12	2	se.	James A. Verploegh
Winterset	Madison	1,118	39	75.6	+ 2.4	106	3	50	11	35	2.77	— 0.72	1.37	0	11	21	7	3	sw.	H. S. Ely
Means and extremes				75.2	+ 2.6	110	3	41	12	42	3.20	— 0.32	2.18	0	10	14	12	5	sw.	
Southeast District																				
Bonaparte (near)	Van Buren	563	39	75.2	+ 2.4	108	3	50	23	38	2.22	— 1.27	0.94	0	8	22	3	6	e.	B. R. Vale
Burlington	Des Moines	544	34	76.8	+ 2.4	104	3	56	21	36	0.88	— 2.85	0.37	0	7	17	7	7	ne.	John W. Donnelly
Columbus Junction	Louisa	595	29	73.2	+ 0.1	106	3	50	11	42	2.71	— 1.63	2.16	0	10	15	14	2	sw.	Miss Musa Todd
Fairfield	Jefferson	780	46	75.8	+ 3.0	109	3	48	23†	43	1.63	— 1.84	0.44	0	13	12	12	7	s.	R. M. McKenzie
Keokuk	Lee	614	59	78.0	+ 3.0	106	3	59	21	32	2.11	— 1.09	1.09	0	9	8	11	12	ne.	U. S. Weather Bureau
Keokuk No. 2	Lee	651	1	78.8		109	3†	56	11	41	2.58		1.26	0	9					J. N. D. Dickinson
Keosauqua	Van Buren	639	38	75.8	+ 2.6	109	3	48	22	42	1.67	— 1.60	0.70	0	7	9	18	4	ne.	Dr. J. W. Rinabarger
Mt. Pleasant	Henry	730	49	76.0	+ 2.4	107	3	53	22	36	2.23	— 1.04	0.92	0	11	11	17	3	se.	J. H. Jericho
Oskaloosa	Mahaska	835	54	75.2	+ 3.1	109	3	52	24	35	2.61	— 0.48	0.76	0	13	14	11	6	nw.	Roy R. Robinson
Ottumwa	Wapello	649	35	76.0	+ 2.0	108	3	50	22†	40	3.63	+ 0.18	1.36	0	15	16	8	7	ne.	C. L. Mikesh
Sigourney	Keokuk	785	34	75.0	+ 2.4	110	3	50	11	37	2.63	— 0.47	1.99	0	9	11	15	5	e.	John B. Slate
Stockport (near)	Van Buren	747	28	75.2	+ 3.0	109	3	45	23	44	2.36	— 0.74	1.18	0	14	17	8	6	ne.	C. L. Beswick
Washington	Washington	757	48	75.6	+ 3.2	109	3	54	21	38	2.34	— 1.31	0.96	0	8	9	18	4	se.	D. D. Sherman
Wever	Lee	552	2	76.6		106	3	48	11†	42	1.90		1.15	0	7	11	10	10	ne.	H. G. Liddle
Means and extremes				75.9	+ 2.7	110	3	45	23	44	2.25	— 1.18	2.16	0	10	13	12	6	ne.	
State means and extremes				74.4	+ 2.7	113	3	41	11†	46	2.42	— 1.02	2.72	0	8	15	11	5	se.	

Temperature normals are based on the 46-year period July 3, 1875 to July 2, 1921; shorter records corrected to harmonize. Precipitation normals are based on the 50-year period ended December 31, 1927 at first order stations; upon all records of 10 years or more ending December 31, 1920 for most of the co-operative observing stations; and upon interpolations from normal maps for recently established stations.

Reference letters a, b, c, etc., appearing in the table indicate the number of days missing; for example b represents two days, etc.

†Also other dates.

‡‡Received too late to be included in means and summaries.

T. Precipitation is less than 0.01 inch rain or melted snow.

amount at a single station was 6.71 inches at Storm Lake, and the least was 0.48 inch at Washta. The greatest amount in 24 consecutive hours was 2.72 inches at Mason City on the 5th. The average number of days with 0.01 inch or more of precipitation for the state was 8, ranging from 4 days in the northeast district, to 11 days in the southwest district. For individual stations the range was from 2 days at Cedar Falls and Waterloo, to 15 days at Ottumwa and Logan.

RIVERS

The lack of moisture was reflected in the interior streams and unusually low stages prevailed with very little fluctuation, which resulted in a continuous downward trend. Many of the small streams were completely dry most of the month. The Missouri River had a falling tendency throughout the month, and averaged more than a foot below normal along the Iowa boundary. The Mississippi River fell continuously throughout the entire month, and averaged more than 1.5 feet below normal. Due to a shortage of water power a few of the local industrial plants in the vicinity of Keokuk curtailed operation during the month.

Daily Precipitation for August, 1930

Stations	Drainage Basin	Day of Month																													To-tals
		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	
Northwest District																																	
Akron	Bix Sioux					.10											.24	1.73	.08	.13		.30						.03				.28	2.89
Alta||||	Raccoon					.11					.08							.78		.45	.80	.17											2.39
Alton	Floyd		T.			.03		T.	.09	.06							.03	.72	T.	.42		T.						.15				.17	1.67
Cherokee	Little Sioux				T.	.09		T.		.06		T.					.12	.43	.08	.12	.18	T.						T.			.02	T.	1.10
Estherville||||	Des Moines									.20										.10	.32	.17						.26			1.05		2.10
Hawarden	Big Sioux					.06				.10							T.	1.87	.22	.21		.17						.13				.20	2.96
Inwood (near)||||	Big Sioux									.02	T.							.09	.37	.23			.05					T.	.11			T.	0.87
Lake Park (near)	Little Sioux																																
Le Mars	Floyd					.11		T.		T.								1.45	.31	.15		.09					T.	T.				.34	2.45
Marathon	Raccoon					.48				.05							.10		T.	.79	.39							.21					2.02
Pocahontas	Des Moines					.60				.43							.54			.58	.45							.03					2.63
Rock Rapids	Big Sioux		.08							.08								.08	.24	.18	.20							.09					0.95
Sanborn	Floyd					T.			T.	.07								T.	T.	.21	.38							.35					1.01
Sheldon	Floyd		T.			.02		T.		.03								.09	.05	.29	.38	T.						.39				T.	1.25
Sioux Center	Floyd									T.								.70	.42	.22		.03						.04				.15	1.56
Spencer	Little Sioux		.10			.05				.50							T.		.03	.79	.25							.95				.10	2.77
Storm Lake	Raccoon					.23				.09	2.02						T.	2.02	.54	1.55	.26							T.					6.71
Washta	Little Sioux					.17				.03							T.		.06	.10		T.									.12		0.48
West Bend	Des Moines		T.			.34		T.	.15	.23							T.	T.		.14	.18							.46					1.50
North Central District																																	
Algona	Des Moines								.05	.18			T.		T.		T.			.46	.73							.49					1.91
Allison (near)	Cedar					1.42		T.		.29		T.	T.				T.			.02	.03							T.	.07				1.83
Belmond	Iowa					2.25		T.	T.	.15			T.					T.		.17	.10							.20					2.87
Britt	Iowa					1.84				.18										.17	.10							.29	.06				2.64
Charles City***	Cedar				.05	1.11				.09			T.				T.	.01		T.	.07							.12			T.		1.45
Forest City||||	Cedar				T.	.65					.05		T.	T.				T.		T.	.03	.18							.12				1.03
Hampton	Cedar					1.01				.50										.10	.05							.08	T.				1.74
Humboldt	Des Moines					1.57				T.							T.			.26	.28							.04					2.15
Mason City	Cedar			T.		2.72				.16							T.	T.		T.	.14							.56					3.58
Northwood	Cedar			T.	.03	.14				T.			T.							T.	.22							.22			.05		0.66
Osage	Cedar				.05	1.10														.10								.26			.02		1.53
Northeast District																																	
Cedar Falls	Cedar					.65				.25					T.						T.							T.	T.	T.			0.90
Decorah||||	Mississippi				.04	.45			.15		.12				.10						T.								.13		1.20	.16	2.35
Dubuque***	Mississippi		T.			1.58		T.		.22				T.			T.											.02	.03		T.	.07	1.92
Fayette	Mississippi					1.35				.10			T.															*	.10				1.55
Independence	Wapsipinicon					.10				.25								.14											T.				0.49
Lansing||||	Mississippi				.02	.22	.10		.09		.06				.16							.09						.12			.30	1.16
New Hampton	Wapsipinicon				T.	2.00				.03																		T.	.11				2.14
Oelwein	Wapsipinicon		T.			.90				.95																							1.85
Postville (near)	Mississippi		.10		.20	1.55		T.		.04																			.11		.01		2.01
Waterloo||||	Cedar					.65	T.				.10									T.		T.						T.					0.75
Waverly	Cedar					.81				1.17											.05								.15				2.18
West Central District																																	
Audubon (near)	Nishnabotna			T.	.03	.26		.55	.09	.01		T.	.13	.01				T.	.18	.65	T.							T.	.06		T.	.30	2.27
Carroll||||	Raccoon					.50					T.		T.		.10			.16		.40	.59	.03							.05			.10	1.93
Denison	Missouri					1.49		T.		T.	.12	T.	.02	.04		T.	.01	T.	.11	.28		T.						.05					2.12
Guthrie Center	Raccoon					.09		.10	.23	.04	.10		.06				.04			.45									.05		.04		1.20
Harlan	Nishnabotna			T.		.78	.55	.12	T.	.18	.30	T.	.02	T.	T.	T.	T.	1.56	.10	.80	T.	T.						.06			.06	.46	4.99
Jefferson	Raccoon					1.20	T.										T.	.27	T.	.38	.14							.04			T.	T.	2.03
Little Sioux	Little Sioux			.01		2.08		.01		.45	.11	.03		.01		.01		1.93	.69	.14		.27						.13				.03	5.90
Logan	Missouri			T.	.12	1.62	.57		.03	T.	.20	.02					.02	.15	.37	.25		.09	.11					.17			.05	.48	4.25
Onawa	Missouri					2.15				T.	.12	T.		T.				.28	1.14	T.		.25						.10			T.		4.04
Rockwell City	Raccoon					1.37				.10				2.40			T.		T.	.20	.38							.03					4.48
Sac City	Raccoon					1.16				.07									.06	1.63	.16												3.08
Sioux City***	Missouri	T.			.11	.02	T.		T.	T.		T.		T.		T.	.07	.02	.21	.14		.28						T.			.04		0.89
Central District																																	
Ames	Skunk					.08		.40						.10			.12			.07	.10							.04					0.91
Baxter	Skunk																																
Boone (near)||||	Des Moines					.05		.01			T.			.01	.03		.18	T.		T.	T.	.26							.04		T.		0.58
Des Moines***	Des Moines		.04	T.	T.	.03	.20	.02	.03	.03		T.	.01	T.		T.	.43	.04	T.	T.	.07							T.	T.	T.	.09	.01	1.00
Fort Dodge||||	Des Moines					1.37					.24						T.		1.18	.15	.06	.13											3.13
Grinnell	Iowa					.02	.47		.10					.10			.33	.11		.09	.07								.30		.07		1.66
Grundy Center	Cedar					.40				.32		T.								.08	.07								.10				0.97
Iowa Falls||||	Iowa					.50	.06				.35		.09					T.	.34	.31	.06	.12						T.					1.83
Marshalltown||||	Iowa			T.			T.	.18			T.		T.		T.		T.	.22	T.	.05		.05						.05		T.			0.55
Monroe	Des Moines		T.			.04	.47	.52	T.	T.		T.		T.			1.00	.63	T.	T.	.11										.48		3.25
Perry	Raccoon					.03	.27	.05	.03					.01		T.	T.			T.	.19							T.	.07		T.		0.65
Toledo	Iowa		T.			.04				T.				T.			.06	.32		.01	.10											T.	0.53
Van Meter||||	Raccoon							.13	.03		T.		T.	T.				1.20			T.	.18									.37	.03	1.94
Waukee	Raccoon		T.	T.	T.	T.	.10	.13	.09	.04	T.			T.			.46	.16		.03	.12	T.							T.		.07	.08	1.28
Webster City	Des Moines					1.14				.27							T.	.07		.20	.12												1.80
East Central District																																	
Belle Plaine	Iowa		T.			.03	.23	T.	.21	.02				.02			.35	.09		.07	.07								T.		.06	T.	1.15
Cedar Rapids||||	Cedar								.07		.30							.90	.01										T.			T.	1.28
Clinton	Mississippi					.14	.11		.18	.40				T.			.10	.37			T.								.01		.21	T.	1.52
Davenport***	Mississippi			T.	.14	T.	.21	T.	.18	.12				.01			.53	1.09			.01								.02	T.	.11		2.42
Fairport	Mississippi			.10	.02		.07		.05	.18					.10		.21	1.50											.02	.02	.09	.01	2.37
Iowa City||||	Iowa					.01	.43	.01	.28	T.	.01		T.		.06			.76				.01						.02		.30	.02	1.91
Le Claire||||	Mississippi				T.	.02	.05	.05	.35	T.	.49				T.			.37	.01			T.						.05		T.	.18	1.57
Maquoketa (near)	Maquoketa					T.	.02		.10	.18							.13														.10	.14	0.67
Muscatine||||	Mississippi					.06		.10	.17	.02	.06				.07			.95											.05	T.	.20	.03	1.71
Olin	Wapsipinicon					T.	T.		T.	.72								.35													T.	T.	1.07
Tipton (near)	Cedar						.62		.72	.29							.18	.31													.60	.10	2.82
Williamsburg	Iowa						.09		.12	T.				.08			1.46	.40			.02										.53	.02	2.72

Daily Precipitation for August, 1930—Continued

Stations	Drainage Basin	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	Totals
Southwest District																																	
Atlantic‖‖	Nishnabotna					.05	.02	.83	.11		.47		.05	T.			.13	.16	.32	.50	.02								.04		.38	.44	3.52
Bedford	102					.03		.03			.34						.50	.27	.88										.88	.55	.10		3.58
Clarinda‖‖	Nodaway						.06			.08	.54	.06					.33	.60	.56	.19									.82	.33	.06	.10	3.73
Corning	Nodaway							1.30		2.56																	.20		.10	.50		4.66
Cumberland (near)	Nodaway				T.	T.	.26	.82			.60	.02				T.	.14	.05	.16	.33										.56	1.11	4.05
Glenwood	Missouri					.13	1.10	.08			.48						.48	.38	.31	1.38		.29							.11	.10	.42	5.26
Lenox	Missouri							.66			.93	T.	T.				.43	.25	.87	.06									.10	.10	.25	.05	3.70
Oakland	Nishnabotna					.20		1.52	.06		.30	.47					.20	.29	.90	.47		.05							.24		.53	.48	5.71
Red Oak (near)	Nishnabotna					.02	1.72	.39	T.	T.	.75						.25		.76	.86	.04	.02							.47	.37	.54	.34	6.53
Riverton (near)	Nishnabotna					T.	T.		T.		.92		.02			.46			.30	1.33		.20								.08		T.	3.31
Thurman	Missouri						T.				.34						.47	.08	.37	1.32		.28								.26		.05	3.17
Omaha, Neb.***	Missouri		T.	.13	.13		.31	.26	T.	.41		T.			T.	.17	.18	1.06	1.62	.95		.27		T.				.01		T.	.70	.08	6.28
South Central District																																	
Afton	Grand				.29	T.		1.07			.91		.10				.68	.07	.22	.04	.15								.02	.12	.70	.30	4.67
Albia‖‖	Des Moines						1.87				.14		T.	T.	T.	T.		.50		T.	T.	T.							T.		.52	T.	3.03
Centerville	Chariton		T.				T.	2.18			.60		.03	T.			.08			T.	.02	.05							.03	.16	.23	.07	3.45
Chariton (near)	Chariton							1.22			.30	T.		T.	T.		.35	.10		T.	.18						T.	.15	T.	T.		2.30
Corydon (near)	Chariton			T.		.01		1.60			.65		.18				.24	.09		.02	.05							.03	.12	.25		3.24
Creston‖‖	Missouri				.04			.56			.80	T.	.10	T.			.31	.27	.14		.23							.03	.01*	.43	.13	3.05
Earlham (near)	Des Moines						.89	.11	.31		T.		.04	T.			1.89	.22		.07	.08							T.	T.	.61	.11	4.33
Indianola	Des Moines		.25		T.	T.	.02	.41	.12		.05		.03	T.			.88	.66		T.	.03	.03								.03	.50	.02	3.03
Knoxville	Des Moines																																
Lacona	Des Moines		.10			.01		.50			.12			.01			.25	.10	.02	.05	.01	.08							.25	.02	.03	1.55
Lamoni‖‖	Grand							.14			.77		.03	.01			.23	1.73	.23	T.	T.							.05	.29	.15	.09	3.72
Melrose	Des Moines		T.			T.	1.55				.50			T.			.48	.04		T.		.10							.17	.20		3.04
Mount Ayr	Grand							.20			.95		.03	.02			.40	1.26	.25	.18								.15	.15	.18	.03	3.80
Tingley	Platte				T.	T.		.57		T.	.86	T.	.03			T.	.55	.16	.20	.09	.04	T.						.30	T.		T.	2.80
Winterset	Des Moines						.18	.09	.05		.16		.04				1.37	.07		.07	.17								T.	.31	.26	2.77
Southeast District																																	
Bonaparte (near)	Des Moines					T.	.69	.25	T.		.20	T.		T.	.36		.07	.38	T.		T.							T.	.21	.06		2.22
Burlington‖‖	Mississippi				T.	.02		.03			.04				.34			.06												.37	.02	0.88
Columbus Junction	Iowa			.01	T.		.17	.10					T.	.04			1.38	.78			.01	T.						.01	.05		.16	2.71
Fairfield	Skunk			.03	.04		.06	.14			.20			.39	.04		.12			.02	.04							.11	.38	.06		1.63
Keokuk***	Mississippi				.04	T.	T.	T.	T.		.15	T.		1.08	.01		.18	.15		T.	T.							.39	.07	.04		2.11
Keokuk No. 2	Mississippi				.04	T.		T.			.23				1.26		.12	.43		T.	.05							T.	.31	.13	.01	2.58
Keosauqua	Des Moines						.50	.20						.46			.09		.16			.10							.16	T.	T.	1.67
Mt. Pleasant	Skunk						.22	.20	T.		.02			.02	.38		.18	.20		T.	.04							.05	.63	.29		2.23
Oskaloosa	Des Moines			T.	.26	.02	T.	.27	.06		T.			.08			.76	.06		.12	.03							.05	.21	.62	.07	2.61
Ottumwa	Des Moines			.03	.08	.12	.24	1.36			.20			.08	.05		.81	.02		.05	T.	.05							.04	.38	.12	T.	3.63
Sigourney	Skunk						.09	.08						.12			.21	1.78			.05							T.	.08	.19	.03	2.63
Stockport (near)	Skunk			.13	.06		.89	.29			.16			.06			.30	.06		.03	T.	.03						.03	.19	.09	.04	2.36
Washington	Skunk			.02	T.		.60	.42	T.					.18			.38	.58			T.							T.	.04	.12	T.	2.34
Wever	Mississippi					T.	.09	T.			.20				1.15	T.	.13	.07			T.									.21	.05		1.90

Except as otherwise indicated, observations are generally made late in the afternoon, near sunset, and precipitation recorded is for 24 hours ending at the time of observation.

‖‖Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.

***Regular Weather Bureau Station: precipitation is for 24-hour period midnight to midnight.

**Incomplete.

*Precipitation included in the next following measurement.

T. Precipitation is less than .01 inch rain or melted snow.

PRESSURE, RELATIVE HUMIDITY, WIND AND SUNSHINE

Stations	Barometric Pressure, Inches (Sea Level) Mean	Highest	Date	Lowest	Date	Relative Humidity, % Mean 7 A. M.	12 Noon‡	7 P. M.	Lowest	Date	‡‡Wind Total movement	Average hourly velocity	Maximum Miles	From	Date	Sunshine % possible	Departure from normal
Chas. City	30.04	30.33	11	29.71	3	78	44	54	26	18	2,800	3.8	25	nw.	5	70	— 1
Davenport	30.03	30.31	12	29.75	3	72	46	51	28	1	3,940	5.3	38	nw.	9	56	—14
DesMoines	30.01	30.30	30	29.69	20	76	46	47	21	1	4,601	6.2	25	s.	31	64	— 6
Dubuque	30.03	30.32	11	29.70	3	78	46	50	23	27	2,778	3.7	27	nw.	5	68	+ 4
Keokuk	30.04	30.29	11	29.82	3	70	41	47	21	26	3,350	4.5	18	sw.	3	66	— 7
Sioux City	29.99	30.30	21	29.61	2	76	51	53	24	10	5,929	8.0	27	s.	31	57	—13
Omaha, Nb	29.98	30.28	11	29.63	2	75	52	59	24	2	3,306	4.4	35	nw.	30	52	—18
Means and extremes.	30.02	30.33	11	29.61	2	75	49	52	21	1*		5.1	38	nw.	9	62	— 8
Normals and records		‖30.43	24th 1919	§29.40	10th 1874	82		61	¶19	5th 1918			‖57	sw.	6th 1916	70	

‡Local mean time *Also at Keokuk on 26th ‖Sioux City §Omaha ¶Des Moines.

‡‡January 1, 1928, 3-cup anemometers replaced 4-cup instruments. See Climatological Data, January, 1928, page 7.

THE SUMMER OF 1930

The state mean temperature for the three summer months, June, July and August was 73.8°, which is 2.2° above the normal and 2.6° above the mean for last year. The summer was characterized by a nearly normal June, the warmest July since 1916, with precipitation 2.34 inches below normal, and August with maximum temperatures equaling or breaking all previous records at many stations, and also the prolonged drouth. Out of 58 summers for which state-wide average temperatures are available, 9 have been warmer and 48 have been cooler. The warmest summer of record was 1901, with a mean of 76.2°, and the coolest was 1915, with a mean of 66.8°. The highest temperature this summer was 113° at Sac City on the 3d of August, equaling the state record for all time; and the lowest was 37° at Denison on June 8.

The average monthly precipitation for the state was 3.25 inches, and the average total was 9.74 inches, or 2.03 inches less than the normal. June precipitation averaged 5.83 inches, which was 1.33 inches above normal, July 1.49 inches, or 2.34 inches below normal, and August 2.42 inches, or 1.02 inches below normal.

The average number of days with 0.01 inch of precipitation, was 22, or 2 days less than last summer, and the lowest since 1913 when the number was 18; with the exception of 1916, when exactly the same number, 22 days, was recorded. The average number of clear days was 52, partly cloudy 29, and cloudy 11, as compared with 48 clear days, 28 partly cloudy, and 16 cloudy days during the summer of 1929.

Due to the high average rainfall in June, this summer does not seem unusually dry in comparison. There being 11 summer seasons having less total rainfall. But when only July and August are considered, the months when the most serious damage to crops occurred, the drouthy condition is apparent, there being three similar periods during the last 58 years when less rainfall occurred. For these two months, 1894 was the driest of record, having an average total of 2.21 inches; 1886 was next with 2.52 inches, then 1901 with 3.63 inches and 1930 with 3.91 inches. In July 1930, the state average rainfall was 39% of the normal, and in August it was 71%. (See map, page 65.)

N. G. R.

Daily Maximum and Minimum Temperature for the Month of August, 1930

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
Northern Division																																	
Algona	Maximum	95	101	110	97	87	91	86	96	84	77	76	81	83	92	94	83	80	78	72	67	77	80	82	86	89	89	86	81	84	90	94	86.1
	Minimum	67	74	76	73	68	66	70	71	67	54	51	59	60	60	65	65	64	60	58	59	54	52	51	54	58	59	64	57	59	61	64	61.9
Alta	Maximum	96	102	108	101	93	97	93	97	84	81	81	84	87	95	96	85	76	71	69	70	79	81	84	86	88	87	78	81	86	93	91	87.1
	Minimum	64	75	78	73	69	68	70	70	64	53	50	61	62	62	63	67	62	61	58	57	54	55	53	56	59	60	64	58	56	60	60	62.0
Alton	Maximum	96	101	107	97	91	95	92	96	85	80	78	80	85	93	91	87	75	73	73	72	78	81	79	84	86	86	80	82	83	90	90	86.0
	Minimum	63	73	75	73	68	68	71	68	72	52	48	63	63	56	58	67	64	63	60	60	56	58	58	59	52	62	65	53	60	60	58	62.1
Belmond	Maximum	93	99	105	99	89	90	85	95	85	77	76	81	80	90	92	86	79	80	70	70	79	81	84	86	89	89	81	83	86	91	94	85.9
	Minimum	61	72	74	71	66	67	68	69	69	50	47	58	59	57	61	65	64	56	58	59	49	48	48	51	52	51	56	55	59	61	59	59.0
Charles City	Maximum	92	95	101	95	83	87	89	92	83	75	75	75	78	87	90	83	78	79	76	72	78	79	82	83	87	88	89	82	82	86	90	84.2
	Minimum	63	68	74	72	68	66	71	70	64	52	50	60	58	59	64	67	63	58	60	57	50	50	50	53	55	57	60	62	57	61	64	60.7
Decorah	Maximum	93	93	101	96	91	89	93	95	82	76	72	78	73	90	94	92	78	80	80	79	81	84	86	90	92	92	93	85	85	85	90	86.7
	Minimum	59	65	84	69	65	60	63	62	65	44	41	48	54	52	56	60	60	44	46	57	43	41	42	44	50	50	54	63	50	49	61	54.9
Dubuque	Maximum	93	95	103	97	83	86	91	92	87	76	74	75	76	86	91	83	77	80	79	78	80	81	84	85	88	90	91	84	83	86	84	85.1
	Minimum	64	75	79	79	65	65	73	73	67	59	53	57	63	59	64	69	63	55	55	60	56	53	53	56	59	61	62	69	64	62	70	63.3
Forest City	Maximum	94	98	105	96	87	88	91	95	86	78	73	75	79	91	95	85	80	81	74	72	78	80	83	88	91	89	87	81	83	89	92	85.9
	Minimum	57	69	73	70	65	63	65	68	70	50	49	56	55	55	59	65	63	56	55	57	49	50	52	53	55	55	60	55	55	58	61	58.8
Independence	Maximum	90	90	99	96	90	87	89	91	88	78	73	76	77	85	90	85	77	79	75	74	77	80	82	83	85	88	90	88	86	87	89	84.6
	Minimum	58	67	70	73	66	66	69	70	66	59	51	58	58	56	62	65	61	54	57	60	51	52	51	54	53	57	60	64	58	60	62	60.3
Inwood	Maximum	103	104	110	101	95	97	96	102	87	85	85	81	89	95	95	86	78	72	73	75	76	81	83	83	87	87	90	85	84	86	89	88.4
	Minimum	67	73	73	71	68	69	68	67	70	51	50	60	60	55	59	65	64	62	59	59	56	57	53	52	56	63	56	51	58	60	59	61.0
Lake Park	Maximum																																
	Minimum																																
Mason City	Maximum	93	96	103	97	83	86	87	94	83	76	74	75	78	88	90	80	79	79	70	71	78	80	81	84	88	88	87	82	82	87	91	84.2
	Minimum	60	67	68	70	65	63	66	66	67	48	45	56	53	54	61	63	63	54	60	63	47	45	45	46	50	52	63	57	53	58	67	57.9
New Hampton	Maximum	93	94	102	99	85	88	90	95	85	78	75	75	77	89	90	84	81	80	79	77	80	84	84	87	91	89	91	85	85	87	90	86.1
	Minimum	58	64	72	69	65	66	66	65	67	51	45	54	53	55	58	63	62	52	55	57	50	49	47	48	53	53	57	61	52	58	60	57.6
Northwood	Maximum	93	96	102	97	87	92	91	96	87	77	80	75	80	90	94	84	83	83	75	72	80	83	85	87	92	88	87	80	82	88	92	86.4
	Minimum	60	70	71	63	67	64	64	70	67	51	49	58	56	55	64	64	63	56	60	59	48	49	50	53	58	56	60	60	54	59	64	59.4
Pocahontas	Maximum	97	102	111	101	90	92	92	99	81	79	81	82	84	93	95	85	78	75	71	64	78	81	83	85	88	89	85	84	85	92	94	87.0
	Minimum	64	70	83	79	67	68	70	80	66	53	47	60	65	71	63	68	63	60	58	58	51	60	58	50	56	58	64	57	58	60	62	62.8
Postville	Maximum	85	88	95	89	75	81	85	86	78	71	70	72	70	83	86	83	72	75	74	73	74	76	79	82	85	89	89	80	86	84	88	80.7
	Minimum	63	65	77	69	65	61	62	67	62	54	46	52	55	56	59	61	60	50	49	56	50	46	47	53	58	57	57	58	56	60	64	57.9
Rock Rapids	Maximum	98	101	107	97	94	94	100	88	80	84	81	88	93	94	84	85	78	74	72	68	78	82	82	84	87	88	82	81	84	92	92	87.2
	Minimum	66	72	70	70	70	68	71	66	68	50	44	62	60	55	59	61	65	60	59	57	59	55	50	50	51	60	65	50	57	56	59	60.2
Central Division																																	
Ames	Maximum	98	100	106	102	95	96	90	98	91	80	83	84	76	91	95	88	78	82	76	70	80	83	84	88	90	92	92	88	84	92	94	88.6
	Minimum	63	76	81	76	70	69	70	73	72	56	50	60	62	58	62	68	64	62	61	57	52	51	51	52	56	55	60	62	57	61	66	62.4
Belle Plaine	Maximum	96	87	107	100	90	92	91	98	94	80	81	84	76	91	95	78	78	82	76	71	79	82	81	88	92	93	94	90	84	90	91	87.5
	Minimum	55	67	72	72	71	67	68	71	71	55	46	57	60	53	64	65	61	56	57	60	49	48	49	48	51	52	57	66	57	61	63	59.6
Carroll	Maximum	95	99	111	101	87	92	88	96	90	97	79	78	76	91	92	84	78	75	71	70	75	80	80	86	88	89	88	85	82	93	91	86.1
	Minimum	66	77	80	78	69	68	69	69	72	56	51	58	61	60	59	59	59	59	56	55	57	50	50	55	53	57	66	57	56	63	61	61.5
Cedar Rapids	Maximum	95	97	108	103	90	92	93	98	92	81	80	82	79	92	94	83	79	83	79	75	82	84	88	88	93	93	93	91	86	88	90	88.7
	Minimum	56	69	77	74	72	69	70	72	71	54	47	58	57	54	58	63	62	55	59	61	56	48	48	49	52	53	55	68	60	59	63	60.3
Davenport	Maximum	94	96	103	95	85	86	91	95	94	78	76	79	76	87	93	83	73	82	80	76	78	81	85	87	89	90	92	88	82	87	85	86.0
	Minimum	65	75	78	80	70	68	73	73	70	62	56	61	61	60	66	66	64	58	58	61	56	56	57	60	62	64	68	71	66	65	72	65.2
Des Moines	Maximum	95	100	105	102	88	97	92	99	92	81	80	81	76	91	92	78	79	79	75	66	79	81	83	86	88	90	91	88	77	89	91	86.8
	Minimum	65	78	83	81	74	70	72	74	72	60	53	62	64	60	64	67	65	64	63	60	55	57	54	55	57	59	62	65	64	63	68	64.8
Ft. Dodge	Maximum	95	101	107	100	88	91	87	96	83	77	80	82	79	90	94	83	77	77	77	65	79	81	83	86	93	90	88	84	86	93	94	86.6
	Minimum	63	75	81	74	68	69	70	69	69	54	48	59	61	59	61	69	61	60	59	59	52	51	50	61	54	55	63	55	53	60	63	61.5
Grinnell	Maximum	97	96	107	100	94	94	90	100	92	82	80	81	76	92	94	82	78	80	78	71	79	80	84	92	90	91	93	86	82	81	88	87.4
	Minimum	61	72	79	75	70	68	70	70	74	60	52	59	60	58	61	63	62	60	60	55	54	55	52	58	57	57	60	65	62	62	64	62.4
Guthrie Center	Maximum	97	102	109	107	101	98	96	97	92	87	79	78	76	91	92	87	85	75	75	73	76	81	82	88	90	92	92	88	80	92	92	88.7
	Minimum	62	76	80	72	70	69	71	68	68	59	46	58	62	59	58	67	64	60	58	60	50	59	47	43	49	52	62	60	58	61	64	61.0
Iowa City	Maximum	95	96	107	100	89	89	92	96	92	80	80	83	76	88	92	80	75	82	79	73	81	82	85	87	90	92	93	89	83	86	87	87.1
	Minimum	57	67	74	75	71	67	69	70	71	59	49	59	58	56	61	63	62	57	58	62	51	50	50	53	53	55	60	68	61	60	67	61.1
Iowa Falls	Maximum	95	99	106	96	88	89	87	94	86	76	75	81	82	90	95	83	75	78	70	67	76	79	84	86	92	92	92	85	88	93	95	86.3
	Minimum	63	72	76	73	68	67	70	69	71	55	47	58	58	56	62	57	64	56	59	59	51	51	50	51	53	53	58	57	56	62	69	60.4
Little Sioux	Maximum	96	103	108	104	90	93	85	93	93	82	72	75	84	91	87	85	90	72	76	78	74	80	77	84	85	85	80	87	83	89	88	86.1
	Minimum	66	76	81	72	69	70	70	69	70	63	55	59	60	62	63	66	66	66	65	59	59	59	56	58	54	65	67	61	60	60	65	64.2
Marshalltown	Maximum	95	99	106	102	92	94	88	98	89	79	81	85	76	90	94	86	79	82	74	69	81	84	84	87	91	92	91	87	82	92	91	87.7
	Minimum	65	75	82	78	70	68	70	73	75	56	49	61	62	57	64	70	65	59	60	61	53	52	52	53	56	57	64	63	58	61	67	63.1
Olin	Maximum	97	98	107	100	87	87	96	99	98	80	79	78	79	90	95	82	76	83	80	76	81	83	87	90	94	93	93	89	87	85	87	88.3
	Minimum	51	63	74	73	69	67	68	72	69	53	45	55	58	51	57	63	61	50	53	57	49	46	44	46	48	51	56	60	59	57	57	57.5
Sioux City	Maximum	96	103	105	98	88	93	90	95	87	80	74	76	82	91	87	85	79	71	75	75	74	79	75	83	85	86	81	83	84	90	88	85.1
	Minimum	71	78	80	72	70	71	75	73	70	61	59	62	63	63	66	69	68	67	64	61	60	63	60	62	56	65	66	59	62	65	66	66.0
Southern Division																																	
Albia	Maximum	95	97	110	102	93	102	95	96	96	83	79	80	81	88	91	82	80	78	74	73	78	82	83	88	90	93	94	90	87	90	90	88.4
	Minimum	62	70	78	80	74	68	69	73	74	63	48	60	60	61	60	65	64	61	59	60	54	51	49	50	52	59	62	67	65	61	55	62.4
Atlantic	Maximum	94	103	107	107	91	105	95	97	97	85	79	75	84	90	93	88	89	74	78	78	78	82	83	88	90	89	90	91	82	90	89	89.1
	Minimum	59	74	76	78	70	70	68	70	67	50	50	57	60	60	58	61	63	65	60	59	55	55	48	50	50	54	62	58	58	59	62	60.8
Burlington	Maximum	98	97	104	102	95	91	89	95	97	82	80	86	78	84	93	87	74	84	88	79	79	80	83	86	89	93	94	87	77	91	88	88.1
	Minimum	62	70	76	81	76	71	72	74	75	64	57	63	62	63	66	70	66	62	61	61	56	57	57	59	59	61	64	70	66	63	67	65.5
Columbus Jct	Maximum	95	98	106	98	87	86	84	93	95	78	77	81	74	84	91	85	72	78	76	74	76	77	80	82	84	88	91	84	75	86	87	84.6
	Minimum	53	70	73	78	74	67	69	72	69	60	50	57	58	59	62	66	63	59	58	61	53	52	52	55	53	55	58	67	64	61	66	61.7
Corning	Maximum																																
	Minimum																																
Corydon	Maximum	94	96	107	100	95	106	91	91	94	78	77	74	82	84	88	83	82	78	73	72	75	78	80	84	86	89	91	85	76	85	89	85.9
	Minimum	59	70	81	83	74	70	70	73	66	65	54	58	61	62	64	67	66	64	61	61	55	55	53	56	60	57	62	68	67	61	65	64.1
Creston	Maximum	92	99	103	99	90	99	96	94	96	81	77	70	81	86	88	85	83	75	84	74	76	79	81	84	87	89	90	86	76	87	87	86.3
	Minimum	61	72	75	76	73	70	69	74	69	64	56	56	60	63	62	65	66	65	60	60	55	60	57	60	59	59	60	67	63	61	63	63.9
Fairfield	Maximum	98	99	109	105	93	102	94	98	99	84	85	86	80	87	95	81	78	85	78	82	83	85	88	89	93	96	96	89	78	92	92	90.3
	Minimum	55	68	70	77	74	68	68	73	68	63	49	60	59	62	60	67	61	61	59	60	51	49	48	48	50	53	60	66	62	60	65	61.2
Keokuk	Maximum	95	97	106	102	97	102	99	96	102	82	82	80	79	85	92	88	78	82	80	81	81	81	84	86	89	92	94	87	73	91	89	88.8
	Minimum	63	74	80	80	77	72	74	77	75	65	61	64	62	66	65	69	67	65	63	64	59	60	61	62	61	62	64	68	66	67	72	67.3
Knoxville	Maximum																																
	Minimum																																
Lamoni	Maximum	96	101	108	101	98	103	101	97	102	81	79	72	85	86	90	89	86	81	78	75	77	80	81	85	89	89	91	86	75	90	89	88.4
	Minimum	59	69	80	74	73	70	68	70	69	63	54	57	58	63	62	65	64	64	62	58	54	53	54	55	58	58	61	66	64	62	61	62.8
Sigourney	Maximum	96	98	110	103	88	97	92	97	96	85	82	84	89	90	94	85	75	80	72	72	79	80	83	86	89	92	94	89	78	90	89	88.2
	Minimum	61	70	75	74	73	62	69	73	72	59	50	58	59	58	62	65	62	58	59	61	51	52	61	52	56	56	57	66	61	59	63	61.7
Thurman	Maximum	96	105	109	103	94	101	99	97	99	88	78	71	84	89	88	90	89	75	75	82	74	80	80	84	90	87	90	86	80	89	90	88.5
	Minimum	58	73	77	72	75	70	69	70	66	66	50	60	61	66	61	63	66	67	64	58	60	60	57	59	55	59	63	69	63	62	62	63.9
Winterset	Maximum	95	101	106	105	90	100	92	99	97	85	82	77	79	90	93	84	93	81	77	70	79	81	84	86	90	91	91	89	80	90	89	88.6
	Minimum	63	75	80	80	72	70	70	70	70	60	50	58	60	61	64	62	63	64	61	59	52	53	52	52	55	59	63	63	61	56	62	62.6
Omaha, Neb	Maximum	96	106	111	102	91	96	95	93	97	82	74	70	83	87	85	86	87	70	74	80	73	81	77	84	87	87	88	83	81	89	90	86.6
	Minimum	70	76	86	77	71	70	71	76	69	66	60	63	62	68	67	68	65	66	64	61	61	62	62	62	61	68	69	65	65	60	65	66.8

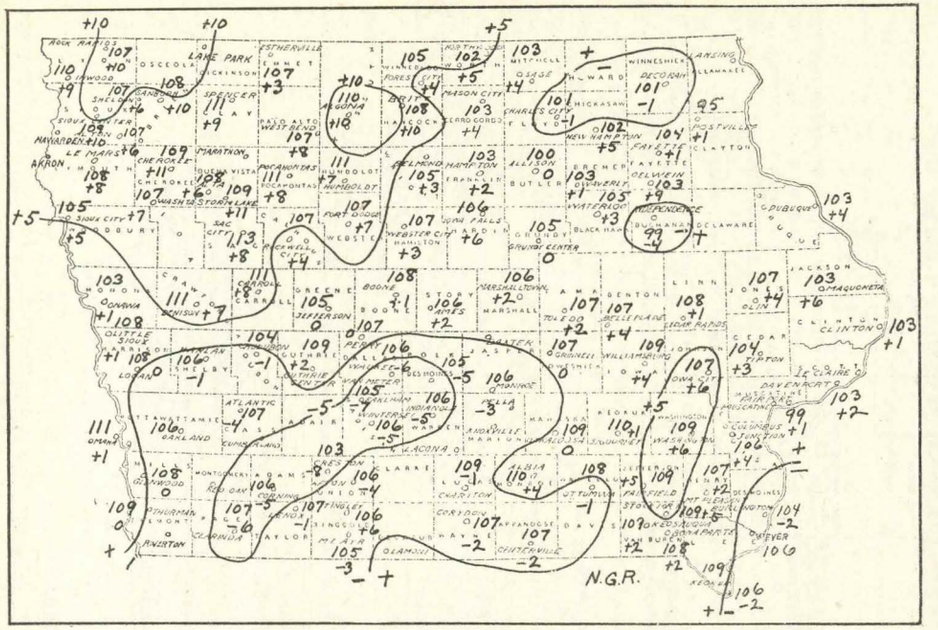


Figure 1. First figures show highest temperature, August, 1930; second figures and lines, number of degrees higher (plus) or lower (minus) than previous high record for August.

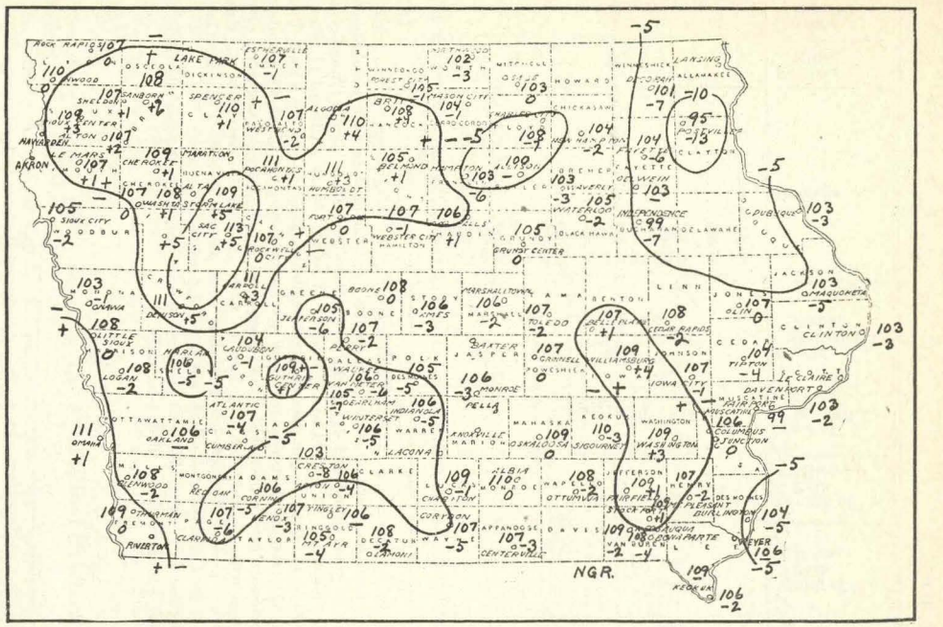


Figure 2. First figures show highest temperature, August, 1930; second figures and lines, number of degrees higher (plus) or lower (minus) than previous all time high record.

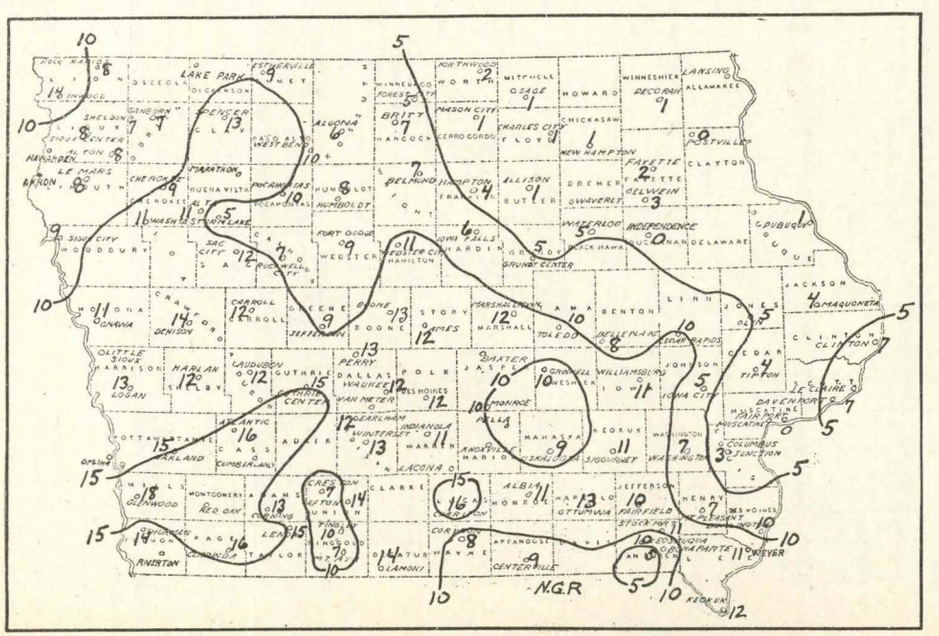


Figure 3. Number of days in July and August, 1930, with maximum temperature 100° or higher; average number, 8.8 days per station, exceeded only by 1901 with 13.4.

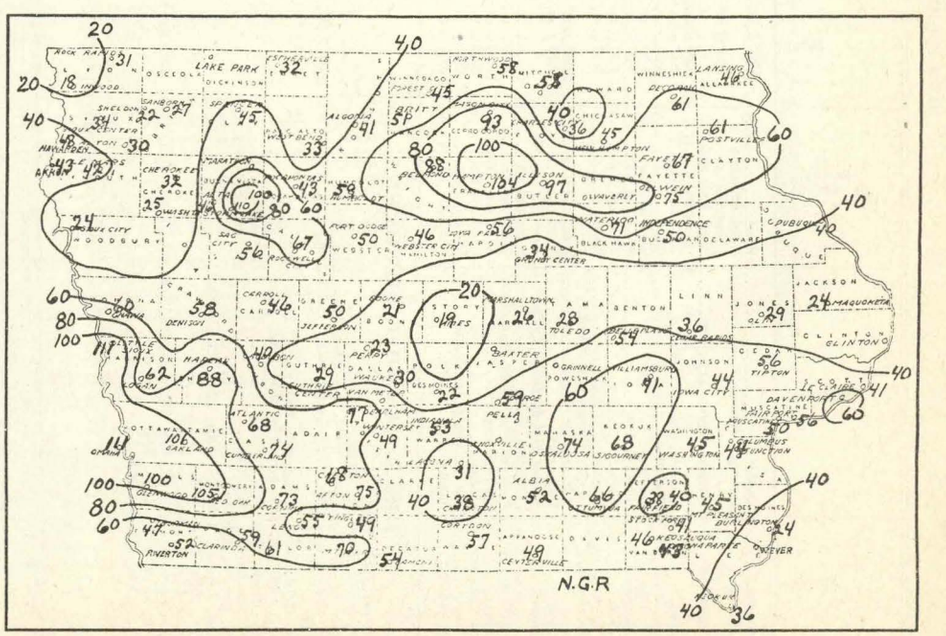


Figure 4. Rainfall of July and August, 1930, in per cent of normal; average, 53.6%.

IOWA STORMS, AUGUST, 1930

Date	County	Township	Nature of Storm	Time	Storm Moved From	Width of Path Miles	Length of Path Miles	Area of Sq. Miles	Size of Hailstones Inches	Damage	Persons Killed	Persons Injured
4	Carroll	Ewoldt	Wind	9:35 p. m.	W to E					Slight to crops		
5	Dubuque	Dubuque, Julian	Wind, Rain,and Electrical	4:00 a. m.						$7,000		1
6	Appanoose	Douglas, Sharon, Vermillion	Wind, Rain and Electrical	6:00 p. m.	SW to NE					$5,000		
6	Cass	Massena, Union, Lincoln	Wind and Rain	6:45 p. m	SW to NE					$400		
6	Jasper	Des Moines	Wind	6:30 p m.	SW to NE					$5,000		
6	Monroe	Franklin	Wind and Hail	5:30 p. m.	SW to NE	2	5	10	½	$2,000		
6	Monroe	Bluff Creek	Wind and Hail	7:00 p. m.	S to N	3	5	15	Walnuts	$1,200		
6	Polk	Allen	Wind and Hail	6:00 p. m.	W to E				Walnuts	$8,200		
6	Wayne	Warren	Wind	5:30 p. m.	SW to NE					$1,500		
9	Clinton	Lincoln, Center, Deep Creek, Hampshire	Wind and Rain	12:30 p. m.	NW to SE					$3,000		
9	Scott	Davenport	Wind	12:30 p. m.						$5,000		
9	Grundy	Beaver, Lincoln, Grant, Colfax, Pleasant Valley	Wind and Hail	.... a. m.	NW to SE					$10,000		
9	Jackson	Bellevue, South Fork, Maquoketa	Wind and Rain	12:30 p. m.						$2,000		
9	Linn	Spring Grove	Wind and Hail	11:00 a. m.	W to E				¼ to ½	$800		
9	Montgomery	Lincoln	Wind and Hail	5:00 p. m.	NW to SE				½	Considerable to corn crop		
9	Page	Harlan, Amnity, Buchanan	Wind and Hail	6:30 p. m.	NW to SE				2	$6,000		
9	Woodbury	Sloan	Wind and Hail	5:00 p. m.	S to N				½	$300		

MISCELLANEOUS PHENOMENA

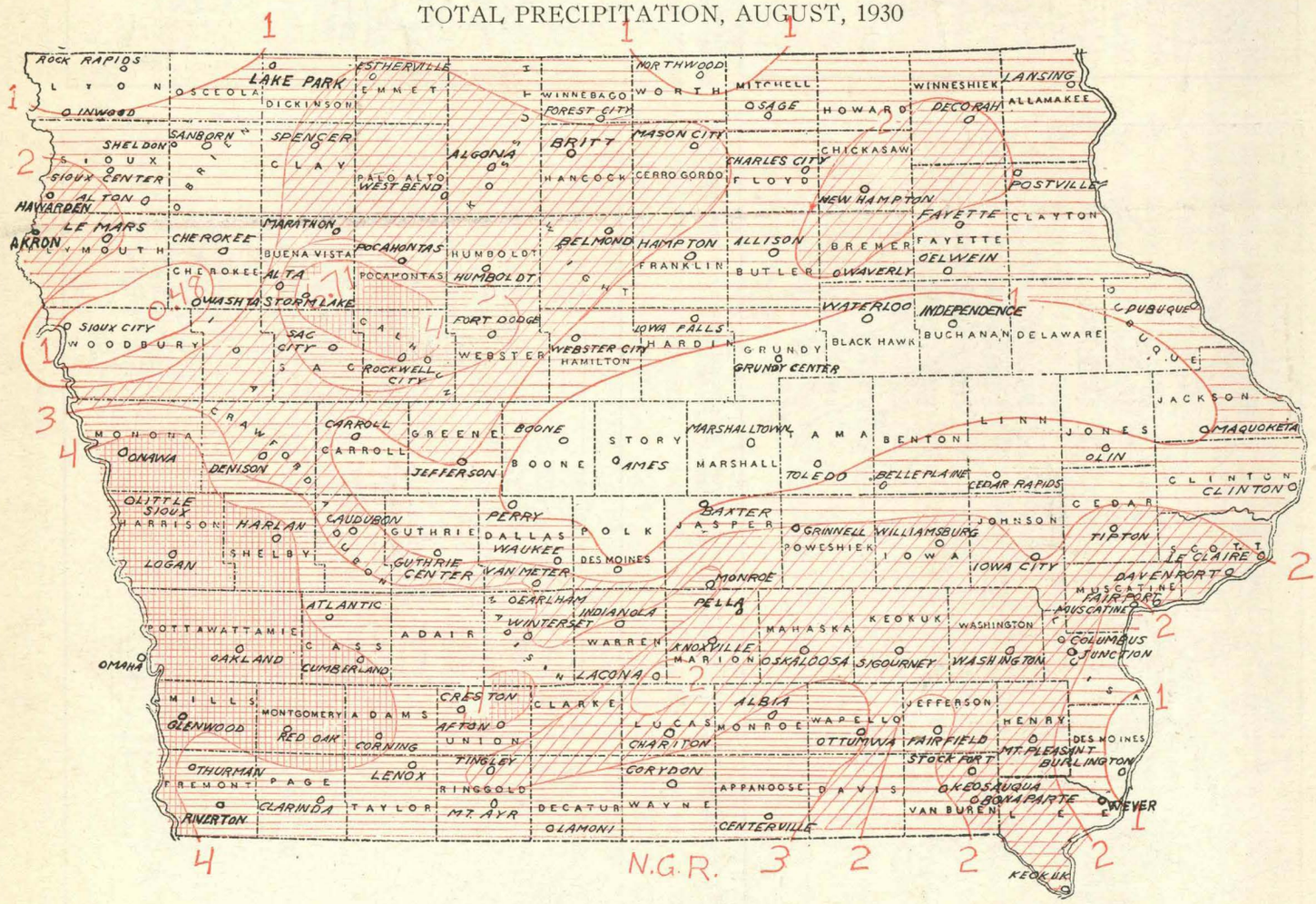
Aurora: 10th, 21st.
Coronas, Lunar: 2d, 13th.
Dews, heavy: 6th, 8th, 15th, 23d, 24th, 25th, 26th, 28th.
Fog, dense: 6th, 7th, 8th, 11th, 14th, 15th, 21st, 22d, 23d, 24th, 25th, 26th, 28th, 30th.
Fog, light: 14th, 15th, 23d, 25th, 26th, 27th, 28th.
Gales: 3d, 4th, 5th, 6th, 7th, 9th, 30th, 31st.
Hail, light: 6th, 9th.
Hail, moderate: 6th, 9th.
Hail, heavy: 6th, 9th.
Halos, Lunar: 1st, 3d, 20th, 21st, 23d, 27th.
Haze: 6th, 27th, 31st.
Record high temperature: 3d.
Thunderstorms: 2d, 3d, 4th, 5th, 6th, 7th, 8th, 9th, 13th, 16th, 17th, 18th, 19th, 21st, 27th, 28th, 29th, 30th, 31st.
Winds, hot: 2d, 3d, 4th.

ERRATA

Report for June, 1930. Page 42, Hawarden; number of days with precipitation 0.01 inch or more published 7, should be 8. Page 42, Sioux Center; number of clear days published 16, should be 17; number of partly cloudy published 13, should be 12. Page 43, Olin; mean temperature published 69.8° should be 69.4°. Page 43, Corning; total precipitation published 4.48, should be 5.23. Page 43, Corning; precipitation departure published +0.35, should be +1.10. Page 43, Corning; number of days with precipitation 0.01 inch or more published 5, should be 6. Page 45, Corning; precipitation on 4th, published none, should be 0.75. Page 45, Corning; total precipitation for month published 4.48, should be 5.23.

Report for July, 1930. Page 55, Davenport; monthly mean barometric pressure (sea level) published 29.94, should be 29.97.

TOTAL PRECIPITATION, AUGUST, 1930



SCALE OF SHADES IN INCHES

Less than 1 | 1 to 2 | 2 to 3 | 3 to 4 | More than 4

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

IOWA SECTION
In co-operation with
IOWA WEATHER AND CROP BUREAU
CHARLES D. REED, Senior Meteorologist

VOL. XLI DES MOINES, IOWA, SEPTEMBER, 1930 No. 9

GENERAL SUMMARY

The chief characteristics of the weather for September, 1930, were the gradual relief from the drouth in most of the State and the unusually large damage done by windstorms, tornadoes and hail.

While the month averaged two degrees above normal, there were no oustanding high temperature periods. Most of the maximum temperatures were recorded near the middle of the month and the low temperatures at nearly all stations, the last five days of the month.

The moderately heavy rains during the fourth week brought relief to the drouthy conditions which prevailed over most of the State during the last three months. This relief came too late to benefit the major crops, but helped pastures, put the soil in condition for fall plowing, and permitted the seeding of winter grains. Much of the rain ran into great cracks that had opened in the ground as wide as one's hand and several feet deep. Much well digging was done. Pastures that were absolutely bare were showing green at the end of the month and furnishing some feed for stock. Corn ripened and dried rapidly and was mostly safe from frost at the end of the month.

Frosts occurred over most of the State during the latter half of the month. In the northern portions, killing frosts occurred on the last four days, with very little damage. In the central and southern portions only light frosts were reported, and even the tenderest of vegetation survived.

A well defined and concentrated low barometric pressure area which approached and crossed Iowa from the southwest, on the 25th and 26th of the month, the first storm of this type since the latter part of June, produced heavy rains, particularly in the central and southeastern portions of the State. The high winds and tornadic conditions which accompanied this storm did thousands of dollars worth of damage to property and crops. Iowa City received 6.13 inches of rain on the 25th, which established a new 24-hour record for that section. Six tornadoes occurred in southern and southeastern Iowa during the month, which killed two persons, injured one, left a total destructive path 38 miles long, and did approximately $250,000 damage.

A very severe hailstorm occurred on the 7th, which did over $800,000 damage in Woodbury and Plymouth counties. So great a damage at this late date is very unusual.

All kinds of building construction advanced favorably. Road construction progressed normally and several long stretches were completed and open to the public by the end of the month.

N. G. R.

TEMPERATURE

The mean temperature for the State, derived from the means of 9 districts of nearly equal area, and based on the records of 104 stations, was 66.3°, or 2.0° above normal. The greatest district excess, 3.2°, was in the southeast district, and the least district excess, 0.6°, was in the northwest district. The highest month'ly mean was 71.5° at Keokuk No. 2, and the lowest, 60.3° at Postville (near). The absolute range for the State was 76°, from 101° at Bonaparte (near) on the 13th, to 25° at Decorah on the 29th. The average number of days with the maximum temperature 90° or above, was 4, ranging from 9 days at Baxter, Tipton, Williamsburg and Keokuk No. 2, to none at Alton, Estherville, Rock Rapids, Charles City, Northwood, Dubuque and Independence. The average number of days with the minimum temperature 32° or lower was zero. The greatest number of days with the minimum temperature 32° or lower at any one station, was 3, recorded at Postville (near). The greatest daily range in temperature at any one station was 55° at Boone (near) on the 22d.

COMPARATIVE DATA FOR THE STATE—SEPTEMBER

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1873	59.1	— 5.2	89	33	2.18	— 1.49	5.40	0.81					
1874	62.8	— 1.5	90	40	6.04	+ 2.37	9.50	4.50					
1875	60.6	— 3.7	92	37	5.02	+ 1.35	9.38	1.33					
1876	60.4	— 3.9	86	38	6.42	+ 2.75	12.60	3.42					
1877	65.4	+ 1.1	96	40	1.95	— 1.72	5.20	0.65					
1878	62.9	— 1.4	92	38	3.13	— 0.54	10.85	0.70					
1879	59.3	— 5.0	90	24	2.70	— 0.97	9.45	0.57					
1880	61.1	— 3.2	90	30	4.18	+ 0.51	11.64	0.10					
1881	64.5	+ 0.2	103	37	7.14	+ 3.47	18.35	2.64					
1882	63.4	— 0.9	97	31	0.87	— 2.80	3.71	0.00					
1883	58.5	— 5.8	93	30	2.04	— 1.63	6.20	0.06					
1884	66.5	+ 2.2	95	30	5.20	+ 1.53	11.00	2.20					
1885	61.7	— 2.6	92	32	3.04	— 0.63	5.59	0.65					
1886	63.0	— 1.3	97	30	4.68	+ 1.01	7.93	0.39					
1887	62.1	— 2.2	98	30	6.17	+ 2.50	12.87	1.40					
1888	59.9	— 4.4	96	26	1.07	— 2.60	3.44	0.10					
1889	60.7	— 3.6	96	23	2.80	— 0.87	7.19	0.70					
1890	59.5	— 4.8	96	23	2.71	— 0.96	4.85	0.30					
1891	67.3	+ 3.0	104	28	1.33	— 2.34	3.60	0.13		4	20	7	3
1892	64.7	+ 0.4	99	29	1.53	— 2.14	4.15	0.16	0	4	16	8	6
1893	64.7	+ 0.4	102	18	2.34	— 1.33	5.49	0.74	0	4	20	6	4
1894	65.1	+ 0.8	100	26	3.57	— 0.10	7.43	0.67	0	8	15	10	5
1895	66.8	+ 2.5	103	22	3.03	— 0.64	7.43	0.85	T.	5	18	8	4
1896	58.5	— 5.8	95	22	4.09	+ 0.42	9.96	1.82	0	10	11	9	10
1897	70.9	+ 6.6	106	26	2.04	— 1.63	5.88	0.00	0	4	23	5	2
1898	65.3	+ 1.0	99	29	2.69	— 0.98	8.45	0.41	0	7	16	9	5
1899	62.5	— 1.8	104	15	0.93	— 2.74	4.32	T.	0	4	16	9	5
1900	64.4	+ 0.1	99	26	4.98	+ 1.31	8.82	2.48	T.	9	15	8	7
1901	63.3	— 1.0	102	26	4.77	+ 1.10	13.62	1.71	0	9	13	9	8
1902	59.1	— 5.2	88	23	4.35	+ 0.68	10.41	1.65	0	9	15	6	9
1903	60.8	— 3.5	94	28	3.81	+ 0.14	8.79	1.42	0	10	14	6	10
1904	64.0	— 0.3	94	30	2.78	— 0.89	8.33	0.99	0	7	13	8	9
1905	65.8	+ 1.5	96	36	3.81	+ 0.14	13.18	0.50	0	8	14	8	8
1906	67.2	+ 2.9	100	27	4.16	+ 0.49	11.10	0.61	0	8	16	8	6
1907	62.8	— 1.5	98	25	2.75	— 0.92	6.06	1.38	0	8	15	9	6
1908	67.9	+ 3.6	98	20	1.20	— 2.45	3.46	0.25	T.	3	21	6	3
1909	62.4	— 1.9	94	30	3.58	— 0.09	7.34	1.39	0	9	14	8	8
1910	63.2	— 1.1	99	30	3.59	— 0.08	7.43	1.18	0	9	14	7	9
1911	65.8	+ 1.5	103	32	5.12	— 1.45	13.73	1.19	T.	10	11	9	10
1912	62.1	— 2.2	104	24	3.98	+ 0.31	10.12	0.28	T.	11	12	8	10
1913	64.5	+ 0.2	107	19	3.31	— 0.36	7.44	0.45	0	9	15	8	7
1914	64.5	+ 0.2	99	30	7.88	+ 4.21	16.24	2.48	0	10	16	7	7
1915	63.7	— 0.6	91	30	6.03	+ 2.36	12.45	2.88	0	11	11	8	11
1916	62.5	— 1.8	98	21	3.89	+ 0.22	9.71	1.45	T.	7	17	8	5
1917	62.6	— 1.7	97	28	2.90	— 0.77	8.68	0.39	0	7	15	7	8
1918	58.6	— 5.7	93	20	1.87	— 1.80	4.62	0.48	T.	6	16	8	6
1919	67.5	+ 3.2	99	33	5.34	+ 1.67	11.82	1.49	0	8	16	6	8
1920	66.5	+ 2.2	98	24	3.30	— 0.37	7.21	0.69	0	8	17	8	5
1921	67.3	+ 3.0	99	31	6.72	+ 3.05	11.95	1.72	0	11	14	8	8
1922	67.1	+ 2.8	103	31	2.03	— 1.64	4.34	0.31	0	6	20	6	4
1923	64.2	— 0.1	92	28	5.79	+ 2.12	12.14	1.88	0	11	14	8	8
1924	59.1	— 5.2	91	25	3.13	— 0.54	5.68	1.01	0	8	16	7	7
1925	69.0	+ 4.7	105	32	5.04	+ 1.37	9.13	1.54	0	9	14	10	6
1926	63.0	— 1.3	92	18	9.76	+ 6.09	18.57	4.75	T.	14	8	7	15
1927	67.4	+ 3.1	101	29	4.56	+ 0.89	11.94	2.02	T.	10	15	8	7
1928	60.5	— 3.8	93	24	3.08	— 0.59	9.98	1.04	0	6	19	7	4
1929	62.4	— 1.9	98	25	3.74	+ 0.07	7.36	1.55	T.	9	14	7	9
1930	66.3	+ 2.0	101	25	2.31	— 1.36	6.39	0.17	0	5	19	7	4

T. indicates an amount too small to measure, or less than .005 inch rainfall and less than .05 inch snowfall.

PRECIPITATION

The average precipitation for the State, derived from the averages of 9 districts of nearly equal area, and based on the records of 120 stations, was 2.31 inches, or 1.36 inches below normal. The greatest district deficiency was in the southwest district, 2.50 inches; and the least district deficiency was in the northwest district, 0.04 inch. The greatest deficiency at any station was 3.66 at Allison and Bedford, the greatest excess was 3.50 at Mason City. The greatest amount at a single station was 6.39 inches at Lake Park (near), and the least was 0.17 inch at Atlantic. The greatest amount in 24 consecutive hours was 6.13 at Iowa City on the 25th. The average number of days with 0.01 inch of more of precipitation for the State was 5, ranging from 3 days in the south-central district, to 7 days in the northwest and north-central districts. The State average number of days with 0.01 inch or more of precipitation this month is the lowest of record since 1908, 3 days being recorded. For individual stations the range was from 2 days at 10 stations, to 11 days at Estherville and Lake Park (near).

Climatological Data for September, 1930

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit							Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
Northwest District																				
Akron	Plymouth	1,153	4								2.74	— 0.05	1.33	0	5	22	6	2	s.	Orlan C. Moore
Alta	Buena Vista	1,513	39	64.3	+ 1.6	91	22	35	27	40	1.99	— 1.29	1.36	0	5	18	11	1	s.	D. E. Hadden
Alton	Sioux	1,305	25	63.8	+ 1.0	88	12†	33	27	39	2.23	— 0.73	0.96	0	6	10	16	4	s.	W. S. Slagle
Cherokee	Cherokee	1,196	10	64.8	+ 2.6	91	12†	35	28	37	2.19	— 1.08	1.43	0	6	22	4	4	se.	J. E. Wirth
Estherville	Emmet	1,298	35	62.9	+ 1.2	89	12†	30	28	42	5.64	+ 2.31	3.15	0	11	22	5	3	nw.	A. O. Peterson
Hawarden	Sioux	1,181	4								3.01	+ 0.13	1.42	0	6	19	5	6	se.	Earl V. Slife
Inwood (near)	Lyon	1,474	26	63.2	+ 0.1	91	12	32	27	40	3.36	+ 0.57	1.63	0	4	26	2	2	se.	A. C. Hanson
Lake Park (near)	Dickinson	1,489	17	61.3	— 0.3	92	12	32	28	43	6.39	+ 2.78	2.12	0	11	16	7	7	nw.	P. M. Lawrence
Le Mars	Plymouth	1,224	34	64.8	+ 1.1	91	12	35	27	43	1.68	— 1.55	0.86	0	4	24	3	3	s.	Henry Newell
Marathon	Buena Vista	1,390	4								2.90		2.03	0	6	20	6	4	nw.	E. G. Smith
Pocahontas	Pocahontas	1,248	26	64.3	+ 0.8	93	22	36	27†	44	3.52	— 0.07	2.45	0	7	24	4	2	s.	F. E. Hronek
Rock Rapids	Lyon	1,349	31	61.5	— 0.2	88	12	32	28	47	2.54	— 0.05	0.80	0	8	25	1	4	n.	Nellie F. Medberry
Sanborn	O,Brien	1,553	16	63.0	+ 0.2	91	12	32	28	37	3.09	— 0.11	1.92	0	9	13	13	4	sw.	J. W. Dow
Sheldon	O,Brien	1,418	19	63.2	— 0.2	90	12	33	27	44	3.34	+ 0.08	1.45	0	8	16	10	4	nw.	Ross E. Forward
Sioux Center	Sioux	1,461	31	63.2	+ 0.2	90	12	32	27	38	2.75	— 0.20	1.10	0	6	17	9	4	nw.	F. C. Aue
Spencer	Clay	1,319	16	63.6	+ 0.1	92	12	33	28	45	3.35	+ 0.03	1.65	0	7	20	8	2	sw.	E. W. Little
Storm Lake	Buena Vista	1,442	41	63.8	— 0.2	90	13	34	27	39	1.14	— 2.11	0.66	0	5	22	6	2	sw.	Russel M. Edwards
Washta	Cherokee	1,157	32	64.6	+ 1.1	94	12	33	27	52	2.40	— 0.99	1.91	0	6	21	5	4	s.	H. L. Felter
West Bend	Palo Alto	1,197	37	64.3	+ 0.9	92	12	33	27†	42	5.02	+ 1.88	3.15	0	8	18	10	2	sw.	Jos. Dorweiler
Means and extremes				63.5	+ 0.6	94	12	30	28	52	3.12	— 0.04	3.15	0	7	20	7	3	s.	
North Central District																				
Algona	Kossuth	1,207	57	63.8	+ 0.5	92	12	33	28	38	5.21	+ 1.89	13.71	0	7	16	11	3	sw.	Leon M. Merritt
Allison (near)	Butler	1,000	16	64.6	+ 1.5	92	12	31	28	41	1.12	— 3.66	0.83	0	4	24	3	4	nw.	George H. Bell
Belmond	Wright	1,181	20	63.4	— 0.2	92	18	31	28†	51	2.38	— 1.82	1.53	0	6	15	5	10	nw.	H. F. Luick
Britt	Hancock	1,236	42	63.2	+ 0.8	91	12	30	28	41	5.01	+ 1.55	1.88	0	8	21	1	8	sw.	E. P. Healy
Charles City	Floyd	1,015	39	62.4	+ 1.4	89	18	32	28	41	2.48	— 1.20	1.19	0	9	20	6	4	se.	U. S. Weather Bureau
Forest City	Winnebago	1,226	36	63.0	+ 0.3	90	12	30	28	41	3.89	+ 0.56	1.63	0	8	16	8	6	nw.	Dr. M. B. Neil
Hampton	Franklin	1,142	5	64.0		91	12	32	30	43	1.86	— 1.57	1.59	0	3	23	2	5	nw.	Howard J. Haydon
Humboldt	Humboldt	1,095	42	64.8	+ 0.6	95	12	33	28	47	2.28	— 0.99	2.07	0	6	19	8	3	n.	H. C. Snitkey
Mason City	Cerro Gordo	1,148	33	61.2	— 0.5	91	11	29	28†	48	6.31	+ 3.50	4.60	0	7	20	6	4	sw.	American Beet Sugar Co.
Northwood	Worth	1,222	34	61.8	+ 0.8	89	12	30	28	40	4.54	+ 1.01	2.20	0	8	17	11	2	sw.	Charles Dwelle
Osage	Mitchell	1,163	36	62.6	+ 1.4	90	12†	31	28	42	1.79	— 1.72	0.94	0	8	17	10	3	nw.	Dr. C. E. Juhl
Means and extremes				63.2	+ 0.8	95	12	29	28†	51	3.35	— 0.22	4.60	0	7	19	6	5	nw.	
Northeast District																				
Cedar Falls	Black Hawk	875									1.48		1.13	0	5	17	8	5	nw.	E. J. Cable
Decorah	Winneshiek	872	37	61.8	+ 0.2	90	1†	25	29	53	2.04	— 2.07	0.93	0	9	21	4	5	nw.	M. D. Whitney
Dubuque	Dubuque	700	57	65.6	+ 1.6	89	12	36	30	40	2.52	— 1.49	1.36	0	5	19	5	6	s.	U. S. Weather Bureau
Fayette	Fayette	1,003	42	64.2	+ 1.9	95	12	29	28†	51	2.19	— 1.48	1.58	0	4	23	3	4	nw.	R. Z. Latimer
Independence	Buchanan	956	66	65.0	+ 1.1	89	12†	35	28	42	2.67	— 1.28	2.15	0	4	15	11	4	nw.	Dr. Geo. Boody
Lansing	Allamakee	632	23								2.57	— 1.12	1.23	0	8					Mrs. Mary Spinner
New Hampton	Chickasaw	1,169	33	63.0	+ 0.6	90	12	27	28	44	2.17	— 1.42	1.17	0	4	15	10	5	nw.	D. W. Dawson
Oelwein	Fayette	1,036	7	54.6	+ 1.8	91	12†	32	28	43	2.10	— 1.69	1.30	0	6	18	6	6	s.	John T. Ridler
Postville (near)	Clayton	1,192	31	60.3	— 0.5	87	12	30	28	45	2.08	— 1.76	1.50	0	6	21	7	2	sw.	F. L. Williams
Waterloo	Black Hawk	854	47	65.3	+ 1.2	93	12	31	28†	50	2.02	— 2.02	1.93	0	7	22	5	3	se.	R. B. Slippy
Waverly	Bremer	936	34	64.9	+ 1.5	92	12†	31	29	46	0.68	— 2.82	0.52	0	3	26	1	3	n.	D. H. Murphy
Means and extremes				63.9	+ 1.1	95	12	25	29	53	2.05	— 1.77	2.15	0	6	20	6	4	nw.	
West Central District																				
Audubon (near)	Audubon	1,297	35	67.8	+ 4.1	93	12†	38	27	38	0.87	— 2.89	0.49	0	4	24	5	1	sw.	George Kibby
Carroll	Carroll	1,265	40	66.4	+ 2.7	91	12†	37	29	40	0.53	— 2.94	0.51	0	2	26	3	1	nw.	Mrs. Jos. J. Wolfe
Denison	Crawford	1,200	36	67.1	+ 3.1	95	13	34	27	48	0.69	— 2.43	0.59	0	5	16	12	2	w.	J. McMinimee
Guthrie Center	Guthrie	987	35	66.8	+ 2.2	94	12†	34	28	51	1.00	— 2.77	0.95	0	2	15	14	1	n.	Floyd H. Bainter
Harlan	Shelby	1,192	31	66.2	+ 2.4	94	13	37	20	42	2.00	— 1.77	1.17	0	6	16	10	4	sw.	Walter Bell
Jefferson	Greene	1,052	31	65.9	+ 2.3	94	22	36	28	45	1.36	— 2.63	0.92	0	5	22	4	4	sw.	W. I. Lyon
Little Sioux	Harrison	1,010	25	67.4	+ 2.1	92	22	38	20	43	1.01	— 2.16	0.81	0	3	12	14	4	s.	H. W. Kerr
Logan	Harrison	1,120	63	66.6	+ 0.9	93	22	40	20†	47	0.84	— 2.32	0.30	0	5	13	15	2	sw.	Amy Ann Stern
Onawa	Monona	1,051	29	65.7	+ 1.1	90	12†	37	20	41	1.65	— 1.86	1.45	0	3	16	8	6	se.	Mrs. H. E. Colby
Rockwell City	Calhoun	1,232	34	65.0	+ 1.2	93	12	34	28	40	1.54	— 2.51	1.54	0	2	26	1	3	s.	A W. McIsaac
Sac City‡‡	Sac	1,209	54	65.4	+ 1.7	93	22	36	28	51	2.92	— 0.41	2.50	0	3	21	6	3	s.	F. P. Kessler
Sioux City	Woodbury	1,135	41	65.8	+ 2.4	90	12	41	27	40	2.46	— 0.57	1.78	0	6	13	11	6	se.	U. S. Weather Bureau
Means and extremes				66.4	+ 2.2	95	13	34	27†	51	1.27	— 2.24	1.78	0	4	18	9	3	sw.	
Central District																				
Ames	Story	926	53	67.6	+ 3.2	95	12†	35	28	50	2.49	— 1.18	1.65	0	3	24	1	5	s.	Iowa State College
Baxter	Jasper	998	30	68.2	+ 3.6	98	18	33	28	47	1.48	— 2.49	1.35	0	3	17	10	3	se.	Geo. R. Geise
Boone (near)	Boone	894	25	66.0	+ 2.2	97	12	31	28	55	2.78	— 1.27	1.33	0	4	19	10	1	s.	C. F. Henning
Des Moines	Polk	861	52	68.2	+ 2.6	94	22	39	28	41	1.53	— 2.14	1.35	0	5	12	9	9	s.	U. S. Weather Bureau
Fort Dodge	Webster	1,114	30	65.0	+ 1.0	94	12	35	27†	48	2.81	— 1.54	2.48	0	7	24	5	1	sw.	Mrs. Emma Sampson
Grinnell	Poweshiek	1,031	26	67.2	+ 2.3	92	22†	33	27	42	0.91	— 2.74	0.60	0	3	28	0	2	s.	R. E. Bates
Grundy Center	Grundy	976	39	65.7	+ 1.1	93	13	33	28	47	1.87	— 1.90	1.42	0	5	22	7	1	nw.	M. G. Heiberger
Iowa Falls	Hardin	1,127	37	65.4	+ 2.8	93	12†	32	28	41	1.68	— 2.12	1.35	0	5	24	1	5	w.	C. H. Gilbert
Marshalltown	Marshall	947	38	67.3	+ 1.9	95	22	38	28†	47	2.03	— 2.08	1.72	0	4	21	5	4	nw.	C. C. Pigman
Monroe	Jasper	922	18	67.6	+ 1.5	94	22	38	27†	38	2.75	— 1.35	2.33	0	4	19	8	3	s.	J. A. Dibel
Perry	Dallas	975	29	66.4	+ 1.9	94	22	33	20†	51	1.23	— 2.54	1.01	0	3	19	8	3	sw.	Eugene N. Hastie
Toledo	Tama	847	36	67.0	+ 1.9	95	13	35	28†	49	2.15	— 1.82	1.15	0	3	17	11	2	nw.	H. P. Giger
Van Meter	Dallas	872	11								0.87		0.70	0	4					Calvin K. Smith
Waukee	Dallas	1,032	27	66.6	+ 1.8	94	22	38	27†	43	0.40	— 3.54	0.22	0	4	22	5	3	sw.	O. D. Ellsworth
Webster City	Hamilton	1,042	25	65.0	+ 1.0	94	22	31	28	54	3.03	— 0.91	1.93	0	5	20	8	2	nw.	Frank A. Bonebright
Means and extremes				66.7	+ 2.1	98	18	31	28	55	1.87	— 2.04	2.48	0	4	21	6	3	s.	

Climatological Data for September, 1930—Continued

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit							Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
East Central District																				
Bella Plaine	Benton	866	40	66.9	+ 2.5	95	13	33	28	50	4.25	+ 0.68	4.25	0	2	19	7	4	s.	O. C. Burrows
Cedar Rapids	Linn	737	48	67.2	+ 2.6	96	13	33	28†	51	3.94	+ 0.34	3.80	0	5	18	3	9	nw.	J. T. Wurster
Clinton	Clinton	595	57	67.2	+ 2.0	96	13	32	28	46	1.89	— 1.60	1.03	0	5	20	4	6	s.	Dr. A. P. Bryant
Davenport	Scott	580	59	68.9	+ 3.3	93	13	41	28	32	0.39	— 3.19	0.21	0	4	16	7	7	s.	U. S. Weather Bureau
Fairport	Muscatine	567	9	67.8	+ 1.8	92	13	37	30	39	0.39	— 3.21	0.23	0	5	16	4	10	s.	Bureau of Fisheries
Iowa City	Johnson	733	70	67.7	+ 2.9	96	13	36	28	45	6.28	+ 2.40	6.13	0	3	18	9	3	nw.	Prof. J. F. Reilly
Le Claire	Scott	576	30								1.64	— 1.77	0.73	0	5					Margaret T. Disney
Maquoketa (near)	Jackson	692	25	65.2	+ 2.0	93	1†	30	28	54	3.21	— 1.07	1.33	0	5	21	5	4	nw.	John Strodthoff
Muscatine	Muscatine	546	69								1.62	— 1.98	1.20	0	5					William Molis
Olin	Jones	760	31	66.1	+ 2.4	95	13	30	28†	47	1.99	— 1.68	1.56	0	2	21	4	5	se.	Mrs. L. Stingley
Tipton (near)	Cedar	806	31	67.6	+ 2.8	96	13	33	28	50	3.21	— 0.72	2.85	0	3	8	15	7	w.	John Kroeplen
Williamsburg	Iowa	770	11	68.4		96	13†	36	28	46	4.46	+ 0.81	4.40	0	3	23	6	1	nw.	Dr. F. C. Schadt
Means and extremes				67.3	+ 2.7	96	13†	30	28†	51	2.77	— 0.92	6.13	0	4	18	6	6	nw.	
Southwest District																				
Atlantic	Cass	1,110	39	67.8	+ 2.8	97	13	35	28	48	0.17	— 3.24	0.08	0	4	16	9	5	sw.	Roy L. Fancolly
Bedford	Taylor	1,200	2								0.40	— 3.66	0.20	0	3	20	6	4	s.	Arthur L. Bishop
Clarinda	Page	1,009	40	68.6	+ 2.3	94	13	39	20	44	0.86	— 2.61	0.64	0	5	22	8	0	s.	Dr. H. C. Hawley
Corning	Adams	1,150	38																	C. A. Smith
Cumberland (near)	Cass	1,225	31								1.01	— 2.37	0.79	0	4	18	5	7	sw.	Carl E Pollock
Glenwood	Mills	1,100	32	67.9	+ 1.2	92	22	40	20†	40	1.25	— 1.43	0.66	0	4	17	8	5	se.	George Mogridge
Greenfield	Adair	1,368									0.62		0.40	0	4	17	11	2	s.	P. C. Cornell
Lenox	Taylor	1,250	35	69.8	+ 4.1	94	13	42	29	43	1.95	— 2.26	1.60	0	4	21	7	2	se.	J. L. Hurley
Oakland	Pottawattamie	1,139	11	66.8	+ 1.7	92	22	39	29	44	1.02	— 2.24	0.62	0	5	22	2	6	sw.	W. S. Mathews
Red Oak (near)	Montgomery	1,030	5								0.76	— 2.78	0.43	0	4	12	15	3	s.	B. R. Bridge
Riverton (near)	Fremont	920	4								2.76	— 1.04	2.68	0	3	18	1	11	s.	Geo. C. Rader
Thurman	Fremont	960	33	68.1	+ 0.5	93	22	42	28	38	1.80	— 2.46	1.03	0	2	16	4	10	s.	H. H. Askew
Omaha, Neb.		1,105	59	68.6	+ 1.8	93	22	43	26	35	0.65	— 2.56	0.47	0	4	17	6	7	s.	U. S. Weather Bureau
Means and extremes				68.2	+ 2.2	97	13	35	28	48	1.10	— 2.50	2.68	0	4	18	7	5	s.	
South Central District																				
Afton	Union	1,212	36																	S. R. Brown
Albia	Monroe	949	32	69.4	+ 4.0	99	13	37	28	42	2.70	— 1.36	1.95	0	2	14	8	8	sw.	J. M. Stevenson
Centerville	Appanoose	1,013	25	67.1	+ 1.5	94	13	37	28	36	0.85	— 3.25	0.50	0	4	17	5	8	sw.	Thomas Wood
Chariton (near)	Lucas	1,042	35	68.6	+ 3.8	95	13	37	28	39	1.85	— 2.09	1.55	0	3	18	8	4	w.	C. C. Burr
Corydon (near)	Wayne	1,050	37	68.5	+ 2.8	94	13	39	28	37	0.90	— 3.19	0.67	0	4	17	10	3	s.	J. C. Davis
Creston	Union	1,291	25	68.0	+ 3.9	92	13†	42	29	38	2.62	— 1.38	2.06	0	4	16	9	5	nw.	Mrs. N. Spangler
Earlham (near)	Madison	1,126	28	66.4	+ 1.8	94	22	33	28	49	1.33	— 2.36	1.18	0	2	22	4	4	nw.	George Phillips
Indianola	Warren	972	39	69.2	+ 3.6	96	13†	38	28	45	2.54	— 1.19	2.20	0	3	22	5	3	e.	Seth F. Shenton
Knoxville	Marion	920	35	69.2	+ 3.4	95	22	39	28	41	2.88	— 1.26	2.85	0	2	19	6	5	nw.	W. J. Casey
Lacona	Warren	824	21								5.28	+ 0.92	4.20	0	4	18	10	2		J. B. Alter
Lamoni	Decatur	1,123	23	68.2	+ 3.5	93	13	42	17†	38	1.39	— 2.62	0.66	0	3	21	5	4	se.	F. S. Parks
Melrose	Monroe	871	1								2.44		2.18	0	4	16	11	3	sw.	J. M. Carr
Mount Ayr	Ringgold	1,220	37	68.2	+ 2.8	91	13	41	17	38	1.80	— 2.15	1.10	0	4	24	5	1	s.	E. O. Gleason
Tingley	Ringgold	1,275	5	68.6	+ 3.8	92	13	42	29	36	1.73	— 2.41	1.27	0	3	21	7	2	sw.	James A. Verploegh
Winterset	Madison	1,118	39	67.8	+ 2.3	94	13	39	29	40	4.45	+ 0.70	2.75	0	3	23	5	2	sw.	H. S. Ely
Means and extremes				68.3	+ 3.1	99	13	33	28	49	2.34	— 1.69	4.20	0	3	19	7	4	sw.	
Southeast District																				
Bonaparte (near)	Van Buren	563	39	68.8	+ 2.9	101	13	37	28	41	3.38	— 0.75	2.20	0	5	22	5	3	s.	B. R. Vale
Burlington	Des Moines	544	34	70.4	+ 3.2	95	1	42	28	33	3.42	— 0.50	1.67	0	5	20	4	6	sw.	John W. Donnelly
Columbus Junction	Louisa	595	29	67.0	+ 0.9	93	1†	35	28	39	1.06	— 2.60	0.44	0	4	16	14	0	se.	Miss Musa Todd
Fairfield	Jefferson	780	46	68.3	+ 2.7	96	22	35	28	42	2.94	— 0.69	1.33	0	4	13	10	7	nw.	R. M. McKenzie
Keokuk	Lee	614	59	71.0	+ 3.5	97	1	45	28	33	2.97	— 0.87	1.74	0	4	15	7	8	sw.	U. S. Weather Bureau
Keokuk No. 2	Lee	651	1	71.5		98	1	41	28	40	3.02		1.58	0	4					J. N. D. Dickinson
Keosauqua	Van Buren	639	38	69.2	+ 3.4	96	1†	36	28	44	3.03	— 1.17	1.85	0	4	18	9	3	sw.	Dr. J. W. Rinabarger
Mt. Pleasant	Henry	730	49	69.0	+ 2.9	94	22	39	28	42	1.89	— 1.64	1.50	0	2	13	13	4	nw.	J. H. Jericho
Oskaloosa	Mahaska	835	54	68.0	+ 3.5	95	22	38	27	38	2.15	— 1.25	2.01	0	4	17	5	8	se.	Roy R. Robinson
Ottumwa	Wapello	649	35	68.6	+ 2.3	97	13	36	28	47	2.41	— 1.14	1.92	0	4	18	5	7	sw.	C. L. Mikesh
Sigourney	Keokuk	785	34	67.6	+ 2.5	96	22	36	28	41	2.33	— 1.36	2.20	0	3	20	8	2	w.	John B. Slate
Stockport (near)	Van Buren	747	28	69.3	+ 4.3	97	1	37	28	43	2.91	— 1.18	2.01	0	4	18	6	6	s.	C. L. Beswick
Washington	Washington	757	48	69.6	+ 4.4	96	13†	37	28	39	3.50	+ 0.12	2.10	0	3	11	15	4	se.	D. D. Sherman
Wever	Lee	552	2								5.36		4.08	0	3					H. G. Liddle
Means and extremes				69.1	+ 3.2	101	13	35	28	47	2.88	— 0.90	4.08	0	4	17	8	5	sw.	
State means and extremes				66.3	+ 2.0	101	13	25	29	55	2.31	— 1.36	6.13	0	5	19	7	4	sw.	

Temperature normals are based on the 46-year period July 3, 1875 to July 2, 1921; shorter records corrected to harmonize. Precipitation normals are based on the 50-year period ended December 31, 1927 at first order stations; upon all records of 10 years or more ending December 31, 1920 for most of the co-operative observing stations; and upon interpolations from normal maps for recently established stations.

Reference letters a, b, c, etc., appearing in the table indicate the number of days missing; for example b represents two days, etc.

†Also other dates.

‡‡Received too late to be included in means and summaries.

T. Precipitation is less than 0.01 inch rain or melted snow.

i Interpolated.

RIVERS

The prolonged drouth was reflected in all of the interior streams, and unusual'y low stages prevailed with very little fluctuation. Most of the small streams were completely dry throughout the month.

The Missouri River had a falling tendency throughout the month, and averaged nearly normal along the Iowa boundary.

The Mississippi River stages remained very low throughout the month. At Dubuque the extreme stages were 1.7 feet and 1.0 foot, and the average was 1.3 feet. At Davenport the stage averaged 1.2 feet, or 1.9 feet below normal. At Keokuk the stage averaged lower during the month than any previous September on record as far back as 1860. The stage was continuously below the zero of the gage, except on the last two days, and averaged 0.7 foot below zero of the gage. Naturally, the low stages cut down the output of water power to a considerable extent.

ERRATA

Report for July, 1930. Page 53, Belle Plaine; number of days clear and cloudy published 22 and 2, should be 21 and 3 respectively.

Report for August, 1930. Page 60, Alton; monthly precipitation published 1.62 inches, should be 1.67 inches. Alton, precipitation departure from normal published —1.48 inches, should be —1.43 inches. Page 61, Mt. Pleasant; date of minimum temperature published 22, should be 23.

Daily Precipitation for September, 1930

Stations	Drainage Basin	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	
Northwest District																																	
Akron	Bix Sioux	.47			.04		1.33								T.										T.	.30	.60						2.74
Alta	Raccoon	.18			.18		.02				T.				.25												1.36						1.99
Alton	Floyd	.22					.68						T.		.30										.07	.18	.78						2.23
Cherokee	Little Sioux	.39			.03		.16								.18				T.							.91	.52						2.19
Estherville	Des Moines	.75	.10		.11				.20					.80	.40					.10						.03	3.10	.05					5.64
Hawarden	Big Sioux	.41							.84						.06										.28	.64	.78						3.01
Inwood (near)	Big Sioux	.29			T.				1.13						.01					T.							1.43						3.36
Lake Park (near)	Little Sioux	.29			.17		.28		.33				1.51	1.68	.44					.28					.03	.35	1.00						6.39
Le Mars	Floyd	.55													.17										T.	.10	.86						1.68
Marathon	Raccoon				.22				.14						.46					.05						.46	1.57						2.90
Pocahontas	Des Moines	.08				.11		.10							.64					.14						1.15	1.30						3.52
Rock Rapids	Big Sioux	.32				.21	.21								.10					.12					.03	.80	.75						2.54
Sanborn	Floyd	.29			.07		.50	.02						.03	.19										.07	.25	1.67						3.09
Sheldon	Floyd	.34			T.	T.	.76	T.					.61		.31					.07					.40	.67	.78						3.34
Sioux Center	Floyd	.45					1.10	.30	T.						.20										.15	.55							2.75
Spencer	Little Sioux	.45			.23	.32								.03	.62					.05						1.65							3.35
Storm Lake	Raccoon	.11			T.		.05				T.				.32											.23	.43						1.14
Washta	Little Sioux	.19			.05		.03								.22											.98	.93						2.40
West Bend	Des Moines	.04			.25		.07							.69	.83					.08						1.60	1.55						5.02
North Central District																																	
Algona	Des Moines	.05					.05							.58	.80					.02					T.	2.21	1.50						5.21
Allison (near)	Cedar	T.			.11									T.	.18											.50	33						1.12
Belmond	Iowa	.03			.48		T.							.02	.32					T.						.95	.58						2.38
Britt	Iowa	.25	.02		.38									1.83	.63										.02	.44	1.41						5.01
Charles City***	Cedar	.02			.17		T.						.96	.08	.01					.01			T.		.04	1.11	.08		T.				2.48
Forest City	Cedar	.21	.06		.20				T.					1.63	.27	.02				T.						T.	1.34	.13					3.89
Hampton	Cedar	.02			.25																		T.		T.	T.	1.59						1.86
Humboldt	Des Moines	.07			.08		.04							T.	.02	T.										1.08	.99						2.28
Mason City	Cedar	.10			.18									4.35	.25					.03						.15	1.25		T.				6.31
Northwood	Cedar	.70			.12		.80							.55	.15					.02					T.	.55	1.65						4.54
Osage	Cedar	.19			.06		.34							.94	.06								.03			.11	.06						1.79
Northeast District																																	
Cedar Falls	Cedar	T.			.06									T.	.05					.02						.22	1.13						1.48
Decorah	Mississippi		.06		.05		.02							.28		.01							.16			.50	.85	.08					2.04
Dubuque***	Mississippi	1.08	T.		T.		T.							.03	.05				T.				T.		T.	1.32	.04					2.52
Fayette	Mississippi	.07			.09									.45	T.								T			1.58						2.19
Independence	Wapsipinicon	T.												.03	.03	T.									T.	.46	2.15					2.67
Lansing	Mississippi		.75		.04		.20							.15										.08	.06	T.	1.23	.06					2.57
New Hampton	Wapsipinicon	.24												.76	T.										T.	.50	.67						2.17
Oelwein	Wapsipinicon	.25							.20					.15	.20											.40	.90						2.10
Postville (near)	Mississippi	.02												.39			.11						.06			.36	1.14						2.08
Waterloo	Cedar		T.		.02									.01	.02					.02					.01	1.93	.01						2.02
Waverly	Cedar				T.										.02										T.	.14	.52						0.68
West Central District																																	
Audubon (near)	Nishnabotna	T.					T.	.02		T.					.28											.49	.08						0.87
Carroll	Raccoon		T.						T.																		.51	.02					0.53
Denison	Missouri	T.	T.					.08			.01				.01											.12	.47						0.69
Guthrie Center	Raccoon																									.95	.05						1.00
Harlan	Nishnabotna	T.						.73	.01		.03				.06					T.						1.00	.17						2.00
Jefferson	Raccoon	.02				.05		T.	T.			T.			.37					T.						.68	.21						1.36
Little Sioux	Little Sioux														.17											.57	.27						1.01
Logan	Missouri	T.						.21			.09			.24												.10	.20						0.84
Onawa	Missouri	T.													.20											1.20	.25						1.65
Rockwell City	Raccoon														T.	T.										.94	.60						1.54
Sac City	Raccoon	.06						T.							.36											1.40	1.10						2.92
Sioux City***	Missouri	.23			T.	.21		.17							.07											1.46	.32						2.46
Central District																																	
Ames	Skunk														.06											1.65	.78						2.49
Baxter	Skunk					.03																				1.35	.10						1.48
Boone (near)	Des Moines		T.			.05									.25				T.							1.15	1.33						2.78
Des Moines***	Des Moines	T.				.12	T.								.03				T.						.09	1.26	.03						1.53
Fort Dodge	Des Moines		T.			.10			.01					.02	.15					.01							2.48	.07					2.84
Grinnell	Iowa					.06																				.60	.25						0.91
Grundy Center	Cedar	T.				.05									.08					.07						.25	1.42						1.87
Iowa Falls	Iowa		T.			.12									.17					.04							1.33	.02					1.68
Marshalltown	Iowa		T.			.01									.05											.25	1.72	T.					2.03
Monroe	Des Moines	T.				.04									.04											2.33	.34						2.75
Perry	Raccoon	T.				.18		T.							T.										T.	1.01	.04						1.23
Toledo	Iowa	T.				T.									.02					T.						.98	1.15						2.15
Van Meter	Raccoon					.13									.04											.27	.43						0.87
Waukee	Raccoon					.11									.05											.22	.02						0.40
Webster City	Des Moines	T.				.12									.90					.08					T.	1.26	0.67						3.03
East Central District																																	
Belle Plaine	Iowa	T.													T.										T.	3.55	.70						4.25
Cedar Rapids	Cedar		.01												.01					.02						.10	3.80						3.94
Clinton	Mississippi	.63	.40											T.	.02					T.					.09	.75	T.						1.89
Davenport***	Mississippi	.07	.01			T.	T.								.10					T.					T	.21	T.						0.39
Fairport	Mississippi		.03					.02							.11											.05	.18						0.39
Iowa City	Iowa														.14											1.34	4.80	T.					6.28
Le Claire	Mississippi		.52	T.											.16						T.					.22	.73	.01					1.64
Maquoketa (near)	Maquoketa	.94	.04											.01	T.											1.33	0.89						3.21
Muscatine	Mississippi	.07					1.20								.15										.05		.15						1.62
Olin	Wapsipinicon																									1.56	.43						1.99
Tipton (near)	Cedar	.06																								.30	2.85						3.21
Williamsburg	Iowa														.06					T.						4.09	.31						4.46

Daily Precipitation for September, 1930—Continued

Stations	Drainage Basin	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	Totals
Southwest District																																	
Atlantic‖‖	Nishnabotna	T.				.02			T.	.01	T.				.08	T.											.06						0.17
Bedford	102									T.	.20				.03												.17						0.40
Clarinda‖‖	Nodaway									.36	.28				.04											.05	.13						0.86
Corning	Nodaway																																
Cumberland (near)	Nodaway	T.								T.	.10				.01											.79	.11						1.01
Glenwood	Missouri									.52					.07											.38	.28						1.25
Greenfield	Nodaway	T.				.06				.01					T.										.40	.15							0.62
Lenox	Missouri									T.	1.60				.05											.20	.10						1.95
Oakland	Nishnabotna									.02	.21				.17											.52	.10						1.02
Red Oak (near)	Nishnabotna									.43	.24				.02												.07						0.76
Riverton (near)	Nishnabotna		T.		.02			T.		2.68	T.			T.	T.												.06						2.76
Thurman	Missouri									1.03					.77																		1.80
Omaha, Neb.***	Missouri	T.								.47	T.				.02											.11	.05						0.65
South Central District																																	
Afton	Grand																																
Albia‖‖	Des Moines									T.				T.	T.											1.95	.75						2.70
Centerville	Chariton					.50					T.													.03	T.	.15	.17						0.85
Chariton (near)	Chariton	T.								T.	T.				.15				T.						1.55		.15						1.85
Corydon (near)	Chariton					.07									.16											1.18	0.15						1.33
Creston‖‖	Missouri	T.	T.					T.		.05	.43	T.			T.											.66	.01						0.90
Earlham (near)	Des Moines	T.				T.	T.																			2.06	.08	T.	T.				2.62
Indianola	Des Moines					.08																				2.20	.26						2.54
Knoxville	Des Moines	T.	T.																							2.85	.03						2.88
Lacona	Des Moines										.03				.05											4.20	1.00						5.28
Lamoni‖‖	Grand									T.	.46				.27	T.											.66	T.					1.39
Melrose	Des Moines					.16	T.				.10															1.30	.88						2.41
Mount Ayr	Grand									1.10				.30												.35	.05						1.80
Tingley	Platte	T								.10	1.17				T.											.46							1.73
Winterset	Des Moines	T.				T.	1.54																			2.75	.16						4.45
Southeast District																																	
Bonaparte (near)	Des Moines				T.	.06	.47								.63					T.			T.	T.		2.20	.02						3.38
Burlington‖‖	Mississippi							.01			T.				.28	.35								T.	1.11	1.67							3.42
Columbus Junction	Iowa							.44			T.				.20									T.		.41	.01						1.06
Fairfield	Skunk	.02													.28										T.	1.31	1.33						2.94
Keokuk***	Mississippi					T.	.02	.01			T.				1.20					T.				T.		1.74	T.						2.97
Keokuk No. 2	Mississippi					T.	T.	.06							1.28									T.		1.58	.10						3.02
Keosauqua	Des Moines					.30	.08								.80											1.85							3.03
Mt. Pleasant	Skunk														.39											1.50	T.						1.89
Oskaloosa	Des Moines	T.									.03			T.	.11											1.71	.30						2.15
Ottumwa	Des Moines					T.		.24			T.				.17				T.						T.	1.92	.08						2.41
Sigourney	Skunk														.13										T.	1.63	.57						2.33
Stockport (near)	Skunk					.06		.04							.80											2.01							2.91
Washington	Skunk					T.					T.				.18										T.	1.22	2.10						3.50
Wever	Mississippi														.67											4.08	.61						5.36

Except as otherwise indicated, observations are generally made late in the afternoon, near sunset, and precipitation recorded is for 24 hours ending at the time of observation.

‖‖Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.

***Regular Weather Bureau Station: precipitation is for 24-hour period midnight to midnight.

**Incomplete.

*Precipitation included in the next following measurement.

T. Precipitation is less than .01 inch rain or melted snow.

i Interpolated.

Iowa July mean temperatures 4° or more from normal (8 cases) and average rainfall 2 inches or more from normal (14 cases) in 58 years, 1873-1930; and departures from normal in the following August.

Temperature Year	July Deg.	Aug. Deg.	Rainfall Year	July In.	Aug. In.
1874	+ 4.1	+ 2.6	1875	+ 2.22	+ 0.60
1901	+ 8.7	+ 2.1	1876	+ 2.32	+ 1.71
1916	+ 6.0	+ 2.3	1896	+ 3.07	+ 0.08
1921	+ 4.2	+ 0.4	1900	+ 2.32	+ 1.21
1930	+ 4.2	+ 2.7	1902	+ 4.84	+ 3.14
1882	— 4.6	— 0.2	1907	+ 3.44	+ 0.89
1891	— 5.2	— 2.6	1915	+ 4.49	— 0.63
1915	— 4.2	— 5.8	1922	+ 2.48	— 0.38
			1886	— 3.33	— 1.42
			1894	— 3.20	— 1.86
			1913	— 2.01	— 0.76
			1916	— 2.05	— 0.86
			1923	— 2.08	+ 1.98
			1930	— 2.34	— 1.02

EXTREME JULY WEATHER INDICATES AUGUST WEATHER

Five times during the last 58 years in Iowa, the State mean temperature for July has been 4° or more above normal and in every case the mean temperature of August has been above normal; also there have been 3 cases when the July mean was 4° or more below normal and in each case the August mean was below normal, so extreme July temperatures have been followed by the same tendency in August 100% of the time.

As to rainfall, there have been 8 cases in 58 years when the State average rainfall for July was 2 inches or more above normal and in 6 of the 8 cases, or 75%, the average rainfall of the following August was above normal; also there were 6 cases when the average rainfall of July was 2 inches or more below normal and in 5 out of the 6 cases, or 83%, the average rainfall of the following August was below normal.

Briefly, there seems to be a well marked tendency for abnormal Iowa weather in July to perpetuate itself through August. In other corn belt states, this weather sequence is not so well defined, though Missouri shows a tendency in that direction.

C. D. R.

PRESSURE, RELATIVE HUMIDITY, WIND AND SUNSHINE

Stations	Barometric Pressure, Inches (Sea Level) Mean	Highest	Date	Lowest	Date	Relative Humidity, % Mean 7 A. M.	12 Noon‡	7 P. M.	Lowest	Date	‡‡Wind Total movement	Average hourly velocity	Maximum Miles	From	Date	Sunshine % possible	Departure from normal
Chas. City	29.96	30.37	30	29.20	26	79	45	57	21	22	3,835	5.3	24	nw.	26	81	+20
Davenport	29.95	30.34	30	29.36	25	76	45	53	20	20	5,604	7.8	39	sw.	26	74	+11
DesMoines	29.93	30.34	30	29.29	26	75	42	48	19	20	5,705	7.9	38	nw.	26	76	+14
Dubuque	29.95	30.36	30	29.29	26	81	45	52	22	20	3,790	5.3	19	s.	26	74	+16
Keokuk	29.97	30.32	30	29.45	25	74	46	51	22	3	4,341	6.0	38	w.	14	69	+ 5
Sioux City	29.94	30.32	2	29.61	25	77	46	50	25	20	7,098	9.9	39	nw.	26	82	+19
Omaha, Nb	29.93	30.34	2	29.47	25	75	49	51	22	20	4,147	5.8	32	nw.	26	61	— 4
Means and extremes	29.95	30.37	30	29.20	26	77	45	52	19	20		6.9	†39	nw.	26	74	+12
Normals and records	30.02	*30.67	25th 1926	¶29.20	29th 1927	83		64	§18	28th 1921			‖58	w.	7th 1872	62	

*Sioux City ¶Des Moines §Omaha ‖Davenport ‡Local mean time †Also Davenport 39 miles from the SW. on the 26th.

‡‡January 1, 1928, 3-cup anemometers replaced 4-cup instruments. See Climatological Data, January, 1928, page 7.

Daily Maximum and Minimum Temperature for the Month of September, 1930

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
Northern Division																																	
Algona	Maximum	82	77	78	88	76	78	70	77	80	85	88	92	83	80	80	70	77	89	78	68	77	88	87	87	67	55	55	55	61	65		76.4
	Minimum	54	46	52	50	56	49	60	56	56	56	60	62	59	60	49	54	44	54	56	41	52	50	68	62	47	41	38	33	36	36		51.2
Alta	Maximum	77	78	81	84	74	83	75	79	79	82	87	90	87	80	81	70	80	89	75	70	80	91	85	84	67	56	57	66	67	71		77.5
	Minimum	53	45	53	54	56	49	59	56	58	56	60	61	59	60	47	52	41	56	51	42	50	51	69	56	49	42	35	37	37	40		51.1
Alton	Maximum	80	79	82	83	73	79	70	76	79	78	84	88	84	78	82	73	78	87	80	68	79	88	85	83	67	59	58	63	63	69		76.5
	Minimum	55	41	46	55	58	49	60	58	61	58	59	63	60	60	45	53	40	54	57	39	48	49	70	63	45	44	33	35	39	39		51.2
Belmond	Maximum	81	79	81	87	77	81	73	81	81	85	89	91	88	81	81	72	78	92	76	71	81	91	88	87	65	56	56	61	64	66		78.0
	Minimum	56	43	46	40	54	48	58	55	53	51	56	60	56	61	47	53	41	47	60	40	50	40	66	63	47	43	35	31	36	31		48.9
Charles City	Maximum	76	75	77	84	77	78	73	77	79	82	86	88	82	78	76	68	73	89	77	66	75	85	86	84	63	62	54	55	61	62		74.9
	Minimum	54	48	48	43	55	50	59	54	57	56	55	62	59	57	48	52	41	50	48	42	50	45	67	59	53	40	36	32	37	34		49.8
Decorah	Maximum	90	75	77	85	83	78	68	76	78	82	73	90	85	84	77	73	73	89	79	67	76	83	88	85	81	68	55	57	61	63		76.6
	Minimum	67	46	43	35	53	44	55	53	53	45	46	67	55	50	43	50	43	36	57	36	46	36	61	69	54	45	34	25	35	26		46.9
Dubuque	Maximum	89	72	78	80	83	79	75	77	76	80	86	89	87	77	76	71	74	87	87	69	80	83	88	81	73	66	57	59	62	61		76.7
	Minimum	68	57	54	50	62	62	59	59	52	53	54	65	64	63	55	55	49	47	60	49	51	48	66	71	62	46	41	39	42	36		54.6
Forest City	Maximum	87	77	77	87	77	75	69	77	80	84	87	90	83	80	80	73	76	89	81	68	77	84	87	86	68	69	55	57	61	65		76.9
	Minimum	61	43	49	46	55	47	59	52	55	54	56	58	56	58	44	51	40	49	59	37	49	46	63	67	48	41	32	30	34	35		49.1
Independence	Maximum	86	75	79	85	81	81	76	77	78	81	86	89	86	83	77	76	75	89	84	70	79	86	86	81	79	72	56	56	59	62		77.7
	Minimum	68	51	58	48	58	53	53	51	53	53	55	63	60	62	49	49	44	50	67	41	53	44	68	71	56	44	37	35	38	37		52.3
Inwood	Maximum	83	74	79	87	77	77	71	72	80	81	86	91	86	80	81	70	81	88	72	69	81	86	86	79	71	59	68	62	67	67		77.0
	Minimum	52	43	47	53	57	50	56	58	58	57	62	63	56	50	44	49	41	56	51	34	46	50	69	52	44	42	32	35	38	39		49.5
Lake Park	Maximum	87	75	78	85	70	72	67	66	77	77	84	92	83	77	78	66	76	85	76	74	73	86	84	78	71	69	52	57	59	66		74.7
	Minimum	50	43	51	42	57	45	56	55	59	55	60	62	58	59	47	51	41	45	38	42	38	49	53	52	47	41	34	32	34	36		47.7
Mason City	Maximum	82	74	77	85	74	76	72	78	88	84	91	90	74	73	78	71	72	88	77	65	74	86	85	85	63	56	53	56	62	64		75.1
	Minimum	55	43	44	37	56	43	59	52	54	51	51	61	55	58	46	50	42	46	58	38	49	41	61	60	46	40	33	29	33	29		47.3
New Hampton	Maximum	82	77	81	85	82	82	75	80	81	83	87	90	85	78	77	71	74	89	83	68	77	85	87	84	80	62	57	58	66	66		77.7
	Minimum	60	45	40	44	54	49	56	51	53	49	53	59	57	57	44	50	37	45	61	37	46	41	64	69	52	43	33	27	36	33		48.2
Northwood	Maximum	77	75	76	85	77	75	69	77	81	82	87	89	80	77	78	65	72	88	76	70	75	85	87	85	62	57	58	53	63	63		74.8
	Minimum	56	45	52	45	58	44	56	51	57	53	56	57	59	59	48	52	42	48	52	40	52	46	64	55	47	40	34	30	36	32		48.9
Pocahontas	Maximum	83	79	81	88	74	81	71	79	79	83	90	92	89	81	81	71	76	90	79	71	80	93	88	81	77	58	57	65	62	62		78.0
	Minimum	56	45	45	48	57	50	57	60	51	53	58	61	69	61	47	54	41	51	58	42	52	49	69	52	47	40	36	37	36	37		50.6
Postville	Maximum	76	70	74	80	78	72	67	74	76	80	81	87	78	74	74	66	70	85	74	66	83	82	85	78	68	61	55	56	60	59		73.0
	Minimum	57	53	49	40	56	55	52	50	49	47	48	58	52	56	47	49	43	40	50	40	42	43	65	61	55	42	34	30	32	32		47.6
Rock Rapids	Maximum	83	77	77	84	78	78	71	67	80	78	84	88	85	78	82	74	79	86	80	68	77	87	85	81	68	57	57	57	63	68		75.9
	Minimum	52	40	45	52	57	45	57	55	58	52	60	63	56	60	43	50	40	51	55	36	46	40	40	40	41	43	33	32	35	35		47.1
Central Division																																	
Ames	Maximum	81	80	84	89	86	86	84	82	81	83	90	95	93	87	81	74	80	94	83	73	82	95	92	88	84	64	63	64	66	67		81.8
	Minimum	60	50	48	48	59	55	58	59	61	55	57	62	64	50	59	59	48	53	65	38	49	45	66	72	56	43	41	35	41	40		53.3
Belle Plaine	Maximum	91	78	81	88	89	89	81	79	79	88	92	94	95	79	81	77	81	92	91	75	85	94	90	84	75	67	64	65	68	69		82.0
	Minimum	66	49	45	51	56	56	61	56	56	54	53	62	66	64	44	51	39	50	68	38	48	44	64	70	55	46	36	39	38	34		51.8
Carroll	Maximum	81	80	84	86	85	84	81	79	78	81	87	91	91	82	84	73	84	89	81	74	83	91	86	86	72	57	59	67	67	69		79.8
	Minimum	54	46	53	52	58	53	56	57	60	57	57	60	61	60	48	57	44	59	63	42	53	51	70	71	51	42	38	39	37	40		53.0
Cedar Rapids	Maximum	93	81	88	88	90	88	83	79	82	87	92	93	96	78	81	77	80	93	89	74	83	94	90	83	77	67	61	64	69	70		82.3
	Minimum	63	58	44	45	57	56	60	58	58	54	50	61	62	63	50	54	43	45	68	42	48	43	66	70	59	41	38	33	38	33		52.0
Davenport	Maximum	92	78	82	82	85	83	79	76	79	83	89	91	93	74	74	76	77	86	90	73	84	91	87	82	79	72	62	65	67	67		79.9
	Minimum	70	59	55	58	62	62	59	60	56	57	58	66	67	66	57	56	52	57	64	51	55	59	69	72	66	49	44	41	47	42		57.9
Des Moines	Maximum	82	79	84	85	86	86	84	81	82	85	88	92	94	76	82	74	82	92	85	74	83	94	84	84	70	66	61	70	68	70		80.8
	Minimum	63	52	52	52	61	58	60	61	61	60	61	65	67	64	53	56	47	56	58	47	55	53	70	61	58	46	42	39	44	45		55.6
Ft. Dodge	Maximum	87	78	82	82	80	83	79	82	83	87	91	94	89	82	81	71	79	92	79	72	81	93	89	88	67	57	56	64	65	69		79.3
	Minimum	57	41	48	47	56	51	57	57	60	54	56	60	58	60	46	54	42	53	61	40	52	45	68	66	50	40	35	35	36	36		50.8
Grinnell	Maximum	89	76	82	86	86	87	83	82	79	85	89	90	89	85	85	73	81	89	89	73	85	92	92	84	84	72	59	60	62	68		81.2
	Minimum	64	53	49	49	59	57	62	60	58	57	60	64	61	50	49	42	39	55	70	43	50	52	62	72	57	46	33	35	42	42		53.2
Guthrie Center	Maximum	82	82	84	87	91	90	84	80	78	82	90	94	94	88	82	76	83	92	83	74	83	94	87	89	85	62	60	68	68	70		82.1
	Minimum	63	47	47	45	57	52	57	60	61	62	54	48	48	61	43	57	39	58	66	36	55	43	69	72	55	44	36	34	36	40		51.5
Iowa City	Maximum	93	79	84	86	89	87	82	75	81	85	91	92	96	77	77	76	79	92	92	75	85	94	90	81	77	67	61	65	68	69		81.5
	Minimum	67	60	47	48	56	58	59	58	57	57	55	63	63	64	52	54	43	49	68	42	50	49	65	71	60	47	39	36	42	37		53.9
Iowa Falls	Maximum	88	76	81	89	82	82	75	80	80	86	90	93	89	79	79	71	77	93	82	69	79	92	90	88	77	62	56	60	62	65		79.1
	Minimum	60	46	48	50	56	54	58	56	56	54	56	61	61	62	50	53	42	54	62	39	53	51	63	69	53	42	36	32	36	34		51.6
Little Sioux	Maximum	80	78	86	82	91	89	82	80	80	81	85	90	90	81	85	75	81	88	79	73	83	92	86	87	70	62	64	75	73	77		80.8
	Minimum	58	45	51	59	56	57	62	63	66	65	60	62	58	57	46	55	40	62	60	38	48	49	69	69	52	44	40	41	43	47		54.1
Marshalltown	Maximum	84	78	83	87	87	86	80	80	78	86	90	93	93	78	80	74	77	92	84	73	83	95	87	84	77	62	60	64	67	68		80.3
	Minimum	63	51	52	48	60	55	60	58	59	57	59	66	65	65	49	55	46	54	64	44	54	48	68	72	56	45	40	38	39	38		54.3
Olin	Maximum	93	80	87	88	89	85	79	78	80	84	91	93	95	78	85	79	80	90	92	76	85	87	90	92	79	67	62	64	66	67		82.0
	Minimum	65	59	43	45	53	55	56	58	51	51	47	58	60	58	49	48	39	51	66	38	44	40	61	71	62	47	37	30	35	30		50.2
Sioux City	Maximum	72	78	82	82	78	83	76	78	78	80	84	90	85	79	84	70	81	88	73	72	80	88	85	79	69	60	58	69	65	72		77.3
	Minimum	55	48	54	60	59	55	60	59	65	65	64	65	63	59	52	54	48	61	53	47	54	48	70	56	43	42	41	43	42	45		54.3
Southern Division																																	
Albia	Maximum	91	82	89	87	87	85	86	78	80	86	89	94	99	81	78	79	85	88	59	78	89	95	85	81	80	70	68	71	70	70		83.0
	Minimum	68	55	57	59	59	56	59	59	59	61	61	66	64	65	48	55	43	58	71	41	53	61	69	71	63	45	38	37	42	44		55.9
Atlantic	Maximum	80	82	88	82	92	88	84	82	76	84	90	94	97	81	87	78	84	91	88	79	88	95	87	88	82	63	70	80	75	76		83.7
	Minimum	62	46	47	49	54	53	54	60	63	64	58	59	60	60	45	53	36	57	57	38	50	47	67	70	56	43	40	35	36	41		52.0
Burlington	Maximum	95	87	86	86	85	86	83	79	83	88	92	93	94	83	71	71	79	88	90	75	84	94	86	84	84	72	65	69	68	67		82.2
	Minimum	68	63	53	58	61	61	65	63	59	63	59	65	68	64	58	56	50	55	67	53	55	63	67	71	65	47	43	42	48	48		58.6
Columbus Jct.	Maximum	93	79	82	83	84	83	78	75	79	80	87	89	91	81	71	75	77	88	90	72	83	93	86	83	80	72	62	64	66	65		79.7
	Minimum	63	61	46	50	56	56	61	58	55	56	54	62	65	63	54	54	48	50	68	46	47	51	67	71	65	47	41	35	40	40		54.4
Corning	Maximum																																
	Minimum																																
Corydon	Maximum	88	79	84	84	81	83	81	78	78	81	87	90	94	88	76	76	80	87	88	72	84	92	82	81	83	71	64	70	72	69		80.9
	Minimum	69	55	50	53	58	57	58	61	61	62	60	65	65	64	51	55	45	59	67	46	54	55	64	71	64	45	44	39	42	44		56.1
Creston	Maximum	85	77	84	79	87	82	81	80	74	79	84	89	92	79	80	75	81	89	87	73	84	92	84	85	81	76	66	73	69	71		80.6
	Minimum	63	50	50	55	58	57	59	62	63	62	62	63	64	61	50	53	43	56	64	44	51	58	67	71	56	44	43	43	42	45		55.3
Fairfield	Maximum	95	78	86	88	83	90	86	80	81	88	93	95	95	86	71	77	80	91	91	75	85	96	86	82	82	62	64	69	69	68		82.4
	Minimum	67	60	44	49	53	54	58	58	57	61	64	63	63	63	51	51	44	49	68	42	48	59	66	70	62	46	39	35	41	42		54.2
Keokuk	Maximum	97	81	87	86	85	85	84	80	79	85	89	90	94	77	71	78	79	86	89	73	84	92	83	83	83	70	68	71	71	68		81.6
	Minimum	69	59	54	59	65	67	67	63	62	65	62	67	68	63	60	57	51	60	66	55	58	68	71	72	67	48	47	45	48	50		60.4
Knoxville	Maximum	88	80	86	87	87	85	84	81	81	81	89	93	95	84	81	78	84	90	92	76	86	95	85	84	79	68	65	70	67	68		82.4
	Minimum	69	55	49	51	57	56	59	59	59	61	58	66	66	65	52	56	47	55	71	47	54	54	70	72	59	46	40	39	43	44		56.0
Lamoni	Maximum	86	76	85	81	87	78	81	80	73	82	86	90	93	80	77	75	80	88	88	75	85	90	82	82	84	66	68	75	80	74		81.0
	Minimum	67	53	51	52	58	57	59	61	60	62	60	64	63	60	52	54	42	55	67	43	50	60	64	69	59	43	43	42	45	44		55.3
Sigourney	Maximum	93	81	85	86	87	85	82	77	79	84	87	93	95	83	78	79	81	91	93	76	86	96	88	82	80	71	69	69	68	69		82.4
	Minimum	65	57	50	51	56	56	58	56	56	57	56	56	63	50	49	53	44	50	63	43	50	55	64	69	60	45	39	36	41	39		52.9
Thurman	Maximum	85	76	83	78	87	83	83	79	75	80	83	89	90	82	81	78	78	89	80	74	83	93	86	89	80	64	68	80	81	79		81.2
	Minimum	62	50	47	56	57	58	61	64	65	66	63	62	63	61	49	51	40	59	56	39	48	55	68	72	60	43	42	42	43	47		55.0
Winterset	Maximum	83	78	85	84	88	85	82	81	75	82	87	91	91	82	81	75	81	90	88	75	85	93	84	86	78	66	65	72	69	70		81.2
	Minimum	67	50	55	50	57	54	58	55	60	61	58	65	63	65	50	52	45	59	63	43	58	53	65	70	54	46	40	40	39	40		54.5
Omaha, Neb.	Maximum	80	76	83	79	84	84	83	78	73	80	83	90	90	80	82	73	80	88	78	74	80	93	85	87	65	63	64	79	72	77		79.4
	Minimum	59	53	59	63	61	60	63	65	66	66	65	66	66	61	57	62	50	63	55	50	55	58	69	65	44	43	49	48	45	50		57.9

IOWA STORMS, SEPTEMBER, 1930

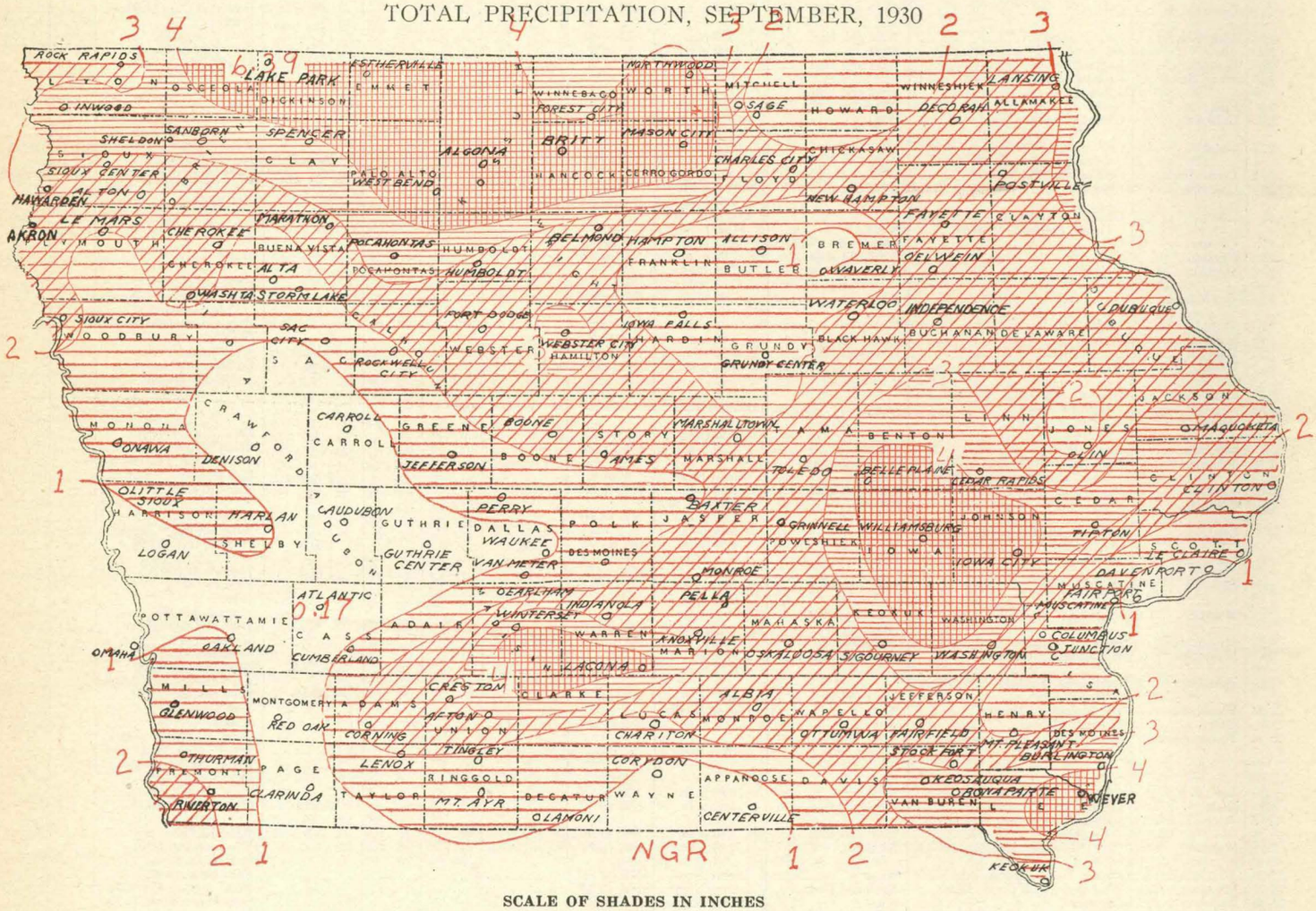
Date	County	Township	Nature of Storm	Time	Storm Moved From	Width of Path Miles	Length of Path Miles	Area of Sq. Miles	Size of Hailstones Inches	Damage	Persons Killed	Persons Injured
6	Franklin	Oakland	Wind	6:15 p. m.	NW to SE	2	8	16	¼	$1,000		
7	Lyon	Lyon, Richland	Hail	9:00 a. m.	NW to SE	3	7	21	½	Considerable to crops		
7	Plymouth	Lincoln, Perry, Plymouth, Portland, Preston, Westfield, Johnson, Washington, Liberty	Wind and Hail	12:45 p. m. to 2:00 p. m.	NW to SE	5	25	125	½ to 2	$380,000		1
7	Woodbury	Sioux City, Concord, Banner, Floyd, Arlington, Moville, Grant, Union, Kedron, Wolf Creek	Wind, Rain and Hail	2:00 p. m. to 3:00 p. m.	NW to SE	5	30	150	¼ to 1	$500,000		
12	Floyd	St. Charles	Hail	8:35 p. m.	W to E				¼	No apparent damage		
12	Cerro Gordo	Lime Creek, Mason, Lake, Clear Lake	Wind, Rain and Electrical	p. m.						$1,000		
12	Dickinson	Diamond Lake, Silver Lake	Wind and Hail	3:00 p. m. to 4:00 p. m.	W to E				½ to 1	$5,000		
12	Osceola	Allison	Hail	4:00 p. m.	N to S				1	Crops $1,500		
14	Lee	Jackson, Des Moines, Montrose, Jefferson, Ft. Madison	Wind, Rain and Electrical	12:45 a. m.	W to E					Wind $2,500		
14	Henry	Scott, Wayne	Wind	11:00 a. m.	S to N					Corn blown down		
14	Plymouth	Preston	Wind and Hail	1:30 p. m.	NW to SE				½ to 1	Crops $5,000 Live Stock $100		
18	Monroe	Monroe, Troy	Wind and Tornado	3:00 p. m.	SW to NE	100 to 150 ft	8			Tornado $6,000 Wind $3,500		
19	Cerro Gordo	Grimes	Wind and Hail	6:00 p. m.	NW to SE				Small	Damaged Corn $2.00 per acre		
19	Dickinson	Center Grove	Wind and Hail	4:00 p. m.	NW to SE				½ to 1	Corn prostrated		
25	Adair	Jefferson	Wind	10:00 a. m.	W to E					Corn prostrated		
25	Benton	Bruce	Wind and Hail	3:30 p. m.	W to E				Small	$2,500		
25	Black Hawk	Orange, West Waterloo, East Waterloo	Wind and Rain	7:00 p. m. to 9:30 p. m.	NW to SE					$500		
25	Cass	Grant	Wind	5:00 p. m.						$200		
25	Calhoun	Garfield, Twin Lakes, Lincoln	Wind	9:00 p. m. to 12:00 Mt.						Corn blown down; dam- $3.00 per A. in places		
25	Cedar	Grover, Iowa, Springdale, Center, Inland, Dayton, Fairfield	Wind and Hail	4:00 p. m. to 5:30 p. m.	W to E				½ to 1	Wind $6,100 Hail $1,150		
25	Cerro Gordo	Grimes, Pleasant Valley	Wind	p. m.						Corn blown down		
25	Cherokee	Cherokee, Liberty, Grand Meadows	Wind and Hail	9:00 p. m. to 11:00 p. m.	NW to SE				½ to 1	Corn prostrated by wind Hail $1,000		
25	Clay	Lone Tree, Garfield, Clay, Gillette Grove, Freeman, Meadow	Wind	8:00 p. m. to 11:00 p. m.	N to S					$12,000		
25	Clinton	Olive	Tornado and Wind	5:45 p. m.	SW to NE		4			$51,000		
25	Clinton	Deep Creek	Wind and Hail	7:00 p. m.	NW to SE				½	$7,000		
25	Decatur	New Buda	Wind	7:00 p. m. to 7:30 p. m.	SW to NE					Buildings $3,000		
25	Des Moines	Union	Wind	5:00 p. m.	SW to NE					Corn prostrated; damage $1.00 per acre		
25	Floyd	Rock Grove	Wind	11:30 p. m.	NW to SE					Corn damaged $5.00 per A.		
25	Fremont	Prairie	Wind	3:00 p. m.	NW to SE					$5,000		
25	Hancock	Orthel, Britt	Wind and Hail	12:00 p. m.	NW to SE				Walnuts	$7,500		
25	Hardin	Hardin	Hail	8:00 p. m.	SW to NE				½ to 1	Considerable to crops. Slight to buildings		
25-26	Humboldt	Delana, Wacousta, Rutland, Corinth, Avery	Wind	During Night	N to S					$5,000		
25	Jasper	Independence, Newton, Rock Creek	Wind and Hail	6:00 p. m. to 6:30 p. m.	SW to NE				½	Corn blown down		
25	Jefferson	Black Hawk	Wind	8:00 p. m.	SW to NE					Crops $3,000		
25-26	Johnson	East Lucas, West Lucas, Graham, Scott, Liberty, Union, Oxford	Wind, Flood and Hail	During Night	W to E				½ to 1½	Wind $7,500; Flood $5,000 Hail $8,000		1
25	Keokuk	Plank, Sigourney	Wind and Hail	1:00 a. m.	NW to SE				½	Slight to crops		
25	Kossuth	Cresco, Burt, German	Wind	10:00 p. m. to 11:00 p. m.	NW to SE					$7,000		
25	Lee	Jackson, Montrose, Des Moines, Jefferson	Wind, Hail, Tornado	3:30 p. m. to 4:00 p. m.	SW to NE	½	6	3	1 to 2	Wind $20,000; Tornado $18,000; Hail $9,000	2	1
25	Lee	Jackson, Montrose	Wind, Hail, Tornado	3:30 to p. m. 4:00 p. m.	SW to NE	½	2	1	1 to 2	Tornado $3,000		
25	Linn	Marion, Cedar	Wind and Rain	4:00 p. m. to 6:00 p. m.	W to E					$600		
25	Monroe	Franklin, Troy, Bluff Creek	Tornado, Wind and Hail	4:00 p. m. to 4:30 p. m.	SW to NE		14		¾	Tornado $17,300 Wind and Hail, slight		
25	Montgomery	West	Tornado	4:30 p. m.	SW to NE	80 ft.	4			$1,000		
25	Muscatine	Wapsinonoc, Goshen	Wind and Hail	4:30 p. m. to 5:30 p. m.	NW to SE				½ to 1	Corn prostrated Wind to bldgs. $500		
25	Palo Alto	Rush Lake, Fairfield, West Bend, Walnut, Highland	Wind and Hail	11:00 p. m.	NW to SE				Small	Wind damaged corn about $2.00 per acre		
25-26	Pocahontas	Des Moines, Summers	Wind	During Night	N to S					Corn prostrated		
25	Polk	Douglas, Elkhart	Wind	2:00 a. m.	SW to NE					$1,000		
25-26	Pottawattamie	Lake, Kane, Garner, Lewis	Wind, Hail and Electrical	During Night						Wind damaged electric power lines and telephone service considerably		2
25	Sac	Clinton, Richland, Wheeler	Wind	12:00 p. m.	NW to SE					Corn blown down		
25	Scott	Liberty	Wind and Hail	5:00 p. m.	NW to SE				Walnuts	Corn blown down		
25	Story	Richland, Lafayette, Washington, Franklin	Wind and Hail	7:00 p. m.	NW to SE					Wind $2,000		
25	Webster	Clay, Newark	Wind	3:00 p. m.	NW to SE					Wind to bldg. $150; corn blown down		
25-26	Winnebago	Linder, Forest, Center, Eden	Wind	During Night	NW to SE					Corn blown down		
25-26	Woodbury	West Fork, Wolf Creek, Liston	Wind and Hail	During Night	NW to SE				½	Wind to crops $15,600		
25-26	Audubon	Cameron	Wind	During Night	N to S					Corn blown down		
25-26	Carroll	Glidden, Richland, Sheridan, Jasper, Grant, Ewoldt	Wind	During Night	NW to SE					Corn blown down		
25-26	Dubuque	Julien	Wind	During Night						Corn blown down		
25-26	Hardin	Pleasant, Tipton	Wind	During Night	NW to SE					Corn blown down		
25-26	Howard	Chester	Wind	During Night	NW to SE					Damaged corn $2.00 per A.		
25-26	Warren	Squaw, Belmont, Otter	Wind and Hail	During Night	W to E				Small	Corn blown down		
25-26	Worth	Deer Creek, Grove, Kensett	Wind	During Night	NW to SE					Corn blown down		
26	Adair	Richland	Wind	1:30 a. m.	NW to SE					Bldgs. $200; Crops $1,000		
26	Butler	Coldwater	Wind	6:00 a. m. to 12:00 p. m.	NW to SE					Corn blown down		
26	Clayton	Garnavillo	Wind	2:00 p. m.	NW to SE					Corn blown down		
26	Greene	Cedar	Wind	2:00 p. m. to 4:00 p. m.	NW to SE					Wind blew corn down damaging approximately 3% of crop in places		
26	Hancock	Magor	Wind and Hail	6:00 a. m.	NW to SE				Small	Wind to crops $2,000		
26	Hancock	Amsterdam	Wind and Hail	5:30 p. m.	SW to NE				1	Wind $1,400; Hail $7,300		
26	Pocahontas	Grant	Wind and Hail	4:00 a. m.	N to S				¼ to ⅜	Wind $6,700		
28-29	Greene	Willow	Wind and Hail	During Night	NW to SE					Wind to crops $3,500		

MISCELLANEOUS PHENOMENA

Aurora: 3d, 18th, 19th, 28th, 29th, 30th.
Circumzenithal Arc: 15th.
Coronas, Lunar: 3d, 5th, 6th, 8th, 30th.
Dews, heavy: 2d, 3d, 5th, 11th, 21st, 29th.
Dust Storm: 18th.
Frost, light: 14th, 17th, 18th, 20th, 26th, 27th, 28th, 29th, 30th.
Frost, heavy: 27th, 28th, 29th, 30th.
Frost, killing: 25th, 28th, 29th, 30th.
Fog, dense: 7th, 8th, 10th, 11th, 30th.
Fog, light: 3d, 5th, 6th, 7th, 8th, 10th, 11th, 12th, 13th, 30th.
Gales: 1st, 14th, 16th, 18th, 22d, 23d, 25th, 26th.

Hail, light: 12th, 14th, 19th, 20th, 25th, 26th, 28th, 29th, 30th.
Hail, moderate: 7th, 12th, 19th, 25th, 26th, 28th, 29th.
Hail, heavy: 7th, 25th, 26th, 28th, 29th.
Halos, Lunar: 15th, 30th.
Halos, Solar: 4th, 13th, 15th, 23d, 24th.
Haze: 6th, 8th, 9th.
Parhelia: 15th.
Thunderstorms: 1st, 5th, 6th, 7th, 8th, 12th, 13th, 14th, 18th, 19th, 22d, 24th, 25th, 26th.
Tornadoes: 18th, 25th.

TOTAL PRECIPITATION, SEPTEMBER, 1930



SCALE OF SHADES IN INCHES

Less than 1	1 to 2	2 to 3	3 to 4	More than 4

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

IOWA SECTION
In co-operation with
IOWA WEATHER AND CROP BUREAU
CHARLES D. REED, Senior Meteorologist

VOL. XLI DES MOINES, IOWA, OCTOBER, 1930 No. 10

GENERAL SUMMARY

October weather averaged nearly normal but there were some outstanding temperature abnormalties. The first half of the month was mild. The warmest week centered on the 10th, when the temperature exceeded 90° in nearly all districts and reached 95° at Waterloo on the 12th. This was within two degrees of the State record for October, 97° having been recorded at Bloomfield on October 2, 1909. Only four times since 1873 has the maximum temperature reached a higher reading. At Davenport the maximum temperature of 88° on the 10th was the highest ever recorded so late in the season, while the minimum reading of 23° on the 21st equaled the lowest temperature ever recorded so early in the fall at that station. Two moderately cold periods occurred, 20th-21st, and again the last two days of the month.

Precipitation was below normal with the exception of a few scattered stations in the northwest, south-central and eastern districts, where the rainfall was deficient. The three principal rainy periods were, the first week, the 12th to 16th, and the 29th-30th.

Snow fell about the middle of the month at several stations, and with a few exceptions amounted to only a trace. On the 29th and 30th the snowfall was quite general, the heaviest occurring in the northwest district, and in the northeastern portion of the State between the Iowa and Maquoketa River Valleys.

A tornado struck near Menlo, in Beaver Township, Guthrie County, on the 1st. It left a marked path about 100 feet wide and 1½ miles long, and destroyed approximately $350.00 worth of property. It moved in the usual direction from southwest to northeast. A heavy electrical storm accompanied by some wind and rain, struck Sioux City and the southwest portion of Plymouth County, about 2:30 p. m. on the 15th, but did no apparent damage. A light hail storm occurred at Knoxville on the 16th and did very little damage.

From the agricultural standpoint the month opened with the farm and garden season nearly ended. Rains during the first sixteen days soaked the soil, conditioning it quite well for fall plowing, some of which was done. Although the rains temporarily broke the drouth, they came too late to be of much benefit, except to winter wheat, pastures and meadows. The total rainfall was not enough to make a material reduction in the seasonal precipitation deficiency, so well digging and drilling was active in an effort to forestall the water shortage which continued serious. The general frost on the 17th killed all remaining garden truck, but the damage was of no commercial importance, as very little vegetation remained, all staple crops having been harvested or were safe from the frost. Corn husking progressed more rapidly than usual, 51% of the husking being done by the close of the month.

All kinds of building construction advanced favorably. The year's road construction program was either completed or nearly so by the end of the month.

A meteor of more than ordinary brilliancy was observed in the southeast, from Riverton, about 8:43 p. m. on the 2d. It started near the constellation of Pegasus' two south stars, and burned out near the point star B of Cetus, and left a well defined trail of a bluish-red color.

N. G. R.

COMPARATIVE DATA FOR THE STATE—OCTOBER

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1873	46.0	— 5.8	76	15	2.64	+ 0.21	4.80	1.25	.....	.....	.....	.....	.....
1874	51.2	— 0.6	84	25	1.52	— 0.91	2.70	0.65	.....	.....	.....	.....	.....
1875	47.8	— 4.0	77	22	1.36	— 1.07	2.71	0.28	.....	.....	.....	.....	.....
1876	47.0	— 4.8	78	18	1.16	— 1.27	3.31	0.18	.....	.....	.....	.....	.....
1877	49.6	— 2.2	93	28	4.45	+ 2.02	8.08	1.90	.....	.....	.....	.....	.....
1878	48.9	— 2.9	85	10	2.73	+ 0.30	5.52	0.40	.....	.....	.....	.....	.....
1879	58.3	+ 6.5	90	11	2.19	— 0.24	6.28	0.28	.....	.....	.....	.....	.....
1880	47.6	— 4.2	83	13	1.90	— 0.53	6.90	0.25	.....	.....	.....	.....	.....
1881	52.1	+ 0.3	86	26	6.42	+ 3.99	14.03	3.10	.....	.....	.....	.....	.....
1882	51.4	+ 2.6	86	23	3.97	+ 1.51	6.50	0.55	.....	.....	.....	.....	.....
1883	47.2	— 4.6	88	20	3.37	+ 0.94	6.95	0.40	.....	.....	.....	.....	.....
1884	54.2	+ 2.4	86	17	4.20	+ 1.77	9.00	2.00	.....	.....	.....	.....	.....
1885	46.7	— 5.1	80	20	2.62	+ 0.19	4.30	0.92	.....	.....	.....	.....	.....
1886	55.0	+ 3.2	88	18	2.51	+ 0.08	8.15	0.43	.....	.....	.....	.....	.....
1887	46.4	— 5.4	86	—3	1.46	— 0.97	3.41	0.05	.....	.....	.....	.....	.....
1888	47.7	— 4.1	84	22	1.16	— 1.27	2.81	0.10	.....	.....	.....	.....	.....
1889	47.5	— 4.3	94	12	0.58	— 1.85	2.88	0.00	.....	.....	.....	.....	.....
1890	49.2	— 2.6	84	15	3.44	+ 1.01	6.43	1.59	.....	.....	.....	.....	.....
1891	50.0	— 1.8	92	19	2.77	+ 0.34	6.53	0.85	.....	6	18	7	6
1892	54.5	+ 2.7	96	14	1.55	— 0.88	2.58	0.00	0.0	4	21	6	4
1893	52.4	+ 0.6	94	10	1.28	— 1.15	4.56	0.02	0.0	4	16	9	6
1894	51.7	— 0.1	90	20	2.67	+ 0.24	5.25	0.03	0.2	8	14	8	9
1895	46.0	— 5.8	88	4	0.47	— 1.96	1.38	0.00	T.	2	19	8	4
1896	47.8	— 4.0	88	12	3.13	+ 0.70	5.05	1.51	T.	5	18	6	7
1897	56.8	+ 5.0	97	12	1.14	— 1.29	3.30	0.03	0.0	4	17	8	6
1898	47.5	— 4.3	88	17	3.56	+ 1.13	5.75	1.27	3.6	8	7	9	15
1899	56.7	+ 4.9	95	17	1.73	— 0.70	4.64	0.15	0.0	5	17	8	6
1900	59.3	+ 7.5	90	21	3.91	+ 1.48	8.00	1.20	0.0	7	16	7	8
1901	54.2	+ 2.4	88	20	1.98	— 0.45	4.23	0.45	T.	6	17	7	7
1902	53.5	+ 1.7	83	20	2.54	+ 0.11	6.66	0.28	T.	5	16	8	7
1903	52.2	+ 0.4	90	16	1.95	— 0.48	4.50	0.32	0.0	5	19	6	6
1904	53.1	+ 1.3	96	16	1.67	— 0.76	4.43	0.14	T.	6	15	8	8
1905	49.2	— 2.6	95	16	3.40	+ 0.97	5.36	1.20	1.6	8	16	6	9
1906	50.5	— 1.3	87	7	1.96	— 0.47	4.25	0.50	0.1	6	14	7	10
1907	50.4	— 1.4	85	10	1.50	— 0.93	3.71	0.30	0.0	5	20	5	6
1908	51.1	— 0.7	89	17	3.38	+ 0.95	8.83	0.58	2.6	8	16	6	9
1909	49.7	— 2.1	97	10	2.22	— 0.21	4.70	0.48	T.	6	16	6	9
1910	55.2	+ 3.4	93	10	0.77	— 1.66	1.73	T.	0.1	4	21	4	6
1911	48.7	— 3.1	87	14	3.34	+ 0.91	7.03	0.73	0.6	10	12	8	11
1912	52.2	+ 0.4	92	16	2.98	+ 0.55	5.77	1.03	T.	6	21	3	7
1913	49.2	— 2.6	89	—2	3.03	+ 0.60	7.29	0.35	1.2	9	15	8	8
1914	55.9	+ 4.1	88	14	3.23	+ 0.80	6.64	0.74	T.	9	16	6	9
1915	54.4	+ 2.6	86	19	1.31	— 1.12	3.25	T.	T.	5	19	6	6
1916	50.9	— 0.9	92	6	2.00	— 0.43	4.33	0.20	2.0	8	16	7	8
1917	42.9	— 8.9	85	0	1.41	— 1.02	4.00	0.15	2.2	6	10	11	10
1918	55.1	+ 3.3	93	21	3.64	+ 1.21	7.56	1.36	0.8	7	13	7	11
1919	50.7	— 1.1	89	8	3.02	+ 0.59	8.65	0.45	T.	10	11	8	12
1920	57.7	+ 5.9	90	11	2.13	— 0.30	4.64	0.48	T.	6	19	6	6
1921	54.6	+ 2.8	90	21	1.96	— 0.47	3.61	0.21	T.	6	17	8	6
1922	56.1	+ 4.3	96	14	1.81	— 0.62	3.93	0.06	T.	5	21	4	6
1923	48.5	— 3.3	81	10	1.22	— 1.21	3.67	0.29	1.7	6	18	6	7
1924	58.1	+ 6.3	89	21	0.87	— 1.56	2.58	0.03	0.0	4	22	5	4
1925	40.2	—11.6	78	—15	2.91	+ 0.48	2.70	0.97	4.9	10	8	8	15
1926	51.2	— 0.6	91	14	1.53	— 0.90	3.91	0.11	T.	7	13	9	9
1927	55.5	+ 3.7	91	24	3.25	+ 0.82	8.51	0.46	T.	7	19	5	7
1928	54.2	+ 2.4	93	17	3.66	+ 1.23	7.38	1.48	0.1	8	15	5	11
1929	51.8	0.0	84	23	3.10	+ 0.67	6.55	1.10	0.7	9	15	5	11
1930	50.7	— 1.1	95	9	2.08	— 0.35	4.21	0.71	0.4	7	14	7	10

T. indicates an amount too small to measure, or less than .005 inch rainfall and less than .05 inch snowfall.

Climatological Data for October, 1930

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit							Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
Northwest District																				
Akron	Plymouth	1,153	4								1.80	+ 0.05	1.71	0.2	4	14	12	5	s.	Orlan C. Moore
Alta	Buena Vista	1,513	39	49.2	— 0.9	89	10	15	21†	36	1.09	— 1.14	0.76	0	6	18	6	7	s.	D. E. Hadden
Alton	Sioux	1,305	25	50.4	+ 0.6	89	10	11	21	42	1.32	— 0.44	1.04	0.2	6	10	11	10	nw.	W. S. Slagle
Cherokee	Cherokee	1,196	10	50.0	+ 0.5	89	10	14	21†	37	0.92	— 0.99	0.85	0	5	15	11	5	s.	J. E. Wirth
Estherville	Emmet	1,298	35	49.0	— 0.1	90	10	11	21	45	1.86	— 0.05	0.90	T.	6	14	13	4	nw.	A. O. Peterson
Hawarden	Sioux	1,181	4								1.23	— 0.62	1.05	T.	3	18	2	11	nw.	Earl V. Slife
Inwood (near)	Lyon	1,474	26	48.4	— 1.4	86	10	10	21	37	1.84	— 0.07	1.14	0.5	9	19	6	6	nw.	A. C. Hanson
Lake Park (near)	Dickinson	1,489	17	47.4	— 1.4	88	10	13	21	35	2.21	+ 0.87	1.42	T.	5	12	4	15	nw.	P. M. Lawrence
Le Mars	Plymouth	1,224	34	51.4	+ 0.3	91	10	13	21†	37	1.08	— 0.98	0.90	0	8	17	6	8	s.	Henry Newell
Marathon	Buena Vista	1,390	4								1.09		0.51	T.	6	17	3	11	nw.	E. G. Smith
Pocahontas	Pocahontas	1,248	26	49.8	— 0.9	90	10	13	21	37	1.17	— 1.56	0.40	T.	8	20	6	5	s.	F. E. Hronek
Rock Rapids	Lyon	1,349	31	48.4	— 0.5	87	10	11	21†	40	2.40	+ 0.61	1.32	1.0	5	23	2	6	s.	Nellie F. Medberry
Sanborn	O,Brien	1,553	16	48.5	— 0.9	88	10	13	21†	36	1.46	— 0.39	1.05	0.5	5	14	8	9	sw.	J. W. Dow
Sheldon	O,Brien	1,418	19	48.7	— 1.5	88	10	10	21	39	1.60	— 0.40	1.20	0.7	5	13	9	9	nw.	Ross E. Forward
Sioux Center	Sioux	1,461	31	48.4	— 1.4	88	10	13	21	36	2.53	+ 0.69	2.18	1.8	4	16	10	5	nw.	F. C. Aue
Spencer	Clay	1,319	16	49.2	— 1.0	90	10	13	21	38	1.28	— 0.64	0.60	0.2	6	17	9	5	sw.	E. W. Little
Storm Lake	Buena Vista	1,442	41	48.8	— 2.4	85	10	12	21	34	0.91	— 1.13	0.69	T.	3	16	8	7	se.	Russel M. Edwards
Washta	Cherokee	1,157	32	50.6	+ 0.1	92	10	10	21†	46	1.35	— 0.76	1.19	T.	4	21	3	7	s.	H. L. Felter
West Bend	Palo Alto	1,197	37	49.0	— 1.6	88	10	12	21	31	1.53	— 0.50	0.50	0	8	17	7	7	nw.	Jos. Dorweiler
Means and extremes				49.2	— 0.8	91	10	10	21	46	1.51	— 0.44	2.18	0.2	6	16	7	8	nw.	
North Central District																				
Algona	Kossuth	1,207	57	49.0	— 1.5	88	10	15	21	32	1.44	— 0.83	0.58	T.	5	10	6	15	nw.	Leon M. Merritt
Allison (near)	Butler	1,000	16	49.0	— 1.7	87	10	14	21	31	2.04	— 0.23	0.75	T.	7	13	4	14	s.	George H. Bell
Belmond	Wright	1,181	20	48.7	— 1.9	88	10	11	21	35	1.88	— 0.84	0.70	1.0	10	9	5	17	nw.	H. F. Luick
Britt	Hancock	1,236	43	48.6	— 1.1	88	10	13	21	30	2.09	— 0.31	0.82	T.	8	19	1	11	nw.	E. P. Healy
Charles City	Floyd	1,015	39	48.0	— 0.6	86	10	18	20	28	1.78	— 0.55	0.83	2.0	12	10	7	14	se.	U. S. Weather Bureau
Forest City	Winnebago	1,226	36	47.4	— 1.7	87	10	15	20†	33	2.31	— 0.12	0.76	0.5	8	8	7	16	se.	Dr. M. B. Neil
Hampton	Franklin	1,142	5	47.6		82	9	13	19	33	2.13	— 0.42	0.75	0.4	8	19	2	10	se.	Howard J. Haydon
Humboldt	Humboldt	1,095	42	49.2	— 2.1	90	10	10	21	37	2.30	+ 0.08	0.60	T.	6	11	13	7	nw.	H. C. Snitkey
Mason City	Cerro Gordo	1,148	33	47.3	— 2.3	85	10	13	21	32	1.85	— 0.35	0.71	1.0	8	13	9	9	nw.	American Beet Sugar Co.
Northwood	Worth	1,222	34	47.3	— 0.9	86	10	16	20†	31	2.17	— 0.47	0.55	3.0	9	8	11	12	nw.	Charles Dwelle
Osage	Mitchell	1,163	36	47.6	— 0.9	87	10	17	21	28	1.87	— 0.57	0.76	1.1	7	12	6	13	se.	Dr. C. E. Juhl
Means and extremes				48.2	— 1.5	90	10	10	21	37	1.99	— 0.42	0.83	0.8	8	12	6	13	nw.	
Northeast District																				
Cedar Falls	Black Hawk	875									3.48		1.25	0.4	10	12	4	15	se.	E. J. Cable
Decorah	Winneshiek	872	37																	M. D. Whitney
Delaware (near)	Delaware	1,083																		E. J. Paris
Dubuque	Dubuque	700	57	50.1	— 1.8	86	10	22	20	27	2.59	+ 0.11	1.21	T.	9	8	10	13	s.	U. S. Weather Bureau
Fayette	Fayette	1,009	42	49.1	— 0.5	87	10	14	22	38	1.69	— 0.84	0.98	0.2	7	14	4	13	nw.	W. C. Van Ness
Independence	Buchanan	956	66	49.4	— 2.7	83	10	18	20†	27	2.60	+ 0.05	1.07	0.7	11	11	6	14	nw.	Dr. Geo. Boody
Lansing	Allamakee	632	23								1.66	— 1.24	0.50	T.	10					Mrs. Mary Spinner
New Hampton	Chickasaw	1,169	33	47.8	— 2.4	85	10	14	20	35	2.65	+ 0.08	0.99	3.0	7	12	3	16	se.	D. W. Dawson
Oelwein	Fayette	1,036	7	49.0	— 2.2	86	10	17	20	30	2.99	+ 0.46	1.25	0.4	5	13	3	15	se.	John T. Ridler
Postville (near)	Clayton	1,192	31	47.3	— 2.0	84	10	16	20†	35	2.51	— 0.17	1.44	1.0	8	14	8	9	se.	F. L. Williams
Waterloo	Black Hawk	854	47	50.3	— 1.6	95	12	13	21	36	2.61	+ 0.17	1.25	1.1	8	14	4	13	se.	R. B. Slippy
Waverly	Bremer	936	24	49.0	— 2.1	87	10	16	21	30	2.68	+ 0.08	0.89	1.7	8	18	5	8	nw.	D. H. Murphy
Means and extremes				49.0	— 1.7	95	12	13	21	38	2.55	— 0.06	1.44	0.8	8	13	5	13	nw.	
West Central District																				
Audubon (near)	Audubon	1,297	35	51.3	+ 0.5	88	10	14	31	34	1.28	— 1.03	0.39	T.	9	16	12	3	se.	George Kibby
Carroll	Carroll	1,265	40	50.5	— 1.1	87	10	15	21†	34	1.30	— 1.28	0.54	0	6	22	3	6	sw.	Mrs. Jos. J. Wolfe
Denison	Crawford	1,200	36	51.9	+ 0.2	89	10	10	31	42	1.05	— 1.18	0.37	0	7	15	9	7	nw.	J. McMinimee
Guthrie Center	Guthrie	987	35	52.0	— 0.5	88	10	12	21†	44	1.55	— 1.11	0.90	0	5	11	16	4	s.	Floyd H. Bainter
Harlan	Shelby	1,210	31	52.0	+ 0.8	89	10	11	31	43	1.21	— 1.44	0.40	0.1	9	15	11	5	nw.	Elmer Buss
Jefferson	Greene	1,052	31	51.4	0.0	87	10	13	21	37	1.32	— 1.22	0.72	T.	5	18	5	8	sw.	W. I. Lyon
Little Sioux	Harrison	1,010	25	52.4	+ 0.2	90	10	19	31	42	1.14	— 0.91	0.47	1.0	9	12	14	5	s.	H. W. Kerr
Logan	Harrison	1,120	63	52.0	— 1.2	89	10	10	31	45	0.71	— 1.67	0.28	T.	6	8	21	2	sw.	Amy Ann Stern
Onawa	Monona	1,051	29	51.8	0.0	88	10	13	31	41	1.38	— 0.80	0.78	T.	4	14	6	11	se.	Mrs. H. E. Colby
Rockwell City	Calhoun	1,232	31	49.8	— 2.0	89	10	13	21	38	1.39	— 1.20	0.72	0	5	18	7	6	nw.	A W. McIsaac
Sac City‡‡	Sac	1,209	54	50.0	— 1.5	90	10	12	21	36	1.47	— 0.70	1.13	0	4	18	7	6	s.	F. P. Kessler
Sioux City	Woodbury	1,135	41	51.2	+ 0.3	88	10	17	31	35	1.60	— 0.17	1.43	0.2	7	11	10	10	nw.	U. S. Weather Bureau
Means and extremes				51.4	— 0.3	90	10	10	31	45	1.28	— 1.06	1.43	0.1	6	15	10	6	nw.	
Central District																				
Ames	Story	926	53	51.5	— 0.2	87	10	17	21	32	1.66	— 0.95	0.76	T.	7	18	5	8	s.	Iowa State College
Baxter	Jasper	993	30	51.1	— 1.3	88	10	14	21	37	2.65	+ 0.23	0.90	0	8	14	6	11	se.	Geo. R. Geise
Boone (near)	Boone	894	25	51.4	— 0.3	89	10	11	21	40	1.72	— 1.07	0.75	T.	8	11	14	6	nw.	C. F. Henning
Des Moines	Polk	861	52	52.3	— 1.1	86	10	21	21	32	2.64	+ 0.14	1.10	0.5	10	12	5	14	se.	U. S. Weather Bureau
Fort Dodge	Webster	1,114	30	50.2	— 1.1	90	10	13	21	31	1.91	— 1.13	0.67	T.	7	18	4	9	sw.	Mrs. Emma Sampson
Grinnell	Poweshiek	1,031	36	51.4	— 1.6	86	10	17	20	36	2.16	— 0.35	1.25	T.	10	13	6	12	se.	R. E. Bates
Grundy Center	Grundy	976	39	49.6	— 1.5	83	11	14	21	35	2.78	— 0.01	0.80	1.0	10	16	4	11	nw.	M. G. Heiberger
Iowa Falls	Hardin	1,127	37	48.4	— 2.3	86	10	11	21	32	2.43	— 0.03	0.69	2.6	10	18	1	12	e.	C. H. Gilbert
Marshalltown	Marshall	947	38	51.0	— 2.0	88	10	17	21	32	2.31	— 0.45	0.86	0.5	7	14	6	11	nw.	C. C. Pigman
Monroe	Jasper	922	18	51.6	— 2.4	88	9	17	21	34	1.48	— 1.02	0.74	T.	6	19	1	11	sw.	J. A. Dibel
Perry	Dallas	975	29	51.2	— 1.0	87	10	12	21	38	1.25	— 1.47	0.47	T.	7	13	7	11	nw.	Eugene N. Hastie
Toledo	Tama	847	36	50.9	— 2.4	87	10	15	21	32	2.24	— 0.27	1.27	T.	8	15	5	11	se.	H. P. Giger
Van Meter	Dallas	872	11								2.14		1.13	T.	5					Calvin K. Smith
Waukee	Dallas	1,032	27	51.2	— 1.6	85	10	15	21†	31	1.99	— 0.17	0.68	T.	6	15	9	7	nw.	O. D. Ellsworth
Webster City	Hamilton	1,042	25	49.6	— 1.8	89	10	9	21	42	1.52	— 0.96	0.64	0.2	10	11	10	10	nw.	Frank A. Bonebright
Means and extremes				50.8	— 1.5	90	10	9	21	42	2.06	— 0.53	1.27	0.3	8	15	6	10	nw.	

Climatological Data for October, 1930—Continued

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit							Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
East Central District																				
Belle Plaine	Benton	866	40	50.3	— 1.6	88	10	13	21	35	1.99	— 0.50	0.78	2.2	9	13	4	14	nw.	O. C. Burrows
Cedar Rapids	Linn	737	48	50.2	— 1.2	88	10	17	21	32	3.90	+ 1.45	1.53	1.8	7	11	1	19	nw.	J. T. Wurster
Clinton	Clinton	595	57	51.0	— 2.0	90	10	18	20	31	2.73	+ 0.17	1.22	T.	6	14	5	12	se.	Dr. A. P. Bryant
Davenport	Scott	580	59	52.2	— 1.5	88	10	23	21	28	2.89	+ 0.50	1.35	T.	9	12	7	12	se.	U. S. Weather Bureau
Fairport	Muscatine	567	9	52.2	— 1.6	83	10†	20	21	29	4.21	+ 1.72	1.70	0	7	13	4	14	s.	Bureau of Fisheries
Iowa City	Johnson	733	70	51.1	— 1.3	87	10	18	21	30	2.55	— 0.19	1.77	0.5	9	15	4	12	nw.	Prof. J. F. Reilly
Le Claire	Scott	576	30								3.01	+ 0.56	1.35	T.	8					Margaret T. Disney
Maquoketa (near)	Jackson	692	25	49.1	— 1.1	88	10	16	22	42	2.91	+ 0.02	1.30	0.4	8	11	6	14	nw.	John Strodthoff
Muscatine	Muscatine	546	69								3.64	+ 0.99	1.53	T.	9					William Molis
Olin	Jones	750	31	48.9	— 2.1	86	10	14	21	33	3.07	+ 0.58	1.50	0	3	18	2	11	nw.	Mrs. L. Stingley
Tipton (near)	Cedar	806	31	50.9	— 1.5	85	10	16	21	31				3.0		7	11	13	s.	John Kroeplen
Williamsburg	Iowa	805	14	51.2		88	10	18	21	32	2.29	— 0.16	1.26	0.2	7	20	3	8	se.	Dr. F. C. Schadt
Means and extremes				50.7	— 1.3	90	10	13	21	42	3.02	+ 0.48	1.77	0.7	7	13	5	13	nw.	
Southwest District																				
Atlantic	Cass	1,110	39	53.0	+ 0.8	89	10	13	21	39	2.16	— 0.44	0.85	T.	10	13	10	8	nw.	Roy L. Fancolly
Bedford	Taylor	1,200	2								1.72	— 1.09	0.55	T.	6	11	7	13	nw.	Arthur L. Bishop
Clarinda	Page	1,009	40	52.1	— 1.9	86	2†	12	31	44	2.46	— 0.18	1.20	T.	10	15	8	8	s.	Dr. H. C. Hawley
Corning	Adams	1,150	38																	C. A. Smith
Cumberland (near)	Cass	1,225	31								1.78	— 0.93	0.78	T.	8	14	8	9	nw.	Carl E Pollock
Glenwood	Mills	1,100	32	53.4	— 0.2	84	2†	12	31	40	1.38	— 1.30	0.48	T.	8	15	6	10	se.	George Mogridge
Greenfield	Adair	1,368									2.07		1.29	T.	7	12	13	6	s.	P. C. Cornell
Lenox	Taylor	1,250	35	53.4	+ 0.2	86	2†	14	31	37	1.87	— 0.85	0.97	T.	5	11	13	7	se.	J. L. Hurley
Oakland	Pottawattamie	1,139	11	52.9	+ 0.6	88	10	12	31	42	1.46	— 1.09	0.94	T.	8	14	5	12	sw.	W. S. Mathews
Red Oak (near)	Montgomery	1,030	5								2.43	— 0.32	1.75	0	7	11	16	4	s.	B. R. Bridge
Riverton (near)	Fremont	920	4								0.88	— 1.84	0.47	T.	5	14	5	12	s.	Geo. C. Rader
Thurman	Fremont	960	33	53.6	+ 0.3	88	10	13	31	44	1.97	— 0.97	0.95	0	4	14	5	12	s.	H. H. Askew
Omaha, Neb		1,105	59	53.6	— 0.7	88	10	22	31	32	0.81	— 1.36	0.40	T.	8	13	10	8	s.	U. S. Weather Bureau
Means and extremes				53.1	— 0.1	89	10	12	31	44	1.75	— 0.92	1.75	T.	7	13	9	9	s.	
South Central District																				
Afton	Union	1,212	36	53.2	— 0.1	87	10	18	21	33	2.03	— 0.55	0.60	T.	6	16	8	7	nw.	S. R. Brown
Albia	Monroe	949	32	51.6	— 1.9	87	10	18	31	35	1.74	— 0.54	1.18	T.	4	16	3	12	se.	J. M. Stevenson
Centerville	Appanoose	1,013	25								1.18	— 1.03	0.58	0.1	10	14	5	12	se.	Thomas Wood
Chariton (near)	Lucas	1,042	55	52.6	— 0.2	86	10	16	21	34	2.57	+ 0.25	0.95	T.	5	14	8	9	sw.	C. C. Burr
Corydon (near)	Wayne	1,050	37	52.0	— 1.8	84	10	19	21†	29	2.10	— 0.49	0.92	0.5	9	18	2	11	nw.	J. C. Davis
Creston	Union	1,291	25	51.4	— 1.1	84	10	15	31	36	1.43	— 1.35	0.52	T.	8	13	12	6	s.	Mrs. N. Spangler
Earlham (near)	Madison	1,126	28	51.4	— 0.6	85	10	12	31	38	2.10	— 0.34	0.82	T.	5	21	1	9	sw.	George Phillips
Indianola	Warren	972	39	53.0	— 0.2	88	8	17	21	37	2.21	— 0.15	0.73	T.	9	16	4	11	e.	Seth F. Shenton
Knoxville	Marion	920	35	52.4	— 1.3	86	10	18	21	32	2.84	+ 0.53	1.46	0.2	9	16	5	10	se.	W. J. Casey
Lacona	Warren	824	31								2.28	— 0.43	0.94	0	9	14	10	7		J. B. Alter
Lamoni	Decatur	1,123	23	51.8	— 1.7	84	10	14	31	34	2.16	— 0.77	0.62	T.	7	16	7	8	nw.	F. S. Parks
Melrose	Monroe	871	1								1.67		0.90	T.	5	12	6	13	sw.	J. M. Carr
Mount Ayr	Ringgold	1,220	37	51.8	— 1.8	84	2†	16	31	39	2.53	+ 0.01	0.75	0	6	15	6	10	s.	E. O. Gleason
Tingley	Ringgold	1,275	5	52.0	— 1.1	84	2	15	31	33	1.75	— 0.94	0.58	T.	5	16	7	8	se.	James A. Verploegh
Winterset	Madison	1,118	39	52.6	— 1.0	85	10	15	21	33	2.19	— 0.18	0.63	T.	8	15	8	8	sw.	H. S. Ely
Means and extremes				52.2	— 1.1	88	8	12	31	39	2.05	— 0.45	1.46	0.1	7	15	6	10	se.	
Southeast District																				
Bonaparte (near)	Van Buren	563	39	51.8	— 1.9	83	10	20	20†	29	2.23	+ 0.35	1.53	T.	4	19	3	9	se.	B. R. Vale
Burlington	Des Moines	544	34	52.8	— 2.1	85	10	23	20†	27	3.00	+ 0.72	1.96	1.0	6	14	5	12	sw.	John W. Donnelly
Columbus Junction	Louisa	595	29	51.2	— 3.1	85	10	20	21	29	2.85	+ 0.30	1.56	T.	10	16	8	7	nw.	Miss Musa Todd
Fairfield	Jefferson	780	46	50.8	— 2.2	86	10	17	21	37	2.44	— 0.32	1.66	0.1	8	15	2	14	n.	R. M. McKenzie
Keokuk	Lee	614	59	54.0	— 1.4	84	10	24	31	27	2.00	— 0.26	1.60	T.	5	15	7	9	nw.	U. S. Weather Bureau
Keokuk No. 2	Lee	651	1	53.9		86	10	22	31	33	2.24		1.63	0.3	6					J. N. D. Dickinson
Keosauqua	Van Buren	639	38	52.4	— 0.8	87	10	17	21	33	2.65	+ 0.66	1.80	T.	4	12	10	9	w.	Dr. J. W. Rinabarger
Mt. Pleasant	Henry	730	49	52.3	— 1.7	83	11†	20	20	30	2.91	+ 0.51	1.60	T.	8	11	9	11	nw.	J. H. Jericho
Oskaloosa	Mahaska	835	54	52.1	— 0.7	86	10	17	21	32	2.19	— 0.06	1.04	0.3	9	12	5	14	nw.	Roy R. Robinson
Ottumwa	Wapello	649	35	52.9	— 1.7	89	10	18	21	35	1.98	— 0.40	1.29	T.	8	17	2	12	nw.	C. L. Mikesh
Sigourney	Keokuk	785	34	51.8	— 1.2	88	10	17	20†	32	1.76	— 0.49	1.46	0.4	4	17	3	11	nw.	John B. Slate
Stockport (near)	Van Buren	747	28	51.8	— 0.6	86	10	18	21	30	3.27	+ 1.21	1.62	T.	4	17	4	10	nw.	C. L. Beswick
Washington	Washington	757	48	52.4	— 0.9	87	10	19	21	31	2.76	+ 0.56	1.66	0.5	5	10	7	14	n.	D. D. Sherman
Wever	Lee	552	2																	H. G. Liddle
Means and extremes				52.3	— 1.4	89	10	17	20†	37	2.48	+ 0.21	1.96	0.2	6	15	5	11	nw.	
State means and extremes				50.7	— 1.1	95	12	9	21	46	2.08	— 0.35	2.18	0.4	7	14	7	10	nw.	

Temperature normals are based on the 46-year period July 3, 1875 to July 2, 1921; shorter records corrected to harmonize. Precipitation normals are based on the 50-year period ended December 31, 1927 at first order stations; upon all records of 10 years or more ending December 31, 1920 for most of the co-operative observing stations; and upon interpolations from normal maps for recently established stations.

Reference letters a, b, c, etc., appearing in the table indicate the number of days missing; for example b represents two days, etc.

†Also other dates.

‡‡Received too late to be included in means and summaries.

T. Precipitation is less than 0.01 inch rain or melted snow.

i Interpolated.

TEMPERATURE

The mean temperature for the State, derived from the means of 9 districts of nearly equal area, and based on the records of 104 stations, was 50.7°, or 1.1° below normal. There was a deficiency in all of the divisions of the State. The greatest deficiency, 1.7°, was in the northeast district, and the least, 0.1°, in the southwest district. The highest monthly mean was 54.0° at Keokuk, and the lowest was 47.3° at Northwood, Postville (near), and Mason City. The absolute range for the State was 86°, from 9° at Webster City on the 21st, to 95° at Waterloo on the 12th. The average number of days, with the maximum temperature 90° or above, was zero, but 11 stations reported one day with temperature reaching 90° or above. Maximum temperatures of 32° or higher occurred at 15 stations. The average number of days with the minimum temperature 32° or below was 11, ranging from 14 days at 3 stations, to 6 days at Keokuk. The greatest daily range in temperature at any one station was 46° at Washta, on the 24th.

Daily Precipitation for October, 1930

Stations	Drainage Basin	Day of Month																													To-tals
		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	
Northwest District																																	
Akron	Bix Sioux		T.	T.		.08							.01			1.62	.09													T.			1.80
Alta	Raccoon		.16	.10	T.	.05										.74	.02													.02			1.09
Alton	Floyd		.17	.03		.05	T.						.03			1.02	.02						T.							T.			1.32
Cherokee	Little Sioux		.03	T.		.02	T.	.02					T.			.75	.10						T.							T.			0.92
Estherville	Des Moines		.90	.20		.05		.06									.55								T.					.10			1.86
Hawarden	Big Sioux			.10		.08							T.		1.05	T.							T.								T.			1.23
Inwood (near)	Big Sioux	.01	.10	.22		.22							.05			1.14	.05						T.							.03	.02			1.84
Lake Park (near)	Little Sioux		1.42	.10				.08								.30	.31	T.											T.				2.21
Le Mars	Floyd		.02	.01		.06							.06			.08	.10						T.							.02	.01		1.08
Marathon	Raccoon		.14	.18	.03								T.			.21	.51													.02	T.		1.09
Pocahontas	Des Moines		.07	.12		.05		.16					.15			.40	.18													.04	T.		1.17
Rock Rapids	Big Sioux		.90	.08		.10										1.22	.10	T.															2.40
Sanborn	Floyd		.28	.05		.05		.03								T.	1.05																1.46
Sheldon	Floyd	T.	.27	.04	T.	.09		T.					T.			1.12	.08	T.					T.							T.	T.		1.60
Sioux Center	Floyd	T.		.15		.20							T.			2.00	.18													T.			2.53
Spencer	Little Sioux		.25	.07		.07		.04								T.	.60	T.												T.	.25		1.28
Storm Lake	Raccoon		.15	.07	T.	T.							T.			.69	T.						T.							T.			0.91
Washta	Little Sioux		.10	.02		T.							.04			1.19														T.	T.		1.35
West Bend	Des Moines		.37	.16			T.	.12					.33			.25	.25						T.							.03	.02		1.53
North Central District																																	
Algona	Des Moines		.58	.17				.34					.33	.02		T.	T.	T.												T.	T.		1.44
Allison (near)	Cedar		.70	.05	T.		.14	.71						.19			.20													T.	.05		2.04
Belmond	Iowa		.70	.11	.03		.07	.57					.09			.02	.18	T.					T.							.06	.05		1.88
Britt	Iowa	.82		.23	.07	.06	.07	.49								.17	.18	T.												T.	T.		2.09
Charles City***	Cedar		.36	.02	T.	.06	.31	.55					.06	.01	.01	.08	.20	T.		T.										.02	.10		1.78
Forest City	Cedar		.76	.27	T.	.03	T.	.62					.27			.10	.22	T.												T.	.04		2.31
Hampton	Cedar	.75	.08	.03		T.	.65				.33	T.		.12	.13	T.		T.			T.	T.								.04	T.		2.13
Humboldt	Des Moines	.46		.58	T.	T.		.28					.60			.22	.16													T.	T.		2.30
Mason City	Cedar		.71	.10	T.	T.	.08	.69					T.	.03	T.	.04	.14	T.		T.			T.								.06		1.85
Northwood	Cedar		.55	.05	.04	T.	.12	.54						.27	T.	.03	.27	T.		T.			T.								.30		2.17
Osage	Cedar		.50	.03	T.		.15	.76			T.			.19			.12														.12		1.87
Northeast District																																	
Cedar Falls	Cedar		.35	.09	.02	.03	.25	1.25						.64		.64	T.	T.										.09		.12	T.		3.48
Decorah	Mississippi																.35														**		**
Delaware (near)	Maquoketa													T.	.30		1.09														T.		
Dubuque***	Mississippi		.17	T.		.01	.20	1.08						.02	.07	.09	.74	T.	T.	T.								.21			T.		2.59
Fayette	Mississippi		.17	.03	T.	.03	.03	.98									.37	T.													.08		1.69
Independence	Wapsipinicon		.11	.05		.01	.28	1.07						.05	.14	T.	.63	T.										.14		.05	.07		2.60
Lansing	Mississippi			.50			.29	.17	.21					.07	.08	.02	.25	.03	T.									.04					1.66
New Hampton	Wapsipinicon		.30	T.			.25	.99						25	.20		.36	T.												.30		2.65
Oelwein	Wapsipinicon						.60	1.25						.20			.90													.04		2.99
Postville (near)	Mississippi			T.	.11	.06		.20	1.24					.31	.04	T.		.45													.10		2.51
Waterloo	Cedar		.21	.09		T.	.07	1.25						.32			.50											.06		.05	.06		2.61
Waverly	Cedar		.50	.02			.30	.89						.29			.48											.03			.17		2.68
West Central District																																	
Audubon (near)	Nishnabotna		.04	.06			T.	.23					.39	.02		.24	.26				T.									.02	.02		1.28
Carroll	Raccoon		.40	.03				.02					.54			.20	.11																1.30
Denison	Missouri		.37	.20	T.	.03		.03					.01	T.		.37	.04													T.			1.05
Guthrie Center	Raccoon		.15					.45					T.	.05		.50	.40																1.55
Harlan	Nishnabotna	.11		.14		.09		.08					.40	T.	T.	.09	.02				.25										.03		1.21
Jefferson	Raccoon		.20	T.		T.	T.	.33					T.	.07	T.	.58	.14													T.	T.		1.32
Little Sioux	Little Sioux		.26	.21	.02	.04	.02						.02			.47					.09									.01			1.14
Logan	Missouri		.18	.28		.09							.02			.07	T.				T.										.07		0.71
Onawa	Missouri		.20	.15		T.	T.						T.			.78	.25	T.											T.	T.	T.		1.38
Rockwell City	Raccoon		.19			T.	.01						.72			.25	.22																1.39
Sac City	Raccoon	.13		.20		.01							T.			1.13	T.													T.			1.47
Sioux City***	Missouri	.02	T.	.05	.06	.01	T.	T.					.02			1.41	.03						T.							T.	T.		1.60
Stuart	Middle																																
Central District																																	
Ames	Skunk				.08		.04	.52						.16		.21	.55													.10			1.66
Baxter	Skunk		.05				.15	.90						.55		.20	.70										.05			.05			2.65
Boone (near)	Des Moines		.12	T.			.10	.46					.20	.05		.30	.45											T.		.04	T.		1.72
Des Moines***	Des Moines	T.	.10	T.	T.	.05	.33	.22					.88	.23	T.	.71	.03						.01							.08	T.		2.64
Fort Dodge	Des Moines		36	.02			.39						.33			.42	.25						T.							.14			1.91
Grinnell	Iowa		.01		.01		.07	1.25						.14	.02	.04	.57													.02	.03		2.16
Grundy Center	Cedar		.10		.06	.05	.40	.80	T.					.42	.20		.50											.15			.10		2.78
Iowa Falls	Iowa		.40		.03		.05	.69						.33		.06	.42											.19		.16	.10		2.43
Marshalltown	Iowa		.05	T.	T.	T.	.21	.86						.37	T.	.03	.61							T.				T.		.15	T.		2.31
Monroe	Des Moines		T.		T.			.74						.23	.01	.20	.21						T							.09	T.		1.48
Perry	Raccoon		.16	T.			.06	.41					.08	.10	T.	.18	.26						T.							T.	T.		1.25
Toledo	Iowa		.07			T.	.14	1.27						.15	T.	.04	.42													.09	.06		2.24
Van Meter	Raccoon		.09				.14	.43						.35			1.13														T.		2.14
Waukee	Raccoon		.10			T.	.22	.40						.41		.68	.18						T.	T.						T.	T.	T.	1.99
Webster City	Des Moines		.25	.02	.02	T.	.15	.49					T.	.09		.15	.22													.11	.02		1.52
East Central District																																	
Belle Plaine	Iowa		.07	T.	T.	T.	.10	.78						03	.21	.01	.51						T.	T.				T.		.08	.20		1.99
Cedar Rapids	Cedar		T.			T.	.12	1.40						T.	.60		1.53											.03		.04	.18		3.90
Clinton	Mississippi			.21			.03	1.22								.06	1.12													.09	T.		2.73
Davenport***	Mississippi		.01	.02			.16	1.16							.06	.27	1.11											T.		.09	.01		2.89
Fairport	Mississippi							1.55							.57	.02	1.70													.02	.22	.13	4.21
Iowa City	Iowa		T.			.01	.09	1.73							.07	.03	.36											.01		.10	.15		2.55
Le Claire	Mississippi		T.	.63	T.		T.	1.09	.36							.06	1.14	.21										T.	T.		.10	.02	3.01
Maquoketa (near)	Maquoketa		.07	.25			.05	1.30							.02	.20	.93												.09	T.			2.91
Muscatine	Mississippi						.18	1.53	.10						.05	.95	.12												.01		.10	.60	3.64
Olin	Wapsipinicon		T.	.57			T.	1.50									1.00																3.07
Tipton (near)	Cedar																																
Williamsburg	Iowa					.01	.17	1.26							.12	T.	.60													.07	.06		2.29

Daily Precipitation for October, 1930—Continued

Stations	Drainage Basin	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	Totals
Southwest District																																	
Atlantic	Nishnabotna		.08	.04			T.	.30					.05	.03	.07	.71	.85				.01										.02		2.16
Bedford	102						.05	.29						.36	.03	.44	.55				T.												1.72
Clarinda	Nodaway		.03	.04				.43	.03				.55		.10	1.20					T.		.04							.03	.01		2.46
Corning	Nodaway																																
Cumberland (near)	Nodaway		.67	.09			T.	.37					.04	.20	.08	.78	.15				T.									T.	T.		1.78
Glenwood	Missouri		.03	.04	T.	.02		.08					.03		.28	.48	.42				T.									T.			1.38
Greenfield	Nodaway		.12	.02		T.	.38						.15	.67	.04	1.29					T.		T.								T.		2.07
Lenox	Missouri					T.	.20	.40						.30		.62	.35				T.		T.										1.87
Oakland	Nishnabotna		.15	.05			.03	.10					.10		.09	.09	.85				T.												1.46
Red Oak (near)	Nishnabotna		.04	.07			T.	.22					.06	.04	.25	1.75					T.									T.			2.43
Riverton (near)	Nishnabotna			T.		T.	T.	.15					T.		.09	.47	.16			T.			.01							T.			0.88
Thurman	Missouri		.14					T.					T.		.33	.55	.95													T.			1.97
Omaha, Neb.***	Missouri	T.	.13	.12	T.	.07	T.						.02	.01	.05	.40	T.				T.		T.							.01			0.81
South Central District																																	
Afton	Grand		T.				.16	.40					T.	.52	.05	.60	.30				T.												2.03
Albia	Des Moines							1.18						.14	T.	.22	.20													T.			1.74
Centerville	Chariton				.03		.11	.18						.03	.22	.26	.32									.01			.01	.01			1.18
Chariton (near)	Chariton		T.		T.	T.	T.	.80						.95	.22	.40	.20				T.								T.	T.			2.57
Corydon (near)	Chariton	T.			.04		*	.92						.25	.12	.27	.41												.07	.02			2.10
Creston	Missouri		.02			.01	.14	.32					T.	.24	.01	.52	.17				T.			T.									1.43
Earlham (near)	Des Moines		T.				.36	.33						.18	T.	.82	.41				T.								T.	T.			2.10
Indianola	Des Moines		.06		.02		.04	.66						.60	T.	.23	.50						T.						.07	.03			2.21
Knoxville	Des Moines		.03	T.	.06	T.	.06	1.46						.32	.11	.16	.58						T.	T.					.06	T.			2.84
Macona	Des Moines				.01		.05	.94						.40	.06	.19	.51									.02				.10			2.28
Lamoni	Grand				T.	T.	.30	.62					.01	.60	.04	.46	.13				T.		T.										2.16
Melrose	Des Moines			T.	.15		T.	.90						.24	.08	.30														T.			1.67
Mount Ayr	Grand						.20	.48						.63	.03	.44	.75																2.53
Tingley	Platte			T.			.21	.44					T.	.58	.04	.48					T.		T.										1.75
Winterset	Des Moines		.09		T.	T.	.18	.24						.50	.03	.63	.50				T.								.02	T.			2.19
Southeast District																																	
Bonaparte (near)	Des Moines		T.	T.		T.	.04	1.53							T.	.26	.40												T.	T.			2.23
Burlington	Mississippi			T.		T.	.03	1.93							T.	.10	.85												.01	.08	T.		3.00
Columbus Junction	Iowa		.01				.05	1.55	.01						.26	.01	.83										.02		.07	.04			2.85
Fairfield	Skunk		T.			T.	.29	1.37							.05	.07	.62						.01	T.					.02	.01			2.44
Keokuk***	Mississippi			T.			.40	1.20							.25	.12	.03						T.	T.			T.		T.	T.			2.00
Keokuk No. 2	Mississippi		T.	T.			.09	1.63							.23	.10	.16													.03	T.		2.24
Keosauqua	Des Moines						.20	1.60							T.	.30	.55													T.			2.65
Mt. Pleasant	Skunk	T.				.01	.05	1.55							.02	.06	1.15												.03	.04			2.91
Oskaloosa	Des Moines		T.	T.	.08	T.	.07	1.04					.06	.14	.07	.65							T.				T.	T.	.06	.02			2.19
Ottumwa	Des Moines		T.	T.			.06	1.29						.10	.05	.44							T.	.02					.01	.01			1.98
Sigourney	Skunk						T.	1.46								.03	.23												T.	.04			1.76
Stockport (near)	Skunk		T.			T.	.10	1.62							T.	.08	1.47													T.			3.27
Washington	Skunk		T.			T.		1.66							.23		.60												.12	.15			2.76
Wever	Mississippi																																

Except as otherwise indicated, observations are generally made late in the afternoon, near sunset, and precipitation recorded is for 24 hours ending at the time of observation.

‖‖Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.

***Regular Weather Bureau Station: precipitation is for 24-hour period midnight to midnight.

**Incomplete.

*Precipitation included in the next following measurement.

T. Precipitation is less than .01 inch rain or melted snow.

i Interpolated.

PRESSURE, RELATIVE HUMIDITY, WIND AND SUNSHINE

Stations	Barometric Pressure, Inches (Sea Level) Mean	Highest	Date	Lowest	Date	Relative Humidity, % Mean 7 A. M.	12 Noon‡	7 P. M.	Lowest	Date	‡‡Wind Total movement	Average hourly velocity	Maximum Miles	From	Date	Sunshine % possible	Departure from normal
Chas. City	30.09	30.65	21	29.60	16	84	61	69	38	28	4,508	6.1	23	w.	17	44	—13
Davenport	30.09	30.60	21	29.62	7	82	58	65	33	17	5,671	7.6	34	w.	17	49	—12
DesMoines	30.08	30.62	21	29.58	15	80	56	62	28	28	6,239	8.4	34	w.	17	58	— 5
Dubuque	30.08	30.63	21	29.61	16	84	62	67	39	28	3,648	4.9	18	nw.	16	41	—13
Keokuk	30.11	30.65	21	29.64	16	79	54	64	33	19	4,349	5.8	28	w.	17	63	+ 2
Sioux City	30.06	30.63	21	29.54	15	80	56	66	31	17†	8,583	11.5	42	nw.	17	66	+ 4
Omaha, Nb	30.07	30.62	21	29.54	15	77	51	53	23	27	4,978	6.7	30	nw.	16	64	+ 2
Means and extremes	30.08	£30.65	21	§29.54	15	81	57	64	23	27		7.3	42	nw.	17	55	— 5
Normals and records	30.30	*30.69	31st 1913	§28.96	20th 1876	81	62	¶16	6th 1928			‖49	sw.	16th 1880		60	

*Davenport; Also Sioux City on the 29th, 1928. §Omaha ¶Des Moines ‖Davenport £Alsc Charles Ctiy ‡Local mean time †And other dates.

‡‡January 1, 1928, 3-cup anemometers replaced 4-cup instruments. See Climatological Data, January, 1928, page 7.

PRECIPITATION

The average precipitation for the State, derived from the averages of 9 districts of nearly equal area, and based on the records of 118 stations, was 2.08 inches, or 0.35 inch below normal. The greatest district deficiency was in the west-central district, 1.06 inches, and the east-central district had the greatest district excess, 0.48 inch. The greatest precipitation deficiency, 1.84 inches at any one station, was at Riverton (near). The greatest excess in the State was 1.72 inches at Fairport. The greatest amount at a single station was 4.21 inches at Fairport, and the least was 0.71 inch at Logan. The greatest amount occurring in 24 consecutive hours was 2.18 inches at Sioux Center on the 15th and 16th. The average number of days with 0.01 inch or more of precipitation for the State was 7, ranging from 8 days in the north-central, northeast and central districts, to 6 days in the southeast, northwest and west-central districts. For individual stations the range was from 3 days at Storm Lake and Olin to 12 days at Charles City.

RIVERS

Even though the State average precipitation was nearly normal, the interior rivers and streams had unusually low stages, with very little fluctuation. Many of the small streams were completely dry most of the month.

On the Missouri River nearly normal stages prevailed, with very little change.

The Mississippi River stages remained very low throughout the month. At Dubuque the extreme stages were 2.7 feet and 1.7 feet, and averaged 2.2 feet. The low stage was the lowest recorded in October since 1925, and the mean stage was the lowest for October since 1923. At Davenport and Keokuk the river continued at very low stages throughout the month.

Daily Maximum and Minimum Temperature for the Month of October, 1930

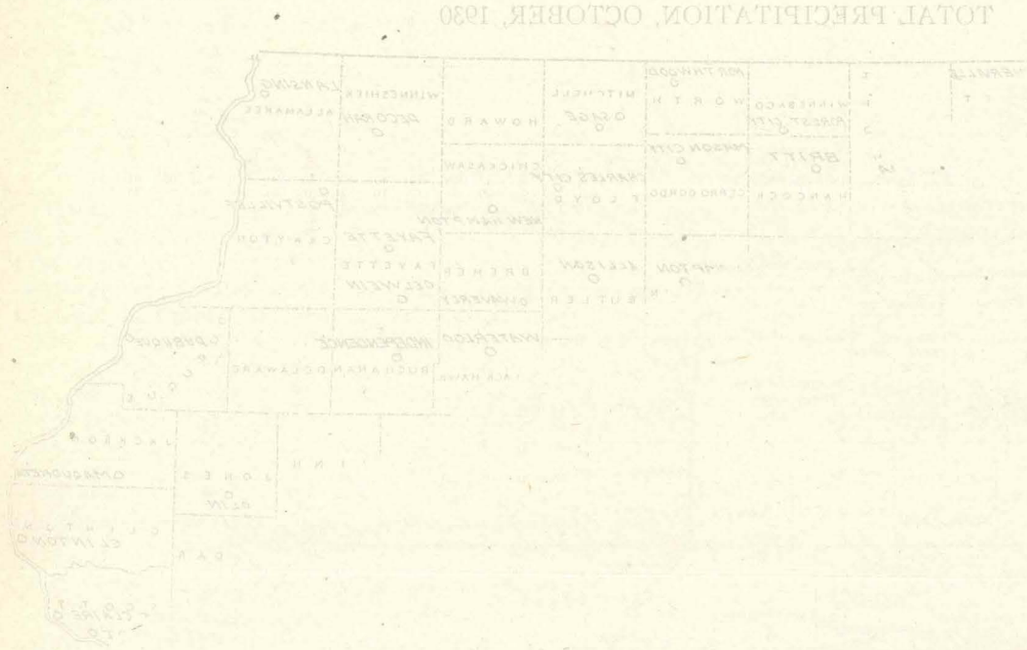
Stations		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mean
Northern Division																																	
Algona	Maximum	72	73	61	71	68	64	62	77	82	88	83	77	64	60	59	59	35	36	34	37	40	39	52	58	65	64	65	54	42	34	38	58.5
	Minimum	44	52	51	56	57	51	54	54	56	63	59	60	44	36	41	33	28	22	20	19	15	25	29	26	39	37	40	36	33	23	19	39.4
Alta	Maximum	76	80	60	71	65	63	73	80	84	89	83	75	60	66	62	52	31	36	34	37	44	40	52	64	68	61	65	50	45	34	46	59.6
	Minimum	46	57	53	55	55	50	55	55	54	63	58	53	42	34	42	28	25	21	18	20	15	34	28	28	40	45	37	31	30	20	15	38.9
Alton	Maximum	79	76	65	73	70	60	72	80	83	89	83	75	61	65	64	55	37	40	38	42	44	41	57	65	70	60	68	57	47	40	47	61.4
	Minimum	49	60	53	57	58	51	54	57	56	63	61	54	45	32	39	32	26	22	19	21	11	34	22	23	37	45	33	36	33	23	12	39.3
Belmond	Maximum	71	75	64	68	68	64	65	76	81	88	82	82	59	59	59	59	34	37	35	38	41	40	54	58	64	64	65	53	42	37	37	58.7
	Minimum	40	52	51	56	57	55	53	52	57	63	60	59	45	41	36	30	25	23	19	17	11	19	26	23	36	45	45	34	30	25	16	38.7
Charles City	Maximum	65	67	61	66	67	64	60	76	78	86	81	80	55	54	62	59	33	36	32	35	40	40	52	54	59	62	63	52	47	33	30	56.4
	Minimum	40	49	52	55	56	53	51	51	56	62	58	55	48	48	51	31	29	25	22	18	20	23	29	26	33	43	43	31	28	26	20	39.7
Decorah	Maximum																																
	Minimum																																
Dubuque	Maximum	61	60	71	69	67	67	60	75	72	86	80	81	65	58	64	62	39	37	32	39	41	42	50	52	56	62	64	53	43	40	40	57.7
	Minimum	37	49	53	55	56	55	55	51	57	63	62	60	53	53	56	35	29	26	23	22	28	22	36	36	33	41	49	37	31	30	25	42.5
Forest City	Maximum	68	72	63	73	68	65	63	75	78	87	81	80	56	56	57	56	39	37	34	39	42	39	53	55	63	63	65	56	46	39	38	58.3
	Minimum	38	39	48	52	53	53	52	50	54	60	55	52	44	35	39	30	24	20	18	15	15	22	25	24	31	43	39	33	26	23	17	36.4
Independence	Maximum	64	65	66	67	66	64	60	73	77	83	80	80	74	65	63	61	51	36	31	36	39	48	53	54	57	61	62	58	47	44	32	58.6
	Minimum	38	58	52	53	55	52	53	49	55	61	58	57	50	48	51	36	27	25	21	18	18	22	31	28	30	37	47	39	29	28	21	40.2
Inwood	Maximum	73	76	60	68	74	62	71	77	81	86	81	72	57	59	58	53	33	36	35	39	39	42	51	62	66	58	64	52	47	38	44	58.5
	Minimum	50	56	50	57	57	52	54	56	55	60	60	50	43	31	41	29	24	19	17	19	10	31	25	25	39	41	39	33	28	22	13	38.3
Lake Park	Maximum	69	65	70	73	68	63	64	78	84	88	81	73	56	61	63	51	33	34	32	35	38	46	48	60	66	57	62	55	30	43	44	57.7
	Minimum	45	48	51	55	56	52	54	53	54	53	58	52	42	34	40	31	23	21	17	17	13	27	30	26	38	44	35	30	21	15	14	37.1
Mason City	Maximum	65	70	61	65	66	64	61	75	78	85	80	80	67	55	58	58	33	35	32	37	39	39	51	54	60	63	63	52	45	37	34	56.8
	Minimum	39	49	50	52	55	54	52	51	54	60	55	60	46	44	42	31	26	22	20	16	13	19	21	22	32	43	43	32	25	25	18	37.8
New Hampton	Maximum	65	67	61	66	65	65	60	75	78	85	82	80	70	55	60	61	39	36	32	38	40	40	55	56	59	62	65	55	51	45	31	58.1
	Minimum	35	47	50	51	54	49	52	49	53	59	57	57	47	45	48	33	24	24	19	14	17	19	26	21	30	40	40	36	23	26	16	37.5
Northwood	Maximum	65	68	58	67	66	65	60	76	81	86	81	80	53	55	58	59	33	35	33	36	40	39	50	56	61	66	62	54	43	38	32	56.6
	Minimum	38	48	50	52	54	55	52	49	54	61	56	60	45	41	42	32	25	23	18	16	16	20	27	25	33	40	43	35	26	25	18	38.0
Pocahontas	Maximum	75	81	61	75	68	64	67	80	81	90	85	79	58	62	61	57	35	40	34	38	42	41	54	61	68	66	65	55	45	35	44	60.3
	Minimum	43	56	53	56	57	48	54	55	55	62	68	57	45	36	41	33	27	22	20	18	13	26	26	24	37	45	39	36	31	23	15	39.4
Postville	Maximum	51	61	63	63	62	63	63	83	79	84	80	79	65	60	59	57	41	35	39	40	41	46	52	54	57	61	62	51	45	36	32	57.0
	Minimum	33	38	50	50	53	51	51	48	53	56	55	55	49	45	47	35	28	23	20	16	18	16	28	29	30	38	44	30	25	27	24	37.6
Rock Rapids	Maximum	73	75	63	70	72	65	70	75	83	87	82	75	57	61	61	55	35	38	35	38	40	41	51	62	67	62	64	58	45	37	44	59.4
	Minimum	48	55	50	55	57	49	52	55	55	58	57	53	43	31	38	31	25	20	17	18	11	32	20	22	39	38	32	33	32	22	11	37.4
Central Division																																	
Ames	Maximum	71	81	79	72	71	67	64	78	83	87	83	82	71	57	60	60	43	40	35	38	41	42	56	58	65	65	65	58	48	40	41	61.3
	Minimum	45	54	55	59	59	56	54	50	58	61	57	60	49	47	48	36	30	26	24	21	17	27	30	26	34	44	45	40	34	26	20	41.7
Belle Plaine	Maximum	70	79	71	70	70	67	62	78	83	88	85	85	70	56	64	60	42	41	37	37	43	41	56	58	64	67	67	55	43	36	38	60.7
	Minimum	40	50	52	56	56	54	54	56	56	61	60	58	50	49	52	37	24	18	20	17	13	20	34	23	31	41	47	34	28	28	19	39.9
Carroll	Maximum	77	80	71	77	70	64	70	78	81	87	82	78	58	57	64	59	38	38	34	38	42	40	55	61	67	65	64	55	51	40	44	60.8
	Minimum	46	57	56	58	56	51	53	55	54	65	58	58	46	39	40	34	28	23	21	19	15	33	28	27	35	44	40	36	33	23	15	40.2
Cedar Rapids	Maximum	68	71	73	70	67	67	62	77	82	88	83	84	68	58	65	61	42	40	37	40	44	43	56	58	59	66	67	53	42	36	37	60.1
	Minimum	36	49	52	54	52	54	54	47	56	61	53	59	54	51	53	37	28	26	23	19	17	20	33	28	31	41	43	40	30	29	21	40.4
Davenport	Maximum	67	70	73	76	70	70	62	74	81	88	84	82	77	61	66	63	43	40	36	38	43	44	51	56	57	67	64	53	45	38	39	60.6
	Minimum	41	48	53	56	57	57	56	53	58	64	63	60	57	54	56	35	31	29	25	24	23	29	37	34	34	44	50	40	34	29	25	43.7
Des Moines	Maximum	74	82	76	74	72	62	66	78	83	86	84	83	60	56	62	61	41	40	36	38	43	43	57	59	66	65	66	55	46	35	43	61.0
	Minimum	45	56	57	60	61	56	55	51	60	65	60	60	50	48	53	36	32	28	26	23	21	34	33	30	34	49	47	41	34	26	22	43.6
Ft. Dodge	Maximum	74	79	72	79	71	63	65	78	81	90	83	83	61	57	61	59	36	39	34	38	42	41	55	58	66	65	65	54	40	38	41	60.3
	Minimum	44	55	52	53	58	53	54	54	57	64	62	61	47	38	42	35	28	23	20	18	13	27	27	27	39	45	41	37	32	25	14	40.2
Grinnell	Maximum	71	84	76	72	71	66	63	79	82	86	83	84	70	55	61	64	47	41	44	34	42	44	52	62	63	62	64	65	52	41	34	61.7
	Minimum	42	52	53	56	59	56	54	50	57	64	60	60	49	49	51	37	26	25	21	17	18	24	29	26	34	43	43	42	30	29	20	41.2
Guthrie Center	Maximum	80	80	75	75	75	70	70	80	84	88	85	82	75	57	64	61	41	39	37	38	45	40	58	63	68	67	87	59	45	45	45	63.8
	Minimum	45	55	57	60	58	52	52	55	55	64	57	62	48	42	44	35	26	24	22	17	12	33	25	21	38	45	43	39	25	24	12	40.2
Iowa City	Maximum	67	70	74	71	68	67	64	77	83	87	83	84	67	59	64	61	43	39	37	37	43	42	55	58	60	66	66	53	42	37	40	60.1
	Minimum	41	51	53	56	57	55	54	49	57	62	60	60	55	53	54	39	28	27	24	20	18	21	37	28	32	41	49	41	31	31	22	42.1
Iowa Falls	Maximum	68	76	64	68	68	66	63	76	79	86	82	82	72	55	59	59	39	38	34	37	39	40	49	55	62	63	63	56	45	39	34	58.6
	Minimum	39	51	50	54	57	53	48	48	55	61	56	57	46	46	42	32	26	21	19	15	11	21	26	23	33	41	43	36	29	26	17	38.1
Little Sioux	Maximum	80	81	78	75	69	65	74	81	84	90	84	75	65	65	69	48	43	41	38	37	46	44	56	67	71	65	70	60	52	41	48	63.3
	Minimum	55	58	61	60	58	54	56	56	56	66	64	56	44	38	47	34	25	25	22	18	16	36	26	25	44	47	33	38	30	25	10	41.4
Marshalltown	Maximum	71	80	70	69	69	63	62	78	84	88	85	83	73	56	60	61	37	39	35	37	41	42	56	60	64	65	66	55	44	37	38	60.3
	Minimum	43	53	53	57	60	54	54	51	57	64	57	60	48	48	51	36	30	25	22	21	17	28	31	28	34	44	41	40	32	28	20	41.6
Olin	Maximum	65	66	72	71	69	66	62	75	78	86	83	82	70	65	66	60	43	40	37	40	42	41	42	57	57	63	66	52	40	40	40	59.2
	Minimum	32	45	50	54	54	53	54	43	54	59	54	55	53	54	53	40	25	25	22	16	14	17	25	24	28	37	44	40	25	27	21	38.6
Sioux City	Maximum	77	81	66	72	69	61	73	80	77	88	81	71	58	63	64	45	38	37	34	39	41	43	51	65	67	60	67	53	47	39	48	59.8
	Minimum	55	62	60	61	58	55	56	58	61	66	64	49	44	38	45	32	29	25	22	24	19	34	32	30	42	46	41	39	31	23	17	42.5
Southern Division																																	
Albia	Maximum	72	83	77	71	69	67	67	78	83	87	83	82	73	56	55	51	45	44	41	40	46	41	60	61	63	63	68	57	57	41	47	62.2
	Minimum	44	55	54	58	49	52	55	51	59	63	59	59	50	45	49	28	23	26	25	22	20	34	33	26	31	43	42	38	31	28	18	41.1
Atlantic	Maximum	83	85	84	79	76	67	69	82	87	89	87	80	67	62	62	65	44	40	39	37	45	41	62	65	70	67	69	57	53	42	47	64.6
	Minimum	50	58	59	60	57	52	54	52	57	64	59	62	48	40	48	33	27	24	23	17	13	37	23	24	40	45	42	39	32	28	15	41.4
Burlington	Maximum	69	78	76	80	70	66	63	75	83	85	82	81	73	61	68	62	44	43	38	34	42	44	52	56	59	62	64	54	51	37	42	61.1
	Minimum	42	51	56	57	57	58	55	53	58	61	60	61	59	56	56	42	31	29	28	23	24	29	39	34	35	42	49	43	33	32	23	44.4
Columbus Jct	Maximum	66	72	75	76	70	65	61	73	81	85	81	82	72	59	64	61	43	41	37	39	43	43	54	56	59	67	65	55	48	35	41	60.3
	Minimum	37	48	52	55	57	56	54	49	56	61	58	58	58	53	54	38	29	27	25	21	20	22	37	29	32	42	47	45	31	31	23	42.1
Corning	Maximum																																
	Minimum																																
Corydon	Maximum	73	82	77	75	72	72	62	75	81	84	82	81	71	51	62	61	41	39	38	36	41	42	55	56	64	64	65	54	50	38	42	60.9
	Minimum	46	57	69	60	61	56	54	51	58	62	60	61	50	49	50	28	28	28	28	21	19	36	33	30	35	44	43	41	31	24	19	43.0
Creston	Maximum	77	83	79	79	70	61	66	76	81	84	82	81	70	55	63	60	43	39	39	33	45	41	57	61	66	65	66	53	52	40	46	61.4
	Minimum	46	56	58	59	58	56	53	50	56	61	58	59	49	47	51	35	25	24	25	18	20	36	26	25	36	44	40	38	29	26	15	41.3
Fairfield	Maximum	69	81	80	76	70	64	63	75	82	86	84	83	68	57	64	61	44	40	37	39	39	43	52	54	60	67	64	52	51	35	41	60.7
	Minimum	41	50	50	55	58	53	53	49	57	49	59	60	54	51	54	39	28	27	26	20	17	23	32	29	33	41	44	40	29	30	21	41.0
Keokuk	Maximum	68	79	81	82	70	66	66	74	83	84	82	81	76	60	71	65	48	44	42	39	42	48	52	56	62	69	66	55	57	38	44	62.9
	Minimum	45	52	57	59	59	56	55	54	60	61	62	61	58	55	56	38	32	31	28	24	26	37	40	34	35	43	49	41	31	28	24	45.0
Knoxville	Maximum	72	83	77	72	70	64	66	77	82	86	83	82	74	55	62	60	43	43	39	58	44	42	59	60	65	66	68	55	50	37	45	61.9
	Minimum	44	54	54	60	62	57	54	51	60	65	58	60	50	49	51	39	30	27	26	22	18	31	34	28	34	45	43	42	32	28	20	42.8
Lamoni	Maximum	78	83	81	75	71	63	68	77	83	84	83	82	69	55	64	61	44	42	42	37	46	41	58	62	66	65	67	54	53	40	47	62.6
	Minimum	47	55	57	58	57	54	52	49	56	59	59	58	49	47	51	33	25	25	28	19	19	35	27	28	36	43	40	38	29	25	14	41.0
Sigourney	Maximum	69	82	75	75	72	65	63	79	85	88	85	86	68	58	65	63	49	43	41	41	45	43	58	59	64	69	69	61	59	37	45	63.3
	Minimum	40	51	50	52	57	54	52	48	55	59	56	58	52	50	52	38	26	25	23	17	17	24	34	27	32	40	43	42	30	28	18	40.3
Thurman	Maximum	83	85	82	75	71	65	75	82	85	88	84	77	64	60	70	66	46	42	42	37	41	42	57	66	72	68	69	61	54	43	50	64.7
	Minimum	53	61	60	62	58	53	56	55	62	64	61	64	51	47	53	36	24	26	30	20	19	35	21	22	42	46	37	39	27	25	13	42.6
Winterset	Maximum	77	82	78	74	70	65	68	78	83	85	83	82	72	55	62	60	43	42	38	38	46	43	60	63	66	67	68	58	50	39	47	62.6
	Minimum	46	55	58	59	57	56	53	53	60	63	60	61	50	46	50	37	28	26	24	19	15	35	30	30	40	45	45	39	35	25	17	42.5
Omaha, Neb.	Maximum	79	82	80	73	68	65	76	80	84	88	83	75	59	61	69	56	44	40	38	34	43	43	55	65	72	64	70	56	51	36	49	62.5
	Minimum	55	62	62	63	56	56	56	56	62	66	64	54	48	45	54	35	31	27	28	27	24	36	32	33	44	48	44	41	32	25	22	44.8

SNOWFALL

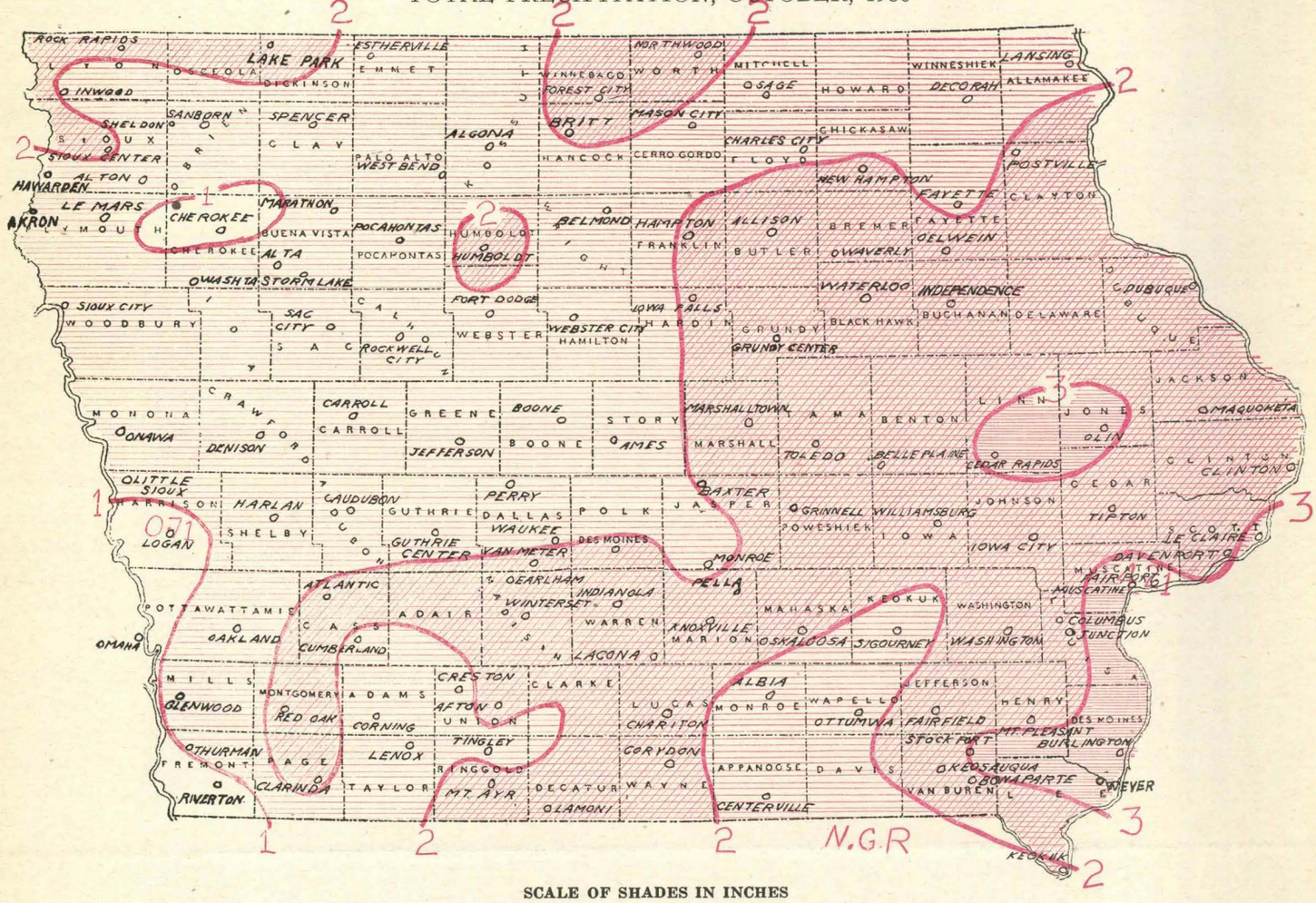
The average snowfall for the State was 0.4 inch, or 0.1 inch below normal. The greatest total snowfall for the month at any one station was 3.0 inches at Northwood, New Hampton and Tipton. There were 57 stations that received only a trace of snow for the month, and 17 stations received none. The greatest snowfall in 24 hours was 3.0 at Northwood, New Hampton and Tipton. The greatest number of days with 0.1 inch or more of snow on the ground at 7:00 p. m. was 2 days at Charles City and Northwood.

MISCELLANEOUS PHENOMENA

Aurora: 19th.
Dew, heavy: 9th, 10th.
Fog, light: 3d, 6th, 7th, 14th, 15th, 23d, 24th.
Fog, dense: 1st, 6th, 7th, 9th, 14th, 15th, 22d, 31st.
Frost, light: 1st, 14th.
Frost, heavy: 1st, 17th, 20th, 21st, 23d, 24th, 27th, 31st.
Frost, killing: 14th, 16th, 17th, 18th, 19th, 20th, 21st, 22d, 23d, 24th, 28th, 31st.
Gales: 11th, 16th, 17th, 18th, 19th, 25th, 27th, 28th, 29th, 30th.
Hail: 16th.
Halo, lunar: 2d, 11th.
Halo, solar: 4th, 6th.
Haze: 22d.
Meteor: 2d.
Sleet: 16th, 29th.
Snow: 5th, 15th, 16th, 17th, 22d, 24th, 29th, 30th.
Thunderstorms: 1st, 2d, 3d, 4th, 6th, 7th, 12th, 14th, 15th, 16th, 27th.
Tornado: 1st.



TOTAL PRECIPITATION, OCTOBER, 1930



SCALE OF SHADES IN INCHES

Less than 1	1 to 2	2 to 3	More than 3

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

IOWA SECTION
In co-operation with
IOWA WEATHER AND CROP BUREAU
CHARLES D. REED, Senior Meteorologist

VOL. XLI DES MOINES, IOWA, NOVEMBER, 1930 No. 11

GENERAL SUMMARY

Large wind movement, a protracted mild period, and a large number of heavy rains, were the leading weather features of November, 1930. Nearly three-fourths of the stations reported more than one-half of the monthly total during a single 24-hour period. Sioux City reported the greatest 24-hour rainfall of record for November.

The mean temperature averaged 41.3° and this has been exceeded but four times in the last 58 years. Approximately one-half of the stations reported their maxima on the 19th, and a number of stations reported the highest maxima ever recorded so late in the season. The lowest temperature occurred in the last part of the first week and most of the last week. The period, 8th-23d inclusive, was continuously above normal and constituted one of the most unusual periods of mild weather experienced in November. The most severe weather occurred on the 28th in the northeastern quarter of the State where the snow cover was greatest. The minimum of —16° at Decorah was the lowest recorded in Iowa in November since 1898, when a minimum of —17° occurred.

Precipitation averaged approximately 37% above normal, but it was below normal in the central and east-central divisions. There have been but three months of the current year that have had more than normal precipitation, and the combined excess of the three months, January, June and November, have been less than the deficiency of July alone. The principal precipitation periods were 15th-16th, 19th-20th and 29th-30th. In each period heavy rains occurred in some portion of the State. There was practically no rain or snow during the first two weeks.

The month was unusually favorable for corn husking, which progressed rapidly, and by the close of the month only 3% remained unhusked, which is the least since 1913. The rains of October and November replenished the depleted soil moisture and permitted an unusually large amount of plowing, and also benefited winter wheat, pastures and meadows. The water supply in general continued seriously deficient.

The snowfall was about normal in the northeastern half of the State, and much below normal in the rest of the State. The snow cover was greatest where the temperatures were severest, and it is unlikely that winter grains or meadows suffered damage of consequence. Considerable glaze on streets and highways during the last week, in the northeastern portion of the State, constituted a great hazard to auto traffic. Building operations and other outside work were carried on with very little interruption.

N. G. R.

COMPARATIVE DATA FOR THE STATE—NOVEMBER

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1873	36.2	— 0.4	61	— 4	0.72	— 0.83	2.78	0.00					
1874	32.9	— 3.7	74	— 6	2.21	+ 0.66	4.79	1.05					
1875	30.1	— 6.5	60	—16	0.19	— 1.36	0.63	0.00					
1876	31.3	— 5.3	68	— 6	1.70	+ 0.15	3.50	0.16					
1877	33.3	— 3.3	82	—10	1.86	+ 0.31	3.84	0.12					
1878	39.7	+ 3.1	72	12	0.63	— 0.92	2.69	0.00					
1879	36.3	— 0.3	75	4	4.08	+ 2.53	7.90	0.20					
1880	25.3	—11.3	68	—12	1.29	— 0.26	3.30	0.05					
1881	34.4	— 2.2	65	— 1	2.01	+ 0.46	3.97	0.60					
1882	37.5	+ 0.9	76	4	1.71	+ 0.16	7.15	0.30					
1883	36.8	+ 0.2	70	— 3	1.44	— 0.11	4.17	0.60					
1884	35.6	— 1.0	68	—15	0.79	— 0.76	1.90	0.00					
1885	36.4	— 0.2	67	14	0.69	— 0.86	2.60	0.10					
1886	32.1	— 4.5	75	— 4	1.49	— 0.06	5.18	0.30					
1887	35.1	— 1.5	78	—25	0.85	— 0.70	4.10	0.10					
1888	37.1	+ 0.5	82	0	1.56	+ 0.01	6.00	0.00					
1889	33.0	— 3.6	68	— 9	1.44	— 0.11	4.90	0.05					
1890	38.9	+ 2.3	78	— 2	1.31	— 0.24	3.55	0.50					
1891	30.5	— 6.1	84	—24	1.70	+ 0.15	3.64	0.66		7	10	8	12
1892	**33.3**	**— 3.3**	**70**	**— 3**	1.10	— 0.45	3.16	0.05	1.8	4	11	8	11
1893	34.0	— 2.6	86	—13	1.17	— 0.38	2.56	0.05	4.6	4	16	8	6
1894	32.7	— 3.9	72	— 5	0.92	— 0.63	2.42	T.	0.4	4	9	11	10
1895	34.3	— 2.3	86	—12	1.51	— 0.04	3.01	0.45	4.9	6	9	8	13
1896	29.6	— 7.0	82	—15	1.83	+ 0.28	4.51	0.16	2.9	6	9	8	13
1897	34.3	— 2.3	81	—19	0.66	— 0.89	2.24	T.	1.2	5	12	8	10
1898	32.2	— 4.4	78	—17	1.50	— 0.05	3.61	0.35	8.7	6	14	8	8
1899	43.9	+ 7.3	86	8	1.20	— 0.35	2.97	0.13	0.5	5	12	8	10
1900	33.5	— 3.1	79	— 6	1.06	— 0.49	3.35	T.	3.7	6	12	7	11
1901	35.8	— 0.8	77	2	0.86	— 0.69	2.30	0.20	2.6	3	18	6	6
1902	41.2	+ 4.6	79	4	2.13	+ 0.58	4.19	0.16	1.8	7	9	7	14
1903	34.2	— 2.4	76	— 5	0.52	— 1.03	1.74	T.	1.1	3	13	8	9
1904	41.0	+ 4.4	80	4	0.15	— 1.40	0.50	0.00	0.5	1	20	6	4
1905	38.4	+ 1.8	70	—12	2.84	+ 1.29	5.30	0.90	0.6	5	16	7	7
1906	35.4	— 1.2	76	— 5	2.03	+ 0.48	3.86	0.35	4.4	8	9	7	14
1907	36.7	+ 0.1	68	— 4	1.03	— 0.52	2.27	0.05	0.9	4	17	6	7
1908	39.3	+ 2.7	80	5	1.56	+ 0.01	3.31	0.21	1.4	5	14	7	9
1909	42.4	+ 5.8	84	— 3	5.39	+ 3.84	11.48	2.07	6.8	10	10	7	13
1910	33.4	— 3.2	76	5	0.34	— 1.21	1.03	T.	0.7	3	13	9	8
1911	29.9	— 6.7	79	— 8	1.42	— 0.13	4.99	0.11	1.6	6	11	8	11
1912	40.1	+ 3.5	77	6	0.98	— 0.57	2.38	0.00	T.	2	18	8	4
1913	44.1	+ 7.5	78	10	1.18	— 0.37	3.49	0.20	0.4	6	11	7	12
1914	41.0	+ 4.4	80	— 4	0.22	— 1.33	0.95	0.00	T.	2	19	6	5
1915	40.2	+ 3.6	83	— 5	1.94	+ 0.39	4.86	0.30	1.2	6	11	10	9
1916	37.3	+ 0.7	80	— 8	1.61	+ 0.06	3.65	0.05	3.6	5	16	6	8
1917	40.7	+ 4.1	77	3	0.28	— 1.27	1.02	T.	1.4	3	14	6	10
1918	39.9	+ 3.3	76	0	2.11	+ 0.56	5.10	0.70	4.4	7	13	5	12
1919	33.6	— 3.0	68	—12	3.40	+ 1.85	6.22	1.97	6.3	8	11	7	12
1920	35.4	— 1.2	71	5	2.03	+ 0.48	4.45	0.73	1.2	8	10	5	15
1921	33.6	— 3.0	70	— 5	0.58	— 0.97	1.61	T.	3.4	5	10	5	15
1922	42.2	+ 5.6	74	11	3.54	+ 1.99	5.28	1.96	0.3	9	11	6	13
1923	40.1	+ 3.5	72	9	0.58	— 0.97	1.84	0.00	1.2	3	16	6	8
1924	38.9	+ 2.3	82	0	0.58	— 0.97	1.55	T.	0.4	4	15	7	8
1925	36.1	— 0.5	68	— 6	0.71	— 0.84	2.30	0.10	4.0	4	15	6	9
1926	32.6	— 4.0	71	— 3	2.10	+ 0.55	3.88	0.68	4.2	7	8	7	15
1927	37.7	+ 1.1	81	0	0.87	— 0.68	3.61	T.	0.6	5	7	6	17
1928	38.7	+ 2.1	70	8	3.83	+ 2.28	6.83	0.77	6.9	9	13	4	13
1929	32.3	— 4.3	66	—12	1.24	— 0.31	2.58	0.08	2.7	6	13	8	9
1930	41.3	+ 4.7	79	—16	2.12	+ 0.57	4.57	0.79	1.1	5	17	6	7

T. indicates an amount too small to measure, or less than .005 inch rainfall and less than .05 inch snowfall.

TEMPERATURE

The mean temperature for the State, derived from the means of 9 districts of nearly equal area, and based on the records of 106 stations, was 41.3°, or 4.7° above normal. There was an excess in all districts. The greatest excess, 5.9°, was in the southwest district, and the least, 3.5°, in the northeast district. The highest monthly mean was 45.0° at Lenox, and the lowest was 36.6° at Lake Park (near). The absolute range for the State was 95°, from 79° at Clinton on the 19th, to —16° at Decorah on the 28th. The average number of days, with the maximum temperature 32° or lower, was 3, ranging from 6 days at Postville, to 1 day at Onawa and Thurman. The average number of days with the minimum temperature 32° or lower was 20, ranging from 27 days at Rock Rapids, to 12 days at Davenport, Burlington and Keokuk. The greatest daily range in temperature at any one station was 46° at Webster City on the 3d and Ottumwa on the 9th. The average number of days with the minimum temperature zero or lower, was 1.

Climatological Data for November, 1930

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit							Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
Northwest District																				
Akron	Plymouth	1,153	4								1.30	+ 0.16	0.58	T.	4	20	5	5	s.	Orlan C. Moore
Alta	Buena Vista	1,513	39	38.7	+ 4.8	68	10†	4	26	32	2.61	+ 1.19	1.65	1.0	7	17	7	6	nw.	D. E. Hadden
Alton	Sioux	1,305	25	39.1	+ 5.5	70	13	6	26	40	2.57	+ 1.20	2.04	1.0	6	14	8	8	nw.	W. S. Slagle
Cherokee	Cherokee	1,196	10	39.6	+ 6.5	68	8†	6	26	35	2.42	+ 0.91	1.50	0.1	6	19	6	5	s.	J. E. Wirth
Estherville	Emmet	1,298	35	38.4	+ 4.4	68	14	0	26	41	3.55	+ 2.24	2.36	1.0	6	17	7	6	nw.	A. O. Peterson
Hawarden	Sioux	1,181	4								2.54	+ 1.48	1.34	T.	6	17	2	11	nw.	Earl V. Slife
Inwood (near)	Lyon	1,474	26	37.3	+ 4.3	67	13	5	26	39	2.21	+ 1.09	1.83	0.5	4	16	9	5	nw.	A. C. Hanson
Lake Park (near)	Dickinson	1,489	17	36.6	+ 3.6	68	13	— 1	26	34	2.70	+ 1.64	1.80	T.	4	14	4	12	nw.	P. M. Lawrence
Le Mars	Plymouth	1,224	34	40.2	+ 5.2	70	13	7	26	39	2.91	+ 1.78	2.45	1.0	4	17	6	7	s.	Henry Newell
Marathon	Buena Vista	1,390	4								2.74		1.28	T.	3	15	3	12	sw.	E. G. Smith
Pocahontas	Pocahontas	1,248	26	40.2	+ 5.5	70	10†	4	26	35	2.04	+ 0.36	0.91	T.	4	19	5	6	s.	F. E. Hronek
Rock Rapids	Lyon	1,349	31	37.2	+ 4.0	67	13	4	26	37	2.35	+ 1.16	1.50	T.	3	21	0	9	n.	Nellie F. Medberry
Sanborn	O.Brien	1,553	16	37.7	+ 5.2	70	13	2	26	38	3.00	+ 1.70	2.23	0.5	3	11	11	8	sw.	J. W. Dow
Sheldon	O.Brien	1,418	19	38.3	+ 5.1	69	13	4	26	39	3.00	+ 1.52	1.94	0.4	7	13	11	6	s.	Ross E. Forward
Sioux Center	Sioux	1,461	31	37.9	+ 4.4	69	13	3	26	36	2.65	+ 1.47	2.30	T.	3	22	5	3	nw.	F. C. Aue
Spencer	Clay	1,319	16	39.5	+ 5.9	69	10†	2	26	35	2.50	+ 1.20	1.63	1.4	5	18	6	6	nw.	E. W. Little
Storm Lake	Buena Vista	1,442	11	39.4	+ 3.9	66	13	4	26	33	2.34	+ 1.01	1.60	T.	4	16	10	4	sw.	Russel M. Edwards
Washta	Cherokee	1,157	32	39.8	+ 4.8	71	10†	6	26	45	2.30	+ 0.98	1.85	T.	3	20	4	6	s.	H. L. Felter
West Bend	Palo Alto	1,197	37	40.0	+ 5.9	70	10	2	26†	35	1.81	+ 0.35	1.14	T.	3	18	8	4	sw.	Jos. Dorweiler
Means and extremes				38.7	+ 4.9	71	10†	— 1	26	45	2.50	+ 1.20	2.45	0.4	4	17	6	7	nw.	
North Central District																				
Algona	Kossuth	1,207	57	40.0	+ 5.4	70	10	1	26†	36	2.06	+ 0.70	1.22	0.5	4	17	4	9	nw.	Leon M. Merritt
Allison (near)	Butler	1,000	16	39.8	+ 5.3	71	11	0	26†	32	1.60	+ 0.25	0.70	2.5	4	19	4	7	s.	George H. Bell
Belmond	Wright	1,181	20	39.4	+ 5.2	76	14	— 3	28	39	1.44	— 0.21	0.67	1.0	8	18	1	11	sw.	H. F. Luick
Britt	Hancock	1,236	43	39.2	+ 5.7	68	10	— 3	28	32	2.15	+ 0.70	0.97	2.0	6	15	2	13	sw.	E. P. Healy
Charles City	Floyd	1,015	39	38.4	+ 5.4	69	19	— 6	28	31	1.76	+ 0.23	0.77	2.7	8	16	5	9	se.	U. S. Weather Bureau
Forest City	Winnebago	1,226	36	38.2	+ 4.7	70	10	— 8	28	36	1.39	— 0.16	0.64	3.5	4	16	1	13	sw.	Dr. M. B. Neil
Hampton	Franklin	1,142	5	39.7		69	10	— 4	28	38	1.33	— 0.27	0.62	0.5	6	20	3	7	sw.	Howard J. Haydon
Humboldt	Humboldt	1,095	42	40.0	+ 4.4	70	9	3	26†	39	1.90	+ 0.23	0.97	T.	3	13	11	6	nw.	H. C. Snitkey
Mason City	Cerro Gordo	1,148	33	38.0	+ 4.5	67	10†	— 7	28	37	1.55	+ 0.07	0.67	3.2	6	18	4	8	se.	American Beet Sugar Co.
Northwood	Worth	1,222	24	37.7	+ 5.3	69	10†	— 9	28	37	2.09	+ 0.12	0.82	5.0	7	14	10	6	sw.	Charles Dwelle
Osage	Mitchell	1,163	36	37.6	+ 4.4	65	19	— 6	28	32	1.50	— 0.01	0.60	2.9	7	16	4	10	sw.	Dr. C. E. Juhl
Means and extremes				38.9	+ 5.1	71	11	— 9	28	39	1.71	+ 0.15	1.22	2.2	6	17	4	9	sw.	
Northeast District																				
Cedar Falls	Black Hawk	875									2.71		1.42	3.2	5	17	7	6	sw.	E. J. Cable
Decorah	Winneshiek	872	37	37.6	+ 2.9	71	19†	—16	28	38	3.09	+ 0.25	1.22	4.5	5	18	2	10	se.	M. D. Whitney
Delaware (near)	Delaware	1,083	30	38.6		72	19	—10	28	35	2.11		0.90	2.0	4	18	4	8	sw.	E. J. Paris
Dubuque	Dubuque	700	57	40.6	+ 3.6	72	19	— 2	28	28	0.79	— 0.91	0.32	3.3	8	17	3	10	s.	U. S. Weather Bureau
Fayette	Fayette	1,009	42	37.8	+ 3.7	70	19	—12	28	40	2.45	+ 0.73	1.23	4.5	6	14	7	9	s.	W. C. Van Ness
Independence	Buchanan	956	66	39.2	+ 2.7	71	19	— 5	28	34	2.29	+ 0.85	1.07	1.9	5	15	7	8	sw.	Dr. Geo. Boody
Lansing	Allamakee	632	23								2.59	+ 0.64	6.92	3.0	8					Mrs. Mary Spinner
New Hampton	Chickasaw	1,169	33	38.0	+ 3.9	70	19	—10	28	35	2.23	+ 0.54	0.97	3.0	4	14	8	8	se.	D. W. Dawson
Oelwein	Fayette	1,036	7	39.6	+ 4.4	71	19	— 6	28	34	2.71	+ 1.13	1.20	4.0	4	16	6	8	s.	John T. Ridler
Postville (near)	Clayton	1,192	31	37.0	+ 3.0	69	19	—10	28	35	3.95	+ 2.26	2.18	5.0	6	14	11	5	sw.	F. L. Williams
Waterloo	Black Hawk	854	47	39.8	+ 3.7	71	19	— 7	28	35	2.58	+ 1.09	1.10	2.5	5	20	3	7		R. B. Slippy
Waverly‡‡	Bremer	936	34	39.5	+ 3.9	69	10†	— 8	28	33	0.95	— 0.70	0.69	1.5	3	20	8	2	n.	D. H. Murphy
Means and extremes				38.8	+ 3.5	72	19	—16	28	40	2.37	+ 0.69	2.18	3.2	5	17	6	7		
West Central District																				
Audubon (near)	Audubon	1,297	35	41.8	+ 7.0	69	10	7	26	39	2.44	— 1.11	1.03	0.2	6	18	9	3	s.	George Kibby
Carroll	Carroll	1,265	40	41.4	+ 5.3	68	10†	7	26	34	2.80	+ 1.48	1.21	T.	7	20	4	6	sw.	Mrs. Jos. J. Wolfe
Denison	Crawford	1,200	36	41.8	+ 6.2	70	10†	7	26	42	2.21	+ 0.86	1.60	1.0	4	15	9	6	nw.	J. McMinimee
Guthrie Center	Guthrie	987	35	43.0	+ 6.0	70	12†	8	26	40	1.79	+ 0.34	0.63	0	3	16	10	4	w.	Floyd H. Bainter
Harlan	Shelby	1,210	31	42.2	+ 6.4	71	12	9	26	43	1.91	+ 0.45	1.23	0.1	5	18	7	5	sw.	Elmer Buss
Jefferson	Greene	1,052	31	42.5	+ 6.3	70	10†	8	26	37	1.58	— 0.35	1.05	T.	3	18	4	8	sw.	W. I. Lyon
Little Sioux	Harrison	1,040	25	42.4	+ 5.7	71	13	10	26	42	2.22	+ 0.65	1.24	T.	4	17	5	8	s.	H. W. Kerr
Logan	Harrison	1,120	63	42.2	+ 4.9	69	10†	9	26	39	2.08	+ 1.68	1.20	T.	3	16	12	2	sw.	Amy Ann Stern
Onawa	Monona	1,051	29	41.0	+ 5.3	70	13	8	26	38	2.35	+ 0.97	1.85	T.	3	19	1	10	nw.	Mrs. H. E. Colby
Rockwell City‡‡	Calhoun	1,232	34	39.8	+ 4.1	70	13	5	26	37	1.54	— 0.16	0.85	0.1	4	15	6	9	nw.	A. W. McIsaac
Sac City	Sac	1,209	54	40.2	+ 4.7	70	10	6	26	39	2.62	+ 1.32	1.33	0.5	4	17	6	7	s.	F. P. Kessler
Sioux City	Woodbury	1,135	41	40.2	+ 5.0	69	13	9	26	33	2.99	+ 1.99	2.59	0.4	7	12	11	7	nw.	U. S. Weather Bureau
Stuart	Guthrie	1,243	10																	Fred Morgan
Means and extremes				41.5	+ 5.5	71	12†	5	26	43	2.27	+ 0.84	2.59	0.2	4	17	7	6	sw.	
Central District																				
Ames	Story	926	53	42.8	+ 6.9	71	19	7	26	36	1.11	— 0.18	0.50	0.4	5	22	3	5	s.	Iowa State College
Baxter	Jasper	993	30	42.4	+ 5.2	73	19	3	28	40	1.15	— 0.28	0.90	T.	2	15	9	6	se.	Geo. R. Geise
Boone (near)	Boone	894	25	41.6	+ 5.0	71	10†	7	26	42	1.33	— 0.04	0.86	T.	4	14	9	7	s.	C. F. Henning
Des Moines	Polk	861	52	43.4	+ 5.0	72	19	9	26	33	1.05	— 0.38	0.74	0.3	8	12	7	11	s.	U. S. Weather Bureau
Fort Dodge	Webster	1,114	30	41.0	+ 4.9	70	10†	4	26	41	1.68	+ 0.10	0.91	T.	5	20	5	5	sw.	Mrs. Emma Sampson
Grinnell	Poweshiek	1,031	36	43.2	+ 5.5	75	19	4	28	41	2.85	+ 1.16	2.60	T.	6	18	6	6	nw.	R. E. Bates
Grundy Center	Grundy	976	39	40.6	+ 4.3	70	10†	— 2	28	39	1.46	+ 0.02	0.89	2.5	5	15	11	4	w.	M. G. Heiberger
Iowa Falls	Hardin	1,127	37	39.3	+ 4.0	68	10†	—10	26	35	1.43	— 0.17	0.80	2.5	4	18	3	9	sw.	C. H. Gilbert
Marshalltown	Marshall	947	38	42.6	+ 5.2	71	10†	4	28	31	1.49	— 0.03	0.71	0.3	4	17	6	7	sw.	C. C. Pigman
Monroe	Jasper	922	18	43.4	+ 4.4	71	10†	8	26	35	1.55	+ 0.05	1.06	0.2	6	18	4	8	s.	J. A. Dibel
Perry	Dallas	975	29	42.0	+ 5.0	70	10	8	26	41	1.60	+ 0.08	0.98	0.4	4	17	6	7	sw.	Eugene N. Hastie
Toledo	Tama	847	36	42.4	+ 4.5	75	19	— 1	28	36	2.29	+ 0.69	1.40	1.0	6	16	11	3	se.	H. P. Giger
Van Meter	Dallas	872	11								1.50		1.00	T.	2					Calvin K. Smith
Waukee	Dallas	1,032	27	42.6	+ 5.5	71	19	8	26	35	1.13	— 0.44	0.68	T.	2	17	6	7	se.	O. D. Ellsworth
Webster City	Hamilton	1,042	25	40.1	+ 4.5	71	10	3	26†	46	1.48	— 0.13	0.74	T.	3	18	2	10	nw.	Frank A. Bonebright
Means and extremes				42.0	+ 5.1	75	19	—10	26	46	1.54	+ 0.03	2.60	0.5	4	17	6	7	s.	

Climatological Data for November, 1930—Continued

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit							Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
East Central District																				
Belle Plaine	Benton	866	40	41.8	+ 4.8	74	19	0	28	38	3.70	+ 2.01	2.40	1.5	7	17	6	7	s.	O. C. Burrows
Cedar Rapids	Linn	737	48	41.0	+ 4.6	75	19	— 4	28	41	1.46	— 0.19	0.42	4.5	6	18	2	10	sw.	J. T. Wurster
Clinton	Clinton	595	57	41.3	+ 3.4	79	19	— 7	28	38	1.38	— 0.51	0.77	4.7	8	17	6	7	s.	Dr. A. P. Bryant
Davenport	Scott	580	59	42.8	+ 3.8	77	19	0	28	28	1.72	— 0.10	0.93	2.7	7	14	9	7	se.	U. S. Weather Bureau
Fairport	Muscatine	567	9			77	19	— 1	28	38	2.03	+ 0.03	0.64	3.0	8	13	6	11	s.	Bureau of Fisheries
Iowa City	Johnson	733	70	41.8	+ 4.2	75	19	— 2	28	38	1.73	— 0.44	0.73	3.0	7	16	10	4	se.	Prof. J. F. Reilly
Le Claire	Scott	576	30								1.57	— 0.20	0.86	4.7	6					Margaret T. Disney
Maquoketa (near)	Jackson	692	25	39.6	+ 3.8	75	19	— 8	28	38	2.42	+ 0.81	1.06	3.5	7	15	7	8	nw.	John Strodthoff
Muscatine	Muscatine	546	69								1.62	— 0.68	0.75	0.2	8					William Molis
Olin	Jones	750	31	39.7	+ 3.4	75	19	— 8	28	42	1.71	+ 0.09	0.40	2.0	6	18	6	6	sw.	Mrs. L. Stingley
Tipton (near)	Cedar	806	31	41.2	+ 3.8	76	20	— 6	28	43	1.69	— 0.18	0.42	2.0	6	15	5	10	s.	John Kroeplen
Williamsburg‡‡	Iowa	805	14	41.8		74	19	1	28	39	1.74	+ 0.04	0.51	0.4	5	22	5	3	nw.	Dr. F. C. Schadt
Means and extremes				41.2	+ 3.9	79	19	— 8	28	43	1.90	+ 0.06	2.40	2.7	7	17	6	7	s.	
Southwest District																				
Atlantic	Cass	1,110	39	44.4	+ 6.9	73	19	5	26†	38	2.33	+ 1.03	1.23	0.2	6	15	9	6	sw.	Roy L. Fancolly
Bedford	Taylor	1,200	2								2.28	+ 0.71	1.00	T.	4	18	3	9	nw.	Arthur L. Bishop
Clarinda	Page	1,009	40	43.0	+ 3.3	71	10†	10	26†	41	2.72	+ 1.20	1.38	0	7	20	7	3	w.	Dr. H. C. Hawley
Corning	Adams	1,287	38	43.6	+ 6.2	70	10†	9	28	44	2.02	+ 0.55	0.88	T.	3	18	6	6	s.	W. J. Wagner
Cumberland (near)	Cass	1,225	31								2.13	+ 1.04	0.97	0	4	20	3	7	sw.	Carl E Pollock
Glenwood	Mills	1,100	32	43.8	+ 5.2	70	9†	10	26	40	2.14	+ 0.99	1.48	T.	3	20	5	5	sw.	George Mogridge
Greenfield	Adair	1,368	34								1.72		0.97	1.0	4	15	7	8	sw.	P. C. Cornell
Lenox	Taylor	1,250	35	45.0	+ 6.8	73	11†	9	28	38	1.90	+ 0.43	1.03	0.1	5	16	5	9	nw.	J. L. Hurley
Oakland	Pottawattamie	1,139	11	44.3	+ 6.8	70	10	9	26	36	1.94	+ 0.69	1.37	T.	3	17	3	10	sw.	W. S. Mathews
Red Oak (near)‡‡	Montgomery	1,030	5								2.36	+ 0.94	1.22	0	4	14	12	4	s.	B. R. Bridge
Riverton (near)	Fremont	920	4								1.80	+ 0.31	1.07	0.4	4	17	3	10	s.	Geo. C. Rader
Thurman	Fremont	960	33	44.8	+ 6.4	71	10†	13	26	42	2.16	+ 0.31	0.75	T.	3	18	2	10	s.	H. H. Askew
Omaha, Neb.		1,105	59	44.0	+ 5.5	70	13	11	26	32	2.17	+ 1.10	1.64	1.1	4	18	5	7	s.	U. S. Weather Bureau
Means and extremes				44.1	+ 5.9	73	11†	5	26†	44	2.20	+ 0.81	1.92	0.2	4	17	6	7	sw.	
South Central District																				
Afton	Union	1,212	36	43.4	+ 4.9	72	10†	9	28	34	2.29	+ 0.86	0.82	0.5	5	20	4	6	sw.	S. R. Brown
Albia	Monroe	949	32	42.7	+ 4.5	73	19	10	26†	39	2.77	+ 1.21	1.32	T.	4	16	2	12	sw.	J. M. Stevenson
Centerville	Appanoose	1,013	25	43.6	+ 4.1	73	19	9	29	33	4.57	+ 3.13	2.84	T.	6	20	3	7	se.	Thomas Wood
Chariton (near)	Lucas	1,042	35	42.9	+ 4.2	73	19	8	28	40	2.28	+ 0.82	1.20	T.	3	17	8	5	sw.	C. C. Burr
Corydon (near)	Wayne	1,050	37	42.9	+ 4.1	73	19	8	28	34	2.39	+ 0.89	1.28	0.4	5	19	2	9	w.	J. C. Davis
Creston	Union	1,291	25	42.4	+ 4.2	71	19	8	28	34	1.56	— 0.16	0.78	0.2	6	14	8	8	s.	Mrs. N. Spangler
Earlham (near)	Madison	1,126	28	42.8	+ 5.6	71	19	8	26	40	1.59	— 0.07	1.17	T.	3	18	3	9	sw.	George Phillips
Indianola	Warren	972	39	44.1	+ 5.8	74	19	9	26	36	0.89	— 0.68	0.51	0.5	6	18	4	8	s.	Seth F. Shenton
Knoxville	Marion	920	35	44.0	+ 5.2	75	19	9	26	35	2.18	+ 0.62	1.48	T.	5	17	6	7	sw.	W. J. Casey
Lacona	Warren	824	31								2.00	+ 0.32	0.97	0	7	15	13	2		J. B. Alter
Lamoni	Decatur	1,123	23	43.0	+ 4.3	74	4	7	28	39	1.70	+ 0.26	0.84	0.4	8	18	3	9	nw.	F. S. Parks
Melrose	Monroe	871	1								2.25		1.50	T.	5	16	8	6	sw.	J. M. Carr
Mount Ayr	Ringgold	1,220	37	43.0	+ 4.2	70	15†	9	28†	34	1.98	+ 0.44	0.81	T.	5	19	5	6	s.	E. O. Gleason
Tingley	Ringgold	1,275	5	43.0	+ 4.6	70	15†	8	28	37	2.41	+ 0.94	1.24	0.7	5	19	6	5	sw.	James A. Verploegh
Winterset	Madison	1,118	39	44.1	+ 5.7	73	19	10	26†	37	1.69	+ 0.22	0.70	0.5	4	18	5	7	nw.	H. S. Ely
Means and extremes				43.2	+ 4.7	75	19	7	28	40	2.17	+ 0.63	2.84	0.2	5	18	5	7	sw.	
Southeast District																				
Bonaparte (near)	Van Buren	563	39	42.5	+ 2.9	74	19	5	28	39	2.18	+ 0.38	1.11	T.	4	18	5	7	s.	B. R. Vale
Burlington	Des Moines	544	34	43.2	+ 2.1	75	19	5	28	29	2.42	+ 0.56	1.26	1.3	6	17	8	5	se.	John W. Donnelly
Columbus Junction	Louisa	595	29	42.1	+ 2.5	75	19	1	28	40	2.31	+ 0.57	1.11	2.2	7	15	14	1	sw.	Miss Musa Todd
Fairfield	Jefferson	780	46	41.8	+ 3.3	75	19	5	28	41	1.68	— 0.48	0.45	0.3	5	18	4	8	s.	R. M. McKenzie
Keokuk	Lee	614	59	44.2	+ 3.1	75	19	9	28	33	3.63	+ 1.69	2.05	0.1	6	18	5	7	sw.	U. S. Weather Bureau
Keokuk No. 2	Lee	651	1	44.2		75	19	8	28	39	3.96		1.70	T.	7					J. N. D. Dickinson
Keosauqua	Van Buren	639	38	43.2	+ 4.2	78	19	9	28	44	1.80	+ 0.19	1.12	T.	3	16	11	3	nw.	Dr. J. W. Rinabarger
Mt. Pleasant	Henry	730	49	44.0	+ 4.3	76	19	4	28	39	1.82	+ 0.01	0.75	T.	6	17	9	4	se.	J. H. Jericho
Oskaloosa	Mahaska	835	54	43.4	+ 4.9	72	10	7	28	36	4.30	+ 2.70	2.61	2.1	9	17	4	9	sw.	Roy R. Robinson
Ottumwa	Wapello	649	35	42.8	+ 2.6	76	19	10	28	46	2.07	+ 0.69	0.75	T.	6	18	5	7	sw.	C. L. Mikesh
Sigourney	Keokuk	785	34	42.7	+ 4.5	76	15†	3	28	42	1.98	+ 0.33	0.60	T.	6	19	7	4	se.	John B. Slate
Stockport (near)	Van Buren	747	28	42.6	+ 4.2	76	19	6	28	43	1.90	+ 0.26	0.84	0.2	6	19	7	4	s.	C. L. Beswick
Washington	Washington	757	48	42.8	+ 4.1	75	19	3	28	34	1.69	— 0.07	0.64	T.	6	12	8	10	nw.	D. D. Sherman
Wever	Lee	552	2																	H. G. Liddle
Means and extremes				43.0	+ 3.6	78	19	1	28	46	2.43	+ 0.69	2.61	0.5	6	17	7	6	sw.	
State means and extremes				41.3	+ 4.7	79	19	—16	28	46	2.12	+ 0.57	2.84	1.1	5	17	6	7	sw.	

Temperature normals are based on the 46-year period July 3, 1875 to July 2, 1921; shorter records corrected to harmonize. Precipitation normals are based on the 50-year period ended December 31, 1927 at first order stations; upon all records of 10 years or more ending December 31, 1920 for most of the co-operative observing stations; and upon interpolations from normal maps for recently established stations.

Reference letters a, b, c, etc., appearing in the table indicate the number of days missing; for example b represents two days, etc.

†Also other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.

‡‡Precipitation not included in means and summaries.

PRECIPITATION

The average precipitation for the State, derived from the averages of 9 districts of nearly equal area, and based on the records of 121 stations, was 2.12 inches, or 0.57 inch above normal. The greatest excess was in the northwest district, 1.20 inches, and the central district had the least excess, 0.03 inch. The greatest precipitation excess at a single station, 3.13 inches, occurred at Centerville, and the greatest deficiency 1.11 inches, at Audubon. The greatest amount at single station was 4.57 inches at Centerville, and the least was 0.79 inch at Dubuque. The greatest amount occurring in 24 consecutive hours was 2.84 inches at Centerville on the 19th and 20th. The average number of days with 0.01 inch or more of precipitation for the State was 5, ranging from 7 days in the east-central district, to 4 days in the northwest, west-central, cenral and southwest districts. For individual stations the range was from 8 days at Belmond, Charles City, Clinton, Dubuque and Muscatine, to 2 days at Baxter, Van Meter and Waukee.

Daily Precipitation for November, 1930

Stations	Drainage Basin	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	
Northwest District																															
Akron	Bix Sioux																.15			.58	.55			T.	T.	.02		T.					1.30
Alta	Raccoon															.70	.18			.60	1.05			.03	.02	T.		.03					2.61
Alton	Floyd														T.		.25			.19	2.04			.02	.03	T.		.04					2.57
Cherokee	Little Sioux														T.	.08	.12			.38	1.50			.03	T.	T.	T.	.01					2.42
Estherville	Des Moines															.05	.80			.24	2.36				.05	.05							3.55
Hawarden	Big Sioux																.48			.67	1.34	T.		.03	T.	.01	.01						2.54
Inwood (near)	Big Sioux																.33			.59	1.24	T.		T.	T.	T.	T.	.05					2.21
Lake Park (near)	Little Sioux														.03		.87			.15	1.65			T.	T.	T.							2.70
Le Mars	Floyd																.38			.32	2.13			T.	T.			.08					2.91
Marathon	Raccoon														T.	T.	1.28			.61	.85		T.			T.	T.						2.74
Pocahontas	Des Moines														T.		.91			.35	.77			T.	T.	T.	T.	.01					2.04
Rock Rapids	Big Sioux																.40			.45	1.50			T.									2.35
Sanborn	Floyd																.73				2.23			T.	.04	T.							3.00
Sheldon	Floyd														T.		.33			.68	1.94	T.		.01	.01	.02	T.	.01					3.00
Sioux Center	Floyd														T.		.35			.70	1.60				T.	T.							2.65
Spencer	Little Sioux														T.		.75				1.63			T.	.02	.08		.02					2.50
Storm Lake	Raccoon														T.	.28	.46			.85	.75			T.	T.	T.	T.	T.					2.34
Washta	Little Sioux																.23			.22	1.85			T.		T.		T.					2.30
West Bend	Des Moines															T.	.48			.22	1.14	T.				T.							1.81
North Central District																															
Algona	Des Moines																.80			.53	.69			T.	T.	.04							2.06
Allison (near)	Cedar															.12	.63			T.	.70				T.	.15							1.60
Belmond	Iowa															.07	.60	.02		.19	.40			.05		.19		.01					1.44
Britt	Iowa														T.	.11	.92				.97	.06				.05		.04					2.15
Charles City***	Cedar														.07	.09	.77			.20	.38	T.		T.	.01	.22		T.			.02		1.76
Forest City	Cedar															T.	.40				.64			T.	.05	.30		T.					1.39
Hampton	Cedar														.06	.45	.10			.19	.43				T.	.10				T.			1.33
Humboldt	Des Moines														T.		.97			.07	.86			T.	T.	T.							1.90
Mason City	Cedar														T.	T.	.45	.11		.67		T.	T.	.02	.20	.10				T.			1.55
Northwood	Cedar														T.	.07	.70			.28	.54	T.			.20	.20				.10			2.09
Osage	Cedar															.09	.60			.19	.38				.02	.20				.02			1.50
Northeast District																															
Cedar Falls	Cedar															.12	.95				1.42				.02	.20				T.			2.71
Decorah	Mississippi															.43	1.22				1.15			.08	T.	.21							3.09
Delaware (near)	Maquoketa															.36	.90				.69					.16							2.11
Dubuque***	Mississippi														.01	.15	.20			.01	.20	T.		T.	.03	.18		T.		.01	T.		0.79
Fayette	Mississippi															.25	.73				1.23			.01	.03	.20							2.45
Independence	Wapsipinicon															.58	.45			T.	1.07				.02	.17							2.29
Lansing	Mississippi															.79	.48	.03			.80	.12			.05		.29			.03	T.		2.59
New Hampton	Wapsipinicon															.44	.67				.97				T.	.15							2.23
Oelwein	Wapsipinicon															.55	.60				1.20					.36							2.71
Postville (near)	Mississippi															.40	1.78				1.29				.04	.40		T.		.04			3.95
Waterloo	Cedar															.25	.93				1.10	.05			T.	.25	T.						2.58
Waverly	Cedar															.08	.69				T.					.18							0.95
West Central District																															
Audubon (near)	Nishnabotna														T.	.45	.72			.20	1.03			T.	T.	.01		.03		T.			2.44
Carroll	Raccoon															.34	1.21			.27	.94				.02	.01		.01					2.80
Denison	Missouri																.60			1.02	.58				T.	T.		.01					2.21
Guthrie Center	Raccoon																.60			.56	.63												1.79
Harlan	Nishnabotna															.04	.63			.12	1.11				T.	T.		.01		T.			1.91
Jefferson	Raccoon														T.	T.	.53			.45	.60			T.	T.	T.		T.		T.			1.58
Little Sioux	Little Sioux															.02	.27			.69	1.24					T.							2.22
Logan	Missouri															T.	.43			.45	1.20				T.								2.08
Onawa	Missouri																.30			.20	1.85	T.			T.	T.		T.					2.35
Rockwell City	Raccoon																.68			.10	.75					T.		.01					1.54
Sac City	Raccoon														T.	T.	1.33			.60	.65			T.	T.	T.		.04					2.62
Sioux City***	Missouri														T.	.30	.05			1.49	1.11	T.		T.	T.	.02	.01	.01					2.99
Stuart	Middle																																
Central District																															
Ames	Skunk																.30			.27	.50				.02			.02					1.11
Baxter	Skunk																.25				.90				T.			T.					1.15
Boone (near)	Des Moines																.45			.14	.72				T.	.02		T.					1.33
Des Moines***	Des Moines														.01	.12	.14			.56	.19			.01	T.	.01	T.	.01		T.			1.05
Fort Dodge	Des Moines																.70			.40	.51	.05			.02								1.68
Grinnell	Iowa															.05	.08				2.60				.02	.02				.08			2.85
Grundy Center	Cedar															.12	.20			T.	.89			T.	.10	.15							1.46
Iowa Falls	Iowa																.38			T.	.80				.10	.15							1.43
Marshalltown	Iowa														T.	T.	.71			T.	.70				.03	.05		T.		T.	T.		1.49
Monroe	Des Moines															.02	.32			.05	1.01					.04		T.		.11			1.55
Perry	Raccoon															T.	.58			.34	.64			T.	T.	T.		.04		T.			1.60
Toledo	Iowa														T.	.05	.70				1.40				.05	.07		T.		.02			2.29
Van Meter	Raccoon															T.	.50				1.00				T.			T.					1.50
Waukee	Raccoon														T.	T.	.68			.45	T.			T.	T.	T.		T.		T.			1.13
Webster City	Des Moines															.20	.54				.74				T.	T.							1.48
East Central District																															
Belle Plaine	Iowa														T.	.29	.69				2.40				.06	.07	T.	.01		.18			3.70
Cedar Rapids	Cedar															.18	.42				.42				.05	.18	T.			.21	T.		1.16
Clinton	Mississippi															.20	.14				.13				.02	.10	.02			.37	.40		1.38
Davenport***	Mississippi														T.	.17	.15			T.	.22			T.	.01	.23		T.	T.	.77	.17		1.72
Fairport	Mississippi															.16	.41				.25				.01	.30	.04			.22	.64		2.03
Iowa City	Iowa															.13	.50				.18	T.			.02	.17		T.		.50	.23		1.73
Le Claire	Mississippi																.19				T.	.22			.01	T.	.23			.03	.86		1.57
Maquoketa (near)	Maquoketa											.01				.22	.23				.28					1.06				.46	.16		2.42
Muscatine	Mississippi															.14	.27				.07	.15			.03		.15	.06			.75		1.62
Olin	Wapsipinicon															.25	.40			.25	.25				T.	.16				.40			1.71
Tipton (near)	Cedar															.26	.33				.18					.10				.42	.40		1.69
Williamsburg	Iowa															.32	.51				**					.04				.39	.48		**

Daily Precipitation for November, 1930—Continued

Stations	Drainage Basin	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	
Southwest District																																	
Atlantic	Nishnabotna															.48	.60			.65	.58				T.	.01		.01		T.			2.33
Bedford	102															T.	.90			.20	.80					T.				.38			2.28
Clarinda	Nodaway														T.	.20	.85			.75	.63				.01	.01				.27			2.72
Corning	Nodaway														T.	T.	.88			.35	.79				T.	T.	T.	T.		T.			2.02
Cumberland (near)	Nodaway														T.	.10	.81			.25	.97				T.	T.	T.	T.					2.13
Glenwood	Missouri															T.	.66			.68	.80					T.							2.14
Greenfield	Nodaway															T.	.64			.97	.03			T.	T.		.08	T.					1.72
Lenox	Missouri														T.		.50			.35	.68					.10		T.		.27			1.90
Oakland	Nishnabotna																.57			.47	.90					T.							1.94
Red Oak (near)	Nishnabotna														T.	.01	1.10			.98	.24					T.							2.36
Riverton (near)	Nishnabotna														T.	T.	.70			.70	.37				T.	T.				.03			1.80
Thurman	Missouri																.71			.75	.70					T.				T.			2.16
Omaha, Neb.***	Missouri														T.	.10	.38			1.24	.45			T.	T.	T.		T.		T.			2.17
South Central District																																	
Afton	Grand																.65			.48	.82							.02		.32			2.29
Albia	Des Moines														T.		.85				1.32				T.	T.	T.	T.		.40	.20		2.77
Centerville	Chariton																.87			.01	2.83				T.	.01		T.		.52	.33		4.57
Chariton (near)	Chariton														T.	T.	.64			T.	1.20				T.	T.		T.		.44			2.28
Corydon (near)	Chariton															T.	.38			T.	1.28				.02			.01			.70		2.39
Creston	Missouri																.61			.75	.03			T.	T.	.03		.01		.13			1.56
Earlham (near)	Des Moines																.42			.53	.64				T.	T.		T.	T.				1.59
Indianola	Des Moines															T.	.02			.25	.51				.02	T.	T.	.05		.04	T.		0.89
Knoxville	Des Moines															.04	.22			.05	1.48				T.	T.				.39	T.		2.18
Lacona	Des Moines															.05	.48			.17	.80					.10				.28	.12		2.00
Lamoni	Grand																.41			.57	.27				.01	.01		.01		.39	.03		1.70
Melrose	Des Moines																.30			.10	1.40				T.		T.			.20	.25		2.25
Mount Ayr	Grand																.50			.19	.81					.08				.40			1.98
Tingley	Platte														T.		.79			.29	.95				T.	T.	T.	.06		.32			2.41
Winterset	Des Moines																.47			.48	.70				T.	T.		.04					1.69
Southeast District																																	
Bonaparte (near)	Des Moines																.40				.24				T.	T.	T.	T.		1.11	.43		2.18
Burlington	Mississippi															T.	.33				.36				.08	.04	T.	T.		1.26	.35		2.42
Columbus Junction	Iowa														T.	.05	1.11				.23				.01	.11				.37	.43		2.31
Fairfield	Skunk															T.	.40				.45				.03	T.				*	.80		1.68
Keokuk***	Mississippi														T.	.27	.92			T.	.29			T.	.02	T.		T.		1.97	.16		3.63
Keokuk No. 2	Mississippi												T.	T.	T.	.02	1.21				.40				.03	.02	T.	T.		1.70	.58		3.96
Keosauqua	Des Moines														T.		.38				.30				T.	T.		T.		1.12			1.80
Mt. Pleasant	Skunk															.02	.45				.25					.06				.75	.29		1.82
Oskaloosa	Des Moines														T.	.03	.89				2.61	T.	T.		.06	.03	.02	.02		.49	.15		4.30
Ottumwa	Des Moines															.09	.59				.75	T.			T.	.02		T.		.39	.23		2.07
Sigourney	Skunk														T.	.25	.45				.60				T.	.01				.50	.17		1.98
Stockport (near)	Skunk															.06	.27				.36				.03			T.		.84	.34		1.90
Washington	Skunk															.10	.45				.27				.04	.10		T.		.64			1.60
Wever	Mississippi																																

Except as otherwise indicated, observations are generally made late in the afternoon, near sunset, and precipitation recorded is for 24 hours ending at the time of observation.

‖‖Precipitation measured in the morning; amount then recorded is for the preceding 24 hours.

***Regular Weather Bureau Station: precipitation is for 24-hour period midnight to midnight.

**Incomplete.

*Precipitation included in the next following measurement.

T. Precipitation is less than .01 inch rain or melted snow.

PRESSURE, RELATIVE HUMIDITY, WIND AND SUNSHINE

Stations	Barometric Pressure, Inches (Sea Level)					Relative Humidity, %					‡‡Wind					Sunshine	
						Mean							Maximum				
	Mean	Highest	Date	Lowest	Date	7 A. M.	12 Noon‡	7 P. M.	Lowest	Date	Total movement	Average hourly velocity	Miles	From	Date	% possible	Departure from normal
Chas. City..	30.04	30.65	6	29.03	16	84	59	69	31	6†	5,370	7.5	23	s.	20	63	+16
Davenport	30.08	30.64	7	29.18	16	80	59	62	29	8	7,673	10.7	36	sw.	20	62	+12
DesMoines	30.05	30.61	6	29.06	16	76	52	58	33	26	7,661	10.6	40	nw.	25	70	+16
Dubuque....	30.06	30.66	6	29.15	16	82	61	67	35	7	4,737	6.6	23	nw.	24	57	+11
Keokuk.....	30.11	30.65	7	29.21	16	75	51	57	27	8	5,723	7.9	31	nw.	25	67	+16
Sioux City.	30.04	30.70	5	29.20	16	77	58	61	36	4	9,133	12.7	51	nw.	25	68	+16
Omaha, Nb	30.05	30.64	5	29.21	16	70	49	54	29	6	5,684	7.9	41	nw.	25	73	+18
Means and extremes	30.06	30.70	5	29.03	16	78	56	61	27	8		9.1	51	nw.	25	66	+15
Normals and records	30.07	*30.96	2d 1896	§29.03	28th 1918	81		72	¶16	6th 1916			‖51	sw.	10th 1919	51	

*Sioux City §Davenport ¶Omaha ‖Keokuk ‡Local mean time †And other dates.

‡‡January 1, 1928, 3-cup anemometers replaced 4-cup instruments. See Climatological Data, January, 1928, page 7.

SNOWFALL

The average snowfall for the State was 1.1 inches, or 1.2 inches below normal. The greatest total snowfall at any one station was 5.0 inches at Northwood and Postville (near). There were 32 stations that received only a trace of snow, and Clarinda, Cumberland (near), Guthrie Center, Lacona and Red Oak (near) received none. The greatest snowfall in 24 hours was 4.5 inches at Decorah on the 25th. The greatest number of days with 0.1 inch or more of snow on the ground was 7, at Cedar Falls and Northwood. The greatest depth of snow on the ground at any time was 4.5 inches at Decorah from the 25th to 28th inclusive.

RIVERS

Low stages prevailed on all interior streams, with little fluctuation. At Des Moines the extreme stages were 1.1 feet and 0.5 foot, and averaged 0.7 foot, or 2.0 feet below normal.

The Missouri River averaged nearly normal. At Sioux City the highest stages were recorded during the third week, and at the close of the month the river had fallen to a stage of 2.4 feet due to ice gorges, which was the lowest recorded this year. At Omaha only slight fluctuation occurred.

On the Mississippi River the stages remained very low throughout the month, and the fluctuations were of little importance. Navigation on the river at Dubuque was officially closed on the 21st. There was much running ice after the 26th but the channel remained open.

ERRATA

Report for September, 1930; Page 68, Estherville; number of days with 0.01 inch or more precipitation published 11, should be 10. Lake Park (near); mean temperature published 61.3°, should be 61.2°. Decorah; date of minimum temperature published 29, should be 28. Page 69, Thurman; lowest temperature published 42° on the 28th, should be 39° on the 20th. Stockport; maximum temperature published 97° on the 1st, should be 98° on the 13th.

Daily Maximum and Minimum Temperature for the Month of November, 1930

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
Northern Division																																	
Algona	Maximum	55	55	58	59	43	34	55	65	66	70	61	58	69	60	65	69	56	59	69	62	46	46	44	33	37	21	17	18	37	43	.....	51.0
	Minimum	26	33	25	35	19	17	24	37	38	39	42	31	38	47	55	33	37	34	48	42	29	30	31	17	16	1	3	1	17	22	.....	29.0
Alta	Maximum	55	57	59	60	34	39	55	64	65	68	60	58	68	57	64	40	54	59	63	59	36	46	42	31	38	15	15	28	36	43	.....	48.9
	Minimum	29	32	29	33	17	18	23	37	41	41	42	37	40	41	38	30	31	33	43	33	28	28	31	19	15	4	9	8	23	21	.....	28.5
Alton	Maximum	65	62	61	62	41	42	57	65	67	67	62	60	70	60	62	39	57	61	52	52	40	48	44	37	40	20	18	32	43	47	.....	51.1
	Minimum	31	31	21	32	17	18	23	36	34	35	33	29	32	48	38	30	28	34	36	38	28	29	32	20	19	6	10	10	18	18	.....	27.1
Belmond	Maximum	52	56	57	61	45	33	53	66	66	69	65	67	70	76	64	59	57	60	67	63	38	47	47	35	36	20	27	18	37	42	.....	51.8
	Minimum	22	30	20	35	19	12	23	37	40	40	42	33	37	37	38	34	34	33	50	38	30	29	32	14	13	0	4	— 3	18	21	.....	27.1
Charles City	Maximum	50	52	53	61	33	37	51	64	65	68	65	67	67	60	63	58	56	60	69	60	38	45	46	32	30	18	13	20	35	34	.....	49.0
	Minimum	20	28	23	32	18	15	23	34	39	38	39	36	38	49	56	36	35	38	50	38	30	30	32	18	15	2	— 3	— 6	20	14	.....	27.9
Decorah	Maximum	47	52	52	60	45	36	49	64	64	64	66	65	65	61	64	63	63	63	71	71	62	45	44	44	23	18	15	11	34	35	.....	50.5
	Minimum	12	20	19	23	18	5	16	33	38	36	35	32	27	48	53	50	34	29	44	45	30	28	30	16	11	— 2	— 4	—16	11	16	.....	24.6
Dubuque	Maximum	47	57	55	63	43	34	49	62	66	67	62	65	58	60	62	61	60	65	72	66	43	47	49	37	24	18	14	21	36	34	.....	49.9
	Minimum	20	33	30	35	25	18	23	37	45	40	43	45	44	48	57	41	40	37	51	43	33	32	35	19	17	4	0	— 2	21	25	.....	31.3
Forest City	Maximum	51	55	57	61	50	33	56	66	67	70	62	61	69	61	63	58	56	59	65	64	47	47	49	41	37	33	15	16	37	41	.....	51.6
	Minimum	19	30	25	33	16	15	20	33	37	37	39	29	35	43	37	32	30	32	35	39	29	29	29	10	10	— 3	0	— 8	13	16	.....	24.7
Independence	Maximum	47	53	51	61	56	37	50	62	65	67	66	66	63	64	63	60	57	62	71	67	49	48	47	43	32	29	14	14	34	36	.....	51.1
	Minimum	18	30	27	29	22	14	22	32	37	37	35	36	38	46	54	37	35	36	37	48	32	28	32	21	13	3	2	— 5	2	21	.....	27.3
Inwood	Maximum	60	58	63	60	40	38	53	64	62	65	58	56	67	58	57	41	48	55	48	47	35	43	41	32	38	18	15	30	41	44	.....	47.8
	Minimum	26	26	21	31	14	19	28	35	35	38	31	37	33	47	41	29	27	30	33	34	27	28	31	20	17	5	9	8	22	18	.....	26.8
Lake Park	Maximum	54	57	58	53	39	34	55	64	60	67	57	53	68	62	61	46	49	54	59	48	40	42	41	31	35	16	12	25	32	41	.....	47.1
	Minimum	24	27	25	33	15	19	21	37	35	37	36	34	36	34	45	30	30	32	34	37	27	27	31	17	16	— 1	2	2	19	20	.....	26.0
Mason City	Maximum	50	54	53	60	44	32	52	65	66	67	65	60	67	59	64	57	55	60	67	61	44	43	46	34	32	19	13	15	36	38	.....	49.3
	Minimum	19	29	19	36	19	13	22	38	40	33	43	33	30	43	53	35	33	30	46	43	30	29	30	18	12	— 1	— 3	— 7	14	19	.....	26.6
New Hampton	Maximum	46	55	51	62	50	40	51	55	65	58	66	66	66	60	58	61	57	59	70	67	48	47	45	40	27	22	13	14	35	36	.....	49.8
	Minimum	13	27	28	31	19	13	21	32	36	36	36	31	35	46	53	35	34	36	47	45	31	28	29	17	13	0	— 2	—10	12	18	.....	26.3
Northwood	Maximum	51	53	55	58	43	33	52	65	65	69	65	59	69	59	65	57	56	59	67	61	44	47	44	32	33	19	14	15	35	37	.....	49.4
	Minimum	18	31	23	32	16	13	21	32	38	35	38	32	32	46	54	33	31	33	45	41	30	30	32	12	13	— 3	0	— 9	13	19	.....	26.0
Pocahontas	Maximum	54	57	59	63	46	41	56	66	68	70	62	63	70	56	66	51	56	60	65	60	48	48	45	35	40	20	16	23	38	43	.....	51.5
	Minimum	25	33	21	35	18	18	22	36	40	37	42	35	35	47	51	31	31	34	47	42	29	29	30	19	15	4	7	7	20	21	.....	28.8
Postville	Maximum	46	53	53	64	31	42	49	60	65	67	65	64	61	58	64	62	51	60	69	60	43	45	46	35	30	15	10	12	35	31	.....	48.2
	Minimum	15	25	27	29	20	10	20	33	42	40	37	34	38	38	42	38	35	34	48	42	29	29	29	19	15	1	— 2	—10	8	10	.....	25.8
Rock Rapids	Maximum	63	55	55	55	52	37	54	64	63	65	58	55	67	60	62	42	54	57	52	54	40	46	45	27	37	25	20	32	40	44	.....	49.3
	Minimum	28	28	20	43	16	18	19	32	26	30	30	30	30	34	42	30	27	32	32	32	27	27	27	20	20	4	8	8	15	17	.....	25.1
Central Division																																	
Ames	Maximum	57	57	58	64	55	35	55	67	68	70	66	68	69	64	67	62	60	65	71	64	46	48	48	42	43	43	20	23	39	45	.....	54.6
	Minimum	24	35	28	31	23	19	20	36	39	39	40	38	38	48	56	36	37	38	49	44	33	32	32	21	19	7	11	8	21	24	.....	30.9
Belle Plaine	Maximum	56	59	56	68	48	40	54	66	70	73	70	70	69	65	65	61	61	65	74	67	49	50	48	41	40	24	20	26	36	41	.....	51.4
	Minimum	21	28	24	30	28	15	20	33	39	39	37	38	41	39	56	37	37	37	51	47	24	31	33	21	14	4	6	0	26	24	.....	29.3
Carroll	Maximum	54	56	57	63	50	38	55	65	66	68	63	66	68	59	67	55	60	63	65	62	40	48	46	37	41	22	19	27	40	46	.....	52.2
	Minimum	30	31	26	39	19	18	21	39	42	43	45	38	39	49	54	31	35	35	47	39	30	30	31	20	19	7	11	9	20	22	.....	30.6
Cedar Rapids	Maximum	52	60	57	66	52	41	52	64	68	70	68	69	65	65	66	60	61	65	75	67	48	48	49	41	33	25	20	17	35	39	.....	53.3
	Minimum	19	27	25	25	25	17	23	32	41	31	34	37	40	49	56	38	37	35	50	47	32	29	31	21	15	4	4	— 4	15	25	.....	28.7
Davenport	Maximum	51	60	59	63	44	37	50	62	67	69	63	60	60	61	66	62	61	70	77	68	44	49	51	37	30	18	18	28	39	40	.....	52.1
	Minimum	24	37	34	38	27	21	28	36	42	41	42	44	46	51	59	43	40	42	55	44	36	32	35	21	18	5	5	0	28	31	.....	33.5
Des Moines	Maximum	57	59	58	65	39	42	54	65	69	70	69	69	69	64	69	58	62	69	72	65	41	51	49	31	44	18	21	35	40	47	.....	54.0
	Minimum	26	37	29	32	25	23	23	39	42	40	43	44	44	50	58	36	39	41	50	36	33	33	31	21	18	9	11	11	32	24	.....	32.7
Ft. Dodge	Maximum	55	57	58	62	44	35	55	64	67	70	63	67	70	60	66	61	59	62	67	63	42	47	46	36	40	22	18	23	39	44	.....	52.1
	Minimum	14	33	33	37	20	16	23	33	41	41	43	35	41	49	57	32	35	35	50	41	31	30	32	19	16	4	9	5	22	20	.....	29.9
Grinnell	Maximum	60	62	57	69	64	38	53	62	68	67	69	68	69	65	67	60	61	67	75	69	53	50	55	50	42	29	20	22	41	38	.....	55.7
	Minimum	23	30	28	33	23	17	24	35	40	41	39	39	39	50	55	40	37	40	50	43	34	29	32	21	15	6	9	4	20	24	.....	30.7
Guthrie Center	Maximum	58	57	53	66	56	43	59	67	67	67	69	70	70	62	68	65	62	69	69	65	42	59	49	41	44	31	21	27	40	50	.....	55.5
	Minimum	27	32	19	38	22	14	19	40	40	39	43	43	34	48	55	34	37	37	48	40	32	30	31	21	19	8	12	10	20	20	.....	30.4
Iowa City	Maximum	53	56	57	66	53	40	52	64	69	69	67	68	63	65	68	60	61	68	75	67	49	48	50	42	33	25	18	18	35	41	.....	53.3
	Minimum	22	28	28	28	27	17	24	29	39	38	37	39	40	47	58	39	35	38	53	49	36	29	33	23	15	6	5	— 2	18	27	.....	30.2
Iowa Falls	Maximum	51	55	55	61	51	34	51	65	66	68	62	67	68	61	64	65	58	60	68	65	45	51	43	10	36	22	16	17	35	43	.....	51.4
	Minimum	22	30	23	32	21	14	22	30	40	36	41	33	34	48	54	32	35	35	50	38	28	27	31	19	13	—10	1	— 2	17	21	.....	27.2
Little Sioux	Maximum	62	60	63	65	51	43	60	67	68	69	67	69	71	63	67	42	61	66	58	62	43	53	48	38	45	25	26	34	38	50	.....	54.5
	Minimum	33	27	21	37	20	21	21	38	43	46	42	38	37	53	38	36	31	35	41	36	29	29	30	25	23	10	16	12	29	19	.....	30.4
Marshalltown	Maximum	55	58	56	65	49	39	53	65	68	71	68	68	70	60	68	59	62	66	71	67	45	48	48	39	40	23	19	22	38	44	.....	53.5
	Minimum	24	36	27	36	23	18	25	38	43	43	44	43	43	51	55	36	38	38	47	45	33	30	33	21	17	5	7	4	22	24	.....	31.6
Olin	Maximum	49	58	57	64	53	37	49	62	67	67	65	67	60	64	66	60	59	64	75	66	50	48	51	46	29	26	20	15	35	45	.....	52.5
	Minimum	15	21	25	22	25	15	19	27	34	27	32	35	38	48	56	41	35	34	45	50	35	29	31	21	15	4	— 1	— 8	10	23	.....	26.9
Sioux City	Maximum	61	58	61	61	37	43	57	65	65	67	63	57	69	60	59	40	51	63	52	52	38	49	45	30	43	17	20	33	39	49	.....	50.1
	Minimum	33	36	28	31	20	22	27	40	41	44	41	42	40	52	32	30	35	35	37	32	29	33	29	23	15	9	12	12	27	19	.....	30.3
Southern Division																																	
Albia	Maximum	59	62	62	69	42	42	54	63	68	70	66	70	69	62	68	56	64	70	73	63	50	51	52	34	41	22	24	24	38	47	.....	54.6
	Minimum	25	31	23	34	24	18	23	35	42	40	42	42	42	49	44	36	38	41	52	42	34	28	30	23	15	10	12	10	21	18	.....	30.8
Atlantic	Maximum	58	60	63	69	54	43	57	66	67	70	68	70	70	63	72	52	63	69	73	67	45	52	52	43	48	25	23	32	39	49	.....	56.1
	Minimum	33	35	25	38	22	19	26	40	46	45	46	43	47	54	49	37	38	50	55	39	35	33	29	18	17	5	10	5	25	18	.....	32.7
Burlington	Maximum	51	58	57	62	54	37	50	61	66	66	61	58	59	60	67	62	62	68	75	67	49	49	52	44	34	29	20	26	39	42	.....	52.8
	Minimum	25	36	35	35	33	22	27	32	39	38	38	44	43	49	58	42	38	43	55	49	37	30	34	24	17	10	10	5	26	30	.....	33.5
Columbus Jct	Maximum	54	57	57	66	55	39	51	63	68	68	66	63	61	64	68	62	62	68	75	68	50	49	49	46	37	29	20	21	37	41	.....	53.8
	Minimum	21	31	31	26	27	17	24	33	39	33	34	42	41	46	57	40	37	39	50	49	34	30	32	23	16	7	6	1	18	28	.....	30.4
Corning	Maximum	62	59	64	67	57	42	57	65	69	70	70	69	70	61	70	58	63	68	70	64	43	50	50	40	46	30	25	31	39	47	.....	55.9
	Minimum	31	35	28	33	23	15	13	36	42	42	43	40	44	50	54	32	35	38	50	38	31	28	30	23	21	10	15	9	28	24	.....	31.4
Corydon	Maximum	57	51	55	66	56	40	52	62	67	68	65	66	68	61	69	62	61	68	73	65	44	48	51	41	43	26	21	27	40	42	.....	53.8
	Minimum	26	35	30	32	25	20	23	33	40	40	39	41	42	49	57	35	36	40	52	43	34	29	31	23	19	11	12	8	27	27	.....	32.0
Creston	Maximum	58	58	61	66	51	42	54	65	62	68	68	68	67	59	69	62	61	67	71	62	42	50	50	38	45	25	23	31	48	46	.....	54.6
	Minimum	27	33	28	34	22	16	20	33	36	38	38	37	39	48	55	32	33	38	49	38	28	28	30	22	19	9	14	8	29	23	.....	30.1
Fairfield	Maximum	57	57	53	64	53	38	51	62	67	67	66	63	65	64	69	62	61	68	75	68	49	48	48	42	43	27	20	20	32	40	.....	53.3
	Minimum	23	31	28	23	26	17	23	31	40	33	33	40	41	49	56	39	32	39	52	48	32	29	31	23	16	10	9	5	20	28	.....	30.3
Keokuk	Maximum	58	60	57	65	48	40	54	64	68	68	63	63	60	61	70	61	64	70	75	67	46	50	54	38	44	22	22	34	46	43	.....	54.5
	Minimum	28	39	36	32	27	25	26	36	45	40	35	44	38	50	59	41	40	44	54	41	34	30	34	23	19	13	13	9	33	32	.....	34.0
Knoxville	Maximum	59	60	58	69	56	40	54	65	70	70	70	70	70	62	68	62	65	68	75	68	46	50	52	43	45	33	21	24	40	45	.....	55.9
	Minimum	25	34	27	34	25	18	23	36	41	42	42	42	44	48	55	36	38	40	49	42	35	30	32	22	16	9	13	10	24	26	.....	32.0
Lamoni	Maximum	60	59	62	74	52	45	54	63	68	69	68	68	68	62	70	57	62	71	71	65	44	50	51	39	47	30	27	32	38	47	.....	55.8
	Minimum	27	33	31	35	23	16	22	29	39	39	38	37	38	47	55	32	32	40	50	42	29	27	28	22	18	9	14	7	25	25	.....	30.3
Sigourney	Maximum	60	61	59	69	50	38	55	66	70	71	69	71	69	64	76	62	64	68	76	70	44	51	51	42	41	41	22	21	38	53	.....	56.4
	Minimum	21	32	27	27	24	16	20	29	40	35	33	37	38	47	54	36	34	39	48	40	34	28	30	23	14	7	7	3	21	25	.....	29.0
Thurman	Maximum	62	60	64	68	60	44	60	68	70	71	69	70	71	63	71	55	61	67	67	64	42	51	51	40	49	33	30	36	39	49	.....	56.9
	Minimum	31	32	23	38	22	18	18	37	44	44	45	40	44	52	54	31	35	40	52	37	31	27	29	27	22	13	17	15	35	23	.....	32.6
Winterset	Maximum	58	60	62	68	57	44	56	66	69	70	69	69	68	61	68	63	62	70	73	62	45	50	51	40	44	27	23	27	40	59	.....	56.0
	Minimum	25	35	25	37	22	18	24	38	44	42	44	42	43	50	56	34	38	36	50	44	33	30	32	21	22	10	10	10	25	25	.....	32.2
Omaha, Neb.	Maximum	60	58	62	66	38	43	60	67	68	69	67	69	70	63	68	48	60	66	66	61	42	52	49	31	48	21	25	37	40	48	.....	54.1
	Minimum	35	39	34	38	26	25	30	39	44	46	51	46	47	52	36	30	39	41	43	34	31	33	31	26	19	11	16	15	32	26	.....	33.8

MISCELLANEOUS PHENOMENA

Cold Wave: 26th.

Corona, lunar: 3d, 4th.

Fog, light: 3d, 4th, 10th, 11th, 12th, 13th, 14th, 15th, 18th, 19th, 29th, 30th.

Fog, dense: 3d, 4th, 10th, 11th, 12th, 13th, 14th, 15th, 18th, 19th, 29th.

Gales: 13th, 14th, 15th, 16th, 20th, 23d, 24th, 25th.

Glaze: 29th, 30th.

Hail, light: 20th.

Halo, lunar: 3d, 5th, 6th, 9th, 30th.

Halo, solar: 1st, 6th, 15th, 24th, 26th, 29th, 30th.

Haze: 18th, 19th.

Meteor Shower: 17th.

Parhelia: 26th.

Rainbow: 20th.

Sleet: 20th, 23d, 24th, 29th.

Thunderstorms: 15th, 16th, 19th, 20th.

Tornado: 20th, pendent, funnel-shaped cloud, with rotary winds and roaring noise, observed passing over Manilla at 3:30 a. m., did not touch the ground; no damage occurred.

THE LEONID METEORS OF 1930

By NORBERT G. RIBBLE

(Weather Bureau Office, Des Moines, Iowa)

Leonid meteor falls occur approximately every 33 years and were expected this year during the early mornings between November 13th and 18th. The main shower is expected about November 15th between 1932-1934. Heavy showers of this fall occurred in 1799, 1833, 1867 and 1868, but failed to occur or were of little consequence in 1900. In 1833 meteors were reported to have fallen from every space in the sky the size of the moon. The bright flashes of light awakened sleepers, like lightning. The Leonid meteors are associated with the orbit of a comet observed in 1866, known as 1866I. The meteors are presumably disintegrated fragments of the head of the comet, and material which has been associated with it from past ages.

A portion of this fall occurred this year on due schedule, and was observed by several parties on the morning of November 17th. A very successful observation was made at Iowa City during the morning of November 17, by a party under the supervision of Professor C. C. Wylie, University of Iowa. One observer in this party recorded 120 meteors within one hour's time, and averaged a little over 100 per hour. Several of these were spectacular and a few lighted the sky like flashes of lightning and left trains visible as long as ten seconds afterwards. The greatest fall occurred between 4:00 and 6:00 a. m.

At Columbia College, Dubuque, a party headed by Father J. A. Theobald and also at Cornell College, Mt. Vernon, a party with Professor F. M. McGaw, recorded numerous falls.

Because of cloudy weather which prevailed east of the Mississippi River, the eastern observers failed to observe the fall. Willard J. Fisher of Harvard had elaborate photographic equipment set up which could not be used. Texas observers recorded a few falls from a partly cloudy sky, which confirms in a general way the Iowa results.

The meteor shower came later and lasted longer than was expected so far in advance of the main group. Some meteors of Leonid group were still visible during the early morning of November 22. Mrs. Harry Allely of Randolph, Iowa, reported a daylight meteor at 6:47 a. m. having a bright flame with a bluish trail.

The pleasing results obtained this year give promise of something worth while for next year, and observers should be on the lookout about November 15, when the earth will again approach the orbit of the meteor swarm.

VETERAN WEATHER OBSERVER RETIRES

Mr. R. Z. Latimer, who has been an exceptionally faithful and accurate cooperative weather observer at Fayette, Iowa, resigned, effective October 6, 1930, after 42 years and 3 months of consecutive service. Such a long and excellent record, kept by one individual, is worthy of special remark.

When Mt. Latimer's resignation came to the attention of the Chief of the Weather Bureau at Washington, D. C., he wrote him the following appreciative letter:

"Mr. R. Z. Latimer,
Fayette, Iowa.

My Dear Mr. Latimer:

"Our Section Director for Iowa, at Des Moines, informs me that you have asked to be relieved of the work of cooperative observer at Fayette:

"The records of this office show that for over 42 years you have kept the official records at Fayette without failure, except recently during your brief illness. While two generations in one family often maintain a faithful meteorological record for a long period, it is rare that a single individual makes such a long, continuous and satisfactory record.

"It is regretted that you are no longer to be a member of our corps of weather observers, composed so largely of the best citizens of the many communities represented, but we realize your age will not permit you to longer continue the work.

"I desire to thank you personally for the excellent public service you have rendered without compensation, and for the splendid cooperation maintained with our Des Moines officials.

"Please accept my best wishes for your future health and happiness.

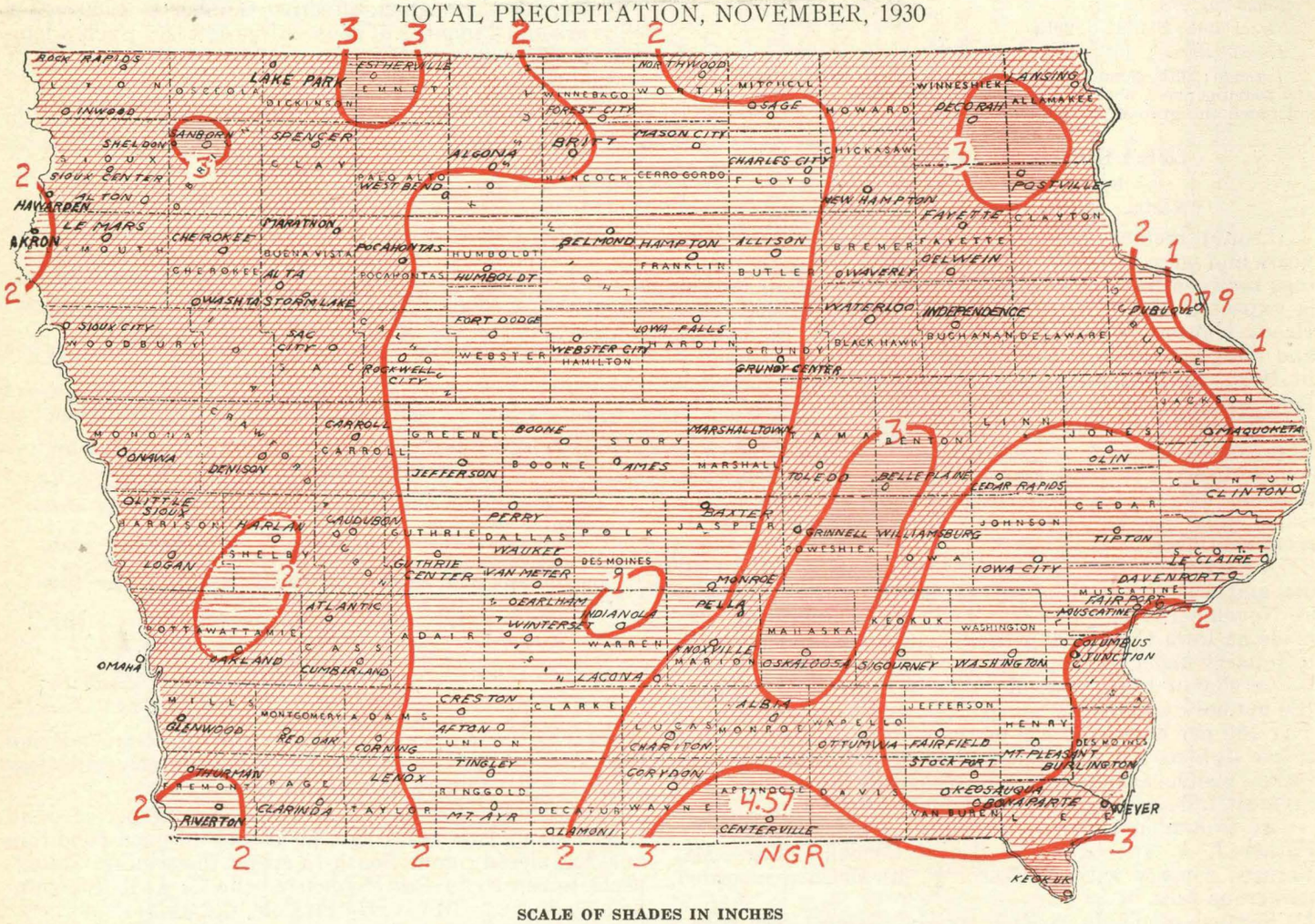
Respectfully,
(Signed) C. F. MARVIN,
Chief of Bureau."

Mr. Latimer also received a letter of commendation from Honorable G. N. Haugen, Representative in Congress for the Fourth District of Iowa.

Though Mr. Latimer experienced a brief period of ill health about two years ago, he is now in good condition and has already gone South to spend the winter. He expects to return to Des Moines for the G. A. R. Encampment next year. He is 85 years old.

Professor W. C. Van Ness, a member of the faculty of Upper Iowa University at Fayette, succeeds Mr. Latimer. In weather observations Professor Van Ness is not a novice. He served as cooperative observer of the Weather Bureau at Denison, Iowa, for 17 years prior to May, 1917.

TOTAL PRECIPITATION, NOVEMBER, 1930



SCALE OF SHADES IN INCHES

Less than 1	1 to 2	2 to 3	More than 3

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

IOWA SECTION
In co-operation with
IOWA WEATHER AND CROP BUREAU
CHARLES D. REED, Senior Meteorologist

VOL. XLI DES MOINES, IOWA, DECEMBER, 1930 No. 12

GENERAL SUMMARY

December weather was mild and dry. Nearly all of the stations reported their maxima on the 9th. At Des Moines the maximum temperature, 61°, recorded on the 9th, broke all the previous records for that day, 57° being recorded in 1889. At many stations the thermometer did not reach the zero mark. The minimum for the month at Omaha, 13° on the 1st, was the highest December minimum of record for that station.

Precipitation averaged exactly 50% of normal, and was below normal in all of the districts. Albia, Centerville, Maquoketa, Olin, Oskaloosa, Ottumwa and Washington, were the only stations that had precipitation in excess of their normal. The southwest district had the greatest precipitation deficiency for the State.

Snow fell mostly on the 13th, 18th and 20th, and averaged 50% of the normal. It was about normal in the east-central district, and much below normal in the rest of the State. The snow cover was the greatest where the temperatures were the severest, and it is unlikely that winter grains or meadows suffered damage of consequence.

Building operations and other outside work were carried on with very little interruption.

The water supply in general continued seriously deficient.

N. G. R.

TEMPERATURE

The mean temperature for the State, derived from the means of 9 districts of nearly equal area, and based on the records of 106 stations, was 26.7°, or 2.6° above normal. There was an excess in all districts. The greatest excess, 4.9°, was in the northwest district, and the least, 0.2°, in the east-central district. The highest monthly mean was 31.6° at Keokuk, and the lowest was 21.5° at Northwood. The absolute range for the State was 75°, from 65° at Albia on the 9th, to —10° at Olin on the 16th and 17th. The average number of days with the maximum temperature 32° or lower, was 14, ranging from 25 days at Northwood, to 5 days at Fairport and Clarinda. The average number of days with the minimum temperatures 32° or lower was 30, ranging from 31 days at 42 stations, to 25 days at Burlington, Keokuk and Keokuk No. 2. The average number of days with the minimum temperature zero or lower, was 1, ranging from 6 days at Decorah, to none at 79 stations. The greatest daily range in temperature at any one station was 43° at Olin on the 24th.

PRECIPITATION

The average precipitation for the State, derived from the average of 9 districts of nearly equal area, and based on the records of 121 stations, was 0.57 inch, or 0.57 inch below normal. The greatest deficiency was in the southwest district, 0.78 inch, and the southeast district had the least deficiency, 0.15 inch. The greatest precipitation excess at a single station, 0.32 inch, occurred at Centerville, and the greatest deficiency, 1.06 inches, at Thurman. The greatest amount at a single station was 1.69 inches at Washington, and the least was a trace at Lake Park (near). The greatest amount occurring in 24 consecutive hours was 1.34 inches at Fairfield on the 4th-5th. The average number of days with 0.01 inch or more of precipitation for the State was 4, ranging from 6 days in the east-central district, to 2 days in the northwest district. For individual stations the range was from 9 days at Clinton and Muscatine, to none at Lake Park (near).

SNOWFALL

The average snowfall for the State was 3.0 inches, or 3.0 inches below normal. The greatest total snowfall at any one station was 9.0 inches at Maquoketa and Olin. Albia and Lake Park (near) received only a trace of snow, which was the least in the State. The greatest snowfall in 24 hours was 5.0 inches at Tipton, on the 13th. The greatest number of days with 0.1 inches or more of snow on the ground was 23, at Delaware (near) and Dubuque. The greatest depth of snow on the ground at any time was 6.7 inches at Olin on the 22d.

COMPARATIVE DATA FOR THE STATE—DECEMBER

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With pre. .01 in. or more	Clear	Partly cloudy	Cloudy
1873	22.6	— 1.5	65	—10	2.51	+ 1.37	8.56	0.60	.....	.....	.....	.....	.....
1874	24.0	— 0.1	60	—18	0.84	— 0.30	3.22	0.10	.....	.....	.....	.....	.....
1875	30.0	+ 5.9	68	—18	2.06	+ 0.92	4.73	0.73	.....	.....	.....	.....	.....
1876	11.9	—12.2	56	—28	0.24	— 0.90	1.40	0.00	.....	.....	.....	.....	.....
1877	36.8	+12.7	65	—11	2.18	+ 1.04	3.90	1.00	.....	.....	.....	.....	.....
1878	17.2	— 6.9	52	—17	0.77	— 0.37	2.78	0.10	.....	.....	.....	.....	.....
1879	16.1	— 8.0	58	—35	1.40	+ 0.26	3.31	0.20	.....	.....	.....	.....	.....
1880	16.1	— 8.0	55	—25	0.85	— 0.29	2.50	0.06	.....	.....	.....	.....	.....
1881	33.8	+ 9.7	60	—10	1.24	+ 0.10	4.67	0.10	.....	.....	.....	.....	.....
1882	21.0	— 3.1	54	—23	1.57	+ 0.43	3.50	0.48	.....	.....	.....	.....	.....
1883	24.8	+ 0.7	62	—24	1.03	+ 0.11	2.75	0.00	.....	.....	.....	.....	.....
1884	16.2	— 7.9	59	—30	2.15	+ 1.01	4.42	0.70	.....	.....	.....	.....	.....
1885	24.6	+ 0.5	55	—22	1.45	+ 0.31	3.73	0.40	.....	.....	.....	.....	.....
1886	14.4	— 9.7	55	—32	0.80	— 0.34	1.64	0.10	.....	.....	.....	.....	.....
1887	20.3	— 3.8	57	—25	2.17	+ 1.03	5.85	0.60	.....	.....	.....	.....	.....
1888	28.6	+ 4.5	66	— 6	1.46	+ 0.32	2.90	0.25	.....	.....	.....	.....	.....
1889	35.8	+11.7	69	— 2	1.06	— 0.08	3.20	0.00	.....	.....	.....	.....	.....
1890	28.5	+ 4.4	68	—18	0.58	— 0.56	2.72	0.00	.....	.....	.....	.....	.....
1891	32.3	+ 8.2	72	—14	2.41	+ 1.27	4.50	1.21	.....	6	14	9	8
1892	18.9	— 5.2	68	—29	1.65	+ 0.51	3.04	0.20	10.9	8	9	8	14
1893	22.0	— 2.1	70	—21	1.31	+ 0.17	2.80	0.46	7.6	7	10	9	12
1894	30.1	+ 6.0	73	—17	0.95	— 0.19	1.75	0.25	1.3	3	15	6	10
1895	25.4	+ 1.3	63	—16	1.63	+ 0.49	5.74	0.00	4.1	5	11	9	11
1896	30.8	+ 6.7	70	—10	0.65	— 0.49	1.79	T.	1.6	4	10	8	13
1897	18.0	— 6.1	60	—25	1.65	+ 0.51	3.22	0.61	15.9	6	11	7	13
1898	18.1	— 6.0	60	—25	0.48	— 0.66	1.70	T.	3.9	3	15	8	8
1899	22.6	— 1.5	75	—19	1.61	+ 0.47	4.28	0.10	4.3	5	12	9	10
1900	26.9	+ 2.8	63	—10	0.45	— 0.69	2.70	T.	2.4	4	13	6	12
1901	20.5	— 3.6	64	—31	0.93	— 0.21	2.75	0.05	5.4	6	10	9	12
1902	20.1	— 4.0	59	—20	2.23	+ 1.09	5.51	0.67	12.9	8	9	6	16
1903	19.6	— 4.5	58	—27	0.41	— 0.73	1.96	T.	3.7	4	11	9	11
1904	23.4	— 0.7	67	—19	1.44	+ 0.30	3.68	0.06	12.3	5	12	7	12
1905	27.0	+ 2.9	62	—11	0.52	— 0.62	1.69	T.	4.2	3	19	6	6
1906	25.7	+ 1.6	65	— 9	1.43	+ 0.29	2.81	0.37	1.4	6	11	7	13
1907	28.8	+ 4.7	62	— 9	1.00	— 0.14	2.28	0.05	4.7	5	10	7	14
1908	27.2	+ 3.1	67	—17	0.57	— 0.57	2.07	0.05	3.8	3	15	8	8
1909	15.1	— 9.0	60	—26	2.18	+ 1.04	6.10	0.89	13.7	11	10	5	16
1910	23.4	— 0.7	57	—14	0.37	— 0.77	1.39	0.01	3.0	3	15	7	9
1911	27.9	+ 3.8	60	—24	2.57	+ 1.43	4.43	0.62	12.6	7	13	6	12
1912	29.2	+ 5.1	64	—13	0.74	— 0.40	1.75	0.10	1.1	3	18	7	6
1913	32.0	+ 7.9	65	—13	1.02	— 0.12	4.73	0.00	1.3	4	15	5	11
1914	15.7	— 8.4	63	—31	1.30	+ 0.16	2.24	0.57	11.1	9	10	6	15
1915	25.0	+ 0.9	56	—10	0.69	— 0.45	1.70	T.	4.6	5	11	8	12
1916	18.7	— 5.4	67	—25	1.04	— 0.10	2.00	0.35	6.7	6	15	8	8
1917	14.5	— 9.6	62	—40	0.56	— 0.58	1.70	0.14	6.7	6	10	9	12
1918	32.7	+ 8.6	68	— 7	1.30	+ 0.16	3.30	0.37	5.1	8	9	8	14
1919	15.0	— 9.1	52	—36	0.54	— 0.60	1.55	0.08	5.8	4	11	7	13
1920	26.4	+ 2.3	65	—26	1.16	+ 0.02	2.64	0.26	7.4	5	10	8	13
1921	28.2	+ 4.1	69	—22	1.02	— 0.12	3.72	T.	2.9	4	14	9	8
1922	24.0	— 0.1	65	—25	0.37	— 0.77	0.97	T.	2.2	3	16	7	8
1923	33.5	+ 9.4	68	—21	0.76	— 0.38	2.22	T.	4.4	4	14	6	11
1924	15.4	— 8.7	62	—33	1.79	+ 0.65	2.93	0.90	8.1	8	12	6	13
1925	21.0	— 3.1	64	—25	1.30	+ 0.16	3.52	0.30	10.6	5	12	8	11
1926	21.9	— 2.2	58	—21	1.06	— 0.08	2.42	0.28	5.7	4	10	7	14
1927	18.7	— 5.4	59	—22	1.04	— 0.10	2.60	0.23	4.4	5	13	8	10
1928	28.7	+ 4.6	57	—15	0.89	— 0.25	1.98	0.12	2.3	5	12	7	12
1929	24.8	+ 0.7	65	—13	0.39	— 0.75	1.21	0.03	3.8	5	12	6	13
1930	26.7	+ 2.6	65	—10	0.57	— 0.57	1.69	T.	3.0	4	12	6	13

T. indicates an amount too small to measure, or less than .005 inch rainfall and less than .05 inch snowfall.

Climatological Data for December, 1930

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit: Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Precipitation, in inches: Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Number of Days: Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy	Prevailing direction of wind	OBSERVERS
Northwest District																				
Akron	Plymouth	1,153	4								0.21	— 0.44	0.09	3.5	3	18	4	9	s.	Orlan C. Moore
Alta	Buena Vista	1,513	39	25.0	+ 3.6	57	9	4	1†	30	0.29	— 0.62	0.16	3.5	4	12	6	13	nw.	D. E. Hadden
Alton	Sioux	1,305	25	26.1	+ 5.3	60	9	2	22	36	0.35	— 0.45	0.25	3.5	2	12	6	13	sw.	W. S. Slagle
Cherokee	Cherokee	1,196	10	25.7	+ 5.2	59	9	5	1	29	0.17	— 0.65	0.14	2.2	2	12	5	14	s.	J. E. Wirth
Estherville	Emmet	1,298	35	26.6	+ 6.3	52	10	0	1	40	0.10	— 0.61	0.05	1.1	2	13	10	8	nw.	A. O. Peterson
Hawarden	Sioux	1,181	4								0.06	— 0.62	0.05	1.2	2	13	5	13	s.	Earl V. Slife
Inwood (near)	Lyon	1,474	26	25.0	+ 5.6	55	9	4	21†	34	0.06	— 0.60	0.03	0.7	3	15	5	11	nw.	A. C. Hanson
Lake Park (near)	Dickinson	1,489	17	24.8	+ 5.3	50	9	1	1	34	T.	— 0.63	T.	T.	0	10	4	17	nw.	P. M. Lawrence
Le Mars	Plymouth	1,22[illegible]	34	28.2	+ 5.8	59	10	7	1†	38	0.41	— 0.46	0.28	3.5	3	12	8	11	nw.	Henry Newell
Marathon	Buena Vista	1,390	4								0.34		0.09	3.4	5	9	5	17	nw.	E. G. Smith
Pocahontas	Pocahontas	1,248	26	25.9	+ 4.2	53	9	4	1†	30	0.33	— 0.59	0.27	3.8	3	15	5	11	nw.	F. E. Hronek
Rock Rapids	Lyon	1,349	31	26.5	+ 6.8	55	9†	4	1†	35	0.06	— 0.57	0.03	1.0	2	19	0	12	n.	Nellie F. Medberry
Sanborn	O,Brien	1,553	16	24.9	+ 5.5	56	9	3	1	31	0.28	— 0.57	0.16	3.5	2	11	8	12	sw.	J. W. Dow
Sheldon	O,Brien	1,418	19	25.2	+ 4.8	57	9	2	30	33	0.14	— 0.68	0.08	1.4	2	11	10	10	nw.	Ross E. Forward
Sioux Center	Sioux	1,461	31	25.0	+ 4.2	58	9	3	21	35	0.11	— 0.77	0.11	1.5	1	14	9	8	s.	F. C. Aue
Spencer	Clay	1,319	16	26.0	+ 5.3	60	10	4	1	32	0.13	— 0.72	0.06	2.5	3	18	3	10	nw.	E. W. Little
Storm Lake	Buena Vista	1,442	41	25.1	+ 2.6	59	9	2	22	31	0.09	— 0.73	0.06	1.0	2	12	8	11	sw.	Russel M. Edwards
Washta	Cherokee	1,157	32	26.6	+ 4.5	62	9	1	22	38	0.23	— 0.60	0.18	2.5	2	14	5	12	s.	H. L. Felter
West Bend	Palo Alto	1,197	37	25.0	+ 3.9	56	9	2	1	31	0.27	— 0.89	0.18	4.0	3	15	11	5	sw.	Jos. Dorweiler
Means and extremes				25.7	+ 4.9	62	9	0	1	40	0.19	— 0.62	0.28	2.3	2	13	6	12	nw.	
North Central District																				
Algona	Kossuth	1,207	57	25.0	+ 3.5	50	9	2	1	31	0.28	— 0.67	0.20	3.8	3	12	4	15	nw.	Leon M. Merritt
Allison (near)	Butler	1,000	16	24.0	+ 2.6	51	9	2	1†	31	0.16	— 0.78	0.15	2.5	2	17	0	14	nw.	George H. Bell
Belmond	Wright	1,181	20	23.6	+ 2.7	50	9	0	23	28	0.30	— 1.03	0.13	2.5	4	8	4	19	nw.	H. F. Luick
Britt	Hancock	1,236	43	24.4	+ 3.9	46	10	1	1	37	0.33	— 0.47	0.12	2.9	4	13	0	18	nw.	E. P. Healy
Charles City	Floyd	1,015	39	23.0	+ 2.6	48	9	0	1	29	0.34	— 0.96	0.15	2.5	5	12	3	16	nw.	U. S. Weather Bureau
Forest City	Winnebago	1,226	36	23.4	+ 2.1	50	9	— 3	1	39	0.45	— 0.43	0.25	4.5	3	17	2	12	nw.	Dr. M. B. Neil
Hampton	Franklin	1,142	5	24.0		50	9	0	23	35	0.24	— 1.01	0.09	1.0	3	17	1	13	nw.	Howard J. Haydon
Humboldt	Humboldt	1,095	42	24.8	+ 2.2	50	9	4	1†	29	0.11	— 0.75	0.07	2.5	2	8	7	16	nw.	H. C. Snitkey
Mason City	Cerro Gordo	1,148	33	22.2	+ 1.3	47	9	— 2	1	29	0.29	— 0.59	0.10	4.2	4	12	5	14	nw.	American Beet Sugar Co.
Northwood	Worth	1,222	34	21.5	+ 1.8	47	9	— 6	2	33	0.40	— 0.83	0.20	4.0	2	11	6	14	nw.	Charles Dwelle
Osage	Mitchell	1,163	36	22.5	+ 2.5	48	9	— 4	1	29	0.58	— 0.64	0.30	3.5	5	8	8	15	nw.	Dr. C. E. Juhl
Means and extremes				23.5	+ 2.6	51	9	— 6	2	39	0.32	— 0.74	0.30	3.1	3	12	4	15	nw.	
Northeast District																				
Cedar Falls	Black Hawk	875									0.50		0.15	5.3	6	13	3	15	nw.	E. J. Cable
Decorah	Winneshiek	872	37	21.8	— 0.4	45	10	— 8	1	38	0.28	— 1.00	0.14	2.0	3	11	3	17	nw.	M. D. Whitney
Delaware (near)	Delaware	1,083	30	22.8		48	9	— 4	16	36	0.67		0.31	3.6	4	14	3	14	nw.	E. J. Paris
Dubuque	Dubuque	700	57	25.4	+ 0.7	52	9	0	24	34	1.24	— 0.20	0.45	7.6	7	9	6	16	nw.	U. S. Weather Bureau
Fayette	Fayette	1,009	42	22.6	+ 1.2	49	9	— 5	16	31	0.63	— 0.78	0.22	6.0	6	13	3	15	nw.	W. C. Van Ness
Independence	Buchanan	956	66	24.1	+ 0.5	49	9	— 3	16	35	0.69	— 0.62	0.25	4.4	4	11	6	14	nw.	Dr. Geo. Boody
Lansing	Allamakee	632	23																	Mrs. Mary Spinner
New Hampton	Chickasaw	1,169	33	22.6	+ 1.8	47	9	— 5	1	40	0.15	— 0.94	0.10	2.0	2	11	3	17	nw.	D. W. Dawson
Oelwein	Fayette	1,036	7	23.9	+ 0.9	48	9†	1	16†	31	0.25	— 1.03	0.25	3.0	1	6	7	18	nw.	John T. Ridler
Postville (near)	Clayton	1,192	31	22.0	+ 1.1	48	9	— 3	1	28	0.40	— 0.96	0.15	3.3	4	12	3	16	sw.	F. L. Williams
Waterloo	Black Hawk	854	47	24.6	+ 1.1	50	9	— 2	16	33	0.67	— 0.53	0.25	4.5	4	14	1	16	nw.	R. B. Slippy
Waverly	Bremer	936	34	23.4	+ 0.2	48	9	— 2	23	35	0.38	— 0.80	0.13	2.7	4	16	10	5	nw.	D. H. Murphy
Means and extremes				23.3	+ 0.7	52	9	— 8	16	40	0.53	— 0.72	0.45	4.0	4	12	4	15	nw.	
West Central District																				
Audubon (near)	Audubon	1,297	35	26.7	+ 3.9	55	9	6	30	29	0.39	— 0.60	0.12	2.4	6	8	10	13	w.	George Kibby
Carroll	Carroll	1,265	40	26.2	+ 2.4	55	9	7	1†	33	0.40	— 0.58	0.20	2.5	4	16	4	11	nw.	Mrs. Jos. J. Wolfe
Denison	Crawford	1,200	36	27.6	+ 3.8	58	9	6	21†	32	0.32	— 0.55	0.18	3.1	5	9	6	16	nw.	J. McMinimee
Guthrie Center	Guthrie	987	35	27.4	+ 2.9	58	9	1	23	30	0.27	— 0.84	0.18	1.0	2	13	4	14	n.	Floyd H. Bainter
Harlan	Shelby	1,210	31	27.8	+ 4.2	58	9	3	23	33	0.23	— 0.77	0.11	2.2	3	9	8	14	nw.	Elmer Buss
Jefferson	Greene	1,052	31	27.4	+ 3.8	61	9	6	23†	31	0.45	— 0.62	0.30	3.5	3	12	3	16	nw.	W. I. Lyon
Little Sioux	Harrison	1,040	25	28.2	+ 4.2	59	9	5	22	36	0.50	— 0.38	0.35	4.3	5	11	7	13	nw.	H. W. Kerr
Logan	Harrison	1,120	63	28.6	+ 3.2	54	9	8	30	36	0.35	— 0.78	0.15	4.4	4	9	18	4	nw.	Amy Ann Stern
Onawa	Monona	1,051	29	27.8	+ 3.9	57	9	4	22	37	0.28	— 0.82	0.25	3.5	2	12	6	13	nw.	Mrs. H. E. Colby
Rockwell City	Calhoun	1,232	34	25.4	+ 2.6	57	9	4	21	31	0.60	— 0.38	0.30	5.0	3	14	6	11	nw.	A W. McIsaac
Sac City	Sac	1,209	54	26.2	+ 3.7	59	9	6	21†	34	0.32	— 0.80	0.16	4.0	4	12	4	15	nw.	F. P. Kessler
Sioux City	Woodbury	1,135	41	28.6	+ 5.5	58	9	8	1	34	0.30	— 0.60	0.12	3.3	5	9	9	13	nw.	U. S. Weather Bureau
Stuart	Guthrie	1,243	10																	Fred Morgan
Means and extremes				27.3	+ 3.7	61	9	1	23	37	0.37	— 0.64	0.35	3.3	4	11	7	13	nw.	
Central District																				
Ames	Story	926	53	27.2	+ 3.4	54	9	6	25	36	0.37	— 0.69	0.18	3.0	4	17	4	10	n.	Iowa State College
Baxter	Jasper	993	30	27.0	+ 2.6	58	9	5	16	35	0.22	— 0.73	0.12	1.5	2	14	5	12	w.	Geo. R. Geise
Boone (near)	Boone	894	25	26.4	+ 2.4	59	9	0	23	33	0.25	— 0.64	0.12	1.8	3	13	6	12	nw.	C. F. Henning
Des Moines	Polk	861	52	28.6	+ 2.6	61	9	10	16	28	0.36	— 0.86	0.21	2.0	4	9	6	16	nw.	U. S. Weather Bureau
Fort Dodge	Webster	1,114	30	25.2	+ 2.9	47	10	4	30	30	0.39	— 0.44	0.29	2.5	3	17	1	13	sw.	Mrs. Emma Sampson
Grinnell	Poweshiek	1,031	36	27.4	+ 2.2	51	9	5	30	31	0.61	— 0.56	0.19	3.6	4	16	2	13	nw.	R. E. Bates
Grundy Center	Grundy	976	39	25.5	+ 1.6	50	9	2	1	36	0.45	— 0.71	0.15	3.0	4	11	9	11	nw.	M. G. Heiberger
Iowa Falls	Hardin	1,127	37	25.0	+ 2.5	50	9	1	23	42	0.62	— 0.68	0.35	3.7	5	12	3	16	w.	C. H. Gilbert
Marshalltown	Marshall	947	38	26.9	+ 1.8	51	9	7	1†	31	0.42	— 0.85	0.14	3.4	5	14	2	15	nw.	C. C. Pigman
Monroe	Jasper	922	18	28.8	+ 2.9	55	9	7	30	31	0.49	— 0.57	0.20	3.2	4	13	4	14	w.	J. A. Dibel
Perry	Dallas	975	29	26.8	+ 2.4	60	9	3	23	31	0.36	— 0.66	0.25	2.3	3	11	6	14	nw.	Eugene N. Hastie
Toledo	Tama	847	36	26.4	+ 1.8	54	9	1	16	33	0.56	— 0.56	0.21	3.5	4	15	5	11	nw.	H. P. Giger
Van Meter	Dallas	872	11								0.21		0.17	2.0	2					Calvin K. Smith
Waukee	Dallas	1,032	27	27.2	+ 2.9	59	9	4	23	30	0.26	— 0.86	0.16	2.0	2	12	4	15	w.	O. D. Ellsworth
Webster City	Hamilton	1,042	25	24.2	+ 1.2	55	9	0	23†	31	0.07	— 0.91	0.03	1.5	3	13	7	11	nw.	Frank A. Bonebright
Means and extremes				26.6	+ 2.4	61	9	0	23†	42	0.38	— 0.70	0.35	2.6	3	13	5	13	nw.	

Climatological Data for December, 1930—Continued

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit							Precipitation, in inches				Number of Days				Prevailing direction of wind	OBSERVERS
				Mean	Departure from normal	Highest	Date	Lowest	Date	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Total snowfall (unmelted)	Precipitation, .01 in. or more	Clear	Partly cloudy	Cloudy		
East Central District																				
Belle Plaine	Benton	866	40	24.7	+ 0.5	52	9	— 2	16	30	1.02	— 0.33	0.34	6.0	4	11	7	13	nw.	O. C. Burrows
Cedar Rapids	Linn	737	48	24.9	+ 0.9	51	9	— 5	16	42	0.93	— 0.38	0.49	6.4	6	15	0	16	nw.	J. T. Wurster
Clinton	Clinton	595	57	25.8	— 0.5	51	9	0	24	35	1.25	— 0.53	0.58	7.3	9	11	7	13	w.	Dr. A. P. Bryant
Davenport	Scott	580	59	28.0	+ 0.9	52	10	7	31	28	0.97	— 0.51	0.53	4.6	6	9	7	15	w.	U. S. Weather Bureau
Fairport	Muscatine	567	9	29.4	+ 2.2	53	9†	4	22	28	1.25	— 0.31	0.73	3.9	5	12	5	14	nw.	Bureau of Fisheries
Iowa City	Johnson	733	70	25.7	— 0.1	52	9	— 6	16	37	1.20	— 0.41	0.65	7.0	6	11	9	11	nw.	Prof. J. F. Reilly
Le Claire	Scott	576	30								1.10	— 0.34	0.52	3.6	8					Margaret T. Disney
Maquoketa (near)	Jackson	692	25	23.9	— 0.1	53	9	— 9	16	42	1.42	+ 0.11	0.56	9.0	5	14	3	14	nw.	John Strodthoff
Muscatine	Muscatine	546	69								1.32	— 0.64	0.75	2.7	9					William Molis
Olin	Jones	750	31	23.8	— 1.1	50	9†	—10	16†	43	1.57	+ 0.22	0.85	9.0	5	13	2	16	sw.	Mrs. L. Stingley
Tipton (near)	Cedar	806	31	24.5	— 1.1	51	10	— 9	16	42	1.35	— 0.13	0.85	8.0	6	8	8	15	w.	John Kroeplen
Williamsburg	Iowa	805	14	25.6	+ 1.2	50	9†	— 4	17	35	1.13	— 0.12	0.46	5.5	4	20	4	7	nw.	Dr. F. C. Schadt
Means and extremes				25.6	+ 0.2	53	9†	—10	16†	43	1.21	— 0.28	0.85	6.1	6	12	5	14	nw.	
Southwest District																				
Atlantic	Cass	1,110	39			58	9				0.28	— 0.84	0.19	1.8	4	8	12	11	nw.	Roy L. Fancolly
Bedford	Taylor	1,200	2								0.31	— 0.67	0.19	2.5	3	10	5	16	nw.	Arthur L. Bishop
Clarinda	Page	1,009	40	29.4	+ 2.5	61	9	7	30	34	0.32	— 0.78	0.16	2.2	4	12	12	7	w.	Dr. H. C. Hawley
Corning	Adams	1,287	38	29.0	+ 3.8	62	9	6	16	33	0.20	— 1.04	0.20	2.0	1	10	10	11	nw.	W. J. Wagner
Cumberland (near)	Cass	1,225	31								0.31	— 0.62	0.22	2.0	3	10	10	11	nw.	Carl E Pollock
Glenwood	Mills	1,100	32	30.0	+ 3.2	58	9	10	30	30	0.19	— 0.48	0.14	0.5	2	11	9	11	nw.	George Mogridge
Greenfield	Adair	1,368	34								0.24		0.15	3.0	2	12	10	9	nw.	P. C. Cornell
Lenox	Taylor	1,250	35	29.3	+ 3.7	62	9	7	30	31	0.45	— 0.53	0.20	2.0	3	15	7	9	nw.	J. L. Hurley
Oakland	Pottawattamie	1,139	11	29.9	+ 4.7	60	9	8	30	32	0.20	— 0.76	0.11	1.0	2	13	3	15	nw.	W. S. Mathews
Red Oak (near)	Montgomery	1,030	5								0.21	— 0.84	0.15	2.0	3	3	18	10	nw.	B. R. Bridge
Riverton (near)	Fremont	920	4								0.13	— 0.95	0.08	1.0	2	13	2	16	nw.	Geo. C. Rader
Thurman	Fremont	960	33	31.3	+ 3.9	61	9	6	30	36	0.25	— 1.06	0.15	2.0	2	14	5	12	s.	H. H. Askew
Omaha, Neb.		1,105	59	31.1	+ 4.7	60	9	13	1	27	0.15	— 0.78	0.09	1.3	3	12	5	14	nw.	U. S. Weather Bureau
Means and extremes				30.0	+ 3.8	62	9	6	16†	36	0.25	— 0.78	0.22	1.8	3	11	8	12	nw.	
South Central District																				
Afton	Union	1,212	36	28.4	+ 2.2	60	9	9	16†	28	0.27	— 0.92	0.12	2.5	3	14	5	12	nw.	S. R. Brown
Albia	Monroe	949	32	29.8	+ 3.6	65	9	7	30	33	1.14	+ 0.07	1.02	T.	2	10	1	20	nw.	J. M. Stevenson
Centerville	Appanoose	1,013	25	29.4	+ 1.7	56	9	8	30	30	1.42	+ 0.32	1.08	0.9	4	11	10	10	nw.	Thomas Wood
Chariton (near)	Lucas	1,042	35	29.0	+ 2.6	62	9	5	30	33	1.12	— 0.04	0.62	1.0	3	12	8	11	nw.	C. C. Burr
Corydon (near)	Wayne	1,050	37	29.2	+ 2.4	57	9	7	30	25	1.20	— 0.09	1.15	1.0	3	14	3	14	nw.	J. C. Davis
Creston	Union	1,291	25	27.8	+ 2.8	60	9	6	30	32	0.26	— 0.80	0.11	1.0	3	7	18	6	nw.	Mrs. N. Spangler
Earlham (near)	Madison	1,126	28	28.2	+ 3.7	64	9	3	16	32	0.22	— 0.97	0.22	3.0	1	16	2	13	sw.	George Phillips
Indianola	Warren	972	39	28.9	+ 3.3	63	9	8	30	31	0.40	— 0.92	0.34	3.4	3	12	7	12	nw.	Seth F. Shenton
Knoxville	Marion	920	35	29.4	+ 3.5	61	9	8	16	32	0.78	— 0.54	0.35	2.0	3	13	5	13	nw.	W. J. Casey
Lacona	Warren	824	31								0.60	— 1.02	0.50	1.0	3	6	15	10		J. B. Alter
Lamoni	Decatur	1,123	23	28.5	+ 2.5	63	9	6	30	35	0.68	— 0.50	0.32	1.2	3	13	4	14	nw.	F. S. Parks
Melrose	Monroe	871	1								1.18		1.02	0.5	3	14	8	9	nw.	J. M. Carr
Mount Ayr	Ringgold	1,220	37	29.3	+ 2.8	62	9	8	23†	32	0.34	— 0.89	0.18	3.0	3	12	7	12	w.	E. O. Gleason
Tingley	Ringgold	1,275	5	28.4	+ 2.4	60	8	7	30	29	0.53	— 0.61	0.23	1.5	3	13	6	12	nw.	James A. Verploegh
Winterset	Madison	1,118	39	28.9	+ 3.1	63	9	3	16†	35	0.27	— 0.92	0.15	2.0	2	16	7	8	nw.	H. S. Ely
Means and extremes				28.9	+ 2.9	65	9	3	16	35	0.69	— 0.51	1.15	1.6	3	12	7	12	nw.	
Southeast District																				
Bonaparte (near)	Van Buren	563	39	29.6	+ 1.8	61	9	7	30	29	1.15	— 0.11	1.02	1.3	4	14	7	10	w.	B. R. Vale
Burlington	Des Moines	544	34	30.0	+ 0.6	58	10	11	30	28	0.92	— 0.68	0.51	2.5	4	10	9	12	nw.	John W. Donnelly
Columbus Junction	Louisa	595	29	27.2	— 0.6	53	10	2	24	37	1.24	— 0.08	0.87	4.1	6	10	9	12	nw.	Miss Musa Todd
Fairfield	Jefferson	780	46	28.0	+ 1.6	55	9	6	17	30	1.58	— 0.04	1.34	2.5	5	13	5	13	n.	R. M. McKenzie
Keokuk	Lee	614	59	31.6	+ 2.0	61	9	13	30	26	0.60	— 0.85	0.45	0.7	4	9	9	13	sw.	U. S. Weather Bureau
Keokuk No. 2	Lee	651	1	31.4		61	9	10	30	29	0.91		0.40	0.3	5					J. N. D. Dickinson
Keosauqua	Van Buren	639	38	30.1	+ 2.4	64	9	5	17	32	1.29	— 0.09	0.65	1.0	4	4	14	13	sw.	Dr. J. W. Rinabarger
Mt. Pleasant	Henry	730	49	29.5	+ 1.4	58	9	7	16	32	1.13	— 0.24	0.80	2.0	4	9	10	12	nw.	J. H. Jericho
Oskaloosa	Mahaska	835	54	28.8	+ 2.8	58	9	6	30	34	1.29	+ 0.12	1.01	5.3	5	11	8	12	w.	Roy R. Robinson
Ottumwa	Wapello	649	35	29.8	+ 2.1	60	9	6	17	32	1.53	+ 0.27	1.33	1.5	4	6	8	17	nw.	C. L. Mikesh
Sigourney	Keokuk	785	34	27.9	+ 1.2	56	9	6	17	35	1.09	— 0.14	0.81	3.3	4	14	7	10	n.	John B. Slate
Stockport (near)	Van Buren	747	28	29.2	+ 2.4	60	9	8	17†	31	1.24	— 0.03	1.04	2.0	4	12	7	12	nw.	C. L. Beswick
Washington	Washington	757	48	27.6	+ 1.0	52	10	7	16	34	1.69	+ 0.37	1.23	3.0	5	4	9	18	nw.	D. D. Sherman
Wever	Lee	552	2																	H. G. Liddle
Means and extremes				29.3	+ 1.7	64	9	2	24	35	1.20	— 0.15	1.34	2.3	4	10	8	13	nw.	
State means and extremes				26.7	+ 2.6	65	9	—10	16†	43	0.57	— 0.57	1.34	3.0	4	12	6	13	nw.	

Temperature normals are based on the 46-year period July 3, 1875 to July 2, 1921; shorter records corrected to harmonize. Precipitation normals are based on the 50-year period ended December 31, 1927 at first order stations; upon all records of 10 years or more ending December 31, 1920 for most of the co-operative observing stations; and upon interpolations from normal maps for recently established stations.

Reference letters a, b, c, etc., appearing in the table indicate the number of days missing; for example b represents two days, etc.

†Also other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.

RIVERS

Low stages prevailed on all interior streams, with little fluctuation. At Des Moines the extreme stages were 1.0 foot and 0.3 foot, and averaged 0.6 foot, or 1.8 feet below normal.

The Missouri River averaged 1.5 feet below normal, with very little fluctuation, at both Sioux City and Omaha.

On the Mississippi River the stages remained very low throughout the month. At Dubuque the average stage was 3.4 feet and at Davenport, 1.2 feet. With the exception of 4 days during the month, the river stage readings at Keokuk were below the zero of the gauge.

Daily Precipitation for December, 1930

Stations	Drainage Basin	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	
Northwest District																																	
Akron	Bix Sioux													.09					.08		.04												0.21
Alta	Raccoon			.05										.05				T.	.16		.03												0.29
Alton	Floyd			T.			T.							.25		T.		T.	.10		T.	T.											0.35
Cherokee	Little Sioux	T.		T.	T.	T.	T.					T.	T.	.03	T.	T.		T.	.14	T.	T.	T.	T.			T.							0.17
Estherville	Des Moines				.05														.05														0.10
Hawarden	Big Sioux													.05		T.		T.	.01		T.												0.06
Inwood (near)	Big Sioux													.03		T.			T.	.02	.01												0.06
Lake Park (near)	Little Sioux																		T.		T.												T.
Le Mars	Floyd													.28		T.		T.	.12		.01	T.											0.41
Marathon	Raccoon				.08											.06	.09		.08		.03	T.	T.										0.34
Pocahontas	Des Moines				.20	.07								T.		T.			.06	T.	T.												0.33
Rock Rapids	Big Sioux													.03				T.	.03		T.												0.06
Sanborn	Floyd													.16					.12		T.												0.28
Sheldon	Floyd				T.	T.	T.					T.		.08	T.	T.		T.	.06	T.	T.	T.	T.			T.				T.			0.14
Sioux Center	Floyd						T.							.11																			0.11
Spencer	Little Sioux					.05								.02		T.			.06		T.												0.13
Storm Lake	Raccoon				.03	T.	T.							T.	T.	T.		T.	.06		T.	T.						T.					0.09
Washta	Little Sioux			T.	T.	T.								.05					.18	T.	T.	T.											0.23
West Bend	Des Moines				.09	.09													.09														0.27
North Central District																																	
Algona	Des Moines				.13	.07									T.	T.			.08		T.												0.28
Allison (near)	Cedar					.01								T.	T.				.15		T.												0.16
Belmond	Iowa				.07	.06								T.	T.	T.			.13		.04		T.										0.30
Britt	Iowa				.07	.10													.12		.04												0.33
Charles City***	Cedar				.15							T.		T.	T.	T.		.02	.13	.01	.03	T.	T.			T.	T.			T.			0.34
Forest City	Cedar		T.		T.	.15								T.	T.				.25		.05												0.45
Hampton	Cedar				.09	.07	T.								T.				.08		T.												0.24
Humboldt	Des Moines				.07									T.					.04	T.	T.		T.										0.11
Mason City	Cedar	.01			.10	T.	T.					T.		T.	T.	T.			.10	T.	.08	T.	T.			T.			T.	T.			0.29
Northwood	Cedar				T.	T.						T.	T.	T.	T.				.20		.20												0.40
Osage	Cedar				.20	.10													.16	.04	.08												0.58
Northeast District																																	
Cedar Falls	Cedar				.15	.05	T.							.14	T.			.10	.04		.02		T.										0.50
Decorah	Mississippi				.14	T.	T.							T.					.05		.09				T.								0.28
Delaware (near)	Maquoketa				.05	.26								.26					.10														0.67
Dubuque***	Mississippi				.23	.22	T.	T.				T.		.34	T.		T.		.34	.02	.08		.01	T.		T.				T.			1.24
Fayette	Mississippi	.04		T.		.22								.13					.09	.03	.12												0.63
Independence	Wapsipinicon					.25								.21					.14		.09												0.69
Lansing	Mississippi																																
New Hampton	Wapsipinicon	T.				.05								T.					.10		T.												0.15
Oelwein	Wapsipinicon													.25				T.		T.	T.												0.25
Postville (near)	Mississippi		.07			.08														.10	.15												0.40
Waterloo	Cedar				T.	.22								.25					.15		.05								T.				0.67
Waverly	Cedar				.10	.03								.12					.13														0.38
West Central District																																	
Audubon (near)	Nishnabotna				.12	.10								.02	T.	.02		T.	.11		.02	T.											0.39
Carroll	Raccoon				.10	.07								.03	T.				.20		T.												0.40
Denison	Missouri				.12	.06								.04		T.		T.	.09	T.	.01	T.							T.				0.32
Guthrie Center	Raccoon					.18													.09														0.27
Harlan	Nishnabotna				.11	T.								.05	T.	T.		T.	.07	T.	T.	T.	T.										0.23
Jefferson	Raccoon				.10	T.								T.		.05		T.	.30		T.								T.	T.			0.45
Little Sioux	Little Sioux				.02	.05								.05				.03	.35														0.50
Logan	Missouri				.13	.02								.05				T.	.15	T.	T.	T.											0.35
Onawa	Missouri				T.									.03		T.		T.	.25		T.												0.28
Rockwell City	Raccoon				.10	.30									T.				.20		T.		T.										0.60
Sac City	Raccoon					.08								.01		T.		T.	.16		.04	T.											0.32
Sioux City***	Missouri	T.			T.	T.	T.					T.	T.	.06	T.	.01		.08	.12	T.	.03	T.				T.				T.		T.	0.30
Stuart	Middle																																
Central District																																	
Ames	Skunk				.03	.07													.18		.09												0.37
Baxter	Skunk					.10								T.					.12														0.22
Boone (near)	Des Moines				.05	.12								T.					.08		T.												0.25
Des Moines***	Des Moines				.13	.09	T.							T.	T.	T.		.07	.07	T.	T.	T.		T.		T.	T.		T.	T.			0.36
Fort Dodge	Des Moines				.12	.17														.10													0.39
Grinnell	Iowa				.19	.11								.13					.15		T.												0.61
Grundy Center	Cedar				.08	.15	T.							.15	T.				.07				T.										0.45
Iowa Falls	Iowa				.10	.15										.02			.30	.05													0.62
Marshalltown	Iowa				.14	.07								.06	T.	T.			.14	T.	.01		T.			T.			T.				0.42
Monroe	Des Moines				.20	.16	.05							T.	T.				.08		T.					T.							0.49
Perry	Raccoon				.01	.07	T.							T.		T.			.25		T.			T.			T.						0.36
Toledo	Iowa				.21	.12	T.							.10					.13				T.										0.56
Van Meter	Raccoon					.04										T.			.17														0.21
Waukee	Raccoon					.10	T.							T.	T.	T.			.16		T.												0.26
Webster City	Des Moines				T.	.03	T.							T.	T.				.03		.01												0.07
East Central District																																	
Belle Plaine	Iowa				.34	.13								.33					.22	T.	T.		T.			T.			T.				1.02
Cedar Rapids	Cedar				.02	.47	T.							.25					.14	T.	.03		.02										0.93
Clinton	Mississippi	.01		T.	.10	.58	.04							.32					.13	.01	.01	.01	.02										1.25
Davenport***	Mississippi	T.			.22	.31	T.	T.						.29	T.	T.			.13	T.	.01	T.	.01	T.		T.	T.			T.			0.97
Fairport	Mississippi				.13	.73								.24					.10		.05												1.25
Iowa City	Iowa				.07	.58								.37					.15		.02		.01										1.20
Le Claire	Mississippi				.01	.52	.06							.20	.06				.03	.20	T.	.02	T.	T.						T.			1.10
Maquoketa (near)	Maquoketa				.34	.56								.33					.12		.07												1.42
Muscatine	Mississippi				.01	.75	.08							.17					.08	.10		.06	.02	.05									1.32
Olin	Wapsipinicon				T.	.85								.32					.24		.08		.08							T.			1.57
Tipton (near)	Cedar				.15	.70								.30					.12		.01		.04										1.35
Williamsburg	Iowa				.46	.26								.33	.08																		1.13

Daily Maximum and Minimum Temperature for the Month of December, 1930

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
Northern Division																																	
Algona	Maximum	33	31	27	32	32	30	41	45	50	49	40	32	30	28	28	27	30	30	32	22	25	26	24	25	30	26	36	28	27	33	33	31.7
	Minimum	2	7	20	23	27	25	20	23	32	30	30	27	27	23	18	11	13	23	15	12	6	15	13	17	22	21	16	19	16	6	9	18.3
Alta	Maximum	26	34	26	31	30	29	43	48	57	50	35	30	30	27	29	28	27	32	29	21	25	24	30	37	30	30	34	29	27	35	32	32.1
	Minimum	4	10	21	22	25	23	22	24	30	29	28	21	25	22	20	14	13	23	14	17	4	6	15	17	25	22	17	17	13	5	9	18.0
Alton	Maximum	26	45	31	32	31	32	50	54	60	55	42	33	34	30	26	29	27	36	33	24	32	32	31	39	33	33	40	33	29	38	36	35.7
	Minimum	6	11	18	20	26	25	18	19	24	27	29	24	25	22	16	9	13	25	12	12	3	2	9	12	20	23	15	16	17	3	10	16.5
Belmond	Maximum	25	29	27	32	32	32	36	44	50	47	35	30	29	29	28	27	31	29	28	23	24	24	25	37	31	26	35	27	27	30	32	31.0
	Minimum	1	5	14	25	30	25	20	20	30	30	29	26	27	26	16	9	11	23	14	6	5	9	0	17	14	20	15	12	15	2	4	16.1
Charles City	Maximum	14	29	30	33	31	33	39	43	48	46	34	30	30	31	27	26	28	30	27	22	23	23	20	33	28	25	33	26	27	29	30	30.0
	Minimum	0	6	15	21	32	27	25	24	31	33	30	27	28	27	13	8	9	22	7	7	6	6	0	12	17	21	13	15	10	3	1	16.0
Decorah	Maximum	30	26	40	32	34	34	33	38	40	45	36	34	30	31	29	23	27	32	28	21	22	22	34	34	28	26	26	30	27	30	30	30.7
	Minimum	— 8	— 5	13	15	29	25	24	22	24	24	26	24	25	25	12	3	5	17	12	8	5	— 2	— 4	22	20	18	6	11	7	— 2	— 1	12.9
Dubuque	Maximum	28	32	33	36	39	38	36	39	52	49	38	35	32	34	25	24	27	30	31	22	25	25	22	34	36	29	34	27	30	26	31	32.2
	Minimum	3	6	20	29	35	30	30	29	32	31	32	31	29	25	10	2	7	22	16	9	18	19	5	0	28	22	21	13	12	7	7	18.7
Forest City	Maximum	36	29	29	32	34	33	40	44	50	48	39	32	29	29	28	27	31	29	28	22	25	27	21	36	30	25	37	27	28	31	31	31.8
	Minimum	— 3	7	17	20	27	24	17	16	29	28	28	25	25	23	23	6	8	22	15	9	2	7	3	10	18	18	12	14	15	0	4	14.9
Independence	Maximum	36	32	31	33	36	36	40	43	49	47	42	34	32	31	30	26	24	30	29	22	23	23	20	35	34	27	33	29	29	24	30	31.9
	Minimum	1	3	18	24	31	26	27	24	32	31	31	28	27	26	13	— 3	2	14	18	— 2	14	18	7	1	25	21	14	8	12	2	11	16.3
Inwood	Maximum	23	43	31	30	29	30	42	48	55	51	37	32	32	30	25	29	28	27	31	25	26	28	30	38	28	33	36	34	31	38	35	33.4
	Minimum	6	11	14	16	26	24	20	21	28	27	28	24	20	20	16	15	14	17	10	15	4	8	12	17	18	25	15	13	15	4	8	16.5
Lake Park	Maximum	20	39	25	29	29	31	42	48	50	48	37	31	30	28	26	29	28	31	32	25	27	26	30	40	31	31	37	33	28	37	34	32.6
	Minimum	1	9	15	16	25	24	20	23	30	29	28	19	26	18	13	11	13	26	13	16	6	7	15	16	22	21	19	19	14	3	6	16.9
Mason City	Maximum	8	28	29	32	33	32	36	41	47	45	36	31	31	29	29	27	30	29	27	22	23	23	20	35	29	26	32	26	27	30	32	29.8
	Minimum	— 2	2	15	18	29	24	20	19	29	30	29	26	27	26	14	9	7	22	14	8	0	4	0	10	12	20	12	11	13	1	5	14.6
New Hampton	Maximum	35	29	30	33	36	35	38	42	47	45	38	34	31	31	32	23	25	29	27	22	23	23	14	28	35	27	32	26	27	25	31	30.7
	Minimum	— 5	— 3	16	18	30	25	25	23	27	30	27	25	26	25	12	3	4	16	16	5	4	13	5	3	20	19	10	11	12	— 2	5	14.4
Northwood	Maximum	20	27	26	31	32	32	36	44	47	45	39	31	29	28	27	27	30	28	27	21	22	24	20	34	24	22	32	26	18	30	30	29.3
	Minimum	— 3	— 6	17	18	28	25	21	19	30	30	25	26	27	25	13	7	7	20	10	6	6	3	1	9	17	15	12	18	— 1	1	— 1	13.7
Pocahontas	Maximum	29	34	28	32	32	30	44	47	53	50	37	32	31	37	29	29	33	31	31	24	27	25	30	39	30	29	37	36	28	35	31	33.5
	Minimum	4	9	16	23	27	24	22	31	32	32	29	24	27	24	19	12	13	21	14	17	4	9	9	17	23	20	17	18	16	5	10	18.3
Postville	Maximum	18	26	27	31	33	34	36	40	48	47	33	32	30	29	28	21	25	28	28	22	20	22	18	20	33	24	32	25	25	22	25	28.5
	Minimum	— 3	— 2	21	18	30	29	26	24	29	29	28	27	26	26	13	6	6	16	15	12	10	10	2	0	18	20	14	16	11	0	4	15.5
Rock Rapids	Maximum	34	43	42	31	36	34	45	51	55	55	45	36	36	34	29	29	30	32	31	30	29	30	35	35	35	34	37	37	32	37	37	36.6
	Minimum	4	12	14	14	20	24	19	18	20	20	28	25	26	20	15	15	15	25	11	16	5	8	14	16	20	23	15	15	19	4	9	16.4
Central Division																																	
Ames	Maximum	42	27	32	34	34	36	40	47	54	49	40	35	31	31	30	27	31	32	30	27	26	26	29	28	42	28	38	35	32	33	33	34.2
	Minimum	8	11	20	27	32	27	25	25	34	34	32	28	28	28	21	7	8	22	24	10	12	7	18	24	6	22	19	19	21	9	16	20.1
Belle Plaine	Maximum	38	31	28	34	37	36	37	34	52	49	37	34	34	33	27	27	26	34	29	27	27	26	21	36	35	27	26	26	32	28	30	32.2
	Minimum	8	7	20	28	33	27	27	23	30	33	29	29	27	26	9	— 2	1	21	14	9	9	14	0	8	25	23	15	11	17	4	8	17.2
Carroll	Maximum	39	32	29	32	32	30	40	46	55	49	39	31	32	32	27	27	28	32	30	23	26	25	29	40	34	31	37	28	30	34	33	33.3
	Minimum	7	11	21	21	26	24	21	26	22	33	30	22	27	25	23	13	13	23	19	17	7	9	10	14	25	23	21	17	20	7	14	19.1
Cedar Rapids	Maximum	37	34	37	35	40	36	38	44	51	50	38	34	38	33	29	28	28	33	30	26	24	25	25	39	35	28	37	27	31	26	30	33.7
	Minimum	6	6	20	29	34	29	28	26	30	30	29	30	25	28	6	— 5	— 3	18	7	1	11	15	2	— 3	26	24	12	8	16	3	10	16.1
Davenport	Maximum	34	35	37	37	41	39	36	41	52	52	41	35	33	33	28	29	32	33	32	32	24	27	21	38	39	29	34	29	33	29	30	34.4
	Minimum	9	11	29	32	36	30	30	29	36	36	34	31	29	28	14	10	10	25	21	12	14	20	11	10	27	24	24	17	13	9	7	21.5
Des Moines	Maximum	24	40	32	35	36	34	44	51	61	52	41	34	33	33	30	27	33	32	32	27	29	28	26	47	39	30	40	30	33	34	35	35.5
	Minimum	11	13	22	29	33	29	29	27	35	39	34	28	30	28	14	10	11	24	22	17	14	13	12	19	28	23	23	19	16	12	10	21.7
Ft. Dodge	Maximum	35	31	28	32	33	31	37	44	40	47	38	33	30	48	28	28	31	32	31	22	25	26	28	38	30	28	36	27	28	33	33	32.5
	Minimum	5	9	16	25	28	25	17	21	31	33	30	27	28	25	18	11	12	21	17	10	7	9	8	20	19	21	17	16	15	4	10	17.9
Grinnell	Maximum	40	37	37	35	38	39	40	42	51	49	42	38	34	33	35	27	32	35	33	23	30	22	25	42	40	29	40	33	33	32	35	35.5
	Minimum	9	9	21	28	33	28	28	22	33	32	31	28	28	27	16	6	7	23	23	13	7	18	7	11	24	23	12	14	18	5	11	19.2
Guthrie Center	Maximum	27	40	32	42	34	32	44	40	58	50	39	32	32	34	30	30	30	33	32	27	31	27	30	44	38	32	40	33	31	36	34	35.3
	Minimum	9	12	20	28	29	27	24	22	32	35	25	21	28	27	21	11	9	22	20	15	11	9	1	16	27	23	21	16	20	6	14	19.4
Iowa City	Maximum	37	35	36	36	38	37	34	43	52	51	38	35	33	32	28	26	30	32	30	25	24	25	20	38	35	27	33	26	31	28	31	33.1
	Minimum	8	7	24	31	35	30	28	27	33	32	30	30	28	27	9	— 6	— 4	23	23	6	12	13	7	1	27	24	19	11	17	5	11	18.3
Iowa Falls	Maximum	38	32	31	32	33	32	37	43	50	45	39	32	30	29	29	25	29	33	28	22	24	24	43	37	35	26	31	29	32	29	31	32.7
	Minimum	4	5	17	25	31	26	24	21	32	32	30	27	27	27	19	6	7	22	18	9	4	8	1	10	20	22	16	12	19	3	11	17.3
Little Sioux	Maximum	37	35	33	33	32	39	53	54	59	55	37	35	35	32	30	31	30	38	37	25	33	32	31	44	32	38	42	37	31	43	35	37.5
	Minimum	12	12	19	21	27	25	17	21	27	26	28	18	21	25	25	19	17	25	17	17	6	5	9	25	25	26	17	14	21	7	14	19.0
Marshalltown	Maximum	38	35	32	34	35	34	42	46	51	50	41	33	32	31	29	27	31	31	29	27	26	24	25	41	37	26	37	30	30	30	31	33.7
	Minimum	7	8	19	27	32	28	27	24	35	37	32	28	28	29	16	7	9	23	21	16	10	19	9	12	23	23	20	15	19	7	12	20.1
Olin	Maximum	36	32	33	35	40	37	35	38	50	50	41	35	35	33	32	22	22	32	32	25	28	27	25	34	36	28	35	27	33	24	21	32.7
	Minimum	7	6	20	27	34	28	28	27	28	28	26	30	28	28	8	—10	—10	8	7	7	12	12	5	— 9	26	22	11	4	13	0	12	15.0
Sioux City	Maximum	19	44	29	33	30	38	46	58	58	55	41	33	32	31	28	30	30	32	33	27	27	27	32	37	34	36	38	36	33	46	35	35.7
	Minimum	8	13	21	25	27	25	28	27	33	34	30	24	27	24	22	19	19	26	17	15	10	12	18	24	29	27	24	18	16	12	16	21.6
Southern Division																																	
Albia	Maximum	20	42	39	38	43	37	47	52	65	56	44	37	35	33	27	29	34	34	38	33	34	33	29	49	42	27	40	35	36	34	23	37.6
	Minimum	12	13	22	30	33	29	29	26	32	39	35	24	29	20	20	10	12	25	24	19	12	22	17	19	25	24	20	17	19	7	17	22.0
Atlantic	Maximum																																
	Minimum																																
Burlington	Maximum	36	35	39	40	42	39	36	43	52	58	46	38	34	33	31	28	31	33	34	32	26	31	23	41	41	28	37	32	34	29	30	35.9
	Minimum	13	12	30	33	38	33	30	29	35	39	34	31	32	29	19	13	12	27	27	19	15	20	14	13	27	26	23	27	22	11	17	24.2
Columbus Jct	Maximum	41	35	36	37	45	39	35	44	52	53	39	33	32	32	29	28	30	32	31	28	27	24	22	39	37	27	35	32	33	28	30	34.4
	Minimum	10	8	23	31	36	30	29	28	34	32	31	30	30	27	13	4	4	25	18	11	11	21	8	2	26	24	21	15	20	8	13	20.1
Corning	Maximum	38	42	37	35	35	37	47	51	62	54	42	35	33	32	32	29	28	36	32	29	30	31	35	48	41	33	37	32	33	36	33	37.3
	Minimum	12	13	25	28	30	27	26	25	29	37	29	24	27	27	22	6	8	15	22	16	15	10	9	24	28	25	20	17	21	8	19	20.8
Corydon	Maximum	37	39	36	37	38	35	41	48	57	52	45	45	40	40	32	26	31	32	33	28	29	29	28	42	39	30	40	30	33	31	31	36.6
	Minimum	13	14	22	30	33	30	29	27	34	40	32	26	31	28	20	9	8	25	22	19	14	19	10	18	26	24	20	18	18	7	14	21.9
Creston	Maximum	37	40	35	33	33	32	44	50	60	57	39	35	33	32	30	27	29	33	34	26	31	30	32	47	38	30	37	30	32	34	32	35.9
	Minimum	10	11	24	27	30	27	26	24	28	35	29	22	28	25	20	7	9	23	17	14	13	9	7	19	27	23	19	15	18	6	15	19.6
Fairfield	Maximum	39	37	35	38	43	37	39	46	55	53	41	35	31	31	31	27	31	31	32	28	27	26	22	43	37	26	38	30	34	30	31	35.1
	Minimum	13	12	24	31	36	29	28	25	33	31	33	29	29	28	11	7	6	25	21	14	12	20	11	13	24	24	19	17	18	8	14	20.8
Keokuk	Maximum	37	41	47	45	44	40	39	48	61	58	46	35	34	33	32	30	31	36	36	33	29	31	27	45	43	30	41	33	37	32	31	38.3
	Minimum	15	15	34	34	38	32	30	28	36	40	33	31	31	31	20	16	16	29	25	20	16	21	15	19	27	26	25	22	19	13	13	24.8
Knoxville	Maximum	36	40	38	34	36	35	45	59	61	54	42	36	33	32	30	27	33	33	32	30	30	29	24	47	43	28	36	31	34	30	28	36.3
	Minimum	12	13	22	30	33	30	29	27	34	41	34	29	29	28	18	8	9	24	22	18	14	23	12	17	26	24	22	18	21	9	18	22.4
Lamoni	Maximum	35	41	35	35	34	32	44	51	63	55	42	38	34	31	29	29	32	32	34	28	32	32	34	55	46	36	41	28	34	33	31	37.3
	Minimum	12	12	25	28	31	27	27	24	31	35	28	21	28	25	20	9	10	22	16	16	10	11	8	20	24	21	19	16	17	6	13	19.7
Sigourney	Maximum	37	40	40	36	40	38	43	48	56	52	42	35	33	33	31	29	30	32	35	30	30	26	24	45	38	27	36	32	34	32	31	36.0
	Minimum	10	9	23	29	33	28	28	23	32	35	30	28	27	27	11	14	6	23	21	15	9	17	9	10	22	23	19	15	19	7	12	19.8
Thurman	Maximum	44	42	34	33	32	34	47	54	61	54	43	40	39	34	34	32	30	40	39	34	32	40	46	55	52	41	40	35	36	42	35	40.5
	Minimum	16	15	25	29	29	28	20	24	28	34	28	26	29	30	27	19	17	24	20	18	12	16	12	22	25	24	19	16	24	6	23	22.1
Winterset	Maximum	40	41	34	33	33	33	47	51	63	55	42	34	32	32	31	29	32	32	35	28	31	31	29	46	41	29	38	33	34	35	33	36.7
	Minimum	12	12	20	28	31	29	27	26	33	40	32	22	29	28	19	9	13	22	20	17	10	10	9	19	28	25	20	17	20	9	18	21.1
Omaha, Neb.	Maximum	30	38	33	32	31	35	48	54	60	55	41	36	35	32	31	30	30	38	39	27	33	33	38	46	36	40	40	37	34	43	36	37.8
	Minimum	13	14	26	28	28	27	26	31	34	38	30	28	31	26	27	20	21	27	20	22	15	19	20	28	29	27	26	19	20	16	20	24.4

ERRATA

Report for February, 1930; Page 10, Jefferson; precipitation departure from normal, published —0.51 inch, should be —0.52 inch.

Report for April, 1930; Page 27, Stockport; mean temperature published 52.5°, should be 53.0°. Stockport; temperature departure published +2.7°, should be +3.2°.

Report for July, 1930, Page 53, Creston; temperature departure published +6.6°, should be +4.6°.

Report for October, 1930; Page 77, Oskaloosa; mean temperature published 52.1°, should be 52.0°. Oskaloosa; temperature departure published —0.7°, should be —0.8°. Page 77, Corydon; mean temperature published 52.0°, should be 52.1°. Corydon; temperature departure published —1.8°, should be —1.7°. Page 80, Corydon; minimum temperature on the 16th published 28°, should be 38°. Corydon; mean minimum temperature published 43.0°, should be 43.3°. Page 77, Albia; mean temperature published 51.6°, should be 52.0°. Albia; temperature departure from normal published —1.9°, should be —1.5°. Page 80, Albia; maximum temperature on the 16th published 51°, should be 61°. Albia; minimum temperature on the 16th published 28°, should be 39°. Albia; monthly mean maximum temperature published 62.2°, should be 62.5°. Albia; monthly mean minimum temperature published 41.1°, should be 41.4°.

Report for November, 1930; Page 84, Baxter; maximum temperature and date published 73° on 19th, should be 76° on 4th. Page 85, Atlantic; number of clear and cloudy days published 15 and 6, should be 17 and 4. Centerville; date of lowest temperature published 29, should be 28. Oskaloosa; maximum temperature and date published 72° on 10th, should be 76° on 19th. Page 84, Decorah; precipitation departure from normal published +0.25, should be +1.25. Page 84, Audubon; precipitation departure published —1.11 inches, should be +1.11 inches. Page 84, Little Sioux; temperature departure from normal published +5.7°, should be +5.9°. Page 84, Logan; precipitation departure published +1.68 inches, should be +0.68 inch. Page 84, Fort Dodge; temperature departure published +4.9°, should be +5.7°.

Report for November, 1930; Page 85, Williamsburg; total precipitation published 1.74 inches, should be 2.52 inches. Williamsburg; precipitation departure from normal published +0.04, should be +0.82 inches. Williamsburg; precipitation, greatest amount in 24 hours published 0.51 inches, should be 0.78 inches. Williamsburg; precipitation 0.01 inch or more published 5, should be 7. Page 86, Williamsburg; precipitation on the 20th published incomplete, should be 0.52 inch. Williamsburg; total precipitation for the month published incomplete, should be 2.52 inches.

BRILLIANT METEOR OF DECEMBER 8, 1930

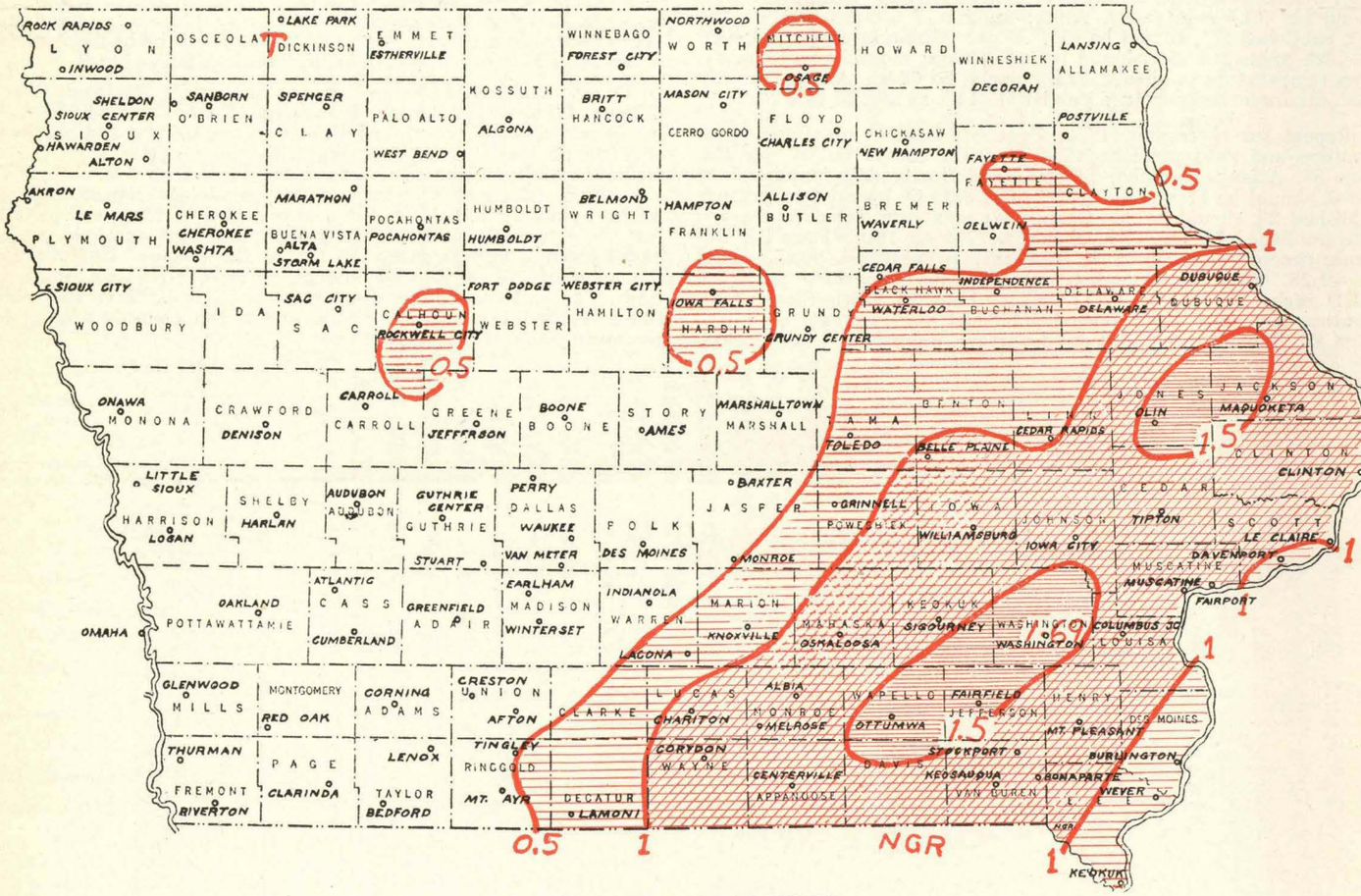
By NORBERT G. RIBBLE

(Weather Bureau Office, Des Moines, Iowa)

In cooperation with the Weather Bureau, Dr. C. C. Wylie, Professor in Astronomy at the State University of Iowa, received more than two hundred reports from eight States, on the brilliant meteor which fell about five o'clock Monday evening, December 8.

Reports show that this meteor was observed from Iowa. Illinois, Indiana, Missouri, Arkansas, Mississippi, Tennessee and Kentucky. It fell probably a few miles north of Carlyle, Illinois, and southwest of Vandalia. As is usually the case, the information from the immediate vicinity of the fall was less complete than was desired, but observations from the distance were completely reported. It appears, however, that detonations were heard in the vicinity of the fall, the letters from that vicinity reporting that an explosion was heard about a minute after the fall of the meteor. Unfortunately the point of fall of possible meteorites is covered with brush and timber, and although there appears to be a good chance that something reached the surface of the earth, the chances are against recovering any of the meteorite.

TOTAL PRECIPITATION, DECEMBER, 1930



SCALE OF SHADES IN INCHES

Less than 0.5	0.5 to 1.0	1.0 to 1.5	More than 1.5

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.
CHARLES F. MARVIN, Chief.

CLIMATOLOGICAL DATA.

IOWA SECTION
In co-operation with
IOWA WEATHER AND CROP BUREAU
CHARLES D. REED, Senior Meteorologist

VOL. XLI DES MOINES, IOWA, ANNUAL, 1930 No. 13

GENERAL SUMMARY

Extreme weather characterized the year 1930. With an average temperature of 50.2°, only one year, 1921, in the last 58, has been warmer; and with an average total rainfall of 26.10 inches, only 5 years have been drier. All months but January, June and November, were drier than normal, and all but January, June and October, were warmer than normal. The temperature ranged from —37° at Decorah on January 22 to 113° at Sac City on August 3, equaling the State Record. The annual range, 150°, has been exceeded only by 1888, with 153°, and 1912, with 151°. The average number of days with maximum temperatures 100° or higher was 8.8, exceeded only by 1901 with 13.4 days. The average length of the growing season between the average date of last killing frost in spring, May 4, and the average date of first killing frost in autumn, October 12, was 161 days, 6 days longer than normal. Ninety-five per cent of the corn escaped frost damage.

The annual rainfall ranged from 16.15 inches at Perry, to 35.65 inches at Oskaloosa. The total number of days with appreciable rainfall ranged from 52 at Chariton to 111 at Dubuque. There were heavy snows in January, excessive downpours of rain in June and November, and one of the severest drouths of record in July and August. Damaging local storms were unusually frequent in June.

Small grain crops and hay gave good yields and excellent quality, but corn, potatoes and late truck crops were damaged.

SYNOPSIS BY MONTHS

Following a prolonged mild period, severe winter weather set in abruptly, with a cold wave on January 7, frequent snows over much of the State, 9th-20th, other cold waves on the 15th and 18th, and prolonged and severe cold throughout the month. Previous low temperature records were equaled or broken at several stations in the eastern districts. Snowfall averaged 14.7 inches, 8.0 inches above normal, and deep snow cover persisted over most of the State most of the month, resembling the record conditions of January, 1929. Aviation was greatly handicapped, particularly in the deep snow covering of landing fields.

In striking contrast with the severe January, February was the mildest in the 58 years of Statewide record, and probably the mildest in a century, judging from the records of the few individual stations available for that length of time. February averaged 25° warmer than January, and 0.9° warmer than a normal March. In the midst of the mildness, a cold wave passed over the State, 14th-15th, producing a minimum temperature of —34° at Webster City, the lowest in the State for the month. Then there was a remarkable moderation in temperature, reaching 72° at Webster City on the 24th, an absolute range of 106° in 9 days. The extreme range in the State was 114°, the greatest State range of record for February. Precipitation was below normal in most of the State, except slight excesses in the lower Iowa and Cedar valleys, and east to the Mississippi River. Snowfall and snow cover were light and below normal, and the snow had a remarkably small water content. Ice harvest, which was progressing rapidly at the close of January, was completed the first week in February. Ice gorges caused floods in the northeast portion of the State. Agricultural pursuits were favored, and by the close of the month perennial plants were showing above ground.

Though March averaged warmer than normal, it was only 1.8° warmer than February, and at several stations in the south and west portions of the State, February averaged warmer than March.

AVERAGE PRECIPITATION
State of Iowa, Year, 1930

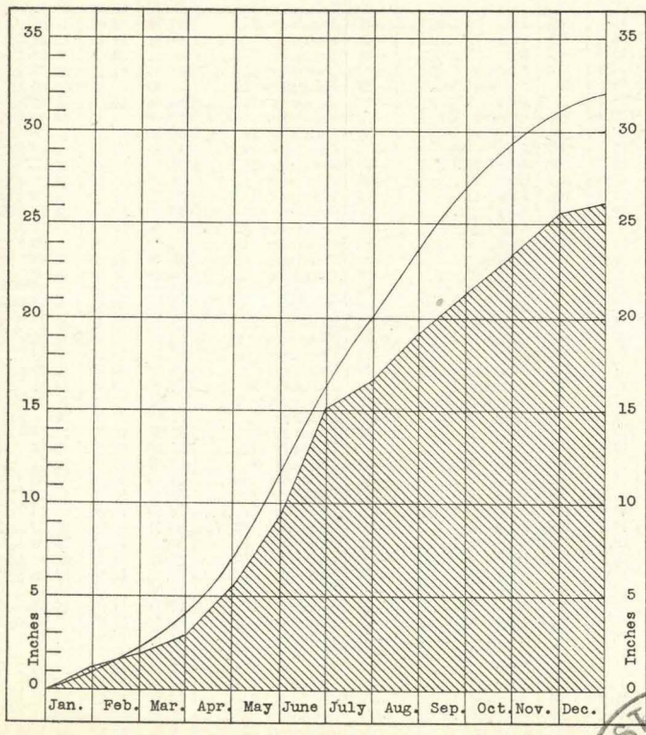


Figure 1.—Line bounding shaded area shows accumulated depth of precipitation in inches. Smoth curve shows normal.

AVERAGE TEMPERATURE DEPARTURE
State of Iowa, Year, 1930

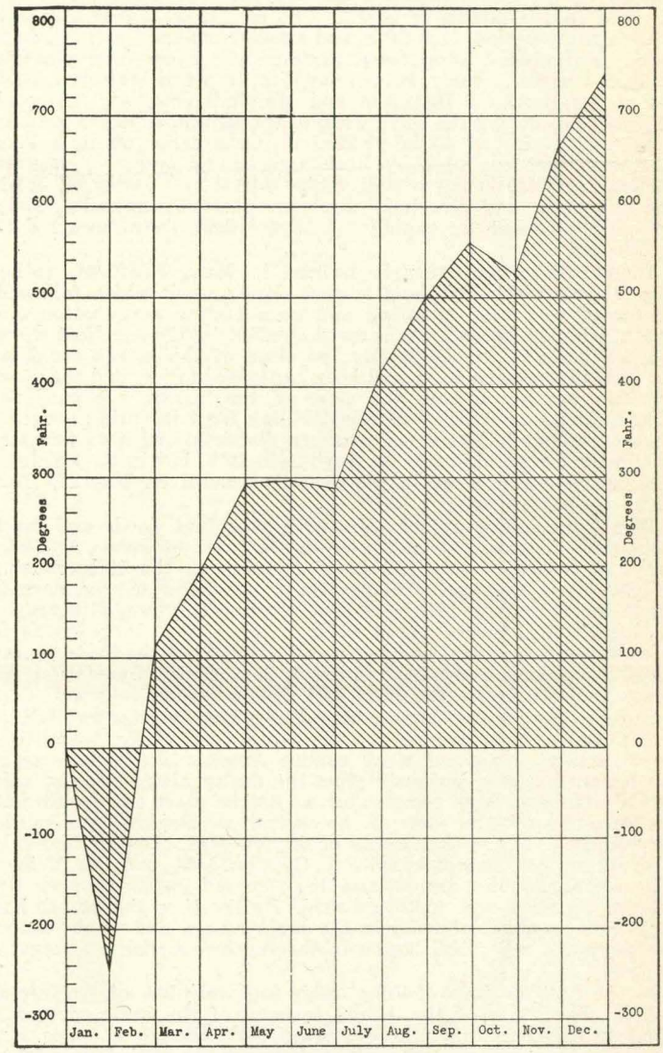


Figure 2.—Line bounding shaded area shows accumulated departure of temperature from normal. Upward slope means temperature above normal; downward, below.

Zero temperatures occurred during a cold wave, 1st-2d. This was one of the notably dry Marchs, with little snow cover. Plowing began early in the month, and much seeding of oats and other small grains was done. There was apparently little winter killing of grasses and wheat. The soil worked up in excellent tilth, but much drier than usual. At the end of the month farm work averaged two or three weeks ahead of normal. The month was generally pleasant.

April had an abnormally warm period, 3d-13th, with maximum temperatures more appropriate for July, on the 9th, 10th and 11th, during which 46 stations in the southern half and extreme eastern portions of the State reported the highest temperature ever experienced in the month of April. The month was generally dry, except a rainy period, 11th-20th, and another toward the close of the month. Farm work progressed rapidly, and some corn planting was done unusually early, before the 15th, in a few scattered localities as far north as Hamilton and Marshall counties. The cool, rainy weather during the third week of the month, retarded germination, and much had to be replanted. Oats came up to a good stand, but were cut back by heavy frosts and freezes. Pastures, meadows, alfalfa, spring wheat, winter wheat and barley, all made good progress, and livestock went on pasture unusually early. Fruits were rushed too rapidly. A severe dust storm occurred on the 5th and 6th.

Temperatures were nearly normal in May. Frequent, rather heavy showers, 6th-12th, and a cool, cloudy week which followed, interferred with corn planting and caused slow germination and growth, which, however, was somewhat offset by the excellent warm seed bed prepared in April. By the close of the month considerable corn in southern Iowa had been cultivated twice, and the more favorable weather toward the close of the month was good for young animals and chicks. The last killing frost in spring occurred at most stations in the three southern districts, and at a few stations in the central districts on April 24th-25th, but in the northern three districts killing frosts were rather general on May 17. Tornadoes were numerous.

Damaging downpours of rain, with attendant floods and much wind squall and hail damage, were the features of June. At Sioux City, 2 80 inches of rain fell in 35 minutes on the 13th, causing $300,000 flood damage. Temperatures averaged nearly normal, though the period 5th-12th, was cool. Though the rainfall averaged 5.83 inches, 1.33 inches above normal, there were large areas in the west-central, central and northwest districts of the State, where precipitation was noticeably deficient, laying the foundation for serious difficulty with the heat and drouth which followed.

Beginning with the first week in July, the average rainfall of each of the next 12 weeks, for the State as a whole, was below normal, except a normal week ending August 19. Certain areas soon began to suffer seriously from the faulty distribution of rain and the attendant high temperatures. At the start the drouth and heat were the worst in some of the central, west-central and southwest counties. In the four weeks ending July 15, Atlantic had only 5% of its normal amount of rainfall, Creston, 11%, and Des Moines, 16%. Gradually the drouth and heat spread eastward over the southern counties, and northeastward. By the time the drouth had reached its greatest intensity in the southeastern and northwestern counties, some relief had begun in the southwest and west-central counties.

In the first 29 days of July, Albia had only 5% of its normal rainfall. The worst of the drouth in most of the State covered a period of 82 days, July 5th-September 24th, though at some stations in the northwest and eastern districts the period was 80 to 81 days. The least amount in 82 days was 0.90 inch at Perry. Ledges Park, near Boone, was a close second, with 0.93 inch. The least number of days with 0.01 inch or more of rain in the 82-day period was 4 days at Olin, though there were only about 8 to 10 days with appreciable rain over a large area extending from Jones County westward to Carroll County, and northwest to Plymouth County. In a good many northeast and north-central counties the rainfall was nearly up to normal, with no long rainless periods, and few days with temperature 100 degrees or higher.

The greatest amount of rain reported was 10.56 inches in 81 days at Mason City, while the greatest number of days with appreciable rainfall in 82 days was 21 days at Omaha. Within a radius of one or two counties of Omaha, frequent and ample rains largely offset the earlier effects of drouth, after about the middle of the 82-day period. The greatest number of consecutive days without appreciable rainfall was 35 at Akron, July 1st-August 4th, followed closely by Keosauqua, with 31 days, July 6th-August 5th. The longest drouth period at Allison and Hampton was 9 days, August 10th-18th.

There were about 5 well defined heat waves, with a day or two of moderate temperatures between. Maximum temperatures of 100° or higher began to appear at several stations in the west portion of the State on July 8, gradually spreading eastward, reaching their greatest intensity on August 3, covering every station in the State except Fairport, Independence and Postville, and ending with 102° at Keokuk on August 9. The total number of days with maximum temperatures 100° or higher, July 8 to August 9, ranged from 18 at Glenwood to none at the three stations above mentioned. The average number for the State was 8.8 days, compared with 13.4 days in July and August, 1901, 5.8 in 1894, and

(Continued on Page 106)

SUPPLEMENTAL PRECIPITATION TABLE, YEAR 1930

STATIONS	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Northern Division													
Algona	*0.85	*0.35	1.60	4.03	*3.15	3.46	0.82	1.91	5.21	1.44	2.06	0.28	25.16
Allison (near)	*1.05	*0.35	*0.85	3.49	3.35	6.35	4.99	1.83	1.12	2.04	1.60	0.16	27.18
Cedar Falls	1.23	0.39	0.86	3.93	5.76	5.93	5.32	0.90	1.48	3.48	2.71	0.50	32.49
Decorah	1.16	0.58	0.92	2.76	4.09	5.77	2.10	2.35	2.04	*1.75	3.09	0.28	26.89
Delaware (near)	1.45	*0.75	*1.05	*4.05	*4.05	*6.65	*2.50	*0.85	*2.45	*2.60	2.11	0.67	29.18
Fayette	1.65	0.55	0.96	*4.05	3.08	9.70	3.41	1.55	2.19	1.69	2.45	0.63	31.91
Hampton	*1.05	*0.35	0.97	3.03	2.85	6.49	5.58	1.74	1.86	2.13	1.33	0.24	27.62
Lake Park (near)	0.58	0.33	0.19	1.91	4.65	4.73	0.33	*1.35	6.39	2.21	2.70	T.	25.37
Lansing	*1.35	*0.55	0.80	2.04	3.94	7.63	2.04	1.16	2.57	1.66	2.59	*0.30	26.63
Marathon	0.82	0.32	0.36	2.40	5.23	6.86	1.37	2.02	2.90	1.09	2.74	0.34	26.45
Waverly	1.10	0.14	0.48	3.91	5.04	7.10	*4.65	2.18	0.68	2.68	0.95	0.38	29.29
Central Division													
Baxter	1.04	0.61	1.38	3.07	4.18	4.14	*1.10	*1.25	1.48	2.65	1.15	0.22	22.27
Guthrie Center	*1.25	0.17	1.10	1.36	3.43	4.93	1.18	1.20	1.00	1.55	1.79	0.27	19.23
Le Claire	*2.00	*2.05	1.01	3.80	2.42	7.60	1.13	1.57	1.64	3.01	1.57	1.10	28.90
Rockwell City	*1.05	*0.55	1.45	3.30	4.11	5.76	0.51	4.48	1.54	1.39	1.54	0.60	26.28
Sac City	1.10	*0.40	1.08	2.81	3.60	5.33	0.83	3.08	2.92	1.47	2.62	0.32	25.56
Tipton (near)	1.63	1.69	0.30	4.45	2.76	8.20	1.49	2.82	3.21	*2.85	1.69	1.35	32.44
Van Meter	1.39	0.50	0.56	1.66	2.99	3.70	1.18	1.94	0.87	2.14	1.50	0.21	18.64
Southern Division													
Afton	1.46	0.63	1.16	2.38	4.80	7.22	0.85	4.67	*3.05	2.03	2.29	0.27	30.81
Corning	1.40	0.11	0.30	1.18	7.20	5.23	1.13	4.66	*1.95	*1.90	2.02	0.20	27.28
Greenfield	*1.25	*0.20	*0.85	*2.15	*3.55	*4.75	*1.35	*3.15	0.62	2.07	1.72	0.24	21.90
Keokuk No. 2	2.27	1.57	0.97	2.06	2.98	4.44	0.43	2.57	3.02	2.24	3.96	0.91	27.42
Melrose	1.90	0.61	1.20	1.00	4.92	4.82	0.72	3.04	2.44	1.67	2.25	1.18	25.78
Oakland	0.93	*0.20	0.66	1.70	2.25	4.80	1.64	5.71	1.02	1.46	1.94	0.20	22.51
Wever	2.25	0.65	0.26	2.48	2.78	5.27	0.79	1.90	5.36	*3.05	*2.75	*0.95	28.49

*Interpolated.

COMPARATIVE DATA FOR THE STATE—Annual

Year	Temperature: Mean annual	Highest	Date	Lowest	Date	Precipitation in Inches: Annual	Greatest annual	Least annual	Average snowfall
1873	46.1	102	August 31	—38		33.92	41.04	23.34	
1874	47.7	101	July 5	—24	January 24	30.76	39.76	25.43	
1875	43.3	97	July 16	—31	January 14	35.83	48.42	28.55	
1876	45.9	96	August 24	—28	December 9	36.65	53.57	19.92	
1877	48.4	100		—31	January 8	35.16	49.82	22.52	
1878	50.0	104		—13	January 6	34.53	42.08	20.92	
1879	48.0	102		—35	December 25	28.23	46.71	16.49	
1880	47.9	104		—25	December 27	30.95	51.10	14.90	
1881	47.5	104		—40	January 9	44.16	56.81	34.02	
1882	48.4	98		—23	December 7	33.40	50.30	17.71	
1883	44.8	100		—38		34.54	46.15	18.00	
1884	46.0	96		—38	January 5	35.59	46.60	23.35	
1885	44.7	102	July 30	—42	January 28	32.23	44.89	17.91	
1886	46.4	103	July 13	—34	February 4	24.71	35.48	15.55	
1887	46.6	105	July 29	—34	January 7	26.31	38.61	12.30	
1888	45.3	110	August 2	—43	January 15	31.44	41.17	20.60	
1889	48.0	104	August 30	—28	February 23	24.95	37.61	13.66	
1890	47.5	110	July* 13	—27	January 22	29.48	45.45	16.54	
1891	47.3	106	August 9	—31	February 4	32.90	49.05	23.48	
1892	46.6	104	July 11	—38	January 19	36.58	48.77	24.78	34.2
1893	45.7	102	July* 13	—36	January 14	27.59	33.27	19.19	37.2
1894	49.7	109	July 26	—37	January 25	21.94	29.81	15.65	19.2
1895	47.2	104	May 28	—33	February 1	26.77	35.25	18.57	26.0
1896	48.6	104	July 3	—20	January 4	37.23	51.60	28.68	22.6
1897	47.8	106	July* 23	—30	January 25	26.98	36.18	20.21	38.8
1898	47.7	103	August 20	—25	December 31	31.34	55.47	19.51	40.3
1899	47.3	104	Sept. 6	—40	February 11	28.68	42.06	21.79	23.4
1900	49.3	103	August 3	—27	February 15	35.05	47.33	25.05	25.8
1901	49.0	113	July 22	—31	December 15	24.41	37.69	16.35	38.5
1902	47.7	98	July 30	—31	January 27	43.82	58.80	20.14	28.0
1903	47.2	101	August 24	—27	December 13	35.39	50.53	26.41	19.4
1904	46.3	100	July 17	—32	January 27	28.51	38.93	19.34	29.2
1905	47.2	104	August 11	—41	February* 2	36.56	52.26	24.66	38.3
1906	48.4	102	July 21	—32	February 10	31.60	44.34	20.63	32.8
1907	47.4	102	July 5	—31	February 5	31.61	43.90	19.93	24.0
1908	49.4	101	August 3	—18	January 29	35.09	49.98	24.11	22.7
1909	47.4	103	August* 15	—26	February* 15	40.01	53.48	37.20	49.0
1910	48.6	108	July 16	—35	January 7	19.87	27.99	12.11	23.4
1911	49.5	111	July* 3	—35	January 3	31.37	46.77	19.74	35.3
1912	46.3	104	Sept. 8	—47	January 12	28.65	33.13	15.25	39.5
1913	49.7	108	July* 16	—25	January 8	29.95	45.18	20.31	25.4
1914	49.1	109	July 12	—31	December 26	31.93	44.11	23.30	27.5
1915	47.8	99	May 14	—32	January 28	39.53	51.15	27.29	31.3
1916	47.2	106	August 4	—34	January 13	28.90	46.34	22.48	29.5
1917	44.8	106	July 30	—40	December 29	27.81	36.00	20.78	32.4
1918	49.2	113	August 4	—36	February 4	32.78	47.53	25.03	33.4
1919	48.6	104	July* 30	—36	December 10	36.76	48.16	26.88	26.6
1920	48.2	102	July 23	—26	January* 4	31.75	44.00	20.95	21.7
1921	52.2	104	July* 11	—22	December 25	32.03	46.47	20.44	30.7
1922	50.2	104	June 23	—29	January 6	29.98	44.20	19.08	13.5
1923	49.0	102	July* 22	—23	February* 3	29.50	37.47	21.36	36.3
1924	46.4	100	August* 21	—36	January 5	31.39	43.85	19.41	37.2
1925	48.8	105	July* 1	—25	December 29	28.24	45.53	13.77	29.2
1926	48.3	109	July* 19	—22	January 28	33.07	48.36	22.35	27.8
1927	48.8	102	July 11	—27	January 15	29.35	47.54	18.75	17.9
1928	49.4	100	August 1	—20	January 2	35.96	47.81	24.67	22.5
1929	46.4	102	August 22	—35	February 20	30.20	44.24	20.57	41.8
1930	50.2	113	August* 3	—37	January 22	26.10	35.65	16.15	23.6
Mn	47.7					31.72			29.6

*And other dates.

CLIMATOLOGICAL DATA FOR THE YEAR 1930

STATIONS	COUNTIES	Elevation, feet	Length of record years.	Temperature, in Degrees Fahrenheit					Precipitation, in Inches							Number of Days				Prevailing direction of wind
				Mean	Highest	Date	Lowest	Date	Length of record, years	Total	Greatest Monthly	Month	Least Monthly	Month	Total snowfall (unmelted)	Precipitation .01 in. or more	Clear	Partly cloudy	Cloudy	
Northern Division																				
Akron	Plymouth	1,153							3	20.80	5.99	May	T	July	15.3	57	207	104	54	s.
Algona	Kossuth	1,207	57	48.2	110	Aug. 3	—26	Jan. 22	58	25.16	5.21	Sept.	0.28	Dec.	18.8					nw.
Allison (near)	Butler	1,000	18	48.0	100	Aug. 3			18	27.18	6.35	June	0.16	Dec.	28.5					
Alta	Buena Vista	1,513	39	48.7	108	Aug. 3	—23	Jan. 11	39	23.09	4.68	June	0.18	Mar.	19.5	77	187	110	68	s.
Alton	Sioux	1,305	25	48.5	107	Aug. 3	—27	Feb. 15	25	21.40	5.10	June	0.16	Mar.	25.2	73	132	140	93	nw.
Belmond	Wright	1,181	20	47.7	105	Aug. 3	—28	Feb. 15	20	26.64	5.72	June	0.29	Feb.	24.5	91	129	71	165	nw.
Britt	Hancock	1,236	43	48.1	108	Aug. 3	—25	Jan. 18	43	28.23	5.35	June	0.18	Feb.	22.5	83	232	26	107	sw.
Cedar Falls	Black Hawk	875							1	32.49	5.93	June	0.39	Feb.	38.0	86	162	103	100	nw.
Charles City	Floyd	1,015	39	47.1	101	Aug. 3	—31	Jan. 22	44	30.09	9.30	June	0.34	Dec.	28.5	105	163	96	106	se.
Cherokee	Cherokee	1,196	8	48.9	109	Aug. 3	—25	Jan. 17	8	20.32	4.96	May	0.17	Feb.†	13.2	73	193	109	63	s.
Decorah	Winneshiek	872	37	46.2	101	Aug. 3	—37	Jan. 22	44	26.89	5.77	June	0.28	Dec.	29.0					nw.
Dubuque	Dubuque	700	57	49.4	103	Aug. 3	—24	Jan. 22	77	28.35	5.21	June	0.79	Nov.	43.0	111	143	99	123	nw.
Estherville	Emmet	1,298	35	48.1	108	July 27	—22	Jan. 18	35	26.54	5.64	Sept.	0.10	Dec.	18.3	80	206	111	48	nw.
Fayette	Fayette	1,003	42	47.7	104	Aug. 3	—34	Jan. 22	42	31.91	9.70	June	0.55	Feb.	32.8					nw.
Forest City	Winnebago	1,226	36	47.1	105	Aug. 3	—28	Jan. 18	36	27.40	5.81	June	0.45	Dec.	36.6	86	166	76	123	nw.
Hampton	Franklin	1,142	6	47.6	103	Aug. 3			6	27.62	6.49	June	0.24	Dec.	25.0					nw.
Hawarden	Sioux	1,181							4	24.15	6.14	May	0.06	Dec.	16.2	62	173	68	124	nw.
Humboldt	Humboldt	1,095	42	48.8	111	Aug. 3	—25	Feb. 15	45	23.37	4.29	June	0.11	Dec.	17.0	59	163	117	85	nw.
Independence	Buchanan	956	66	48.8	99	July 20†	—31	Jan. 22	66	29.72	7.36	June	0.49	Aug.	25.8	89	160	106	99	nw.
Inwood (near)	Lyon	1,474	26	47.6	110	July 27†	—30	Jan. 17	26	21.01	5.43	June	0.04	Mar.	11.0	69	226	75	64	nw.
Lake Park (near)	Dickinson	1,489	10	46.6			—27	Jan. 17†	10	25.37	6.39	Sept.	T	Dec.	8.7					nw.
Lansing	Allamakee	632							23	26.63	7.63	June	0.30	Dec.	30.0					
Le Mars	Plymouth	1,224	34	49.5	108	Aug. 3	—25	Jan. 17	42	22.39	6.05	May	0.20	March	23.6	73	231	60	74	s.
Marathon	Buena Vista	1,390							4	26.45	6.86	June	0.32	Feb.	15.2	70	193	63	109	sw.
Mason City	Cerro Gordo	1,148	33	46.2	103	Aug. 3	—31	Jan. 22	33	30.43	6.31	Sept.	0.29	Dec.	26.7	95	163	125	77	nw.
New Hampton	Chickasaw	1,169	33	47.1	102	Aug. 3	—30	Jan. 18	33	26.47	5.89	June	0.15	Dec.	26.1	78	146	104	115	nw.
Northwood	Worth	1,222	34	46.4	102	Aug. 3	—27	Jan. 18	34	31.92	8.72	June	0.40	Dec.	32.5	83				nw.
Oelwein	Fayette	1,036	7	48.3	103	July 27†	—25	Jan. 18†	7	33.46	8.75	June	0.10	Feb.	23.4	58	184	81	100	s.
Osage	Mitchell	1,163	40	46.7	103	Aug. 3	—30	Jan. 18	40	25.85	7.34	June	0.58	Dec.	24.5	88				nw.
Pocahontas	Pocahontas	1,248	26	48.9	111	Aug. 3	—30	Feb. 15	26	21.47	3.52	Sept.	0.30	July	19.4	78	197	96	72	s.
Postville (near)	Clayton	1,192	31	45.6	95	Aug. 3	—26	Jan. 18	31	30.77	6.68	June	0.40	Dec.	31.8	82	170	133	62	sw.
Rock Rapids	Lyon	1,349	31	47.4	107	Aug. 3	—27	Jan. 17	31	23.16	5.83	May	0.06	Mar.†	20.3	64	271	31	63	s.
Sanborn	O'Brien	1,553	16	47.3	108	Aug. 3	—28	Jan. 17	16	24.06	4.99	June	0.14	Feb.	17.4	68	147	118	100	sw.
Sheldon	O'Brien	1,418	18	47.9	107	Aug. 3	—25	Jan. 17	23	23.97	5.27	May	0.14	Dec.	17.6	83	157	130	78	nw.
Sioux Center	Sioux	1,461	31	47.8	109	Aug. 3	—28	Jan. 17	31	23.74	5.23	May	0.11	Dec.	21.5	55	191	104	70	nw.
Spencer	Clay	1,319	16	48.8	111	Aug. 3	—25	Feb. 15	16	21.61	4.31	May	0.13	Dec.	21.6	83	187	107	71	sw.
Storm Lake	Buena Vista	1,442	41	48.5	109	Aug. 3	—22	Jan. 17	41	27.75	6.71	Aug.	0.09	Dec.	14.5	61	171	129	65	sw.
Washta	Cherokee	1,157	32	49.4	107	Aug. 3	—26	Jan. 22	32	20.02	4.98	June	0.10	Mar.	13.0	59	220	77	68	s.
Waterloo	Black Hawk	854	47	49.2	105	Aug. 3	—33	Jan. 22	48	29.87	5.07	June	0.67	Dec.	30.3	83	222	54	89	se.
Waverly	Bremer	936	34	48.2	103	Aug. 3	—34	Jan. 22	34	29.29	7.10	June	0.14	Feb.	26.5					nw.
West Bend	Palo Alto	1,197	37	48.6	107	July 27†	—24	Jan. 18	37	20.98	5.02	Sept.	0.27	Dec.	15.5	74	196	118	51	sw.
Central Division																				
Ames	Story	926	53	51.1	108	July 27	—23	Jan. 22	54	19.76	3.60	May	0.37	Dec.	22.6	67				s.
Audubon (near)	Audubon	1,297	35	50.7	104	July 18†	—21	Jan. 18	35	18.65	4.16	June	0.39	Dec.	19.7	80	194	122	49	sw.
Baxter	Jasper	993	30	51.4			—24	Jan. 22	30	22.27	4.18	May	0.22	Dec.	18.9					nw.
Belle Plaine	Benton	866	40	50.1	107	Aug. 3	—28	Jan. 22	40	31.76	5.32	May	1.02	Dec.	32.8	96	175	99	91	nw.
Boone (near)	Boone	894	25	50.0	108	July 27†	—34	Jan. 22	25	19.59	3.60	June	0.25	Dec.	18.3	77	170	118	77	s.
Carroll	Carroll	1,265	40	49.9	111	Aug. 3	—20	Jan. 18	40	21.31	3.61	May	0.19	Feb.	13.8	70	249	54	62	nw.
Cedar Rapids	Linn	737	48	50.3	108	Aug. 3	—27	Jan. 22	48	32.05	7.36	June	0.84	March	29.5	85	177	23	165	nw.
Clinton	Clinton	595	57	50.7	103	Aug. 3	—26	Jan. 22	59	26.99	7.49	June	0.68	July	34.5	108	187	66	112	s.
Davenport	Scott	580	59	52.0	105	July 27	—18	Jan. 18	59	30.01	9.14	June	0.39	Sept.	26.1	104	139	105	121	sw.
Denison	Crawford	1,200	36	50.6	111	Aug. 3	—19	Jan. 17†	36	17.99	2.59	June	0.18	Feb.	21.6	73	147	141	77	nw.
Des Moines	Polk	861	52	51.9	106	July 27	—20	Jan. 22	52	19.57	3.69	June	0.36	Dec.	24.7	92	120	113	132	s.
Fairport	Muscatine	567	9	51.9	99	July 25†	—27	Jan. 22	9	32.71	9.39	June	0.39	Sept.	33.8	106	156	73	136	s.
Fort Dodge	Webster	1,114	30	49.3	107	July 27†	—22	Jan. 18†	30	25.83	5.62	June	0.35	Feb.	25.5	81	217	62	86	sw.
Grinnell	Poweshiek	1,031	36	50.5	107	Aug. 3	—26	Jan. 22	36	28.48	7.49	June	0.48	March	29.1	89	225	66	74	nw.
Grundy Center	Grundy	976	39	49.2	105	July 27†	—28	Jan. 18†	39	25.05	4.70	June	0.45	Dec.	29.5	78	201	86	78	nw.
Guthrie Center	Guthrie	987	35	51.1	109	Aug. 3			35	19.23	4.93	June	0.17	Feb.	15.5					w.
Harlan	Shelby	1,210	31	50.2	106	Aug. 3	—25	Jan. 18	31	22.70	4.99	Aug.	0.15	Feb.	14.0	72	163	109	93	nw.
Iowa City	Johnson	733	70	50.6	107	Aug. 3	—31	Jan. 22	70	34.08	8.35	June	0.90	March	33.5	103	165	114	86	nw.
Iowa Falls	Hardin	1,127	37	48.6	106	Aug. 3	—26	Jan. 22	47	28.08	7.08	June	0.50	Feb.	38.0	84	192	66	107	w.
Jefferson	Greene	1,052	31	50.3	105	Aug. 3	—21	Jan. 17†	31	20.18	3.69	May	0.45	Dec.	19.0	57	201	65	99	sw.
Le Claire	Scott	576							30	28.90	7.60	June	1.01	March						
Little Sioux	Harrison	1,040	25	51.7	108	Aug 3	—20	Jan. 22	25	24.30	5.90	Aug.	0.44	Feb.	17.1	84	131	164	70	s.
Logan	Harrison	1,120	63	51.6	108	Aug. 3	—19	Jan. 18	63	18.69	4.25	Aug.	0.18	Feb.	20.8	83	108	221	36	sw.
Maquoketa (near)	Jackson	692	25	48.6	103	Aug. 3	—30	Jan. 22	25	27.57	5.19	June	0.67	Aug.	26.9	97	195	63	107	nw.
Marshalltown	Marshall	947	38	50.7	107	July 27	—23	Jan. 18	38	19.42	3.33	May	0.42	Dec.	28.8	81	183	87	95	nw.
Monroe	Jasper	922	18	51.7	106	Aug. 3	—26	Jan. 18	18	26.99	7.54	June	0.49	Dec.	32.6	75	218	51	96	s.
Muscatine	Muscatine	546							85	31.25	9.27	June	1.31	March						
Olin	Jones	750	31	49.0	107	Aug. 3	—35	Jan. 22	31	25.21	5.41	June	0.56	March	28.5	63	210	60	95	sw.
Onawa	Monona	1,051	29	50.9	104	July 17†	—22	Jan. 22	42	21.32	4.04	Aug.	0.28	Feb.†	23.5	54	164	85	116	nw.
Perry	Dallas	975	29	50.4	107	Aug. 3	—29	Feb. 15	29	16.15	2.80	June	0.36	Dec.	19.6	70	170	107	88	sw.
Rockwell City	Calhoun	1,232	34	49.1	107	July 27†			34	26.28	5.76	June	0.51	July	23.6					nw.
Sac City	Sac	1,209	54	49.6	113	Aug. 3	—20	Jan. 17	54	25.56	5.33	June	0.32	Dec.	24.5					s.
Sioux City	Woodbury	1,135	41	50.6	105	Aug. 3	—22	Jan. 17	41	23.55	5.88	May	0.12	March	16.0	81	118	129	118	nw.
Stuart	Guthrie	1,243																		
Tipton (near)	Cedar	806	31	50.2	104	Aug. 3	—30	Jan. 22	31	32.44	8.20	June	0.30	March	36.5		98	58	109	s.
Toledo	Tama	847	36	50.2	107	Aug. 3	—29	Jan. 22	36	24.11	4.10	June	0.53	Aug.	27.3	83	192	104	69	nw.
Van Meter	Dallas	872							11	18.64	3.70	June	0.21	Dec.	23.5	56				
Waukee	Dallas	1,032	27	51.0	107	July 27	—23	Jan. 18	27	18.96	4.81	June	0.26	Dec.	23.0	71	233	67	65	sw.
Webster City	Hamilton	1,042	25	48.6	107	July 27†	—34	Feb. 15	25	26.59	8.11	June	0.07	Dec.	27.7	77	194	95	76	nw.
Williamsburg	Iowa	805	14	51.1	109	Aug. 3	—28	Jan. 22	15	34.43	9.19	June	0.73	March	17.2	74	249	67	49	nw.

CLIMATOLOGICAL DATA FOR THE YEAR 1930—Continued

STATIONS	COUNTIES	Elevation, feet	Length of record, years	Temperature, in Degrees Fahrenheit					Precipitation, in Inches							Number of Days				Prevailing direction of wind
				Mean	Highest	Date	Lowest	Date	Length of record, years	Total	Greatest Monthly	Month	Least Monthly	Month	Total snowfall (unmelted)	Precipitation .01 in. or more	Clear	Partly cloudy	Cloudy	
Southern Division																				
Afton	Union	1,212	36	52.4	106	July 27†	—19	Jan. 17†	36	30.81	7.22	June	0.27	Dec.	24.5					sw.
Albia	Monroe	949	32	52.1	110	July 27†	—21	Jan. 18	32	27.74	6.40	June	0.73	Feb.	31.0	66	169	62	134	nw.
Atlantic	Cass	1,110	39	51.4	107	Aug. 3†	—27	Jan. 22	39	20.34	3.52	Aug.	0.17	Sept.	18.0	85	164	132	69	sw.
Bedford	Taylor	1,200							2	25.23	5.91	June	0.31	Dec.	18.0	72	183	70	112	nw.
Bonaparte (near)	Van Buren	563	39	51.8	108	Aug. 3	—24	Jan. 22	39	27.69	8.45	June	0.38	Feb.	15.2	71	227	48	90	s.
Burlington	Des Moines	544	34	53.4	109	July 27	—19	Jan. 18	34	26.86	6.20	June	0.77	March	24.3	87	204	68	93	sw.
Centerville	Appanoose	1,013	25	51.8	107	Aug. 3	—21	Jan. 22	25	25.74	5.17	June	0.18	July	32.2	91	186	83	96	sw.
Chariton (near)	Lucas	1,042	35	51.9	110	July 27	—26	Jan. 22	35	23.08	4.91	June	0.72	July	15.5	52	179	115	71	sw.
Clarinda	Page	1,009	40	52.3	107	July 27†	—29	Jan. 22	40	27.52	5.54	June	0.32	Dec.	29.2	95	198	132	35	s.
Columbus Junction	Louisa	595	29	50.8	106	Aug. 3	—26	Jan. 22	29	30.35	10.69	June	0.79	July	30.8	99	183	130	52	sw.
Corning	Adams	1,287	38	52.1	106	Aug. 3			38	27.28	7.20	May	0.11	Feb.	17.9					sw.
Corydon (near)	Wayne	1,050	37	51.6	107	Aug. 3	—23	Jan. 22	37	24.22	4.19	June	0.65	Feb.	26.3	79	193	68	104	nw.
Creston	Union	1,291	25	50.9	103	Aug. 3	—25	Jan. 18	25	27.11	7.04	June	0.26	Dec.	17.1	90	141	144	80	s.
Cumberland (near)	Cass	1,225							30	21.86	4.05	Aug.	0.17	Feb.	18.0	70	191	93	81	nw.
Earlham (near)	Madison	1,126	28	50.7	105	Aug. 3	—30	Jan. 22	28	22.50	4.33	Aug.	0.17	Feb.	27.5	59	230	49	86	sw.
Fairfield	Jefferson	780	46	51.2	109	Aug. 3	—29	Jan. 22	48	27.17	6.53	June	1.11	July	29.1	91	168	92	105	n.
Glenwood	Mills	1,100	32	52.8	108	Aug. 3	—18	Jan. 18	36	24.98	5.26	Aug.	0.19	Dec.	16.5	74	181	101	83	se.
Greenfield	Adair	1,368								21.90	*4.75	June	*0.20	Feb.						
Indianola	Warren	972	39	52.3	108	July 27	—23	Jan. 22	39	27.37	6.80	June	0.40	Dec.	29.2	79	180	104	81	sw.
Keokuk	Lee	614	59	54.1	107	July 27	—17	Jan. 18	59	24.01	4.06	June	0.30	July	18.4	83	146	101	118	sw.
Keokuk No. 2	Lee	651	1	54.4	112	July 27	—22	Jan. 22	1	27.42	4.44	June	0.43	July	25.0	86				
Keosauqua	Van Buren	639	38	52.2	109	Aug. 3	—36	Jan. 22	38	28.13	7.67	June	0.52	Feb.	23.1	59				nw.
Knoxville	Marion	920	35	52.2	108	July 27†	—27	Jan. 22	35	27.43	6.38	June	0.78	Dec.	24.9	71	188	87	90	nw.
Lacona	Warren	824							31	28.18	6.25	June	0.60	Dec.	26.0	90	149	164	52	
Lamoni	Decatur	1,123	23	51.5	108	Aug. 3	—24	Jan. 22	24	23.97	3.91	June	0.47	July	14.6	81	209	68	88	nw.
Lenox	Taylor	1,250	35	52.8	107	July 27†	—22	Jan. 18	35	26.07	5.96	June	0.45	July†	17.9	75	198	94	73	se.
Melrose	Monroe	871							1	25.78	4.92	May	0.64	Feb.	28.0	65	162	104	99	sw.
Mount Ayr	Ringgold	1,220	37	51.8	105	Aug. 3	—25	Jan. 22	37	29.42	6.49	June	0.34	Dec.	19.0	73	237	63	65	s.
Mt. Pleasant	Henry	730	49	52.5	107	July 27†	—21	Jan. 22	49	30.80	12.28	June	0.91	July	17.0	82	148	139	78	nw.
Oakland	Pottawattamie	1,139	11	52.0	106	July 18†	—24	Jan. 22	11	22.51	5.71	Aug.	0.20	Feb.†	14.5					sw.
Oskaloosa	Mahaska	835	54	51.6	109	Aug. 3	—26	Jan. 18†	54	35.65	7.47	June	1.29	Dec.	44.3	108	161	98	106	nw.
Ottumwa	Wapello	649	35	52.6	108	July 27†	—36	Jan. 22	36	28.21	7.26	June	0.80	March	22.9	87	184	79	102	nw.
Red Oak (near)	Montgomery	1,030							17	28.55	6.53	Aug.	0.06	Feb.	25.0	73	142	166	57	s.
Riverton (near)	Fremont	920							4	24.51	5.80	June	0.13	Dec.	15.4	63	192	50	123	s.
Sigourney	Keokuk	785	34	51.3	110	Aug. 3	—27	Jan. 22	34	32.72	9.33	June	0.78	March	27.9	75	193	82	90	nw.
Stockport (near)	Van Buren	747	28	51.8	109	Aug. 3	—35	Jan. 22	28	29.64	7.57	June	0.76	July	23.7	88	207	73	85	s.
Thurman	Fremont	960	33	53.0	109	Aug. 3	—33	Jan. 22	39	22.57	4.59	June	0.25	Dec.	22.5	53	169	95	101	s.
Tingley	Ringgold	1,275	5	51.7	106	July 27†	—23	Jan. 18	5	27.42	6.60	June	0.53	Dec.	15.8	69	212	88	65	sw.
Washington	Washington	757	48	52.3	109	Aug. 3	—26	Jan. 22	51	34.97	13.49	June	0.83	July	29.6	78	145	119	101	nw.
Wever	Lee	552	2	53.3	108	July 27			8	28.49	5.36	Sept.	0.26	March						
Winterset	Madison	1,118	39	52.0	106	July 27†	—20	Jan. 18	39	28.24	6.15	June	0.25	Feb.	20.0	76	231	64	70	nw.
Omaha, Nebr.		1,105	59	53.4	111	Aug. 3	—16	Jan. 17	59	20.35	6.28	Aug.	0.15	Dec.	22.0	81	172	105	88	s.

†Also on other dates.

MONTHLY STATE DATA FOR 1930

MONTH	Barometric Pressure Inches (Sea Level)					Temperature Degrees, F.				Relative Humidity Per Cent				Precipitation, Inches					No. of Days				Sunshine		Wind	
	Mean	Highest	Date	Lowest	Date	Mean	Departure from Normal	Highest	Lowest	7 a. m.*	12 noon‡	7 p. m.*	Departure from Normal¶	Lowest	Average	Departure from Normal	Greatest	Least	Snowfall	With .01 inch or More Precipitation	Clear	Partly Cloudy	Cloudy	Pct. of Possible Amt.	Departure from Normal	Average Hourly Velocity	Prevailing Direction
January	30.26	30.84	10	29.40	14	10.5	— 8.0	58	—37	84	70	78	0	26	1.33	+0.26	2.51	0.41	14.7	8	14	8	9	61	+ 9	8.1	nw.
February	29.99	30.64	15	29.34	24	35.5	+12.9	80	—34	82	61	68	— 4	21	0.67	—0.54	2.45	0.06	2.8	5	11	10	7	57	+ 2	8.2	sw.
March	29.95	30.69	2	29.47	6	37.3	+ 2.7	80	— 4	72	45	48	—14	8	0.89	—0.88	2.42	0.04	1.3	5	14	8	9	68	+11	10.7	nw.
April	30.01	30.32	8	29.56	17	52.1	+ 3.2	96	5	72	47	49	— 6	10	2.67	—0.29	4.59	1.05	0.3	9	14	7	9	63	+ 6	8.4	nw.
May	29.95	30.45	25	29.22	7	60.2	+ 0.1	91	26	75	54	55	— 3	21	3.72	—0.86	7.20	1.61	T.	11	14	7	10	63	+ 1	9.1	sw.
June	29.91	30.24	8	29.43	13	69.0	— 0.3	101	37	76	52	54	— 4	24	5.83	+1.33	13.49	2.48	0	10	16	10	4	72	+ 5	7.5	sw.
July	29.95	30.31	14	29.62	12	77.9	+ 4.2	112	40	68	43	43	—12	16	1.49	—2.34	5.58	T.	0	4	21	8	2	80	+ 7	6.3	sw.
August	30.02	30.33	11	29.61	2	74.4	+ 2.7	113	41	75	49	52	— 8	21	2.42	—1.02	6.71	0.48	0	8	15	11	5	62	— 8	5.1	ne.
September	29.95	30.37	30	29.20	26	66.3	+ 2.0	101	25	77	45	52	— 9	19	2.31	—1.36	6.39	0.17	0	5	19	7	4	74	+12	6.9	sw.
October	30.08	30.65	21	29.54	15	50.7	— 1.1	95	9	81	57	64	+ 1	23	2.08	—0.35	4.21	0.71	0.4	7	14	7	10	55	— 5	7.3	nw.
November	30.06	30.70	5	29.03	16	41.3	+ 4.7	79	—16	78	56	61	+ 7	27	2.12	+0.57	4.57	0.79	1.1	5	17	6	7	66	+15	9.1	sw.
December	30.14	30.76	16	29.63	10	26.7	+ 2.6	65	—10	83	69	75	— 2	19	0.57	—0.57	1.69	T.	3.0	4	12	6	13	44	— 2	7.1	nw.
Means and Extremes	30.02	30.84	10	29.03	16	50.2	+ 2.2	113	—37	77	54	58	— 6	8	26.10	—6.05	13.49	T.	23.6	81	181	95	89	64	+ 5	7.8	sw.
Normals and Records	30.02	31.09	Jan. 25 1905	28.69	Feb. 28 1902	48.0		113	—47	81		66		5	32.15		19.80	0.00	30.7	85	166	101	98	59			

‡Local mean time.
*Normal central time.
†And other dates.
¶7 A. M. and 7 P. M. observations only.

MEAN MONTHLY AND ANNUAL TEMPERATURES, WITH DEPARTURES FROM THE NORMAL, FOR 1930

STATIONS	January		February		March		April		May		June		July		August		September		October		November		December		Annual	
	Temp.	Dep.	Temp.	Dep.	Temp.	Dep.	Temp.	Dep.	Temp.	Dep.	Temp.	Dep.	Temp.	Dep.	Temp.	Dep.	Temp.	Dep.	Temp.	Dep.	Temp.	Dep.	Temp.	Dep.	Temp.	Dep.
Northern Division																										
Algona	8.2	-7.2	*32.0	+13.2	33.0	+1.5	49.7	+2.1	*59.0	-0.2	68.1	-0.5	77.1	+4.1	74.0	+3.7	63.8	+0.5	49.0	-1.5	40.0	+5.4	25.0	+3.5	48.2	+2.0
Allison (near)	*7.5	-7.8	*30.5	+11.2	*35.0	+2.9	50.2	+2.9	59.0	+0.3	68.0	-0.1	75.8	+3.0	73.0	+2.5	64.6	+1.5	49.0	-1.7	39.8	+5.3	24.0	-2.6	48.0	+1.8
Alta	8.4	-7.6	33.4	+13.7	34.4	+1.4	51.3	+4.2	58.3	-0.3	68.5	+0.7	78.4	+6.0	74.6	+4.3	64.3	+1.6	49.2	-0.9	38.7	+4.8	25.0	+3.6	48.7	+2.6
Alton	6.7	-8.8	32.6	+13.7	34.9	+2.9	50.4	+3.4	58.6	0.0	67.8	-0.6	77.8	+4.3	74.0	+3.1	63.8	+1.0	50.4	+0.6	39.1	+5.5	26.1	+5.3	48.5	+2.5
Belmond	6.6	-8.1	31.0	+12.7	35.0	+3.7	49.6	+2.9	58.4	-0.2	67.6	-0.9	76.4	+2.8	72.4	+2.6	63.4	-0.2	48.7	-1.9	39.4	+5.2	23.6	+2.7	47.7	+1.8
Britt	8.3	-5.9	31.7	+14.1	35.8	+4.3	50.2	+4.0	58.8	+0.8	67.9	+0.5	76.2	+5.0	73.2	+3.3	63.2	+0.8	48.6	-1.1	39.2	+5.7	24.4	+3.9	48.1	+2.9
Charles City	6.6	-7.1	29.6	+12.5	33.8	+3.1	49.4	+3.0	58.5	+0.7	67.8	+1.3	75.0	+2.7	72.4	+3.3	62.4	+1.4	48.0	-0.6	38.4	+5.4	23.0	+2.6	47.1	+2.4
Cherokee	8.2	-7.0	33.8	+14.3	35.6	+3.7	51.2	+4.8	58.0	0.0	67.4	-0.1	78.0	+6.9	74.0	+4.0	64.8	+2.6	50.0	+0.5	39.6	+6.5	25.7	+5.2	48.9	+3.5
Decorah	7.0	-8.2	30.0	+12.2	33.3	+2.0	48.0	+0.7	57.5	-0.9	66.8	-1.2	73.2	+1.0	70.8	+2.3	61.8	+0.2	*47.0	-2.1	37.6	+2.9	21.8	-0.4	46.2	+0.7
Dubuque	11.8	-7.3	33.7	+11.5	35.6	+1.6	50.6	+2.0	60.3	0.0	69.0	-0.4	76.0	+1.9	74.2	+2.5	65.6	+1.6	50.1	-1.8	40.6	+3.6	25.4	+0.7	49.4	+1.3
Estnerville	6.6	-6.5	31.6	+13.7	33.6	+2.0	49.6	+4.7	58.0	+1.0	67.6	+0.7	78.6	+6.7	74.6	+5.8	62.9	+1.2	49.0	-0.1	38.4	+4.4	26.6	+6.3	48.1	+3.3
Fayette	9.1	-6.3	31.1	+12.1	35.1	+3.8	*49.0	+2.1	59.4	+1.4	68.4	+1.1	74.4	+2.5	72.6	+3.2	64.2	+1.9	49.1	-0.5	37.8	+3.7	22.6	+1.2	47.7	+2.1
Forest City	7.5	-6.8	29.8	+11.2	34.6	+2.8	49.6	+3.3	57.7	-0.4	66.3	-1.5	74.8	+2.6	72.4	+2.2	63.0	+0.3	47.4	-1.7	38.2	+4.7	23.4	+2.1	47.1	+1.6
Hampton	*7.0		*30.5		34.8		49.7		58.4		67.5		75.6		72.2		64.0		47.6		39.7		24.0		47.6	
Humboldt	8.2	-8.3	32.8	+12.3	35.9	+2.7	51.8	+3.7	59.2	-0.8	68.0	-1.3	77.2	+3.1	73.9	+2.1	64.8	+0.6	49.2	-2.1	40.0	+4.4	24.8	+2.2	48.8	+1.5
Independence	10.8	-6.1	36.4	+15.2	36.4	+2.3	50.3	+1.6	59.2	-0.4	67.6	-0.7	75.0	+2.0	72.4	+1.1	65.0	+1.1	49.4	-2.7	39.2	+2.7	24.1	+0.5	48.8	+1.4
Inwood (near)	5.2	-8.8	31.6	+13.8	33.9	+1.2	49.0	+2.3	57.6	-0.1	66.9	-0.8	77.8	+5.2	74.7	+4.2	63.2	+0.1	48.4	-1.4	37.3	+4.3	25.0	+5.6	47.6	+2.2
Lake Pk. (near)	4.7	-8.6	30.2	+12.4	33.2	+1.8	48.1	+2.5	57.0	-0.5	65.7	-1.6	76.6	+4.6	*73.5	+4.0	61.2	-0.3	47.4	-1.4	36.6	+3.6	24.8	+5.3	46.6	+1.8
Le Mars	8.1	-9.0	35.2	+14.3	36.2	+2.9	51.4	+3.6	58.6	-0.4	67.6	-1.0	78.0	+4.7	74.6	+3.6	64.8	+1.1	51.4	+0.3	40.2	+5.2	28.2	+5.8	49.5	+2.6
Mason City	5.6	-8.6	29.8	+11.7	34.0	+3.1	48.2	+1.7	57.4	-0.6	66.0	-1.6	73.7	+1.3	71.0	+1.4	61.2	-0.5	47.3	-2.3	38.0	+4.5	22.2	+1.3	46.2	+1.0
New Hampton	8.5	-6.0	29.5	+10.8	35.2	+3.9	49.6	+2.6	58.6	+0.3	67.5	-0.2	73.6	+1.4	71.8	+2.0	63.0	+0.6	47.8	-2.4	38.0	+3.9	22.6	+1.8	47.1	+1.5
Northwood	5.6	-7.1	28.5	+12.2	*33.5	+4.3	48.9	+3.8	58.0	+0.7	67.0	+0.3	74.6	+3.4	72.9	+4.4	61.8	+0.8	47.3	-0.9	37.7	+5.3	21.5	+1.8	46.4	+2.4
Oelwein	9.6	-6.8	31.8	+11.5	35.6	+2.6	50.2	+2.6	59.0	+0.3	68.4	+0.6	76.0	+3.8	72.3	+2.1	64.6	+1.8	49.0	-2.2	39.6	+4.4	23.9	+0.9	48.3	+1.8
Osage	6.0	-7.3	29.0	+12.2	33.8	+3.9	48.8	+2.9	58.2	+0.4	67.2	0.0	74.5	+2.6	72.2	+3.5	62.6	+1.4	47.6	-0.9	37.6	+4.4	22.5	+2.5	46.7	+2.2
Pocahontas	8.2	-7.8	32.9	+13.2	35.1	+2.8	50.6	+3.5	58.4	-0.4	68.6	+0.3	78.2	+5.5	74.9	+4.3	64.3	+0.8	49.8	-0.9	40.2	+5.5	25.9	+4.2	48.9	+3.6
Postville (near)	7.8	-7.4	29.5	+11.2	33.9	+3.3	47.0	+0.7	56.7	-0.7	65.4	-0.3	71.2	+1.2	69.3	+1.5	60.3	-0.5	47.3	-2.0	37.0	+3.0	22.0	+1.1	45.6	+0.9
Rock Rapids	5.4	-8.1	31.0	+13.1	34.2	+2.7	49.4	+3.1	58.2	+0.2	67.1	-0.8	76.2	+3.6	73.7	+4.0	61.5	-0.2	48.4	-0.5	37.2	+4.0	26.5	+6.8	47.4	+2.3
Sanborn	5.8	-8.8	31.0	+12.5	33.6	+2.0	49.2	+2.7	56.6	-1.5	66.8	-0.9	76.6	+3.8	73.8	+3.3	63.0	+0.2	48.5	-0.9	37.7	+5.2	24.9	+5.5	47.3	+1.9
Sheldon	6.8	-7.8	32.2	+13.7	34.6	+3.0	50.4	+3.4	57.7	-0.5	67.0	-0.5	77.1	+4.1	73.8	+3.3	63.0	-0.2	48.7	-1.5	38.3	+5.1	25.2	+4.8	47.9	+2.2
Sioux Center	6.2	-8.9	31.7	+13.0	35.0	+3.5	50.2	+3.7	57.4	-0.8	67.1	-0.4	77.6	+4.6	74.0	+3.5	63.2	+0.2	48.4	-1.4	37.9	+4.4	25.0	+4.2	47.8	+2.1
Spencer	6.4	-8.3	32.3	+13.8	35.2	+2.8	51.0	+4.0	59.0	+0.5	68.4	-0.1	79.0	+5.6	75.9	+5.3	63.6	+0.1	49.2	-1.0	39.5	+5.9	26.0	+5.3	48.8	+2.8
Storm Lake	9.0	-7.8	34.3	+13.9	34.6	+2.0	50.2	+2.8	57.8	-1.3	67.8	-0.7	77.7	+4.2	73.8	+2.4	63.8	-0.2	48.8	-2.4	39.4	+3.9	25.1	+2.6	48.5	+1.6
Washta	9.3	-7.3	35.0	+14.2	37.4	+4.1	51.6	+4.1	58.6	+0.3	67.2	-0.9	77.2	+4.9	74.4	+3.8	64.6	+1.1	50.6	+0.1	39.8	+4.8	26.6	+4.5	49.4	+2.8
Waterloo	9.1	-8.3	33.0	+12.1	36.8	+2.4	51.0	+2.2	60.3	+0.1	69.4	0.0	76.4	+2.7	73.8	+2.3	65.3	+1.2	50.3	-1.6	39.8	+3.7	21.6	+1.1	49.2	+1.5
Waverly	7.6	-8.6	30.6	+10.6	35.2	+2.3	50.0	+2.4	59.5	+0.7	68.9	+0.7	*75.5	+3.0	74.2	+3.6	64.9	+1.5	49.0	-2.1	39.5	+3.9	23.4	+0.2	48.2	+1.5
West Bend	8.0	-7.0	32.6	+13.4	35.0	+3.0	50.8	+3.4	59.2	-0.1	68.2	-0.2	78.0	+4.8	73.6	+3.0	64.3	+0.9	49.0	-1.6	40.0	+5.9	25.0	+3.9	48.6	+2.4
Central Division																										
Ames	11.2	-7.3	36.2	+13.7	38.7	+3.7	52.6	+3.8	60.8	0.0	69.6	-0.3	79.4	+5.4	75.5	+3.7	67.6	+3.2	51.5	-0.2	42.8	+6.9	27.2	+3.4	51.1	+3.0
Audubon (near)	10.1	-7.0	36.3	+14.8	37.6	+3.8	52.7	+5.1	59.3	0.0	69.4	+1.1	80.1	+7.4	75.4	+4.6	67.8	+4.1	51.3	+0.5	41.8	+7.0	26.7	+3.9	50.7	+3.8
Baxter	14.4	-5.0	37.0	+14.1	39.8	+4.8	52.7	+3.7	60.9	+0.4	69.2	-0.4	*79.5	+5.3	*75.0	+2.8	68.2	+3.6	51.1	-1.3	42.4	+5.2	27.0	+2.6	51.4	+3.0
Belle Plaine	10.8	-8.0	35.2	+12.3	37.8	+2.9	52.2	+2.8	60.8	+0.4	69.8	+0.6	77.4	+3.9	73.6	+2.1	66.9	+2.5	50.3	-1.6	41.8	+4.8	24.7	+0.5	50.1	+1.9
Boone (near)	10.3	-7.6	35.2	+11.9	37.4	+1.4	51.6	+2.6	59.8	-0.1	68.4	-0.6	77.2	+3.7	74.8	+3.9	66.0	+2.2	51.4	-0.3	41.6	+5.0	26.4	+2.4	50.0	+2.0
Carroll	10.3	-7.1	35.5	+13.6	36.6	+0.6	52.0	+3.5	59.2	-0.7	68.4	0.0	79.0	+5.8	73.8	+2.7	66.4	+2.7	50.6	-1.0	41.4	+5.3	26.2	+2.4	49.9	+2.3
Cedar Rapids	11.3	-7.6	35.0	+12.5	37.8	+3.1	52.2	+3.0	61.2	+0.5	70.6	+1.5	77.8	+3.8	74.5	+2.7	67.2	+2.6	50.2	-1.2	41.0	+4.6	24.9	+0.9	50.3	+2.2
Clinton	13.6	-7.0	35.8	+11.2	37.8	+2.0	52.2	+2.4	62.4	+1.3	70.2	-0.2	76.7	+1.9	74.7	+2.0	67.2	+2.0	51.0	-2.0	41.3	+3.4	25.8	-0.5	50.7	+1.3
Davenport	14.8	-7.0	37.2	+12.3	38.4	+2.3	53.3	+3.4	62.8	+1.5	71.0	+0.5	78.6	+3.3	75.6	+2.5	68.9	+3.3	52.2	-1.5	42.8	+3.8	28.0	+0.9	52.0	+2.1
Denison	10.1	-8.1	35.4	+13.0	37.6	+2.6	52.5	+3.3	59.8	-0.3	69.0	-0.1	80.0	+6.6	74.3	+2.8	67.1	+3.1	51.9	+0.2	41.8	+6.2	27.6	+3.8	50.6	+2.8
Des Moines	12.4	-7.7	38.2	+14.5	38.1	+2.2	53.6	+3.5	61.1	-0.2	70.2	-0.4	80.4	+5.0	75.8	+2.7	68.2	+2.6	52.3	-1.1	43.4	+5.0	28.6	+2.6	51.9	+2.4
Fairport	14.5	-7.4	37.8	+12.6	39.4	+2.4	54.0	+3.3	62.8	+0.9	70.8	+0.4	77.4	+2.4	74.6	+1.6	67.8	+1.8	52.2	-1.6	*42.0	+2.8	29.4	+2.2	51.9	+1.8
Fort Dodge	9.0	-7.7	34.0	+11.7	36.3	+2.0	51.3	+3.7	59.6	+0.4	68.0	-1.0	78.1	+4.1	74.0	+3.2	65.0	+1.0	50.2	-1.1	41.0	+5.7	25.2	+2.9	49.3	+2.1
Grinnell	10.8	-9.4	35.2	+12.0	37.3	+2.0	51.8	+2.4	59.8	-1.0	69.0	-0.6	77.6	+3.3	74.9	+2.3	67.2	+2.3	51.4	-1.6	43.2	+5.5	27.4	+2.2	50.5	+1.7
Grundy Center	9.6	-8.9	33.1	+11.1	36.6	+1.9	50.8	+1.7	59.2	-1.4	68.6	-1.1	77.0	+2.9	74.4	+2.5	65.7	+1.1	49.6	-1.5	40.6	+4.3	25.5	+1.6	49.2	+1.2
Guthrie Center	10.5	-7.7	37.2	+13.6	38.2	+3.0	53.1	+3.7	60.6	+1.1	69.1	+0.1	80.3	+6.7	74.8	+3.1	66.8	+2.2	52.0	-0.5	43.0	+6.0	27.4	+2.9	51.1	+2.9
Harlan	10.4	-7.7	35.9	+13.0	37.3	+2.0	52.4	+3.4	58.7	-1.4	68.5	-0.6	78.4	+5.3	73.2	+2.2	66.2	+2.4	52.0	+0.8	42.2	+6.4	27.8	+4.2	50.2	+2.4
Iowa City	12.1	-7.9	35.9	+11.7	38.4	+2.8	52.4	+2.5	61.8	+1.5	69.7	+0.6	77.1	+3.3	74.1	+2.1	67.7	+2.9	51.1	-1.3	41.8	+4.2	25.7	-0.1	50.6	+1.8
Iowa Falls	8.6	-7.1	32.3	+11.3	36.2	+2.1	50.6	+2.8	59.6	+0.8	68.2	+0.3	76.8	+4.5	73.4	+2.3	65.4	+2.8	48.4	-2.3	39.3	+4.0	25.0	+2.5	48.6	+2.0
Jefferson	11.0	-7.1	36.2	+13.7	37.5	+1.7	52.1	+3.6	59.6	-0.2	67.8	-1.4	78.7	+5.4	73.6	+2.9	65.9	+2.3	51.4	0.0	42.5	+6.3	27.4	+3.8	50.3	+2.6
Little Sioux	11.0	-8.3	38.1	+14.2	38.8	+2.7	54.0	+3.5	61.2	+0.1	70.1	0.0	81.5	+7.1	75.2	+2.6	67.4	+2.1	52.4	+0.2	42.4	+5.9	28.2	+4.2	51.7	+2.9
Logan	11.8	-8.5	39.8	+14.8	*39.5	+2.3	53.8	+3.0	60.4	-0.9	70.2	+0.4	80.2	+6.0	74.6	+1.9	66.6	+0.9	52.0	-1.2	42.2	+4.9	28.6	+3.2	51.6	+2.2
Maquoketa (nr.)	10.8	-7.8	34.2	+12.4	35.9	+2.4	49.8	+2.5	59.8	+0.8	68.4	+0.8	74.4	+3.2	72.6	+3.0	65.2	+2.0	49.1	-1.1	39.6	+3.8	23.9	-0.1	48.6	+1.8
Marshalltown	10.9	-9.1	35.0	+11.4	37.2	+1.6	52.1	+2.5	60.6	-0.3	70.1	-0.2	79.4	+4.1	75.4	+2.6	67.3	+1.9	51.0	-2.0	42.6	+5.2	26.9	+1.8	50.7	+1.6
Monroe	12.2	-8.5	37.8	+13.2	39.4	+3.4	53.6	+3.5	61.0	-0.1	70.0	+0.2	79.7	+4.7	74.8	+1.4	67.6	+1.5	51.6	-2.4	43.4	+4.4	28.8	+2.9	51.7	+2.1
Olin	10.0	-8.2	34.0	+11.9	36.5	+2.0	50.8	+1.6	60.1	-0.2	69.4	+0.3	75.3	+1.3	72.9	+1.3	66.1	+2.4	48.9	-2.1	39.7	+3.4	23.8	-1.1	49.0	+1.1
Onawa	12.3	-6.5	37.6	+14.4	39.4	+4.1	53.1	+3.0	59.5	-1.4	69.2	-0.8	79.4	+5.1	74.0	+1.9	65.7	+1.1	51.8	0.0	41.0	+5.3	27.8	+3.9	50.9	+2.5
Perry	10.1	-8.9	36.1	+12.6	38.2	+2.8	52.2	+3.1	60.1	-0.7	68.8	-1.7	79.0	+4.8	73.9	+2.0	66.4	+1.9	51.2	-1.0	42.0	+5.0	26.8	+2.4	50.4	+1.9
Rockwell City	*9.5	-7.8	*34.5	+13.3	35.9	+2.1	51.0	+2.8	58.5	-0.3	67.8	-1.6	78.0	+4.9	74.2	+3.1	65.0	+1.2	49.8	-2.0	39.8	+4.1	25.4	+2.6	49.1	+1.9
Sac City	9.4	-7.8	*34.5	+14.0	36.5	+3.4	51.8	+4.0	58.7	0.0	68.4	-0.9	79.5	+6.6	74.2	+2.6	65.4	+1.7	50.0	-1.5	40.2	+4.7	26.2	+3.7	49.6	+2.6
Sioux City	10.4	-7.4	36.4	+15.4	36.2	+3.5	52.8	+5.0	59.6	-0.8	69.7	+0.2	80.5	+6.2	75.6	+3.6	65.8	+2.4	51.2	+0.3	40.2	+5.0	28.6	+5.5	50.6	+3.3
Tipton (near)	11.6	-8.1	34.4	+10.6	38.0	+2.5	52.0	+2.0	62.0	+1.2	70.2	-0.5	76.4	+1.9	74.0	+1.8	67.6	+2.8	50.9	-1.5	41.2	+3.8	24.5	-1.1	50.2	+1.2
Toledo	10.0	-9.3	34.7	+11.7	38.2	+2.8	52.0	+2.4	60.2	-0.7	69.0	-0.9	77.4	+3.2	74.3	+2.2	67.0	+1.9	50.9	-2.4	42.4	+4.5	26.4	+1.8	50.2	+1.4
Waukee	11.1	-7.7	37.2	+14.1	38.6	+3.4	53.4	+4.0	60.2	-0.5	69.5	0.0	79.6	+5.5	74.8	+2.3	66.6	+1.8	51.2	-1.6	42.6	+5.5	27.2	+2.9	51.0	+2.5
Webster City	7.8	-9.1	32.6	+11.4	36.0	+2.0	50.8	+2.3	59.0	-0.7	67.8	-1.4	76.6	+2.6	73.4	+1.8	65.0	+1.0	49.6	-1.8	40.1	+4.5	24.2	+1.2	48.6	+1.2
Williamsburg	12.0		36.8		38.5		52.6		61.9		70.4		78.6		75.9		68.4		51.2		41.8		25.6		51.1	
Southern Division																										
Afton	13.4	-7.7	40.4	+14.8	39.9	+3.4	54.2	+4.0	61.2	-0.2	70.4	+1.0	80.4	+6.6	75.4	+2.8	*68.5	+3.4	53.2	-0.1	43.4	+4.9	28.4	+2.2	52.4	+2.9
Albia	13.2	-7.7	39.3	+13.9	39.8	+3.6	53.6	+2.9	61.7	+0.4	69.6	-0.8	78.7	+4.2	75.4	+2.8	69.4	+4.0	52.0	-1.5	42.7	+4.5	29.8	+3.6	52.1	+2.5
Atlantic	10.8	-8.5	37.6	+13.7	38.2	+2.2	53.4	+3.6	59.6	-1.1	68.5	-0.9	79.5	+5.3	75.0	+2.3	67.8	+2.8	53.0	+0.8	44.4	+6.9	*28.5	+2.8	51.4	+2.5
Bonaparte (nr.)	13.0	-9.2	38.3	+11.5	38.8	+1.4	54.0	+3.2	62.4	+1.1	69.7	-0.4	77.5	+3.1	75.2	+2.4	68.8	+2.9	51.8	-1.9	42.5	+2.9	29.6	+1.8	51.8	+1.6
Burlington	16.0	-8.2	39.2	+10.5	40.2	+1.3	55.7	+3.6	64.6	+1.7	72.2	+0.5	80.2	+4.2	76.8	+2.4	70.4	+3.2	52.8	-2.1	43.2	+2.1	30.0	+0.6	53.4	+1.6
Centerville	12.6	-10.0	39.4	+12.3	39.0	+1.1	53.2	+1.2	61.2	-0.2	70.0	-0.5	78.8	+3.9	74.7	+1.5	67.1	+1.5	*52.5	-1.5	43.6	+4.1	29.4	+1.7	51.8	+1.3
Chariton (near)	11.7	-9.3	39.2	+14.1	39.2	+3.2	53.4	+3.9	61.2	+1.1	69.2	+0.4	80.6	+7.3	75.6	+3.7	68.6	+3.8	52.6	-0.2	42.9	+4.2	29.0	+2.6	51.9	+2.9
Clarinda	13.0	-9.4	40.6	+12.8	40.0	+1.9	55.4	+4.3	61.4	-1.5	69.2	-2.2	78.4	+2.9	75.8	+1.2	68.6	+2.3	52.4	-1.6	43.0	+3.3	29.4	+2.5	52.3	+1.4
Columbus Jct.	13.2	-8.9	37.3	+11.0	38.8	+1.8	53.2	+2.0	61.6	-0.6	68.5	-2.2	76.4	+1.4	73.2	+0.1	67.0	+0.9	51.2	-3.1	42.1	+2.5	27.2	-0.6	50.8	+0.4
Corning	12.0	-9.0	39.9	+14.8	39.2	+2.7	54.6	+5.3	60.4	-0.1	69.4	-0.1	79.6	+5.5	*76.0	+3.8	*68.5	+3.6	*53.0	+0.6	43.6	+6.2	29.0	+3.8	52.1	+3.1
Corydon (near)	12.1	-9.8	39.0	+12.8	38.6	+2.0	53.8	+3.3	60.8	-0.5	69.0	-1.2	78.8	+4.2	75.0	+1.8	68.5	+2.8	52.1	-1.7	42.9	+4.1	29.2	+2.4	51.6	+1.6
Creston	10.9	-9.2	38.1	+13.4	38.0	+2.4	52.8	+3.3	59.9	-0.8	68.5	-0.2	78.0	+4.6	75.1	+3.1	68.0	+3.9	51.4	-1.1	42.4	+4.2	27.8	+2.8	50.9	+2.2
Earlham (nr.)	11.8	-7.4	37.1	+13.8	38.2	+3.2	52.5	+3.8	60.4	+0.2	67.4	-1.1	78.8	+6.0	73.4	+2.0	66.4	+1.8	51.4	-0.6	42.8	+5.6	28.2	+3.7	50.7	+2.6
Fairfield	11.6	-10.0	37.4	+11.9	38.4	+1.7	53.0	+2.9	61.6	+0.5	69.4	-0.4	78.0	+3.6	75.8	+3.0	68.3	+2.7	50.8	-2.2	41.8	+3.3	28.0	+1.6	51.2	+1.6
Glenwood	13.0	-8.9	40.6	+14.1	40.7	+2.8	55.7	+4.4	61.3	0.0	70.4	0.0	81.3	+6.0	75.8	+1.8	67.9	+1.2	53.4	-0.2	43.8	+5.2	30.0	+3.2	52.8	+2.4
Indianola	12.5	-7.2	38.8	+14.2	39.1	+2.8	54.0	+3.5	62.0	+0.5	70.2	+0.2	80.1	+5.3	75.8	+2.7	69.2	+3.6	53.0	-0.2	44.1	+5.8	28.9	+3.3	52.3	+2.9
Keokuk	16.9	-8.0	40.7	+12.4	40.0	+1.1	56.8	+4.5	63.8	0.0	72.2	-0.3	80.5	+3.6	78.0	+3.0	71.0	+3.5	54.0	-1.4	44.2	+3.1	31.6	+2.0	54.1	+1.9
Keokuk No. 2	16.4		40.6		40.8		57.0		64.8		72.6		81.0		78.8		71.5		53.9		44.2		31.4		54.4	
Keosauqua	12.6	-9.4	38.4	+11.1	38.9	+1.0	54.0	+2.9	62.2	+0.9	70.2	0.0	78.8	+4.1	75.8	+2.6	69.2	3.4	52.4	-0.8	43.2	+4.2	30.1	+2.4	52.2	+1.9
Knoxville	12.2	-9.2	39.0	+13.3	39.6	+3.0	53.4	+2.8	61.6	+0.1	70.0	-0.5	79.8	+5.3	75.7	+3.3	69.2	+3.4	52.4	-1.3	44.0	+5.2	29.4	+3.5	52.2	+2.4
Lamoni	11.7	-9.7	38.8	+11.4	38.7	+1.8	53.9	+3.4	60.4	-0.8	68.7	-0.9	78.5	+4.6	75.6	+3.2	68.2	+3.5	51.8	-1.7	43.0	+4.3	28.5	+2.5	51.5	+1.8
Lenox	12.7	-8.9	39.4	+13.9	39.5	+2.9	54.6	+4.1	61.8	-0.1	70.4	-0.4	80.8	+5.7	77.4	+3.7	69.8	+4.1	53.4	+0.2	45.0	+6.8	29.3	+3.7	52.8	+3.0
Mount Ayr	13.0	-9.2	40.0	+13.6	39.8	+2.8	54.0	+3.8	60.2	-1.1	69.0	-1.0	77.9	+3.6	75.4	+2.4	68.2	+2.8	51.8	-1.8	43.0	+4.2	29.3	+2.8	51.8	+1.9
Mt. Pleasant	14.4	-8.1	38.8	+12.3	39.2	+1.6	54.5	+3.0	63.3	+0.8	70.7	-0.9	78.8	+3.1	76.0	+2.4	69.0	+2.9	52.3	-1.7	44.0	+4.3	29.5	+1.4	52.5	+1.7
Oakland	11.8	-8.1	*38.5	+13.9	39.6	+3.4	53.8	+3.7	61.6	+0.4	69.6	-0.6	80.0	+5.7	74.7	+1.8	66.8	+1.7	52.9	+0.6	44.3	+6.8	29.9	+4.7	52.0	+2.9
Oskaloosa	12.2	-8.5	38.0	+13.3	38.6	+2.8	53.2	+3.1	61.3	+0.1	69.0	-0.6	78.5	+4.8	75.2	+3.1	68.4	+3.5	52.0	-0.8	43.4	+4.9	28.8	+2.8	51.6	+2.4
Ottumwa	13.0	-9.6	39.8	+13.1	40.4	+1.6	54.4	+2.2	63.4	+0.4	71.2	-0.5	79.0	+2.7	76.0	+2.0	68.6	+2.3	52.9	-1.7	42.8	+2.6	29.8	+2.1	52.6	+1.4
Sigourney	11.6	-8.9	37.6	+12.9	39.0	+2.9	53.0	+3.0	61.6	+0.8	69.6	-0.1	78.2	+4.1	75.0	+2.4	67.6	+2.5	51.8	-1.2	42.7	+4.5	27.9	+1.2	51.3	+2.0
Stockport (near)	11.8	-9.6	38.0	+12.3	39.0	+2.6	53.0	+3.2	62.4	+1.9	70.4	+0.7	78.4	+4.6	75.2	+3.0	69.3	+4.3	51.8	-0.6	42.6	+4.2	29.2	+2.4	51.8	+2.5
Thurman	12.5	-10.1	40.6	+12.7	40.8	+2.8	56.2	+4.2	61.8	-0.9	70.7	-1.4	79.9	+4.3	76.2	+1.8	68.1	+0.5	53.6	+0.3	44.8	+6.4	31.3	+3.9	53.0	+2.0
Tingley	11.8	-9.3	39.4	+13.3	39.0	+2.7	54.3	+4.6	60.9	+0.5	69.2	-0.6	78.7	+5.3	75.4	+3.2	68.6	+3.8	52.0	-1.1	43.0	+4.6	28.4	+2.4	51.7	+2.4
Washington	14.1	-6.9	38.3	+12.8	39.6	+3.1	54.4	+3.7	63.2	+1.7	70.2	0.0	79.3	+4.8	75.6	+3.2	69.6	+4.4	52.4	-0.9	42.8	+4.1	27.6	+1.0	52.3	+2.6
Wever	*16.0		38.2		40.2		56.4		64.0		72.0		78.8		76.6		*70.5		*53.0		*43.5		*30.5		53.3	
Winterset	13.0	-7.7	39.2	+14.4	39.6	+3.4	53.4	+3.1	61.2	-0.4	69.2	-1.2	79.6	+4.7	75.6	+2.4	67.8	+2.3	52.6	-1.0	44.1	+5.7	28.9	+3.1	52.0	+2.4
Omaha, Nb.	14.0	-7.9	40.8	+15.3	39.4	+2.4	55.9	+4.7	61.6	-0.8	71.6	0.0	83.0	+6.3	76.7	+2.3	68.6	+1.8	53.6	-0.7	44.0	+5.5	31.1	+4.7	53.4	+2.8

*Interpolated.

MEAN MONTHLY AND ANNUAL PRECIPITATIONS, WITH DEPARTURES FROM THE NORMAL, FOR 1930

STATIONS	January		February		March		April		May		June		July		August		September		October		November		December		Annual	
	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.	Prec.	Dep.
Northern Division																										
Akron	0.72	+0.13	0.07	-0.81	0.07	-1.19	1.28	-1.35	5.99	+2.24	3.73	-0.56	T.	-3.81	2.89	-0.03	2.74	-0.05	1.80	+0.05	1.30	+0.16	0.21	-0.44	20.80	-5.66
Alta	1.06	+0.30	0.39	-0.63	0.18	-1.37	3.44	+0.35	3.76	-1.15	4.68	-0.48	1.21	-3.04	2.39	-1.19	1.99	-1.29	1.09	-1.14	2.61	+1.19	0.29	-0.62	23.09	-9.07
Alton	1.06	+0.30	0.50	-0.46	0.16	-0.94	1.70	-0.79	4.35	-0.47	5.10	+1.14	0.39	-3.15	1.67	-1.43	2.23	-0.73	1.32	-0.44	2.57	+1.20	0.35	-0.45	21.40	-6.22
Belmond	0.96	-0.30	0.29	-0.82	0.91	-0.42	3.13	-0.13	3.73	-1.48	5.72	+0.96	3.03	-0.59	2.87	-0.21	2.38	-1.82	1.88	-0.84	1.44	-0.21	0.30	-1.03	26.64	-6.89
Britt	1.18	+0.50	0.18	-0.63	0.54	-0.71	3.35	+0.78	4.07	-0.83	5.35	+0.82	1.34	-2.64	2.64	-1.13	5.01	+1.55	2.09	-0.31	2.15	+0.70	0.33	-0.47	28.23	-2.37
Chas. City	1.41	+0.36	0.44	-0.66	0.90	-0.87	3.47	+0.95	5.63	+1.30	9.30	+4.67	1.13	-2.64	1.45	-2.03	2.48	-1.20	1.78	-0.55	1.76	+0.23	0.34	-0.96	30.09	-1.40
Cherokee	0.55	-0.07	0.17	-0.82	0.30	-0.98	2.98	-0.01	4.96	+0.29	3.44	-1.00	1.12	-2.70	1.10	-2.10	2.19	-1.08	0.92	-0.99	2.42	+0.91	0.17	-0.65	20.32	-9.20
Dubuque	2.05	+0.75	1.19	-0.19	1.23	-0.80	4.34	+1.49	4.33	+0.11	5.21	+0.90	0.94	-3.00	1.92	-1.32	2.52	-1.49	2.59	+0.11	0.79	-0.91	1.24	-0.20	28.35	-4.55
Estherville	0.85	+0.27	0.45	-0.39	0.48	-0.79	2.53	-0.10	3.88	-0.59	4.85	+0.51	0.25	-3.91	2.10	-1.09	5.64	+2.31	1.86	-0.05	3.55	+2.24	0.10	-0.61	26.54	-2.20
Forest City	1.92	+1.04	0.52	-0.42	1.03	-0.40	2.91	+0.43	4.03	-0.61	5.81	+1.26	2.11	-1.46	1.03	-2.34	3.89	+0.56	2.31	-0.12	1.39	-0.16	0.45	-0.43	27.40	-2.65
Hawarden	0.69	+0.13	0.26	-0.53	0.08	-1.20	2.09	-0.68	6.14	+2.39	4.97	+0.54	0.12	-3.51	2.96	+0.18	3.01	+0.13	1.23	-0.62	2.54	+1.48	0.06	-0.62	24.15	-2.31
Humboldt	1.00	+0.19	0.42	-0.50	0.46	-0.98	2.97	+0.29	3.47	-0.85	4.29	-0.09	2.02	-1.72	2.15	-1.15	2.28	-0.99	2.30	+0.08	1.90	+0.23	0.11	-0.75	23.37	-6.24
Independence	1.31	+0.14	0.57	-0.48	1.09	-0.63	4.02	+1.51	3.42	-0.85	7.36	+2.74	3.21	-0.93	0.49	-2.72	2.67	-1.28	2.60	+0.05	2.29	+0.85	0.69	-0.62	29.72	-2.22
Inwood (near)	0.67	+0.02	0.27	-0.60	0.04	-1.16	1.54	-0.99	4.54	+0.34	5.43	+0.12	0.18	-3.19	0.87	-1.72	3.36	+0.57	1.84	-0.07	2.21	+1.09	0.06	-0.60	21.01	-6.19
Le Mars	1.41	+0.84	0.56	-0.24	0.20	-1.05	2.25	-0.57	6.05	+1.52	3.03	-1.35	0.36	-3.72	2.45	-0.23	1.68	-1.55	1.08	-0.98	2.91	+1.78	0.41	-0.46	22.39	-6.01
Mason City	0.78	-0.19	0.38	-0.57	0.80	-0.57	2.90	-0.35	2.49	-2.20	6.30	+1.16	3.20	-0.32	3.58	-0.16	6.31	+3.50	1.85	-0.35	1.55	+0.07	0.29	-0.59	30.43	+0.13
New Hampton	1.22	+0.24	0.40	-0.65	0.86	-1.06	3.07	+0.47	4.54	-0.29	5.89	+1.32	1.15	-2.62	2.14	-1.36	2.17	-1.42	2.65	+0.08	2.23	+0.54	0.15	-0.94	26.47	-5.69
Northwood	0.90	-0.24	0.55	-0.83	1.45	-0.40	3.45	+0.71	3.16	-1.93	8.72	+3.86	3.83	0.00	0.66	-3.30	4.54	+1.01	2.17	-0.47	2.09	+0.12	0.40	-0.83	31.92	-2.30
Oelwein	1.12	-0.04	0.10	-1.08	1.09	-0.73	4.10	+1.32	4.90	+0.48	8.75	+4.29	3.50	-0.42	1.85	-1.47	2.10	-1.69	2.99	+0.46	2.71	+1.13	0.25	-1.03	33.46	+1.22
Osage	0.84	-0.17	0.69	-0.37	0.98	-0.61	2.79	+0.33	3.74	-0.94	7.34	+2.59	2.20	-1.07	1.53	-1.60	1.79	-1.72	1.87	-0.57	1.50	-0.01	0.58	-0.64	25.85	-4.78
Pocahontas	0.73	-0.05	0.31	-0.81	0.99	-0.38	2.56	-0.16	3.43	-1.00	3.46	-1.18	0.30	-3.15	2.63	-0.74	3.52	-0.07	1.17	-1.56	2.04	+0.36	0.33	-0.59	21.47	-9.33
Postville (nr.)	1.49	+0.26	0.60	-0.54	0.81	-1.11	4.13	+1.12	3.34	-1.72	6.68	+2.02	2.77	-1.62	2.01	-1.44	2.08	-1.76	2.51	-0.17	3.95	+2.26	0.40	-0.96	30.77	-3.66
Rock Rapids	0.98	+0.29	0.54	-0.14	0.06	-1.26	1.80	-1.00	5.83	+2.28	4.85	+0.23	0.80	-2.57	0.95	-1.40	2.54	-0.05	2.40	+0.61	2.35	+1.16	0.06	-0.57	23.16	-2.42
Sanborn	0.88	+0.18	0.14	-0.86	0.39	-1.01	3.23	+0.23	4.82	+0.03	4.99	+0.26	0.77	-2.73	1.01	-2.20	3.09	-0.11	1.46	-0.39	3.00	+1.70	0.28	-0.57	24.06	-5.47
Sheldon	1.07	+0.35	0.42	-0.56	0.16	-1.14	2.27	-0.68	5.27	+0.52	5.17	+0.77	0.28	-3.82	1.25	-1.75	3.34	+0.08	1.60	-0.40	3.00	+1.52	0.14	-0.68	23.97	-5.79
Sioux Center	0.98	+0.24	0.20	-0.77	0.20	-1.06	2.33	-0.49	5.23	+0.52	4.51	+0.45	0.69	-3.14	1.56	-1.26	2.75	-0.20	2.53	+0.69	2.65	+1.47	0.11	-0.77	23.74	-4.32
Spencer	0.92	+0.22	0.35	-0.56	0.29	-1.03	2.91	+0.01	4.31	+0.11	2.48	-1.72	0.32	-3.18	2.77	-0.63	3.35	+0.03	1.28	-0.64	2.50	+1.20	0.13	-0.72	21.61	-6.91
Storm Lake	0.92	+0.22	0.20	-0.79	0.59	-0.71	3.07	+0.14	3.87	-0.62	6.69	+1.69	1.22	-2.85	6.71	+3.57	1.14	-2.11	0.91	-1.13	2.34	+1.04	0.09	-0.73	27.75	-2.28
Washta	0.58	-0.03	0.21	-0.73	0.10	-0.91	2.87	+0.25	3.18	-1.44	4.98	+0.40	1.34	-2.89	0.48	-2.46	2.40	-0.99	1.35	-0.76	2.30	+0.98	0.23	-0.60	20.02	-9.18
Waterloo	1.26	+0.14	0.77	-0.41	1.09	-0.58	4.04	+1.51	4.55	+0.46	5.07	+0.94	4.46	+0.48	0.75	-2.56	2.02	-2.02	2.61	+0.17	2.58	+1.09	0.67	-0.53	29.87	-1.31
West Bend	0.41	-0.54	0.40	-0.58	0.72	-0.84	2.78	-0.09	1.95	-2.24	3.71	-0.58	0.85	-2.62	1.50	-2.19	5.02	+1.88	1.53	-0.50	1.84	+0.35	0.27	-0.89	20.98	-8.84
Central Division																										
Ames	1.08	+0.18	0.69	-0.25	1.00	-0.42	3.05	+0.07	3.60	-0.91	3.30	-1.07	0.50	-3.36	0.91	-2.53	2.49	-1.18	1.66	-0.95	1.11	-0.18	0.37	-0.69	19.76	-11.29
Audubon (nr.)	0.97	+0.14	0.43	-0.60	0.77	-0.68	1.55	-1.57	2.87	-1.51	4.16	+0.14	0.65	-3.02	2.27	-1.36	0.87	-2.89	1.28	-1.03	2.44	-1.11	0.39	-0.60	18.65	-11.87
Belle Plaine	1.69	+0.13	1.46	-0.14	1.10	-1.18	2.75	-0.66	5.32	+0.51	4.61	+0.26	2.72	-1.23	1.15	-2.08	4.25	+0.68	1.99	-0.50	3.70	+2.01	1.02	-0.33	31.76	-2.53
Boone (near)	1.28	+0.44	0.51	-0.49	1.17	-0.27	2.69	-0.19	2.72	-2.31	3.60	-0.93	0.96	-2.76	0.58	-2.98	2.78	-1.27	1.72	-1.07	1.33	-0.04	0.25	-0.64	19.59	-12.51
Carroll	0.73	-0.05	0.19	-0.87	2.20	+0.51	2.63	-0.32	3.61	-0.95	3.47	-1.31	1.52	-2.06	1.93	-1.92	0.53	-2.94	1.30	-1.28	2.80	+1.48	0.40	-0.58	21.31	-10.29
Cedar Rapids	1.63	+0.23	0.98	-0.42	0.84	-1.46	3.09	-0.16	5.28	+0.58	7.36	+3.01	1.36	-2.54	1.28	-2.22	3.94	+0.34	3.90	+1.45	1.46	-0.19	0.93	-0.38	32.05	-1.76
Clinton	1.46	-0.36	1.25	-0.71	0.98	-1.84	4.11	+1.07	2.25	-2.35	7.49	+3.10	0.68	-3.21	1.52	-2.11	1.89	-1.60	2.73	+0.17	1.38	-0.51	1.25	-0.53	26.99	-8.88
Davenport	2.05	+0.63	2.38	+0.80	1.02	-1.29	2.96	+0.27	2.13	-1.81	9.14	+5.03	1.94	-1.39	2.42	-1.07	0.39	-3.19	2.89	+0.50	1.72	-0.10	0.97	-0.51	30.01	-2.13
Denison	0.95	+0.29	0.18	-0.76	0.64	-0.89	2.55	-0.28	2.43	-1.85	2.59	-1.50	2.26	-1.48	2.12	-1.69	0.69	-2.43	1.05	-1.18	2.21	+0.86	0.32	-0.55	17.99	-11.47
Des Moines	1.41	+0.34	0.50	-0.62	1.12	-0.66	2.35	-0.56	3.36	-1.20	3.69	-1.07	0.56	-2.94	1.00	-2.52	1.53	-2.14	2.64	+0.14	1.05	-0.38	0.36	-0.86	19.57	-12.47
Fairport	2.12	+0.49	2.45	+0.70	1.35	-1.11	2.80	-0.18	2.47	-1.71	9.39	+5.12	1.88	-1.73	2.37	-1.58	0.39	-3.21	4.21	+1.72	2.03	+0.03	1.25	-0.31	32.71	-1.77
Fort Dodge	1.07	+0.23	0.35	-0.50	0.88	-0.72	3.12	+0.38	4.20	-0.38	5.62	+1.20	0.64	-3.27	3.13	-0.47	2.84	-1.54	1.91	-1.13	1.68	+0.10	0.39	-0.44	25.83	-6.54
Grinnell	1.98	+0.83	0.84	-0.38	0.48	-1.35	3.42	-0.29	3.82	-1.15	7.49	+2.94	2.26	-2.11	1.66	-2.04	0.91	-2.74	2.16	-0.35	2.85	+1.16	0.61	-0.56	28.48	-6.04
Grundy Cntr.	1.36	+0.39	0.83	-0.11	1.00	-0.80	3.63	+0.40	4.60	-0.34	4.70	-0.38	1.40	-2.33	0.97	-2.33	1.87	-1.90	2.78	-0.01	1.46	+0.02	0.45	-0.71	25.05	-8.10
Harlan	0.93	+0.13	0.15	-0.98	0.66	-0.67	1.20	-1.68	3.62	-0.94	4.15	-0.48	1.65	-2.23	4.99	+1.33	2.00	-1.77	1.21	-1.44	1.91	+0.45	0.23	-0.77	22.70	-9.05
Iowa City	1.36	-0.28	1.86	+0.35	0.90	-1.50	3.11	-0.07	3.09	-1.44	8.35	+3.86	1.74	-2.38	1.91	-2.19	6.28	+2.40	2.55	-0.19	1.73	-0.44	1.20	-0.41	34.08	-2.29
Iowa Falls	1.42	+0.18	0.50	-1.13	1.05	-0.82	3.88	+0.76	3.88	-0.73	7.08	+1.62	2.28	-1.66	1.83	-1.58	1.68	-2.12	2.43	-0.03	1.43	-0.17	0.62	-0.68	28.08	-6.36
Jefferson	1.25	+0.39	0.51	-0.52	1.05	-0.41	2.48	-0.37	3.69	-0.86	3.05	-1.15	1.41	-2.27	2.03	-1.15	1.36	-2.63	1.32	-1.22	1.58	-0.35	0.45	-0.62	20.18	-11.16
Little Sioux	0.70	-0.05	0.44	-0.84	0.90	-0.42	1.67	-1.00	3.77	-0.67	3.13	-1.13	2.92	-1.28	5.90	+2.16	1.01	-2.16	1.14	-0.91	2.22	+0.65	0.50	-0.38	24.30	-6.03
Logan	1.01	+0.01	0.18	-1.01	0.20	-1.46	1.69	-1.10	3.27	-0.97	3.37	-1.81	0.74	-3.67	4.25	+0.56	0.84	-2.32	0.71	-1.67	2.08	+1.68	0.35	-0.78	18.69	-13.54
Maq'keta (nr.)	1.25	-0.10	1.03	-0.32	0.71	-1.61	4.20	+1.38	3.57	-0.93	5.19	+0.39	0.99	-2.80	0.67	-2.47	3.21	-1.07	2.91	+0.02	2.42	+0.84	1.42	+0.11	27.57	-6.56
Marshalltown	1.47	+0.30	0.57	-0.64	0.87	-0.99	2.40	-0.44	3.33	-1.16	2.70	-1.87	1.28	-2.73	0.55	-2.45	2.03	-2.08	2.31	-0.45	1.49	-0.03	0.42	-0.85	19.42	-13.39
Monroe	1.19	+0.09	0.56	-0.64	1.19	-0.61	2.99	-0.26	3.12	-1.83	7.54	+3.04	0.88	-2.68	3.25	-0.15	2.75	-1.35	1.48	-1.02	1.55	+0.05	0.49	-0.57	26.99	-5.93
Muscatine	2.37	+0.53	1.87	-0.05	1.31	-1.29	2.47	-0.81	1.82	-2.60	9.27	+4.84	2.23	-1.48	1.71	-2.43	1.62	-1.98	3.64	+0.99	1.62	-0.68	1.32	-0.64	31.25	-5.60
Olin	1.32	-0.11	0.60	-1.05	0.56	-1.70	2.94	+0.13	3.85	-0.84	5.41	+1.23	1.12	-2.73	1.07	-2.53	1.99	-1.68	3.07	+0.58	1.71	+0.09	1.57	+0.22	25.21	-8.39
Onawa	0.96	-0.03	0.28	-1.00	0.47	-1.15	3.00	+0.33	3.20	-1.63	2.81	-1.87	0.90	-3.25	4.04	-0.02	1.65	-1.86	1.38	-0.80	2.35	+0.97	0.28	-0.82	21.32	-11.13
Perry	1.31	+0.29	0.42	-0.90	0.81	-0.93	1.86	-1.13	2.63	-2.21	2.80	-1.62	1.23	-2.81	0.65	-3.42	1.23	-2.54	1.25	-1.47	1.60	+0.08	0.36	-0.66	16.15	-17.32
Sioux City	0.64	-0.10	0.28	-0.54	0.12	-1.03	2.00	-0.70	5.88	+1.83	5.67	+1.68	0.72	-2.82	0.89	-2.24	2.46	-0.57	1.60	-0.17	2.99	+1.99	0.30	-0.60	23.55	-3.27
Toledo	1.18	+0.08	1.38	+0.25	1.46	-0.34	3.27	+0.21	3.67	-1.02	4.10	-0.42	1.28	-2.26	0.53	-2.40	2.15	-1.82	2.24	-0.27	2.29	+0.69	0.56	-0.56	24.11	-7.86
Waukee	1.58	+0.43	0.46	-0.77	1.31	-0.34	1.62	-2.18	3.06	-1.61	4.81	+0.72	1.06	-3.48	1.28	-2.08	0.40	-3.54	1.99	-0.17	1.13	-0.44	0.26	-0.86	18.96	-14.32
Webster City	1.44	+0.38	0.39	-0.75	0.85	-0.65	3.37	+0.58	3.47	-0.80	8.11	+3.86	1.06	-2.28	1.80	-1.02	3.03	-0.91	1.52	-0.96	1.48	-0.13	0.07	-0.91	26.59	-3.59
Williamsburg	0.92	-0.48	2.31	+1.01	0.73	-1.38	1.90	-1.45	3.67	-0.93	9.19	+4.69	2.59	-1.36	2.72	-0.78	4.46	+0.81	2.29	-0.16	2.52	+0.82	1.13	-0.12	34.43	+0.67
Southern Division																										
Albia	1.38	+0.19	0.73	-0.63	1.55	-0.41	1.63	-1.45	3.85	-1.14	6.40	+2.08	0.82	-3.32	3.03	-0.30	2.70	-1.36	1.74	-0.54	2.77	+1.21	1.14	+0.07	27.74	-5.60
Atlantic	1.13	+0.29	0.27	-0.87	0.90	-0.69	1.84	-1.30	3.26	-0.97	3.20	-1.86	1.28	-2.26	3.52	+0.05	0.17	-3.24	2.16	-0.44	2.33	+1.03	0.28	-0.84	20.34	-11.10
Bedford	1.07	+0.13	0.74	-0.62	0.97	-0.85	2.58	-0.28	4.66	+0.07	5.91	+1.82	1.01	-2.94	3.58	+0.02	0.40	-3.66	1.72	-1.09	2.28	+0.71	0.31	-0.67	25.23	-7.36
Bonap'te (nr.)	1.33	-0.21	0.38	-0.88	1.17	-1.08	1.62	-0.58	2.62	-2.01	8.45	+4.09	0.96	-2.90	2.22	-1.27	3.38	-0.75	2.23	+0.35	2.18	+0.38	1.15	-0.11	27.69	-5.97
Burlington	2.20	+0.44	1.42	-0.39	0.77	-1.74	2.43	-0.67	2.39	-2.14	6.20	+1.91	0.81	-2.60	0.88	-2.85	3.42	-0.50	3.00	+0.72	2.42	+0.56	0.92	-0.68	26.86	-7.94
Centerville	1.99	+0.74	0.49	-1.01	1.79	-0.14	1.45	-2.05	3.20	-1.39	5.17	+0.77	0.18	-3.75	3.45	-0.03	0.85	-3.25	1.18	-1.03	4.57	+3.13	1.42	+0.32	25.74	-7.69
Chariton (nr.)	0.84	-0.23	1.01	-0.12	1.24	-0.50	1.05	-2.25	3.19	-1.33	4.91	+0.53	0.72	-3.59	2.30	-1.39	1.85	-2.09	2.57	+0.25	2.28	+0.82	1.12	-0.04	23.08	-9.94
Clarinda	1.99	+1.03	0.49	-0.65	0.87	-0.85	2.69	-0.22	4.92	-0.03	5.54	+0.83	0.93	-3.40	3.73	+0.20	0.86	-2.61	2.46	-0.18	2.72	+1.20	0.32	-0.78	27.52	-5.46
Columbus Jct.	1.88	+0.57	1.53	+0.13	1.20	-0.84	2.48	-0.50	1.61	-2.70	10.69	+6.39	0.79	-2.78	2.71	-1.63	1.06	-2.60	2.85	+0.30	2.31	+0.57	1.24	-0.08	30.35	-3.17
Corydon (near	1.43	+0.16	0.65	-0.75	1.89	-0.12	1.43	-1.98	4.03	-0.64	4.19	-0.45	0.77	-3.04	3.24	0.00	0.90	-3.19	2.10	-0.49	2.39	+0.89	1.20	-0.09	24.22	-9.70
Creston	1.26	+0.21	0.33	-1.01	1.16	-0.30	2.60	-0.83	3.92	-0.62	7.04	+2.09	1.88	-2.12	3.05	-0.21	2.62	-1.38	1.43	-1.35	1.56	-0.16	0.26	-0.80	27.11	-6.48
Cmb'ld (near)	1.10	+0.33	0.17	-0.92	0.89	-0.65	2.02	-0.72	3.26	-0.92	3.88	-0.44	1.26	-2.42	4.05	+0.60	1.01	-2.37	1.78	-0.93	2.13	+1.04	0.31	-0.62	21.86	-8.02
Earlham (nr.)	1.76	+0.58	0.17	-1.24	0.78	-0.93	2.20	-1.15	3.27	-1.17	3.28	-1.15	1.47	-2.19	4.33	+0.50	1.33	-2.36	2.10	-0.34	1.59	-0.07	0.22	-0.97	22.50	-10.49
Fairfield	2.22	+0.70	1.45	-0.14	1.22	-1.11	1.64	-2.02	2.73	-2.71	6.53	+1.70	1.11	-2.71	1.63	-1.84	2.94	-0.69	2.44	-0.32	1.68	-0.48	1.58	-0.04	27.17	-9.66
Glenwood	1.35	+0.64	0.27	-0.60	0.94	-0.40	2.16	-0.73	3.60	-1.01	4.75	-0.12	1.69	-1.91	5.26	+1.90	1.25	-1.43	1.38	-1.30	2.14	+0.99	0.19	-0.48	24.98	-4.45
Indianola	1.93	+0.78	1.20	-0.01	1.13	-0.50	2.88	-0.28	3.32	-1.13	6.80	+2.36	1.04	-2.75	3.03	-0.81	2.54	-1.19	2.21	-0.15	0.89	-0.68	0.40	-0.92	27.37	-5.28
Keokuk	2.51	+0.95	1.01	-0.54	0.67	-1.71	1.97	-1.02	2.18	-1.75	4.06	-0.07	0.30	-3.11	2.11	-1.09	2.97	-0.87	2.00	-0.26	3.63	+1.69	0.60	-0.85	24.01	-8.63
Keosauqua	1.58	+0.02	0.52	-0.95	1.29	-0.98	1.71	-1.68	3.22	-1.66	7.67	+3.20	1.70	-2.29	1.67	-1.60	3.03	-1.17	2.65	+0.66	1.80	+0.19	1.29	-0.09	28.13	-6.35
Knoxville	1.69	+0.46	1.07	-0.18	1.14	-0.66	1.64	-1.76	3.46	-0.79	6.38	+2.28	1.58	-2.39	1.79	-2.12	2.88	-1.26	2.84	+0.53	2.18	+0.62	0.78	-0.54	27.43	-5.81
Lacona	2.22	+0.57	0.76	-0.92	1.41	-0.89	1.82	-1.25	3.30	-1.53	6.25	+1.68	0.71	-3.07	1.55	-1.90	5.28	+0.92	2.28	-0.43	2.00	+0.32	0.60	-1.02	28.18	-7.52
Lamoni	1.07	+0.01	1.78	+0.54	1.49	-0.38	1.94	-1.48	3.66	-1.29	3.91	-0.94	0.47	-3.47	3.72	-0.06	1.39	-2.62	2.16	-0.77	1.70	+0.26	0.68	-0.50	23.97	-10.70
Lenox	1.42	+0.75	0.57	-0.42	0.84	-0.70	1.90	-1.34	5.06	+0.38	5.96	+1.79	0.45	-3.76	3.70	+0.34	1.95	-2.26	1.87	-0.85	1.90	+0.43	0.45	-0.53	26.07	-6.17
Mount Ayr	1.51	+0.49	0.91	-0.39	2.42	+0.52	2.70	-0.66	4.21	-1.26	6.49	+1.75	0.73	-3.69	3.80	+0.40	1.80	-2.15	2.53	+0.01	1.98	+0.44	0.34	-0.89	29.42	-5.43
Mt. Pleasant	1.42	-0.12	1.23	-0.21	1.00	-1.20	2.33	-0.64	1.65	-2.97	12.28	+7.25	0.91	-2.75	2.23	-1.04	1.89	-1.64	2.91	+0.51	1.82	+0.01	1.13	-0.24	30.80	-3.04
Oskaloosa	1.73	+0.70	1.47	+0.32	1.33	-0.58	4.59	+1.74	4.08	-0.17	7.47	+3.49	2.44	-1.28	2.61	-0.48	2.15	-1.25	2.19	-0.06	4.30	+2.70	1.29	+0.12	35.65	+5.25
Ottumwa	1.68	+0.16	0.85	-0.60	0.80	-1.17	1.85	-1.06	3.13	-1.52	7.26	+3.25	1.02	-2.54	3.63	+0.18	2.41	-1.44	1.98	-0.40	2.07	+0.69	1.53	+0.27	28.21	-4.18
Red Oak (nr.)	1.68	+0.87	0.06	-1.07	0.70	-0.90	4.21	+1.15	3.03	-1.72	5.01	+0.36	1.57	-2.48	6.53	+2.89	0.76	-2.78	2.43	-0.32	2.36	+0.94	0.21	-0.84	28.55	-3.90
Riverton (n'r)	1.01	+0.21	0.46	-0.72	0.88	-0.72	2.64	-0.34	4.16	-0.64	5.80	+0.94	0.68	-3.26	3.31	-0.37	2.76	-1.04	0.88	-1.84	1.80	+0.31	0.13	-0.95	24.51	-8.42
Sigourney	1.92	+0.66	0.90	-0.50	0.78	-1.23	3.59	+0.31	4.30	+0.03	9.33	+5.07	2.11	-1.74	2.63	-0.47	2.33	-1.36	1.76	-0.49	1.98	+0.33	1.09	-0.14	32.72	+0.47
Stockp'rt (nr.)	2.23	+0.85	1.25	-0.14	1.05	-1.12	2.20	-0.92	2.90	-1.76	7.57	+3.08	0.76	-3.83	2.36	-0.74	2.91	-1.18	3.27	+1.21	1.90	+0.26	1.24	-0.03	29.64	-4.32
Thurman	1.77	+1.09	0.35	-1.03	0.42	-1.06	2.15	-1.00	3.24	-1.71	4.59	-0.61	0.70	-3.47	3.17	-0.90	1.80	-2.46	1.97	-0.97	2.16	+0.31	0.25	-1.06	22.57	-12.87
Tingley	1.30	+0.40	0.70	-0.48	0.97	-0.83	2.45	-0.93	5.27	+0.30	6.60	+1.93	0.91	-3.23	2.80	-0.68	1.73	-2.41	1.75	-0.94	2.41	+0.94	0.53	-0.61	27.42	-6.54
Washington	2.25	+0.77	1.59	+0.30	0.84	-1.35	1.63	-1.12	2.45	-1.71	13.49	+9.58	0.83	-2.51	2.34	-1.31	3.50	+0.12	2.76	+0.56	7.60	-0.07	1.69	+0.37	34.97	+3.63
Winterset	1.35	+0.43	0.25	-0.83	1.09	-0.66	2.72	-0.86	4.25	-0.27	6.15	+1.28	1.06	-3.34	2.77	-0.72	4.45	+0.70	2.19	-0.18	1.69	+0.22	0.27	-0.92	28.24	-5.15
Omaha, Nb.	1.73	+1.03	0.21	-0.68	0.65	-0.72	2.37	-0.14	2.74	-1.03	1.56	-3.00	1.03	-2.51	6.28	+3.23	0.65	-2.56	0.81	-1.36	2.17	+1.10	0.15	-0.78	20.35	-7.42

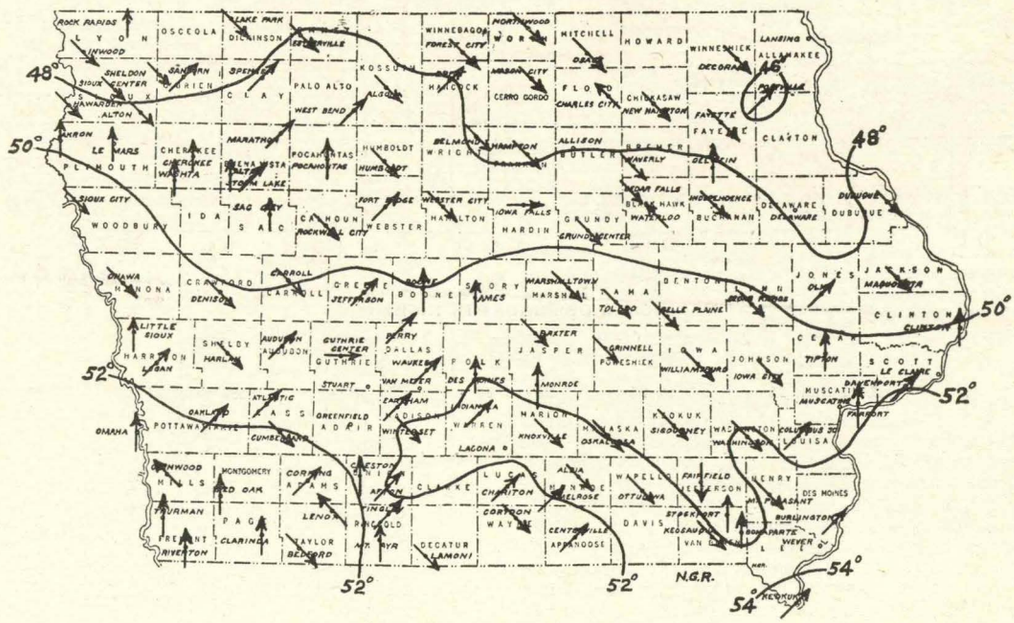
DATES OF KILLING FROST, 1930

Charles City, Davenport, Des Moines, Dubuque, Keokuk, Sioux City, Omaha and Marshalltown, excluded from averages because of city influences.

STATIONS	Last in Spring	First in Autumn	Days in Growing Season
Northwest District			
Alta	May 17	Oct. 16	152
Alton	May 17	Oct. 14	150
Cherokee	May 17	Oct. 17	153
Estherville	May 18	Sept. 28	133
Inwood (near)	May 17	Sept. 27†	133
Lake Park (near)	May 17†	Spet. 28	134
Le Mars	May 17†	Oct. 17	153
Pocahontas	May 17†	Oct. 17†	153
Rock Rapids	May 17	Oct. 17	153
Sanborn	May 17	Oct. 17	153
Sheldon	May 17	Oct. 14	150
Sioux Center	May 17†	Sept. 27	133
Spencer	May 17	Oct. 14	150
Storm Lake	May 17	Oct. 17	153
Washta	May 24	Oct. 17	146
West Bend	May 17	Oct. 17	153
Rural Average	May 18	Oct. 12	147
West Central District			
Audubon (near)	April 24†	Oct. 17	176
Carroll	May 17†	Oct. 17	153
Denison	April 24†	Oct. 17†	176
Guthrie Center	April 25†	Oct. 17†	175
Harlan	April 24†	Oct. 17	176
Jefferson	April 25	Oct. 17†	175
Little Sioux	April 23†	Oct. 17	177
Logan	April 22	Oct. 16†	177
Onawa	April 22†	Oct. 16†	177
Rockwell City	May 17†	Oct. 17†	153
Sac City	May 17†	Oct. 16	152
Sioux City	April 24	Oct. 16	175
Rural Average	April 30	Oct. 17	170
Southwest District			
Atlantic	April 24	Oct. 17	176
Clarinda	April 22†	Oct. 17†	178
Corning	April 24†	Oct. 17	176
Cumberland (near)	April 24	Oct. 17	176
Glenwood	April 23	Oct. 17	177
Lenox	April 24	Oct. 17†	176
Oakland	April 24†	Oct. 17	176
Red Oak (near)	.....	Oct. 17	.....
Riverton (near)	April 21	Oct. 17	179
Thurman	April 8†	Oct. 17	192
Omaha, Nebr.	April 1	Oct. 17	199
Rural Average	April 22	Oct. 17	178
North Central District			
Algona	May 17†	Oct. 17†	153
Allison (near)	May 17	Sept. 28	134
Belmond	May 17	Sept. 28	134
Britt	April 26†	Sept. 28†	155
Charles City	April 25	Sept. 28	156
Forest City	May 17†	Sept. 28	134
Hampton	May 17	Sept. 30	136
Humboldt	May 17†	Oct. 17†	153
Mason City	May 30	Sept. 28	121
Northwood	May 17†	Sept. 28	134
Osage	May 17†	Sept. 28†	134
Rural Average	May 16	Oct. 2	139
Central District			
Ames	April 25†	Oct. 17†	175
Baxter	April 25†	Oct. 17	175
Boone (near)	May 30†	Sept. 28	121
Des Moines	April 2	Oct. 17	198
Fort Dodge	May 17†	Oct. 17†	153
Grinnell	May 17	Oct. 17†	153
Grundy Center	May 17†	Oct. 17	153
Iowa Falls	May 17†	Sept. 28	134
Marshalltown	April 25	Oct. 17	175
Monroe	April 23†	Oct. 17	177
Perry	April 25	Oct. 17	175
Toledo	April 25	Oct. 17	175
Waukee	April 25†	Oct. 17†	175
Webster City	May 30	Oct. 17	140
Rural Average	May 8	Oct. 14	159
South Central District			
Afton	April 24†	Oct. 17†	176
Albia	April 25†	Oct. 17	175
Centerville	April 25	Oct. 17	175
Chariton (near)	April 25	Oct. 17†	175
Corydon (near)	April 25†	Oct. 17	175
Creston	April 22†	Oct. 17	178
Earlham (near)	April 25†	Oct. 17	175
Indianola	April 24†	Oct. 17†	176
Knoxville	April 25†	Oct. 17	175
Lamoni	April 24†	Oct. 17	176
Mount Ayr	April 24†	Oct. 17	176
Tingley	April 24†	Oct. 17	176
Winterset	April 24	Oct. 17	176
Rural Average	April 24	Oct. 17	176
Northeast District			
Decorah	May 24	Sept. 28	127
Dubuque	April 24	Oct. 17	176
Fayette	May 17	Sept. 28	134
Independence	April 26†	Oct. 17†	174
New Hampton	May 17†	Sept. 28	134
Oelwein	May 17†	Sept. 28†	134
Postville (near)	May 17	Sept. 28	134
Waterloo	April 26†	Sept. 28	155
Waverly	May 17	Sept. 28	134
Rural Average	May 13	Sept. 30	140
East Central District			
Belle Plaine	May 17	Oct. 17†	153
Cedar Rapids	May 17	Oct. 17†	153
Clinton	April 26	Oct. 17	174
Davenport	April 2	Oct. 17	198
Fairport	April 25†	Oct. 17†	175
Iowa City	April 8	Oct. 17	192
Maquoketa (near)	May 17†	Sept. 28†	134
Olin	May 17†	Sept. 28†	134
Tipton (near)	May 24†	Oct. 17†	146
Williamsburg	April 25†	Oct. 17†	175
Rural Average	May 6	Oct. 13	160
Southeast District			
Bonaparte (near)	April 25†	Oct. 17†	175
Burlington	April 2†	Oct. 17†	198
Columbus Junction	April 25†	Oct. 17†	175
Fairfield	April 25	Oct. 17†	175
Keokuk	March 30	Oct. 20	204
Keosauqua	April 25†	Oct. 17†	175
Mt. Pleasant	April 24	Oct. 17	176
Oskaloosa	April 25	Oct. 17	175
Ottumwa	April 25	Oct. 17	175
Sigourney	April 25†	Oct. 17	175
Stockport (near)	April 27†	Oct. 17†	173
Washington	April 25†	Oct. 17†	175
Wever	April 25†	Oct. 17†	175
Rural Average	April 23	Oct. 17	177
State Average, 1930	May 4	Oct. 12	161
State Normal	May 3	Oct. 5	155

† Date of last temperature of 32° or lower in the Spring, or first temperature of 32° in the Autumn (as the case may be) when frost was not reported.

MEAN ISOTHERMS AND PREVAILING WINDS, YEAR 1930



5.3 in 1911. The average maximum temperature of August 3, 1930, "the hot Sunday", was 106.36°, the hottest single day in Iowa in probably a century. Corn and late truck and fruit crops were the principal sufferers.

Generous rains September 25th-26th conditioned the soil for plowing and for seeding of winter wheat, and helped pastures and other grass lands, clover and alfalfa.

October precipitation was mostly light and deficient, though about normally frequent. Corn husking progressed more rapidly than usual, 51% of the husking being done by the close of the month. In the western and southern districts practically all stations had their first killing frost of autumn on October 17, while in the north-central and northeast districts many stations had their first killing frost on September 28. The average date for the State was October 12, which is 7 days later than usual. October temperatures exceeded 90° around the 10th in nearly all districts, reaching 95° at Waterloo on the 12th, within 2° of the State record for October. At some stations these temperatures were the highest ever recorded so late in the season. Then followed a cold and stormy period, during which the minimum temperatures were very low for so early in the season, being the lowest ever recorded in the early fall at Davenport.

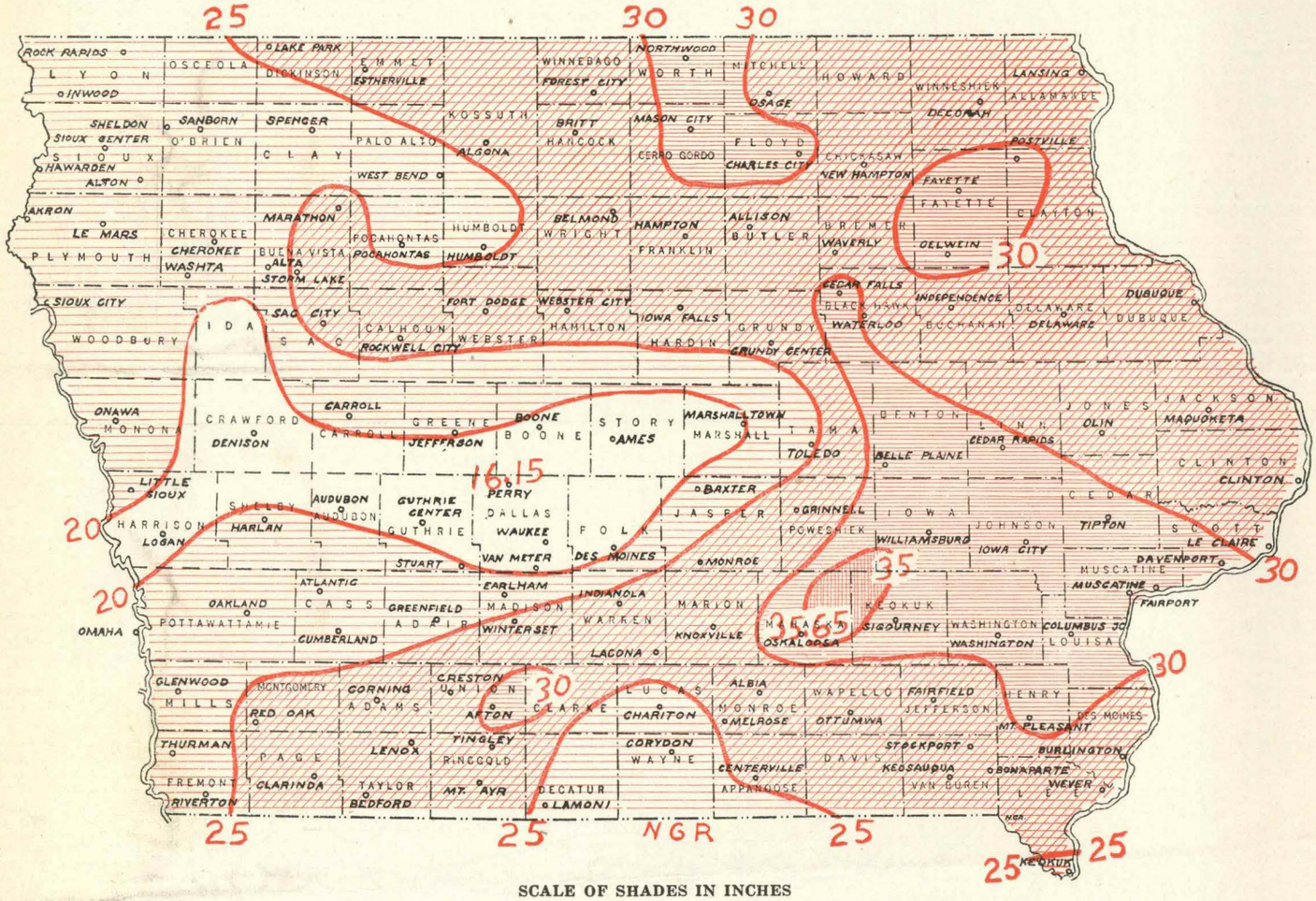
November was generally mild, with little precipitation till after the middle of the month. Corn husking and other farm work made rapid progress.

December was mild and dry, though there were three mostly light snow storms. The year closed with the water supply on farms seriously deficient.

ERRATA

Annual Climatological Data for 1929; Page 102, Cherokee; April Precipitation published 3.14 inches, should be 2.14 inches. Page 102, Fayette; June, total precipitation published 1.76 inches, should be 1.78 inches.

TOTAL PRECIPITATION, YEAR, 1930



SCALE OF SHADES IN INCHES

Less than 20 | 20 to 25 | 25 to 30 | 30 to 35 | More than 35