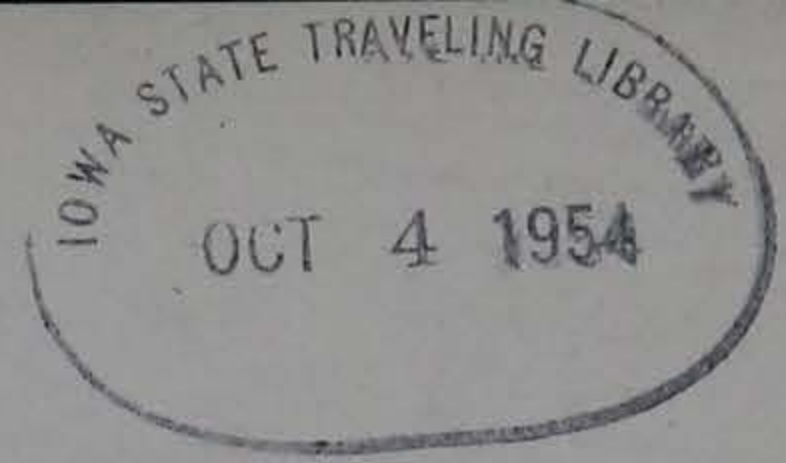


S
61
.E48
no.8
1954

Climate of Iowa

R. H. Shaw

Iowa
551.5
Sh2



THE CLIMATE OF IOWA

I. The Occurrence of Freezing Temperatures in Spring and Fall



by Robert H. Shaw, H. C. S. Thom and Gerald L. Barger

Agronomy Department, Iowa State College

and

**Weather Bureau, United States Department of Commerce
cooperating**

TRAVELING LIBRARY
STATE DEPT.

Special Report No. 8

Agricultural Experiment Station—Iowa State College

Ames, Iowa—August, 1954

Iowa
551.5
95h2

Iowa
551.5
qSh2
8

mb, n.a.

Iowa	BOOK CARD	n.a.
551.5		
qSh2		
Shaw		
Climate of Iowa		

DEC 7 1968

Iowa n.a.
551.5
qSh2
Shaw
Climate of Iowa

TRAVELING LIBRARY
OF THE STATE OF IOWA

To communities, and schools, books for reloaning are loaned for a three months' period. To individuals and to clubs for study use, books are loaned for two to four weeks.

Borrowers are requested to return the books as soon as the need for them is passed, and *always* when books are due. Where books are reloaned, fines may be charged by the *local* library and *retained* when the books are returned.

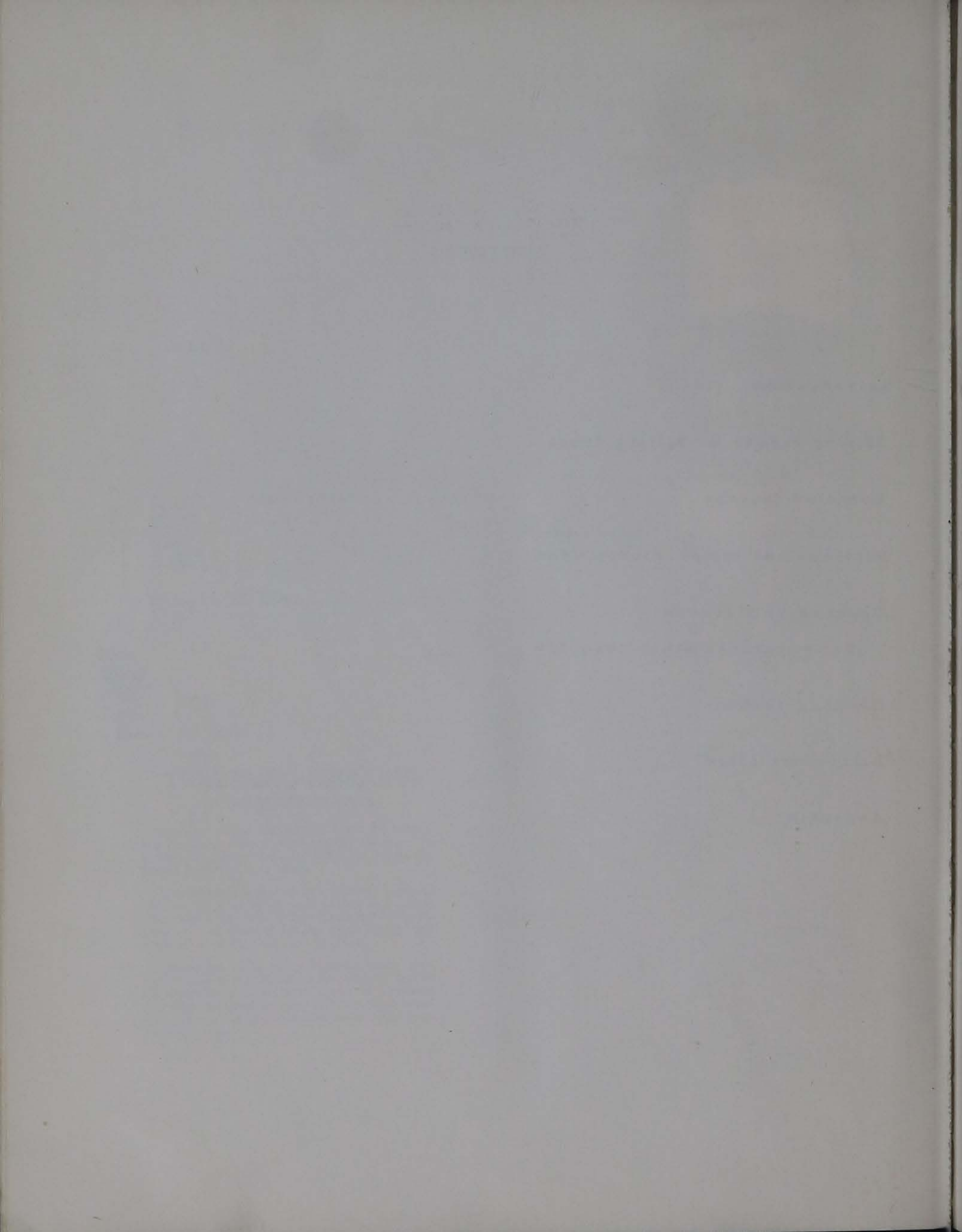
DAMAGES. The pages of these books must not be marked and librarians are required to note the condition of books when loaned to borrowers and when returned by such borrowers and to report damages beyond reasonable wear to the State Traveling Library.

Ⓢ

2342k-1

CONTENTS

	Page
Introduction	5
Killing freeze or killing frost	5
Location factors	6
Stations and temperatures used	8
Chances of a freeze	8
Temperatures other than 32°	11
Growing season	17
Literature cited	17
Appendix	25



THE CLIMATE OF IOWA¹

I. THE OCCURRENCE OF FREEZING TEMPERATURES IN SPRING AND FALL by Robert H. Shaw, H. C. S. Thom and Gerald L. Barger²

No type of agriculture can be established profitably in a region unless the risk of loss to that type of agriculture from unfavorable weather conditions is more than balanced by the profits of other times. The farmer should know the risk involved in raising a given crop at a given time. One of these weather risks is minimum temperatures. Minimum temperatures are important at all times of the year, but at certain times, the occurrence of especially critical temperatures is of extreme importance. A killing freeze is often a factor limiting production. Killing freezes may occur in the spring to damage perennial crops that start growth early in the season, or annual plants that get an early start and are then injured by a late spring freeze. Killing freezes may also occur in the fall and terminate the growing season. In either case, severe damage can be caused and heavy losses incurred. Injury may also occur to perennial crops from sub-zero winter temperatures, but that type of freezing weather will not be covered in this report.

Although Iowa is not a large producer of fruits and vegetables, frost damage to fruit trees or vegetable gardens is important to the individual gardener. Fruit setting may be impaired or prevented by freezing temperatures during the period of fruit bloom. Garden crops may be injured by freezing temperatures after the planting of tender plants. In recent years, the danger of soft corn has been emphasized because of the importance of corn in the national and world food supply, and the possibility of a reduction in the crop due to an early freeze.

Little can be done, at least on a large scale in Iowa, to protect crops from damage. The

individual gardener can cover his susceptible crops, but on a large scale this is impossible. Smudge pots, such as those used in the citrus areas of California, have little use in Iowa. Seed corn producers can pick their corn early and dry it artificially so that a freeze does not damage high-moisture-content corn. To the average farmer the main protection is in scheduling planting at the most suitable time and in the use of proper varieties, but in spite of this, freeze injury will occur in some years.

If a producer knows the expected dates when freezes will occur, he can at least plan his operations some time in advance and make the most efficient use of the freeze-free period. Knowledge of the freeze risk may also cause him to use better adapted varieties and avoid unnecessary risks expected from freezing temperatures.

KILLING FREEZE OR KILLING FROST

A killing frost is defined as the frost or freezing condition which kills the staple vegetation in the vicinity of the observing station. A frost occurs when there is a visible deposit of ice crystals on the surfaces of objects. When the atmosphere comes in contact with cold objects, it may be cooled below its condensation point. If this occurs, moisture is deposited on that object. If the temperature is above freezing, dew is formed; if below freezing, frost is formed.

A frost may or may not kill vegetation, depending upon its severity. Vegetation may also be killed when there is no frost but when subfreezing temperatures occur with no frost deposit-- a so-called "black frost." In this case, plants are blackened due to freezing injury. The determination of a killing frost is also uncertain because of variations in the staple vegetation which may be near the observing station. A tender crop may be completely killed, and a killing frost reported, while a hardy crop may suffer little damage, and a killing frost would not be reported.

¹ Projects 797 and 1192 of the Iowa Agricultural Experiment Station, in cooperation with the United States Weather Bureau.

² Associate professor of agricultural climatology, Agronomy Department; formerly senior meteorologist, U. S. Weather Bureau, and professor of climatology, Iowa State College, now chief climatologist, U. S. Weather Bureau; and area climatologist, U. S. Weather Bureau, and associate professor of agricultural climatology, Agronomy Department.

The occurrence of frost is not a good measure of plant injury. It is the low temperature which causes the injury, not the frost deposit. On this basis, a numerical definition of a freeze is better--one which gives freeze risk in terms of a certain temperature. Knowing the chance of temperatures falling below a given level, the individual can make adjustments for his particular locality, taking into account the kind of crop and the conditions or stage of development of this crop.

Damage depends upon the condition of the crop, duration of the freezing temperatures, rate of temperature change and possibly several other factors. Any temperature values given will necessarily have to be general.

The extent of the damage to different crops by certain critical temperatures has been only partially evaluated. The damage to each crop varies with the condition of that crop.

For a general classification of plants, the following four groups were used: fruits; tender, semi-hardy and hardy vegetables; soybeans and field corn.

Tender vegetables are garden beans, sweet-corn, sweet potatoes, melons, pumpkin, tomatoes; semi-hardy are beets, carrots, parsnips, lettuce and spinach. Hardy plants are turnips, cabbage, peas, onion and radishes. Vegetable crops of the tender classification are damaged by any temperature of 32° F. or lower. Semi-hardy plants are damaged by temperatures slightly below freezing, and in low areas may be damaged when nearby temperatures are reported at 32°. Hardy plants require temperatures below 28° to cause serious injury.

Certain fruits have been classified by Gardner et al. (2) based upon observations of various workers. Critical or danger points are given in table 1.

Table 1. Temperature danger points for certain fruits

Fruit	Stage of plants		
	Buds closed but showing color	In blossom	Setting fruit
Apple	25-27°	28-29	28-30
Peach	20-29	25-30	27-30
Cherry	22-29	28-30	28-30
Plum	25-30	28-31	28-31
Grape	30	31	31

Strawberries are often damaged by 32°, with heavy damage at lower temperatures when in the blooming stage. Berries which have set are more resistant to freezing injury.

Regarding germination of seed corn, the following estimates are available from work done by Rossman (4, 5): Both duration of temperature and speed with which the low temperature were reached were important in determining the amount of injury. Injury differed between varieties, and from year to year, injury differed at the same moisture content. Exposures up to 16 hours at 26° F. produces no reduction in germination. At 20° short exposures produced no injury but long exposures of corn at 40 to 50 percent moisture content produced injury, as did exposures of over 4 hours at 14° at the same moisture content. Corn at 30 percent moisture was damaged only by long exposure at 14°.

In the spring, 30° will generally kill exposed, above-ground parts of corn and soybeans, while in the fall, 30° causes partial defoliation of corn and soybeans, with 28° causing both killing and defoliation of soybeans, depending upon the denseness of foliage and duration of the temperatures.

LOCATION FACTORS

Although the temperatures used in this study were standard weather bureau minimum temperatures, they may not be the exact temperatures to which plants are subjected. Most weather bureau observations are taken at a height of about 5 feet, as in the shelter pictures in fig. 1. According to Geiger (3), the air layer close to the ground is a zone of disturbance, and by using a height of 5 feet some of this extreme variability is removed. The data are then valid for a larger surrounding area for air temperature, but appreciable local differences may occur at ground level because of topographic effects.

There are certain basic characteristics which must be remembered. First of all, the air is generally coldest close to the ground or near plant surfaces at night. These objects radiate heat more rapidly, become cooler and cool the surrounding air; the air does not cool the ground. It is possible in this way for plant and ground surfaces to freeze even though the temperature of the air is above freezing. In addition, as will be discussed later, low spots are usually cold spots, so that this will affect the temperature observed. In the use of minimum temperature data, these facts must be remembered.



Fig. 1. This weather station at the Iowa State College Agronomy Farm at Ames is more complete than the cooperative observer stations located throughout the state, but it illustrates the type of ventilated shelter in which the thermometers are always exposed and the standard Weather Bureau rain gage in the far left foreground. In addition, this station has a pan for measuring water evaporated and a wind gage immediately above it. In the right foreground is a recording rain gage and behind it are soil thermometers measuring soil temperature at depths from 1 inch to 72 inches below the surface. A psychrometer for measuring humidity is also located inside the shelter.

For Iowa, Corton (1) found the following average temperature effects from latitude, longitude and altitude:

Mean date of last spring freeze is 5 days later per degree of latitude, and mean date of first fall freeze is 4 days earlier per degree of latitude, south to north. That is, on the average it freezes earlier in the north in the fall and later in the spring. One degree of latitude is about 70 miles. Mean date of last spring freeze is 1.5 days later per degree of longitude east to west and first fall freeze 1 day earlier per degree of longitude east to west. Freezes generally occur later in the spring in the west and earlier in the fall. Mean date of last spring freeze is slightly over 1 day later, and mean date of first fall freeze 9 days earlier per 1000 feet decrease in elevation. The lower elevations freeze later in the spring and earlier in the fall.

The latitude effects are self explanatory, for it warms up first in the south because of the greater amount of radiation absorbed, and cools off last for the same reason. Cold waves reaching Iowa most frequently move across the state from northwest to southeast, so that the western part of the state would receive cold air masses which do not reach the eastern part of the state, giving a later freeze date in the spring and an earlier freeze date in the fall for the western part. In a relatively flat country like Iowa, air drainage due to local conditions is the dominating factor in considering elevation. Air resembles water in that the coldest water collects at the bottom of the tank, while cold air tends to collect in low spots. Thus, in Iowa, locations low in relation to the surrounding area tend to become cold spots due to the accumulation of cold air. The larger effect of altitude in the fall is probably due to a greater number of radiation freezes, because of more clear weather in the fall.

There are several factors which may intensify a freeze or result in a freezing temperature:

1. At night, with no incoming radiation from the sun, a clear sky favors heat radiation outward from the ground and results in radiation freezes. If dry air is present over the earth, the counter or back radiation of the atmosphere is small and there is a greater cooling of the ground surface than if large amounts of water vapor are present. Clouds act as a blanket holding heat in.

2. Still air allows the temperature to become layered or stratified with the coldest air next to the ground. When the wind blows at night it

mixes this air with the warmer air above, resulting in a warmer temperature near the surface. As a result, there is less danger of a freeze if the wind is blowing.

3. Advection, or moving in of cold air, causes air temperatures to be lowered and freezing temperatures may be reached. A cold wave is the advection of cold air into an area. A freeze caused by the moving of cold air into an area is called an advection freeze.

4. Other factors of less general importance are poor heat conductivity of the ground, as in a peat area, proximity to buildings and lack of natural protection. Plants protected by higher trees or shrubs are less likely to freeze, because these higher plants protect the lower growth by reducing radiation losses.

The combination of several of these factors results in some difference between downtown, residential and open country location. Excluding the larger Iowa cities, Corton (1) found the minimum temperatures at the downtown location averaged about 2° F. warmer than in residential areas, which in turn were about 1° F warmer than open country areas.

STATIONS AND TEMPERATURES USED

In the selection of the stations used in this study, an attempt was made to select stations so that the entire state was covered. Only those stations with a reasonably long record were considered. Most of the stations used had about a 50-year record. The stations used are shown in fig. 2 on a map of Iowa and Table 1-A lists their location by longitude, latitude and also altitude. The freeze data were summarized for 58 stations for 32° and 19 stations for 28°, 24° and 16°.

Tabulations were made of the last freeze occurrence in the spring and the first in the fall. A 32°-freeze means the occurrence of a temperature of 32° or below; a 28° freeze is the occurrence of a temperature of 28° or below. It was believed a breakdown by 4° F. intervals near the freezing level was small enough to give a general solution to the problem. These temperatures are now used by the U.S. Weather Bureau in standard climatological tabulations.

CHANCES OF A FREEZE

In many weather statistics, the value often quoted is the mean or average. In the case of the freeze hazard, this is the halfway point;

TABLE 1-A. STATION LOCATOR

<u>Station</u>	<u>County</u>	<u>Latitude</u>		<u>Longitude</u>		<u>Elevation</u>
Albia	Monroe	41	02	92	48	969
Allison	Butler	42	46	92	47	1060
Alta	Buena Vista	42	40	95	18	1513
Alton	Sioux	42	59	96	01	1325
Ames	Story	42	00	93	39	1004
Atlantic	Cass	41	25	95	00	1155
Audubon	Audubon	41	43	94	56	1300
Baxter	Jasper	41	48	93	08	993
Bonaparte	Van Buren	40	43	91	48	563
Britt	Hancock	43	04	93	49	1234
Centerville	Appanoose	40	43	92	53	1013
Chariton	Lucas	41	00	93	15	940
Charles City	Floyd	43	04	92	41	1013
Clarinda	Page	40	44	95	01	1004
Clinton	Clinton	41	51	90	11	590
Columbus	Louisa	41	17	91	22	595
Corning	Adams	41	00	94	95	1300
Creston	Union	41	02	94	24	1320
Davenport	Muscatine	41	30	90	48	579
Decorah	Winneshiek	43	18	91	48	859
Delaware	Delaware	42	28	91	23	1083
Denison	Crawford	42	00	95	22	1307
Des Moines	Polk	41	32	93	39	948
Dubuque	Dubuque	42	24	90	42	1065
Elkader	Clayton	42	51	91	24	730
Estherville	Emmet	43	24	94	50	1298
Fairfield	Jefferson	41	01	91	57	780
Fayette	Fayette	42	50	91	48	1009
Glenwood	Mills	40	58	95	41	1000
Grundy Center	Grundy	42	23	92	42	1050
Harlan	Shelby	41	40	95	19	1200
Independence	Buchanan	42	28	91	55	956
Indianola	Warren	41	22	93	33	972
Inwood	Lyon	43	18	96	28	1460
Iowa City	Johnson	41	39	91	32	645
Iowa Falls	Hardin	42	32	93	16	1144
Jefferson	Greene	42	00	94	22	1055
Keokuk	Lee	40	24	91	24	574
Lamoni	Decatur	40	39	94	00	1164
Le Mars	Plymouth	42	48	96	10	1230
Logan	Harrison	41	38	95	48	1120
Maquoketa	Jackson	42	08	90	36	692
Mt. Ayr	Ringgold	40	44	94	14	1214
Northwood	Worth	43	27	93	13	1215
Olin	Jones	42	03	90	55	750
Onawa	Monona	42	02	96	06	1050
Osage	Mitchell	43	17	92	48	1170
Oskaloosa	Mahaska	41	17	92	40	813
Perry	Dallas	41	51	94	06	975
Pocahontas	Pocahontas	42	44	94	40	1226
Sac City	Sac	42	26	94	59	1274
Sibley	Osceola	43	24	95	45	1494
Sioux City	Woodbury	42	32	96	22	1093
Toledo	Tama	42	00	92	34	929
Waukee	Dallas	41	37	95	53	1032
Webster City	Hamilton	42	28	93	49	1040
West Bend	Palo Alto	43	48	94	25	1197

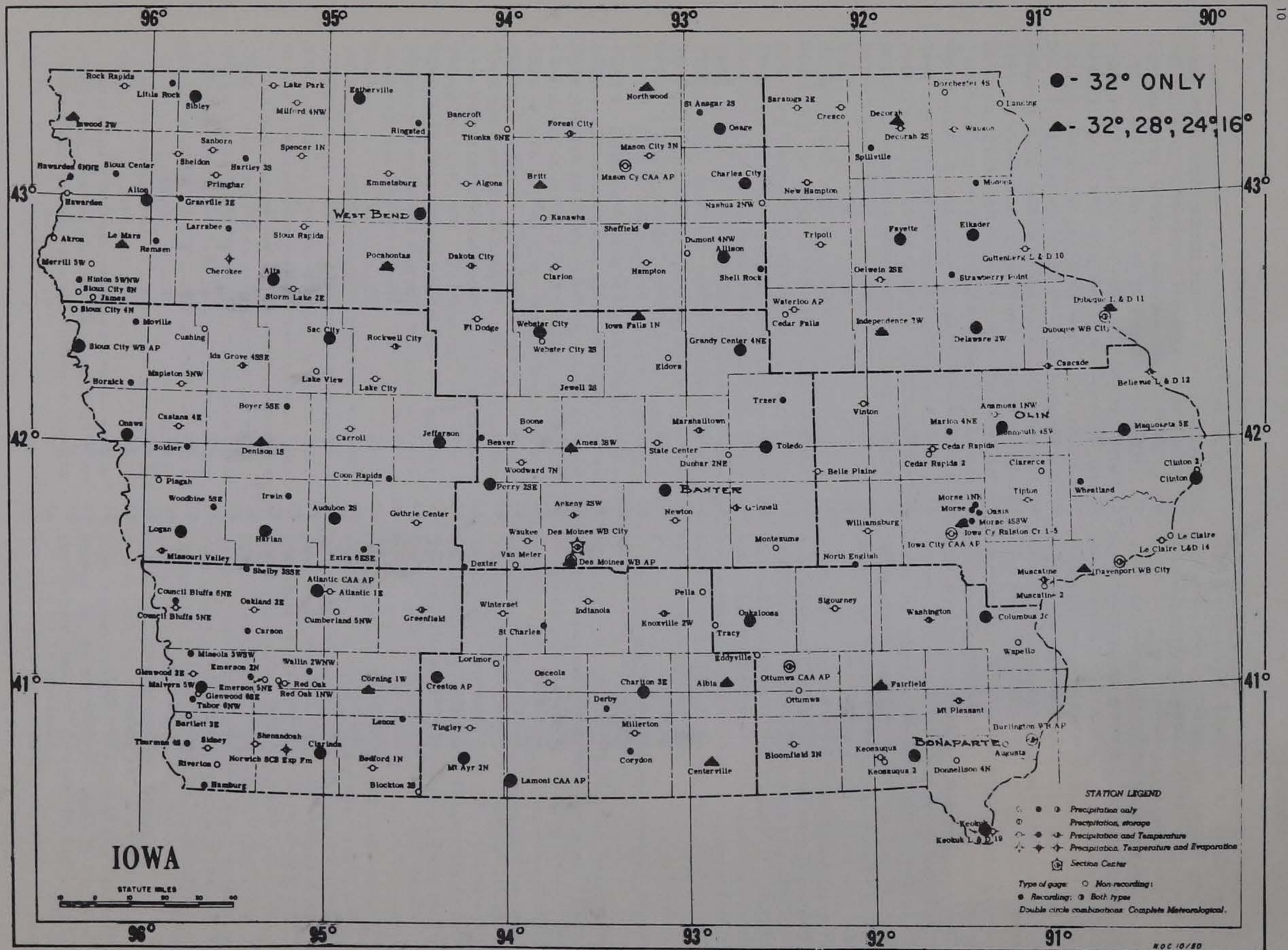


Fig. 2. Stations used in freeze hazard study.

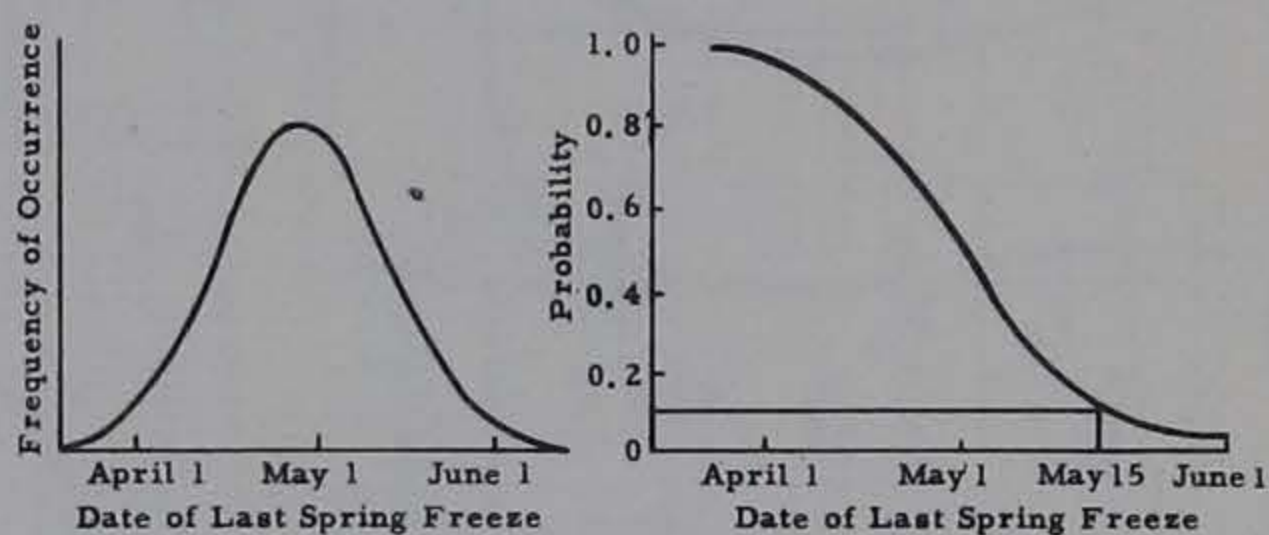
that is, there is a 50-50 chance of a freeze occurring before or after this date. Another explanation is: Over a period of years, in half of the years, the freeze would occur before the mean date and in half of the years it would occur after the mean date. In many operations, other risks or chances are of interest. For example a chance of 1 in 10 or a chance of 1 in 4. A chance of 1 in 10 means that the chances of occurrence are only 10%. Applying this reasoning to freeze hazard data means that if one considers this chance of a freeze in the spring, in 1 year out of 10, the freeze would be expected after this date and in 9 years out of 10 the last freeze would occur before this date. In the fall, the first freeze would occur before this date 1 year in 10 and after this date 9 years in 10. The term 1 year in 10 does not mean it would occur once every 10 years, but that over a long period of years, say 50 years, we would expect five occurrences after this date in the spring.

After tabulation of the dates of freezes for each year for the individual stations, averages or means were determined. (See Appendix I.) From these averages of 32° , figs. 3 and 4 were drawn. The average dates for all the 58 stations were plotted on a map and the lines shown were drawn. These lines indicate the general trend, and do not consider the peculiarities of certain stations. In the final drawing of the map, the data for the individual stations were omitted. The means for the individual stations can be obtained from the station records given in Appendix I or from the 50% dates given in tables 2 and 3.

Thom and Shaw (6) have described a method for computation of the chance or likelihood of late spring and early fall freezes. The method of computation will not be presented here—only the results obtained for the stations used.

However, here is an example of how the values in tables 2 and 3 were prepared: If we plot the number of occurrences of the last spring freeze on each date and fit a smooth curve to this, we get a curve of the type shown below. If we reconstruct this curve into the one shown at the right, which we call a cumulative probability curve, we can obtain the chance of a freeze occurring after any given date. Suppose you set your tomato plants out on May 15. Then you have a 10 percent chance of losing your plants from a freeze. To obtain this risk figure, move vertically from May 15 until the curve is intersected, then horizontally to the line marked

"probability" or chance of a freeze. This same procedure could be used for any date or for any chance you wish to take. Instead of your having to do this each time, we have prepared tables 2 and 3 for certain chances of occurrence. In these tables, 75, 50, 25, 10, 5 and 1 percent chances of a freeze are given. For all stations not tabulated, the following procedure should be used: Referring to fig. 3, Cedar Rapids lies about halfway between the lines labeled April 30 and May 5. Therefore, the average date of the last 32° freeze would be estimated to be about May 2 or 3. Since Cedar Rapids is closer to the April 30 line, the date May 2 should be used. This is the estimated average date for this area. In order to obtain the dates when chances of a freeze are other than 50 percent,



refer to table 4. If one is interested in a 1 in 4 or 25 percent chance, then according to this table, for spring, 8 days must be added to the above date, making May 10 the date one has a 1 in 4 chance. This means that, over a period of years, in 1 year out of 4 a freeze will occur later than this date. For a 1 in 10 chance, add 15 days making the date May 17. In 1 year out of 10, a freeze would be expected in this area after that date. Using fig. 4, the estimated date in the fall is Oct. 5 because that line goes through the Cedar Rapids area. To get the date the chance of a freeze is 25 percent, refer to table 4, fall. It is found that 8 days must be subtracted from the average date, making Sept. 27 the date when a chance of a freeze is 25 percent. In 1 year out of 4, a freeze would be expected in the Cedar Rapids area before Sept. 27. This same method can be applied to any location in the state.

TEMPERATURES OTHER THAN 32°

The same type of information can be compiled for temperatures other than 32° . Using the data of the 19 stations tabulated and estimates of other stations obtained by the regression method of Thom and Shaw (6), maps were drawn

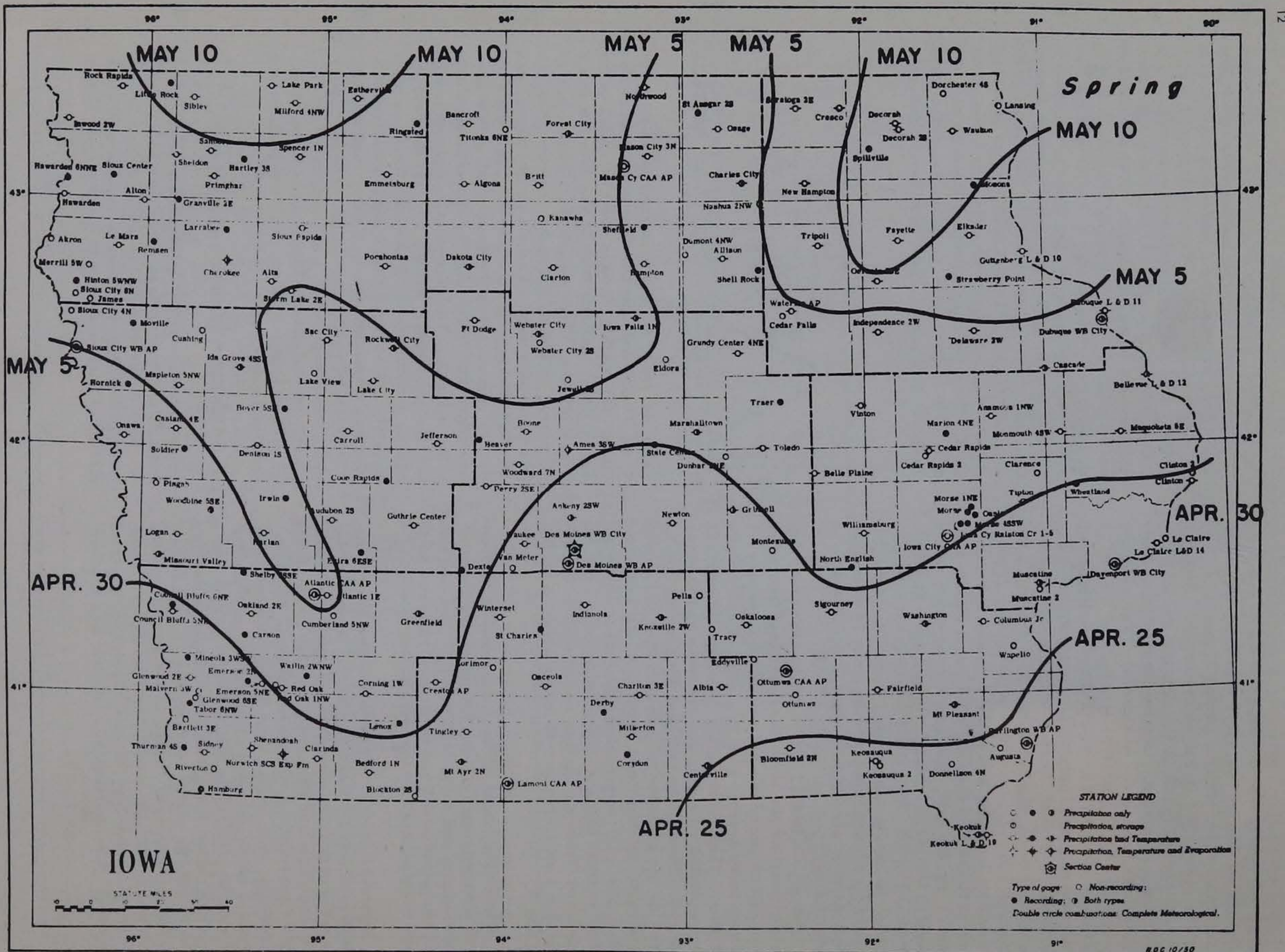


Fig. 3. Mean date of last 32° F. freeze in spring.

Table 2. PERCENT CHANCE OF 32° F. OCCURRING ON OR AFTER GIVEN DATES IN SPRING

Station	Percent Chance					
	75	50	25	10	5	1
<u>NW</u>						
Alta	Apr 28	May 6	May 14	May 21	May 25	June 2
Alton	Apr 29	May 7	May 15	May 22	May 26	June 3
Esterville	May 2	May 10	May 18	May 25	May 29	June 6
Inwood	May 1	May 9	May 17	May 24	May 28	June 5
Le Mars	Apr 29	May 7	May 15	May 22	May 26	June 3
Pocahontas	Apr 28	May 6	May 14	May 21	May 25	June 2
Sibley	May 4	May 12	May 20	May 27	May 31	June 8
West Bend	Apr 29	May 7	May 15	May 22	May 25	June 3
<u>NC</u>						
Allison	Apr 26	May 4	May 12	May 19	May 23	May 31
Britt	Apr 30	May 8	May 16	May 23	May 27	June 4
Charles City	Apr 24	May 2	May 10	May 17	May 21	May 29
Northwood	Apr 27	May 5	May 13	May 20	May 24	June 1
Osage	Apr 23	May 1	May 9	May 16	May 20	May 28
<u>NE</u>						
Decorah	May 5	May 13	May 21	May 28	June 2	June 10
Delaware	Apr 26	May 4	May 12	May 19	May 23	May 31
Dubuque	Apr 12	Apr 20	Apr 28	May 5	May 9	May 17
Elkader	May 1	May 9	May 17	May 24	May 28	June 5
Fayette	May 4	May 12	May 20	May 27	May 31	June 8
Independence	Apr 26	May 4	May 12	May 19	May 23	May 31
<u>WC</u>						
Audubon	Apr 26	May 4	May 12	May 19	May 23	May 31
Denison	Apr 30	May 8	May 16	May 23	May 27	June 4
Harlan	Apr 27	May 5	May 13	May 20	May 24	June 1
Jefferson	Apr 25	May 3	May 11	May 18	May 22	May 30
Logan	Apr 25	May 3	May 11	May 18	May 22	May 30
Onawa	Apr 25	May 3	May 11	May 18	May 22	May 30
Sac City	Apr 25	May 3	May 11	May 18	May 22	May 30
Sioux City	Apr 20	Apr 28	May 6	May 13	May 17	May 25
<u>C</u>						
Ames	Apr 23	May 1	May 9	May 16	May 20	May 28
Baxter	Apr 22	Apr 30	May 8	May 15	May 19	May 27
Des Moines	Apr 10	Apr 18	Apr 26	May 3	May 7	May 15
Grundy Center	Apr 25	May 3	May 11	May 18	May 22	May 30
Iowa Falls	Apr 28	May 6	May 14	May 21	May 25	June 2
Perry	Apr 26	May 4	May 12	May 19	May 23	May 31
Toledo	Apr 27	May 5	May 13	May 20	May 24	June 1
Waukee	Apr 21	Apr 29	May 7	May 14	May 18	May 26
Webster City	May 2	May 10	May 18	May 25	May 29	June 6
<u>EC</u>						
Clinton	Apr 20	Apr 28	May 6	May 13	May 17	May 25
Davenport	Apr 7	Apr 15	Apr 23	Apr 30	May 4	May 12
Iowa City	Apr 20	Apr 28	May 6	May 13	May 17	May 25
Maquoketa	Apr 24	May 2	May 10	May 17	May 21	May 29
Olin	Apr 25	May 3	May 11	May 18	May 22	May 30
<u>SW</u>						
Atlantic	Apr 29	May 7	May 15	May 22	May 26	June 3
Clarinda	Apr 20	Apr 28	May 6	May 13	May 17	May 25
Corning	Apr 24	May 2	May 10	May 17	May 21	May 29
Glenwood	Apr 20	Apr 28	May 6	May 13	May 17	May 25

Table 2(con't)

Station	Percent Chance					
	75	50	25	10	5	1
<u>SC</u>						
Albia	Apr 20	Apr 28	May 6	May 13	May 17	May 25
Centerville	Apr 16	Apr 24	May 2	May 9	May 13	May 21
Chariton	Apr 22	Apr 30	May 8	May 15	May 19	May 27
Creston	Apr 23	May 1	May 9	May 16	May 20	May 28
Indianola	Apr 19	Apr 27	May 5	May 12	May 16	May 24
Lamoni	Apr 21	Apr 29	May 7	May 14	May 18	May 26
Mt. Ayr	Apr 20	Apr 28	May 6	May 13	May 17	May 25
<u>SE</u>						
Bonaparte	Apr 16	Apr 24	May 2	May 9	May 13	May 21
Col Junction	Apr 18	Apr 26	May 4	May 11	May 15	May 23
Fairfield	Apr 20	Apr 28	May 6	May 13	May 17	May 25
Keokuk	Apr 5	Apr 13	Apr 21	Apr 28	May 2	May 10
Oskaloosa	Apr 19	Apr 27	May 5	May 12	May 16	May 24

Table 3. PERCENT CHANCE OF 32° F. OCCURRING ON OR BEFORE GIVEN DATES IN FALL

Station	Percent Chance					
	1	5	10	25	50	75
<u>NW</u>						
Alta	Sept. 6	Sept. 15	Sept. 19	Sept. 27	Oct. 5	Oct. 13
Alton	Sept. 2	Sept. 11	Sept. 15	Sept. 23	Oct. 1	Oct. 9
Estherville	Aug. 31	Sept. 9	Sept. 13	Sept. 21	Sept. 29	Oct. 7
Inwood	Aug. 30	Sept. 8	Sept. 12	Sept. 20	Sept. 28	Oct. 6
Le Mars	Sept. 1	Sept. 10	Sept. 14	Sept. 22	Sept. 30	Oct. 8
Pocahontas	Sept. 5	Sept. 14	Sept. 18	Sept. 26	Oct. 4	Oct. 12
Sibley	Aug. 24	Sept. 2	Sept. 6	Sept. 14	Sept. 22	Sept. 30
West Bend	Sept. 2	Sept. 11	Sept. 15	Sept. 23	Oct. 1	Oct. 9
<u>NC</u>						
Allison	Sept. 5	Sept. 14	Sept. 18	Sept. 26	Oct. 4	Oct. 12
Britt	Sept. 2	Sept. 11	Sept. 15	Sept. 23	Oct. 1	Oct. 9
Charles City	Sept. 5	Sept. 14	Sept. 18	Sept. 26	Oct. 4	Oct. 12
Northwood	Sept. 5	Sept. 14	Sept. 18	Sept. 26	Oct. 4	Oct. 12
Osage	Sept. 4	Sept. 13	Sept. 17	Sept. 25	Oct. 3	Oct. 11
<u>NE</u>						
Decorah	Aug. 28	Sept. 6	Sept. 10	Sept. 18	Sept. 26	Oct. 4
Delaware	Sept. 7	Sept. 16	Sept. 20	Sept. 28	Oct. 6	Oct. 14
Dubuque	Sept. 17	Sept. 26	Sept. 30	Oct. 8	Oct. 16	Oct. 24
Elkader	Aug. 28	Sept. 6	Sept. 10	Sept. 18	Sept. 26	Oct. 4
Fayette	Aug. 30	Sept. 8	Sept. 12	Sept. 20	Sept. 28	Oct. 6
Independence	Sept. 4	Sept. 13	Sept. 17	Sept. 25	Oct. 3	Oct. 11
<u>WC</u>						
Audubon	Sept. 7	Sept. 16	Sept. 20	Sept. 28	Oct. 6	Oct. 14
Denison	Sept. 3	Sept. 12	Sept. 16	Sept. 24	Oct. 2	Oct. 10
Harlan	Sept. 5	Sept. 14	Sept. 18	Sept. 26	Oct. 4	Oct. 12
Jefferson	Sept. 6	Sept. 15	Sept. 19	Sept. 27	Oct. 5	Oct. 13

Table 3 (Cont'd)

Station	Percent Chance					
Logan	Sept. 6	Sept. 15	Sept. 19	Sept. 27	Oct. 5	Oct. 13
Onawa	Sept. 6	Sept. 15	Sept. 19	Sept. 27	Oct. 5	Oct. 13
Sac City	Sept. 4	Sept. 13	Sept. 17	Sept. 25	Oct. 3	Oct. 11
Sioux City	Sept. 11	Sept. 20	Sept. 24	Oct. 2	Oct. 10	Oct. 18
<u>C</u>						
Ames	Sept. 6	Sept. 15	Sept. 19	Sept. 27	Oct. 5	Oct. 13
Baxter	Sept. 7	Sept. 16	Sept. 20	Sept. 28	Oct. 6	Oct. 14
Des Moines	Sept. 17	Sept. 26	Sept. 30	Oct. 8	Oct. 16	Oct. 24
Grundy Center	Sept. 4	Sept. 13	Sept. 17	Sept. 25	Oct. 3	Oct. 11
Iowa Falls	Aug. 31	Sept. 9	Sept. 13	Sept. 21	Sept. 29	Oct. 7
Perry	Sept. 5	Sept. 14	Sept. 18	Sept. 26	Oct. 4	Oct. 12
Toledo	Sept. 4	Sept. 13	Sept. 17	Sept. 25	Oct. 3	Oct. 11
Waukee	Sept. 9	Sept. 18	Sept. 22	Sept. 30	Oct. 8	Oct. 16
Webster City	Sept. 1	Sept. 10	Sept. 14	Sept. 22	Sept. 30	Oct. 8
<u>EC</u>						
Clinton	Sept. 10	Sept. 19	Sept. 23	Oct. 1	Oct. 9	Oct. 17
Davenport	Sept. 22	Oct. 1	Oct. 5	Oct. 13	Oct. 21	Oct. 29
Iowa City	Sept. 11	Sept. 20	Sept. 24	Oct. 2	Oct. 10	Oct. 18
Maquoketa	Sept. 1	Sept. 10	Sept. 14	Sept. 22	Sept. 30	Oct. 8
Olin	Sept. 4	Sept. 13	Sept. 17	Sept. 25	Oct. 3	Oct. 11
<u>SW</u>						
Atlantic	Sept. 2	Sept. 11	Sept. 15	Sept. 23	Oct. 1	Oct. 9
Clarinda	Sept. 11	Sept. 20	Sept. 24	Oct. 2	Oct. 10	Oct. 18
Corning	Sept. 9	Sept. 18	Sept. 22	Sept. 30	Oct. 8	Oct. 16
Glenwood	Sept. 10	Sept. 19	Sept. 23	Oct. 1	Oct. 9	Oct. 17
<u>SC</u>						
Albia	Sept. 11	Sept. 20	Sept. 24	Oct. 2	Oct. 10	Oct. 18
Centerville	Sept. 11	Sept. 20	Sept. 24	Oct. 2	Oct. 10	Oct. 18
Chariton	Sept. 10	Sept. 19	Sept. 23	Oct. 1	Oct. 9	Oct. 17
Creston	Sept. 10	Sept. 19	Sept. 23	Oct. 1	Oct. 9	Oct. 17
Indianola	Sept. 12	Sept. 21	Sept. 25	Oct. 3	Oct. 11	Oct. 19
Lamoni	Sept. 12	Sept. 21	Sept. 25	Oct. 3	Oct. 11	Oct. 19
Mt. Ayr	Sept. 11	Sept. 20	Sept. 24	Oct. 2	Oct. 10	Oct. 18
<u>SE</u>						
Bonaparte	Sept. 10	Sept. 19	Sept. 23	Oct. 1	Oct. 9	Oct. 17
Col. Junction	Sept. 13	Sept. 22	Sept. 26	Oct. 4	Oct. 12	Oct. 20
Fairfield	Sept. 8	Sept. 17	Sept. 21	Sept. 29	Oct. 7	Oct. 15
Keokuk	Sept. 24	Oct. 3	Oct. 7	Oct. 15	Oct. 23	Oct. 31
Oskaloosa	Sept. 9	Sept. 18	Sept. 22	Sept. 30	Oct. 8	Oct. 16

for 28°, 24°, and 16°. These maps are shown in figs. 5-10, and give the average date of last occurrence in the spring and first occurrence in the fall. If other chances are desired, table 4 can be used to estimate the date as we did for 32°. For example, for 28°, spring, Cedar Rapids lies close to the April 20 line, so the average date would be estimated as April 20. Osceola would be estimated as April 17. Table 4 is then used as previously to estimate the date having the risk or chance desired.

Table 4. Adjustments to be applied to mean freeze dates to obtain other probabilities of occurrence.

Probability of freeze	Spring					Fall				
	75	25	10	5	1	75	25	10	5	1
Days to be added to or subtracted from mean dates	-8	+8	+15	+19	+27	+8	-8	-16	-20	-29

If temperatures other than those given are wanted, table 5 can be used to estimate the average date of occurrence of these temperatures.

In certain cases, the main interest may be the date a temperature occurred in a given year. The information for each year of record for the stations used is given in Appendix I. To obtain the date of the first or last freeze for any year, look for that year under the desired station.

Table 5. Occurrence of temperatures relative to 32°

Temperature	Last in spring av. no of days earlier than 32°	First in fall av. no. of days later than 32°
30	6	6
26	18	16
22	29	25
20	33	30
18	37	34

GROWING SEASON

The term growing season or freeze-free season has been used to designate the period between the last freeze in the spring and the first in the fall. The effective growing season avail-

able for any crop varies from this figure, depending upon the time the crop is planted or commences growth in the spring, and the time it matures or is killed by freezing weather in the fall. For central Iowa (Ames) the last freeze in the spring occurs on the average on May 1, and the first in the fall on Oct. 5, an interval of 157 days. This is not the length of growing season available for corn. The average planting date of corn in Central Iowa (7) is May 14. The period from May 14 to Oct. 5 is 144 days. The chances of this period being freeze-free are equal to the chance of the period after May 14 being freeze-free in the spring multiplied by the chances of the period before Oct. 5 being freeze-free in the fall. This is equal to

$$\frac{86}{100} \times \frac{50}{100} = 43\%$$

That is, the chance of the 144-day period from May 14, the average date of corn planting, to Oct. 5, being freeze-free is 43%. In this case, our effective growing season is considerably shorter than our freeze-free period. This situation exists for other field crops and many of our vegetable crops. However, the freeze-free period does give us a means of comparing different parts of the state. In fig. 11, the average freeze-free period is shown.

LITERATURE CITED

1. Corton, E. L. The influence of the location on the length of the freeze free season in Iowa. Unpublished M. S. thesis Ames, Iowa, Iowa State College Library. 1948
2. Gardner, V. R., Bradford, F. C. and Hooker, H. D., Jr. Fundamentals of Fruit Production, 2nd ed. McGraw-Hill, 1939.
3. Geiger, R. The climate near the ground. Harvard University Press. 1950
4. Rossman, E. C. Freezing injury of maize seed. Plant Physiol. 24:629-656. 1949
5. _____ Freezing injury of inbred and hybrid maize seed. Agron. Jour. 41:574-583. 1949
6. Thom, H. C. S. and Shaw, R. H. The freeze hazard for Iowa. Unpublished. To be submitted to Monthly Weather Rev.
7. U. S. Weather Bureau and Iowa Department of Agriculture. Iowa Corn Phenology Summary Mimeo. 1950

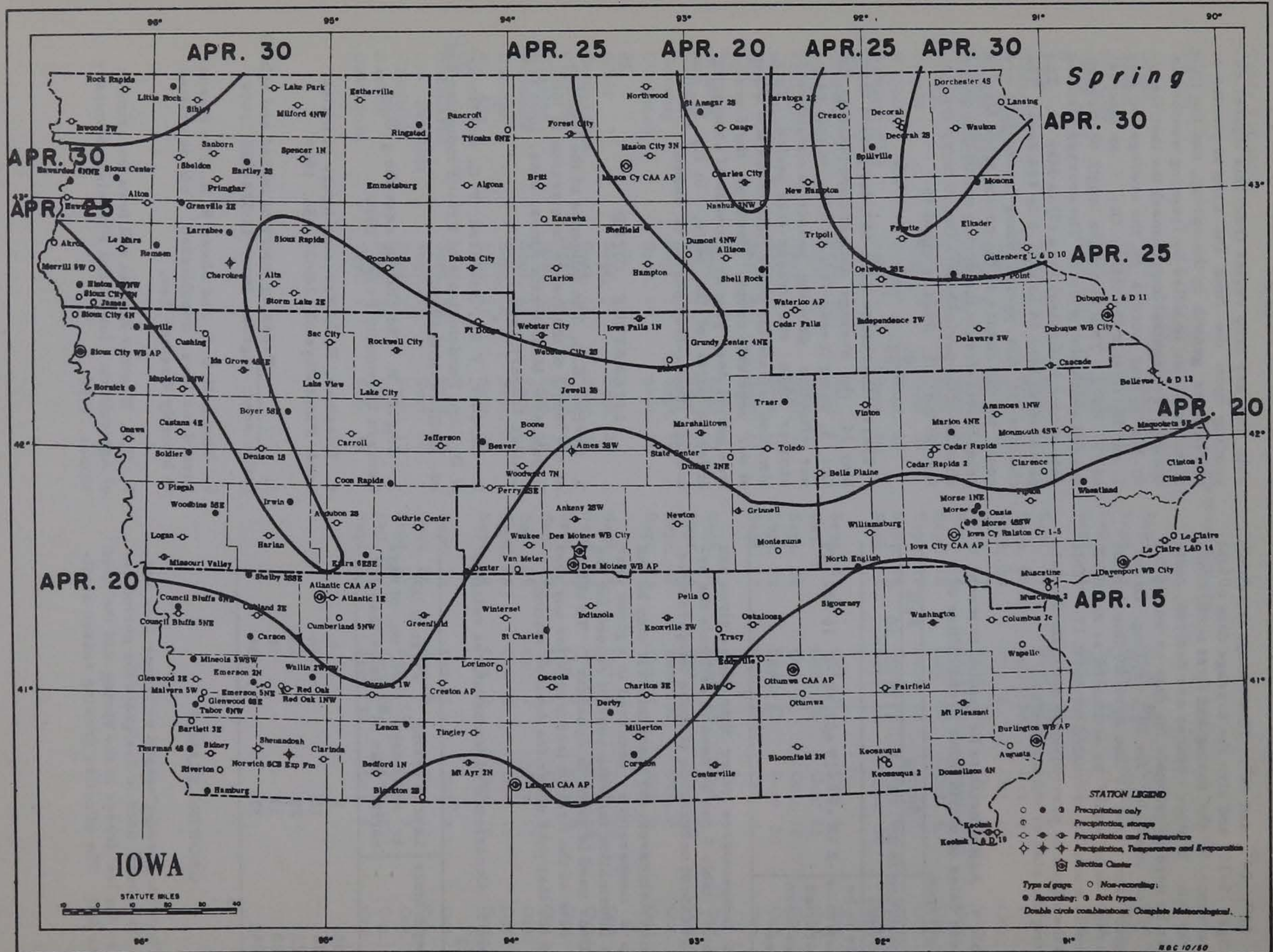


Fig. 5. Mean date of last 28° F. freeze in spring.

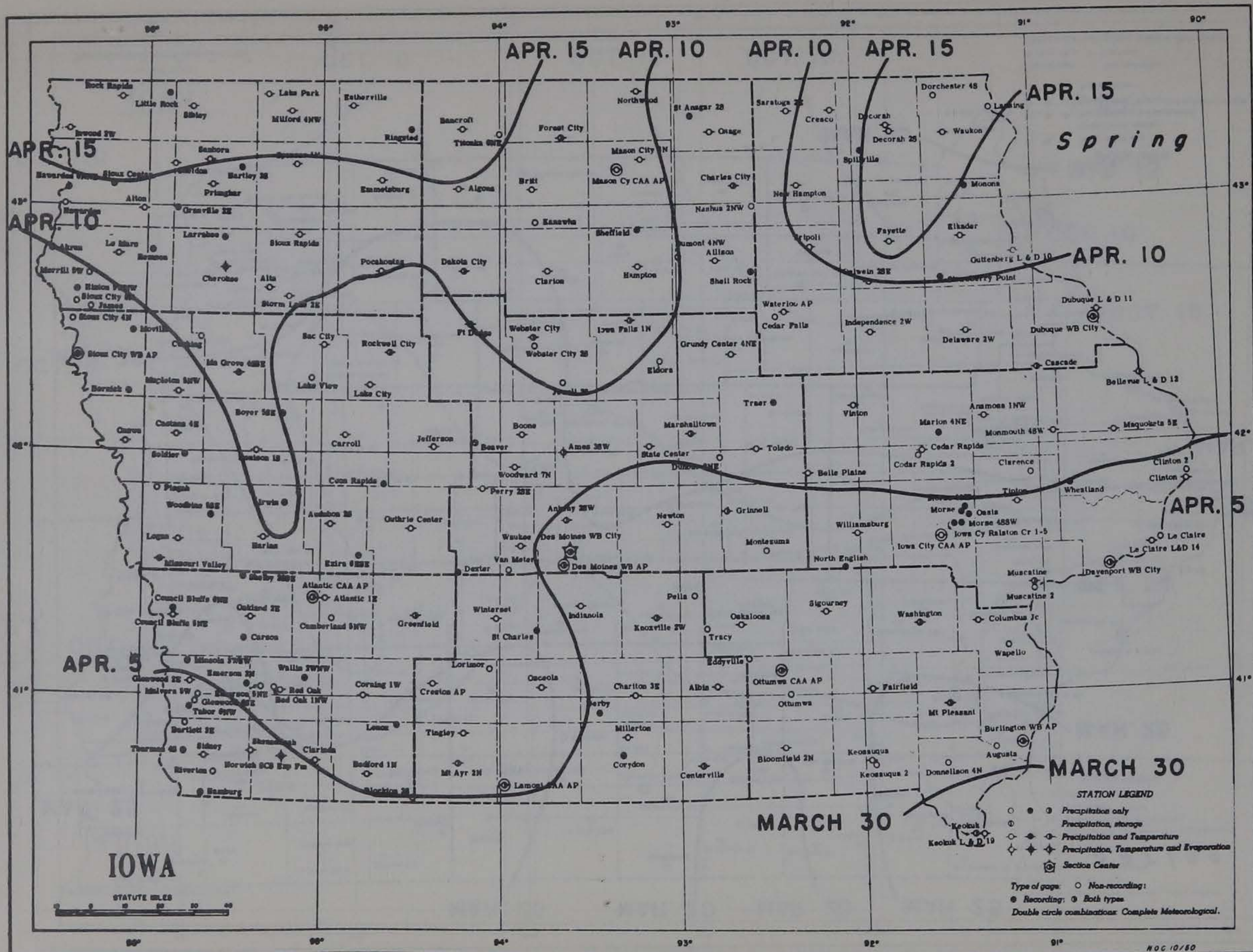


Fig. 6. Mean date of last 24° F. freeze in spring.

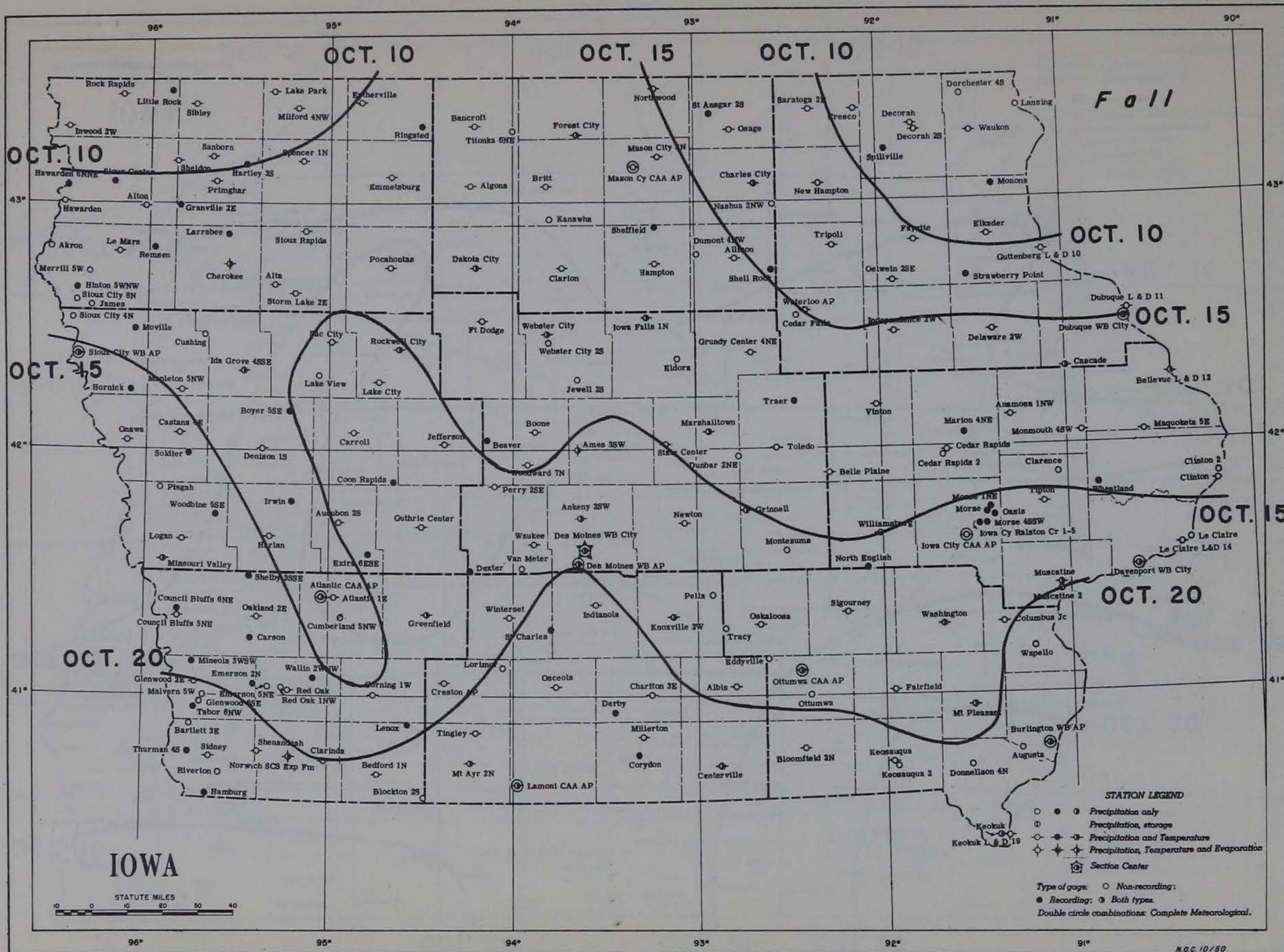


Fig. 8 Mean date of first 28° F. freeze in fall.

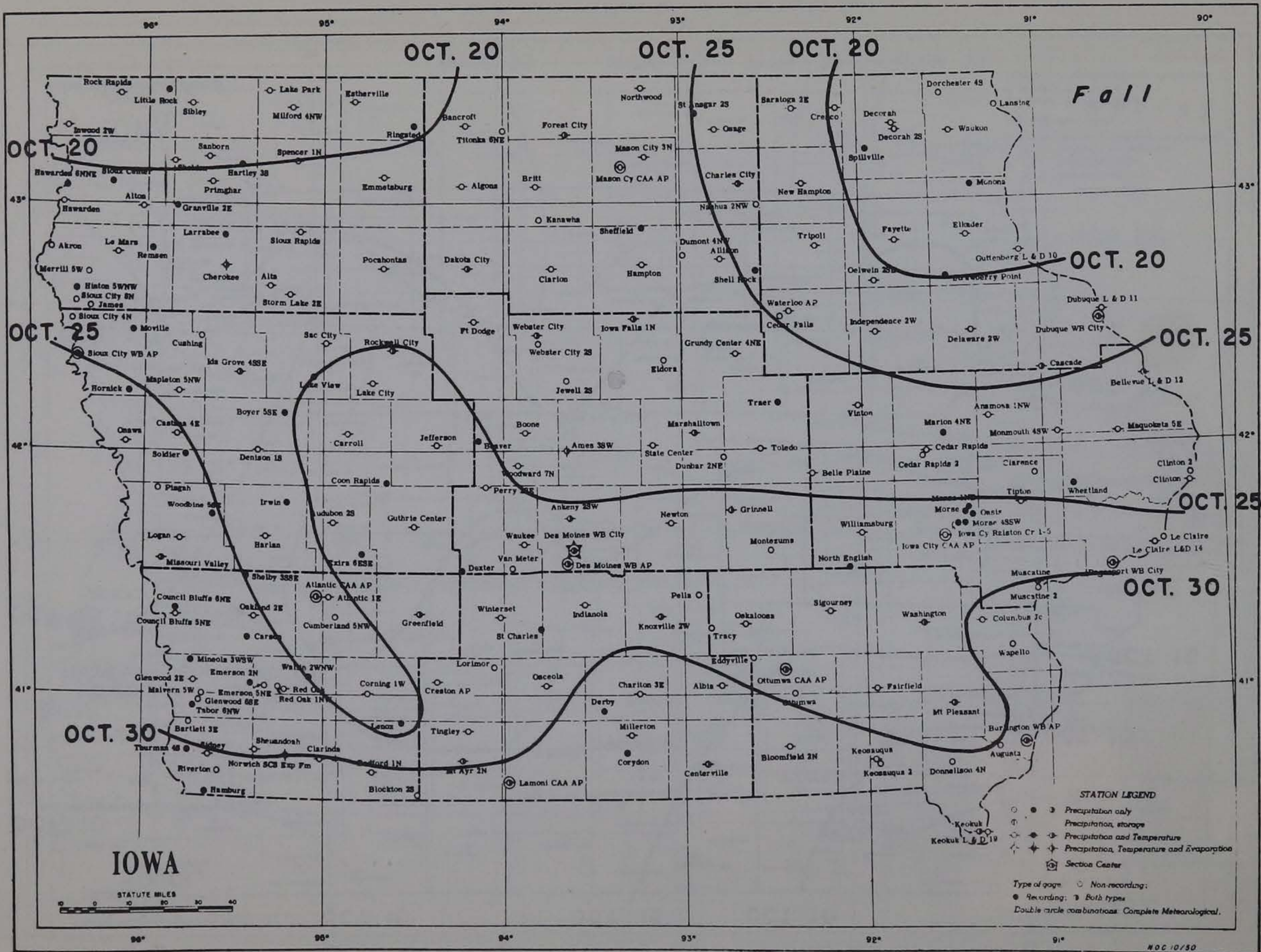


Fig. 9. Mean date of first 24° F. freeze in fall.

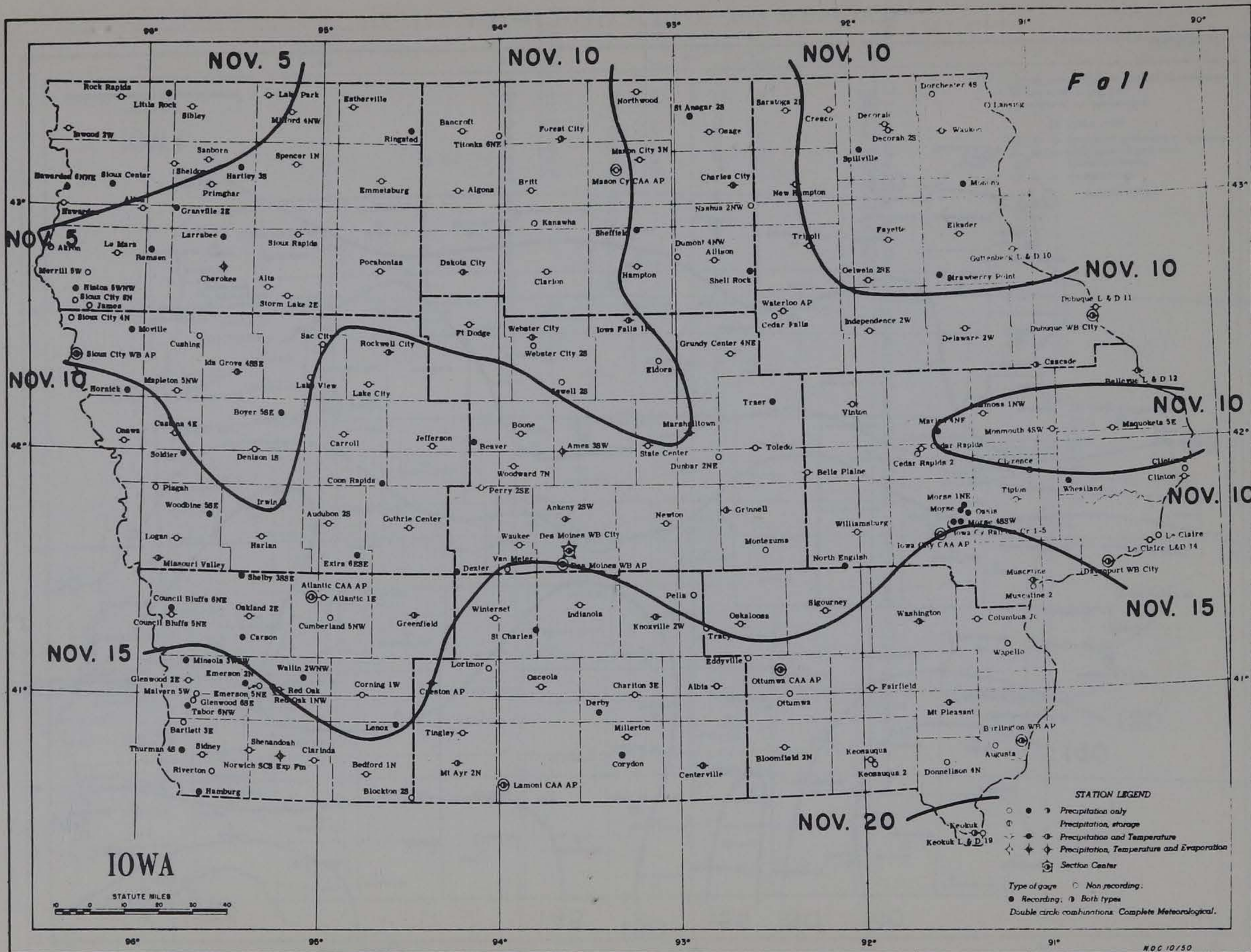


Fig. 10. Mean date of first 16° F. freeze in fall.

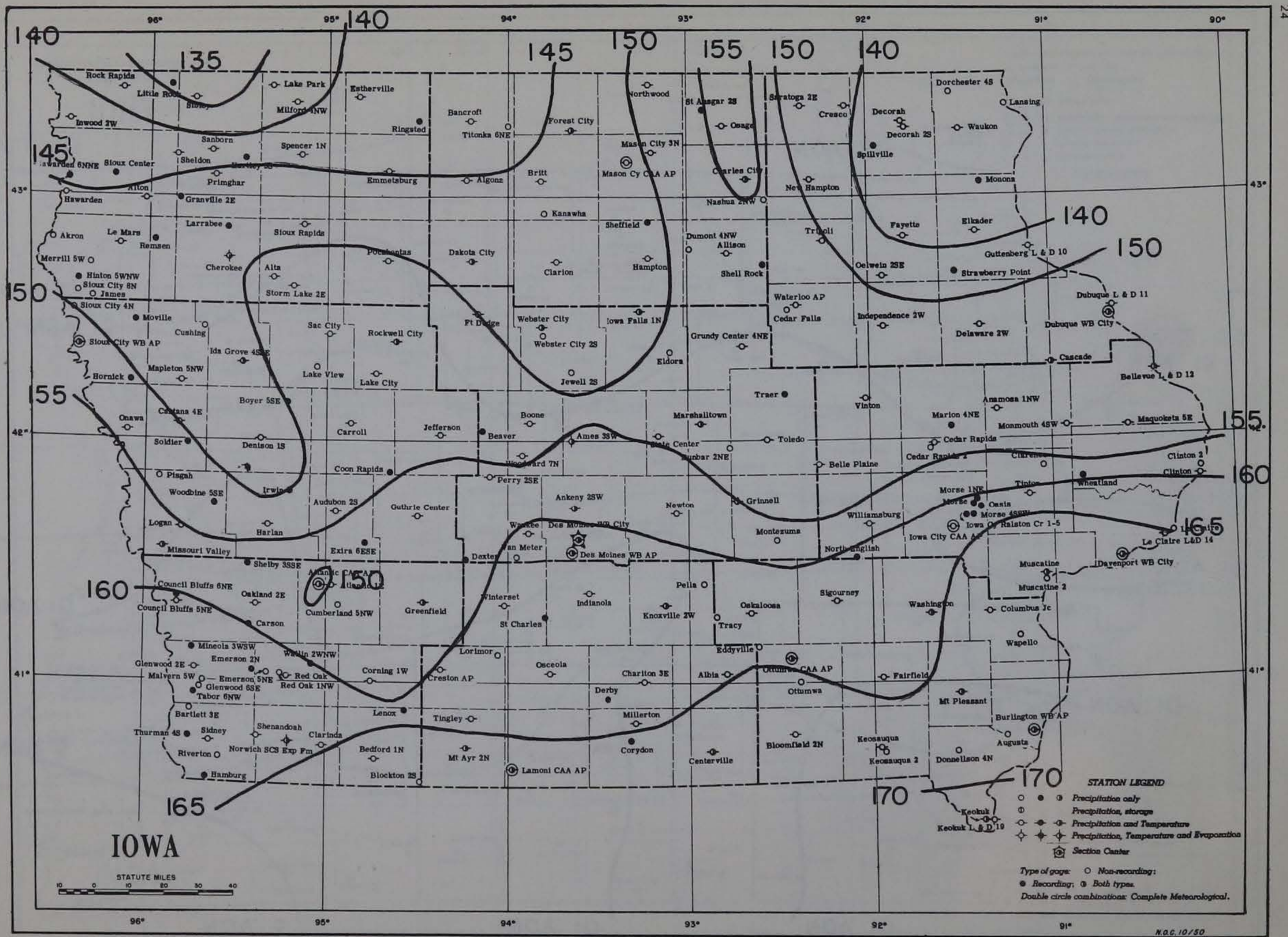


Fig. 11. Average length of freeze-free season in Iowa.

APPENDIX

Note: The following stations are out of alphabetical order and will be found on the pages indicated below:

32° F. or Lower

Bonaparte on page 36

28° F. or Lower

Davenport on page 60

16° F. or Lower

Davenport on page 81

DATE OF OCCURRENCE OF 32° F. OR LOWERSTATION - Albia
COUNTY - Monroe

Year of occurrence	Last occurrence in spring	First occurrence in fall
1899	April 16	Sept. 26
1900	April 14	Oct. 8
1901	April 21	Sept. 18
1902	April 14	Oct. 14
1903	May 3	Sept. 24
1904	April 26	Oct. 6
1905	April 19	Oct. 12
1906	May 9	Oct. 10
1907	May 20	Sept. 25
1908	May 2	Sept. 28
1909	May 10	Oct. 12
1910	April 26	Oct. 22
1911	May 2	Oct. 21
1912	April 19	Sept. 26
1913	April 27	Sept. 22
1914	April 20	Oct. 25
1915	May 9	Oct. 5
1916	April 10	Sept. 18
1917	May 7	Oct. 6
1918	April 22	Sept. 20
1919	April 26	Oct. 11
1920	May 14	Sept. 30
1921	May 3	Oct. 8
1922	April 20	Oct. 17
1923	May 9	Oct. 19
1924	April 22	Sept. 30
1925	May 25	Oct. 10
1926	April 28	Sept. 26
1927	April 24	Nov. 2
1928	April 27	Oct. 25
1929	May 5	Oct. 23
1930	April 25	Oct. 17
1931	May 21	Nov. 1
1932	April 27	Oct. 6
1933	April 27	Oct. 18
1934	April 27	Oct. 28
1935	May 4	Oct. 4
1936	April 22	Oct. 22
1937	April 25	Oct. 13
1938	April 22	Oct. 23
1939	April 18	Sept. 30
1940	May 2	Nov. 6
1941	March 29	Oct. 28
1942	April 11	Sept. 24
1943	April 20	Oct. 15
1944	May 5	Oct. 10
1945	April 18	Oct. 9
1946	May 11	Oct. 12
1947	May 29	Nov. 7
1948	April 14	Oct. 17
1949	April 19	Sept. 28
1950	May 1	Oct. 3
1951	April 19	Sept. 28
1952	April 16	Oct. 6
Average	April 28	Oct. 10

DATE OF OCCURRENCE OF 32° F. OR LOWERSTATION - Allison
COUNTY - Butler

Year of occurrence	Last occurrence in spring	First occurrence in fall
1914	April 20	Oct. 25
1915	May 17	Aug. 30
1916	May 18	Sept. 17
1917	May 23	Oct. 6
1918	May 13	Sept. 20
1919	April 26	Oct. 11
1920	April 28	Oct. 1
1921	May 16	Oct. 4
1922	April 29	Oct. 9
1923	May 9	Sept. 14
1924	April 22	Sept. 30
1925	May 25	Oct. 7
1926	May 3	Sept. 25
1927	April 30	Sept. 20
1928	April 28	Sept. 25
1929	May 19	---
1930	May 17	Sept. 28
1931	May 21	Nov. 2
1932	April 27	Oct. 5
1933	April 27	Oct. 12
1934	April 27	Sept. 27
1935	May 4	Sept. 27
1936	April 26	Oct. 22
1937	April 22	Sept. 16
1938	April 22	Oct. 24
1939	April 21	Sept. 30
1940	May 3	Oct. 15
1941	April 24	Oct. 27
1942	April 20	Sept. 24
1943	May 1	Oct. 16
1944	May 6	Oct. 13
1945	May 10	Sept. 29
1946	---	Oct. 12
1947	May 29	Sept. 26
1948	April 13	Oct. 17
1949	April 22	Sept. 29
1950	May 1	Oct. 3
1951	April 26	Sept. 28
1952	April 24	Oct. 3
Average	May 4	Oct. 4

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Alta
COUNTY - Buena Vista

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 2	Sept. 25
1894	April 21	Oct. 8
1895	May 19	Sept. 29
1896	April 21	Sept. 19
1897	May 30	Oct. 9
1898	April 14	Oct. 6
1899	May 13	Sept. 29
1900	May 3	Oct. 8
1901	May 12	Sept. 20
1902	April 23	Sept. 12
1903	May 3	Sept. 16
1904	April 26	Oct. 6
1905	May 26	Oct. 11
1906	May 9	Oct. 6
1907	May 27	Oct. 8
1908	May 3	Sept. 28
1909	May 10	Oct. 12
1910	May 4	Oct. 21
1911	May 3	Oct. 19
1912	May 14	Sept. 26
1913	April 27	Sept. 22
1914	May 12	Oct. 25
1915	May 18	Oct. 5
1916	May 2	Sept. 15
1917	May 4	Oct. 8
1918	May 11	Sept. 20
1919	April 25	Oct. 10
1920	April 28	Sept. 30
1921	May 14	Oct. 7
1922	April 19	Oct. 10
1923	May 12	Oct. 19
1924	May 24	Nov. 2
1925	May 17	Oct. 6
1926	May 3	Sept. 25
1927	April 24	Nov. 2
1928	April 27	Sept. 25
1929	May 16	Sept. 18
1930	May 17	Oct. 16
1931	May 22	Nov. 1
1932	April 27	Oct. 5
1933	April 27	Oct. 8
1934	April 27	Sept. 27
1935	May 3	Sept. 27
1936	April 22	Oct. 21
1937	May 14	Oct. 13
1938	May 8	Oct. 20
1939	April 21	Sept. 29
1940	May 2	Oct. 15
1941	April 24	Sept. 28
1942	May 4	Sept. 25
1943	May 8	---
1944	May 6	Oct. 10
1945	May 10	Sept. 29
1946	May 12	Oct. 11
1947	May 29	Sept. 22
1948	April 13	Oct. 17
1949	April 24	Sept. 22
1950	May 7	Oct. 3
1951	April 23	Sept. 28
1952	April 15	Oct. 4
Average	May 6	Oct. 5

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Alton
COUNTY - Sioux

Year of occurrence	Last occurrence in spring	First occurrence in fall
1905	---	Oct. 11
1906	May 9	Sept. 30
1907	May 20	Sept. 25
1908	May 3	Sept. 29
1909	May 10	Oct. 11
1910	May 29	Sept. 27
1911	May 3	Oct. 20
1912	May 14	Sept. 26
1913	April 28	Sept. 22
1914	May 13	Oct. 15
1915	May 19	Sept. 21
1916	May 18	Sept. 15
1917	May 8	Oct. 6
1918	April 30	Sept. 18
1919	May 2	Oct. 10
1920	April 28	Sept. 30
1921	May 14	Oct. 4
1922	April 20	Oct. 9
1923	May 12	Oct. 13
1924	May 24	Sept. 28
1925	May 25	Oct. 9
1926	May 14	Sept. 25
1927	April 24	Oct. 7
1928	May 1	Sept. 23
1929	May 16	Sept. 18
1930	May 17	Oct. 14
1931	May 22	Oct. 17
1932	April 27	Sept. 29
1933	April 27	Sept. 27
1934	April 27	Sept. 21
1935	May 5	Sept. 27
1936	April 29	Oct. 7
1937	May 14	Sept. 16
1938	April 9	Oct. 20
1939	April 21	Sept. 29
1940	May 3	Oct. 15
1941	April 24	Sept. 28
1942	May 15	Sept. 24
1943	May 13	Sept. 17
1944	May 6	Oct. 9
1945	May 10	Sept. 29
1946	May 12	Sept. 29
1947	May 29	Sept. 22
1948	April 12	Oct. 10
1949	April 19	Sept. 29
1950	May 1	Oct. 3
1951	April 26	Sept. 28
1952	April 14	Sept. 23
Average	May 7	Oct. 1

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Ames
COUNTY - StorySTATION - Atlantic
COUNTY - Cass

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 6	Sept. 25
1894	May 28	Sept. 18
1895	May 22	Sept. 30
1896	---	Sept. 19
1897	April 20	Sept. 20
1898	April 24	Oct. 6
1899	April 19	Sept. 29
1900	April 14	Oct. 8
1901	April 30	Oct. 4
1902	April 24	Sept. 13
1903	May 1	Oct. 7
1904	April 21	Oct. 6
1905	April 22	Oct. 11
1906	May 9	Oct. 1
1907	May 20	Sept. 25
1908	May 4	Sept. 28
1909	May 10	Oct. 13
1910	May 14	Oct. 22
1911	May 2	Oct. 4
1912	April 27	Sept. 26
1913	April 28	Sept. 22
1914	May 17	Oct. 25
1915	May 9	Oct. 5
1916	May 2	Sept. 18
1917	May 7	Oct. 1
1918	May 1	Sept. 20
1919	April 27	Oct. 11
1920	April 14	Sept. 30
1921	May 16	Oct. 4
1922	April 18	Oct. 12
1923	May 9	Oct. 20
1924	April 22	Sept. 30
1925	May 11	Oct. 7
1926	April 28	Sept. 26
1927	April 24	Oct. 14
1928	April 28	Sept. 26
1929	May 7	Sept. 18
1930	April 25	Oct. 17
1931	May 8	Nov. 2
1932	April 27	Oct. 6
1933	April 27	Oct. 5
1934	April 27	Sept. 27
1935	May 4	Oct. 4
1936	April 23	Oct. 22
1937	April 25	Sept. 16
1938	May 8	Oct. 23
1939	April 22	Sept. 30
1940	May 3	Nov. 6
1941	April 24	Oct. 27
1942	April 20	Sept. 24
1943	April 21	Oct. 15
1944	May 6	Oct. 10
1945	May 10	Sept. 29
1946	May 12	Sept. 30
1947	May 29	Nov. 6
1948	April 14	Oct. 17
1949	April 19	Sept. 29
1950	May 1	Sept. 24
1951	April 23	Sept. 28
1952	April 16	Oct. 3
Average	May 1	Oct. 5

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 6	Sept. 2
1894	June 6	Sept. 18
1895	May 22	Sept. 29
1896	April 22	Sept. 20
1897	May 31	Sept. 20
1898	May 12	Oct. 6
1899	May 4	Sept. 18
1900	May 3	Sept. 17
1901	May 26	Sept. 19
1902	April 23	Sept. 12
1903	May 3	Sept. 16
1904	April 29	Sept. 14
1905	May 26	Oct. 21
1906	May 28	Sept. 27
1907	May 27	Sept. 22
1908	May 9	Sept. 30
1909	May 10	Oct. 21
1910	May 4	Oct. 22
1911	May 2	Oct. 20
1912	May 17	Sept. 26
1913	April 28	Sept. 22
1914	April 20	Oct. 25
1915	May 9	Oct. 5
1916	May 18	Sept. 29
1917	May 7	Oct. 6
1918	May 1	Sept. 20
1919	April 26	Oct. 10
1920	May 14	Sept. 30
1921	May 4	Oct. 3
1922	April 30	Oct. 9
1923	May 9	Oct. 20
1924	May 12	Sept. 28
1925	May 25	Oct. 9
1926	April 28	Sept. 25
1927	April 24	Oct. 14
1928	April 27	Sept. 25
1929	May 16	Sept. 18
1930	April 24	Oct. 17
1931	May 22	Oct. 17
1932	April 27	Sept. 29
1933	April 27	Sept. 27
1934	April 27	Sept. 16
1935	May 5	Oct. 4
1936	April 23	Oct. 22
1937	May 14	Sept. 16
1938	May 8	Oct. 23
1939	April 21	Sept. 30
1940	May 2	Sept. 26
1941	April 24	Oct. 16
1942	May 4	Sept. 24
1943	May 8	Sept. 17
1944	May 6	Oct. 10
1945	May 9	Sept. 29
1946	May 12	Oct. 12
1947	May 29	Oct. 19
1948	April 14	Oct. 17
1949	April 24	Sept. 28
1950	May 1	Sept. 24
1951	April 26	Sept. 28
1952	May 13	Sept. 23
Average	May 7	Oct. 1

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Audubon
COUNTY - Audubon

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 3	Sept. 16
1894	May 19	Oct. 8
1895	May 22	Sept. 29
1896	April 6	Sept. 18
1897	May 31	Sept. 20
1898	April 26	Oct. 6
1899	April 20	Sept. 26
1900	May 3	Oct. 8
1901	---	---
1902	---	Sept. 12
1903	May 3	Sept. 16
1904	May 15	Sept. 15
1905	May 26	Oct. 12
1906	May 9	Sept. 20
1907	May 20	Sept. 22
1908	May 9	Sept. 28
1909	May 10	Sept. 27
1910	May 4	Oct. 22
1911	May 2	Oct. 21
1912	April 19	Sept. 26
1913	April 28	Sept. 22
1914	April 20	Oct. 25
1915	May 19	Oct. 5
1916	May 18	Sept. 15
1917	May 7	Sept. 27
1918	May 13	Sept. 20
1919	April 26	---
1920	April 28	Sept. 30
1921	May 14	Oct. 10
1922	April 20	Oct. 12
1923	May 9	Oct. 19
1924	May 24	Sept. 28
1925	May 17	Oct. 6
1926	May 14	Sept. 25
1927	April 24	Nov. 2
1928	April 27	Sept. 26
1929	May 16	Oct. 21
1930	April 24	Oct. 17
1931	May 8	Nov. 1
1932	April 27	Oct. 10
1933	April 15	Oct. 12
1934	April 27	Sept. 27
1935	May 5	Oct. 4
1936	April 22	Oct. 21
1937	April 26	Oct. 13
1938	May 8	Oct. 20
1939	April 21	Sept. 30
1940	May 2	Nov. 6
1941	April 24	Oct. 28
1942	May 4	Sept. 24
1943	April 20	Oct. 15
1944	May 6	Oct. 10
1945	May 10	Sept. 29
1946	May 12	Oct. 12
1947	May 29	Nov. 7
1948	April 14	Oct. 16
1949	April 24	Sept. 28
1950	May 1	Oct. 3
1951	April 23	Sept. 27
1952	---	Oct. 5
Average	May 4	Oct. 6

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Baxter
COUNTY - Jasper

Year of occurrence	Last occurrence in spring	First occurrence in fall
1899	April 19	Sept. 28
1900	May 2	Oct. 7
1901	April 21	Oct. 4
1902	April 24	Sept. 12
1903	May 3	Oct. 9
1904	April 27	Oct. 6
1905	April 30	Oct. 12
1906	May 10	Oct. 6
1907	May 20	Sept. 25
1908	May 2	Sept. 28
1909	May 4	Oct. 11
1910	May 13	Oct. 22
1911	May 2	Oct. 20
1912	April 27	Sept. 26
1913	April 27	Sept. 22
1914	April 20	Oct. 25
1915	April 12	Oct. 5
1916	April 17	Sept. 29
1917	April 15	Oct. 6
1918	April 25	Sept. 20
1919	April 25	Oct. 11
1920	April 28	Sept. 30
1921	May 3	Oct. 4
1922	April 29	Oct. 12
1923	May 9	Oct. 19
1924	May 24	Sept. 30
1925	May 11	Oct. 7
1926	April 28	Sept. 25
1927	April 24	Oct. 14
1928	April 28	Sept. 25
1929	May 19	Sept. 18
1930	April 25	Oct. 17
1931	May 21	Nov. 2
1932	April 27	Oct. 6
1933	April 27	Oct. 12
1934	April 27	Sept. 27
1935	May 4	Oct. 4
1936	April 23	Oct. 22
1937	April 25	Sept. 26
1938	April 22	Oct. 20
1939	April 22	Sept. 30
Average	April 30	Oct. 6

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Britt
COUNTY - HancockSTATION - Centerville
COUNTY - Appanoose

Year of occurrence	Last occurrence in spring	First occurrence in fall
1897	May 31	Sept. 17
1898	May 6	Sept. 30
1899	May 13	Sept. 26
1900	May 5	Sept. 17
1901	May 25	Sept. 18
1902	April 27	Sept. 12
1903	May 3	Sept. 24
1904	May 15	Oct. 6
1905	May 26	Oct. 11
1906	May 9	Oct. 6
1907	May 27	Sept. 25
1908	May 3	Sept. 28
1909	May 10	Oct. 11
1910	May 13	Oct. 6
1911	May 3	Oct. 8
1912	May 14	Sept. 26
1913	April 25	Sept. 22
1914	April 20	Oct. 25
1915	May 17	Sept. 21
1916	May 18	Sept. 15
1917	May 23	Oct. 6
1918	May 13	Sept. 20
1919	May 2	Oct. 10
1920	May 13	Oct. 1
1921	May 15	Oct. 2
1922	April 29	Oct. 9
1923	May 9	Oct. 14
1924	---	Sept. 30
1925	May 25	Oct. 7
1926	May 14	Sept. 25
1927	April 30	Sept. 20
1928	May 12	Sept. 25
1929	May 19	Sept. 18
1930	April 26	Sept. 28
1931	May 22	Nov. 1
1932	April 27	Oct. 5
1933	April 27	Oct. 12
1934	April 27	Sept. 22
1935	May 3	Sept. 27
1936	April 23	Oct. 21
1937	April 11	Oct. 8
1938	May 8	Oct. 20
1939	April 21	Sept. 30
1940	May 3	Oct. 15
1941	April 24	Oct. 27
1942	April 19	Sept. 24
1943	May 8	Oct. 14
1944	May 6	Oct. 9
1945	June 4	Sept. 29
1946	May 12	---
1947	May 29	Sept. 22
1948	April 13	Oct. 10
1949	April 24	Sept. 1
1950	May 9	Aug. 20
1951	May 11	Sept. 25
1952	April 24	Oct. 4
Average	May 8	Oct. 1

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 27	Oct. 23
1894	March 31	---
1895	March 24	Sept. 30
1896	---	Oct. 7
1897	April 21	---
1898	April 7	Oct. 14
1899	April 16	Sept. 29
1900	April 13	---
1901	---	Sept. 18
1902	April 15	---
1903	---	---
1904	---	---
1905	---	---
1906	---	---
1907	---	---
1908	---	---
1909	---	---
1910	---	---
1911	May 2	Oct. 21
1912	April 19	Sept. 26
1913	April 27	Sept. 13
1914	April 20	Oct. 26
1915	April 12	Oct. 5
1916	April 8	Sept. 18
1917	May 5	Oct. 5
1918	April 21	Oct. 25
1919	April 26	Oct. 10
1920	April 15	Oct. 1
1921	April 18	Oct. 8
1922	April 29	Oct. 12
1923	May 9	Oct. 20
1924	May 1	Sept. 30
1925	May 25	Oct. 9
1926	May 2	Sept. 25
1927	May 12	Oct. 14
1928	April 27	Sept. 26
1929	May 5	Oct. 23
1930	April 25	Oct. 17
1931	May 7	Nov. 1
1932	April 28	Oct. 11
1933	April 27	Oct. 22
1934	April 27	Oct. 28
1935	May 4	Oct. 4
1936	April 22	Oct. 22
1937	April 11	Sept. 26
1938	April 22	Oct. 23
1939	April 18	Sept. 30
1940	May 2	Sept. 26
1941	March 29	Oct. 28
1942	April 11	Sept. 24
1943	April 20	Oct. 15
1944	May 5	Oct. 10
1945	April 18	Oct. 9
1946	May 11	Oct. 12
1947	May 29	Nov. 7
1948	April 14	Oct. 17
1949	April 19	Sept. 29
1950	May 1	Oct. 4
1951	April 23	Sept. 28
1952	April 16	Oct. 6
Average	April 24	Oct. 10

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Chariton
COUNTY - Lucas

Year of occurrence	Last occurrence in spring	First occurrence in fall
1896	April 5	Oct. 7
1897	April 19	Oct. 29
1898	April 7	Oct. 14
1899	April 16	Sept. 26
1900	May 3	Nov. 8
1901	April 20	Sept. 18
1902	April 23	Oct. 14
1903	May 3	Oct. 9
1904	April 21	Oct. 23
1905	April 18	Oct. 12
1906	May 9	Oct. 6
1907	May 11	Sept. 25
1908	May 2	Sept. 28
1909	May 10	Oct. 12
1910	May 13	Oct. 22
1911	May 2	Oct. 21
1912	April 19	Sept. 26
1913	April 28	Sept. 22
1914	April 20	Oct. 25
1915	May 18	Oct. 5
1916	May 18	Sept. 18
1917	May 14	Oct. 6
1918	May 1	Sept. 20
1919	April 26	Oct. 11
1920	April 28	Sept. 30
1921	May 3	Oct. 4
1922	April 30	Oct. 12
1923	May 9	Oct. 19
1924	April 22	Sept. 30
1925	May 25	Oct. 7
1926	April 28	Sept. 25
1927	April 24	Oct. 14
1928	April 28	Sept. 26
1929	May 5	Oct. 22
1930	April 25	Oct. 17
1931	May 21	Nov. 1
1932	April 27	Oct. 9
1933	April 27	Oct. 18
1934	April 27	Sept. 27
1935	May 4	Oct. 4
1936	April 22	Oct. 22
1937	April 25	Sept. 16
1938	April 22	Oct. 19
1939	April 19	Sept. 30
1940	May 1	Nov. 6
1941	April 21	Oct. 15
1942	April 21	Sept. 24
1943	May 1	Oct. 4
1944	May 6	Oct. 10
1945	May 18	Oct. 9
1946	May 12	Sept. 30
1947	May 29	Nov. 6
1948	April 21	Oct. 4
1949	April 24	Sept. 29
1950	May 1	Oct. 3
1951	April 23	Sept. 28
1952	April 25	---
Average	April 30	Oct. 9

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Charles City
COUNTY - Floyd

Year of occurrence	Last occurrence in spring	First occurrence in fall
1892	April 29	Oct. 8
1893	May 4	Sept. 25
1894	May 19	Sept. 18
1895	May 21	Sept. 30
1896	April 9	Sept. 20
1897	---	Sept. 20
1898	April 29	Oct. 6
1899	May 13	Sept. 26
1900	May 5	Oct. 8
1901	April 21	Oct. 3
1902	April 24	Sept. 12
1903	May 3	Sept. 18
1904	May 15	Oct. 6
1905	April 30	Oct. 11
1906	May 9	Oct. 9
1907	May 20	Sept. 25
1908	May 3	Sept. 28
1909	May 10	Oct. 11
1910	May 5	Oct. 6
1911	May 4	Oct. 21
1912	April 27	Sept. 26
1913	April 28	Sept. 22
1914	April 20	Oct. 25
1915	May 17	Oct. 5
1916	May 2	Sept. 17
1917	May 23	Oct. 5
1918	May 13	Sept. 21
1919	May 2	Oct. 10
1920	April 17	Oct. 1
1921	May 16	Oct. 4
1922	April 22	Oct. 12
1923	May 9	Oct. 19
1924	April 22	Sept. 30
1925	May 25	Oct. 7
1926	May 3	Sept. 25
1927	April 24	Oct. 13
1928	April 28	Sept. 25
1929	May 19	Sept. 18
1930	May 17	Sept. 28
1931	May 7	Nov. 1
1932	April 27	Oct. 6
1933	April 27	Oct. 12
1934	April 27	Oct. 27
1935	May 4	Oct. 3
1936	April 26	Oct. 2
1937	April 11	Sept. 16
1938	April 22	Oct. 23
1939	April 19	Sept. 30
1940	May 3	Nov. 6
1941	April 24	Oct. 27
1942	April 19	Sept. 24
1943	May 1	Oct. 16
1944	May 6	Oct. 16
1945	May 9	Sept. 29
1946	May 11	Oct. 11
1947	May 9	Sept. 26
1948	April 14	Oct. 10
1949	April 24	Sept. 29
1950	May 1	Oct. 4
1951	April 26	Sept. 28
1952	April 16	Oct. 3
Average	May 2	Oct. 4

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Clarinda
COUNTY - PageSTATION - Clinton
COUNTY - Clinton

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 2	Oct. 15
1894	April 11	Oct. 31
1895	April 3	Sept. 30
1896	April 6	Oct. 18
1897	April 19	Nov. 2
1898	April 7	Oct. 6
1899	April 16	Sept. 26
1900	April 13	Oct. 17
1901	April 21	Sept. 18
1902	April 23	Oct. 13
1903	May 3	Oct. 9
1904	April 27	Oct. 22
1905	April 22	Oct. 11
1906	May 9	Oct. 10
1907	May 16	Oct. 8
1908	May 3	Sept. 28
1909	May 10	Oct. 12
1910	April 26	Oct. 22
1911	May 2	Oct. 20
1912	May 17	Sept. 26
1913	April 28	Sept. 22
1914	April 20	Oct. 27
1915	May 9	Oct. 5
1916	April 11	Sept. 29
1917	May 7	Oct. 9
1918	May 1	Sept. 20
1919	April 25	Oct. 11
1920	April 28	Sept. 30
1921	May 4	Oct. 8
1922	April 20	Oct. 9
1923	May 9	Oct. 14
1924	May 11	Sept. 29
1925	May 25	Oct. 7
1926	April 28	Sept. 25
1927	April 24	Oct. 31
1928	April 28	Sept. 26
1929	May 16	Oct. 21
1930	April 22	Oct. 17
1931	May 7	Nov. 1
1932	April 27	Oct. 6
1933	April 15	Oct. 22
1934	April 27	Sept. 27
1935	May 4	Oct. 4
1936	April 22	Oct. 22
1937	May 14	Oct. 14
1938	April 22	Oct. 20
1939	April 19	Sept. 30
1940	May 1	Sept. 26
1941	March 29	Oct. 28
1942	May 4	Sept. 24
1943	April 21	Oct. 15
1944	May 6	Oct. 10
1945	May 5	Oct. 9
1946	May 12	Sept. 30
1947	May 29	Oct. 19
1948	April 14	Oct. 10
1949	April 19	Sept. 29
1950	May 1	Oct. 3
1951	April 23	Sept. 28
1952	April 25	Oct. 6

Average

April 28

Oct. 10

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 6	Sept. 26
1894	April 12	Oct. 13
1895	May 14	Sept. 30
1896	April 10	Sept. 20
1897	April 20	Oct. 29
1898	April 21	Oct. 14
1899	April 19	Sept. 27
1900	May 5	Oct. 17
1901	May 26	Oct. 3
1902	April 24	Sept. 13
1903	May 1	Sept. 18
1904	April 21	Oct. 14
1905	April 22	Oct. 12
1906	May 9	Oct. 10
1907	May 16	Oct. 13
1908	May 3	Sept. 29
1909	May 3	Sept. 30
1910	May 5	Oct. 22
1911	May 4	Oct. 22
1912	---	Sept. 26
1913	April 29	Sept. 22
1914	April 20	Oct. 25
1915	April 13	Oct. 8
1916	May 2	Sept. 29
1917	May 23	Oct. 6
1918	May 1	Oct. 24
1919	April 25	Oct. 17
1920	May 15	Sept. 30
1921	May 16	Oct. 4
1922	April 20	Oct. 17
1923	April 17	Oct. 20
1924	April 12	Oct. 22
1925	May 25	Oct. 10
1926	April 26	Sept. 26
1927	April 24	Oct. 14
1928	May 12	Sept. 24
1929	May 5	Sept. 18
1930	April 26	Sept. 28
1931	April 30	Oct. 18
1932	May 2	Oct. 6
1933	April 27	Oct. 13
1934	April 27	Oct. 28
1935	May 4	Oct. 4
1936	April 23	Oct. 2
1937	April 11	Oct. 8
1938	April 22	Oct. 24
1939	April 22	Oct. 1
1940	April 21	Oct. 16
1941	April 2	Oct. 28
1942	April 19	Sept. 25
1943	April 15	Oct. 15
1944	April 17	Oct. 12
1945	May 9	Oct. 9
1946	April 27	Nov. 12
1947	April 21	Nov. 6
1948	April 17	Oct. 17
1949	April 19	Sept. 29
1950	May 1	Oct. 4
1951	April 23	Oct. 31
1952	April 16	Oct. 3

Average

April 28

Oct. 9

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Columbus Junction
COUNTY - LouisaSTATION - Corning
COUNTY - Adams

Year of occurrence	Last occurrence in spring	First occurrence in fall
1900	---	Nov. 8
1901	April 20	Oct. 4
1902	April 24	Oct. 14
1903	May 1	Oct. 18
1904	April 25	Oct. 23
1905	April 18	Oct. 12
1906	May 7	Oct. 10
1907	May 11	Oct. 12
1908	May 2	Sept. 29
1909	May 3	Oct. 12
1910	April 25	Oct. 22
1911	May 2	Oct. 22
1912	April 19	Sept. 28
1913	April 28	Sept. 22
1914	April 20	Oct. 26
1915	April 3	Oct. 9
1916	April 9	Sept. 29
1917	May 4	Oct. 8
1918	May 1	Oct. 25
1919	April 25	Oct. 11
1920	April 16	Oct. 28
1921	April 18	Oct. 8
1922	April 20	Oct. 17
1923	April 17	Oct. 20
1924	April 12	Sept. 30
1925	May 25	Oct. 10
1926	April 26	Sept. 26
1927	April 24	Oct. 14
1928	April 28	Sept. 26
1929	May 5	Oct. 23
1930	April 25	Oct. 17
1931	May 7	Nov. 2
1932	May 2	Oct. 6
1933	April 27	Oct. 13
1934	April 25	Oct. 28
1935	May 4	Oct. 4
1936	April 22	Oct. 22
1937	April 9	Oct. 8
1938	April 10	Oct. 24
1939	April 22	Sept. 30
1940	May 1	Sept. 26
1941	April 22	Oct. 28
1942	May 16	Sept. 24
1943	April 21	Oct. 15
1944	May 6	Oct. 12
1945	May 9	Oct. 9
1946	April 27	Oct. 1
1947	May 9	Nov. 6
1948	April 9	Oct. 17
1949	April 19	Sept. 29
1950	May 1	Oct. 4
1951	April 23	Sept. 28
1952	April 16	Oct. 3
Average	April 26	Oct. 12

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 2	Sept. 25
1894	May 19	Oct. 8
1895	May 12	Sept. 30
1896	April 6	Sept. 28
1897	April 20	Oct. 29
1898	April 15	Oct. 14
1899	April 16	Sept. 26
1900	May 3	Oct. 8
1901	April 22	Sept. 18
1902	April 23	Sept. 12
1903	May 3	Oct. 9
1904	April 27	Oct. 23
1905	April 21	Oct. 12
1906	May 9	Oct. 1
1907	May 27	Sept. 25
1908	May 2	Sept. 28
1909	May 10	Oct. 12
1910	May 13	Oct. 22
1911	May 2	Oct. 21
1912	April 20	Sept. 26
1913	April 28	Sept. 22
1914	May 13	Oct. 25
1915	May 17	Oct. 6
1916	May 18	Sept. 15
1917	May 25	Sept. 27
1918	May 1	Sept. 20
1919	April 26	Oct. 11
1920	April 28	Sept. 30
1921	May 4	Oct. 4
1922	April 20	Oct. 9
1923	May 9	Oct. 19
1924	May 24	Sept. 28
1925	May 25	Oct. 7
1926	April 28	Sept. 25
1927	April 24	Oct. 31
1928	May 12	Sept. 25
1929	May 16	Oct. 13
1930	April 24	Oct. 17
1931	May 7	Nov. 1
1932	April 27	Oct. 6
1933	April 15	Oct. 8
1934	April 27	Oct. 28
1935	May 4	Sept. 28
1936	April 22	Oct. 22
1937	April 25	Sept. 26
1938	April 22	Oct. 19
1939	April 19	Sept. 30
1940	May 1	Nov. 6
1941	April 24	Oct. 27
1942	May 4	Sept. 24
1943	April 20	Oct. 15
1944	May 6	Oct. 10
1945	May 9	Oct. 9
1946	May 12	Oct. 12
1947	May 29	Nov. 7
1948	April 14	Oct. 10
1949	---	Sept. 29
1950	May 1	Oct. 3
1951	April 23	Sept. 28
1952	April 16	Oct. 6
Average	May 2	Oct. 8

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Creston
COUNTY - UnionSTATION - Decorah
COUNTY - Winneshiek

Year of occurrence	Last occurrence in spring	First occurrence in fall
1905	April 19	Oct. 12
1906	May 9	Oct. 6
1907	May 27	Sept. 25
1908	May 3	Sept. 28
1909	May 10	Oct. 12
1910	May 13	Oct. 22
1911	May 2	Oct. 20
1912	April 18	Sept. 26
1913	April 28	Sept. 22
1914	April 20	Oct. 25
1915	May 17	Oct. 5
1916	May 18	Sept. 29
1917	May 8	Oct. 6
1918	May 1	Sept. 20
1919	April 26	Oct. 11
1920	April 28	Sept. 30
1921	May 3	Oct. 8
1922	April 19	Oct. 12
1923	May 9	Oct. 19
1924	April 22	Sept. 29
1925	May 25	Oct. 7
1926	April 28	Sept. 25
1927	April 24	Oct. 14
1928	April 28	Sept. 25
1929	May 16	Oct. 23
1930	April 22	Oct. 17
1931	May 21	Nov. 4
1932	April 27	Oct. 6
1933	April 27	Oct. 18
1934	April 27	Sept. 27
1935	May 4	Oct. 4
1936	April 22	Oct. 22
1937	April 26	Sept. 26
1938	April 22	Oct. 19
1939	April 19	Sept. 30
1940	May 2	Nov. 6
1941	March 29	Oct. 27
1942	May 4	Sept. 24
1943	April 20	Oct. 15
1944	May 6	Oct. 10
1945	May 10	Sept. 29
1946	May 12	Oct. 12
1947	May 29	Nov. 7
1948	April 14	Oct. 17
1949	April 19	Sept. 29
1950	May 1	Oct. 3
1951	April 23	Sept. 28
1952	May 11	Oct. 6
Average	May 1	Oct. 9

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	---	Sept. 23
1894	---	Sept. 18
1895	May 22	Sept. 30
1896	April 22	Sept. 20
1897	June 8	Sept. 20
1898	April 24	Sept. 11
1899	April 22	Sept. 26
1900	May 5	Oct. 8
1901	June 8	Oct. 4
1902	April 24	Sept. 12
1903	May 3	Sept. 18
1904	May 15	Oct. 6
1905	April 22	Oct. 11
1906	May 28	Oct. 10
1907	May 21	Sept. 25
1908	May 9	Sept. 29
1909	May 10	Sept. 27
1910	May 14	Oct. 22
1911	May 5	Oct. 8
1912	May 17	Sept. 26
1913	April 29	Oct. 18
1914	May 16	Oct. 25
1915	May 19	Aug. 30
1916	May 2	Sept. 16
1917	May 24	Sept. 11
1918	May 13	Sept. 21
1919	May 2	Oct. 11
1920	May 14	Sept. 30
1921	---	Oct. 4
1922	April 29	Oct. 9
1923	May 17	Sept. 14
1924	May 30	Sept. 30
1925	May 26	Oct. 5
1926	June 3	Sept. 13
1927	April 24	Sept. 23
1928	June 10	Sept. 23
1929	May 21	Sept. 18
1930	May 24	Sept. 28
1931	May 23	Oct. 12
1932	May 2	Sept. 24
1933	April 27	Oct. 2
1934	May 25	Oct. 1
1935	May 4	Sept. 27
1936	April 26	Oct. 2
1937	April 22	Sept. 16
1938	April 22	Oct. 23
1939	May 13	Sept. 30
1940	May 11	Sept. 25
1941	May 24	Sept. 26
1942	May 23	Sept. 20
1943	May 17	Sept. 11
1944	May 9	Oct. 9
1945	June 5	Sept. 29
1946	June 4	Sept. 2
1947	May 30	Sept. 22
1948	May 26	Sept. 27
1949	April 28	Sept. 1
1950	May 11	Aug. 20
1951	May 11	Sept. 25
1952	May 29	Oct. 3
Average	May 13	Sept. 26

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Davenport
COUNTY - Scott

Year of occurrence	Last occurrence in spring	First occurrence in fall
1874	April 28	Oct. 12
1875	May 2	Oct. 16
1876	April 2	Oct. 11
1877	April 30	Nov. 3
1878	March 28	Oct. 27
1879	April 17	Oct. 24
1880	April 11	Oct. 17
1881	April 14	Nov. 10
1882	April 12	Nov. 12
1883	April 29	Oct. 21
1884	April 22	Oct. 23
1885	May 9	Oct. 6
1886	April 17	Oct. 1
1887	April 26	Oct. 21
1888	May 13	Oct. 3
1889	April 6	Oct. 6
1890	April 10	Oct. 27
1891	April 8	Oct. 20
1892	April 15	Oct. 23
1893	April 23	Oct. 25
1894	April 8	Nov. 5
1895	April 2	Oct. 9
1896	April 8	Oct. 18
1897	April 20	Oct. 29
1898	April 7	Oct. 23
1899	April 9	Sept. 30
1900	April 12	Nov. 7
1901	April 21	Oct. 4
1902	April 15	Nov. 7
1903	April 30	Oct. 26
1904	April 21	Oct. 23
1905	April 18	Oct. 12
1906	April 1	Oct. 10
1907	May 4	Oct. 13
1908	May 2	Sept. 29
1909	May 2	Oct. 12
1910	April 25	Oct. 27
1911	April 8	Oct. 26
1912	April 18	Oct. 23
1913	April 27	Oct. 20
1914	April 20	Oct. 26
1915	April 3	Oct. 9
1916	April 9	Oct. 21
1917	April 15	Oct. 8
1918	April 25	Nov. 1
1919	April 25	Oct. 28
1920	April 13	Oct. 28
1921	April 17	Oct. 8
1922	March 31	Oct. 17
1923	April 14	Oct. 20
1924	April 11	Oct. 23
1925	April 6	Oct. 10
1926	April 19	Oct. 24
1927	April 23	Nov. 5
1928	April 20	Oct. 29
1929	April 1	Oct. 23
1930	April 2	Oct. 17
1931	April 6	Nov. 6
1932	April 13	Oct. 30
1933	April 11	Oct. 25
1934	April 25	Oct. 28
1935	April 16	Oct. 4
1936	April 22	Oct. 23
1937	April 3	Oct. 14
1938	April 9	Nov. 7

1939	April 13	Oct. 14
1940	April 13	Nov. 6
1941	March 29	Oct. 27
1942	April 11	Sept. 28
1943	April 15	Oct. 16
1944	April 17	Nov. 4
1945	April 5	Oct. 9
1946	March 11	Nov. 13
1947	April 16	Nov. 8
1948	April 9	Oct. 17
1949	April 19	Oct. 26
1950	April 28	Nov. 4
1951	April 17	Oct. 31
1952	April 11	Oct. 6
Average	April 15	Oct. 21

STATION - Bonaparte
COUNTY - Van Buren

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 23	Sept. 26
1894	April 12	Oct. 9
1895	May 14	Sept. 30
1896	April 5	Sept. 20
1897	May 2	Oct. 29
1898	April 7	Oct. 14
1899	April 16	Sept. 29
1900	April 13	Oct. 8
1901	April 21	Oct. 4
1902	April 15	Oct. 14
1903	May 3	Oct. 18
1904	April 21	Oct. 23
1905	April 22	Oct. 12
1906	May 9	Oct. 10
1907	May 11	Oct. 12
1908	May 2	Sept. 28
1909	May 3	Oct. 12
1910	April 25	Oct. 22
1911	May 2	Oct. 15
1912	April 19	Sept. 26
1913	April 27	Sept. 22
1914	April 20	Oct. 25
1915	May 9	Oct. 8
1916	April 9	Sept. 18
1917	May 5	Oct. 6
1918	April 21	Sept. 21
1919	April 26	Oct. 11
1920	April 17	Oct. 1
1921	April 18	Oct. 8
1922	April 20	Oct. 12
1923	April 17	Oct. 14
1924	April 22	Sept. 30
1925	May 25	Oct. 10
1926	April 26	Sept. 26
1927	April 24	Oct. 14
1928	April 28	Sept. 26
1929	April 2	Oct. 23
1930	April 25	Oct. 17
1931	May 7	Nov. 1
1932	April 27	Oct. 6
1933	April 27	Oct. 13
1934	April 27	Oct. 28
1935	May 4	Oct. 4
1936	April 22	Oct. 22
1937	April 11	Oct. 8
1938	April 22	Oct. 23
Average	April 24	Oct. 9

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Delaware
COUNTY - DelawareSTATION - Denison
COUNTY - Crawford

Year of occurrence	Last occurrence in spring	First occurrence in fall
1899	April 19	Sept. 30
1900	May 5	Oct. 8
1901	April 22	Sept. 18
1902	April 24	Sept. 12
1903	May 4	Oct. 9
1904	May 15	Oct. 23
1905	April 30	Oct. 12
1906	May 10	Oct. 6
1907	May 27	Sept. 25
1908	May 3	Sept. 29
1909	May 10	Oct. 12
1910	May 5	Oct. 22
1911	May 3	Oct. 21
1912	April 27	Sept. 26
1913	May 11	Sept. 22
1914	April 20	Oct. 27
1915	May 17	Oct. 8
1916	May 18	Sept. 17
1917	May 23	Oct. 6
1918	May 13	Oct. 25
1919	April 26	Oct. 11
1920	April 18	Oct. 1
1921	May 16	Oct. 8
1922	---	---
1923	---	---
1924	---	---
1925	---	---
1926	---	---
1927	---	---
1928	---	---
1929	---	---
1930	---	---
1931	May 21	Nov. 2
1932	April 27	Oct. 5
1933	May 4	Oct. 12
1934	April 27	Sept. 27
1935	May 4	Oct. 4
1936	April 23	Oct. 2
1937	April 25	Oct. 7
1938	April 22	Oct. 23
1939	April 22	Sept. 30
1940	May 3	Oct. 15
1941	April 24	Oct. 27
1942	May 16	Sept. 24
1943	May 1	Oct. 16
1944	May 6	Oct. 9
1945	May 10	Sept. 29
1946	May 11	Sept. 29
1947	May 29	Sept. 30
1948	April 17	Oct. 3
1949	April 24	Sept. 14
1950	May 1	Oct. 3
1951	April 23	Sept. 28
1952	April 16	Oct. 3
Average	May 4	Oct. 6

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 3	---
1894	---	---
1895	May 21	Sept. 30
1896	---	Oct. 7
1897	April 18	Oct. 12
1898	May 5	Oct. 6
1899	April 22	Sept. 18
1900	May 3	Sept. 17
1901	May 26	Sept. 17
1902	April 23	Sept. 12
1903	June 4	Sept. 27
1904	April 28	Oct. 6
1905	May 26	Oct. 11
1906	May 28	Sept. 30
1907	May 27	Sept. 25
1908	May 9	Sept. 28
1909	May 10	Oct. 11
1910	May 13	Oct. 6
1911	May 2	Oct. 21
1912	May 17	Sept. 26
1913	April 28	Sept. 22
1914	May 13	Oct. 16
1915	May 18	Sept. 21
1916	May 18	Sept. 15
1917	May 24	---
1918	May 13	Sept. 20
1919	April 26	Oct. 10
1920	April 28	Sept. 30
1921	May 14	Oct. 4
1922	April 19	Oct. 9
1923	May 9	Oct. 20
1924	May 24	Sept. 28
1925	May 25	Oct. 7
1926	May 14	Sept. 25
1927	May 5	Oct. 31
1928	April 27	Sept. 25
1929	May 16	Sept. 18
1930	April 24	Oct. 17
1931	May 22	Oct. 17
1932	April 27	Oct. 10
1933	April 27	Oct. 8
1934	April 27	Sept. 27
1935	May 5	Sept. 27
1936	April 22	Oct. 21
1937	May 14	Sept. 16
1938	May 8	Oct. 20
1939	April 19	Sept. 30
1940	May 1	Sept. 26
1941	April 24	Sept. 29
1942	May 4	Sept. 24
1943	May 8	Sept. 20
1944	May 6	Oct. 9
1945	May 10	Sept. 29
1946	May 12	Sept. 29
1947	May 29	Sept. 25
1948	April 13	Oct. 14
1949	April 24	Sept. 29
1950	May 1	Sept. 24
1951	April 26	Sept. 28
1952	April 16	Oct. 5
Average	May 8	Oct. 2

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Des Moines (city)
COUNTY - Polk

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1878	---	Oct. 18	1940	April 13	Nov. 6
1879	April 18	Oct. 24	1941	March 29	Oct. 27
1880	April 19	Oct. 16	1942	April 11	Sept. 28
1881	April 15	Oct. 20	1943	April 19	Oct. 16
1882	April 30	Nov. 11	1944	May 6	Oct. 22
1883	April 2	Oct. 20	1945	April 5	Oct. 9
1884	April 10	Oct. 23	1946	May 11	Nov. 11
1885	May 9	Oct. 4	1947	April 16	Nov. 8
1886	April 7	Oct. 1	1948	April 9	Oct. 17
1887	April 25	Oct. 12	1949	April 19	Oct. 24
1888	April 20	Sept. 29	1950	May 1	Oct. 4
1889	April 6	Sept. 27	1951	April 23	Oct. 24
1890	May 7	Oct. 19	1952	April 15	Oct. 5
1891	April 7	Oct. 9			
1892	April 29	Oct. 23			
1893	April 23	Oct. 15	Average	April 18	Oct. 16
1894	April 11	Oct. 14			
1895	April 3	Sept. 30			
1896	April 8	Sept. 28			
1897	April 20	Oct. 29			
1898	April 7	Oct. 14			
1899	April 16	Sept. 29			
1900	April 12	Nov. 7			
1901	April 20	Oct. 4			
1902	April 23	Oct. 14			
1903	May 3	Oct. 18			
1904	April 21	Oct. 23			
1905	April 8	Oct. 12			
1906	April 1	Oct. 10			
1907	May 4	Oct. 12			
1908	May 2	Sept. 29			
1909	May 3	Oct. 11			
1910	April 24	Oct. 22			
1911	April 9	Oct. 22			
1912	April 3	Oct. 23			
1913	April 7	Sept. 22			
1914	April 20	Oct. 25			
1915	April 3	Oct. 9			
1916	April 9	Sept. 29			
1917	April 15	Oct. 8			
1918	April 20	Oct. 31			
1919	April 24	Oct. 17			
1920	April 13	Oct. 1			
1921	April 17	Oct. 8			
1922	April 19	Oct. 12			
1923	May 9	Oct. 21			
1924	April 22	Nov. 7			
1925	March 28	Oct. 10			
1926	April 19	Sept. 26			
1927	April 24	Oct. 14			
1928	April 25	Oct. 28			
1929	April 2	Oct. 23			
1930	April 24	Oct. 17			
1931	May 7	Nov. 4			
1932	April 14	Oct. 10			
1933	April 27	Oct. 24			
1934	April 25	Oct. 28			
1935	May 4	Oct. 4			
1936	April 22	Oct. 21			
1937	April 11	Oct. 13			
1938	April 9	Oct. 23			
1939	April 17	Oct. 13			

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Dubuque
 COUNTY - Dubuque

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1874	April 17	Oct. 13	1942	April 11	Sept. 25
1875	May 2	Oct. 12	1943	April 17	Oct. 17
1876	May 1	Oct. 7	1944	April 19	Oct. 12
1877	May 1	Oct. 30	1945	May 9	Oct. 15
1878	March 28	Oct. 22	1946	April 27	Nov. 6
1879	April 5	Oct. 24	1947	April 16	Nov. 7
1880	April 15	Oct. 17	1948	April 9	Oct. 17
1881	April 1	Nov. 3	1949	April 19	Oct. 26
1882	May 2	Oct. 19	1950	April 27	Nov. 4
1883	May 21	Oct. 1	1951	April 23	Oct. 8
1884	April 21	Oct. 23	1952	April 15	Oct. 3
1885	May 7	Oct. 6			
1886	April 8	Oct. 1	Average	April 20	Oct. 16
1887	April 26	Oct. 12			
1888	May 13	Sept. 28			
1889	April 6	Sept. 27			
1890	May 6	Sept. 28			
1891	April 12	Oct. 16			
1892	April 15	Oct. 23			
1893	April 23	Sept. 27			
1894	April 8	Oct. 7			
1895	May 14	Oct. 9			
1896	April 8	Oct. 18			
1897	April 20	Oct. 17			
1898	April 7	Oct. 15			
1899	April 16	Sept. 29			
1900	April 12	Nov. 7			
1901	April 21	Oct. 4			
1902	April 15	Oct. 14			
1903	April 30	Oct. 24			
1904	April 21	Oct. 27			
1905	April 16	Oct. 21			
1906	April 2	Oct. 9			
1907	May 4	Oct. 13			
1908	May 3	Sept. 29			
1909	May 3	Oct. 12			
1910	April 25	Oct. 28			
1911	May 2	Oct. 24			
1912	April 19	Oct. 23			
1913	April 6	Oct. 20			
1914	April 20	Oct. 26			
1915	April 3	Oct. 8			
1916	April 9	Oct. 10			
1917	April 15	Oct. 6			
1918	April 25	Oct. 25			
1919	April 25	Oct. 17			
1920	April 14	Oct. 28			
1921	April 18	Nov. 2			
1922	April 20	Oct. 18			
1923	May 8	Oct. 20			
1924	April 12	Oct. 22			
1925	April 6	Oct. 9			
1926	April 26	Sept. 26			
1927	April 23	Oct. 14			
1928	April 20	Oct. 26			
1929	April 1	Oct. 23			
1930	April 24	Oct. 17			
1931	April 24	Nov. 6			
1932	April 14	Oct. 6			
1933	April 15	Oct. 13			
1934	April 25	Oct. 28			
1935	May 4	Oct. 4			
1936	April 22	Oct. 2			
1937	April 11	Oct. 13			
1938	April 9	Oct. 24			
1939	April 13	Oct. 14			
1940	April 17	Nov. 6			
1941	April 2	Oct. 27			

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Elkader
COUNTY - ClaytonSTATION - Estherville
COUNTY - Emmet

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 6	August 29
1894	May 20	Sept. 18
1895	May 27	Sept. 30
1896	April 22	Sept. 20
1897	June 1	Sept. 20
1898	April 26	Sept. 11
1899	April 19	Sept. 26
1900	May 5	Oct. 8
1901	April 21	Oct. 4
1902	April 24	Sept. 12
1903	May 3	Sept. 18
1904	May 15	Sept. 15
1905	April 22	Oct. 12
1906	May 28	Oct. 1
1907	May 27	Sept. 25
1908	May 9	Sept. 29
1909	May 11	Sept. 26
1910	May 13	Oct. 23
1911	May 5	Oct. 8
1912	May 14	Sept. 26
1913	May 11	Sept. 22
1914	May 17	Oct. 25
1915	May 17	August 30
1916	May 18	Sept. 16
1917	May 24	Sept. 11
1918	May 13	Sept. 21
1919	May 2	Oct. 11
1920	---	Sept. 30
1921	---	---
1922	---	---
1923	---	---
1924	---	---
1925	---	---
1926	---	---
1927	---	---
1928	---	---
1929	---	---
1930	---	---
1931	---	---
1932	---	---
1933	---	---
1934	---	---
1935	May 4	Sept. 27
1936	April 26	Oct. 2
1937	April 22	Sept. 20
1938	May 12	Oct. 21
1939	April 22	Sept. 30
1940	May 4	Sept. 26
1941	April 24	Sept. 29
1942	May 16	Sept. 24
1943	May 14	Sept. 26
1944	May 6	Oct. 9
1945	June 4	Sept. 29
1946	May 13	Sept. 2
1947	May 30	Sept. 26
1948	April 21	Sept. 27
1949	April 24	Sept. 24
1950	May 2	Sept. 24
1951	May 11	Sept. 28
1952	May 29	Sept. 21

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 7	---
1894	---	---
1895	May 21	Sept. 30
1896	April 21	Sept. 19
1897	May 31	Sept. 17
1898	May 6	Sept. 30
1899	May 13	Sept. 18
1900	May 4	Sept. 17
1901	May 25	Sept. 20
1902	April 26	Sept. 13
1903	May 3	Sept. 24
1904	May 15	Sept. 21
1905	May 26	---
1906	May 8	Sept. 30
1907	May 27	Sept. 25
1908	May 3	Sept. 28
1909	May 10	Oct. 12
1910	May 26	Oct. 6
1911	May 3	Oct. 8
1912	April 28	Sept. 26
1913	April 28	Sept. 22
1914	May 12	Oct. 14
1915	May 18	Oct. 5
1916	May 3	Sept. 15
1917	May 22	Oct. 6
1918	May 14	Sept. 20
1919	May 2	Oct. 10
1920	May 14	Sept. 30
1921	May 16	Oct. 3
1922	April 28	Oct. 10
1923	May 12	Sept. 14
1924	May 24	Sept. 9
1925	May 25	Oct. 6
1926	May 3	Sept. 25
1927	April 24	Sept. 27
1928	May 12	Sept. 25
1929	May 19	Sept. 18
1930	May 18	Sept. 28
1931	May 22	Oct. 17
1932	April 27	Sept. 29
1933	May 3	Oct. 10
1934	May 15	Sept. 21
1935	May 5	Sept. 27
1936	April 29	Oct. 7
1937	May 14	Oct. 10
1938	May 12	Oct. 22
1939	April 21	Sept. 26
1940	May 3	Sept. 26
1941	April 24	Sept. 28
1942	May 15	Sept. 24
1943	May 13	Sept. 17
1944	May 6	Oct. 9
1945	June 3	Sept. 29
1946	May 12	Oct. 12
1947	May 28	Sept. 22
1948	April 13	Oct. 10
1949	April 24	Sept. 29
1950	May 7	Sept. 24
1951	April 24	Sept. 28
1952	April 24	Sept. 23

Average

May 9

Sept. 26

Average

May 10

Sept. 29

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Fairfield
COUNTY - JeffersonSTATION - Fayette
COUNTY - Fayette

Year of occurrence	Last occurrence in spring	First occurrence in fall
1894	---	Oct. 9
1895	May 14	Sept. 30
1896	April 8	Sept. 20
1897	May 31	Sept. 20
1898	April 11	Oct. 14
1899	April 16	Sept. 29
1900	April 13	---
1901	---	---
1902	April 17	Sept. 13
1903	---	---
1904	---	---
1905	---	---
1906	---	---
1907	---	---
1908	May 8	Sept. 28
1909	May 3	Oct. 12
1910	April 25	Oct. 23
1911	April 7	Oct. 22
1912	April 17	Sept. 26
1913	April 27	Sept. 22
1914	May 1	Oct. 25
1915	May 9	Oct. 5
1916	May 2	Sept. 29
1917	May 7	Sept. 11
1918	April 19	---
1919	April 26	Oct. 11
1920	May 15	Oct. 28
1921	April 18	Oct. 4
1922	April 30	Oct. 12
1923	May 13	Sept. 14
1924	April 22	Sept. 30
1925	May 25	Oct. 10
1926	April 26	Sept. 26
1927	April 24	Sept. 22
1928	May 12	Sept. 24
1929	May 5	Sept. 18
1930	April 25	Oct. 17
1931	May 7	Nov. 2
1932	May 2	Sept. 30
1933	April 27	Oct. 13
1934	April 28	Oct. 28
1935	May 4	Oct. 4
1936	April 22	Oct. 22
1937	April 11	Sept. 26
1938	April 22	Oct. 24
1939	April 22	Oct. 14
1940	May 1	Sept. 26
1941	March 29	Oct. 28
1942	April 20	Sept. 24
1943	April 21	Oct. 15
1944	May 6	Oct. 12
1945	May 14	Oct. 9
1946	April 27	Nov. 5
1947	May 9	Nov. 6
1948	May 3	Oct. 17
1949	April 19	Sept. 28
1950	April 29	Oct. 5
1951	April 23	Sept. 28
1952	April 15	Oct. 3
Average	April 28	Oct. 7

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 7	---
1894	May 28	Sept. 11
1895	May 21	Sept. 30
1896	April 22	Sept. 20
1897	May 31	Sept. 20
1898	May 12	Sept. 11
1899	April 22	Sept. 26
1900	May 5	Sept. 17
1901	June 8	Sept. 18
1902	May 10	Sept. 12
1903	June 12	---
1904	May 15	Sept. 12
1905	May 26	Oct. 11
1906	May 28	---
1907	May 27	Sept. 25
1908	May 9	---
1909	May 11	Sept. 27
1910	May 14	Oct. 6
1911	May 5	Oct. 8
1912	May 14	Sept. 26
1913	May 10	Sept. 22
1914	May 15	Oct. 27
1915	April 13	Oct. 8
1916	May 2	Sept. 17
1917	May 23	Sept. 11
1918	May 13	Sept. 21
1919	May 2	Oct. 11
1920	May 14	Sept. 30
1921	May 16	Oct. 4
1922	April 30	Oct. 9
1923	May 17	Sept. 14
1924	May 20	Sept. 30
1925	May 26	Oct. 7
1926	May 3	Sept. 25
1927	April 24	Oct. 14
1928	May 12	Sept. 24
1929	May 19	Sept. 18
1930	May 17	Sept. 28
1931	May 23	Oct. 17
1932	May 2	Sept. 29
1933	April 27	Sept. 27
1934	May 25	Oct. 27
1935	May 4	Sept. 28
1936	April 26	Oct. 2
1937	April 22	Sept. 16
1938	May 12	Oct. 21
1939	May 12	Sept. 30
1940	May 4	Sept. 26
1941	April 25	Sept. 29
1942	May 16	Sept. 24
1943	May 14	Sept. 20
1944	May 6	Oct. 9
1945	June 4	Sept. 29
1946	May 11	Sept. 29
1947	May 29	Sept. 26
1948	May 7	Oct. 2
1949	April 24	Sept. 1
1950	May 2	Sept. 24
1951	April 26	Sept. 28
1952	May 29	Oct. 3
Average	May 12	Sept. 28

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Glenwood
COUNTY - Mills

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 23	Oct. 15
1894	May 19	Oct. 8
1895	May 21	Sept. 30
1896	April 6	Sept. 28
1897	May 14	Oct. 29
1898	April 20	Oct. 6
1899	April 16	Sept. 26
1900	May 3	Oct. 8
1901	April 18	Sept. 18
1902	April 23	---
1903	---	Oct. 16
1904	April 19	Oct. 23
1905	May 28	Oct. 22
1906	May 6	---
1907	---	---
1908	---	Sept. 28
1909	May 10	Oct. 12
1910	April 24	Oct. 6
1911	May 2	Oct. 20
1912	April 15	Sept. 26
1913	April 13	Sept. 22
1914	April 20	Oct. 25
1915	May 17	Oct. 5
1916	April 21	Sept. 29
1917	May 7	Oct. 8
1918	April 25	Sept. 20
1919	April 24	Oct. 10
1920	April 28	Sept. 30
1921	May 4	Oct. 4
1922	April 19	Oct. 9
1923	April 17	Oct. 20
1924	April 22	Sept. 30
1925	May 25	Oct. 7
1926	April 28	Sept. 25
1927	April 22	Oct. 31
1928	April 28	Sept. 25
1929	May 2	Oct. 21
1930	April 23	Oct. 17
1931	May 22	Oct. 17
1932	April 27	Oct. 10
1933	April 16	Oct. 18
1934	April 27	Oct. 28
1935	May 5	Oct. 4
1936	April 22	Oct. 22
1937	April 25	Sept. 26
1938	April 22	Oct. 22
1939	April 19	Sept. 30
1940	April 24	Oct. 15
1941	March 29	Oct. 27
1942	May 4	Sept. 24
1943	April 20	Sept. 20
1944	May 6	---
1945	May 5	Oct. 9
1946	May 12	Sept. 29
1947	May 29	Oct. 29
1948	April 13	Oct. 12
1949	April 19	Sept. 29
1950	May 1	Oct. 3
1951	April 23	Sept. 28
1952	May 13	Oct. 6

Average

April 28

Oct. 9

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Grundy Center
COUNTY - Grundy

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 23	Sept. 25
1894	May 19	Oct. 7
1895	May 14	Sept. 30
1896	April 9	Sept. 20
1897	May 31	Sept. 30
1898	May 6	Oct. 6
1899	April 22	Sept. 26
1900	May 5	Oct. 8
1901	April 22	Sept. 18
1902	April 24	Sept. 12
1903	May 3	Oct. 9
1904	April 11	Oct. 6
1905	April 30	Oct. 13
1906	May 7	Oct. 1
1907	May 20	Sept. 25
1908	May 3	Sept. 28
1909	May 10	Sept. 30
1910	May 4	Oct. 22
1911	May 3	Oct. 20
1912	April 27	Sept. 26
1913	April 28	Sept. 22
1914	April 20	Oct. 25
1915	April 13	---
1916	May 2	Sept. 29
1917	May 6	Oct. 6
1918	May 1	Sept. 21
1919	April 18	Oct. 11
1920	April 28	Oct. 1
1921	May 16	Oct. 3
1922	April 29	Oct. 12
1923	May 9	Sept. 14
1924	May 20	Sept. 30
1925	May 25	Oct. 7
1926	May 25	Sept. 25
1927	April 24	Oct. 14
1928	April 28	Sept. 25
1929	May 19	Sept. 18
1930	May 17	Oct. 17
1931	May 22	Oct. 17
1932	April 27	Sept. 29
1933	May 5	Oct. 12
1934	April 27	Sept. 27
1935	May 4	Oct. 4
1936	April 23	Oct. 22
1937	April 11	Oct. 8
1938	April 22	Oct. 23
1939	April 19	Sept. 30
1940	May 3	Sept. 26
1941	April 25	Sept. 26
1942	May 16	Sept. 24
1943	May 1	Sept. 20
1944	May 7	Oct. 9
1945	May 18	Sept. 29
1946	May 12	Sept. 29
1947	May 29	Nov. 6
1948	April 14	Oct. 17
1949	April 24	Sept. 29
1950	May 1	Oct. 3
1951	May 11	Sept. 28
1952	April 16	Oct. 3

Average

May 3

Oct. 3

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Harlan
COUNTY - Shelby

Year of occurrence	Last occurrence in spring	First occurrence in fall
1899	April 16	Sept. 26
1900	May 3	Sept. 17
1901	May 13	Sept. 18
1902	April 23	Sept. 12
1903	May 3	Sept. 16
1904	April 27	Oct. 22
1905	May 26	Oct. 11
1906	May 9	Oct. 1
1907	May 16	Sept. 25
1908	May 9	Sept. 28
1909	May 10	Oct. 11
1910	May 13	Sept. 27
1911	May 2	Oct. 20
1912	May 17	Sept. 26
1913	April 27	Sept. 22
1914	May 13	Oct. 25
1915	May 17	Oct. 5
1916	May 18	Sept. 15
1917	May 7	Sept. 27
1918	May 13	Sept. 20
1919	April 26	Oct. 10
1920	April 28	Sept. 30
1921	May 4	Oct. 4
1922	April 20	Oct. 9
1923	May 9	Oct. 14
1924	May 24	Sept. 28
1925	May 25	Oct. 6
1926	May 14	Sept. 25
1927	April 24	Oct. 14
1928	April 27	Sept. 25
1929	May 16	Oct. 21
1930	April 24	Oct. 17
1931	May 22	Oct. 17
1932	April 27	Sept. 29
1933	April 27	Sept. 27
1934	April 27	Sept. 27
1935	May 5	Oct. 4
1936	May 3	Oct. 21
1937	May 14	Sept. 16
1938	April 22	Oct. 20
1939	April 19	Sept. 30
1940	May 2	Oct. 15
1941	April 24	Oct. 16
1942	May 4	Sept. 24
1943	April 28	Sept. 20
1944	May 6	Oct. 9
1945	May 9	Sept. 29
1946	May 12	Oct. 12
1947	May 29	Oct. 29
1948	April 14	Oct. 17
1949	April 19	Sept. 29
1950	May 1	Oct. 4
1951	April 26	Sept. 28
1952	April 16	Oct. 3
Average	May 5	Oct. 4

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Independence
COUNTY - Buchanan

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 4	Sept. 25
1894	May 20	Oct. 6
1895	May 4	Sept. 30
1896	April 22	Sept. 20
1897	May 31	Sept. 20
1898	May 6	Oct. 6
1899	April 19	Sept. 29
1900	May 3	Oct. 8
1901	April 21	Sept. 18
1902	April 24	Sept. 12
1903	May 3	Sept. 18
1904	May 15	Sept. 15
1905	April 30	Oct. 12
1906	May 9	---
1907	May 20	Sept. 25
1908	May 3	Sept. 28
1909	May 10	Oct. 12
1910	May 14	Oct. 22
1911	May 5	Oct. 8
1912	May 14	Sept. 26
1913	April 28	Sept. 22
1914	April 20	Oct. 25
1915	April 13	Oct. 8
1916	May 2	Sept. 18
1917	May 23	Oct. 6
1918	May 13	Sept. 21
1919	April 26	Oct. 11
1920	April 28	Sept. 30
1921	May 16	Oct. 8
1922	April 28	Oct. 15
1923	May 9	Sept. 14
1924	May 21	Sept. 30
1925	May 25	Oct. 7
1926	May 3	Sept. 25
1927	April 24	Oct. 14
1928	May 1	Sept. 26
1929	May 19	Sept. 18
1930	April 26	Oct. 17
1931	May 21	Nov. 2
1932	April 27	Oct. 5
1933	April 27	Oct. 2
1934	April 27	Oct. 28
1935	May 4	Sept. 27
1936	April 23	Oct. 2
1937	April 22	Sept. 26
1938	April 22	Oct. 23
1939	April 22	Sept. 30
1940	April 24	Oct. 16
1941	April 22	Oct. 27
1942	April 20	Sept. 24
1943	May 1	Sept. 26
1944	May 6	Oct. 9
1945	May 10	Sept. 29
1946	May 12	Oct. 31
1947	May 29	Sept. 26
1948	April 17	Oct. 3
1949	April 24	Sept. 29
1950	May 1	Oct. 3
1951	April 26	Sept. 28
1952	April 15	Oct. 3
Average	May 4	Oct. 3

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Indianola
COUNTY - WarrenSTATION - Inwood
COUNTY - Lyon

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 3	Oct. 24	1904	April 26	Oct. 5
1894	May 19	Oct. 14	1905	May 4	Oct. 10
1895	May 12	Sept. 30	1906	May 28	Sept. 30
1896	April 6	Oct. 7	1907	May 27	Sept. 25
1897	April 19	Oct. 22	1908	May 9	Sept. 27
1898	April 10	Oct. 6	1909	May 16	Oct. 11
1899	April 16	Sept. 29	1910	May 25	Sept. 27
1900	May 3	Nov. 8	1911	May 3	Sept. 19
1901	April 19	Oct. 4	1912	May 16	Sept. 16
1902	April 13	Oct. 14	1913	May 6	Sept. 21
1903	May 3	Oct. 18	1914	April 20	Oct. 15
1904	April 21	Oct. 23	1915	May 18	Sept. 21
1905	April 22	Oct. 12	1916	May 18	Sept. 15
1906	May 9	Oct. 10	1917	May 13	Sept. 30
1907	May 4	Oct. 12	1918	May 10	Sept. 18
1908	May 2	Sept. 28	1919	April 26	Oct. 10
1909	May 3	Oct. 12	1920	April 28	Sept. 30
1910	April 25	Oct. 22	1921	May 14	Oct. 4
1911	April 15	Oct. 21	1922	April 26	Oct. 9
1912	April 19	Sept. 26	1923	May 12	Oct. 13
1913	April 27	Sept. 22	1924	May 24	Sept. 28
1914	April 20	Oct. 25	1925	May 25	Oct. 8
1915	April 12	Oct. 8	1926	May 22	Sept. 25
1916	April 9	Sept. 29	1927	May 5	Sept. 20
1917	April 15	Oct. 8	1928	May 1	Sept. 23
1918	April 21	Sept. 20	1929	May 16	Sept. 18
1919	April 26	Oct. 11	1930	May 30	Sept. 27
1920	April 24	---	1931	May 22	Oct. 17
1921	May 3	Oct. 4	1932	May 1	Sept. 23
1922	April 20	Oct. 12	1933	May 6	Oct. 7
1923	May 9	Oct. 19	1934	April 27	Sept. 21
1924	April 22	Oct. 22	1935	May 5	Sept. 27
1925	May 25	Oct. 9	1936	May 3	Oct. 7
1926	April 28	Sept. 25	1937	April 26	Sept. 16
1927	April 24	Oct. 14	1938	April 22	Sept. 19
1928	April 28	Sept. 25	1939	April 21	Sept. 25
1929	May 5	Sept. 18	1940	May 16	Sept. 11
1930	April 24	Oct. 17	1941	April 24	Sept. 28
1931	May 21	Nov. 6	1942	May 15	Sept. 24
1932	April 27	Oct. 6	1943	May 13	Sept. 20
1933	April 27	Oct. 22	1944	May 6	Oct. 9
1934	April 27	Oct. 28	1945	May 16	Sept. 28
1935	May 4	Oct. 4	1946	May 12	Sept. 29
1936	April 22	Oct. 22	1947	May 29	Sept. 22
1937	April 25	Sept. 26	1948	April 12	Oct. 14
1938	April 22	Oct. 20	1949	May 24	Sept. 13
1939	April 18	Sept. 30	1950	May 7	Oct. 3
1940	May 2	Oct. 15	1951	May 11	Sept. 22
1941	April 24	Oct. 28	1952	May 12	Oct. 2
1942	May 4	Sept. 24			
1943	April 20	Oct. 15			
1944	May 6	Oct. 10	Average	May 9	Sept. 28
1945	May 9	Oct. 9			
1946	May 12	Oct. 12			
1947	May 29	Nov. 7			
1948	April 9	Oct. 17			
1949	April 24	Sept. 29			
1950	May 1	Oct. 3			
1951	April 23	Sept. 28			
1952	April 16	Oct. 3			
Average	April 27	Oct. 11			

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Iowa City
COUNTY - Johnson

Year of occurrence	Last occurrence in spring	First occurrence in fall
1892	April 15	Oct. 23
1893	May 6	Sept. 26
1894	April 23	Oct. 6
1895	May 14	Sept. 30
1896	April 7	Sept. 20
1897	April 20	Oct. 29
1898	April 14	Oct. 14
1899	April 19	Sept. 29
1900	April 19	Oct. 17
1901	April 21	Oct. 4
1902	April 24	Oct. 14
1903	May 3	Oct. 18
1904	April 26	Oct. 23
1905	April 22	Oct. 11
1906	May 9	Oct. 10
1907	May 11	Oct. 12
1908	May 3	Sept. 29
1909	May 3	Oct. 12
1910	April 25	Oct. 22
1911	May 3	Oct. 21
1912	April 20	Sept. 26
1913	May 10	Sept. 22
1914	April 21	Oct. 25
1915	April 13	Oct. 9
1916	May 18	Sept. 18
1917	May 23	Oct. 1
1918	May 2	Sept. 21
1919	April 26	Oct. 11
1920	May 14	Oct. 1
1921	May 16	Oct. 4
1922	April 29	Oct. 10
1923	May 10	Sept. 14
1924	April 12	Sept. 30
1925	May 25	Oct. 10
1926	April 26	Sept. 26
1927	April 24	Oct. 14
1928	April 28	Sept. 25
1929	May 5	Sept. 18
1930	April 25	Oct. 17
1931	May 7	Nov. 2
1932	May 2	Oct. 6
1933	April 27	Oct. 13
1934	April 27	Oct. 28
1935	May 4	Oct. 4
1936	April 22	Oct. 22
1937	April 11	Oct. 8
1938	April 22	Oct. 24
1939	April 22	Oct. 14
1940	May 1	Oct. 16
1941	March 29	Oct. 28
1942	April 11	Sept. 24
1943	April 21	Oct. 16
1944	May 5	Oct. 12
1945	May 9	Oct. 9
1946	April 27	Nov. 12
1947	May 9	Nov. 5
1948	April 14	Oct. 18
1949	April 19	Sept. 29
1950	May 1	Oct. 4
1951	April 23	Sept. 29
1952	April 16	Oct. 3
Average	April 28	Oct. 10

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Iowa Falls
COUNTY - Hardin

Year of occurrence	Last occurrence in spring	First occurrence in fall
1892	---	Oct. 8
1893	May 4	Sept. 25
1894	May 19	Sept. 18
1895	May 21	Sept. 30
1896	April 22	Sept. 19
1897	May 31	Sept. 20
1898	April 29	Oct. 6
1899	May 13	Sept. 26
1900	May 5	Sept. 17
1901	April 21	Sept. 18
1902	April 24	Sept. 12
1903	May 3	Sept. 18
1904	May 15	Sept. 15
1905	April 30	Oct. 12
1906	May 28	Oct. 1
1907	May 20	Sept. 25
1908	May 9	Sept. 28
1909	May 11	Oct. 12
1910	May 14	Oct. 6
1911	May 5	Oct. 8
1912	May 14	Sept. 26
1913	April 29	Sept. 22
1914	May 15	Oct. 25
1915	May 18	August 30
1916	May 2	Sept. 17
1917	May 23	Sept. 11
1918	May 14	Sept. 20
1919	May 2	Oct. 11
1920	April 28	Sept. 30
1921	May 16	Oct. 4
1922	April 29	Oct. 9
1923	May 9	Sept. 14
1924	April 22	Sept. 30
1925	May 25	Oct. 7
1926	May 3	Oct. 16
1927	April 30	Oct. 14
1928	May 12	Sept. 25
1929	May 19	Sept. 18
1930	May 17	Sept. 28
1931	May 22	Oct. 17
1932	April 28	Sept. 29
1933	May 4	Oct. 5
1934	April 27	Sept. 27
1935	May 5	Oct. 2
1936	April 26	Oct. 2
1937	April 11	Sept. 26
1938	April 22	Oct. 23
1939	April 22	Sept. 30
1940	May 3	Oct. 15
1941	April 24	Sept. 29
1942	April 20	Sept. 24
1943	May 1	Oct. 16
1944	May 6	Oct. 9
1945	May 10	Sept. 29
1946	May 12	Sept. 29
1947	May 29	Sept. 26
1948	April 14	Oct. 4
1949	April 24	Sept. 24
1950	May 1	Sept. 24
1951	May 11	Sept. 28
1952	April 24	Oct. 3
Average	May 6	Sept. 29

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Jefferson
COUNTY - GreeneSTATION - Lamoni
COUNTY - Decatur

Year of occurrence	Last occurrence in spring	First occurrence in fall
1906	May 9	Oct. 9
1907	May 20	Sept. 25
1908	---	Sept. 28
1909	---	Oct. 11
1910	---	Oct. 6
1911	May 5	Oct. 8
1912	April 27	Sept. 26
1913	April 28	Sept. 22
1914	April 20	Oct. 25
1915	May 9	Oct. 5
1916	May 18	Sept. 29
1917	May 7	Oct. 7
1918	April 30	Sept. 20
1919	May 2	Oct. 11
1920	April 28	Sept. 30
1921	May 16	Oct. 4
1922	April 29	Oct. 9
1923	May 9	Sept. 14
1924	April 22	Sept. 30
1925	May 25	Oct. 7
1926	May 14	Sept. 25
1927	April 24	Oct. 8
1928	May 12	Sept. 25
1929	May 16	Sept. 18
1930	April 25	Oct. 17
1931	May 22	Nov. 4
1932	April 27	Oct. 10
1933	April 27	Oct. 5
1934	April 27	Sept. 27
1935	May 5	Oct. 4
1936	April 22	Oct. 21
1937	April 25	Sept. 26
1938	April 22	Oct. 23
1939	April 21	Sept. 30
1940	May 2	Oct. 15
1941	April 24	Sept. 29
1942	May 4	Sept. 24
1943	April 20	Oct. 14
1944	May 6	Oct. 10
1945	May 10	Sept. 29
1946	May 12	Sept. 30
1947	May 29	Nov. 7
1948	April 14	Oct. 17
1949	April 24	Sept. 29
1950	May 1	Oct. 4
1951	April 26	Sept. 28
1952	April 16	Oct. 6
Average	May 3	Oct. 5

Year of occurrence	Last occurrence in spring	First occurrence in fall
1897	---	Oct. 22
1898	April 26	Oct. 14
1899	April 16	Sept. 29
1900	---	---
1901	---	---
1902	---	---
1903	---	---
1904	---	---
1905	---	---
1906	---	---
1907	---	---
1908	---	---
1909	May 2	Oct. 12
1910	April 25	Oct. 22
1911	May 2	Oct. 22
1912	April 19	Sept. 26
1913	April 26	Sept. 22
1914	---	Oct. 26
1915	May 9	Oct. 6
1916	May 2	Sept. 29
1917	May 4	Oct. 6
1918	April 23	Sept. 20
1919	April 26	Oct. 11
1920	April 28	Sept. 30
1921	May 3	Oct. 4
1922	April 29	Oct. 14
1923	May 13	Oct. 14
1924	April 22	Sept. 30
1925	May 25	Oct. 9
1926	April 28	Sept. 25
1927	April 23	Sept. 21
1928	April 27	Sept. 25
1929	May 3	Oct. 23
1930	April 24	Oct. 17
1931	May 6	Nov. 1
1932	April 27	Oct. 6
1933	April 15	Oct. 18
1934	April 27	Sept. 27
1935	May 4	Oct. 4
1936	April 22	Oct. 22
1937	April 25	Oct. 14
1938	April 22	Oct. 20
1939	April 19	Oct. 12
1940	May 2	Nov. 6
1941	April 24	Oct. 27
1942	May 4	Sept. 24
1943	April 20	Oct. 15
1944	May 6	Oct. 10
1945	April 18	Oct. 9
1946	May 11	Oct. 12
1947	May 29	Nov. 7
1948	April 14	Oct. 17
1949	April 19	Oct. 22
1950	May 1	Oct. 3
1951	April 23	Sept. 28
1952	April 16	Oct. 5
Average	April 29	Oct. 11

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Keokuk (city)
 COUNTY - Lee

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1872	April 16	Oct. 14	1934	April 21	Oct. 28
1873	April 25	Oct. 6	1935	April 16	Oct. 4
1874	April 23	Oct. 31	1936	April 18	Oct. 23
1875	May 2	Oct. 12	1937	April 6	Oct. 14
1876	April 2	Oct. 11	1938	April 9	Nov. 7
1877	April 3	Nov. 4	1939	April 13	Oct. 14
1878	March 4	Oct. 27	1940	April 13	Nov. 7
1879	April 5	Oct. 24	1941	March 29	Oct. 27
1880	April 11	Oct. 18	1942	April 11	Oct. 25
1881	April 14	---	1943	April 19	Oct. 17
1882	April 12	---	1944	April 15	Nov. 24
1883	April 24	Oct. 24	1945	April 5	Oct. 9
1884	April 8	Oct. 23	1946	March 11	Nov. 13
1885	May 7	Oct. 4	1947	April 16	Nov. 8
1886	April 7	Nov. 6	1948	March 28	Oct. 18
1887	April 18	Oct. 24	1949	April 19	Oct. 26
1888	April 12	Nov. 7	1950	April 27	Nov. 4
1889	April 6	Oct. 21	1951	April 17	Nov. 1
1890	April 10	Oct. 27	1952	April 11	---
1891	April 8	Nov. 1			
1892	April 15	Oct. 23			
1893	April 23	Oct. 15	Average	April 13	Oct. 23
1894	April 2	Oct. 14			
1895	April 3	Oct. 9			
1896	April 4	Oct. 20			
1897	April 20	Nov. 2			
1898	April 6	Oct. 25			
1899	April 9	Sept. 29			
1900	April 12	Nov. 8			
1901	April 18	Nov. 3			
1902	April 8	Oct. 14			
1903	April 4	Oct. 27			
1904	April 21	Oct. 27			
1905	April 17	Oct. 12			
1906	April 1	Oct. 10			
1907	May 4	Oct. 13			
1908	May 2	Oct. 31			
1909	May 2	Oct. 12			
1910	April 24	Oct. 28			
1911	April 9	Oct. 22			
1912	April 18	Oct. 23			
1913	April 7	Oct. 20			
1914	April 20	Oct. 26			
1915	April 3	Oct. 9			
1916	April 9	Oct. 20			
1917	April 15	Oct. 8			
1918	April 19	Nov. 1			
1919	April 1	Oct. 28			
1920	April 13	Oct. 29			
1921	April 17	Oct. 8			
1922	March 31	Oct. 15			
1923	April 16	Oct. 21			
1924	April 2	Nov. 8			
1925	April 5	Oct. 10			
1926	April 19	Oct. 24			
1927	April 23	Nov. 5			
1928	April 19	Oct. 29			
1929	April 1	Oct. 23			
1930	April 2	Oct. 17			
1931	May 7	Nov. 6			
1932	April 27	Oct. 30			
1933	April 11	Oct. 25			

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Le Mars
COUNTY - PlymouthSTATION - Logan
COUNTY - Harrison

Year of occurrence	Last occurrence in spring	First occurrence in fall
1896	April 7	Sept. 19
1897	May 31	Sept. 18
1898	May 12	Oct. 6
1899	May 13	Sept. 25
1900	May 3	Sept. 17
1901	May 25	Sept. 18
1902	April 26	Sept. 12
1903	May 3	Sept. 16
1904	April 27	Oct. 6
1905	May 26	Oct. 11
1906	May 9	Sept. 30
1907	May 27	Sept. 25
1908	May 9	Sept. 28
1909	May 10	Oct. 11
1910	May 13	Oct. 22
1911	May 2	Oct. 22
1912	April 27	Sept. 26
1913	April 27	Sept. 22
1914	April 20	Oct. 15
1915	May 18	Oct. 5
1916	May 3	Sept. 15
1917	May 13	Oct. 8
1918	April 30	Sept. 18
1919	---	Oct. 10
1920	April 29	Sept. 29
1921	May 14	Oct. 4
1922	April 20	Oct. 9
1923	May 12	Oct. 13
1924	May 24	Sept. 28
1925	May 25	Oct. 7
1926	May 14	Sept. 25
1927	April 24	Oct. 7
1928	May 12	Sept. 23
1929	May 16	Sept. 18
1930	May 17	Oct. 17
1931	May 22	Oct. 17
1932	April 27	Sept. 29
1933	April 27	Oct. 8
1934	April 27	Sept. 16
1935	May 3	Sept. 27
1936	May 3	Oct. 7
1937	May 14	Sept. 16
1938	May 8	Sept. 20
1939	April 21	Sept. 29
1940	May 1	Sept. 25
1941	April 24	Oct. 27
1942	May 15	Sept. 24
1943	May 8	Sept. 20
1944	May 6	Oct. 9
1945	May 16	Sept. 29
1946	May 12	Sept. 29
1947	May 29	Sept. 22
1948	April 12	Oct. 14
1949	April 24	Sept. 29
1950	May 1	Oct. 3
1951	April 23	Sept. 28
1952	April 24	Oct. 4
Average	May 7	Sept. 30

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 2	Sept. 25
1894	May 19	Oct. 8
1895	May 21	Sept. 30
1896	April 6	Sept. 19
1897	April 29	Oct. 9
1898	April 26	Oct. 13
1899	April 21	Sept. 19
1900	May 3	Sept. 17
1901	May 26	Sept. 18
1902	April 23	Sept. 12
1903	May 2	Oct. 18
1904	May 10	Oct. 21
1905	May 5	Oct. 11
1906	May 9	Oct. 9
1907	May 11	Sept. 25
1908	May 8	Sept. 28
1909	May 10	Oct. 11
1910	May 13	Sept. 27
1911	May 2	Oct. 8
1912	April 27	Sept. 26
1913	April 27	Sept. 22
1914	May 13	Oct. 25
1915	May 17	Oct. 5
1916	May 18	Sept. 15
1917	May 7	Oct. 8
1918	April 25	Sept. 20
1919	April 24	Oct. 10
1920	April 28	Sept. 30
1921	May 4	Oct. 4
1922	April 19	Oct. 9
1923	May 9	Oct. 19
1924	April 22	Oct. 22
1925	May 25	Oct. 9
1926	May 14	Sept. 25
1927	April 24	Oct. 31
1928	April 28	Sept. 25
1929	May 16	Oct. 21
1930	April 22	Oct. 16
1931	May 22	Nov. 1
1932	April 27	Oct. 6
1933	April 27	Oct. 8
1934	April 27	Sept. 27
1935	May 5	Oct. 4
1936	April 22	Oct. 21
1937	April 26	Sept. 26
1938	April 22	Oct. 20
1939	April 19	Sept. 30
1940	April 24	Oct. 15
1941	April 24	Oct. 16
1942	May 4	Sept. 24
1943	April 20	Sept. 20
1944	May 6	Oct. 10
1945	May 10	Sept. 29
1946	May 12	Sept. 29
1947	May 29	Oct. 29
1948	April 15	Oct. 12
1949	April 19	Sept. 29
1950	May 1	Oct. 3
1951	April 26	Sept. 28
1952	April 16	Oct. 6
Average	May 3	Oct. 5

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Maquoketa
COUNTY - Jackson

STATION - Mount Ayr
COUNTY - Ringgold

Year of occurrence	Last occurrence in spring	First occurrence in fall
1897	April 20	Sept. 21
1898	April 21	Oct. 13
1899	April 19	Sept. 27
1900	May 5	Oct. 8
1901	May 26	Sept. 19
1902	April 27	Sept. 12
1903	May 3	Sept. 18
1904	May 15	Sept. 15
1905	April 23	Oct. 12
1906	---	---
1907	---	---
1908	---	---
1909	---	---
1910	---	---
1911	---	---
1912	---	---
1913	---	---
1914	April 20	Oct. 25
1915	April 13	Oct. 9
1916	May 2	Sept. 18
1917	May 23	Sept. 11
1918	May 1	Sept. 27
1919	April 26	Oct. 11
1920	May 14	Oct. 2
1921	---	---
1922	---	---
1923	---	---
1924	---	---
1925	May 26	Oct. 7
1926	May 15	Sept. 25
1927	April 24	Oct. 8
1928	May 12	Sept. 24
1929	May 21	Sept. 18
1930	May 17	Sept. 28
1931	May 23	Oct. 17
1932	May 2	Sept. 29
1933	April 27	Oct. 2
1934	April 28	Oct. 1
1935	May 7	Sept. 28
1936	April 23	Oct. 2
1937	April 25	Sept. 20
1938	April 10	Oct. 24
1939	April 22	Sept. 30
1940	April 21	Sept. 26
1941	April 25	---
1942	April 20	Sept. 24
1943	May 9	Sept. 17
1944	May 6	Oct. 12
1945	May 10	Oct. 3
1946	April 27	Oct. 1
1947	---	---
1948	April 17	Oct. 17
1949	April 24	Sept. 29
1950	May 1	Sept. 24
1951	April 23	Sept. 28
1952	April 15	Oct. 3
Average	May 2	Sept. 30

Year of occurrence	Last occurrence in spring	First occurrence in fall
1895	May 12	Sept. 30
1896	April 4	Oct. 16
1897	April 19	Oct. 29
1898	April 13	Oct. 17
1899	April 16	Sept. 29
1900	May 3	Nov. 7
1901	April 20	Sept. 18
1902	April 23	Sept. 13
1903	May 3	Oct. 18
1904	April 21	Oct. 23
1905	April 18	Oct. 18
1906	May 9	Oct. 9
1907	May 16	Oct. 12
1908	May 2	Sept. 21
1909	May 2	Oct. 12
1910	April 25	Oct. 22
1911	May 2	Oct. 21
1912	April 7	Sept. 26
1913	April 12	Sept. 22
1914	April 20	Sept. 27
1915	May 9	Oct. 5
1916	April 10	Sept. 29
1917	May 4	Oct. 8
1918	April 21	Sept. 20
1919	April 26	Oct. 11
1920	April 28	Sept. 30
1921	May 3	Oct. 8
1922	April 19	Oct. 12
1923	May 9	Oct. 19
1924	May 24	Oct. 22
1925	May 25	Oct. 9
1926	April 28	Sept. 25
1927	April 24	Sept. 21
1928	April 27	Sept. 25
1929	May 5	Oct. 23
1930	April 24	Oct. 17
1931	May 7	Nov. 1
1932	April 27	Oct. 10
1933	April 23	Oct. 18
1934	April 27	Oct. 28
1935	May 4	Oct. 4
1936	April 22	Oct. 22
1937	April 25	Oct. 14
1938	April 22	Sept. 19
1939	April 21	Sept. 30
1940	May 1	Nov. 6
1941	April 24	Oct. 27
1942	May 4	Sept. 24
1943	April 20	Oct. 15
1944	May 6	Oct. 10
1945	April 18	Oct. 9
1946	May 12	Oct. 12
1947	May 29	Nov. 7
1948	April 14	Oct. 17
1949	April 19	Sept. 29
1950	May 1	Oct. 3
1951	April 23	Sept. 28
1952	April 16	Oct. 6
Average	April 28	Oct. 10

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Northwood
COUNTY - WorthSTATION - Olin
COUNTY - Jones

Year of occurrence	Last occurrence in spring	First occurrence in fall
1896	April 22	Sept. 19
1897	June 1	Sept. 20
1898	April 26	Sept. 30
1899	May 13	Sept. 27
1900	May 5	Oct. 8
1901	May 12	Sept. 18
1902	April 23	Oct. 14
1903	May 3	Oct. 9
1904	April 27	Oct. 23
1905	April 30	Oct. 11
1906	May 7	Oct. 9
1907	May 27	Sept. 25
1908	May 3	Sept. 28
1909	May 10	Oct. 12
1910	May 3	Oct. 22
1911	May 3	Oct. 9
1912	April 27	Sept. 26
1913	April 28	Sept. 22
1914	April 20	Oct. 25
1915	April 13	Oct. 5
1916	May 2	Sept. 15
1917	May 6	Oct. 6
1918	May 13	Sept. 21
1919	May 2	---
1920	May 14	Oct. 1
1921	May 16	Oct. 4
1922	April 28	Oct. 12
1923	May 9	Oct. 19
1924	May 25	Sept. 30
1925	May 25	Oct. 9
1926	May 3	Sept. 25
1927	April 24	Oct. 14
1928	April 27	Oct. 25
1929	May 19	Sept. 18
1930	May 17	Sept. 28
1931	May 23	Oct. 17
1932	April 27	Oct. 6
1933	April 27	Oct. 12
1934	April 27	Sept. 27
1935	May 5	Sept. 27
1936	April 26	Oct. 2
1937	May 14	Sept. 26
1938	May 8	Oct. 22
1939	April 22	Sept. 26
1940	May 3	Oct. 15
1941	April 24	Sept. 29
1942	April 20	Sept. 24
1943	May 7	Oct. 14
1944	May 6	Oct. 9
1945	May 10	Sept. 29
1946	May 12	Oct. 12
1947	May 29	Sept. 22
1948	April 17	Oct. 10
1949	April 24	Sept. 29
1950	May 1	Sept. 24
1951	April 23	Sept. 25
1952	April 25	Sept. 20
Average	May 5	Oct. 4

Year of occurrence	Last occurrence in spring	First occurrence in fall
1898	April 21	Oct. 15
1899	April 19	Sept. 26
1900	May 5	---
1901	April 21	Oct. 4
1902	April 27	Sept. 13
1903	May 1	Sept. 18
1904	April 21	Sept. 15
1905	April 22	Oct. 12
1906	May 10	Oct. 6
1907	May 11	Sept. 25
1908	May 3	Sept. 29
1909	May 4	Oct. 12
1910	May 14	Oct. 22
1911	May 4	Oct. 23
1912	April 22	Sept. 26
1913	May 11	Oct. 18
1914	April 20	Oct. 25
1915	April 13	Oct. 8
1916	May 2	Oct. 10
1917	May 23	Oct. 1
1918	May 1	Sept. 27
1919	April 26	Oct. 11
1920	May 14	Oct. 1
1921	May 16	Oct. 4
1922	April 29	Oct. 15
1923	May 13	Sept. 14
1924	May 25	Sept. 30
1925	May 26	Oct. 7
1926	April 26	Sept. 25
1927	April 24	Oct. 8
1928	May 12	Sept. 24
1929	May 21	Sept. 18
1930	May 17	Sept. 28
1931	May 23	Oct. 17
1932	May 2	Sept. 28
1933	April 27	Oct. 2
1934	April 28	Sept. 27
1935	May 4	Sept. 28
1936	April 23	Oct. 2
1937	April 22	Sept. 26
1938	April 22	Oct. 20
1939	April 22	Sept. 30
1940	May 4	Sept. 26
1941	April 25	---
Average	May 3	Oct. 3

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Onawa
COUNTY - MononaSTATION - Osage
COUNTY - Mitchell

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1899	April 22	Sept. 29	1893	April 23	Sept. 25
1900	May 3	Oct. 7	1894	April 5	Oct. 9
1901	April 20	Sept. 18	1895	April 3	Sept. 30
1902	April 23	Oct. 14	1896	April 8	Sept. 19
1903	May 3	Oct. 26	1897	April 19	Sept. 20
1904	April 27	Oct. 23	1898	April 7	Oct. 6
1905	April 21	Oct. 12	1899	May 13	Sept. 26
1906	May 6	Oct. 9	1900	May 5	Oct. 8
1907	May 16	Oct. 12	1901	May 12	Sept. 20
1908	May 2	Sept. 29	1902	April 26	Oct. 5
1909	May 10	Oct. 12	1903	May 3	Sept. 18
1910	May 4	Oct. 22	1904	May 15	Oct. 6
1911	May 2	Oct. 21	1905	April 30	Oct. 12
1912	April 18	Sept. 30	1906	May 7	Oct. 6
1913	April 13	Sept. 22	1907	May 27	Sept. 25
1914	April 20	Oct. 16	1908	May 3	Sept. 28
1915	May 18	Oct. 5	1909	May 10	Oct. 12
1916	May 18	Sept. 15	1910	May 5	Oct. 22
1917	May 7	Oct. 8	1911	May 3	Oct. 21
1918	---	Sept. 18	1912	April 27	Sept. 26
1919	April 24	Oct. 10	1913	April 27	Sept. 22
1920	April 28	Sept. 30	1914	April 20	Oct. 25
1921	May 15	---	1915	---	---
1922	---	Oct. 9	1916	---	---
1923	May 12	Oct. 13	1917	---	---
1924	May 24	Oct. 22	1918	---	---
1925	May 17	Oct. 9	1919	---	---
1926	May 14	Sept. 25	1920	---	---
1927	May 5	Sept. 25	1921	---	---
1928	May 4	Sept. 25	1922	---	---
1929	May 16	Oct. 21	1923	---	---
1930	April 22	Oct. 16	1924	---	---
1931	May 22	Oct. 17	1925	May 25	Oct. 7
1932	April 27	Oct. 4	1926	May 3	Sept. 25
1933	April 15	Oct. 12	1927	April 24	Oct. 14
1934	April 27	Sept. 27	1928	April 28	Sept. 26
1935	May 5	Oct. 4	1929	May 19	Sept. 18
1936	April 22	Oct. 8	1930	May 17	Sept. 28
1937	April 26	Oct. 14	1931	May 7	Oct. 17
1938	May 8	Sept. 19	1932	April 27	Oct. 6
1939	April 19	Sept. 30	1933	May 3	Oct. 12
1940	April 24	Sept. 11	1934	April 27	Sept. 27
1941	April 24	Oct. 16	1935	May 3	Sept. 27
1942	May 4	Sept. 24	1936	April 26	Oct. 21
1943	May 8	Sept. 20	1937	May 14	Oct. 8
1944	May 6	Oct. 8	1938	April 22	Oct. 23
1945	May 10	Sept. 29	1939	April 19	Sept. 30
1946	May 12	Sept. 29	1940	May 3	Oct. 15
1947	May 29	Sept. 22	1941	April 24	Oct. 16
1948	April 13	Sept. 28	1942	April 19	Sept. 24
1949	April 19	Sept. 28	1943	May 1	Sept. 17
1950	May 1	Oct. 3	1944	May 7	Oct. 9
1951	April 26	Sept. 28	1945	May 10	Sept. 29
1952	April 16	Oct. 5	1946	May 12	Sept. 25
			1947	May 29	Sept. 22
			1948	April 17	Oct. 10
			1949	April 24	Sept. 14
			1950	May 1	Sept. 24
			1951	April 26	Sept. 28
			1952	April 24	Oct. 3
Average	May 3	Oct. 5	Average	May 1	Oct. 3

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Oskaloosa
COUNTY - MahaskaSTATION - Perry
COUNTY - Dallas

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 3	Sept. 25	1900	---	Oct. 8
1894	---	Oct. 9	1901	April 19	Oct. 3
1895	April 14	Sept. 30	1902	April 23	Oct. 14
1896	April 3	Sept. 20	1903	May 3	Oct. 17
1897	May 2	Sept. 20	1904	April 28	Oct. 6
1898	April 15	Oct. 14	1905	April 18	Oct. 12
1899	April 16	Sept. 29	1906	May 9	Oct. 1
1900	May 3	Oct. 8	1907	May 20	Sept. 25
1901	April 21	Oct. 4	1908	May 2	Sept. 28
1902	April 24	Sept. 13	1909	May 10	Oct. 11
1903	May 3	Oct. 18	1910	May 13	Oct. 22
1904	April 21	Oct. 23	1911	May 2	Oct. 21
1905	April 22	Oct. 12	1912	April 27	Sept. 26
1906	May 9	Oct. 6	1913	April 28	Sept. 22
1907	May 4	Oct. 12	1914	April 20	Oct. 25
1908	May 2	Sept. 28	1915	May 9	Oct. 5
1909	May 10	Oct. 12	1916	May 2	Sept. 29
1910	May 25	Oct. 22	1917	May 7	Oct. 6
1911	May 2	Oct. 21	1918	May 1	Sept. 20
1912	April 20	Sept. 26	1919	April 26	Oct. 11
1913	April 28	Sept. 22	1920	April 28	Sept. 30
1914	April 20	Oct. 25	1921	May 16	Oct. 4
1915	April 12	Oct. 9	1922	April 20	Oct. 9
1916	April 9	Sept. 17	1923	May 9	Oct. 19
1917	May 7	Oct. 1	1924	May 11	Sept. 30
1918	May 1	Sept. 21	1925	May 25	Oct. 7
1919	April 26	Oct. 11	1926	May 15	Sept. 25
1920	April 28	Oct. 1	1927	May 12	Oct. 8
1921	April 18	Oct. 4	1928	May 12	Sept. 23
1922	April 20	Oct. 12	1929	May 21	Sept. 18
1923	May 9	Oct. 20	1930	April 25	Oct. 17
1924	April 22	Sept. 30	1931	May 22	Oct. 17
1925	May 25	Oct. 10	1932	April 27	Sept. 29
1926	April 28	Sept. 26	1933	April 27	Sept. 27
1927	April 24	Oct. 14	1934	May 25	Sept. 16
1928	April 28	Sept. 25	1935	May 5	Oct. 4
1929	May 5	Oct. 23	1936	April 23	Oct. 22
1930	April 25	Oct. 17	1937	April 25	Sept. 16
1931	May 21	Nov. 4	1938	May 13	Oct. 20
1932	April 27	Oct. 6	1939	April 19	Sept. 30
1933	April 27	Oct. 18	1940	May 3	Sept. 26
1934	April 27	Oct. 28	1941	April 24	Sept. 30
1935	May 4	Oct. 4	1942	May 4	Sept. 20
1936	April 22	Oct. 22	1943	May 1	Sept. 20
1937	April 26	Sept. 26	1944	May 6	Oct. 10
1938	April 22	Oct. 20	1945	May 9	Sept. 29
1939	April 19	Sept. 30	1946	May 12	Sept. 30
1940	May 3	Sept. 26	1947	May 29	Oct. 19
1941	March 29	Oct. 27	1948	April 14	Oct. 17
1942	April 20	Sept. 24	1949	April 24	Sept. 29
1943	April 21	Oct. 14	1950	May 1	Sept. 24
1944	May 5	Oct. 10	1951	April 26	Sept. 28
1945	May 10	Oct. 9	1952	April 16	Oct. 5
1946	May 11	Sept. 30			
1947	May 9	Nov. 6			
1948	April 14	Oct. 17	Average	May 4	Oct. 4
1949	April 24	Sept. 29			
1950	May 1	Sept. 24			
1951	April 23	Sept. 28			
1952	April 16	Oct. 3			
Average	April 27	Oct. 8			

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Pocahontas
COUNTY - PocahontasSTATION - Sac City
COUNTY - Sac

Year of occurrence	Last occurrence in spring	First occurrence in fall
1904	---	Oct. 6
1905	April 30	Oct. 6
1906	May 6	Oct. 6
1907	May 27	Sept. 25
1908	May 3	Sept. 28
1909	May 10	Oct. 11
1910	May 4	Oct. 22
1911	May 3	Oct. 8
1912	April 27	Sept. 26
1913	April 27	Sept. 22
1914	May 15	Oct. 25
1915	May 17	Oct. 5
1916	May 2	Sept. 17
1917	May 6	Oct. 8
1918	May 1	Sept. 20
1919	May 2	Oct. 11
1920	May 14	Sept. 30
1921	May 16	Oct. 4
1922	April 20	Oct. 9
1923	May 9	Oct. 19
1924	May 25	Sept. 28
1925	May 25	Oct. 7
1926	May 14	Sept. 25
1927	April 24	Oct. 14
1928	May 12	Sept. 23
1929	May 19	Sept. 18
1930	May 17	Oct. 17
1931	May 22	Nov. 2
1932	April 27	Oct. 5
1933	April 27	Oct. 12
1934	April 27	Sept. 27
1935	May 5	Sept. 27
1936	April 22	Oct. 21
1937	May 14	Oct. 8
1938	May 18	Oct. 20
1939	April 22	Sept. 25
1940	May 3	Sept. 25
1941	April 24	Sept. 29
1942	April 20	Sept. 24
1943	May 8	Sept. 17
1944	May 6	Oct. 9
1945	May 10	Sept. 29
1946	May 12	Sept. 30
1947	May 29	Sept. 21
1948	April 14	Oct. 10
1949	April 19	Sept. 29
1950	May 7	Oct. 3
1951	April 26	Sept. 28
1952	April 24	Sept. 23
Average	May 6	Oct. 4

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 23	---
1894	May 19	Oct. 8
1895	May 12	Sept. 30
1896	April 6	Sept. 19
1897	May 15	Sept. 20
1898	April 28	Oct. 6
1899	---	Sept. 18
1900	May 3	Sept. 17
1901	April 20	Sept. 17
1902	April 23	Sept. 12
1903	May 3	Sept. 16
1904	April 26	Oct. 6
1905	May 12	---
1906	May 7	Oct. 6
1907	May 27	Sept. 25
1908	---	---
1909	May 10	Oct. 12
1910	May 4	Oct. 21
1911	May 2	Oct. 21
1912	April 27	Sept. 27
1913	April 14	Sept. 22
1914	April 20	Oct. 25
1915	---	Oct. 5
1916	May 2	Sept. 15
1917	May 4	Oct. 6
1918	April 26	Sept. 21
1919	April 26	Oct. 10
1920	April 28	Sept. 30
1921	May 15	Oct. 4
1922	April 22	Oct. 9
1923	May 9	Oct. 19
1924	May 24	Oct. 22
1925	May 11	Oct. 7
1926	May 3	Sept. 25
1927	---	Oct. 13
1928	April 27	Sept. 25
1929	May 16	Sept. 18
1930	May 17	Oct. 17
1931	May 22	Nov. 2
1932	April 27	Oct. 10
1933	April 27	Sept. 27
1934	April 27	Sept. 16
1935	May 5	Oct. 4
1936	---	Oct. 8
1937	May 14	Sept. 26
1938	May 8	Oct. 23
1939	April 22	Sept. 30
1940	May 2	Sept. 26
1941	April 21	Sept. 29
1942	May 4	Sept. 23
1943	May 8	Sept. 20
1944	---	Oct. 10
1945	May 10	Sept. 29
1946	May 12	Oct. 12
1947	May 29	Nov. 7
1948	April 13	Sept. 17
1949	April 24	Sept. 29
1950	May 1	Oct. 3
1951	April 26	Sept. 28
1952	April 15	Oct. 5

Average

May 3

Oct. 3

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Sibley
COUNTY - Osceola

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 17	Sept. 16
1894	May 21	Sept. 11
1895	May 27	---
1896	April 21	Sept. 19
1897	June 7	Sept. 17
1898	April 26	Sept. 30
1899	May 13	Sept. 20
1900	May 3	Sept. 17
1901	June 7	Sept. 17
1902	April 26	Sept. 12
1903	May 3	Sept. 16
1904	April 28	Sept. 21
1905	May 26	Oct. 12
1906	May 9	Oct. 6
1907	May 27	Sept. 25
1908	May 8	Sept. 28
1909	May 11	Oct. 12
1910	May 13	Sept. 27
1911	May 4	Oct. 8
1912	May 14	Sept. 26
1913	May 6	Sept. 22
1914	May 13	Sept. 14
1915	May 18	Sept. 21
1916	---	Sept. 15
1917	June 15	Sept. 27
1918	May 13	Sept. 12
1919	April 26	---
1920	---	---
1921	---	---
1922	---	---
1923	---	---
1924	---	---
1925	---	---
1926	---	---
1927	---	---
1928	---	---
1929	---	---
1930	---	---
1931	---	---
1932	---	---
1933	---	---
1934	---	---
1935	---	Sept. 27
1936	May 3	Sept. 30
1937	May 14	Sept. 16
1938	May 8	Sept. 19
1939	May 12	Sept. 26
1940	May 2	Sept. 12
1941	May 12	Sept. 29
1942	May 15	Sept. 20
1943	May 27	Sept. 17
1944	May 6	Oct. 9
1945	May 14	Sept. 28
1946	May 12	Sept. 29
1947	May 30	Sept. 22
1948	April 13	Oct. 10
1949	April 24	Sept. 1
1950	May 7	Aug. 20
1951	May 11	Sept. 16
1952	May 29	Sept. 19
Average	May 12	Sept. 22

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Sioux City (city)
COUNTY - Woodbury

Year of occurrence	Last occurrence in spring	First occurrence in fall
1889	---	Oct. 6
1890	May 7	Oct. 19
1891	April 7	Oct. 6
1892	April 20	Oct. 8
1893	May 3	Sept. 25
1894	April 20	Oct. 8
1895	May 21	Sept. 30
1896	April 7	Sept. 19
1897	April 20	Oct. 9
1898	April 26	Sept. 26
1899	April 22	Sept. 26
1900	May 3	Nov. 8
1901	April 19	Sept. 18
1902	April 25	Sept. 13
1903	April 28	Oct. 26
1904	April 26	Oct. 23
1905	April 18	Oct. 20
1906	May 6	Oct. 9
1907	May 15	Oct. 12
1908	May 2	Sept. 28
1909	May 10	Oct. 11
1910	May 13	Oct. 27
1911	May 2	Oct. 20
1912	April 22	Oct. 22
1913	April 14	Sept. 22
1914	April 20	Oct. 25
1915	May 9	Oct. 8
1916	May 1	Sept. 29
1917	April 28	Oct. 7
1918	April 30	Sept. 20
1919	April 24	Oct. 10
1920	April 28	Sept. 30
1921	April 17	Oct. 4
1922	April 19	Oct. 9
1923	May 9	Oct. 20
1924	April 22	Nov. 2
1925	May 11	Oct. 9
1926	April 28	Sept. 25
1927	April 24	Oct. 7
1928	April 27	Sept. 25
1929	May 5	Oct. 23
1930	April 24	Oct. 16
1931	May 21	Nov. 1
1932	April 27	Oct. 9
1933	April 15	Oct. 8
1934	April 27	Oct. 27
1935	April 16	Sept. 27
1936	April 22	Oct. 20
1937	April 25	Oct. 13
1938	April 9	Oct. 23
1939	April 19	Oct. 13
1940	April 13	Oct. 15
1941	April 21	Oct. 27
1942	May 15	Sept. 24
1943	April 28	Oct. 14
1944	May 6	Oct. 10
1945	May 10	Sept. 28
1946	May 12	Oct. 11
1947	May 29	Oct. 29
1948	April 9	Oct. 12
1949	April 24	Sept. 29
1950	May 1	Oct. 3
1951	April 26	Sept. 28
1952	April 16	Oct. 5
Average	April 28	Oct. 10

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Toledo
COUNTY - TamaSTATION - Waukee
COUNTY - Dallas

Year of occurrence	Last occurrence in spring	First occurrence in fall
1894	May 20	Oct. 6
1895	May 14	Sept. 30
1896	April 9	Sept. 20
1897	May 31	Sept. 20
1898	May 6	Oct. 14
1899	April 19	Sept. 26
1900	May 5	Oct. 8
1901	May 13	Sept. 19
1902	April 24	Sept. 12
1903	May 3	Sept. 18
1904	April 27	Sept. 15
1905	April 22	Oct. 12
1906	May 9	Oct. 1
1907	May 20	Sept. 25
1908	May 3	Sept. 28
1909	May 10	Sept. 27
1910	April 25	Oct. 22
1911	May 3	Oct. 20
1912	April 27	Sept. 26
1913	April 29	Sept. 22
1914	April 20	Oct. 25
1915	May 17	Oct. 5
1916	May 2	Sept. 18
1917	May 23	Sept. 11
1918	May 13	Sept. 20
1919	April 26	Oct. 11
1920	May 14	Sept. 30
1921	May 16	Oct. 4
1922	April 29	Oct. 12
1923	May 9	Sept. 14
1924	May 20	Sept. 30
1925	May 25	Oct. 7
1926	May 15	Sept. 25
1927	April 24	Oct. 14
1928	May 12	Sept. 25
1929	May 19	Sept. 18
1930	April 25	Oct. 17
1931	May 21	Nov. 2
1932	May 2	Oct. 5
1933	April 27	Oct. 12
1934	April 27	Sept. 27
1935	May 4	Oct. 4
1936	April 22	Oct. 2
1937	April 25	Sept. 16
1938	May 12	Oct. 19
1939	April 19	Sept. 30
1940	May 3	Sept. 25
1941	April 25	Oct. 27
1942	May 16	Sept. 24
1943	May 1	Oct. 16
1944	May 6	Oct. 10
1945	May 18	Sept. 29
1946	May 11	Nov. 4
1947	May 29	Nov. 6
1948	April 14	Oct. 17
1949	April 19	Sept. 26
1950	May 1	Oct. 3
1951	April 23	Sept. 28
1952	April 16	Oct. 3
Average	May 5	Oct. 3

Year of occurrence	Last occurrence in spring	First occurrence in fall
1894	---	Oct. 9
1895	May 12	Sept. 30
1896	April 6	Sept. 20
1897	April 20	Oct. 22
1898	---	---
1899	---	---
1900	---	---
1901	---	---
1902	---	---
1903	---	---
1904	April 21	Oct. 6
1905	April 18	Oct. 12
1906	May 9	Oct. 9
1907	May 20	Oct. 12
1908	May 2	Sept. 28
1909	May 10	Oct. 11
1910	May 3	Oct. 22
1911	May 2	Oct. 21
1912	April 27	Sept. 26
1913	April 27	Sept. 22
1914	April 20	Oct. 25
1915	April 12	Oct. 5
1916	May 18	Sept. 27
1917	May 7	Oct. 6
1918	May 1	Sept. 20
1919	April 26	Oct. 11
1920	April 28	Sept. 30
1921	May 3	Oct. 4
1922	April 20	Oct. 12
1923	May 9	Oct. 19
1924	April 20	Sept. 30
1925	May 25	Oct. 7
1926	April 28	Sept. 25
1927	April 24	Oct. 14
1928	---	Sept. 25
1929	May 16	Sept. 18
1930	April 25	Oct. 17
1931	May 21	Nov. 4
1932	April 27	Oct. 6
1933	April 27	Oct. 13
1934	April 27	Sept. 27
1935	May 4	Oct. 4
1936	April 22	Oct. 22
1937	April 25	Oct. 7
1938	April 22	Oct. 23
1939	April 21	Sept. 30
1940	May 3	Oct. 15
1941	April 24	Oct. 27
1942	May 4	Sept. 24
1943	May 13	Oct. 15
1944	---	Oct. 10
1945	April 18	Sept. 29
1946	May 12	Oct. 12
1947	April 16	Nov. 8
1948	April 9	Oct. 17
1949	April 19	Sept. 29
1950	May 1	Oct. 3
1951	April 23	Sept. 28
Average	April 29	Oct. 8

DATE OF OCCURRENCE OF 32° F. OR LOWER

DATE OF OCCURRENCE OF 32° F. OR LOWER

STATION - Webster City
COUNTY - HamiltonSTATION - West Bend
COUNTY - Palo Alto

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1896	---	Sept. 20	1894	May 20	---
1897	April 21	Oct. 9	1895	May 21	Sept. 30
1898	April 26	Oct. 6	1896	April 6	Sept. 19
1899	---	---	1897	May 31	Sept. 20
1900	May 3	---	1898	April 14	Oct. 6
1901	---	---	1899	April 9	Sept. 29
1902	---	---	1900	May 3	Oct. 8
1903	---	---	1901	April 18	Sept. 18
1904	---	---	1902	April 24	Sept. 12
1905	May 26	Oct. 12	1903	May 3	Sept. 27
1906	May 28	Oct. 1	1904	April 27	Oct. 6
1907	May 27	Sept. 25	1905	May 8	Oct. 12
1908	May 9	Sept. 28	1906	May 9	Oct. 6
1909	May 10	Oct. 12	1907	May 27	Sept. 25
1910	May 14	Oct. 6	1908	May 3	Sept. 28
1911	May 3	Oct. 8	1909	May 10	Oct. 11
1912	---	Sept. 26	1910	May 13	Oct. 6
1913	April 28	Sept. 22	1911	May 3	Oct. 8
1914	May 13	Oct. 25	1912	May 14	Sept. 26
1915	May 17	Oct. 5	1913	April 27	Sept. 22
1916	May 18	Sept. 17	1914	April 30	Oct. 25
1917	May 11	Oct. 6	1915	May 17	Oct. 5
1918	May 13	Sept. 20	1916	May 2	Sept. 15
1919	May 2	Oct. 11	1917	May 25	Oct. 8
1920	April 28	Sept. 30	1918	May 13	Sept. 18
1921	May 16	Oct. 4	1919	April 26	Oct. 10
1922	April 29	Oct. 9	1920	April 28	Sept. 30
1923	May 9	Sept. 14	1921	May 15	Oct. 3
1924	May 24	Sept. 28	1922	April 26	Oct. 9
1925	May 25	Oct. 7	1923	May 12	Oct. 13
1926	May 15	Sept. 25	1924	May 24	Sept. 28
1927	May 12	Oct. 14	1925	May 25	Oct. 7
1928	May 28	Sept. 25	1926	May 14	Sept. 25
1929	May 21	Sept. 18	1927	May 5	Sept. 20
1930	May 30	Sept. 28	1928	May 12	Sept. 23
1931	May 22	Oct. 17	1929	May 19	Sept. 18
1932	May 2	Sept. 29	1930	May 17	Oct. 16
1933	April 27	Sept. 27	1931	May 22	Nov. 4
1934	May 25	Sept. 16	1932	April 27	Sept. 29
1935	May 5	Sept. 27	1933	April 27	Oct. 9
1936	April 23	Oct. 2	1934	April 27	Sept. 16
1937	May 14	Sept. 16	1935	May 3	Sept. 27
1938	May 13	Oct. 21	1936	April 22	Oct. 21
1939	May 13	Sept. 30	1937	May 14	Sept. 16
1940	May 3	Sept. 12	1938	May 8	Oct. 20
1941	April 24	Sept. 29	1939	April 21	Sept. 26
1942	May 7	Sept. 20	1940	May 3	Sept. 25
1943	May 1	Sept. 17	1941	April 24	Sept. 28
1944	May 6	Oct. 10	1942	May 4	Sept. 24
1945	May 9	Sept. 29	1943	May 13	Sept. 17
1946	May 12	Sept. 30	1944	May 6	Oct. 9
1947	May 29	Sept. 25	1945	June 3	Sept. 28
1948	April 14	Oct. 10	1946	May 12	Oct. 12
1949	April 24	Sept. 24	1951	May 12	Oct. 12
1950	May 1	Sept. 24			
1951	May 11	Sept. 28			
1952	April 25	Sept. 21			
			Average	May 7	Oct. 1
Average	May 10	Sept. 30			

DATE OF OCCURRENCE OF 28° F. OR LOWER

DATE OF OCCURRENCE OF 28° F. OR LOWER

STATION - Albia
COUNTY - MonroeSTATION - Ames
COUNTY - Story

Year of occurrence	Last occurrence in spring	First occurrence in fall
1894	April 1	---
1895	---	---
1896	---	---
1897	---	---
1898	---	Oct. 14
1899	April 16	Sept. 29
1900	April 12	Nov. 8
1901	April 20	Oct. 4
1902	April 13	Oct. 14
1903	April 5	Oct. 26
1904	April 22	Oct. 23
1905	April 18	Oct. 12
1906	April 1	Oct. 10
1907	May 5	Oct. 12
1908	May 2	Sept. 29
1909	May 2	Oct. 12
1910	April 24	Oct. 28
1911	April 9	Oct. 22
1912	April 3	Oct. 23
1913	March 28	Sept. 22
1914	April 20	Oct. 27
1915	April 4	Oct. 9
1916	April 11	Oct. 10
1917	April 15	Oct. 8
1918	April 12	Oct. 25
1919	April 26	Oct. 17
1920	April 13	Oct. 29
1921	April 17	Oct. 8
1922	April 18	Oct. 17
1923	April 17	Oct. 21
1924	April 2	Nov. 8
1925	April 5	Oct. 10
1926	April 18	Oct. 24
1927	April 24	Nov. 5
1928	April 20	Oct. 29
1929	April 1	Nov. 6
1930	April 1	Oct. 17
1931	May 7	Nov. 4
1932	April 27	Oct. 21
1933	April 7	Oct. 25
1934	April 25	Oct. 28
1935	April 16	Oct. 4
1936	April 22	Oct. 23
1937	April 6	Oct. 14
1938	April 9	Nov. 7
1939	April 12	Oct. 14
1940	April 13	Nov. 7
1941	March 29	Oct. 28
1942	April 11	Sept. 28
1943	April 15	Oct. 17
1944	April 5	Nov. 4
1945	April 5	Oct. 9
1946	March 11	Nov. 12
1947	March 30	Nov. 8
1948	April 9	Oct. 17
1949	April 16	Sept. 29
1950	April 21	Nov. 4
1951	April 17	Oct. 31
1952	April 15	Oct. 6
Average	April 13	Oct. 20

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 24	Sept. 25
1894	April 9	Oct. 9
1895	April 3	Sept. 30
1896	---	Oct. 6
1897	April 19	Oct. 29
1898	April 7	Oct. 26
1899	April 19	Sept. 29
1900	April 12	Nov. 8
1901	April 18	Oct. 4
1902	April 13	Oct. 14
1903	April 30	Oct. 7
1904	April 21	Oct. 23
1905	April 19	Oct. 12
1906	April 1	Oct. 10
1907	May 11	Sept. 25
1908	May 2	Sept. 29
1909	May 3	Oct. 13
1910	April 20	Oct. 27
1911	April 9	Oct. 21
1912	April 19	Sept. 29
1913	April 28	Sept. 22
1914	April 19	Oct. 26
1915	April 3	Oct. 9
1916	April 9	Sept. 29
1917	April 15	Oct. 6
1918	May 1	Sept. 21
1919	April 27	Oct. 11
1920	April 14	Oct. 1
1921	April 17	Oct. 12
1922	April 1	Oct. 17
1923	April 10	Oct. 21
1924	April 12	Oct. 22
1925	May 11	Oct. 10
1926	April 19	Oct. 24
1927	April 24	Nov. 5
1928	April 20	Oct. 26
1929	April 2	Nov. 5
1930	April 23	Oct. 18
1931	May 7	Nov. 4
1932	April 12	Oct. 11
1933	April 22	Oct. 22
1934	April 25	Oct. 28
1935	April 30	Oct. 4
1936	April 22	Oct. 22
1937	April 6	Oct. 14
1938	April 22	Oct. 24
1939	April 13	Oct. 14
1940	April 13	Nov. 7
1941	March 29	Oct. 28
1942	April 11	Sept. 27
1943	April 17	Oct. 16
1944	April 17	Oct. 22
1945	May 9	Oct. 9
1946	March 11	Nov. 5
1947	May 9	Nov. 8
1948	April 9	Oct. 17
1949	April 19	Oct. 24
1950	May 1	Oct. 25
1951	April 23	Oct. 24
1952	April 11	Oct. 6
Average	April 18	Oct. 16

DATE OF OCCURRENCE OF 28° F. OR LOWER

STATION - Britt
COUNTY - Hancock

Year of occurrence	Last occurrence in spring	First occurrence in fall
1897	May 31	Sept. 20
1898	April 14	Oct. 6
1899	May 13	Sept. 26
1900	May 3	Oct. 8
1901	April 22	Oct. 4
1902	April 23	Sept. 13
1903	May 3	Oct. 18
1904	April 21	Oct. 6
1905	April 30	Oct. 12
1906	May 7	Oct. 10
1907	May 20	Sept. 25
1908	May 3	Sept. 28
1909	May 10	Oct. 12
1910	May 3	Oct. 22
1911	April 15	Oct. 21
1912	April 3	Sept. 26
1913	April 12	Sept. 22
1914	April 20	Oct. 25
1915	May 9	Oct. 5
1916	April 9	Sept. 17
1917	May 2	Oct. 8
1918	May 13	Oct. 31
1919	April 26	Oct. 11
1920	April 14	Oct. 1
1921	May 15	Oct. 30
1922	April 20	Oct. 12
1923	May 9	Oct. 20
1924	---	Nov. 2
1925	May 11	Oct. 10
1926	April 27	Sept. 25
1927	April 24	Nov. 2
1928	---	Oct. 30
1929	May 5	Sept. 18
1930	April 25	Oct. 17
1931	May 7	Nov. 4
1932	April 12	Oct. 13
1933	April 27	Oct. 13
1934	April 27	Oct. 28
1935	April 30	Oct. 4
1936	April 22	Oct. 22
1937	April 6	Oct. 13
1938	April 22	Oct. 23
1939	April 19	Sept. 30
1940	April 24	Nov. 7
1941	March 29	Oct. 27
1942	April 11	Sept. 24
1943	April 20	Oct. 16
1944	May 6	Oct. 22
1945	May 10	Sept. 29
1946	May 11	---
1947	May 9	Nov. 7
1948	April 9	Oct. 10
1949	April 24	Sept. 29
1950	May 1	Oct. 3
1951	April 27	Sept. 25
1952	April 11	Oct. 5
Average	April 27	Oct. 11

DATE OF OCCURRENCE OF 28° F. OR LOWER

STATION - Centerville
COUNTY - Appanoose

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 23	Oct. 27
1894	March 30	---
1895	March 24	Oct. 1
1896	---	Oct. 17
1897	April 19	---
1898	April 7	Oct. 26
1899	April 5	Sept. 29
1900	April 12	---
1901	---	Nov. 3
1902	April 8	---
1903	---	---
1904	---	---
1905	---	---
1906	---	---
1907	---	---
1908	---	---
1909	---	---
1910	---	---
1911	April 7	Oct. 21
1912	April 3	Oct. 23
1913	April 5	Oct. 20
1914	April 20	Oct. 27
1915	April 3	Oct. 9
1916	April 8	Oct. 20
1917	April 13	Oct. 7
1918	April 11	Nov. 1
1919	April 1	Oct. 17
1920	April 13	Oct. 29
1921	April 17	Nov. 9
1922	March 26	Oct. 17
1923	April 8	Oct. 21
1924	April 2	Oct. 22
1925	April 5	Oct. 17
1926	April 18	Sept. 26
1927	April 24	Nov. 6
1928	April 27	Oct. 29
1929	April 1	Nov. 6
1930	April 1	Oct. 17
1931	May 7	Nov. 6
1932	April 28	Oct. 30
1933	March 28	Oct. 25
1934	April 21	Oct. 28
1935	April 16	Oct. 4
1936	April 22	Oct. 22
1937	April 11	Oct. 14
1938	April 9	Nov. 7
1939	April 12	Oct. 14
1940	April 13	Nov. 7
1941	March 29	Oct. 28
1942	April 11	Sept. 28
1943	April 19	Oct. 15
1944	April 5	Nov. 22
1945	April 5	Oct. 9
1946	April 12	Nov. 12
1947	March 30	Nov. 8
1948	April 9	Oct. 17
1949	April 19	Oct. 26
1950	April 27	Oct. 25
1951	April 17	Oct. 31
1952	April 15	Oct. 6
Average	April 11	Oct. 23

DATE OF OCCURRENCE OF 28° F. OR LOWER

DATE OF OCCURRENCE OF 28° F. OR LOWER

STATION - Corning
COUNTY - AdamsSTATION - Decorah
COUNTY - Winneshiek

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 23	Oct. 15
1894	April 12	Nov. 3
1895	April 3	Sept. 30
1896	April 3	Sept. 28
1897	April 19	Oct. 29
1898	April 7	Oct. 26
1899	April 9	Sept. 26
1900	April 13	Nov. 8
1901	April 18	Oct. 4
1902	April 13	Oct. 14
1903	April 30	Oct. 18
1904	April 21	Oct. 23
1905	April 18	Oct. 21
1906	April 15	Oct. 10
1907	May 4	Oct. 12
1908	May 2	Sept. 29
1909	May 10	Oct. 12
1910	April 23	Oct. 22
1911	April 15	Oct. 21
1912	April 7	Sept. 26
1913	April 25	Sept. 22
1914	April 20	Oct. 27
1915	May 9	Oct. 9
1916	April 9	Sept. 29
1917	May 7	Oct. 6
1918	April 21	Nov. 1
1919	April 1	Oct. 11
1920	April 28	Oct. 1
1921	May 3	Oct. 4
1922	April 18	Oct. 9
1923	May 9	Oct. 20
1924	May 11	Sept. 30
1925	May 25	Oct. 9
1926	April 26	Sept. 26
1927	March 28	Oct. 31
1928	April 27	Sept. 25
1929	April 2	Oct. 25
1930	April 24	---
1931	May 7	Nov. 6
1932	April 27	Oct. 26
1933	April 15	Oct. 25
1934	April 25	Oct. 28
1935	April 16	Oct. 4
1936	April 22	Oct. 22
1937	April 10	Oct. 14
1938	April 22	Oct. 24
1939	April 13	Sept. 30
1940	April 13	Nov. 6
1941	March 29	Oct. 28
1942	April 11	Sept. 24
1943	April 19	Oct. 15
1944	May 5	Nov. 4
1945	April 5	Oct. 9
1946	March 10	Oct. 12
1947	April 16	Nov. 7
1948	April 8	Oct. 17
1949	April 19	Oct. 24
1950	April 29	Nov. 4
1951	April 22	Oct. 24
1952	April 11	Oct. 6

Average

April 20

Oct. 15

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	---	Sept. 23
1894	---	Oct. 9
1895	May 14	Oct. 9
1896	April 7	Oct. 7
1897	May 31	Sept. 20
1898	April 19	Oct. 20
1899	April 10	Sept. 29
1900	May 5	Nov. 7
1901	April 21	Oct. 4
1902	April 15	Oct. 14
1903	April 30	Oct. 24
1904	April 21	Oct. 6
1905	April 16	Oct. 20
1906	April 16	Oct. 10
1907	May 4	Oct. 13
1908	May 3	Oct. 12
1909	May 4	Oct. 12
1910	May 4	Oct. 23
1911	May 4	Oct. 21
1912	April 27	Oct. 23
1913	April 29	Oct. 21
1914	April 11	Oct. 25
1915	April 13	Oct. 9
1916	May 2	Oct. 10
1917	May 5	Oct. 13
1918	May 2	Nov. 1
1919	April 26	Oct. 11
1920	April 17	Oct. 1
1921	---	Oct. 4
1922	April 22	Oct. 17
1923	April 17	Sept. 14
1924	April 22	Sept. 30
1925	May 17	Oct. 6
1926	April 26	Sept. 25
1927	April 23	Oct. 14
1928	April 28	Sept. 26
1929	May 19	Sept. 18
1930	May 17	Sept. 28
1931	May 23	Nov. 2
1932	April 28	Oct. 6
1933	April 27	Oct. 13
1934	April 27	Oct. 28
1935	May 4	Oct. 4
1936	April 23	Oct. 2
1937	April 11	Oct. 8
1938	April 22	Oct. 24
1939	April 22	Sept. 30
1940	April 25	Sept. 26
1941	April 24	Sept. 29
1942	May 16	Sept. 25
1943	May 14	Oct. 17
1944	May 6	Oct. 12
1945	May 18	Sept. 29
1946	June 3	Sept. 2
1947	May 9	Sept. 25
1948	May 8	Oct. 3
1949	April 24	Sept. 24
1950	May 1	Sept. 24
1951	April 26	Sept. 29
1952	April 24	Oct. 3

Average

April 30

Oct. 8

DATE OF OCCURRENCE OF 28° F. OR LOWER

STATION - Davenport
COUNTY - Scott

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1874	April 9	Nov. 13	1939	April 12	Oct. 14
1875	April 17	Nov. 6	1940	April 13	Nov. 11
1876	March 30	Oct. 11	1941	March 25	Oct. 28
1877	April 2	Nov. 5	1942	March 30	Oct. 25
1878	Feb. 26	Oct. 27	1943	April 14	Oct. 17
1879	April 5	Oct. 31	1944	April 5	Nov. 27
1880	March 17	Oct. 18	1945	March 8	Nov. 3
1881	April 14	Nov. 14	1946	March 11	Nov. 16
1882	April 11	Nov. 12	1947	March 30	Nov. 9
1883	April 1	Nov. 1	1948	March 28	Nov. 22
1884	April 8	Nov. 18	1949	April 16	Oct. 31
1885	April 8	Nov. 3	1950	April 14	Nov. 10
1886	April 6	Nov. 6	1951	March 26	Nov. 1
1887	April 5	Oct. 24	1952	March 27	Oct. 20
1888	March 28	Nov. 11			
1889	April 6	Oct. 28			
1890	April 1	Oct. 31	Average	April 4	Oct. 31
1891	April 7	Nov. 1			
1892	April 10	Oct. 26			
1893	April 15	Oct. 28			
1894	March 29	Nov. 6			
1895	March 21	Oct. 23			
1896	April 3	Oct. 18			
1897	April 20	Nov. 6			
1898	April 6	Oct. 26			
1899	April 4	Oct. 30			
1900	April 12	Nov. 8			
1901	March 31	Nov. 3			
1902	April 8	Nov. 27			
1903	March 29	Nov. 6			
1904	April 21	Nov. 6			
1905	April 16	Oct. 28			
1906	April 1	Oct. 10			
1907	April 17	Oct. 28			
1908	April 3	Nov. 5			
1909	April 10	Oct. 12			
1910	April 24	Oct. 29			
1911	April 7	Oct. 27			
1912	March 30	Nov. 2			
1913	March 28	Oct. 21			
1914	April 9	Oct. 26			
1915	April 3	Oct. 9			
1916	April 9	Nov. 13			
1917	April 9	Oct. 8			
1918	April 10	Nov. 1			
1919	March 22	Oct. 29			
1920	April 13	Oct. 29			
1921	April 17	Nov. 12			
1922	March 22	Nov. 22			
1923	April 8	Oct. 30			
1924	April 2	Nov. 7			
1925	March 19	Oct. 21			
1926	April 18	Nov. 2			
1927	April 23	Nov. 5			
1928	April 15	Oct. 29			
1929	April 1	Nov. 20			
1930	March 28	Oct. 19			
1931	March 31	Nov. 24			
1932	March 24	Nov. 10			
1933	March 28	Oct. 25			
1934	March 31	Nov. 1			
1935	April 15	Oct. 4			
1936	April 8	Oct. 23			
1937	March 27	Oct. 14			
1938	April 7	Nov. 8			

DATE OF OCCURRENCE OF 28° F. OR LOWER

DATE OF OCCURRENCE OF 28° F. OR LOWER

STATION - Denison
COUNTY - CrawfordSTATION - Fairfield
COUNTY - Jefferson

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 23	---
1894	---	---
1895	May 12	Sept. 30
1896	---	Oct. 17
1897	April 18	Oct. 31
1898	April 16	Oct. 14
1899	April 16	Sept. 26
1900	April 12	Oct. 17
1901	April 22	Oct. 4
1902	April 23	Oct. 5
1903	April 30	Oct. 10
1904	April 21	Oct. 23
1905	May 4	Oct. 12
1906	April 6	Oct. 10
1907	May 4	Oct. 12
1908	May 2	Sept. 29
1909	May 10	Oct. 12
1910	May 13	Oct. 28
1911	April 14	Oct. 21
1912	March 28	Oct. 30
1913	April 27	Sept. 22
1914	April 20	Oct. 25
1915	May 9	Oct. 5
1916	May 18	Sept. 29
1917	May 5	---
1918	April 24	Sept. 21
1919	April 24	Oct. 11
1920	April 13	Oct. 28
1921	April 17	Oct. 4
1922	April 1	Oct. 9
1923	April 17	Oct. 20
1924	April 22	Nov. 7
1925	May 11	Oct. 9
1926	April 28	Sept. 25
1927	April 24	Oct. 31
1928	April 27	Oct. 29
1929	May 5	Oct. 23
1930	April 8	Oct. 17
1931	April 27	Nov. 1
1932	April 27	Oct. 21
1933	April 27	Oct. 22
1934	April 25	Oct. 28
1935	April 30	Oct. 4
1936	April 22	Oct. 21
1937	April 10	Oct. 14
1938	April 9	Oct. 24
1939	April 13	Oct. 14
1940	May 1	Nov. 7
1941	April 24	Oct. 27
1942	April 11	Sept. 24
1943	April 20	Oct. 15
1944	May 6	Oct. 10
1945	April 18	Sept. 29
1946	May 12	Oct. 12
1947	May 29	Oct. 29
1948	April 13	Oct. 17
1949	April 19	Sept. 29
1950	April 27	Oct. 25
1951	April 26	Oct. 19
1952	April 16	Oct. 6

Average

April 26

Oct. 15

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 23	---
1894	---	Oct. 9
1895	April 3	Oct. 9
1896	April 4	Oct. 7
1897	April 19	Oct. 29
1898	April 7	Oct. 14
1899	April 4	Sept. 29
1900	April 12	---
1901	---	---
1902	April 13	Oct. 14
1903	---	---
1904	---	---
1905	---	---
1906	---	---
1907	---	---
1908	April 30	Sept. 29
1909	May 3	Oct. 12
1910	April 24	Oct. 28
1911	April 7	Nov. 1
1912	April 3	Oct. 23
1913	March 28	Oct. 21
1914	April 14	Oct. 27
1915	April 3	Oct. 9
1916	April 22	Oct. 11
1917	April 14	Oct. 6
1918	May 1	Nov. 2
1919	April 25	Oct. 17
1920	April 14	Oct. 29
1921	April 17	Oct. 8
1922	March 26	Oct. 18
1923	April 10	Oct. 21
1924	April 1	Sept. 30
1925	April 5	Oct. 10
1926	April 26	Sept. 26
1927	April 24	Oct. 18
1928	April 28	Sept. 26
1929	April 1	Nov. 4
1930	April 25	Oct. 17
1931	May 7	Nov. 6
1932	April 18	Oct. 11
1933	April 27	Oct. 23
1934	April 25	Oct. 28
1935	April 16	Oct. 4
1936	April 22	Oct. 23
1937	April 11	Oct. 8
1938	April 9	Nov. 7
1939	April 13	Oct. 14
1940	April 13	Nov. 7
1941	March 29	Oct. 28
1942	April 11	Sept. 28
1943	April 21	Oct. 17
1944	April 6	Oct. 22
1945	April 5	Oct. 9
1946	March 11	Nov. 12
1947	March 30	Nov. 9
1948	April 9	Oct. 17
1949	April 16	Oct. 25
1950	April 20	Nov. 4
1951	April 17	Oct. 8
1952	April 11	Oct. 3

Average

April 14

Oct. 18

DATE OF OCCURRENCE OF 28° F. OR LOWER

STATION - Des Moines
COUNTY - Polk

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1878	---	Oct. 26	1940	April 13	Nov. 7
1879	April 5	Oct. 24	1941	March 29	Nov. 8
1880	April 11	Oct. 17	1942	April 1	Sept. 28
1881	April 14	Nov. 14	1943	April 15	Oct. 16
1882	March 30	Nov. 11	1944	April 5	Nov. 4
1883	March 30	Oct. 20	1945	April 5	Nov. 3
1884	April 8	Oct. 23	1946	March 11	Nov. 12
1885	April 13	Nov. 13	1947	March 30	Nov. 9
1886	April 5	Oct. 27	1948	April 2	Oct. 18
1887	April 4	Oct. 24	1949	April 16	Oct. 26
1888	April 20	Oct. 17	1950	April 15	Nov. 4
1889	April 4	Oct. 20	1951	April 17	Oct. 31
1890	April 1	Oct. 27	1952	April 11	Oct. 28
1891	April 7	Oct. 22			
1892	April 9	Oct. 24			
1893	April 23	Oct. 15	Average	April 7	Oct. 27
1894	April 1	Nov. 6			
1895	April 2	Oct. 9			
1896	April 3	Oct. 18			
1897	March 27	Nov. 2			
1898	April 7	Oct. 26			
1899	April 4	Sept. 29			
1900	April 12	Nov. 8			
1901	April 3	Nov. 3			
1902	April 8	Nov. 17			
1903	March 29	Nov. 6			
1904	April 16	Oct. 27			
1905	April 16	Oct. 28			
1906	March 24	Oct. 10			
1907	May 4	Oct. 13			
1908	April 3	Nov. 5			
1909	May 1	Oct. 12			
1910	April 23	Oct. 28			
1911	April 9	Oct. 28			
1912	March 25	Nov. 1			
1913	March 28	Oct. 21			
1914	April 9	Oct. 27			
1915	March 31	Oct. 9			
1916	April 9	Oct. 20			
1917	April 9	Oct. 8			
1918	April 8	Nov. 1			
1919	March 27	Oct. 28			
1920	April 7	Oct. 29			
1921	April 17	Nov. 9			
1922	March 26	Oct. 18			
1923	April 8	Oct. 21			
1924	April 1	Nov. 7			
1927	March 19	Oct. 10			
1926	April 15	Oct. 24			
1927	April 23	Nov. 6			
1928	April 19	Nov. 4			
1929	April 1	Nov. 6			
1930	April 1	Oct. 18			
1931	May 7	Nov. 6			
1932	March 31	Oct. 21			
1933	March 28	Oct. 25			
1934	March 31	Oct. 28			
1935	April 16	Oct. 31			
1936	April 7	Oct. 23			
1937	April 6	Oct. 14			
1938	April 7	Nov. 7			
1939	April 13	Oct. 14			

DATE OF OCCURRENCE OF 28° F. OR LOWER

STATION - Dubuque
COUNTY - Dubuque

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1874	---	Oct. 12	1938	April 7	Nov. 8
1875	April 24	Oct. 12	1939	April 13	Oct. 28
1876	April 1	Oct. 11	1940	April 12	Nov. 7
1877	April 2	Nov. 5	1941	March 29	Oct. 28
1878	Feb. 27	Nov. 3	1942	April 11	Oct. 25
1879	April 5	Oct. 24	1943	April 15	Nov. 10
1880	April 11	Oct. 18	1944	April 5	Nov. 27
1881	April 14	Nov. 14	1945	March 9	Nov. 3
1882	April 12	Nov. 12	1946	March 11	Nov. 16
1883	April 1	Nov. 2	1947	March 30	Nov. 8
1884	April 8	Oct. 23	1948	March 30	Oct. 17
1885	May 7	Oct. 6	1949	April 16	Oct. 26
1886	April 6	Oct. 27	1950	April 14	Nov. 9
1887	April 25	Oct. 22	1951	April 17	Oct. 27
1888	April 6	Oct. 3	1952	April 11	Oct. 5
1889	April 6	Oct. 7			
1890	April 1	Oct. 31			
1891	April 7	Nov. 2	Average	April 7	Oct. 27
1892	April 11	Oct. 24			
1893	April 15	Oct. 28			
1894	April 2	Oct. 14			
1895	April 2	Oct. 9			
1896	April 5	Oct. 18			
1897	April 20	Nov. 6			
1898	April 7	Oct. 26			
1899	April 5	Sept. 30			
1900	April 12	Nov. 8			
1901	April 1	Nov. 3			
1902	April 8	Nov. 8			
1903	April 30	Oct. 27			
1904	April 21	Nov. 6			
1905	March 20	Oct. 28			
1906	April 1	Oct. 10			
1907	April 17	Oct. 13			
1908	April 9	Oct. 31			
1909	April 10	Oct. 13			
1910	April 24	Oct. 28			
1911	April 7	Oct. 28			
1912	April 3	Nov. 2			
1913	March 28	Oct. 20			
1914	April 9	Oct. 27			
1915	April 3	Oct. 9			
1916	April 9	Nov. 11			
1917	April 13	Oct. 13			
1918	April 10	Nov. 1			
1919	April 1	Oct. 28			
1920	April 13	Oct. 29			
1921	April 17	Nov. 12			
1922	March 26	Nov. 22			
1923	April 10	Oct. 21			
1924	April 12	Oct. 22			
1925	April 5	Oct. 10			
1926	April 18	Oct. 24			
1927	April 23	Nov. 5			
1928	April 15	Oct. 29			
1929	April 1	Nov. 7			
1930	April 2	Oct. 18			
1931	April 2	Nov. 6			
1932	March 27	Nov. 10			
1933	March 28	Oct. 25			
1934	March 31	Nov. 1			
1935	April 15	Oct. 4			
1936	April 8	Oct. 23			
1937	March 29	Oct. 13			

DATE OF OCCURRENCE OF 28° F. OR LOWER

DATE OF OCCURRENCE OF 28° F. OR LOWER

STATION - Independence
COUNTY - BuchananSTATION - Inwood
COUNTY - Lyon

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	May 4	Sept. 25	1904	April 19	Oct. 5
1894	April 2	Oct. 6	1905	April 30	Oct. 21
1895	April 14	Sept. 30	1906	May 9	Oct. 9
1896	April 6	Sept. 20	1907	May 27	Sept. 28
1897	May 31	Oct. 9	1908	May 8	Sept. 28
1898	April 7	Oct. 23	1909	May 10	Oct. 12
1899	April 19	Sept. 30	1910	May 13	Oct. 22
1900	April 21	Nov. 8	1911	May 2	Oct. 21
1901	April 21	Oct. 4	1912	April 18	Sept. 27
1902	April 15	Oct. 14	1913	April 26	Sept. 22
1903	May 1	Oct. 18	1914	April 20	Oct. 26
1904	April 21	Oct. 23	1915	April 1	Oct. 8
1905	April 18	Oct. 12	1916	April 22	Sept. 15
1906	April 16	---	1917	May 2	Oct. 8
1907	May 11	Oct. 12	1918	April 30	Sept. 18
1908	May 2	Sept. 29	1919	April 24	Oct. 10
1909	May 3	Oct. 12	1920	April 28	Sept. 30
1910	April 24	Oct. 29	1921	May 14	Oct. 8
1911	April 9	Oct. 22	1922	April 20	Oct. 11
1912	April 3	Oct. 23	1923	May 9	Oct. 13
1913	April 27	Oct. 20	1924	May 24	Sept. 28
1914	April 20	Oct. 27	1925	May 17	Oct. 9
1915	April 3	Oct. 9	1926	May 14	Sept. 25
1916	April 9	Sept. 18	1927	April 24	Nov. 2
1917	April 15	Oct. 6	1928	April 27	Sept. 23
1918	May 1	Nov. 1	1929	May 16	Oct. 21
1919	April 25	Oct. 11	1930	May 17	Oct. 17
1920	April 14	Oct. 29	1931	May 22	Nov. 1
1921	April 18	Oct. 8	1932	April 27	Sept. 29
1922	April 1	Oct. 17	1933	April 27	Oct. 12
1923	April 12	Oct. 20	1934	April 27	Sept. 21
1924	April 11	Oct. 22	1935	April 30	Sept. 27
1925	April 5	Oct. 10	1936	April 22	Oct. 7
1926	April 26	Sept. 26	1937	April 9	Oct. 13
1927	April 9	Nov. 2	1938	April 9	Oct. 23
1928	April 22	Oct. 29	1939	April 21	Sept. 29
1929	April 2	Oct. 23	1940	April 18	Oct. 15
1930	April 24	Oct. 17	1941	March 29	Sept. 28
1931	April 27	Nov. 6	1942	April 11	Sept. 24
1932	April 12	Oct. 21	1943	May 13	Oct. 15
1933	April 27	Oct. 25	1944	May 6	Oct. 10
1934	April 27	Oct. 28	1945	May 10	Sept. 29
1935	May 4	Oct. 4	1946	May 12	Oct. 12
1936	April 23	Oct. 22	1947	May 29	Nov. 7
1937	April 11	Oct. 8	1948	April 12	Oct. 17
1938	April 10	Oct. 24	1949	April 24	Sept. 28
1939	April 13	Oct. 14	1950	May 7	Oct. 3
1940	April 13	Nov. 7	1951	April 23	Sept. 28
1941	March 29	Oct. 28	1952	April 15	Oct. 4
1942	April 11	Sept. 25			
1943	April 21	Oct. 17			
1944	April 17	Oct. 16	Average	May 1	Oct. 8
1945	May 9	Oct. 9			
1946	May 11	Nov. 4			
1947	April 21	Nov. 8			
1948	April 14	Oct. 10			
1949	April 19	Sept. 29			
1950	May 1	Oct. 4			
1951	April 23	Oct. 31			
1952	April 11	Oct. 5			
Average	April 19	Oct. 16			

DATE OF OCCURRENCE OF 28° F. OR LOWER

STATION - Iowa City
COUNTY - Johnson

DATE OF OCCURRENCE OF 28° F. OR LOWER

STATION - Iowa Falls
COUNTY - Hardin

Year of occurrence	Last occurrence in spring	First occurrence in fall
1888	March 27	Nov. 16
1889	April 6	Nov. 5
1890	April 1	Oct. 31
1891	---	---
1892	---	---
1893	April 23	Sept. 26
1894	April 6	Oct. 9
1895	April 3	Oct. 1
1896	April 5	Oct. 18
1897	April 20	Oct. 29
1898	April 7	Oct. 23
1899	April 16	Sept. 30
1900	April 12	Nov. 8
1901	April 21	Oct. 4
1902	April 17	Oct. 14
1903	April 4	Oct. 24
1904	April 22	Oct. 23
1905	April 17	Oct. 12
1906	May 7	Oct. 10
1907	May 4	Oct. 13
1908	April 30	Oct. 31
1909	May 3	Oct. 12
1910	April 24	Oct. 29
1911	April 8	Oct. 22
1912	April 19	Oct. 23
1913	April 13	Oct. 21
1914	April 12	Oct. 27
1915	April 4	Oct. 9
1916	April 9	Sept. 18
1917	April 15	Oct. 8
1918	May 1	Oct. 25
1919	April 1	Oct. 17
1920	April 14	Oct. 1
1921	April 18	Oct. 8
1922	April 1	Oct. 18
1923	April 17	Oct. 20
1924	April 10	Oct. 22
1925	May 7	Oct. 10
1926	April 26	Sept. 26
1927	April 24	Nov. 2
1928	April 28	Oct. 26
1929	April 13	Nov. 5
1930	April 23	Oct. 17
1931	May 7	Nov. 6
1932	April 14	Oct. 11
1933	April 27	Oct. 23
1934	April 25	Oct. 28
1935	April 16	Oct. 4
1936	April 22	Oct. 23
1937	March 29	Oct. 8
1938	April 9	Oct. 24
1939	April 13	Oct. 14
1940	April 13	Nov. 7
1941	March 29	Oct. 28
1942	April 11	Sept. 28
1943	April 15	Oct. 17
1944	April 6	Nov. 4
1945	May 9	Oct. 9
1946	April 12	Nov. 12
1947	March 30	Nov. 6
1948	April 9	Oct. 17
1949	April 19	Oct. 26
1950	April 28	Oct. 25
1951	April 23	Oct. 31
1952	April 16	Oct. 3
Average	April 16	Oct. 19

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 23	Sept. 25
1894	April 5	Sept. 18
1895	May 14	Sept. 30
1896	April 7	Sept. 20
1897	May 31	Oct. 29
1898	April 15	Oct. 6
1899	April 19	Sept. 26
1900	May 3	Oct. 8
1901	April 20	Oct. 4
1902	April 24	Oct. 14
1903	May 3	Oct. 18
1904	April 21	Oct. 6
1905	April 18	Oct. 12
1906	May 7	Oct. 6
1907	May 11	Sept. 25
1908	May 3	Sept. 29
1909	May 4	Oct. 12
1910	May 4	Oct. 28
1911	May 3	Oct. 21
1912	April 19	Oct. 23
1913	April 27	Sept. 22
1914	April 21	Oct. 25
1915	April 4	Oct. 9
1916	April 10	Sept. 29
1917	April 16	Oct. 6
1918	May 1	Sept. 21
1919	April 26	Oct. 11
1920	April 14	Oct. 1
1921	May 16	Oct. 4
1922	April 22	Oct. 12
1923	May 9	Oct. 21
1924	April 22	Oct. 22
1925	May 11	Oct. 10
1926	April 26	Sept. 26
1927	April 24	Oct. 14
1928	April 27	Oct. 26
1929	May 7	Oct. 23
1930	April 25	Oct. 17
1931	May 8	Nov. 6
1932	April 12	Oct. 11
1933	April 27	Oct. 20
1934	April 27	Oct. 28
1935	April 19	Oct. 4
1936	April 22	Oct. 21
1937	April 6	Oct. 13
1938	April 22	Nov. 7
1939	April 13	Sept. 30
1940	May 3	Nov. 6
1941	April 24	Oct. 27
1942	April 11	Sept. 28
1943	April 17	Oct. 16
1944	April 17	Oct. 22
1945	May 9	Oct. 9
1946	May 11	Nov. 4
1947	May 9	Nov. 8
1948	April 9	Oct. 17
1949	April 24	Sept. 29
1950	May 1	Oct. 4
1951	April 26	Sept. 28
1952	April 16	Oct. 3
Average	April 26	Oct. 12

DATE OF OCCURRENCE OF 28° F. OR LOWER

DATE OF OCCURRENCE OF 28° F. OR LOWER

STATION - Le Mars
COUNTY - PlymouthSTATION - Northwood
COUNTY - Worth

Year of occurrence	Last occurrence in spring	First occurrence in fall
1896	April 3	Oct. 17
1897	May 2	Oct. 9
1898	April 26	Oct. 6
1899	April 21	Sept. 29
1900	May 3	Nov. 1
1901	April 18	Oct. 4
1902	April 23	Sept. 12
1903	April 30	Oct. 26
1904	April 27	Oct. 6
1905	April 22	Oct. 20
1906	May 9	Oct. 9
1907	May 20	Oct. 12
1908	May 2	Sept. 29
1909	May 10	Oct. 12
1910	May 3	Oct. 22
1911	April 14	Oct. 21
1912	April 7	Oct. 22
1913	April 27	Sept. 22
1914	April 20	Oct. 27
1915	April 12	Oct. 9
1916	April 9	Sept. 29
1917	May 6	Oct. 8
1918	April 30	Sept. 18
1919	---	Oct. 10
1920	April 29	Sept. 30
1921	May 3	Oct. 4
1922	April 19	Oct. 12
1923	May 9	Oct. 20
1924	April 22	Nov. 2
1925	May 25	Oct. 9
1926	April 28	Sept. 25
1927	April 24	Nov. 2
1928	April 27	Sept. 25
1929	May 16	Sept. 18
1930	April 24	Oct. 17
1931	May 21	Nov. 1
1932	April 27	Oct. 13
1933	April 15	Oct. 12
1934	April 27	Oct. 28
1935	April 30	Oct. 4
1936	April 22	Oct. 21
1937	April 25	Oct. 13
1938	April 9	Oct. 23
1939	April 19	Sept. 30
1940	April 13	Nov. 7
1941	March 29	Oct. 27
1942	April 11	Sept. 24
1943	May 8	Oct. 15
1944	May 6	Oct. 10
1945	May 9	Sept. 29
1946	May 12	Oct. 12
1947	May 29	Nov. 7
1948	April 9	Oct. 17
1949	April 18	Oct. 24
1950	May 1	Nov. 9
1951	April 22	Sept. 28
1952	April 15	Oct. 5
Average	April 27	Oct. 13

Year of occurrence	Last occurrence in spring	First occurrence in fall
1896	April 6	Oct. 8
1897	April 20	Oct. 9
1898	April 7	Oct. 6
1899	April 19	Sept. 30
1900	April 12	Nov. 7
1901	April 19	Oct. 16
1902	April 23	Nov. 7
1903	April 30	Oct. 18
1904	April 21	Oct. 6
1905	April 30	Oct. 12
1906	May 7	Oct. 10
1907	May 6	Oct. 12
1908	May 3	Sept. 29
1909	May 4	Oct. 12
1910	May 3	Oct. 27
1911	---	Oct. 22
1912	April 27	Oct. 23
1913	April 27	Sept. 22
1914	April 20	Oct. 27
1915	April 4	Oct. 9
1916	April 10	Oct. 10
1917	April 14	Oct. 6
1918	April 26	Oct. 31
1919	April 26	---
1920	April 18	Oct. 28
1921	May 16	Oct. 8
1922	April 20	Oct. 12
1923	May 9	Oct. 19
1924	April 22	Oct. 22
1925	May 6	Oct. 10
1926	April 26	Sept. 25
1927	---	Oct. 14
1928	April 25	Oct. 29
1929	May 3	Sept. 18
1930	April 24	Oct. 17
1931	May 7	Nov. 6
1932	April 12	Oct. 13
1933	April 27	Oct. 12
1934	April 27	Oct. 28
1935	April 16	Oct. 4
1936	April 22	Oct. 21
1937	April 11	Oct. 8
1938	April 9	Oct. 23
1939	April 19	Sept. 30
1940	April 13	Nov. 6
1941	March 29	Oct. 27
1942	April 11	Sept. 25
1943	April 20	Oct. 16
1944	April 17	Oct. 22
1945	May 9	Sept. 29
1946	May 11	Oct. 18
1947	May 9	Nov. 7
1948	April 9	Oct. 17
1949	April 24	Sept. 29
1950	May 1	Oct. 25
1951	April 23	Sept. 28
1952	April 15	Oct. 3
Average	April 23	Oct. 15

DATE OF OCCURRENCE OF 28° F. OR LOWER

DATE OF OCCURRENCE OF 24° F. OR LOWER

STATION - Pocahontas
COUNTY - PocahontasSTATION - Albia
COUNTY - Monroe

Year of occurrence	Last occurrence in spring	First occurrence in fall
1904	---	Oct. 6
1905	April 18	Oct. 27
1906	May 6	Oct. 10
1907	May 11	Oct. 12
1908	May 2	Sept. 28
1909	May 10	Oct. 11
1910	May 4	Oct. 28
1911	April 23	Oct. 21
1912	April 3	Oct. 23
1913	April 27	Sept. 22
1914	April 20	Oct. 27
1915	April 12	Oct. 9
1916	April 14	Sept. 29
1917	April 16	Oct. 8
1918	April 26	Nov. 1
1919	April 26	Oct. 11
1920	April 13	Oct. 1
1921	April 17	Oct. 4
1922	April 20	Oct. 12
1923	April 17	Oct. 20
1924	April 22	Oct. 22
1925	May 11	Oct. 10
1926	April 28	Sept. 25
1927	April 24	Oct. 31
1928	April 27	Oct. 28
1929	May 5	Sept. 18
1930	April 25	Oct. 17
1931	May 21	Nov. 6
1932	April 12	Oct. 13
1933	April 27	Oct. 22
1934	April 27	Oct. 28
1935	April 30	Oct. 4
1936	April 22	Oct. 21
1937	April 6	Oct. 13
1938	April 22	Oct. 23
1939	April 19	Sept. 30
1940	April 18	Oct. 15
1941	April 24	Oct. 27
1942	April 11	Sept. 24
1943	April 20	Oct. 16
1944	May 6	Oct. 10
1945	May 9	Sept. 29
1946	May 12	Oct. 12
1947	May 9	Nov. 7
1948	April 13	Oct. 17
1949	April 19	Sept. 29
1950	May 1	Oct. 25
1951	April 23	Sept. 28
1952	April 16	Oct. 6
Average	April 25	Oct. 14

Year of occurrence	Last occurrence in spring	First occurrence in fall
1898	---	Oct. 26
1899	April 4	Sept. 29
1900	April 12	Nov. 8
1901	March 24	Nov. 2
1902	April 8	Nov. 14
1903	March 25	Oct. 26
1904	April 17	Oct. 27
1905	March 15	Oct. 28
1906	March 25	Oct. 31
1907	May 4	Oct. 13
1908	April 3	Nov. 11
1909	April 11	Oct. 13
1910	April 24	Oct. 29
1911	April 7	Nov. 2
1912	March 25	Nov. 2
1913	March 28	Oct. 21
1914	April 10	Oct. 27
1915	March 31	Oct. 9
1916	April 9	Oct. 21
1917	April 15	Oct. 13
1918	April 12	Nov. 1
1919	April 1	Oct. 28
1920	April 13	Oct. 29
1921	April 17	Nov. 10
1922	March 8	Nov. 21
1923	April 8	Oct. 30
1924	April 1	Nov. 8
1925	March 19	Oct. 10
1926	April 15	Nov. 2
1927	March 27	Nov. 6
1928	April 15	Oct. 29
1929	March 10	Nov. 19
1930	March 30	Oct. 17
1931	April 1	Nov. 6
1932	March 31	Oct. 30
1933	March 28	Oct. 25
1934	March 31	Oct. 28
1935	April 16	Oct. 6
1936	April 7	Oct. 23
1937	March 29	Oct. 14
1938	April 2	Nov. 8
1939	April 12	Oct. 14
1940	April 12	Nov. 11
1941	March 25	Oct. 28
1942	March 29	Sept. 28
1943	March 22	Nov. 11
1944	April 5	Nov. 28
1945	March 8	Nov. 3
1946	March 11	Nov. 17
1947	March 30	Nov. 11
1948	March 28	Nov. 12
1949	March 19	Oct. 31
1950	April 14	Nov. 4
1951	March 24	Nov. 1
1952	April 10	Oct. 6
Average	April 2	Oct. 29

DATE OF OCCURRENCE OF 24° F. OR LOWER

DATE OF OCCURRENCE OF 24° F. OR LOWER

STATION - Ames
COUNTY - StorySTATION - Britt
COUNTY - Hancock

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 24	Sept. 28
1894	April 9	Oct. 9
1895	April 2	Oct. 8
1896	---	Oct. 19
1897	March 27	Nov. 6
1898	April 7	Oct. 31
1899	April 4	Sept. 29
1900	March 21	Nov. 8
1901	March 31	Nov. 3
1902	April 8	Nov. 19
1903	April 13	Oct. 27
1904	April 17	Oct. 23
1905	April 17	Oct. 28
1906	March 24	Oct. 10
1907	May 4	Oct. 13
1908	April 30	Oct. 12
1909	March 21	Oct. 13
1910	April 17	Oct. 27
1911	April 9	Oct. 28
1912	March 25	Oct. 23
1913	March 27	Oct. 21
1914	April 19	Oct. 26
1915	March 30	Oct. 9
1916	April 9	Oct. 21
1917	April 9	Oct. 8
1918	April 11	Sept. 27
1919	April 1	Oct. 28
1920	April 13	Oct. 29
1921	April 10	Nov. 9
1922	March 3	Oct. 18
1923	April 8	Oct. 21
1924	April 1	Nov. 7
1925	March 28	Oct. 22
1926	April 15	Oct. 25
1927	March 27	Nov. 6
1928	April 19	Oct. 29
1929	April 1	Nov. 6
1930	April 1	Oct. 19
1931	April 1	Nov. 6
1932	March 23	Oct. 30
1933	April 27	Oct. 26
1934	April 25	Oct. 28
1935	April 16	Oct. 4
1936	April 22	Oct. 23
1937	March 29	Oct. 14
1938	April 7	Nov. 8
1939	April 13	Oct. 14
1940	April 13	Nov. 7
1941	March 29	Oct. 28
1942	April 1	Sept. 28
1943	April 15	Oct. 16
1944	April 6	Nov. 4
1945	April 5	Nov. 3
1946	March 11	Nov. 13
1947	March 30	Nov. 9
1948	March 28	Oct. 17
1949	April 16	Oct. 26
1950	April 15	Nov. 4
1951	April 17	Oct. 31
1952	April 10	Oct. 7
Average	April 7	Oct. 24

Year of occurrence	Last occurrence in spring	First occurrence in fall
1897	April 20	Oct. 9
1898	April 7	Oct. 6
1899	April 4	Sept. 29
1900	March 31	Nov. 8
1901	April 18	Nov. 3
1902	April 23	Oct. 14
1903	April 4	Nov. 6
1904	April 19	Oct. 23
1905	April 18	Oct. 28
1906	May 7	Oct. 10
1907	May 4	Oct. 12
1908	May 2	Sept. 29
1909	May 3	Oct. 12
1910	April 17	Oct. 28
1911	April 9	Oct. 27
1912	March 25	Oct. 30
1913	March 27	Sept. 22
1914	April 20	Oct. 27
1915	March 31	Oct. 9
1916	April 9	Sept. 29
1917	April 15	Oct. 8
1918	April 24	Nov. 1
1919	March 31	Oct. 11
1920	April 13	Oct. 28
1921	April 18	---
1922	March 29	Oct. 12
1923	May 9	Oct. 20
1924	---	Nov. 7
1925	March 15	Oct. 10
1926	April 26	Oct. 24
1927	April 22	Nov. 5
1928	---	Nov. 3
1929	April 2	Nov. 7
1930	April 1	Oct. 18
1931	April 27	Nov. 6
1932	March 31	Oct. 13
1933	April 14	Oct. 25
1934	April 27	Oct. 28
1935	April 16	Oct. 4
1936	April 22	Oct. 22
1937	March 27	Oct. 13
1938	April 8	Nov. 7
1939	April 13	Oct. 14
1940	April 13	Nov. 11
1941	March 25	Oct. 28
1942	April 11	Sept. 28
1943	April 15	Oct. 16
1944	April 5	Nov. 4
1945	April 5	Oct. 9
1946	March 11	---
1947	April 20	Nov. 8
1948	April 9	Oct. 17
1949	April 24	Oct. 24
1950	April 28	Oct. 4
1951	April 19	Oct. 23
1952	April 10	Oct. 5
Average	April 13	Oct. 20

DATE OF OCCURRENCE OF 24° F. OR LOWER

DATE OF OCCURRENCE OF 24° F. OR LOWER

STATION - Centerville
COUNTY - AppanooseSTATION - Corning
COUNTY - Adams

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 23	Nov. 2
1894	March 30	---
1895	March 19	Oct. 9
1896	---	Oct. 21
1897	---	---
1898	---	---
1899	April 4	Nov. 3
1900	March 31	---
1901	---	Nov. 3
1902	April 8	---
1903	---	---
1904	---	---
1905	---	---
1906	---	---
1907	---	---
1908	---	---
1909	---	---
1910	---	---
1911	April 7	Nov. 1
1912	March 25	---
1913	March 27	Oct. 21
1914	April 9	Oct. 27
1915	March 30	Oct. 9
1916	April 6	Nov. 12
1917	April 9	Oct. 12
1918	April 10	Nov. 1
1919	March 11	Oct. 28
1920	April 5	Oct. 29
1921	April 17	Nov. 12
1922	March 8	Nov. 21
1923	April 8	Oct. 30
1924	April 2	Nov. 12
1925	March 15	Oct. 27
1926	April 15	Nov. 9
1927	March 27	Nov. 6
1928	April 15	Nov. 23
1929	March 10	Nov. 20
1930	March 30	Oct. 20
1931	April 1	Nov. 6
1932	March 23	Nov. 11
1933	March 28	Nov. 8
1934	March 31	Nov. 1
1935	April 16	Nov. 1
1936	April 8	Oct. 23
1937	March 29	Oct. 14
1938	April 2	Nov. 8
1939	April 12	Oct. 14
1940	April 12	Nov. 7
1941	March 29	Oct. 28
1942	March 30	Sept. 28
1943	April 14	Nov. 3
1944	April 5	Nov. 28
1945	March 8	Nov. 4
1946	March 10	Nov. 17
1947	March 30	Nov. 9
1948	April 1	Nov. 13
1949	March 19	Oct. 31
1950	April 15	Nov. 4
1951	March 24	Nov. 1
1952	April 10	Oct. 6
Average	April 1	Nov. 1

Year of occurrence	Last occurrence in spring	First occurrence in fall
1891	---	Oct. 22
1892	April 9	Oct. 25
1893	April 23	Oct. 15
1894	April 1	Nov. 10
1895	March 21	Oct. 23
1896	April 3	Oct. 20
1897	March 27	Nov. 2
1898	April 2	Nov. 14
1899	April 4	Sept. 29
1900	April 12	Nov. 8
1901	March 31	Oct. 4
1902	April 13	Nov. 23
1903	April 4	Nov. 6
1904	April 16	Oct. 27
1905	April 18	Oct. 28
1906	March 23	Oct. 10
1907	May 4	Oct. 12
1908	May 2	Sept. 29
1909	May 1	Oct. 12
1910	April 20	Oct. 29
1911	April 9	Oct. 22
1912	March 25	Oct. 30
1913	March 27	Sept. 22
1914	April 20	Oct. 27
1915	March 31	Oct. 9
1916	April 9	Oct. 10
1917	April 15	Oct. 8
1918	April 11	Nov. 1
1919	March 7	Oct. 28
1920	April 13	Oct. 1
1921	April 17	Oct. 12
1922	March 27	Oct. 12
1923	April 17	Oct. 20
1924	April 1	Nov. 7
1925	May 7	Oct. 10
1926	April 15	Oct. 24
1927	March 21	Nov. 6
1928	April 27	Nov. 4
1929	March 26	Nov. 7
1930	April 8	Oct. 21
1931	April 4	Nov. 24
1932	March 31	Nov. 9
1933	March 23	Oct. 25
1934	March 31	Nov. 1
1935	April 16	Oct. 4
1936	April 22	Oct. 23
1937	March 27	Oct. 14
1938	April 6	Oct. 24
1939	April 12	Oct. 14
1940	April 13	Nov. 7
1941	March 29	Oct. 28
1942	April 11	Sept. 28
1943	April 14	Oct. 16
1944	April 5	Nov. 27
1945	April 5	Nov. 4
1946	March 10	Nov. 17
1947	March 30	Nov. 11
1948	April 1	Oct. 17
1949	---	Oct. 26
1950	April 14	Nov. 4
1951	April 16	Nov. 1
1952	April 10	Oct. 6
Average	April 7	Oct. 24

DATE OF OCCURRENCE OF 24° F. OR LOWER

STATION - Davenport
COUNTY - Scott

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1874	April 4	Nov. 18	1939	April 12	Nov. 28
1875	April 17	Nov. 16	1940	April 12	Nov. 11
1876	March 30	Nov. 21	1941	March 18	Nov. 23
1877	April 2	Nov. 5	1942	Feb. 28	Oct. 26
1878	Feb. 11	Oct. 31	1943	March 22	Nov. 10
1879	April 4	Oct. 31	1944	April 4	Nov. 29
1880	March 17	Oct. 18	1945	March 7	Nov. 3
1881	April 14	Nov. 14	1946	March 11	Nov. 17
1882	March 24	Nov. 13	1947	March 26	Nov. 11
1883	March 29	Nov. 11	1948	March 13	Nov. 23
1884	April 8	Nov. 23	1949	March 19	Nov. 3
1885	March 23	Nov. 13	1950	April 13	Nov. 10
1886	April 5	Nov. 7	1951	March 25	Nov. 1
1887	April 5	Oct. 24	1952	March 25	Oct. 29
1888	March 25	Nov. 16			
1889	March 28	Nov. 16			
1890	March 16	Dec. 2	Average	March 26	Nov. 11
1891	April 4	Nov. 13			
1892	April 9	Nov. 8			
1893	March 18	Oct. 29			
1894	March 29	Nov. 11			
1895	March 21	Oct. 23			
1896	April 3	Nov. 9			
1897	March 26	Nov. 12			
1898	April 5	Nov. 11			
1899	April 2	Dec. 3			
1900	March 21	Nov. 8			
1901	March 21	Nov. 3			
1902	March 18	Dec. 3			
1903	March 1	Nov. 16			
1904	April 16	Nov. 25			
1905	March 14	Nov. 14			
1906	March 23	Nov. 13			
1907	April 17	Oct. 28			
1908	April 2	Nov. 11			
1909	April 10	Oct. 13			
1910	April 24	Oct. 29			
1911	April 1	Nov. 1			
1912	March 25	Nov. 2			
1913	March 27	Oct. 21			
1914	April 9	Nov. 16			
1915	March 31	Nov. 14			
1916	April 6	Nov. 13			
1917	March 19	Oct. 29			
1918	March 10	Nov. 23			
1919	March 7	Nov. 12			
1920	April 5	Nov. 10			
1921	March 29	Nov. 11			
1922	March 3	Nov. 24			
1923	March 31	Oct. 30			
1924	March 31	Nov. 24			
1925	March 15	Oct. 27			
1926	April 1	Nov. 9			
1927	March 3	Nov. 5			
1928	April 15	Nov. 24			
1929	March 10	Nov. 20			
1930	March 21	Oct. 20			
1931	March 30	Nov. 25			
1932	March 22	Nov. 11			
1933	March 21	Nov. 9			
1934	March 28	Dec. 1			
1935	March 17	Nov. 6			
1936	April 7	Nov. 4			
1937	March 27	Nov. 3			
1938	March 6	Nov. 22			

DATE OF OCCURRENCE OF 24° F. OR LOWER

DATE OF OCCURRENCE OF 24° F. OR LOWER

STATION - Decorah
COUNTY - WinneshiekSTATION - Denison
COUNTY - Crawford

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	---	Oct. 24
1894	---	Oct. 14
1895	April 2	Oct. 9
1896	April 7	Oct. 7
1897	April 20	Oct. 17
1898	April 7	Oct. 26
1899	April 4	Sept. 30
1900	April 12	Nov. 8
1901	April 21	Nov. 3
1902	April 13	Nov. 7
1903	March 29	Oct. 24
1904	April 19	Oct. 26
1905	April 14	Oct. 27
1906	March 26	Oct. 31
1907	May 4	Oct. 13
1908	May 3	Oct. 31
1909	April 23	Oct. 12
1910	April 23	Oct. 29
1911	May 3	Oct. 22
1912	April 3	Oct. 23
1913	March 27	Oct. 21
1914	April 11	Oct. 27
1915	April 3	Oct. 9
1916	April 9	Oct. 10
1917	April 15	Oct. 13
1918	April 25	Nov. 1
1919	April 25	Oct. 28
1920	April 13	Oct. 1
1921	April 10	Nov. 5
1922	March 28	Oct. 18
1923	April 10	Oct. 21
1924	April 19	Oct. 22
1925	May 11	Oct. 10
1926	April 26	Sept. 26
1927	April 23	Oct. 14
1928	April 28	Oct. 29
1929	April 1	Nov. 7
1930	April 26	Oct. 18
1931	April 24	Nov. 6
1932	April 30	Oct. 13
1933	April 27	Oct. 13
1934	April 25	Nov. 2
1935	April 15	Oct. 4
1936	April 22	Oct. 23
1937	April 11	Oct. 13
1938	April 5	Nov. 8
1939	April 13	Oct. 14
1940	April 13	Nov. 7
1941	March 29	Oct. 28
1942	April 11	Sept. 25
1943	May 1	Oct. 17
1944	April 20	Oct. 15
1945	May 9	Sept. 29
1946	May 9	Nov. 4
1947	May 9	Sept. 26
1948	April 21	Oct. 3
1949	April 19	Sept. 29
1950	April 21	Sept. 24
1951	April 19	Nov. 1
1952	April 15	Oct. 3
Average	April 17	Oct. 19

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 23	---
1894	---	---
1895	April 2	Oct. 23
1896	---	Oct. 18
1897	April 18	Nov. 8
1898	April 14	Oct. 26
1899	April 7	Sept. 29
1900	April 11	Nov. 8
1901	April 18	Nov. 3
1902	April 13	Oct. 14
1903	April 30	Oct. 18
1904	April 19	Oct. 23
1905	April 18	Oct. 28
1906	April 6	Oct. 10
1907	May 4	Oct. 17
1908	May 2	Sept. 29
1909	May 1	Oct. 12
1910	April 18	Oct. 29
1911	April 7	Oct. 28
1912	March 24	Oct. 30
1913	March 27	Sept. 22
1914	April 11	Oct. 27
1915	April 2	Oct. 9
1916	April 9	Oct. 10
1917	April 15	---
1918	April 10	Sept. 21
1919	March 27	Oct. 26
1920	April 13	Oct. 29
1921	April 10	Nov. 9
1922	March 28	Oct. 12
1923	April 8	Oct. 21
1924	April 1	Nov. 8
1925	March 28	Oct. 17
1926	April 15	Oct. 24
1927	April 24	Nov. 6
1928	April 19	Nov. 4
1929	April 9	Nov. 6
1930	April 1	Oct. 18
1931	April 5	Nov. 6
1932	April 12	Oct. 30
1933	April 15	Oct. 22
1934	April 25	Oct. 28
1935	April 16	Oct. 4
1936	April 22	Oct. 22
1937	March 27	Oct. 14
1938	April 7	Nov. 7
1939	April 12	Oct. 14
1940	April 12	Nov. 11
1941	March 29	Oct. 28
1942	April 11	Sept. 28
1943	April 17	Oct. 15
1944	April 5	Nov. 4
1945	April 5	Oct. 9
1946	March 10	Nov. 12
1947	April 7	Nov. 8
1948	April 10	Oct. 17
1949	April 16	Oct. 26
1950	April 26	Nov. 4
1951	April 4	Oct. 31
1952	April 10	Oct. 6
Average	April 11	Oct. 23

DATE OF OCCURRENCE OF 24° F. OR LOWER

STATION - Des Moines
COUNTY - Polk

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1878	---	Oct. 27	1941	March 18	Nov. 22
1879	April 4	Oct. 31	1942	March 29	Oct. 25
1880	March 17	Oct. 18	1943	March 22	Nov. 10
1881	April 13	Nov. 14	1944	April 2	Nov. 29
1882	March 24	Nov. 12	1945	March 7	Nov. 3
1883	March 28	Nov. 12	1946	March 11	Nov. 17
1884	March 14	Nov. 6	1947	March 30	Nov. 10
1885	March 29	Nov. 14	1948	March 13	Nov. 22
1886	April 2	Nov. 7	1949	March 19	Oct. 31
1887	April 4	Oct. 24	1950	April 13	Nov. 4
1888	April 20	Nov. 11	1951	March 24	Nov. 1
1889	April 4	Nov. 5	1952	April 10	Oct. 29
1890	March 28	Nov. 3			
1891	April 4	Nov. 13			
1892	March 23	Nov. 7	Average	March 29	Oct. 18
1893	April 15	Oct. 28			
1894	March 29	Nov. 10			
1895	March 17	Oct. 9			
1896	April 3	Nov. 8			
1897	March 24	Nov. 6			
1898	March 30	Nov. 11			
1899	April 4	Nov. 3			
1900	March 21	Nov. 8			
1901	March 31	Nov. 3			
1902	April 8	Nov. 26			
1903	March 25	Nov. 16			
1904	March 27	Nov. 11			
1905	April 16	Oct. 31			
1906	March 24	Oct. 31			
1907	April 17	Oct. 28			
1908	April 2	Nov. 11			
1909	April 10	Oct. 12			
1910	April 17	Oct. 29			
1911	March 29	Nov. 1			
1912	March 25	Nov. 2			
1913	March 27	Oct. 21			
1914	April 9	Oct. 27			
1915	March 30	Nov. 14			
1916	April 6	Oct. 21			
1917	March 18	Oct. 13			
1918	March 10	Nov. 23			
1919	March 7	Oct. 28			
1920	April 5	Nov. 9			
1921	April 16	Nov. 9			
1922	March 8	Nov. 24			
1923	April 8	Oct. 30			
1924	April 1	Nov. 8			
1925	March 15	Oct. 27			
1926	April 15	Nov. 2			
1927	March 3	Nov. 5			
1928	April 15	Nov. 24			
1929	March 10	Nov. 19			
1930	March 30	Oct. 20			
1931	March 29	Nov. 6			
1932	March 23	Nov. 10			
1933	March 22	Nov. 8			
1934	March 31	Nov. 1			
1935	March 17	Nov. 5			
1936	April 7	Oct. 23			
1937	March 27	Oct. 14			
1938	March 6	Nov. 8			
1939	April 12	Nov. 4			
1940	April 12	Nov. 11			

DATE OF OCCURRENCE OF 24° F. OR LOWER

STATION - Dubuque
COUNTY - Dubuque

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1874	---	Nov. 13	1936	April 8	Oct. 27
1875	April 17	Nov. 4	1937	March 27	Nov. 3
1876	March 31	Oct. 15	1938	March 8	Nov. 8
1877	April 2	Nov. 5	1939	April 13	Nov. 27
1878	Feb. 26	Nov. 26	1940	April 11	Nov. 11
1879	April 5	Nov. 1	1941	March 18	Nov. 23
1880	March 17	Oct. 18	1942	March 1	Oct. 26
1881	April 6	Nov. 14	1943	March 22	Nov. 10
1882	March 24	Nov. 12	1944	April 4	Nov. 27
1883	April 23	Nov. 11	1945	March 8	Nov. 4
1884	March 15	Nov. 19	1946	March 11	Nov. 16
1885	March 25	Nov. 13	1947	March 30	Nov. 9
1886	April 5	Nov. 6	1948	March 13	Nov. 23
1887	April 5	Oct. 24	1949	March 19	Nov. 21
1888	March 28	Nov. 16	1950	April 13	Nov. 10
1889	March 30	Oct. 29	1951	March 26	Nov. 1
1890	March 30	Nov. 26	1952	April 11	Oct. 6
1891	April 5	Nov. 2			
1892	April 9	Nov. 5			
1893	March 27	Oct. 30	Average	March 29	Nov. 7
1894	March 30	Nov. 10			
1895	April 2	Oct. 23			
1896	April 4	Oct. 21			
1897	March 26	Nov. 12			
1898	April 6	Nov. 11			
1899	April 4	Sept. 30			
1900	March 21	Nov. 8			
1901	March 31	Nov. 3			
1902	April 7	Nov. 28			
1903	March 21	Nov. 16			
1904	April 16	Nov. 14			
1905	March 19	Oct. 29			
1906	March 25	Oct. 31			
1907	April 14	Oct. 28			
1908	April 3	Nov. 5			
1909	April 10	Oct. 28			
1910	April 24	Oct. 29			
1911	April 7	Nov. 1			
1912	March 25	Nov. 2			
1913	March 27	Oct. 21			
1914	April 9	Nov. 15			
1915	April 3	Nov. 14			
1916	April 6	Nov. 13			
1917	March 19	Oct. 13			
1918	March 10	Nov. 23			
1919	March 11	Nov. 4			
1920	April 5	Oct. 29			
1921	March 29	Nov. 9			
1922	March 8	Nov. 24			
1923	April 8	Oct. 30			
1924	April 2	Nov. 8			
1925	March 15	Oct. 22			
1926	April 1	Nov. 2			
1927	March 22	Nov. 5			
1928	April 15	Nov. 24			
1929	April 1	Nov. 20			
1930	March 26	Oct. 19			
1931	March 31	Nov. 24			
1932	March 24	Nov. 11			
1933	March 23	Nov. 9			
1934	March 28	Dec. 2			
1935	April 15	Nov. 5			

DATE OF OCCURRENCE OF 24° F. OR LOWER

STATION - Fairfield
COUNTY - Jefferson

Year of occurrence	Last occurrence in spring	First occurrence in fall
1894	---	Oct. 31
1895	April 2	Oct. 9
1896	April 3	Oct. 21
1897	March 27	Nov. 6
1898	April 7	Oct. 31
1899	April 2	Sept. 29
1900	---	---
1901	---	---
1902	---	---
1903	---	---
1904	---	---
1905	---	---
1906	---	---
1907	---	---
1908	April 2	Oct. 12
1909	April 10	Oct. 13
1910	April 24	Oct. 29
1911	April 7	Nov. 1
1912	March 25	Nov. 2
1913	March 28	Oct. 21
1914	April 9	Oct. 27
1915	April 3	Oct. 9
1916	April 6	Oct. 21
1917	April 9	Oct. 13
1918	April 9	Nov. 1
1919	March 23	Oct. 29
1920	April 8	Oct. 29
1921	April 1	Nov. 3
1922	March 22	Nov. 16
1923	April 9	Oct. 21
1924	April 1	Oct. 23
1925	April 5	Oct. 10
1926	April 15	Oct. 25
1927	April 24	Nov. 6
1928	April 15	Oct. 29
1929	March 10	Nov. 5
1930	March 30	Oct. 20
1931	March 30	Nov. 6
1932	March 23	Oct. 30
1933	April 27	Oct. 25
1934	April 25	Nov. 1
1935	March 17	Oct. 6
1936	April 8	Oct. 23
1937	March 27	Oct. 14
1938	April 4	Nov. 8
1939	April 12	Oct. 14
1940	April 13	Nov. 7
1941	March 29	Oct. 28
1942	March 30	Sept. 28
1943	April 15	Oct. 17
1944	April 5	Nov. 24
1945	March 8	Nov. 4
1946	March 11	Nov. 17
1947	March 26	Nov. 11
1948	March 17	Oct. 18
1949	March 19	Oct. 30
1950	April 14	Nov. 4
1951	March 26	Oct. 24
1952	April 7	Oct. 6
Average	April 3	Oct. 26

DATE OF OCCURRENCE OF 24° F. OR LOWER

STATION - Independence
COUNTY - Buchanan

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	April 23	Oct. 28
1894	March 29	Nov. 6
1895	April 2	Oct. 9
1896	April 4	Oct. 18
1897	April 20	Oct. 9
1898	April 7	Oct. 26
1899	April 5	Sept. 30
1900	April 21	Nov. 8
1901	April 1	Nov. 3
1902	April 8	Nov. 7
1903	March 30	Oct. 26
1904	April 21	Oct. 27
1905	April 14	Oct. 28
1906	April 1	---
1907	May 4	Oct. 13
1908	April 3	Nov. 5
1909	April 13	Oct. 13
1910	April 24	Oct. 29
1911	April 7	Oct. 28
1912	March 25	Oct. 23
1913	March 28	Oct. 21
1914	April 11	Oct. 27
1915	April-3	Nov. 14
1916	April 6	Oct. 21
1917	April 15	Oct. 13
1918	April 10	Nov. 1
1919	April 1	Oct. 28
1920	April 6	Oct. 29
1921	April 17	Nov. 9
1922	March 12	Nov. 22
1923	April 7	Oct. 30
1924	April 2	Nov. 8
1925	April 5	Oct. 10
1926	April 19	Oct. 24
1927	March 27	Nov. 5
1928	April 15	Oct. 29
1929	April 1	Nov. 5
1930	April 1	Oct. 19
1931	March 30	Nov. 6
1932	March 24	Oct. 28
1933	March 28	Oct. 25
1934	April 25	Oct. 28
1935	May 4	Oct. 4
1936	April 22	Oct. 23
1937	March 27	Oct. 14
1938	April 5	Nov. 8
1939	April 13	Oct. 14
1940	April 13	Nov. 7
1941	March 25	Oct. 28
1942	March 30	Sept. 28
1943	April 15	Oct. 17
1944	April 5	Nov. 4
1945	May 9	Oct. 15
1946	April 5	Nov. 12
1947	April 18	Nov. 9
1948	April 3	Oct. 17
1949	April 16	Oct. 26
1950	April 28	Nov. 4
1951	April 17	Nov. 1
1952	April 10	Oct. 6
Average	April 9	Oct. 26

DATE OF OCCURRENCE OF 24° F. OR LOWER

DATE OF OCCURRENCE OF 24° F. OR LOWER

STATION - Inwood
COUNTY - LyonSTATION - Iowa City
COUNTY - Johnson

Year of occurrence	Last occurrence in spring	First occurrence in fall
1904	April 19	Nov. 10
1905	April 18	Oct. 27
1906	April 15	Oct. 10
1907	May 3	Oct. 12
1908	May 2	Sept. 29
1909	May 10	Oct. 12
1910	May 3	Oct. 28
1911	April 14	Oct. 25
1912	April 7	Oct. 19
1913	April 12	Sept. 22
1914	April 20	Oct. 27
1915	April 1	Nov. 13
1916	April 10	Sept. 29
1917	April 15	Oct. 8
1918	April 24	Sept. 20
1919	April 24	Oct. 10
1920	April 13	Oct. 28
1921	April 10	Oct. 8
1922	April 1	Oct. 12
1923	May 9	Oct. 20
1924	April 22	Nov. 2
1925	May 6	Oct. 9
1926	April 28	Sept. 25
1927	April 22	Nov. 5
1928	April 27	Oct. 25
1929	May 16	Oct. 24
1930	April 1	Oct. 17
1931	May 21	Nov. 5
1932	April 12	Oct. 30
1933	April 27	Oct. 12
1934	April 27	Oct. 28
1935	April 16	Oct. 4
1936	April 22	Oct. 21
1937	April 5	Oct. 13
1938	April 9	Oct. 23
1939	April 13	Oct. 14
1940	April 18	Oct. 15
1941	March 18	Oct. 27
1942	April 11	Sept. 28
1943	April 19	Oct. 15
1944	May 5	Nov. 3
1945	April 5	Oct. 22
1946	May 12	Oct. 12
1947	April 20	Nov. 8
1948	April 8	Oct. 17
1949	April 3	Oct. 24
1950	May 1	Nov. 4
1951	April 19	Sept. 28
1952	April 10	Oct. 5
Average	April 20	Oct. 18

Year of occurrence	Last occurrence in spring	First occurrence in fall
1891	April 5	Nov. 2
1892	April 10	Oct. 27
1893	April 9	Oct. 29
1894	March 29	Nov. 11
1895	April 2	Oct. 9
1896	April 3	Oct. 18
1897	March 27	Nov. 3
1898	April 7	Oct. 27
1899	April 4	Sept. 30
1900	March 21	Nov. 8
1901	March 29	Nov. 4
1902	April 8	Nov. 23
1903	March 30	Oct. 24
1904	April 17	Oct. 27
1905	April 7	Oct. 28
1906	April 1	Oct. 11
1907	April 18	Oct. 28
1908	April 3	Nov. 5
1909	April 11	Oct. 13
1910	April 24	Oct. 29
1911	April 8	Oct. 28
1912	March 26	Oct. 23
1913	March 28	Oct. 21
1914	April 10	Oct. 27
1915	April 3	Oct. 9
1916	April 7	Oct. 21
1917	April 15	Oct. 13
1918	March 24	Nov. 1
1919	April 1	Oct. 29
1920	April 13	Oct. 29
1921	March 29	Nov. 10
1922	March 22	Oct. 18
1923	March 31	Oct. 21
1924	April 2	Nov. 8
1925	March 19	Oct. 10
1926	April 19	Nov. 2
1927	April 23	Nov. 6
1928	April 15	Oct. 29
1929	March 10	Nov. 16
1930	March 30	Oct. 19
1931	April 1	Nov. 6
1932	March 24	Oct. 30
1933	March 28	Oct. 25
1934	April 25	Oct. 28
1935	March 17	Nov. 5
1936	April 8	Oct. 23
1937	March 27	Oct. 14
1938	April 2	Nov. 8
1939	April 13	Oct. 14
1940	April 13	Nov. 7
1941	March 25	Oct. 28
1942	March 29	Sept. 28
1943	April 15	Nov. 11
1944	April 5	Nov. 29
1945	March 8	Nov. 4
1946	March 11	Nov. 17
1947	March 30	Nov. 9
1948	---	Oct. 18
1949	April 16	Oct. 26
1950	April 14	Nov. 4
1951	April 17	Nov. 1
1952	April 7	Oct. 6
Average	April 3	Oct. 28

DATE OF OCCURRENCE OF 24° F. OR LOWER

DATE OF OCCURRENCE OF 24° F. OR LOWER

STATION - Iowa Falls
COUNTY - HardinSTATION - Le Mars
COUNTY - Plymouth

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1892	---	Oct. 24	1896	April 3	Oct. 18
1893	April 23	Oct. 15	1897	April 19	Nov. 2
1894	April 1	Nov. 5	1898	April 6	Oct. 26
1895	April 2	Sept. 30	1899	April 4	Nov. 2
1896	April 4	Oct. 17	1900	April 11	Nov. 8
1897	April 19	Oct. 29	1901	April 18	Oct. 4
1898	April 7	Oct. 26	1902	April 14	Oct. 28
1899	April 4	Sept. 29	1903	April 30	Nov. 10
1900	March 30	Nov. 8	1904	April 19	Oct. 23
1901	April 18	Oct. 4	1905	April 18	Oct. 28
1902	April 13	Nov. 7	1906	March 31	Oct. 10
1903	April 4	Oct. 24	1907	May 4	Oct. 12
1904	April 19	Oct. 22	1908	May 2	Nov. 9
1905	April 17	Oct. 12	1909	May 2	Oct. 12
1906	May 7	Oct. 10	1910	May 3	Oct. 28
1907	May 4	Oct. 13	1911	April 7	Oct. 27
1908	April 30	Oct. 12	1912	March 31	Oct. 22
1909	May 3	Oct. 13	1913	April 13	Sept. 22
1910	April 18	Oct. 29	1914	April 11	Oct. 27
1911	April 9	Oct. 22	1915	April 1	Nov. 13
1912	April 3	Oct. 23	1916	April 9	Oct. 10
1913	March 28	Oct. 20	1917	April 15	Oct. 8
1914	April 11	Oct. 27	1918	April 24	Sept. 20
1915	March 31	Oct. 9	1919	---	Oct. 11
1916	April 10	Oct. 10	1920	April 13	Oct. 29
1917	April 16	Oct. 8	1921	April 17	Nov. 9
1918	April 12	Nov. 1	1922	March 28	Oct. 12
1919	April 1	Oct. 11	1923	April 8	Oct. 21
1920	April 14	Oct. 29	1924	April 22	Nov. 7
1921	April 17	Nov. 7	1925	March 28	Oct. 10
1922	April 20	Oct. 18	1926	April 18	Oct. 24
1923	April 8	Oct. 21	1927	April 22	Nov. 5
1924	April 12	Nov. 8	1928	April 27	Oct. 29
1925	March 28	Oct. 10	1929	April 2	Nov. 6
1926	April 26	Oct. 24	1930	April 1	Oct. 18
1927	April 23	Nov. 5	1931	April 27	Nov. 6
1928	April 19	Oct. 29	1932	April 12	Nov. 1
1929	April 2	Nov. 6	1933	April 15	Oct. 25
1930	April 1	Oct. 18	1934	April 25	Oct. 28
1931	April 27	Nov. 6	1935	April 16	Oct. 4
1932	March 23	Oct. 30	1936	April 22	Oct. 21
1933	April 27	Oct. 22	1937	April 9	Oct. 13
1934	April 27	Oct. 28	1938	April 9	Nov. 5
1935	April 16	Oct. 4	1939	April 12	Oct. 14
1936	April 22	Oct. 22	1940	April 13	Nov. 7
1937	March 29	Oct. 14	1941	March 18	Oct. 27
1938	April 7	Nov. 7	1942	April 11	Sept. 28
1939	April 13	Oct. 14	1943	April 20	Oct. 15
1940	April 13	Nov. 7	1944	April 16	Nov. 3
1941	March 29	Oct. 28	1945	April 5	Sept. 29
1942	March 30	Sept. 28	1946	March 11	Oct. 12
1943	April 17	Oct. 17	1947	March 27	Nov. 8
1944	April 5	Nov. 4	1948	April 2	Oct. 17
1945	April 5	Oct. 9	1949	April 2	Oct. 31
1946	March 11	Nov. 12	1950	April 14	Nov. 10
1947	March 30	Nov. 9	1951	April 16	Nov. 27
1948	April 9	Oct. 17	1952	April 10	Oct. 17
1949	March 19	Oct. 24			
1950	April 21	Oct. 25			
1951	April 17	Oct. 31			
1952	April 11	Oct. 6			
Average	April 11	Oct. 22	Average	April 12	Oct. 23

DATE OF OCCURRENCE OF 24° F. OR LOWER

DATE OF OCCURRENCE OF 24° F. OR LOWER

STATION - Northwood
COUNTY - Worth

STATION - Pocahontas
COUNTY - Pocahontas

Year of occurrence	Last occurrence in spring	First occurrence in fall
1896	April 6	Oct. 17
1897	April 20	Nov. 2
1898	April 7	Oct. 27
1899	April 4	Sept. 30
1900	March 31	Nov. 8
1901	April 18	Nov. 3
1902	April 8	Nov. 17
1903	April 4	Nov. 6
1904	April 16	Oct. 27
1905	April 18	Oct. 28
1906	March 31	Oct. 10
1907	May 4	Oct. 13
1908	April 3	Nov. 5
1909	April 27	Oct. 13
1910	April 23	Oct. 28
1911	---	Oct. 22
1912	March 25	Oct. 23
1913	March 28	Oct. 20
1914	April 20	Oct. 27
1915	March 31	Oct. 9
1916	April 9	Oct. 17
1917	April 13	Oct. 8
1918	April 24	Nov. 1
1919	April 26	---
1920	April 14	Oct. 29
1921	April 17	Nov. 8
1922	March 29	Nov. 21
1923	April 8	Oct. 30
1924	April 22	Nov. 8
1925	---	Oct. 17
1926	April 15	Oct. 24
1927	---	---
1928	April 20	Oct. 29
1929	April 2	Nov. 6
1930	April 22	Oct. 18
1931	March 30	Nov. 6
1932	April 12	Oct. 13
1933	April 14	Oct. 25
1934	April 25	Oct. 28
1935	April 16	Oct. 4
1936	April 22	Oct. 22
1937	March 29	Oct. 13
1938	April 8	Nov. 7
1939	April 13	Oct. 14
1940	April 13	Nov. 11
1941	March 25	Oct. 28
1942	April 11	Sept. 28
1943	April 15	Oct. 16
1944	April 4	Nov. 4
1945	April 5	Oct. 22
1946	March 11	Nov. 12
1947	April 12	Nov. 8
1948	April 9	Oct. 17
1949	April 16	Oct. 24
1950	April 14	Nov. 4
1951	April 17	Nov. 27
1952	April 11	Oct. 5
Average	April 11	Oct. 26

Year of occurrence	Last occurrence in spring	First occurrence in fall
1904	---	Nov. 11
1905	April 18	Oct. 28
1906	March 24	Oct. 10
1907	May 4	Oct. 12
1908	May 2	Nov. 9
1909	May 3	Oct. 12
1910	May 3	Oct. 29
1911	April 9	Oct. 27
1912	March 25	Oct. 30
1913	March 27	Sept. 22
1914	April 20	Oct. 27
1915	March 31	Nov. 13
1916	April 9	Oct. 21
1917	April 8	Oct. 8
1918	April 11	Nov. 1
1919	March 8	Oct. 26
1920	April 13	Oct. 28
1921	April 17	Nov. 9
1922	March 29	Oct. 17
1923	April 8	Oct. 21
1924	April 22	Oct. 22
1925	March 28	Oct. 10
1926	April 18	Oct. 24
1927	March 27	Nov. 5
1928	April 19	Oct. 29
1929	April 2	Nov. 6
1930	April 1	Oct. 18
1931	April 1	Nov. 6
1932	March 23	Oct. 13
1933	March 26	Oct. 25
1934	April 25	Oct. 28
1935	April 16	Oct. 4
1936	April 22	Oct. 22
1937	March 27	Oct. 13
1938	April 8	Oct. 23
1939	April 13	Sept. 30
1940	April 13	Nov. 7
1941	March 18	Oct. 28
1942	April 8	Sept. 28
1943	April 17	Oct. 16
1944	April 16	Nov. 4
1945	April 5	Sept. 29
1946	April 9	Nov. 5
1947	April 20	Nov. 8
1948	April 9	Oct. 17
1949	April 16	Oct. 24
1950	April 28	Oct. 25
1951	April 17	Oct. 24
1952	April 10	Oct. 15
Average	April 10	Oct. 23

DATE OF OCCURRENCE OF 16° F. OR LOWER

DATE OF OCCURRENCE OF 16° F. OR LOWER

STATION - Albia
COUNTY - MonroeSTATION - Ames
COUNTY - Story

Year of occurrence	Last occurrence in spring	First occurrence in fall
1894	March 29	---
1895	---	---
1896	---	---
1897	---	---
1898	March 23	Nov. 21
1899	April 4	Dec. 4
1900	March 20	Nov. 14
1901	March 21	Nov. 3
1902	March 18	Dec. 3
1903	March 1	Nov. 17
1904	March 27	Nov. 30
1905	March 12	Nov. 29
1906	March 23	Nov. 13
1907	April 14	Nov. 14
1908	March 9	Dec. 1
1909	March 18	Nov. 17
1910	Feb. 28	Nov. 17
1911	March 18	Nov. 2
1912	March 22	Dec. 2
1913	March 27	Oct. 31
1914	March 22	Nov. 19
1915	March 13	Nov. 15
1916	March 11	Nov. 14
1917	March 6	Oct. 13
1918	March 10	Nov. 24
1919	March 8	Nov. 12
1920	April 5	Nov. 10
1921	March 28	Nov. 12
1922	March 1	Nov. 25
1923	March 31	Dec. 31
1924	March 31	Nov. 28
1925	March 15	Oct. 28
1926	March 27	Nov. 10
1927	March 3	Nov. 18
1928	March 5	Nov. 25
1929	March 9	Nov. 21
1930	March 3	Nov. 25
1931	March 16	Dec. 14
1932	March 14	Nov. 16
1933	March 15	Nov. 15
1934	March 18	Dec. 4
1935	March 8	Nov. 22
1936	April 3	Nov. 4
1937	March 27	Nov. 17
1938	Feb. 18	Nov. 8
1939	March 18	Dec. 21
1940	March 25	Nov. 11
1941	March 18	Nov. 23
1942	Feb. 25	Nov. 26
1943	March 22	Nov. 11
1944	March 9	Nov. 30
1945	March 7	Nov. 21
1946	March 10	Dec. 1
1947	March 16	Nov. 11
1948	March 13	Dec. 8
1949	March 15	Dec. 8
1950	March 13	Nov. 11
1951	March 24	Nov. 2
1952	March 24	Nov. 10

Average

March 16

Nov. 20

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	March 20	Oct. 29
1894	March 31	Nov. 11
1895	April 2	Oct. 23
1896	---	Nov. 8
1897	March 15	Nov. 6
1898	March 28	Nov. 11
1899	April 2	Dec. 4
1900	March 21	Nov. 14
1901	March 31	Nov. 4
1902	March 18	Dec. 3
1903	March 25	Nov. 17
1904	March 28	Nov. 30
1905	March 11	Nov. 2
1906	March 22	Nov. 13
1907	April 15	Oct. 28
1908	April 2	Nov. 15
1909	March 17	Nov. 17
1910	Feb. 28	Oct. 27
1911	March 27	Nov. 2
1912	March 25	Nov. 2
1913	March 27	Oct. 21
1914	March 23	Nov. 17
1915	March 13	Nov. 15
1916	March 15	Nov. 13
1917	March 18	Oct. 13
1918	March 10	Nov. 24
1919	March 6	Nov. 12
1920	March 7	Nov. 10
1921	March 28	Nov. 12
1922	March 2	Nov. 12
1923	March 31	Oct. 30
1924	April 1	Nov. 8
1925	March 15	Oct. 28
1926	March 27	Nov. 10
1927	March 3	Nov. 6
1928	March 5	Nov. 25
1929	March 9	Nov. 21
1930	March 3	Nov. 26
1931	March 17	Nov. 25
1932	March 22	Nov. 15
1933	March 20	Nov. 9
1934	March 27	Nov. 23
1935	March 17	Nov. 22
1936	April 7	Nov. 4
1937	March 27	Nov. 3
1938	March 10	Nov. 22
1939	March 18	Nov. 27
1940	March 25	Nov. 11
1941	March 18	Nov. 23
1942	Feb. 25	Oct. 26
1943	March 22	Nov. 11
1944	March 29	Nov. 30
1945	March 7	Nov. 4
1946	March 11	Nov. 17
1947	March 16	Nov. 11
1948	March 13	Nov. 22
1949	March 18	Nov. 22
1950	March 14	Nov. 4
1951	March 24	Nov. 2
1952	March 14	Oct. 29

Average

March 19

Nov. 12

DATE OF OCCURRENCE OF 16° F. OR LOWER

DATE OF OCCURRENCE OF 16° F. OR LOWER

STATION - Britt
COUNTY - HancockSTATION - Centerville
COUNTY - Appanoose

Year of occurrence	Last occurrence in spring	First occurrence in fall
1897	March 16	Nov. 6
1898	March 30	Nov. 11
1899	April 4	Nov. 3
1900	March 31	Nov. 13
1901	March 31	Nov. 3
1902	April 8	Nov. 27
1903	March 1	Nov. 14
1904	March 27	Nov. 11
1905	April 14	Nov. 1
1906	March 23	Nov. 13
1907	April 14	Oct. 28
1908	April 2	Nov. 10
1909	March 20	Oct. 13
1910	Feb. 28	Oct. 29
1911	April 7	Nov. 1
1912	March 23	Nov. 25
1913	March 27	Oct. 30
1914	March 23	Oct. 27
1915	March 31	Nov. 14
1916	April 6	Oct. 21
1917	March 19	Oct. 21
1918	March 10	Nov. 23
1919	March 6	Oct. 27
1920	April 6	Nov. 10
1921	March 28	---
1922	March 3	Nov. 25
1923	March 31	Oct. 30
1924	---	Nov. 8
1925	March 15	Oct. 27
1926	April 5	Nov. 2
1927	March 3	Nov. 12
1928	---	Nov. 25
1929	March 10	Nov. 20
1930	April 1	Oct. 21
1931	March 16	Nov. 25
1932	March 23	Nov. 15
1933	March 23	Nov. 9
1934	March 31	Nov. 22
1935	March 17	Nov. 1
1936	April 7	Oct. 23
1937	March 27	Nov. 3
1938	March 6	Nov. 14
1939	April 12	Nov. 27
1940	April 11	Nov. 11
1941	March 18	Nov. 23
1942	March 1	Oct. 26
1943	March 22	Nov. 11
1944	March 29	Nov. 29
1945	March 7	Nov. 3
1946	March 10	---
1947	March 26	Nov. 9
1948	March 13	Oct. 17
1949	March 19	Oct. 31
1950	April 14	Nov. 10
1951	March 21	Oct. 31
1952	April 26	Nov. 10
verage	March 24	Nov. 8

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	March 18	Nov. 13
1894	March 28	---
1895	March 15	Oct. 28
1896	---	---
1897	---	---
1898	---	---
1899	April 4	---
1900	March 21	---
1901	---	Nov. 4
1902	March 18	---
1903	---	---
1904	---	---
1905	---	---
1906	---	---
1907	---	---
1908	---	---
1909	---	---
1910	---	---
1911	---	Nov. 2
1912	March 22	---
1913	March 27	Dec. 8
1914	March 22	Nov. 19
1915	March 8	Nov. 15
1916	March 7	Nov. 13
1917	March 9	Oct. 30
1918	March 10	Nov. 29
1919	March 5	Nov. 12
1920	April 5	Nov. 10
1921	March 28	Nov. 12
1922	March 2	Dec. 5
1923	March 31	Dec. 31
1924	March 31	Nov. 28
1925	March 15	Oct. 28
1926	March 27	Nov. 10
1927	March 3	Nov. 18
1928	March 5	Nov. 25
1929	March 9	Nov. 21
1930	March 2	Nov. 26
1931	March 4	Dec. 14
1932	March 14	Nov. 16
1933	March 10	Nov. 15
1934	March 18	Dec. 4
1935	March 8	Nov. 22
1936	April 3	Nov. 8
1937	March 27	Nov. 3
1938	March 6	Nov. 8
1939	March 18	Dec. 21
1940	April 12	Nov. 11
1941	March 18	Nov. 23
1942	Feb. 25	Oct. 26
1943	March 22	Nov. 11
1944	March 29	Nov. 30
1945	March 7	Nov. 22
1946	March 10	Dec. 2
1947	March 18	Nov. 11
1948	March 13	Dec. 8
1949	March 15	Nov. 22
1950	March 14	Nov. 10
1951	March 24	Nov. 2
1952	March 7	Nov. 10
Average	March 17	Nov. 19

DATE OF OCCURRENCE OF 16° F. OR LOWER

STATION - Corning
COUNTY - Adams

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	March 18	Nov. 15
1894	March 29	Nov. 11
1895	March 16	Oct. 23
1896	March 23	Nov. 8
1897	March 15	Nov. 16
1898	March 28	Nov. 21
1899	April 4	Nov. 3
1900	March 21	Nov. 14
1901	March 21	Nov. 4
1902	March 18	Nov. 27
1903	March 25	Nov. 17
1904	March 27	Nov. 26
1905	March 11	Nov. 29
1906	March 22	Nov. 13
1907	April 17	Oct. 28
1908	April 2	Nov. 12
1909	March 17	Nov. 17
1910	Feb. 27	Nov. 16
1911	March 18	Nov. 2
1912	March 22	Nov. 2
1913	March 26	Oct. 31
1914	March 20	Nov. 16
1915	March 12	Nov. 14
1916	March 11	Nov. 13
1917	March 9	Oct. 13
1918	April 11	Nov. 24
1919	March 5	Nov. 12
1920	March 7	Nov. 10
1921	March 28	Nov. 12
1922	March 11	Nov. 25
1923	March 31	Oct. 30
1924	April 1	Nov. 14
1925	March 15	Oct. 28
1926	April 15	Nov. 2
1927	March 3	Nov. 6
1928	April 9	Nov. 25
1929	March 9	Nov. 21
1930	March 28	Oct. 31
1931	March 9	Nov. 25
1932	March 22	Nov. 15
1933	March 22	Nov. 13
1934	March 24	Dec. 1
1935	March 17	Nov. 22
1936	April 7	Nov. 4
1937	March 27	Oct. 23
1938	March 6	Nov. 8
1939	April 12	Nov. 27
1940	April 12	Nov. 11
1941	March 17	Nov. 23
1942	March 2	Oct. 26
1943	March 21	Nov. 16
1944	March 29	Nov. 29
1945	March 7	Nov. 4
1946	March 9	Nov. 17
1947	March 26	Nov. 11
1948	March 28	Nov. 22
1949	March 15	Oct. 31
1950	April 13	Nov. 10
1951	March 24	Nov. 2
1952	March 24	Nov. 26

Average

March 22

Nov. 12

DATE OF OCCURRENCE OF 16° F. OR LOWER

STATION - Decorah
COUNTY - Winneshiek

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	---	Oct. 28
1894	March 29	Nov. 11
1895	March 17	Oct. 23
1896	April 3	Oct. 21
1897	March 16	Nov. 15
1898	March 28	Nov. 11
1899	April 4	Nov. 3
1900	March 20	Nov. 13
1901	March 31	Nov. 3
1902	March 18	Nov. 30
1903	March 1	Nov. 15
1904	March 27	Nov. 30
1905	March 11	Oct. 28
1906	March 23	Nov. 22
1907	March 14	Nov. 14
1908	April 2	Nov. 15
1909	March 20	Oct. 27
1910	March 10	Nov. 3
1911	April 7	Nov. 2
1912	March 23	Oct. 2
1913	March 22	Nov. 10
1914	March 20	Nov. 17
1915	March 30	Nov. 15
1916	April 6	Nov. 14
1917	March 19	Oct. 13
1918	March 16	Nov. 23
1919	March 7	Nov. 12
1920	April 5	Oct. 29
1921	March 28	Nov. 9
1922	March 3	Nov. 25
1923	March 31	Nov. 8
1924	April 2	Nov. 8
1925	March 15	Oct. 27
1926	April 15	Nov. 9
1927	March 27	Nov. 6
1928	April 15	Nov. 25
1929	March 10	Nov. 20
1930	March 30	Oct. 20
1931	March 31	Nov. 25
1932	March 23	Nov. 12
1933	March 28	Nov. 10
1934	March 31	Nov. 2
1935	March 12	Oct. 6
1936	April 7	Nov. 4
1937	March 27	Nov. 3
1938	March 8	Nov. 14
1939	April 12	Nov. 3
1940	March 25	Nov. 11
1941	March 18	Nov. 23
1942	March 3	Oct. 26
1943	March 22	Nov. 11
1944	March 31	Nov. 30
1945	March 12	Oct. 31
1946	April 27	Nov. 17
1947	March 30	Nov. 11
1948	March 28	Nov. 29
1949	April 16	Oct. 26
1950	April 14	Nov. 11
1951	March 25	Nov. 1
1952	March 27	Oct. 18

Average

March 25

Nov. 9

DATE OF OCCURRENCE OF 16° F. OR LOWER

81

STATION - Davenport
COUNTY - Scott

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1874	March 13	Nov. 24	1935	March 8	Nov. 22
1875	March 20	Nov. 17	1936	March 6	Dec. 6
1876	March 21	Nov. 28	1937	March 9	Nov. 20
1877	March 17	Nov. 28	1938	Feb. 1	Nov. 24
1878	Jan. 23	Dec. 15	1939	March 18	Dec. 30
1879	March 17	Nov. 3	1940	March 25	Nov. 12
1880	March 16	Nov. 16	1941	March 18	Nov. 24
1881	April 5	Nov. 19	1942	Feb. 20	Nov. 26
1882	March 12	Dec. 6	1943	March 20	Nov. 16
1883	March 24	Nov. 14	1944	March 10	Dec. 12
1884	March 12	Nov. 23	1945	Feb. 26	Nov. 21
1885	March 21	Dec. 5	1946	March 9	Dec. 2
1886	April 2	Nov. 24	1947	Feb. 28	Nov. 11
1887	April 4	Nov. 19	1948	March 12	Dec. 9
1888	March 22	Dec. 12	1949	March 17	Dec. 8
1889	Feb. 25	Nov. 28	1950	March 13	Nov. 20
1890	March 16	Dec. 2	1951	March 24	Nov. 2
1891	March 15	Nov. 17	1952	March 7	Nov. 27
1892	March 20	Nov. 8			
1893	March 16	Nov. 18			
1894	March 29	Nov. 11	Average	March 11	Nov. 27
1895	March 16	Nov. 24			
1896	March 14	Nov. 27			
1897	March 14	Nov. 23			
1898	Feb. 27	Nov. 11			
1899	March 23	Dec. 4			
1900	March 21	Nov. 14			
1901	March 6	Nov. 16			
1902	March 18	Dec. 4			
1903	March 1	Nov. 17			
1904	March 27	Nov. 30			
1905	March 11	Nov. 29			
1906	March 22	Dec. 6			
1907	Feb. 22	Dec. 30			
1908	Feb. 27	Dec. 1			
1909	March 17	Dec. 5			
1910	Feb. 27	Nov. 30			
1911	March 16	Nov. 11			
1912	March 22	Dec. 8			
1913	March 22	Dec. 21			
1914	March 2	Nov. 18			
1915	Feb. 9	Dec. 13			
1916	March 8	Nov. 13			
1917	March 5	Dec. 5			
1918	March 1	Dec. 25			
1919	March 6	Nov. 12			
1920	March 8	Nov. 12			
1921	March 28	Nov. 12			
1922	March 1	Dec. 5			
1923	March 31	Dec. 31			
1924	March 7	Nov. 28			
1925	March 15	Oct. 28			
1926	March 29	Nov. 10			
1927	Feb. 18	Dec. 2			
1928	March 5	Dec. 4			
1929	March 9	Nov. 21			
1930	March 2	Nov. 26			
1931	Feb. 14	Jan 8			
1932	March 14	Nov. 16			
1933	March 10	Nov. 15			
1934	March 18	Dec. 6			

DATE OF OCCURRENCE OF 16° F. OR LOWER

STATION - Denison
COUNTY - Crawford

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	March 25	---
1894	---	---
1895	March 16	Oct. 23
1896	---	Nov. 8
1897	March 15	Nov. 9
1898	March 30	Nov. 10
1899	April 4	Nov. 3
1900	March 20	Nov. 13
1901	March 31	Nov. 4
1902	April 7	Nov. 25
1903	March 20	Nov. 17
1904	March 27	Nov. 30
1905	April 18	Nov. 29
1906	March 22	Nov. 13
1907	April 20	Oct. 28
1908	April 2	Nov. 12
1909	March 17	Oct. 13
1910	Feb. 27	Nov. 11
1911	March 27	Nov. 1
1912	March 24	Nov. 2
1913	March 27	Oct. 21
1914	March 27	Oct. 27
1915	March 26	Nov. 29
1916	March 15	Nov. 13
1917	March 18	---
1918	March 10	Nov. 23
1919	March 5	Nov. 12
1920	March 8	Nov. 11
1921	March 28	Nov. 9
1922	March 2	Nov. 25
1923	March 31	Oct. 30
1924	April 1	Nov. 14
1925	March 15	Oct. 27
1926	March 29	Nov. 2
1927	March 21	Nov. 6
1928	April 14	Nov. 25
1929	March 9	Nov. 14
1930	March 8	Oct. 21
1931	March 16	Nov. 25
1932	March 22	Nov. 15
1933	March 22	Nov. 9
1934	March 27	Dec. 2
1935	March 17	Oct. 6
1936	April 7	Nov. 3
1937	March 27	Oct. 14
1938	March 6	Nov. 8
1939	March 18	Nov. 3
1940	April 11	Nov. 11
1941	March 17	Nov. 10
1942	March 28	Oct. 26
1943	March 21	Nov. 11
1944	March 29	Nov. 28
1945	April 5	Nov. 4
1946	March 10	Nov. 17
1947	March 26	Nov. 11
1948	March 28	Nov. 22
1949	March 18	Oct. 31
1950	April 14	Nov. 10
1951	March 24	Nov. 2
1952	April 10	Nov. 26

Average

March 24

Nov. 9

DATE OF OCCURRENCE OF 16° F. OR LOWER

STATION - Fairfield
COUNTY - Jefferson

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	---	---
1894	---	Nov. 11
1895	March 16	Oct. 23
1896	March 22	Nov. 9
1897	March 15	Nov. 23
1898	March 23	Nov. 11
1899	April 2	Dec. 4
1900	March 21	---
1901	---	---
1902	---	Nov. 29
1903	---	---
1904	---	---
1905	---	---
1906	---	---
1907	---	---
1908	March 9	Dec. 1
1909	April 10	Nov. 18
1910	Feb. 27	Oct. 29
1911	March 16	Nov. 12
1912	March 22	Dec. 3
1913	March 28	Nov. 11
1914	March 20	Nov. 17
1915	March 27	Nov. 15
1916	March 11	Nov. 13
1917	March 9	Oct. 13
1918	March 10	Dec. 25
1919	March 6	Nov. 13
1920	April 5	Nov. 10
1921	Feb. 23	Nov. 12
1922	March 3	Nov. 25
1923	March 31	Dec. 31
1924	March 31	Nov. 28
1925	March 15	Oct. 28
1926	March 13	Nov. 10
1927	March 2	Nov. 6
1928	March 5	Nov. 25
1929	March 9	Nov. 21
1930	March 3	Nov. 25
1931	March 10	Dec. 14
1932	March 14	Nov. 16
1933	March 10	Nov. 15
1934	March 25	Dec. 7
1935	March 8	Nov. 22
1936	April 3	Nov. 27
1937	March 27	Nov. 4
1938	Feb. 1	Nov. 24
1939	March 18	Dec. 14
1940	March 25	Nov. 11
1941	March 18	Nov. 23
1942	Feb. 20	Nov. 26
1943	March 22	Nov. 11
1944	March 10	Nov. 30
1945	March 7	Nov. 4
1946	March 10	Nov. 26
1947	March 16	Nov. 11
1948	March 12	Nov. 23
1949	March 18	Nov. 21
1950	March 13	Nov. 10
1951	March 24	Nov. 2
1952	March 7	---

Average

March 15

Nov. 19

DATE OF OCCURRENCE OF 16° F. OR LOWER

83

STATION - Des Moines
COUNTY - Polk

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1878	---	Oct. 27	1940	March 25	Nov. 11
1879	March 19	Nov. 2	1941	March 18	Nov. 23
1880	March 16	Nov. 14	1942	Feb. 20	Nov. 26
1881	April 13	Nov. 15	1943	March 22	Nov. 16
1882	March 24	Nov. 24	1944	March 9	Nov. 30
1883	March 23	Nov. 13	1945	March 7	Nov. 22
1884	March 14	Nov. 23	1946	March 10	Dec. 1
1885	March 23	Dec. 4	1947	March 3	Dec. 11
1886	March 10	Nov. 18	1948	March 13	Dec. 8
1887	March 29	Oct. 25	1949	March 15	Dec. 7
1888	March 22	Nov. 16	1950	March 13	Nov. 10
1889	March 10	Nov. 18	1951	March 24	Nov. 2
1890	March 16	Dec. 3	1952	March 5	Nov. 27
1891	March 14	Nov. 13			
1892	March 20	Nov. 8			
1893	March 18	Nov. 15	Average	March 16	Nov. 21
1894	March 29	Nov. 11			
1895	March 16	Oct. 29			
1896	March 22	Nov. 11			
1897	March 14	Nov. 23			
1898	March 28	Nov. 21			
1899	April 4	Dec. 3			
1900	March 13	Nov. 14			
1901	March 11	Nov. 4			
1902	March 18	Dec. 3			
1903	March 1	Nov. 17			
1904	March 27	Nov. 30			
1905	March 11	Nov. 29			
1906	March 22	Nov. 22			
1907	March 14	Dec. 4			
1908	March 8	Nov. 30			
1909	March 17	Nov. 17			
1910	Feb. 27	Nov. 17			
1911	March 15	Nov. 2			
1912	March 22	Dec. 6			
1913	March 27	Dec. 20			
1914	March 22	Nov. 19			
1915	March 12	Dec. 2			
1916	March 8	Nov. 13			
1917	March 5	Oct. 30			
1918	March 10	Nov. 24			
1919	March 5	Nov. 12			
1920	March 7	Nov. 10			
1921	March 28	Nov. 12			
1922	March 2	Dec. 5			
1923	March 31	Dec. 30			
1924	April 1	Nov. 28			
1925	March 15	Oct. 27			
1926	March 13	Nov. 10			
1927	March 19	Nov. 18			
1928	March 5	Dec. 4			
1929	March 9	Nov. 20			
1930	March 2	Nov. 26			
1931	Feb. 14	Dec. 14			
1932	March 14	Nov. 15			
1933	March 10	Nov. 15			
1934	March 24	Dec. 6			
1935	March 8	Nov. 21			
1936	April 7	Nov. 8			
1937	March 27	Nov. 17			
1938	Feb. 25	Nov. 22			
1939	March 18	Dec. 21			

DATE OF OCCURRENCE OF 16° F. OR LOWER

STATION - Dubuque
COUNTY - Dubuque

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1874	---	Nov. 19	1939	March 18	Dec. 22
1875	April 17	Nov. 17	1940	March 25	Nov. 11
1876	March 22	Nov. 22	1941	March 18	Dec. 10
1877	March 25	Nov. 6	1942	Feb. 20	Nov. 26
1878	Feb. 11	Dec. 7	1943	March 20	Nov. 16
1879	March 19	Nov. 3	1944	March 10	Nov. 30
1880	March 17	Nov. 16	1945	March 7	Nov. 21
1881	March 14	Nov. 15	1946	March 11	Nov. 22
1882	March 24	Nov. 13	1947	March 16	Nov. 13
1883	April 23	Nov. 14	1948	March 13	Dec. 9
1884	March 14	Nov. 23	1949	March 15	Nov. 22
1885	March 25	Dec. 5	1950	March 18	Nov. 10
1886	April 3	Nov. 19	1951	March 22	Nov. 2
1887	April 4	Oct. 25	1952	March 26	Oct. 18
1888	March 24	Nov. 17			
1889	Feb. 25	Nov. 8			
1890	March 16	Dec. 2	Average	March 15	Nov. 22
1891	March 15	Nov. 17			
1892	March 21	Nov. 8			
1893	March 18	Nov. 15			
1894	March 29	Nov. 11			
1895	March 16	Oct. 30			
1896	March 15	Nov. 12			
1897	March 15	Nov. 23			
1898	March 5	Nov. 22			
1899	March 24	Dec. 4			
1900	March 21	Nov. 14			
1901	March 21	Nov. 4			
1902	March 18	Dec. 4			
1903	March 1	Nov. 17			
1904	March 27	Nov. 30			
1905	March 11	Nov. 29			
1906	March 23	Nov. 22			
1907	March 2	Dec. 1			
1908	March 9	Nov. 30			
1909	March 17	Nov. 18			
1910	Feb. 28	Nov. 30			
1911	March 16	Nov. 11			
1912	March 23	Nov. 2			
1913	March 22	Dec. 21			
1914	March 2	Nov. 18			
1915	March 9	Dec. 13			
1916	March 23	Nov. 13			
1917	March 18	Dec. 4			
1918	March 10	Nov. 24			
1919	March 7	Nov. 12			
1920	March 17	Nov. 11			
1921	March 28	Nov. 12			
1922	March 3	Dec. 5			
1923	March 31	Dec. 31			
1924	March 7	Nov. 28			
1925	March 15	Oct. 28			
1926	March 13	Nov. 10			
1927	Feb. 19	Dec. 1			
1928	March 5	Dec. 4			
1929	March 10	Nov. 20			
1930	March 3	Nov. 26			
1931	Feb. 14	Dec. 7			
1932	March 14	Nov. 15			
1933	March 10	Nov. 15			
1934	March 24	Dec. 6			
1935	March 8	Nov. 21			
1936	April 7	Nov. 26			
1937	March 27	Nov. 20			
1938	March 6	Nov. 24			

DATE OF OCCURRENCE OF 16° F. OR LOWER

DATE OF OCCURRENCE OF 16° F. OR LOWER

STATION - Independence
COUNTY - BuchananSTATION - Inwood
COUNTY - Lyon

Year of occurrence	Last occurrence in spring	First occurrence in fall	Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	March 18	Nov. 3	1904	March 27	Nov. 10
1894	March 29	Nov. 11	1905	April 17	Oct. 30
1895	April 2	Oct. 23	1906	March 23	Nov. 18
1896	March 22	Oct. 21	1907	April 17	Oct. 28
1897	March 16	Nov. 6	1908	April 2	Nov. 10
1898	April 5	Nov. 12	1909	March 17	Oct. 13
1899	April 2	Nov. 3	1910	Feb. 27	Nov. 5
1900	March 21	Nov. 14	1911	April 6	Oct. 27
1901	March 31	Nov. 4	1912	March 24	Oct. 30
1902	March 18	Dec. 4	1913	March 27	Oct. 20
1903	March 25	Nov. 17	1914	April 11	Nov. 8
1904	March 27	Nov. 14	1915	March 29	Nov. 13
1905	March 11	Nov. 29	1916	April 6	Oct. 20
1906	March 23	---	1917	March 19	Oct. 8
1907	March 14	Oct. 28	1918	April 5	Nov. 22
1908	March 9	Nov. 11	1919	March 7	Oct. 28
1909	March 17	Oct. 28	1920	April 6	Nov. 10
1910	Feb. 28	Oct. 29	1921	March 28	Nov. 9
1911	April 7	Nov. 2	1922	March 28	Dec. 1
1912	March 25	Nov. 2	1923	April 8	Oct. 30
1913	March 27	Oct. 31	1924	April 1	Nov. 7
1914	March 20	Nov. 16	1925	March 15	Oct. 27
1915	March 30	Nov. 15	1926	April 5	Oct. 30
1916	March 23	Nov. 13	1927	April 21	Nov. 6
1917	March 19	Oct. 13	1928	April 19	Nov. 3
1918	March 10	Nov. 24	1929	April 1	Nov. 19
1919	March 6	Nov. 12	1930	April 1	Oct. 21
1920	March 17	Nov. 10	1931	March 29	Nov. 24
1921	March 28	Nov. 12	1932	March 23	Nov. 12
1922	March 3	Nov. 25	1933	March 22	Nov. 8
1923	March 31	Oct. 30	1934	March 27	Nov. 1
1924	April 1	Nov. 14	1935	March 8	Oct. 10
1925	March 15	Oct. 28	1936	April 7	Oct. 22
1926	March 13	Nov. 10	1937	March 27	Oct. 14
1927	March 22	Nov. 18	1938	March 7	Nov. 7
1928	March 5	Dec. 4	1939	April 12	Oct. 28
1929	March 10	Nov. 20	1940	April 11	Nov. 11
1930	March 3	Nov. 6	1941	March 18	Nov. 23
1931	March 4	Nov. 25	1942	March 28	Oct. 26
1932	March 22	Nov. 15	1943	March 21	Nov. 11
1933	March 10	Nov. 13	1944	March 30	Nov. 4
1934	March 27	Dec. 4	1945	March 8	Nov. 3
1935	March 8	Nov. 21	1946	March 11	Nov. 11
1936	April 7	Nov. 4	1947	March 26	Nov. 9
1937	March 27	Nov. 3	1948	March 13	Oct. 17
1938	March 6	Nov. 8	1949	March 18	Oct. 31
1939	March 18	Nov. 27	1950	April 13	Nov. 10
1940	March 25	Nov. 11	1951	March 24	Oct. 27
1941	March 18	Nov. 23	1952	March 26	Oct. 5
1942	Feb. 22	Oct. 26			
1943	March 22	Nov. 11			
1944	March 30	Nov. 30			
1945	March 7	Nov. 4	Average	March 28	Nov. 2
1946	March 11	Nov. 22			
1947	March 26	Nov. 11			
1948	March 13	Nov. 23			
1949	March 19	Nov. 22			
1950	April 13	Nov. 10			
1951	March 27	Nov. 2			
1952	March 25	Oct. 29			
Average	March 19	Nov. 11			

DATE OF OCCURRENCE OF 16° F. OR LOWER

STATION - Iowa City
COUNTY - Johnson

Year of occurrence	Last occurrence in spring	First occurrence in fall
1888	March 22	Dec. 19
1889	Feb. 27	Nov. 28
1890	March 16	Dec. 3
1891	---	---
1892	---	---
1893	March 17	Nov. 3
1894	March 29	Nov. 11
1895	March 16	Oct. 23
1896	March 22	Nov. 9
1897	March 15	Nov. 23
1898	Feb. 27	Nov. 11
1899	April 2	Dec. 4
1900	March 21	Nov. 14
1901	March 6	Nov. 3
1902	March 18	Nov. 30
1903	March 1	Nov. 17
1904	March 28	Nov. 26
1905	March 12	Nov. 29
1906	March 23	Nov. 13
1907	Feb. 23	Nov. 14
1908	March 9	Dec. 1
1909	March 18	Nov. 18
1910	March 1	Oct. 29
1911	March 19	Nov. 2
1912	March 25	Nov. 2
1913	March 23	Oct. 31
1914	March 21	Nov. 19
1915	March 13	Nov. 22
1916	March 15	Nov. 14
1917	March 6	Oct. 13
1918	March 11	Nov. 24
1919	March 6	Nov. 12
1920	March 8	Oct. 29
1921	March 28	Nov. 12
1922	March 3	Nov. 25
1923	March 31	Nov. 22
1924	March 31	Nov. 25
1925	March 15	Oct. 28
1926	March 29	Nov. 10
1927	March 3	Nov. 6
1928	March 5	Dec. 4
1929	March 9	Nov. 21
1930	March 2	Nov. 25
1931	March 30	Dec. 14
1932	March 14	Nov. 16
1933	March 10	Nov. 15
1934	March 25	Dec. 4
1935	March 8	Nov. 22
1936	April 3	Nov. 4
1937	March 27	Nov. 19
1938	March 6	Nov. 24
1939	March 18	Dec. 14
1940	March 25	Nov. 11
1941	March 18	Nov. 23
1942	Feb. 20	Nov. 26
1943	March 22	Nov. 11
1944	March 10	Dec. 1
1945	March 7	Nov. 4
1946	March 11	Nov. 22
1947	March 16	Nov. 11
1948	March 13	Nov. 23
1949	March 19	Nov. 22
1950	March 14	Nov. 10
1951	March 26	Nov. 2
1952	March 24	Oct. 18
Average	March 15	Nov. 17

DATE OF OCCURRENCE OF 16° F. OR LOWER

STATION - Iowa Falls
COUNTY - Hardin

Year of occurrence	Last occurrence in spring	First occurrence in fall
1893	March 18	Oct. 26
1894	March 29	Nov. 10
1895	March 17	Oct. 9
1896	April 2	Nov. 9
1897	March 16	Nov. 6
1898	March 28	Nov. 11
1899	April 4	Dec. 3
1900	March 31	Nov. 13
1901	March 31	Nov. 3
1902	March 18	Dec. 3
1903	March 25	Nov. 17
1904	March 27	Nov. 14
1905	March 11	Nov. 29
1906	March 24	Nov. 13
1907	April 14	Oct. 28
1908	April 2	Nov. 11
1909	March 20	Oct. 28
1910	March 1	Oct. 29
1911	April 8	Nov. 2
1912	March 23	Nov. 2
1913	March 27	Oct. 21
1914	March 23	Nov. 16
1915	March 27	Nov. 14
1916	April 6	Oct. 21
1917	March 19	Oct. 13
1918	March 11	Nov. 24
1919	March 6	Nov. 12
1920	April 5	Nov. 10
1921	March 28	Nov. 9
1922	March 2	Nov. 25
1923	March 31	Oct. 30
1924	April 1	Nov. 14
1925	March 15	Oct. 28
1926	March 27	Nov. 2
1927	March 3	Nov. 6
1928	April 15	Nov. 25
1929	March 10	Nov. 20
1930	April 1	Oct. 20
1931	March 17	Nov. 24
1932	March 23	Nov. 15
1933	March 22	Nov. 9
1934	March 31	Nov. 23
1935	March 17	Nov. 12
1936	April 7	Nov. 4
1937	March 27	Nov. 3
1938	March 6	Nov. 22
1939	April 12	Nov. 21
1940	March 25	Nov. 11
1941	March 18	Nov. 23
1942	Feb. 28	Oct. 26
1943	March 22	Nov. 11
1944	March 29	Nov. 30
1945	March 7	Nov. 4
1946	March 11	Nov. 17
1947	March 26	Nov. 11
1948	March 13	Nov. 22
1949	March 19	Oct. 31
1950	March 14	Nov. 4
1951	March 24	Nov. 2
1952	March 26	Oct. 29
Average	March 23	Nov. 10

DATE OF OCCURRENCE OF 16° F. OR LOWER

DATE OF OCCURRENCE OF 16° F. OR LOWER

STATION - Le Mars
COUNTY - PlymouthSTATION - Northwood
COUNTY - Worth

Year of occurrence	Last occurrence in spring	First occurrence in fall
1896	April 1	Nov. 8
1897	March 16	Nov. 6
1898	March 30	Nov. 10
1899	April 4	Nov. 3
1900	March 21	Nov. 8
1901	March 21	Nov. 4
1902	April 7	Nov. 26
1903	March 20	Nov. 16
1904	March 27	Nov. 11
1905	April 14	Nov. 20
1906	March 22	Nov. 18
1907	April 17	Nov. 12
1908	April 2	Nov. 12
1909	March 17	Oct. 13
1910	Feb. 27	Nov. 5
1911	March 28	Nov. 1
1912	March 24	Nov. 24
1913	March 27	Oct. 20
1914	March 22	Nov. 16
1915	March 26	Nov. 14
1916	April 6	Oct. 20
1917	March 18	Oct. 8
1918	April 4	Nov. 23
1919	---	Oct. 28
1920	April 5	---
1921	March 28	Nov. 9
1922	March 2	Nov. 25
1923	April 8	Oct. 30
1924	April 1	Nov. 14
1925	March 15	Oct. 20
1926	April 3	Nov. 2
1927	March 21	Nov. 12
1928	April 14	Nov. 25
1929	April 1	Nov. 14
1930	April 1	Oct. 21
1931	March 16	Nov. 24
1932	March 23	Nov. 12
1933	March 22	Nov. 8
1934	March 27	Nov. 1
1935	March 17	Nov. 1
1936	April 7	Oct. 26
1937	March 27	Oct. 14
1938	March 6	Nov. 7
1939	April 12	Nov. 3
1940	April 11	Nov. 11
1941	March 18	Nov. 23
1942	March 28	Oct. 26
1943	March 21	Nov. 11
1944	March 30	Nov. 4
1945	March 7	Nov. 3
1946	March 10	Nov. 12
1947	March 26	Nov. 9
1948	March 13	Nov. 13
1949	March 18	Oct. 31
1950	April 13	Nov. 10
1951	March 24	Nov. 2
1952	March 25	Nov. 20

Year of occurrence	Last occurrence in spring	First occurrence in fall
1896	April 2	Nov. 10
1897	March 16	Nov. 6
1898	March 30	Nov. 11
1899	April 3	Dec. 3
1900	March 20	Nov. 14
1901	March 22	Nov. 3
1902	March 18	Nov. 30
1903	March 1	Nov. 16
1904	March 27	Nov. 29
1905	April 14	Nov. 1
1906	March 23	Nov. 13
1907	March 14	Nov. 14
1908	April 2	Nov. 10
1909	March 18	Nov. 17
1910	Feb. 28	Oct. 28
1911	March 27	Nov. 2
1912	March 23	Nov. 2
1913	March 27	Oct. 21
1914	April 8	Nov. 16
1915	March 27	Nov. 14
1916	April 6	Oct. 21
1917	March 19	Oct. 31
1918	March 10	Nov. 23
1919	March 22	---
1920	April 6	Nov. 10
1921	March 28	Nov. 9
1922	March 3	Nov. 25
1923	March 31	Oct. 30
1924	April 2	Nov. 8
1925	March 15	Oct. 28
1926	April 5	Nov. 9
1927	March 3	---
1928	April 15	Nov. 25
1929	March 10	Nov. 20
1930	April 1	Oct. 20
1931	March 16	Nov. 25
1932	March 23	Nov. 14
1933	March 28	Nov. 9
1934	March 31	Dec. 4
1935	March 12	Nov. 1
1936	April 7	Oct. 23
1937	March 27	Nov. 3
1938	April 2	Nov. 8
1939	April 12	Nov. 22
1940	April 11	Nov. 11
1941	March 18	Nov. 23
1942	Feb. 28	Oct. 26
1943	March 22	Nov. 11
1944	March 29	Nov. 27
1945	March 9	Nov. 4
1946	March 10	Nov. 17
1947	March 17	Nov. 11
1948	March 13	Nov. 22
1949	March 19	Oct. 31
1950	March 18	Nov. 4
1951	March 25	Nov. 1
1952	March 27	Oct. 17

Average

March 26

Nov. 6

Average

March 23

Nov. 11

DATE OF OCCURRENCE OF 16° F. OR LOWER

STATION - Pocahontas
 COUNTY - Pocahontas

Year of occurrence	Last occurrence in spring	First occurrence in fall
1904	---	Nov. 30
1905	April 14	Nov. 29
1906	March 22	Nov. 12
1907	April 17	Nov. 12
1908	April 2	Nov. 12
1909	March 18	Oct. 13
1910	Feb. 28	Nov. 3
1911	April 7	Nov. 1
1912	March 23	Nov. 2
1913	March 27	Oct. 21
1914	March 23	Nov. 16
1915	March 26	Nov. 14
1916	April 6	Nov. 13
1917	March 18	Oct. 19
1918	April 4	Nov. 23
1919	March 6	Nov. 12
1920	April 5	Nov. 10
1921	March 28	Nov. 9
1922	March 2	Nov. 25
1923	March 31	Oct. 30
1924	April 1	Nov. 8
1925	March 15	Oct. 27
1926	April 5	Nov. 2
1927	March 3	Nov. 6
1928	April 14	Nov. 25
1929	March 9	Nov. 14
1930	April 1	Oct. 21
1931	March 15	Nov. 25
1932	March 23	Nov. 14
1933	March 22	Nov. 9
1934	March 27	Nov. 1
1935	March 17	Nov. 6
1936	April 7	Oct. 23
1937	March 27	Nov. 3
1938	March 6	Nov. 8
1939	April 12	Nov. 3
1940	April 12	Nov. 11
1941	March 18	Nov. 23
1942	March 2	Oct. 26
1943	March 22	Nov. 10
1944	March 29	Nov. 4
1945	April 5	Nov. 4
1946	March 9	Nov. 17
1947	March 26	Nov. 9
1948	March 28	Nov. 22
1949	---	Oct. 31
1950	April 13	Nov. 10
1951	March 26	Nov. 2
1952	March 25	Oct. 17
Average	March 25	Nov. 8

STATE LIBRARY OF IOWA



3 1723 02085 9047