Climatological Data for July, 1910.

DISTRICT No. 5, UPPER MISSISSIPPI VALLEY.

GEORGE M. CHAPPEL, District Editor.

GENERAL SUMMARY.

There was a wide range in the character of the weather that prevailed during July over the upper Mississippi Valley. While many sections in the northern half of the district were suffering from high temperatures and severe drought conditions the southern sections were having an excess of rainfall and normal or subnormal temperatures.

There have been a few warmer and drier months of the same name during the past 40 years, but it is believed that the deficiency of precipitation in the northern States for the past seven months, January to July, inclusive, has been greater than for any like period since the establishment of the Weather Service. The average rainfall for the whole of Iowa for the past month is 1.86 inch, as compared with 0.63 inch in July, 1894, the driest July on record, but the total precipitation for the first seven months of 1894 was 12.25 inches as compared with 10.94 inches for the same period this year. The prolonged deficiency in precipitation is seriously affecting vegetation, and the stage of the rivers, and is causing many of the smaller streams and shallow wells to go dry. On the other hand, frequent and heavy rains over Missouri and southern Illinois have interfered with farm work and caused, at some time during the month, flood stages in the small streams and creeks.

TEMPERATURE.

The average temperature did not vary materially from the normal; the departures ranging from +3.2° in North Dakota to −1.3° at Hannibal, Mo. July, 1910, will, however, be remembered over the northern section of the district as a hot, dry month, due to the fact that the maximum temperatures on many days ranged from 90° to over 100°. The night temperatures were, with a few exceptions, moderate, thereby keeping the average down to a little above the normal. The mean temperature ranged from 69.2° in North Dakota to 76.2° in Illinois, and while the average was higher in the southern sections, the highest maximum temperatures were recorded in the northern sections. Periods of high temperature, of from one to four days' duration, were interspersed throughout the month, but the monthly maximum temperature was recorded at most of the stations in North Dakota and Minnesota between the 14th and 16th, inclusive; in Wisconsin on the 1st; in Iowa in the 16th or the 24th; and in Missouri and Illinois on the 24th, 25th, or 26th.

The mean temperature for the district, as shown by the records of 293 stations, was 73.1°, which is 1.5° above the normal. The highest monthly mean was 79.4° at Carbondale, Ill., and the lowest, 64.3° at Hannah, N. Dak. The highest temperature recorded was 108° at Ridgeway, Iowa, on the 16th, and the lowest, 30° at Long Lake, Wis., on the 18th.

PRECIPITATION.

Showers were quite frequent in all sections, but they were so badly distributed geographically, and the amounts of rainfall were generally so small that the larger part of the district suffered from droughty conditions during the entire month, and yet there were localities where the showers were timely and the rainfall sufficient, though light, to prevent any material damage to vegetation. In other localities, the monthly rainfall was very nearly or above the normal amounts, but it came generally in one heavy shower which afforded only temporary relief. Over Missouri, southern Illinois, and extreme southeastern Iowa the rainfall was above the normal and was fairly well distributed throughout the month, although the bulk of it fell on two or three days. With one or two exceptions, it was the driest July on record in the northern sections of the district. In view of the fact that the preceding month was so hot and dry and the deficit in precipitation since March 1 was so great, the condition in North Dakota was unprecedented.

The average precipitation for the district, as shown by the records of 308 stations, was 2.22 inches, which is 1.61 inch below the normal. The greatest amount, 12.02 inches, occurred at Steffenville, Mo., and the least, a trace, at Grafton, N. Dak. Measurable precipitation occurred on an average of six days.

EXCESSIVE PRECIPITATION.

Excessive precipitation occurred as follows: At Davenport, Iowa, on the 14th, 2.01 inches were recorded between 11:13 a. m. and 12:55 p. m. During the same storm, 1.59 inch was registered in the 22 minutes ending at 11:59 a. m. At Hannibal, Mo., on the 14th, 0.53 inch fell in 15 minutes. During a thunderstorm on the night of the 28-29th, 0.67 inch fell between 11:53 p. m. of the 28th and 12:22 a. m. of the 29th, and 3.84 inches fell during the 2 hours ending at 3:20 a. m. During the same storm, 4.84 inches fell in 5 hours and 41 minutes.

The cooperative observer at Steffenville, Mo., reports that a violent thunderstorm occurred at that place during the night of the 28-29th, beginning about 10 p. m. Six horses and one cow were killed by the lightning; two barns were burned, and several other buildings were struck and damaged by the lightning. The rain fell in torrents, over 5 inches falling in less than 5 hours. Considerable damage was done to crops by overflowing streams, but no human lives were lost. At Cairo, Ill., on the 2d, 0.48 inch fell in 15 minutes; on the 3d, 0.36 inch fell in 15 minutes; on the 5th, 0.39 inch fell in 15 minutes, and 1.09 inch in 35 minutes; and on the 17th, 0.41 inch fell in 20 minutes. At Devils Lake, N. Dak., on the 23d, 0.51 inch fell in 30 minutes. At Peoria, Ill., on the 28th, 1.44 inch fell in one hour.

SUNSHINE AND CLOUDINESS.

The average number of clear days was 18, partly cloudy, 9; and cloudy, 4. The duration of sunshine was above the normal.

WIND.

Southwest winds prevailed. The highest velocity reported was 39 miles an hour, from the north, at Cairo, Ill., on the 17th.

MISCELLANEOUS.

Owing to the dryness of the ground in North Dakota, much damage was caused by prairie fires. The forest fires, which were especially severe in the northern counties of Wisconsin, were checked by the rain on the 23d and 24th.

Although the drought has been severe, and very damaging in certain localities, it has had its advantages. Much of the bottom lands in Iowa and western Minnesota that have heretofore been too wet to cultivate, are this year producing the most bountiful crops.

Thunderstorms were quite frequent, but were generally feeble and less damaging than usual. There was also less than the usual amount of damage done by the wind. The Secretary of the Iowa Mutual Tornado Insurance Association, in a letter to the district editor, says: "Following is a list of losses sustained and paid by this association for the month of July, during the past five years. 1906, $2,124.46; 1907, $7,640.36; 1908, $16,609.85; 1909, $5,886.80; 1910, $885.20." A loss of only $850.20, on an assessable capital of $147,000,000 demonstrates that in Iowa at least, there were very few wind squalls.

The worst hailstorm reported occurred in northern Todd and southern Wadena counties, Minnesota, on the 27th. The following is an excerpt from an account of the storm as published in the Todd County Argus, Long Prairie, Minn.:

A heavy hail storm passed over northern Todd and southern Wadena counties on July 27, killing stock, knocking the shingles off the roofs, and

destroying what was left of the crops after the long drought. Hailstones as big as base balls were picked up after the storm. Crops were pounded into the ground and totally destroyed. At the John Holper's farm, south of Wadena, a cow was killed and another struck in the eye and blinded. At another place, hogs, sheep, and poultry were killed. All houses in the path of the storm lost the window glass on the south and west sides, and cattle and horses were seriously injured by breaking through the wire fences to reach shelter. It is said that some of the hailstones that fell on John Holper's farm weighed 5 pounds.

RIVERS.

The average stage of all rivers in the district was much below the normal, but some of the smaller streams in Missouri and southern Illinois were at flood stage at some time during the month, due to heavy local showers.

The prolonged period of deficiency in precipitation, extending from March 1 to the end of July, caused a very low stage of water in the Mississippi and Minnesota rivers. Business was interrupted to a considerable degree, particularly on the former stream, and it was difficult to get sufficient water pressure to supply the water mains in a number of the cities.—*U. G. Purssell, Section Director.*

The rivers were extremely low in Wisconsin and at some stations the stages were the lowest ever known during July.—*H. B. Hersey, Inspector.*

The highest stage of the Mississippi, at Dubuque, Iowa, was 1.9 foot on the 1st, or 1.6 foot lower than any July maximum stage at this station in 37 years, and probably the lowest maximum stage ever known in July. Minimum, 0.6 foot on the 29th and several other dates, or 0.6 foot lower than any stage known in July during the past 37 years, and probably the lowest ever known in July. (The low water of 1864 was recorded later in the summer. The exact stage during July, 1864, is unknown.) River traffic was almost completely suspended during the month. The Diamond Jo steamer, *Sidney*, left Dubuque on her last trip to St. Louis on the 4th. The *St. Paul* and *Quincy* have not run all the summer, owing to low water. The *Eclipse*, the regular packet between Dubuque and Prairie Du Chien, was unable to run after the 8th, owing to low water, but made several excursion trips to Bellevue during the month. Log rafts, much smaller than the ususal size were brought down the river at intervals, and Dubuque lumber mills were kept in operation during the month, but it is understood that mills farther down the river have been obliged to close, owing to inability to obtain logs. It is believed that never before in the history of navigation on the upper Mississippi River has traffic been so completely interrupted by low water so early in the season as at present. The Wisconsin River, it is said by old settlers, is experiencing the lowest continued low water for 20 years, many mills along the river have been shut down for several weeks or running only half time for want of water. The lakes in the Eagle River region are reported lower than for many years. Crews are engaged all along the river in raising sunken logs; the extreme low water making the logs easy to get at.—*J. H. Spencer, Local Forecaster.*

At the close of July the Mississippi River had fallen to 0.6 foot at Davenport, Iowa, which is the lowest during the season of navigation since 1895, when the lowest gage reading was only 0.1 foot on September 14. The lowest stage in the history of the local station, during the months when the river was free from ice, was 0.0, on October 1 and 2, 1891. Because of the very low water, no regular passenger or excursion steamers have gone over the Le Claire Rapids since early in the month just passed. Regular trips are still being made to Burlington, Iowa, by the boats of the Carnival City Packet Company, though on July 13 the *Helen Blair*, one of the steamers of that company, struck upon an isolated rock a short distance below Davenport and injured her bottom so badly that she has since been out of commission. The passengers, crew, and all the cargo were saved, and the steamer has been raised and is being repaired.—*J. M. Sherier, Local Forecaster.*

At Keokuk, Iowa, the Mississippi River is at an unusually low stage, and navigation has nearly been abandoned on account of the low water.—*Fred Z. Gosewisch, Observer.*

Notwithstanding the excessive rainfall, the Mississippi River, between Keokuk, Iowa, and Hannibal, Mo., is reported to be lower than during any July in 20 years or more, and navigation has practically ceased.—*George Reeder, Section Director.*

The maximum stage of the Des Moines River at Des Moines, Iowa, was 2.7 feet on the 1st, and the minimum was 1.7 foot on the 10th, which is the lowest reading on record for July.

The observer at Hannibal, Mo., reports:

On the night of the 28–29th a severe thunderstorm, accompanied by excessive rainfall, occurred at or near Hannibal, Mo., which caused Bear Creek to rise with great rapidity and to an unusual height. The bottom lands were overflowed from beyond Oakwood to Main street. Crops and gardens were destroyed and much stock drowned. Many residences were flooded, and from a number the occupants had to be rescued in boats. The north end of the Chicago, Burlington and Quincy Railroad bridge, generally known as the K. Line Bridge, was undermined and settled down; the Main Street Wagon Bridge was partly undermined, and the Third Street Bridge went out, as well as numerous small bridges. The city streets and country roads were badly washed. It is estimated that the damage in Hannibal will amount to from $75,000 to $100,000.

In the extreme southern part of Illinois, great damage was done to growing crops by the inundation from the Cache River. In Johnson County alone, a loss of $100,000 was estimated. Not only was corn destroyed, but roads were washed out, bridges carried away, culverts damaged, and fences destroyed.

DRAINAGE AND ENGINEERING NOTES.

Mr. A. D. Morehouse, Acting Chief of Drainage Investigations, has furnished the following: "The drainage survey of the upper Des Moines River being conducted by Drainage Investigations, Office of Experiment Stations, United States Department of Agriculture, was continued during the month of July. All lines of the preliminary survey are completed to the north line of Palo Alto County, which is as far upstream as it is practicable to run the survey.

H. A. Kipp, Drainage Engineer, has completed the examinations in southern Iowa and is now cooperating with Mr. Baxter on the Des Moines River survey. S. H. McCrory has about completed similar examinations in northern Iowa.

As mentioned in the July Review, all of this work is under the direction of C. G. Elliott, Chief of Drainage Investigations, in cooperation with the Iowa State Drainage, Waterways, and Conservation Commission."

During July, the United States Army Engineers, under the supervision of Mr. A. O. Rowse, continued the survey of the Des Moines River.

Topography on both sides of the river, covering area subject to overflow, soundings and probings of the river bottom, and levels to determine the water slope were taken for a distance of 27 miles, measured along the river, and 16 miles of topography were platted. At the end of the month the party was camped near Howell, Iowa.

A ditch to cost in the neighborhood of $100,000 is soon to be constructed in what is known as Boone-Story Drainage District No. 3, or the Goose Lake drain. The county auditors of the two counties have advertised for bids for the construction of the same. This is one of the largest drainage propositions that has been put in this part of the State. The drain originates in Boone County, and runs in a southeasterly direction, enters Story County, about midway between Slater and Kelley and has Skunk River as an outlet. It will drain a vast area of land. There is a stretch of over 5¼ miles of open work, all of it to be 8 feet wide at the bottom, and part of it as wide as 48 feet at the top. The tile portion of the drain proper and tributaries consists of over 13 miles, the tile ranging in size from 6 to 30 inches.—*Marshaltown, Iowa, Times-Republican.*

St. Paul, Minn., July 12.—Although the passage of the river and harbor bill by Congress providing for the completion of the

upper Mississippi River Channel within 12 years ended the work originally designed by the Upper Mississippi River Improvement Association, that body still has much to do in providing better facilities for transportation. This subject is the chief one for discussion at the ninth annual convention of the association, which opened here to-day.

Delegates were named by the governors, mayors, and various organizations of Illinois, Missouri, Iowa, Minnesota, and Wisconsin, and there was a large attendance when President Wilkinson, of Burlington, Iowa, rapped for order. The commercial associations of St. Paul have made elaborate plans to entertain the delegates for luncheons and a banquet.—*Tingley, Iowa, Vindicator.*

An appropriation was made by the Iowa State Drainage, Waterways, and Conservation Commission for the completion of the Boone River Survey which was begun early in the summer by Mr. Dobson but has never been finished. Mr. Hites was instructed to make as complete a survey of the Boone River, from Webster City to its junction with the Des Moines River, as will be possible with the funds available. This survey is to be made in order that a report on the water-power possibilities of the stream may be incorporated in the commission's report to the coming legislature, and is very important since the Boone River is a typical northern Iowa stream, and the work done upon it can safely be used as a basis for calculating, in a rough way, the water-power facilities of larger Iowa streams.

Some very valuable data on the water-power plants of the State are now being assembled by the secretary of the commission. It is thought by the time the report is complete, the horsepower, head, type of wheels and number of hours per year of operation of each water-power plant in the State will be known. There are at present about 100 water-power mills and hydroelectric plants in operation in Iowa.

TABLE 1.—*Climatological data for July, 1910. District No. 5, Upper Mississippi Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Precipitation, in inches. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Sky. Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	Observers.
North Dakota.																				
Amenia	Cass	954	12	72.1	+ 4.7	102	15	45	10	50	1.19	− 1.59	0.50	0.0	3	21	7	3	nw.	C. E. Wood.
Bottineau	Bottineau	1,638	14	68.0	+ 2.1	102	14	41	28	44	2.23	+ 0.01	0.76	0.0	9	16	9	6	se.	J. A. Kemp.
Cando	Towner	1,488	8	69.4	+ 5.2	96	14†	40	12	48	3.21	− 0.61	1.48	0.0	8	17	11	3	n.	G. Bennett.
Crosby	Williams	.....	3	67.6	.....	100	14	44	12	41	1.62	.....	1.10	0.0	6	20	7	4	nw.	H. C. Kaschau.
Devils Lake	Ramsey	1,482	4	68.8	+ 0.7	96	14	47	9	39	1.84	− 1.94	1.05	0.0	8	17	12	2	nw.	U. S. Weather Bureau.
Donnybrook	Ward	1,760	10	68.7	+ 4.2	101	14	44	10†	42	3.11	+ 0.07	1.35	0.0	7	22	7	2	nw.	C. J. De Vore.
Dunseith	Rolette	.....	12	66.4	+ 1.2	104	14	38	28	56	1.43	− 1.03	1.40	0.0	2	29	0	2	w.	L. H. Trowbridge.
Edmore	Ramsey	1,524	4	68.1	.....	97	14	40	9†	47	1.82	.....	1.22	0.0	3	18	13	0	w.	H. R. Aslakson.
Forman	Sargent	1,249	15	.....	.....	101	1	.....	.....	.....	1.90	− 0.75	1.55	0.0	2	21	7	3	sw.	A. Maltby.
Grafton	Walsh	827	12	73.6	+ 6.5	94	20	53	21†	35	T.	− 1.99	T.	0.0	0	27	2	2	.....	H. La Moure.
Granville	McHenry	1,504	3	69.0	.....	104	14	42	13	48	1.97	.....	0.91	0.0	8	13	17	1	nw.	W. A. Christiansen.
Hannah	Cavalier	1,568	4	64.3[c]	.....	94[c]	20	37[c]	9†	50[c]	1.81	.....	1.41	0.0	2	.....	.....	.....	nw.	J. Moffatt.
Hansboro	Towner	.....	2	67.4	.....	101	14	42	10†	43	1.26	.....	0.80	0.0	4	25	4	2	nw.	Geo. Dale.
Hillsboro	Traill	901	4	71.8	.....	97	15	46	18	41	1.86	.....	1.20	0.0	6	16	12	3	nw.	M. H. Norman.
Lakota	Nelson	1,519	3	67.1	.....	94	14	40	28	47	2.12	.....	1.22	0.0	5	13	17	1	nw.	C. R. Pettes.
Langdon	Cavalier	1,615	14	66.4	.....	98	14	42	12	41	1.39	.....	0.63	0.0	6	22	0	9	sw.	J. Woolner.
Larimore	Grand Forks	1,134	14	69.5	+ 3.4	94	14†	47	18	41	1.37	− 1.84	0.73	0.0	3	19	5	7	w.	Reuben Gray.
Lisbon	Ransom	1,091	5	71.2	.....	100	25	43	10	53	2.85	.....	2.12	0.0	7	22	5	4	nw.	H. K. Adams.
McKinney	Ward	1,640	15	67.6	+ 1.8	106[a]	14	37[a]	12	49[a]	1.95	− 0.22	1.05	0.0	5	.....	.....	.....	nw.	N. P. Swenson.
Manfred	Wells	1,605	8	68.6	.....	100	14	44	30	45	2.09	.....	0.78	0.0	5	18	12	1	nw.	P. B. Anderson.
Mayville	Traill	975	14	77.9	+10.0	95	15	54	11	26	1.50	− 2.02	0.82	0.0	2	28	1	2	nw.	N. C. McDonald.
Minot	Ward	1,557	11	70.2	+ 1.6	104	14	45	28	39	2.28	+ 0.53	0.65	0.0	11	26	2	3	nw.	Wm. J. Farris.
Minto	Walsh	820	16	69.9	+ 2.9	98	14	43	12	45	1.05	− 1.82	0.55	0.0	5	20	7	4	nw.	S. S. Marsh.
Oriska	Barnes	1,270	4	70.0	.....	99	15	46	18	43	0.70	.....	0.34	0.0	5	5	25	1	nw.	W. E. Williams.
Park River	Walsh	998	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. Heyward.
Pembina	Pembina	789	11	66.4	+ 0.3	94	6†	44	30	42	1.05	− 1.84	0.65	0.0	5	22	3	6	w.	C. W. Shumaker.
Power	Richland	1,020	17	71.3	+ 2.6	95	15	41	10	47	0.94	− 2.56	0.40	0.0	3	20	6	5	se.	J. A. Power.
Pratt	McHenry	.....	5	68.6	.....	99	14	41	25†	49	1.63	.....	1.00	0.0	5	25	3	3	nw.	C. H. Butts.
Towner	McHenry	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Belle Bagley.
University	Grand Forks	830	18	69.1	+ 2.1	96	15	43	10†	45	0.64	− 1.85	0.54	0.0	3	9	11	11	nw.	W. R. Holgate.
Wahpeton	Richland	962	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. G. Burch.
Walhalla	Pembina	966	5	69.6[c]	.....	100[c]	14	45[c]	11†	41[c]	0.94	.....	0.63	0.0	3	.....	.....	.....	.....	C. H. Lee.
Westhope	Bottineau	.....	3	66.4	.....	106	14	30	11	61	2.51	.....	1.80	0.0	2	19	0	12	se.	C. W. Clark.
Willow City	...do...	1,471	16	67.5	+ 2.0	101	14	40	12†	48	1.27	− 1.00	0.90	0.0	3	10	20	1	nw.	M. A. Ostby.
Minnesota.																				
Albert Lea	Freeborn	1,229	20	73.6	+ 2.3	99	16	50	13	36	1.40	− 2.37	1.00	0.0	2	24	6	1	se.	Edward Carey.
Alexandria	Douglas	1,391	16	70.5	+ 1.1	92	25	49	4	38	3.78	+ 0.54	1.92	0.0	6	22	4	5	nw.	P. O. Unumb.
Angus	Polk	870	8	68.2	.....	94	15	42	10†	46	1.54	.....	0.78	0.0	5	10	16	5	nw.	John Nadvornik.
Bagley	Clearwater	.....	4	67.4	.....	94	15	39	18	48	1.94	.....	0.76	0.0	5	13	17	1	sw.	Jens Nelson.
Baudette	Beltrami	1,084	1	68.6	.....	94	15	42	12	38	1.37	.....	0.82	0.0	6	14	8	9	nw.	Franz W. Schmidt.
Beardsley	Bigstone	1,090	17	72.2	+ 2.9	100	16	43	10	50	0.57	− 2.89	0.23	0.0	4	15	13	3	se.	Roy A. Smith.
Beaulieu	Mahnomen	1,200	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Elizabeth S. Cooper.
Bird Island	Renville	1,039	20	71.6	+ 0.7	97	15	47	4	43	1.69	− 1.48	0.56	0.0	7	23	5	3	sw.	Dr. F. L. Puffer.
Caledonia	Houston	1,179	17	74.0	+ 3.1	94	1†	54	13†	21	1.59	− 2.42	1.15	0.0	3	24	2	5	sw.	W. D. Belden.
Campbell	Wilkin	984	.....	69.2	.....	97	25	41	10†	50	0.65	.....	0.43	0.0	4	21	0	10	se.	J. T. Neisess.
Cass Lake	Cass	1,300	4	.....	.....	.....	.....	.....	.....	.....	2.50	.....	1.65	0.0	2	.....	.....	.....	.....	C. W. Burns.
Collegeville	Stearns	1,282	17	73.4	+ 2.3	94	21	48	4	33	0.77	− 2.71	0.52	0.0	8	22	6	3	nw.	Fridolin Tembreul.
Crookston	Polk	863	20	70.8	+ 2.5	94	15	50	10†	36	1.18	− 2.34	0.57	0.0	6	27	2	2	s.	A. G. Anderson.
Detroit	Becker	1,364	14	69.2	+ 2.0	97	15	43	10	45	1.83	− 2.51	0.75	0.0	7	23	8	0	sw.	George W. Peoples.
Fairmont (near)	Martin	1,240	23	72.1	+ 0.9	94	16	53	4†	27	1.64	− 1.79	0.92	0.0	5	19	11	1	s.	W. F. Wherland.
Faribault	Rice	1,003	13	71.8	+ 1.5	95	25	50	13†	41	2.27	− 1.87	0.94	0.0	6	21	9	1	sw.	Dr. A. R. T. Wylie.
Farmington	Dakota	902	22	73.8	+ 3.3	98	15	51	4	36	2.65	− 0.69	0.85	0.0	6	20	6	5	nw.	D. F. Akin.
Fergus Falls	Ottertail	1,210	18	72.0	+ 2.3	94	25	49	10	37	1.89	− 1.97	1.10	0.0	7	20	11	0	nw.	Chas. E. Kissenger.
Fort Ripley	Crow Wing	1,136	4	69.2	.....	95	21	41	4	46	1.86	− 0.72	0.98	0.0	4	19	6	6	s.	J. J. Tucker.
Fosston	Polk	1,289	1	68.8	.....	95	15	45	12†	37	1.72	.....	0.67	0.0	5	17	11	3	sw.	O. N. Hem.
Fram	Marshall	.....	.....	66.4	.....	95	15	40	20	52	0.91	.....	0.87	0.0	2	20	7	4	sw.	A. W. Clark.
Glencoe	McLeod	1,000	14	72.6	+ 3.2	97	16	48	4	40	1.00	− 2.05	0.45	0.0	4	23	8	0	sw.	C. G. Selvig.
Grand Meadow	Mower	1,338	23	74.2	+ 2.9	102	16	50	13	39	0.76	− 3.01	0.52	0.0	3	23	6	2	sw.	C. F. Greening.
Hallock	Kittson	815	11	68.2	+ 1.7	96	14	42	12	44	0.80	− 2.32	0.37	0.0	6	21	8	2	n.	D. A. Robertson.
Halstad	Norman	870	4	70.5	.....	99	15	42	10	44	1.57	.....	1.12	0.0	7	22	7	2	sw.	Aaron G. Holstrom.
Hinckley	Pine	1,050	5	69.8	.....	96	15	44	4†	43	1.19	.....	0.27	0.0	5	11	15	4	s.	W. R. Newman.
International Falls	Koochiching	1,112	2	67.4	.....	96	1	42	12	38	2.12	.....	0.87	0.0	6	20	7	4	sw.	Rees Roe.
Kelliher	Beltrami	.....	3	67.4	.....	93	1†	40	21	45	2.15	.....	1.07	0.0	6	13	18	0	nw.	A. Gilmour.
Lake Crystal	Blue Earth	.....	3	72.0	.....	94	16	51	13	35	1.78	.....	1.05	0.0	6	26	3	2	nw.	W. P. Cobb.
Leech Lake Dam	Cass	1,301	22	66.4	− 0.5	93[a]	1†	40	4†	41[a]	4.03	− 0.25	2.33	0.0	5	8	22	1	w.	Hans Olson.
Little Fork	Koochiching	.....	.....	65.9	.....	96	15	38	12	44	2.24	.....	0.85	0.0	6	18	11	2	.....	O. C. Olson.
Long Prairie	Todd	1,299	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. M. Sheets.
Lynd (2)	Lyon	1,175	18	69.2	− 0.8	93	16	45	19	38	1.76	− 1.24	0.42	0.0	6	22	6	3	sw.	J. W. Rouse.
Mankato	Blue Earth	747	11	.....	.....	.....	.....	.....	.....	.....	1.60	− 1.57	0.77	0.0	6	.....	.....	.....	ne.	Sadie H. Blake.
Mapleplain	Hennepin	1,023	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	G. W. Richards.
Milaca	Millelacs	1,072	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. H. Foss.
Milan	Chippewa	955	16	70.4	+ 0.4	95	16	45	4	42	1.58	− 1.58	0.75	0.0	5	5	25	1	se.	O. K. Ojjorden.
Minneapolis	Hennepin	918	19	73.9	+ 1.9	94	15	52	12	29	0.74	− 3.07	0.34	0.0	6	17	7	7	w.	U. S. Weather Bureau.
Montevideo	Chippewa	900	20	72.8	+ 2.1	98	16†	48	12	47	2.29	− 0.47	0.96	0.0	8	14	14	3	se.	Lloyd G. Moyer.
Moorhead	Clay	935	29	71.4	+ 2.7	98	15	48	12	44	0.83	− 2.91	0.44	0.0	6	24	5	2	nw.	U. S. Weather Bureau.
Mora	Kanabec	.....	5	67.4	.....	95	15	37	18	50	2.61	.....	1.02	0.0	5	22	7	2	w.	Hans Peterson.
Morris	Stevens	1,170	25	71.7	+ 1.5	97	16	48	12	39	1.22	− 2.70	0.52	0.0	6	26	3	2	s.	D. T. Wheaton.
New London	Kandiyohi	1,215	16	70.2	+ 0.5	95	16†	47	12	39	1.21	− 2.25	0.48	0.0	6	25	5	1	s.	Harold Swenson.
New Richland	Waseca	1,180	16	73.8	+ 2.1	97	16	52	10†	34	1.46	.....	0.61	0.0	5	20	9	2	sw.	N. O. Tyrholm.
New Ulm	Brown	791	30	74.6	+ 0.5	101	16	53	12†	41	1.53	− 2.08	0.67	0.0	6	23	1	7	s.	Andrew J. Eckstein.
Osakis	Douglas	1,343	3	69.5	.....	92	20	47	4†	39	2.65	.....	1.20	0.0	6	24	4	3	nw.	J. B. Johnson.
Park Rapids	Hubbard	1,426	20	70.0	+ 2.7	95	1†	48	4†	41	1.59	− 2.36	0.90	0.0	5	19	5	7	nw.	Dr. P. A. Walling.
Pine River Dam	Crow Wing	1,251	23	70.7	+ 2.2	96	15	40	18	44	3.68	+ 0.14	2.10	0.0	6	18	12	1	nw.	Neil McKay.
Pokegama Falls	Itasca	1,280	23	66.3	+ 0.5	93	15†	37	28	41	5.76	+ 1.83	3.18	0.0	9	10	20	1	nw.	Arthur L. Mampel.
Red Lake	Beltrami	1,152	2	68.2	.....	94	1	45	17	36	3.18	.....	1.55	0.0	8	9	20	2	w.	A. C. Goddard.
Red Wing	Goodhue	680	14	.....	.....	.....	.....	.....	.....	.....	1.90	.....	0.48	0.0	7	20	6	5	nw.	Louis Bach.
Redwood Falls	Redwood	1,050	3	73.3	.....	98	16	49	12	41	1.48	− 1.66	0.41	0.0	5	27	2	2	nw.	N. B. Anderson.
Reeds Landing	Wabasha	681	15	.....	.....	.....	.....	.....	.....	.....	1.84	− 1.77	0.74	0.0	7	23	4	4	se.	John Deschneau.
Rochester	Olmsted	991	6	72.4	.....	97	1†	46	13	42	0.84	.....	0.27	0.0	4	21	1	8	s.	S. R. Case.
Roseau	Roseau	1,040	3	67.8	.....	95	14†	42	12	44	1.16	.....	0.43	0.0	5	27	4	0	nw.	A. Waag.
St. Charles	Winona	850	19	73.0	+ 2.7	98	1†	49	13	40	1.32	− 2.04	0.75	0.0	7	24	4	3	se.	S. W. Gleason.
St. Cloud	Sherburne	1,020	32	73.0	+ 2.1	95	20	46	4†	38	0.63	− 3.08	0.34	0.0	3	21	5	5	sw.	Jos. H. Capser.
St. Paul	Ramsey	837	39	74.2	+ 2.1	95	25	54	12	33	0.99	− 2.41	0.33	0.0	6	22	8	1	sw.	U. S. Weather Bureau.
St. Peter	Nicollet	825	17	68.6	+ 3.0	97	23	34	12	47	1.06	− 2.80	0.75	0.0	2	20	8	3	sw.	Chas. C. Cavanaugh.
Sandy Lake Dam	Aitkin	1,234	17	67.6	+ 0.5	92	14	40	17	37	4.01	+ 0.08	2.15	0.0	10	17	10	4	sw.	U. S. Engineer Corps.
State Sanatorium	Cass	.....	3	69.9	.....	95	15	47	18	34	2.54	.....	1.15	0.0	4	27	2	2	sw.	Walter J. Marclacy.
Stillwater	Washington	694	5	.....	.....	.....	.....	.....	.....	.....	1.18	.....	0.42	0.0	6	23	2	6	sw.	Oscar Ostrom.

TABLE 1.—*Climatological data for July, 1910. District No. 5*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature in degrees Fahrenheit. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Precipitation, in inches. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Sky. Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	Observers.
Minnesota—Cont'd.																				
Taylors Falls	Chisago	759	3	73.0	.....	95	15	50	18†	36	2.39	.....	0.89	0.0	5	18	9	4	s.	Mpls. Gen. Elec. Co.
Warroad	Roseau	1,069	1	66.2	.....	92	15	41	12	40	1.37	.....	0.68	0.0	5	27	2	2	w.	John H. Sawyer.
West Concord	Dodge	1,232	1	73.6	.....	99	25	51	13†	40	0.92	.....	0.67	0.0	3	16	13	2	sw.	H. H. Orcutt.
Willow River	Pine	1,046	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Brandt.
Windom	Cottonwood	1,336	4	72.7	.....	96	16	49	12	40	1.34	.....	0.76	0.0	4	12	17	2	n.	Taber C. Richmond.
Winnebago	Faribault	1,100	11	72.8	+ 0.8	97	16	52	13†	36	1.93	− 2.76	1.20	0.0	4	23	5	3	nw.	H. H. Haight.
Winnibigoshish	Itasca	1,300	22	70.0	+ 3.0	93	1†	49	4†	35	3.39	− 0.68	2.03	0.0	8	21	9	1	w.	John Duncan.
Winona	Winona	700	15	76.9	+ 4.4	101	1	51	13	39	0.62	− 2.40	0.26	0.0	5	22	6	3	nw.	Perry C. Meyrs.
Worthington	Nobles	979	15	73.0	+ 3.4	96	16†	48	4	38	1.89	− 2.40	0.78	0.0	7	18	4	9	sw.	Milton P. Mann.
Zumbrota	Goodhue	917	15	73.6	+ 2.6	97	16†	47	31	42	1.14	.....	0.76	0.0	3	25	5	1	nw.	W. C. Rowell.
South Dakota.																				
Milbank	Grant	1,148	18	70.4	+ 0.4	98	16	45	12	42	1.91	− 0.74	0.84	0.0	7	19	4	8	nw.	I. T. Patridge.
Wisconsin.																				
Antigo	Langlade	1,489	16	70.2[d]	+ 2.6	97	1	42[e]	18	40	2.43	.....	1.01	0.0	6	20	10	1	w.	Elton C. Larzelere.
Barron	Barron	1,115	18	69.1	+ 0.9	94	1†	42	4	43	2.21	− 1.67	0.68	0.0	5	25	6	0	w.	Wm. A. Kent.
Beloit	Rock	750	23	75.4	+ 2.5	96	1†	52	19	43	1.22	− 2.43	0.81	0.0	5	17	6	8	sw.	Smith Observatory.
Big St. Germain Dam§	Vilas	1,590	1	66.0	.....	95	1†	41	31	44	2.39	.....	1.10	0.0	7	21	7	3	nw.	Oscar Brehmer.
Brodhead	Green	812	12	76.1	+ 3.3	101	1	48	19	39	1.72	− 2.96	0.95	0.0	6	20	11	0	sw.	Hecktore D. Kirkpatrick.
Burnett	Dodge	880	6	72.8	.....	100	1	41	19	41	1.76	.....	0.82	0.0	4	20	11	0	sw.	Geo. W. Smith.
Darlington	Lafayette	867	5	74.2	.....	100	1	43	19	43	0.80	.....	0.50	0.0	2	26	1	4	nw.	S. P. Nelson.
Deerskin Dam§	Forest	1,625	1	.....	.....	.....	.....	.....	.....	.....	2.24	.....	0.93	0.0	7	18	10	3	sw.	Wm. E. O'Neal.
Delavan	Walworth	920	17	73.8	+ 1.9	98	1†	45	19	41	0.92	− 3.34	0.29	0.0	8	22	8	1	sw.	Elwood S. Austin.
Dodgeville	Iowa	1,116	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Geo. W. Butler
Downing	Dunn	983	8	69.6	.....	98	1	40	4	45	3.09	.....	1.47	0.0	6	11	5	15	sw.	Eugene F. Stoddard.
Eau Claire	Eau Claire	800	19	73.7	+ 3.0	98	1	50	4	38	2.47	− 1.00	0.98	0.0	6	25	4	2	nw.	Robert D. Whitford
Grand Rapids	Wood	1,021	11	72.4	+ 3.1	99	1	45	18	41	1.76	− 1.11	0.95	0.0	5	22	8	1	sw.	Willis B. Raymond.
Grantsburg	Burnett	1,095	19	70.7	+ 1.6	98	15	40	17	41	4.05	− 0.35	1.90	0.0	7	20	6	5	sw.	Theodore Olsen.
Hancock	Waushara	1,091	18	74.4	+ 3.5	101	1	49	18	38	1.20	− 2.75	0.98	0.0	4	22	9	0	sw.	Frederick B. Hamilton.
Hatfield	Jackson	973	15	71.7	+ 4.8	98	1	42	4	46	2.03	− 1.53	1.75	0.0	4	21	8	2	w.	Walter S. Woods.
Hayward	Sawyer	1,197	19	69.3	+ 2.3	96[a]	15	41[a]	18	44[a]	3.12	− 0.63	1.60	0.0	7	14[a]	12[a]	4[a]	w.	William E. Swain.
Hillsboro	Vernon	1,000	19	70.0	+ 0.7	97	2	42	13	44	1.65	− 1.84	1.00	0.0	3	21	10	0	sw.	Emil V. Wernick.
Koepenick	Langlade	1,683	20	66.0	− 1.4	96	1	35	18	45	2.26	− 1.58	0.80	0.0	6	26	0	5	sw.	Edward S. Koepenick.
Lac du Flambeau§	Vilas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. J. Lovett.
La Crosse	La Crosse	714	38	74.5	+ 1.9	98	16	52	13	36	1.03	− 3.04	0.43	0.0	7	18	9	4	s.	U. S. Weather Bureau.
Lake Mills	Jefferson	897	19	74.7	+ 3.5	99	1	48	18†	38	1.40	− 2.69	1.06	0.0	5	15	16	0	sw.	S. Newton Dexter Smith.
Lancaster	Grant	1,070	20	74.4	+ 2.7	98	1	50	19	35	0.71	− 3.40	0.41	0.0	5	24	6	1	sw.	Edward Pollock.
Long Lake	Oneida	1,592	2	65.2	.....	96	1	30	18	53	1.74	.....	0.70	0.0	7	19	9	3	sw.	Louie Frank.
Madison	Dane	974	32	74.2	+ 1.8	97	1	54	18	29	0.81	− 3.18	0.28	0.0	5	12	14	5	sw.	U. S. Weather Bureau.
Mather	Juneau	962	6	68.6	.....	100	1	38	31	48	1.15	.....	0.48	0.0	5	21	4	6	e.	Frank Evans.
Mauston	do	882	14	72.3	+ 2.1	97	16	45	18	38	1.71	− 2.58	1.20	0.0	3	25	4	2	nw.	Eugene L. Hitchcock.
Meadow Valley	do	974	19	71.2	+ 1.9	102	1	39	13	51	1.37	− 2.61	0.61	0.0	6	10	20	1	nw.	Charles H. Johnson.
Medford	Taylor	1,420	19	69.3	+ 0.5	96	15	41	18	42	2.51	− 1.58	1.18	0.0	5	26	4	1	w.	William Zeit.
Merrill	Lincoln	1,267	4	71.0	.....	98	1	44	5†	44	1.65	.....	0.67	0.0	6	28	3	0	w.	Frank M. McElroy.
Minocqua	Vilas	1,604	6	67.6	.....	95	1†	37	18	44	2.52	.....	1.28	0.0	8	16	14	1	w.	Benjamin W. Applebee.
Mondovi	Buffalo	738	2	72.4	.....	100	1	46	13	43	1.99	.....	0.65	0.0	6	19	8	4	nw.	Dr. Charles Hebard.
Mount Horeb	Dane	1,226	6	74.2	.....	99	1	50	18†	37	0.91	.....	0.65	0.0	3	17	12	2	w.	W. M. Lewis.
Muscoda	Grant	666	1	75.4	.....	104	15	48	13	42	1.04	.....	0.60	0.0	3	18	10	3	sw.	Henry Eckstein.
Neillsville	Clark	996	21	71.8	+ 2.0	100	1	44	13	46	2.76	− 1.03	1.52	0.0	5	20	1	10	nw.	William Heaslett.
New Richmond	St. Croix	990	5	72.8	.....	96	20	46	4	40	3.88	.....	1.02	0.0	7	19	9	3	nw.	Frank A. R. Van Meter.
Osceola	Polk	806	19	72.4	+ 3.3	100[a]	15	46	4†	41	1.77	− 2.35	0.75	0.0	6	21	7	3	s.	Charles W. Staples.
Park Falls§	Price	1,492	18	67.4	+ 1.2	95	1	36	18	47	2.79	− 2.88	1.09	0.0	6	20	8	3	sw.	Flambeau Paper Co.
Portage	Columbia	809	14	75.4	+ 4.0	100	1	48	19	39	1.04	− 2.31	0.87	0.0	4	27	3	1	sw.	James Clear.
Prairie du Chien	Crawford	690	23	75.2	+ 1.4	101	16	49	13†	45	0.52	− 3.11	0.26	0.0	5	21	5	5	nw.	Jas. A. Gillis.
Prentice	Price	1,551	12	64.6	− 1.0	95	1	32	18	54	3.29	− 0.80	1.60	0.0	7	19	5	7	sw.	Joseph G. Lash.
Rhinelander	Oneida	1,550	4	69.2	.....	96	1	39	18	41	1.44	.....	0.60	0.0	9	11	14	6	nw.	John Lind.
Sauk City	Sauk	758	2	75.8	.....	102	1	48	19	44	2.37	.....	0.85	0.0	4	19[f]	6[f]	0[f]	.....	Kilien Derleth.
Shullsburg	Lafayette	1,019	4	73.5	.....	95	1	47	19	34	1.16	.....	1.03	0.0	2	16	11	4	w.	Harrison B. Chamberlin.
Solon Springs	Douglas	1,083	4	67.8	.....	94	15	38	18	44	4.20	.....	1.70	0.0	7	18	8	5	sw.	John M. Sayles.
Spooner	Washburn	1,104	15	70.0	+ 0.8	94	15	45	4	39	1.02	− 2.95	0.29	0.0	8	24	5	2	e.	Horace A. Bresee.
Stanley	Chippewa	1,082	6	69.9	.....	98	1	42	13	46	2.71	.....	1.41	0.0	7	24	6	1	nw.	W. Humphrey Scott.
Stevens Point	Portage	1,113	17	71.4[f]	+ 1.8	100[f]	1	42[f]	19	45[f]	0.94	− 2.46	0.66	0.0	5	7[b]	11[b]	11[b]	sw.	Garry E. Culver.
Sugar Camp Dam§	Oneida	1,582	1	.....	.....	.....	.....	.....	.....	.....	2.49	.....	1.08	0.0	6	.....	.....	.....	w.	Robert Hayes.
Twin Lakes Dam§	Vilas	1,625	1	.....	.....	.....	.....	.....	.....	.....	2.18	.....	1.14	0.0	5	12	17	2	sw.	Albert D. Hansen.
Valley Junction	Monroe	930	18	72.2	+ 2.8	101	1	42	31	44	1.60	− 2.46	0.84	0.0	3	23	6	2	nw.	Frederick Muermann.
Viroqua	Vernon	1,412	19	75.6	+ 6.6	100	16	51	18†	35	1.98	− 2.14	1.51	0.0	3	15	13	3	sw.	Henry E. Rogers.
Vudesare	Vilas	1,600	2	79.4	.....	96	1	33	18	41	1.34	.....	0.40	0.0	6	19	11	1	w.	Louis L. Thomas.
Watertown	Jefferson	824	19	73.4	+ 3.0	95	1	46	19	35	1.24	− 2.47	0.64	0.0	5	18	12	1	sw.	Charles J. Salick.
Waukesha	Waukesha	864	14	73.8	+ 2.6	96	1†	46	19	36	1.44	− 1.96	1.35	0.0	4	19	12	0	sw.	Carroll College.
Wausau	Marathon	1,212	17	71.7	+ 3.4	98	1	46	18	39	1.92	− 2.27	1.10	0.0	4	23	7	1	w.	George H. Halder.
Weyerhaeuser	Rusk	1,297	3	67.9	.....	93	1	40	19	45	3.83	.....	1.60	0.0	7	18	13	0	sw.	Miss Etta Stiles.
Whitehall	Trempealeau	675	18	71.6	+ 1.4	101	1	43	13	44	0.90	− 2.55	0.90	0.0	1	26	0	5	nw.	Hans J. Haugh.
Iowa.																				
Albia§	Monroe	959	12	75.0	+ 0.8	99	25	51	13	37	1.57	− 3.36	1.22	0.0	5	18	9	4	sw.	J. I. Chenoweth.
Algona§	Kossuth	1,213	36	74.0	+ 0.6	96	16	50	13	33	0.77	− 2.33	0.38	0.0	4	26	3	2	sw.	Dr. F. T. Seeley.
Alta	Buena Vista	1,513	19	72.2	+ 0.3	91	16	52	13	34	2.58	− 2.10	0.95	0.0	10	17	13	1	sw.	David E. Hadden.
Amana	Iowa	721	34	76.0	+ 2.3	99	16	48	19	38	1.08	− 3.17	0.69	0.0	5	15	11	5	sw.	C. Schadt.
Ames	Story	926	34	73.6	− 0.7	96	1†	49[b]	13	39[c]	1.69	− 2.75	0.65	0.0	5	16	11	4	s.	Iowa State College.
Baxter§	Jasper	998	10	74.1	+ 0.9	99	1	49	13	38	2.07	− 2.97	1.44	0.0	5	16	11	4	sc.	W. R. Vandike.
Belleplaine	Benton	828	20	75.1	+ 2.3	99	16	48	13	39	0.86	− 3.55	0.55	0.0	4	19	9	3	s.	S. P. Van Dike.
Belmond	Wright	.....	.....	72.3	.....	95	16	50	13	34	3.13	.....	1.10	0.0	7	5	24	2	nw.	Geo. P. Hardwick.
Bloomfield§	Davis	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. R. Davis.
Bonaparte§	Van Buren	.....	19	75.4	− 0.1	100	24	52	19	38	2.89	− 0.84	1.33	0.0	5	.....	.....	.....	.....	B. R. Vale.
Boone	Boone	1,134	5	74.8	.....	97	1	54	13	33	1.86	.....	0.75	0.0	7	20	5	6	.....	Carl Fritz Henning.
Britt§	Hancock	1,236	13	71.4	− 0.4	94	16	49	13	35	1.60	− 2.83	0.58	0.0	6	23	8	0	s.	L. M. Goodman.
Buckingham	Tama	.....	10	.....	.....	.....	.....	.....	.....	.....	0.76	− 3.91	0.41	.....	3	.....	.....	.....	.....	J. S. Gwynn.
Burlington	Des Moines	544	14	76.4	+ 1.0	101	24	55	13†	31	4.15	+ 0.53	2.07	0.0	7	21	5	5	sw.	Max E. Poppe, jr.
Carroll	Carroll	1,265	20	72.5	− 0.5	93	7†	48	12	36	1.14	− 2.87	0.60	0.0	4	16	10	5	nw.	Mrs. Jos. J. Wolfe.
Cedar Rapids	Linn	733	28	76.8	+ 2.1	100	1†	53	19	35	0.44	− 3.60	0.19	0.0	3	18	5	8	sw.	W. J. Greene.
Charles City	Floyd	1,015	19	73.2	− 0.3	98	16	48	13	36	0.43	− 3.15	0.14	0.0	6	10	15	6	nw.	U. S. Weather Bureau.
Clear Lake§	Cerro Gordo	1,241	12	74.6	+ 1.4	96	16	52	18	33	1.22	− 3.52	0.80	0.0	3	29	0	2	s.	Oscar Stevens
Clinton	Clinton	593	43	76.9	+ 3.1	101	1	47	19	38	1.68	− 2.52	0.43	0.0	6	12	12	7	.....	Luke Roberts.
Columbus Junction§	Louisa	595	9	75.8	+ 0.2	96	24	53	19	33	3.05	− 0.96	1.02	0.0	7	22	7	2	se.	J. B. Johnston.
Davenport	Scott	580	39	77.0	+ 1.6	97	24	56	18	29	2.86	− 0.69	2.01	0.0	5	19	7	5	sw.	U. S. Weather Bureau.
Decorah	Winneshiek	875	17	76.6	+ 4.6	105	15	48	11†	45	0.73	− 2.99	0.45	0.0	3	.....	.....	.....	.....	F. H. Baker.
Delaware	Delaware	1,083	19	76.0	+ 4.1	98	16	52	18†	36	0.65	− 3.50	0.41	0.0	4	20	10	1	se.	William Ball.
Des Moines	Polk	861	32	75.6	+ 0.1	97	16	54	13	35	0.86	− 3.00	0.56	0.0	5	9	11	11	s.	U. S. Weather Bureau.
De Soto§	Dallas	866	10	75.0	+ 2.3	100	16	46	13	41	0.63	− 5.20	0.30	0.0	5	23	4	4	sw.	R. D. Minard.

TABLE 1.—*Climatological data for July, 1910. District No. 5*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Precipitation, in inches. Total.	Departure from the normal	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days. .01 inch or more.	Sky. Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	Observers.
Iowa—Cont'd.																				
Dubuque	Dubuque	639	37	76.0	+ 1.3	98	1	54	19	30	0.47	− 3.83	0.23	0.0	5	14	13	4	nw.	U. S. Weather Bureau.
Earlham	Madison		8	74.2	+ 4.2	97	16†	46	13	45	1.11	− 3.73	0.47	0.0	6	19	7	5	sw.	George Phillips.
Elkader	Clayton	727	31	75.0	+ 1.4	103	16	45	19	46	0.41	− 4.27	0.27	0.0	3	19	11	1	ne.	Chas. Reinecke.
Elma	Howard		1	74.6		99	16	51	13	37	0.33		0.12	0.0	5	24	6	1	se.	H. A. Moore.
Estherville	Emmet	1,298	15	71.4	+ 0.3	93	16†	50	13†	37	2.00	− 2.58	0.53	0.0	7	18	0	13	sw.	A. O. Peterson.
Fairfield	Jefferson		26	76.1	+ 1.4	100[a]	24	49	19	39[a]	3.08	− 0.91	1.53	0.0	7	21	6	4	w.	R. Monroe McKenzie.
Fayette§	Fayette	1,003	20	74.4	+ 1.3	101	16	46	13	43	1.04	− 3.05	0.50	0.0	4	28	3	0	sw.	R. Z. Latimer.
Forest City§	Winnebago	1,226	16	72.4	+ 0.4	96	16	51	13†	36	1.80	− 1.88	0.85	0.0	6	23	7	1	w.	J. A. Peters.
Fort Dodge	Webster	1,126	10	73.9	+ 1.4	97	1	50	13	37	2.82	− 2.21	1.25	0.0	9	24	0	7	n.	J. F. Monk.
Fort Madison	Lee	516	61								2.72	− 1.24	1.27	0.0	5	9	13	9	s.	Miss L. A. McCready.
Gilman	Marshall	1,052	11								0.95	− 3.64	0.72	0.0	3					J. L. Wylie.
Grand Meadow	Clayton	1,180	19	72.2	+ 1.7	92	16	50	18	30	0.76	− 3.98	0.19	0.0	4	11	16	4	sw.	F. L. Williams.
Greene	Butler		12	76.6	+ 3.3	106	16	49	13	45	0.68	− 4.02	0.20	0.0	6	11	16	4	w.	J. L. Cole.
Grinnell	Poweshiek	1,023	18	75.7	+ 2.5	100	24	52	13†	40	1.92	− 3.03	0.85	0.0	4	18	11	2	nw.	D. W. Brainard
Grundy Center§	Grundy	976	19	73.8	+ 1.6	98	16	47	13†	42	0.92	− 3.63	0.52	0.0	3	22	0	9	sw.	J. B. Calderwood.
Guthrie Center§	Guthrie	1,077	15	74.6	+ 1.2	96	25	46	13	43	0.85	− 3.97	0.28	0.0	9	18	9	4	se.	D. G. Beardsley.
Hampton	Franklin	1,155	20	75.0	+ 2.6	98	15	54	11†	35	0.95	− 3.88	0.24	0.0	7	13	13	5	nw.	E. C. Grenelle.
Humboldt	Humboldt	1,095	22	72.5	− 0.4	95	16	48	13	37	1.82	− 2.12	0.68	0.0	7	30	0	1	sw.	Henry S. Wells.
Independence§	Buchanan	921	46	74.4	+ 1.5	98	16	49	19	39	0.51	− 4.08	0.27	0.0	5	24	3	4	sw.	George Donohoe.
Indianola	Warren	969	19	76.2	+ 1.5	98	25	54	13†	34	0.70	− 3.56	0.55	0.0	5	12	11	8	ne.	John L. Tilton.
Iowa City	Johnson	683	50	74.8	+ 0.6	98[a]	1†	48	19	40[a]	2.22	− 2.26	1.20	0.0	7	21	4	6	se.	A. G. Smith.
Iowa Falls	Hardin	1,170	17	71.6	− 0.4	95	1†	46	13	40	2.19	− 1.91	1.33	0.0	5	26	2	3	sw.	J. B. Parmelee.
Jefferson§	Greene		11																	G. W. Jackson.
Keokuk	Lee	547	39	76.4	− 0.6	99	24	57	19	30	2.74	− 1.29	1.22	0.0	9	16	11	4	sw.	U. S. Weather Bureau.
Keosauqua	Van Buren	644	18	75.6	− 0.3	101	24	48	19	39	5.69	+ 1.56	3.52	0.0	7	9	16	6		J. H. Landes.
Knoxville§	Marion	920	15	76.3	+ 0.8	97	24†	52	19	37	1.62	− 2.84	1.00	0.0	4	16	11	4	nw.	Casey & Belville.
Lacona	Warren		11								0.96	− 3.52	0.68	0.0	7					J. B. Alter.
Le Claire	Scott	576	10								1.86	− 2.76	1.14	0.0	4					Miss M. T. Disney.
Marshalltown	Marshall	947	18	73.9	+ 0.7	98	16†	48	13	41	1.05	− 3.66	0.71	0.0	5	20	5	6	nw.	Ralph B. Reasoner.
Mason City§	Cerro Gordo	1,132	13	72.0	− 0.5	95	16	46	13	37	0.71	− 3.35	0.36	0.0	4	21	9	1	sw.	J. S. Mills.
Mount Pleasant§	Henry	729	29	76.0	+ 0.4	101	1	48	19	40	3.49	− 0.34	1.50	0.0	8	13	11	7	sw.	J. W. Edwards.
Muscatine	Muscatine		50								3.04	− 0.87	1.43	0.0	7					William Molis
New Hampton§	Chickasaw	1,169	13	75.4	+ 4.0	99	16	49	13	40	0.12	− 4.07	0.09	0.0	2	22	5	4	w.	A. F. Kemman.
Newton§	Jasper	944	22	76.0	+ 1.6	95	16†	55	13	32	1.83	− 2.55	0.78	0.0	4	15	10	6	s.	J. P. Beatty.
Northwood§	Worth	1,222	14	73.0[f]	+ 1.8	95[f]	16	52[f]	19	34[f]	1.78	− 2.14	0.83	0.0	4	25	4	2		Chas. H. Dwelle.
Olin§	Jones	760	12	76.0	+ 2.8	101	25	45	19	45	0.63	− 3.34	0.26	0.0	8	20	10	1		C. M. Miles.
Osage	Mitchell	1,184	23	75.8	+ 5.3	102	16	48	13	39	0.56	− 3.16	0.33	0.0	2	27	2	2	nw.	A. D. Bundy.
Oskaloosa§	Mahaska	843	34	75.0	+ 0.6	99	25	48	13	43	3.00	− 0.97	1.56	0.0	4	19	4	8	sw.	Joseph Boyd.
Ottumwa	Wapello	649	15	78.5	+ 2.5	103	24	53	13†	40	3.21	− 0.92	2.47	0.0	5	6	6	19	se.	W. J. Mesmer.
Pella	Marion	877	8	74.6	− 1.4	101	24	46	13†	44	1.09	− 3.27	0.52	0.0	6	26	3	2	sw.	John H. Ver Steeg.
Perry§	Dallas	975	9	74.8	+ 0.2	97	1	50	13	40	1.07	− 3.54	0.64	0.0	7	19	8	4	sw.	Ed. S. Gray.
Plover	Pocahontas	1,426	14	72.1	− 0.5	96	16	47	13	42	2.30	− 2.07	0.70	0.0	6	28	2	1	s.	J. S. Smith.
Pocahontas	do	1,248	6	71.0		93	16	50	18	33	1.87		0.48	0.0	7	23	6	2	sw.	F. E. Hronek.
Ridgeway§	Winneshiek	1,215	12	76.4	+ 3.0	108	16	50	18	43	0.57	− 4.09	0.39	0.0	5	23	7	1	s.	Arthur Betts.
Rockwell City§	Calhoun		14	74.0	+ 0.6	96	16	53	14	33	3.30	− 0.22	1.00	0.0	4	29	2	0		C. M. Randall.
Sac City	Sac	1,278	34	73.0	+ 0.3	93[a]	16	55[a]	10†	33[a]	1.07	− 2.96	0.34	0.0	5					E. N. Baily.
St. Charles§	Madison	1,079	9	76.4	+ 2.3	99	25	55	13	33	0.86	− 4.93	0.55	0.0	5	20	10	1	s.	R. D. Minard.
Sigourney§	Keokuk	877	14	76.8[e]	+ 1.0	98[e]	25	52[e]	13	37[e]	2.11	− 2.19	0.70	0.0	6					J. T. Parker.
Stockport§	Van Buren		8	75.3		101	24	47	13	41	3.20	− 1.39	1.34	0.0	7	22	3	6	sw.	C. L. Beswick.
Storm Lake	Buena Vista	1,440	21	73.4	+ 1.5	90[c]	26	53[f]	5†	34[f]	2.61	− 1.69	0.62	0.0	7					S. B. Fracker.
Stuart	Guthrie	1,216	11																	J. P. Fox.
Tipton§	Cedar	807	11	79.2	+ 4.4	101	1	57	13†	34	0.95	− 3.27	0.42	0.0	4	26	5	0	ne.	F. K. Gregg.
Toledo§	Tama	856	16	73.9	+ 0.3	96	16	46	13	39	1.20	− 2.86	0.65	0.0	4	24	5	2	w.	I. F. Giger.
Wapello§	Louisa	588	12	74.2	− 1.0	93	24	56	19	23	3.47	+ 0.25	1.37	0.0	4	22	6	3	sw.	G. W. Schofield.
Washington	Washington	769	28	75.2	− 0.3	98	24	53	13†	34	2.24	− 1.38	0.80	0.0	6	13	15	3	sw.	Wm. A. Cook.
Waterloo	Black Hawk	862	27	73.8	+ 0.3	99	16	53	13†	37	0.84	− 3.56	0.45	0.0	7	22	7	2		M. L. Newton.
Waukee	Dallas	1,039	7	74.5		96	1†	50	13	35	0.81		0.32	0.0	7	17	12	2	sw.	Samuel F. Foft.
Waverly§	Bremer	948	14	73.8	+ 1.4	97	16	50	13	34	0.82	− 3.72	0.23	0.0	5	17	12	2	e.	H. S. Hoover.
Webster City§	Hamilton		5	74.4		99	16	47	13	44	1.81		0.66	0.0	6	22	8	1	nw.	C. D. Carpenter.
West Bend§	Palo Alto	1,197	17	72.0	− 0.1	96	16	50	13†	37	1.32	− 2.46	0.49	0.0	6	16	11	4	s.	Joseph Dorweiler.
Whitten§	Hardin	1,036	13	74.4	+ 1.1	97	1	50	13	38	1.86	− 2.48	0.85	0.0	4	20	8	3	se.	F. P. Butler.
Winterset§	Madison	1,129	19	76.4	+ 2.4	100	25	51	13	39	0.72	− 4.96	0.35	0.0	6	10	13	8	s.	Robert S. Cooper.
Missouri.																				
Gorin	Scotland	700	24								6.08	+ 1.55	2.90	0.0	5	4	19	8	sw.	J. W. Pulliam.
Hannibal	Marion	534	18	76.1	− 1.3	95	24	56	19	20	9.32	+ 5.57	4.84	0.0	10	12	12	7	sw.	U. S. Weather Bureau.
Louisiana	Pike	500	32	75.8	− 0.1	96	25	50	19	39	10.92	+ 7.39	3.40	0.0	10	21	5	5	w.	J. T. Farrell.
Mexico	Audrain	797	32	76.0	− 1.0	97	25	53	19	32	6.36	+ 2.31	2.46	0.0	11	14	2	15	s.	J. F. Llewellyn.
Steffenville	Lewis	576	17	75.4	− 0.8	95	24†	55	13†	28	12.02	+ 7.28	5.80	0.0	8	15	15	1	e.	Frank Hall.
Sublett	Adair	1,000	30	75.2	− 0.6	95	24	51	13	35	10.85	+ 6.46	2.60	0.0	5	11	14	6	sw.	Lewis Spriggs.
Warrenton	Warren	865	20	76.5	− 0.8	97	25	54	19	30	6.44	+ 2.55	1.42	0.0	13	12	3	16	n.	Dr. J. H. Frick.
Indiana.																				
Collegeville	Jasper		11	73.4	− 0.5	99	1	51	19	37	4.95	+ 0.62	1.85	0.0	7	3	17	11	ne.	Prof. L. C. Klosterman.
Knox	Starke	716	5	74.6		97	1	53	19†	36	3.00		1.58	0.0	5	18	12	1	sw.	W. R. R. Tatman.
Laporte	Laporte	810	14	74.5	+ 0.8	97[a]	24	49	19	38	0.88	− 2.52	0.45	0.0	4	9[h]	9[h]	5[h]	sw.	Wm. N. Walton, jr.
Plymouth	Marshall	790	7	72.7		95	1	51	19†	36	2.30		1.25	0.0	5	16	13	2	sw.	J. W. Siders.
Illinois.																				
Aledo	Mercer	738	10	74.8	+ 0.8	96	24	51	19	31	2.15	− 1.64	1.15	0.0	7	8	22	1	sw.	Wm. B. Frew.
Alexander	Morgan	670	17	75.8	− 0.3	97	25	55	18†	33	2.56	− 1.34	0.75	0.0	10	9	12	10	sw.	George H. Hall.
Antioch	Lake	861	9	75.4	+ 3.1	99	1	47	19	39	0.83	− 2.75	0.20	0.0	5	14	13	4	sw.	J. C. James, jr.
Astoria	Fulton	650	11	74.2	+ 0.5	98	24	49	19	32	2.65	− 0.96	0.87	0.0	10	14	11	6	s.	Ed. V. Bohl.
Aurora	Kane	687	31	75.0	+ 1.9	99	1	51	13†	42	1.66	− 1.85	0.40	0.0	8	17	10	4	ne.	W. Holden.
Bement	Piatt	700	3	76.0		97	26†	54	19	33	6.36		1.56	0.0	7	17	4	10	s.	Rev. C. S. Adams.
Benton	Franklin	598	8	77.4		94	25	58	19†	28	3.15		1.25	0.0	8	2	15	14	ne.	F. H. Stamper.
Bloomington	McLean	840	19	75.8	+ 0.2	98	24†	54[a]	18†	35[a]	2.91	− 0.90	1.00	0.0	9	15	6	10	sw.	Prof. H. N. Pearce
Cairo	Alexander	359	33	78.3	− 0.3	94	25	63	19	24	7.59	+ 4.14	2.11	0.0	16	10	11	11	s.	U. S. Weather Bureau.
Carbondale	Jackson	412		79.4		100	25	54	20	33	8.58	+ 5.48	2.90	0.0	13	14	8	9	sw.	State Normal University.
Carlinville	Macoupin	663	20	76.5	+ 0.1	97	25	55	19†	30	5.89	+ 1.96	1.05	0.0	11	12	13	6	ne.	R. O. Purviance.
Clinton	Dewitt	727		75.6		97	27	52	19	32	3.75		1.10	0.0	10	16	11	4	sw.	J. F. Ziegler.
Coatsburg	Adams	763	18	77.0	+ 0.4	97	24	55	18	30	4.96	+ 0.85	3.17	0.0	5	12	12	7	s.	Dr. J. R. Lambert.
Cobden	Union	656	27	78.9	+ 0.3	98	25	57	20	28	10.82	+ 6.42	3.70	0.0	13	12	5	14	s.	John Buck.
Dakota	Stephenson	929	5	75.2		98	1	49	19	33	1.45		0.71	0.0	6	13	16	2	e.	Rev. G. W. Kerstetter.
Decatur	Macon	685	19	76.2	+ 0.5	97	25	53	19	31	3.23	− 0.18	0.99	0.0	10	15	10	6	sw.	Prof. J. H. Coonradt.
Dixon	Lee	725	20	76.4	+ 2.4	98	1†	50	19	39	0.70	− 3.24	0.38	0.0	5	18	9	4		H. V. Bardwell.
Du Quoin	Perry	459	22	79.0	+ 0.7	98	25	58	19†	28	3.68	− 0.60	1.56	0.0	10	15	11	5	sw.	G. H. Knetzger.
Dwight	Livingston	600	17	75.7	+ 0.4	99	24	51	19	35	1.36	− 2.04	0.67	0.0	6	10	12	9	sw.	Ed. O. Welch.
Elgin§	Kane	716	3	75.2		103[a]	1	52[a]	18†	40[a]	3.14		1.47	0.0	5	6	24	1	sw.	Elgin Observatory.
Galva	Henry	842	18	75.8	+ 1.5	100	24	51	18	36	2.24	− 1.51	0.76	0.0	9	23	2	6	sw.	Prof. F. U. White.

TABLE 1.—*Climatological data for July, 1910. District No. 5*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, .01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Illinois—Cont'd.																				
Greenville	Bond	635	32	76.6	− 0.8	94	27	56	19	26	8.01	+ 4.27	2.32	0.0	15	10	10	11	sw.	M. S. Oudyn.
Griggsville	Pike	650	25	76.3	− 0.3	94	24	57	19	24	4.45	+ 0.99	1.90	0.0	6	14	16	1	sw.	Geo. F. Kneeland.
Halfway	Williamson	569	14	78.8	+ 0.1	99	25	57	19	26	6.04	+ 2.81	2.08	0.0	11	14	5	12	sw.	E. L. Hearn.
Havana	Mason	475	18	78.6	+ 1.4	101	22†	56	19	31	3.35	− 0.87	1.33	0.0	7	11	19	1	s.	F. & C. Borgelt.
Henry	Marshall	500	22	77.2	+ 2.8	102	24	50	19	35	1.27	− 2.38	0.54	0.0	6	19	10	2	sw.	Dr. F. A. Powell.
Hillsboro	Montgomery	675	16	76.0	− 0.4	97	25	55	19†	30	4.20	+ 0.22	1.55	0.0	9	15	2	14	nw.	Ira L. Woodward.
Joliet	Will	541	19	75.6	+ 1.8	98	24	54	19	35	1.46	− 2.10	0.50	0.0	8	17	5	9	sw.	F. M. Muhlig.
Kishwaukee	Winnebago	730	22	75.4	+ 2.3	101	1	47	19	40	2.04	− 1.51	0.75	0.0	7	21	9	1	sw.	Geo. Stevens.
La Grange	Cook	657	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. E. Sanford.
La Harpe	Hancock	698	31	74.3	− 2.1	97	24	51	19	40	3.61	− 0.88	1.90	0.0	5	14	9	8	se.	Jno. S. Campbell.
Lanark	Carroll	883	21	75.2	+ 2.6	101	26	40	19	45	1.34	− 2.81	0.49	0.0	6	28	3	0	sw.	M. N. Wertz.
La Salle	La Salle	536	33	76.4	+ 1.1	99	21	52	19	34	0.79	− 2.48	0.24	0.0	4	15	7	9	sw.	U. S. Weather Bureau.
Lincoln	Logan	482	22	74.8	− 1.1	95	24†	49	19	35	2.99	− 0.15	0.96	0.0	9	12	15	4	s.	Prof. C. S. Oglevee.
Martinton	Iroquois	633	23	75.3	+ 1.1	101	1	52	18†	37	4.36	+ 0.90	1.55	0.0	9	17	8	6	sw.	Jos. H. Peltier.
Mascoutah	St. Clair	425	20	78.6	+ 0.7	100	25	54	19†	34	5.90	+ 2.42	1.85	0.0	11	14	15	2	se.	Geo. Henrich.
Minonk	Woodford	745	17	76.2	+ 1.4	100	24	51	19	38	1.31	− 1.75	0.53	0.0	8	18	10	3	sw.	O. M. Davison.
Monmouth	Warren	784	18	76.6	+ 1.8	101	24	50	19	37	2.62	− 1.70	1.20	0.0	8	20	6	5	e.	Hugh R. Moffet.
Morrison	Whiteside	685	16	75.4	+ 2.1	99	24	46	19	37	1.08	− 3.83	0.42	0.0	5	19	10	2	sw.	S. A. Maxwell.
Morrisonville	Christian	638	11	74.8	− 0.4	94	25	53	19†	30	5.05	+ 0.81	1.50	0.0	10	15	11	5	sw.	J. D. Lowis.
Mount Vernon	Jefferson	511	16	77.8	0.0	98	25	55	20	32	5.97	+ 1.76	1.73	0.0	15	12	5	14	sw.	Theo. P. Stelle.
Oregon	Ogle	702	1	75.5	.....	99	1	48	19	39	0.95	.....	0.55	0.0	3	27	4	0	s.	Samuel Ray.
Ottawa	La Salle	500	24	76.8	+ 1.6	101	24	51	19	36	0.67	− 3.15	0.30	0.0	4	21	0	10	sw.	Miss M. M. Harris.
Pana	Christian	692	24	75.8	− 0.5	92	8	55	19	30	4.30	+ 0.30	1.61	0.0	14	17	10	4	sw.	C. W. Sibley.
Peoria	Peoria	609	33	75.4	0.0	99	24	50	19	36	3.23	+ 0.26	1.89	0.0	8	13	10	8	s.	U. S. Weather Bureau.
Pontiac	Livingston	546	8	77.1	.....	100	24	51	19	35	1.25	.....	0.60	0.0	8	15	10	6	sw.	Geo. Butterworth.
Riley	McHenry	956	51	75.2	+ 3.6	98	1†	51	13	34	1.09	− 2.40	0.63	0.0	6	14	12	5	sw.	John West James.
Rockford	Winnebago	763	18	75.6	+ 1.8	99	1	50	19	39	1.91	− 1.71	0.60	0.0	6	20	6	5	.....	Hosmer C. Porter.
Rushville	Schuyler	670	19	76.0	+ 0.4	98	24	55	19	27	2.86	− 1.17	0.98	0.0	7	21	6	4	sw.	H. F. Dyson.
St. Charles	Kane	700	15	75.2	+ 1.6	99	1	51	13	40	1.77	− 2.13	0.60	0.0	8	17	14	0	sw.	Dr. Wm. H. Bishop.
St. Peter	Fayette	.....	.....	76.4	.....	93	8†	54	20	31	5.58	.....	1.76	0.0	11	6	22	3	sw.	M. L. Lansford.
Sparta	Randolph	538	24	76.7	− 0.5	97	25	54	19†	29	5.16	+ 1.64	1.69	0.0	16	13	16	2	s.	Jas. A. Caldwell.
Springfield	Sangamon	644	33	76.4	− 0.1	96	25	57	18	27	2.63	− 0.27	1.24	0.0	10	12	8	11	sw.	U. S. Weather Bureau.
Streator	La Salle	626	17	76.6	+ 1.7	101	24	51	19	38	0.81	− 3.08	0.22	0.0	8	27	3	1	sw.	Edw. F. Sweetser.
Sullivan	Moultrie	530	10	76.1	+ 0.5	95	27	53	19†	30	4.90	+ 2.03	1.57	0.0	9	12	16	3	sw.	C. A. Corbin.
Sycamore	De Kalb	855	30	75.8	+ 3.8	104	1	48	19	46	1.50	− 2.18	0.62	0.0	4	20	6	5	sw.	Miss E. J. Davis.
Tiskilwa	Bureau	798	16	75.8	+ 1.9	98	24	52	14†	35	0.91	− 3.23	0.41	0.0	5	22	4	5	w.	F. I. Smucker.
Walnut	....do	717	19	77.4	+ 1.8	100	1†	51	19	36	1.34	− 2.69	0.57	0.0	7	21	10	0	s.	O. C. Nussle.
White Hall	Greene	573	2	75.2	.....	97	25	53	20	37	4.26	.....	1.98	0.0	7	15	8	8	sw.	Dr. R. A. Pritchett.
Windsor	Shelby	681	11	76.1	+ 0.8	97	25	50	19†	35	5.68	+ 1.46	1.73	0.0	14	8	12	11	sw.	Herbert Rose.
Winnebago	Winnebago	900	23	75.8	+ 2.9	101	1	49	19	39	2.32	− 1.47	1.18	0.0	9	26	4	1	w.	Frank Osborn
Yorkville	Kendall	584	23	75.6	+ 2.7	101	1	47	19	46	1.59	− 1.92	0.70	0.0	8	21	9	1	w.	Herman A. Grimwood.
Zion	Carroll	938	16	75.0	+ 3.1	99	1	46	19	38	1.04	− 2.75	0.50	0.0	4	23	6	2	w.	Robt. F. Gillogly.

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
* Precipitation included in that of the next measurement.
** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
‡ Separate dates of falls not recorded.
§ Data are from standard instruments not supplied by the U. S. Weather Bureau.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.
‖ Estimated by observer.
‖‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for July, 1910. District No. 5, Upper Mississippi Valley.*

Stations.	River basins.	Day of month.																																Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
North Dakota.																																		
Amenia	Red									T.		.43			.26									.50									1.19
Bottineau	Mouse	.25	.02			.62	.06				T.	.01								.16	T.			.76	.34				.01				2.23
Cando	Sheyenne	.48				.85	.04					.26						.05						1.48	.03			.02					3.21
Crosby	Mouse	.06			T.	.03			T.	T.	.09	.31					T.		T.					1.10				T.			.03		1.62
Devils Lake	Sheyenne					.10		.02	.01	.01	.08	.55					T.		.02		T.			1.05				T.					1.84
Donnybrook	Mouse	.04			T.	.41					.66	.37							.10				1.35	.18									3.11
Dunseith	...do				T.		T.	T.			T.	T.					T.		T.		T.	T.		1.40	.03			T.					1.43
Edmore	Sheyenne	T.				.50	T.					.10												1.22									1.82
Forman	...do						.35							1.55																			1.90
Grafton	Red																T.	T.															T.
Granville	Mouse	.16	T.			.04				T.	.03	.71							.34		.03			.63				T.				.03	1.97
Hannah	Pembina	.40				T.																	1.41				T.						1.81
Hansboro	Red	.25				.06																		.80				.15					1.26
Hillsboro	...do									.05	.03	.35		T.						.15	.08			1.20									1.86
Lakota	Sheyenne	.26				.09	.02	T.	T.		T.	.52							T.		T.			1.23				T.					2.12
Langdon	Pembina	.26				.14							.03											.63	.28							.05	1.39
Larimore	Red									.07		.73												.57									1.37
Lisbon	Sheyenne						.37	T.	.04			.15	.03		2.12							.11										.03	2.85
McKinney	Mouse					.55					.30												*	1.05	.05								1.95
Manfred	Sheyenne	.53				.17						.78							.02					.59									2.09
Mayville	Red											.68												.82									1.50
Minot	Mouse	.11		.21		.06	.27				.07	.40	.06							.32				.65	.12			.01					2.28
Minto	Red					.30		.05		.07		.08												.55									1.05
Oriska	Sheyenne									.10		.34		.13										.01				.12					0.70
Park River	Red																																
Pembina	...do	.08				.20																		.02	.65							.10	1.05
Power	Sheyenne					.32						.22		.40												T.							0.94
Pratt	Mouse		.15			.26						.16											1.00	.06									1.63
Towner	...do																																
University	Red					T.	.06	T.	T.	.04		.54																					0.64
Wahpeton	...do																																
Walhalla	Pembina				.30	T.						.01												.63									0.94
Westhope	Mouse					.71																	1.80										2.51
Willow City	...do	.12										.25							T.					.90				T.					1.27
Minnesota.																																		
Albert Lea	Mississippi						.40			1.00		T.						T.			T.		T.					T.					1.40
Alexandria‖	...do						1.92			.25	.10		.27		.18							1.06										3.78
Angus	Red	T.				.78		.08	.12			.29							T.					.27	T.								1.54
Bagley	...do						.28			.07	.07	.76												.76									1.94
Baudette	Rainy					T.	T.		.01	.05		.02												.82	.05							.42	1.37
Beardsley	Minnesota						.22			.09		.23		T.							T.											.03	0.57
Beaulieu	Red																																
Bird Island	Minnesota						.07			.56		.46	.05		.34									.11				.10				T.	1.69
Caledonia‖	Mississippi									T.							.30					.05		T.	1.15				T.				1.59
Campbell‖	Red						.10		T.	.02			.10		.43							T.				T.			T.				0.65
Cass Lake‖	Mississippi						.85		T.	T.		T.		T.										1.65		T.							2.50
Collegeville	...do	.02					.04			.17		.32	.01									.07		.10								.04	0.77
Crookston‖	Red						T.			.04		.37	.04							.13					.57							.03	1.18
Detroit‖	...do						.31	.75		.03	T.	.02	.28		.10									.34	T.				T.				1.83
Fairmont (near)	Minnesota						.30			.92		T.			.16								T.	.05		T.		.21					1.64
Faribault	Mississippi						.75			.94		.27	.17											.04				.10				T.	2.27
Farmington	...do						.26			.56		T.	.70								.11	T.		.85	.17				T.				2.65
Fergus Falls	Red						.03		.15			.15		1.10							.30			.06				.10					1.89
Fort Ripley‖	Mississippi						.20				T.		.55		.13							.98			T.								1.86
Fosston	Red						.31			.09		.60	.05											.67									1.72
Fram	...do							.04																.87								T.	0.91
Glencoe	Mississippi									.45	.15													.25				.15				T.	1.00
Grand Meadow	...do						.22			.52			T.															.02				T.	0.76
Hallock	Red	T.				.55					.02	.02												.37	.02							.02	0.80
Halstad	...do									.01	.03	.25	.10		.04							.02			1.12								1.57
Hinckley	St. Croix									.27	.26	.27						.21						.18									1.19
International Falls	Rainy						.52		T.		.12		.10			T.								.87	.05	T.						.46	2.12
Kelliher	Red						.07			.07		.71					T.				T.			1.07	.03	.20							2.15
Lake Crystal	Minnesota						.11			1.05			.14		.21									.11				.16					1.78
Leech Lake Dam	Mississippi						1.30			.02		.35								.03				2.33									4.03
Little Fork	Rainy	.08					.83					.18					T.			T.				.85	.03							.27	2.24
Long Prairie	Mississippi																																
Lynd (2)	Minnesota						.27		T.	.42			.36		.27									.04		T.		.40					1.76
Mankato‖	...do						.16			.77	.26		.13												.11				.17				1.60
Mapleplain	Mississippi																																
Milaca	...do																																
Milan	Minnesota	T.	T.				.75			.20		.38									T.			T.				.10				.15	1.58
Minneapolis	Mississippi					T.				.34		.07	.09	T.							T.	.05		.17								.02	0.74
Montevideo‖	Minnesota		.18			.42				.30	.11		.96		T.								T.		.05			.25	.02				2.29
Moorhead	Red					T.			.08		T.	.44		.12						.02	.01			.16									0.83
Mora	St. Croix									.30		.14						1.02			.60			.55									2.61
Morris	Minnesota						.52			.10		.20		.02							.16			T.								.22	1.22
New London	Mississippi	.23				.05				.22		.48										.18										.05	1.21
New Richland	Minnesota						.57			.61		.10									.12			T.				.06					1.46
New Ulm‖	...do						T.			.67	.10		.18		.07										.16			T.	.35				1.53
Osakis	Mississippi						1.20			.14		.22		.10								.98		T.								.01	2.65
Park Rapids‖	...do						.90		.06			T.	.39		.01			T.							.23								1.59
Pine River Dam	...do						2.10		.20	.18		.60		.25										.35									3.68
Pokegama Falls	...do						1.36			.14	T.	.42	T.				.17	.07		.08				3.18		.20	T.					.14	5.76
Red Lake	Red						.22	.33		.05		.58					.08							1.55		.30						.07	3.18
Red Wing‖	Mississippi						.34			.26	.36		.48					.28						.10	.08								1.90
Redwood Falls	Minnesota						.36			.41		.41			T.									.11				.19					1.48
Reeds Landing‖	Mississippi						.28			.42	.14		.08					.74						.14	.04								1.84
Rochester‖	...do						.26			.27	.16							.15															0.84
Roseau	Red									.17										.05				.43	.09							.42	1.16
St. Charles‖	Mississippi									.32	.10		.02					.75					.07	.05					.01				1.32
St. Cloud	...do						.01			.28		.34												T.									0.63
St. Paul	...do						.01			.33		.13	.15									T.		.24								.13	0.99
St. Peter	Minnesota					T.				.75		T.	T.															.31					1.06
Sandy Lake Dam	Mississippi						2.15	.29	.23	.02	.47	.02	.04				.06							.70	.03								4.01
State Sanatorium	...do						.87				.08	.44												1.15									2.54
Stillwater‖	St. Croix						.02			.16	.22		.32					.04							.42								1.18
Taylors Falls	...do									.76		.22					.89							.31	.21								2.39
Warroad	Rainy		.02						.06							.08								.68								.53	1.37
West Concord	Mississippi						.20			.67		.05												T.				T.				T.	0.92
Willow River	St. Croix																																
Windom	Des Moines						.08			.76		T.			.28									T.		T.		.22					1.34
Winnebago‖	Minnesota						1.20			.58	.02		T.		.13							T.					T.	T.				1.93
Winnibigoshish	Mississippi						.58			.08	.04	.31					.12							2.03		.05						.18	3.39

TABLE 2.—*Daily precipitation for July, 1910. District No. 5*—Continued.

Stations.	River basins.	Day of month.																																Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Minnesota—Cont'd.																																		
Winona	...do									.13			.02					.06						.26	.15			T.					0.62
Worthington‖	Des Moines						.14			.65	.13				.55										.10		.19		.13				1.89
Zumbrota	Mississippi						.08			.76		T.					T.											T.				.30	1.14
South Dakota.																																		
Milbank	Minnesota		.37				.84			.08	T.		.34		T.							.07						.17	.04			T.	1.91
Wisconsin.																																		
Antigo	Wisconsin									.04			.38											.22	1.01		.63					.15	2.43
Barron	Chippewa						.20			.32	T.	T.	.66					.35							.68								2.21
Beloit	Rock									.08					.05			.81					.10	.18									1.22
Big St. Germain Dam	Wisconsin								T.	.25	.14		.33											.03	1.10		.50			T.		.04	2.39
Brodhead	Rock									.36			.16			.12		.95					.08	.05				T.					1.72
Burnett	...do									.08			.82									T.	T.	.06	.80								1.76
Darlington	...do																	.50					.30										0.80
Deerskin Dam	Wisconsin			T.				T.		.30	.19		.37									.15		T.	.93		.26					.04	2.24
Delavan	Rock						T.			.20		.19	.06		T.	.02	.29						.04	.09	.03								0.92
Dodgeville	...do																																	
Downing	Chippewa						.02			.62			.70					.26						.02	1.47								3.09
Eau Claire	...do						.06			.56		T.	.16					.98				T.		.09	.62								2.47
Grand Rapids‖	Wisconsin										.46			.08		.04		.15				.08	T.		.95								1.76
Grantsburg	St. Croix									.20	T.	.32	.10				1.20							1.90					.15			.18	4.05
Hancock	Wisconsin										.08		T.					.11				.03			.98								1.20
Hatfield	Black									.03			.20											.05	1.75								2.03
Hayward	St. Croix						.12		.15		T.	.22	.25									T.		T.	1.60					.16		.62	3.12
Hillsboro	Wisconsin									.07		T.	T.		T.			.58				T.	T.	T.	1.00			T.					1.65
Koepenick	...do									T.	.11		.30											.25	.80		.40					.40	2.26
Lac du Flambeau	Chippewa																																	
LaCrosse	Mississippi									.01			T.				.10	.38				.04		.26	.20			T.				.04	1.03
Lake Mills	Rock									.02			1.06			T.		.08					T.	.02	.22			T.					1.40
Lancaster	Mississippi									.10			.06					.41					.07		.07			T.					0.71
Long Lake	Wisconsin									.18	.19		.30									.01		.03	.70		.33						1.74
Madison	Rock	T.								T.		.14	.03		.10			.26					T.		.28			T.				T.	0.81
Mather‖	Wisconsin										.10		T.	.12				.37					.08	T.	.48								1.15
Mauston	...do										.11							.40							1.20								1.71
Meadow Valley	...do									.06	.03		.11					.51						.05	.61								1.37
Medford	Black									.15			.65											.45	1.18					.08			2.51
Merrill	Wisconsin									.15			.30	.01										.16	.67					.12		.25	1.65
Minocqua	...do									.50	.13		.35												1.28		.04		.07	.07		.08	2.52
Mondovi	Mississippi						.07			.52		T.		.01				.65						.54	.20								1.99
Mount Horeb	Rock									T.		T.	.04					.65							.22			T.					0.91
Muscoda‖	Wisconsin										.08							.60					T.		.36				T.				1.04
Neillsville	Black									T.			.16		.04			.46				.58			1.52								2.76
New Richmond	St. Croix						.04			.68		.18	.93					1.02						.41	.62								3.88
Osceola	...do						T.			.25			.40					.28			T.				.75				.03			.06	1.77
Park Falls	Chippewa								T.	.33	.04		.59											.14	1.09					.60			2.79
Portage	Wisconsin										.10							.11				.05			.78								1.04
Prairie du Chien‖	Mississippi										.04							.18					.02	.02	.26								0.52
Prentice	Chippewa									.33	T.	.26	.26											1.60			.11		.29			.44	3.29
Rhinelander	Wisconsin									.16	.03		.30					.01						.02	.60		.23			.04		.05	1.44
Sauk City	...do											.85			.40			.42							.70								2.37
Shullsburg	Mississippi										.13							1.03															1.16
Solon Springs	St. Croix						.35	T.	.70	T.	.15	.40	.20				T.							1.70					T.			.70	4.20
Spooner	...do						.18			.15	.03	.29	.12					.04				.15							.06				1.02
Stanley	Chippewa									.30			.26					.45			T.	.01		.25	1.41					.03			2.71
Stevens Point	Wisconsin									T.	.05		.12					.07				.04			.66								0.94
Sugar Camp Dam	...do									.28	.25	.38													1.08		.48		.02		T.		2.49
Twin Lakes Dam	...do									.30	.20	.29													1.14		.25						2.18
Valley Junction	...do									T.			.12					.64						T.	.84								1.60
Viroqua	Mississippi									T.	.01							.46					T.		1.51			T.					1.98
Vudesare	Wisconsin			T.				T.					.40								.12	.34		.10	.35							.03	1.34
Watertown‖	Rock									T.			.18	.10		.23	T.							.09	.64								1.24
Waukesha	Fox									.01			1.35											.01	.07								1.44
Wausau	Wisconsin									.05			.41											.36	1.10								1.92
Weyerhaeuser	Chippewa						.35		T.	.27			.90					.13				.27		1.60								.31	3.83
Whitehall	Mississippi									T.			T.					.90						T.	T.								0.90
Iowa.																																		
Albia‖	Des Moines			.13							.05					.11											1.22			.06			1.57
Algona	...do						.38														T.	T.			.17	.12			.10				0.77
Alta‖	Raccoon					*	.95			.38	.02				.15	.05					T.	.24	.30		T.		.14		.35				2.58
Amana	Iowa												.02		.30								.01				.06		.69				1.08
Ames	Skunk		.27			T.				T.					.42								T.			.20	.15		.65				1.69
Baxter	...do									T.			.61		.09								.04			T.	1.44		.49				2.07
Belle Plaine	Iowa									T.		.01			.20									T.			.10		.55				0.86
Belmond	...do						.98			.22		T.			.22								.10	T.		.33	1.10		.18				3.13
Bloomfield	Mississippi																																	
Bonaparte	Des Moines									.15		.13				1.00											.28			1.33			2.89
Boone‖	...do			.04							.19		T.		.75								.08	T.			.19		.50	.11			1.86
Britt	Iowa						.58			.42					.16								T.			.20	.14		.10				1.60
Buckingham	Cedar												.07														.41		.28				0.76
Burlington‖	Mississippi			.63				T.			.80		T.			2.07	.22										.15		.13	.15			4.15
Carroll‖	Raccoon		T.			.22									.60						T.	.26				T.		T.	.06				1.14
Cedar Rapids‖	Cedar											T.			.12		T.						T.			.13		.19	T.				0.44
Charles City	...do									.04					.02			.13						.14			.04	.06					0.43
Clear Lake	...do						.30																T.				.80		.12				1.22
Clinton	Mississippi									.37		.32			.11			.10						.35					.43				1.68
Columbus Junction	Iowa						.15			.75		.15			T.	1.02							.03				.10		.85				3.05
Davenport	Mississippi									.30		.22			2.01			.05					T.						.28				2.86
Decorah	...do									T.			.02					.45					.26										0.73
Delaware	...do										.10				.02								.41						.12				0.65
Des Moines	Des Moines		T.							.01		T.			.27					T.	T.		.02			.54	.02	T.	T.				0.86
De Soto	Raccoon		.14							T.					.12						T.		.04			.03	.30	T.					0.63
Dubuque	Mississippi									.18		.01			.01			.23					.04					T.	T.				0.47
Earlham	Raccoon		.11							.06					.11						T.		.09			.47	.27		T.				1.11
Elkader	Mississippi									T.			T.					.03				T.	.11		.27								0.41
Elma	Wapsipinicon	.10				T.			.03						T.								.12		.07			.01					0.33
Estherville‖	Des Moines						.34			.53	.06				.26								.41				.15		.25				2.00
Fairfield	Skunk			T.						.11	.01	.32			.36	.32											.43			1.53			3.08
Fayette	Mississippi									T.					T.								.15		.36		.50	T.	.03				1.04
Forest City‖	Cedar						.37			.27	.03				.13												.85		.15				1.80
Fort Dodge‖	Des Moines						.68			.04	.22				.23	.12						T.	.12	.05			.11		1.25	T.			2.82
Fort Madison	Mississippi		.05	T.						.26					T.	1.27										T.	.39			.75			2.72
Gilman	Iowa									T.		T.			.04						T.					T.	.19		.72				0.95
Grand Meadow	Mississippi		.17							T.								.21					.19		.19			T.					0.76
Greene	Cedar									.08					.10			.10							.13		.07		.20				0.68
Grinnell	Iowa									T.		.85			.13						T.		T.			T.	.44		.50				1.92

TABLE 2.—*Daily precipitation for July, 1910. District No. 5*—Continued.

Stations.	River basins.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Iowa—Cont'd.																																	
Grundy Center	Cedar																						.14			.52			.26				0.92
Guthrie Center	Raccoon		.05				T.	.05		.05					.28			T.		T.	.10		.07			.12	.10		.03				0.85
Hampton	Cedar					.05				.07					.18								.06	.15		.20		.24					0.95
Humboldt	Des Moines						.68			.62					.35						.05		.03				.03			.06			1.82
Independence	Wapsipinicon										.02				.09			.06					.07						.27				0.51
Indianola	Des Moines									.02					.03					T.	T.		.05	T.		.05	.55	T.	T.				0.70
Iowa City‖	Iowa										.61		.07			.21								.05			.03		1.20	.05			2.22
Iowa Falls‖	...do			T.			T.				T.				.10									.40	.15		1.38		.21				2.19
Jefferson	Raccoon																																
Keokuk	Mississippi		.20				.01			.41					.67	.58							T.			.03	.29		.36	.19			2.74
Keosauqua‖	Des Moines			.09							.21		.17			1.23	.02							T.			.45			3.52			5.69
Knoxville	...do		T.							T.		.39			.11						T.		T.			.12	1.00	T.	T.				1.62
Lacona	...do		.01							.01		.10			.15			T.			T.	T.	.01	T.		.10	.58						0.96
Le Claire‖	Mississippi										.40		T.			1.14		T.						.04					.28	T.			1.86
Marshalltown‖	Iowa						T.				T.				.05							T.	.06	T.	T.		.19		.71	.04			1.05
Mason City	Cedar						.08			.17																	.36		.10				0.71
Mount Pleasant	Skunk			T.						1.50		.04			.02	1.02							.03				.30		.20	.38			3.49
Muscatine‖	Mississippi										1.43		T.			.12	.04	.02						.02			T.		1.35	.06			3.04
New Hampton	Wapsipinicon									.03													.09										0.12
Newton	Skunk											.30			.20												.78		.55				1.83
Northwood	Cedar									.40								.52					.83		.03	T.		T.	T.				1.78
Olin	Wapsipinicon									.06		.03	.06		.09								.09	.01			.03		.26				0.63
Osage	Cedar									.33							T.						.23										0.56
Oskaloosa	Des Moines			.05							T.				.83	T.					T.		T.			.56	T.		1.56				3.00
Ottumwa	...do		T.				T.			.05					.06	.04							T.				.59	T.	T.	2.47			3.21
Pella	...do									T.		.08			.20						T.		.13	T.		.05	.52		.11				1.09
Perry	Raccoon		.14							.07					.64						.03		.05				.06		.08				1.07
Plover	Des Moines						.35			.70					.10						.45		.50	T.		T.			.20				2.30
Pocahontas	...do						.48			.40					.28						.02		.22			.09				.38			1.87
Ridgeway	Mississippi									.03					T.			.12			T.		.39	.01				.02					0.57
Rockwell City	Raccoon									.95					1.00								.35						1.00				3.30
Sac City	...do						.33			.34					.15											.02				.23			1.07
St. Charles	Des Moines		.21							.03								T.					.03	T.		.04	.55		T.				0.86
Sigourney	Skunk														.70	.14							.01				.33	T.	.58	.35			2.11
Stockport	...do									.33	.02	.03			.19	1.01							T.			T.	.28		.55	T.	1.34		3.20
Storm Lake	Raccoon						.62			.35					.26					.44			.27	T.		.12							2.61
Stuart	...do																																
Tipton	Cedar									.08		.05			.42														.40				0.95
Toledo	Iowa														.25								.05			T.	.25		.65				1.20
Wapello	...do									1.37	T.					.89							T.						1.10	.11			3.47
Washington	Skunk									.27					.43	.80											.12		.56	.06			2.24
Waterloo‖	Cedar									T.					.02	.03		.45					.04	.07			.04		.19				0.84
Waukee	Raccoon		.32					T.		.01					.09						T.		.06	T.			.16	.15	.02				0.81
Waverly	Cedar									T.		T.			T.			.20					.09		.20		.10		.23				0.82
Webster City	Des Moines		T.	T.			.21			.17					.49								.16	T.	T.	.12		.66					1.81
West Bend	...do						.43			.49					.04								.15	T.		.05			.16				1.32
Whitton	Iowa									T.					.18						T.		.12			T.	.71		.85				1.86
Winterset	Des Moines		T.					T.		.04					.09						.02		.07	T.		.15	.35		T.				0.72
Missouri.																																	
Gorin	Mississippi		.39							.82		T.				1.59											.38			2.90			6.08
Hannibal	...do		T.				.02			.07	.01				1.17	2.20									.07	.26	.68		.18	4.66			9.32
Louisiana	...do				.26		.23				.43		.21		T.	3.40	.07								.01	.05	3.00			3.26			10.92
Mexico‖	...do			.03	.13			T.			.92	.20	.04			2.46	1.17		.19						.01		1.06	.15			T.		6.36
Steffenville	...do		.65								.08	.62			.13	2.85							T.			.94	.95		T.	5.80			12.02
Sublett	...do		.75											2.50												2.50	2.50			2.60			10.85
Warrenton‖	...do			.41	.85	.01					.83	.05	.04	.05		.98	.20		.28								1.42	1.28		.04			6.44
Indiana.																																	
Collegeville	Iroquois			.11			.05			T.		1.40	.10			1.85									T.					.55			4.95
Knox	Kankakee						.12			T.			1.58			.46		.40						T.						.44			3.00
Laporte	...do												.35					.67					.45	.01									0.88
Plymouth	...do						T.				.45		1.25			.41		.13												.06			2.30
Illinois.																																	
Aledo	Mississippi									.60	.04	.03			T.	.20							T.				.04	T.	1.15	.09			2.15
Alexander	Illinois		.13			T.	.06				.37	.25	.19			.75	.13						.01			T.	.19		T.	.48			2.56
Antioch	...do						.18				.10							.20					.15	.20									0.83
Astoria	...do		T.			T.	.01				.45	.08			.87	.51	.04						T.		.14		.05		.04	.46			2.65
Aurora	...do						.08			*	.28		.18	.06		T.		.40					.25	.14				.27					1.66
Bement	Mississippi			.12									.86	.90		.28	1.56												1.25	1.39			6.36
Benton	...do			1.25	.10	.25				.35	.10					T.									.15			.70		.25			3.15
Bloomington	Illinois			.10							.25		.13	1.00		.22		.18					T.		.07				.48	.48			2.91
Cairo	Mississippi	.19	.60	1.08	.29	1.73	.38		T.	.21	.11	.04	.09			.24	.27	1.66							.01	.41	.28				T.	T.	7.59
Carbondale	...do			.23	1.42	.24	1.28			.25	.30	.39				.03	2.90		.09						.03		1.07				.35		8.58
Carlinville	Illinois		.81	.05	.60		.64			.13	.74			.27		1.05	.70								T.		.35		T.	.55			5.89
Carlyle	Mississippi		.50	.30	.65	.15	.20				.86	.30	.50			.50	1.40								.25	.55	.05			.40			6.55
Chester‖	...do		.26	.42	.20	1.52	.04	.94	.50		.56	.08	.20	T.			1.64	T.	1.76							T.	.56	.36			T.		9.04
Clinton	Illinois		T.	.30			.01				.06	.34	.05		.15	.01	1.10								T.				.99	.74			3.75
Coatsburg	Mississippi		.15				T.				.15				T.	3.17										T.	.53			.96			4.96
Cobden	...do	.16	T.	.33	2.00		.10	T.		.52	.53	.05	1.02		T.	T.	3.70	.60	.92								.65			.24			10.82
Dakota	...do									.15			.09		.01			.71					T.	.07			.42						1.45
Decatur‖	Illinois		.08	.25	T.	.01					.01	.20	.63		.20	.99							T.			T.	T.	T.	.30	.56			3.23
Dixon‖	Mississippi										.07					.18		.38						.05					T.	.02			0.70
Du Quoin	...do		.15	.08	.23	T.				.33	T.	T.	.18			1.56									.24	.49	.06			.36			3.68
Dwight	Illinois			.04									.67		.18			.34											.07	.06			1.36
East St. Louis‖	Mississippi			.85	.37	.38	.26	.07			.11						.97									T.	.58	.42		.99			5.00
Edwardsville	...do		.15	.06	.02					T.	.80			.06		2.23	T.								.30		1.02			.42			5.06
Elgin	Illinois						T.			.40		.60				.62		1.47						T.				.05					3.14
Galva‖	...do									.59	.17		.05		.38	.06	.04	.05					T.						.41	.49			2.24
Grafton‖	Mississippi		.08		1.96		.04	.30			1.20		.06	.52			.18										1.90	.36					6.60
Greenville	...do		.20	1.22	.27	.56	.67		.02	.02	.70	.01	.46			2.32	.50								.63		.18			.25			8.01
Griggsville	Illinois				T.		T.			T.	.20	T.	.30		T.	1.90	T.								.11	T.	.46			1.48			4.45
Halfway	Mississippi	T.		.08	1.13	T.	.02			.31	.47	T.	.81			T.	2.08	.07							.03		.90			.14			6.04
Havana	Illinois		T.							.31					1.33	.82									.07		.03		.28	.51			3.35
Henry	...do										.54		.10		T.	.09		.18					T.						.32	.04			1.27
Hillsboro‖	Mississippi			.70	.35	.05						.25	.20	.52				1.55								T.	.08	T.		.50			4.20
Joliet	Illinois									.18		.04	.11		.03	.05	.13	.42					T.						T.	.50			1.46
Kishwaukee	Mississippi						.10			.40					.05			.45					.01	.28			.75						2.04
La Grange	Illinois																																
La Harpe	...do		T.				T.			.68	.08				T.	1.90							T.				.27	T.	T.	.68			3.61
Lanark	Mississippi									.47			.49		.06			.25					.02	.05				T.	T.				1.34
La Salle	Illinois						T.			.24		T.			.23	T.		.11						T.				T.	.21				0.79
Lincoln	...do		T.	.02			.02				.96	T.	.11		.09	.26	.19									T.	T.		.75	.59			2.99
Loami	...do		T.	T.	T.	T.	.38				.30	.35	.55		T.	.70	.20	T.					T.				.15	T.	T.	.50			3.13
Martinton‖	...do		.90	.65			T.					.10	.83		.40	.95	.45												.03	.05			4.36
Mascoutah	Mississippi		.54	.22	.26	.86				.04	.20	.01	.57			1.85									.25					1.10			5.90

TABLE 2.—*Daily precipitation for July, 1910. District No. 5*—Ciontnued.

Stations.	River basins.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Illinois—Cont'd.																																	
Minonk	Illinois			.16						.15		T.	.53		.09	.04		.04					T.						.26	.04			1.31
Monmouth	Mississippi				.01		.01			1.20			.08		T.	.38							.01						.52	.41			2.62
Morrison	do									.28					.42			.09					T.	.14					.15				1.08
Morrisonville	Illinois		.04	1.50	.03		T.			T.	.56		.87			.48	1.01								.08		.06	T.		.42			5.05
Mt. Vernon‖	Mississippi			.15	.14	.86	.08	.04			.34		.35	.09			1.73	.65								.26	.60	.03		.03	.62		5.97
Oregon	do										.15				.25			.55					T.										0.95
Ottawa	Illinois												.30		.04			.25										.08					0.67
Pana	Mississippi		.05	.13	.22		.02	.01		T.	.09	T.	1.61	T.		.40	1.19	.02							.06		.02		.07	.41			4.30
Peoria	Illinois			.01						.43		T.	.02		.51	.32		.04					T.		T.			T.	1.83	.07			3.23
Pontiac	do			.02			.16						.60		.19			.01						.01					.21	.05			1.25
Riley	Mississippi						.09	.01			T.		T.	.19		.63							T.	.13			.04		T.				1.09
Rockford‖	do										.40		T.	.26		.02	T.	.40						.23				.60					1.91
Rushville	Illinois		.57				.08			.24		.06			.25	.98							T.	T.		T.			.68				2.86
St. Charles	do						.31				.06		.17		T.	.15		.60					.17	.08				.23	T.				1.77
St. Peter	Mississippi		.57	.21	.47	.05	T.			1.05	.50		.42			.42	1.34								.20		T.			.35			5.58
Sparta	do		.15	1.69	.15	.12	.08	.01		.08	.25	.02	.51			.60	.60	T.	.05						.07		.63			.15			5.16
Springfield	Illinois		.02		.01	T.	T.			.32		.35	.12		.03	1.24							T.		T.		.06		.10	.38			2.63
Streator‖	do										.14		.08	.10		.06	T.	.66	T.					.08					.22	.07			0.81
Sullivan	Mississippi		.11	.35						T.			1.57	.07			1.50	.05							.37				.53	.35			4.90
Sycamore‖	do							T.			.21					T.		.52						.15				.62					1.50
Tiskilwa	Illinois									.23			T.		.14	.08		.05					T.		T.				.41				0.91
Walnut	Mississippi			T.						.45	.14				.56	.01		.04					T.					.08	.06	T.			1.34
Warsaw‖	do		.73				.13			.18				1.12												.47			.88				3.51
White Hall	Illinois		.03	.25			T.				.17	T.	.19		T.	1.98									T.	T.	.50		T.	1.14			4.26
Windsor	Mississippi		.21	1.52	1.28					.02	.06	.01	.21	T.		.45	1.03	.07					.01		.03				.53	.25			5.68
Winnebago	do						T.			.11	.10		.05		.14			.44					.03	.20			.07	1.18					2.32
Yorkville	Illinois						T.				.20		.10		.03			.70					.25	.20				.10		.01			1.59
Zion	Mississippi									.02		.30	.50		T.	T.		.22					T.					T.					1.04

TABLE 3.—*Maximum and minimum temperatures at selected stations, July, 1910. District No. 5, Upper Mississippi Valley.*

Date.	North Dakota.										Minnesota.																	
	Bottineau.§§		Devils Lake.		Lisbon.§§		Minot.§§		Pembina.§§		Collegeville.		Crookston.§§		Grand Meadow.		Montevideo.§§		Moorhead.		New Ulm.§§		Pine River Dam.		St. Paul.		Winnibigoshish.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min
1...	70	60	71	60	94	67	75	60	64	60	92	68	88	70	96	64	95	65	92	65	92	65	94	68	91	68	93	68
2...	84	52	83	54	90	54	86	57	62	52	87	60	82	58	94	66	87	62	86	59	89	66	87	64	89	72	89	64
3...	87	57	86	56	90	54	91	59	78	50	85	58	80	64	85	62	80	55	86	54	80	61	77	56	73	60	77	55
4...	95	58	90	59	87	50	96	65	78	50	79	48	85	52	84	54	83	50	84	52	89	55	85	45	84	55	81	49
5...	78	60	83	59	92	60	81	64	80	55	87	63	88	71	89	57	96	49	90	68	92	62	89	62	88	60	87	59
5...	87	48	88	54	95	54	89	53	94	58	85	63	91	60	88	69	87	59	90	58	87	65	88	66	86	67	85	65
7...	76	53	88	60	97	58	86	60	78	69	89	65	90	60	88	59	89	61	94	62	91	60	86	61	91	61	88	60
8...	78	48	80	50	87	53	79	57	79	50	86	65	83	59	93	59	87	60	84	58	87	63	81	61	88	66	80	63
9...	71	46	73	47	80	54	73	48	68	48	80	56	77	55	82	60	79	60	77	58	74	62	78	58	71	61	78	56
10...	70	42	73	51	85	43	71	49	62	44	79	56	78	50	82	53	84	53	80	49	83	55	76	53	81	56	75	54
11...	74	50	71	52	82	53	72	52	80	48	77	56	70	55	85	54	74	57	70	52	86	60	74	50	82	61	71	52
12...	79	42	74	47	82	46	79	46	72	50	77	52	78	50	79	56	79	48	80	48	80	53	75	45	79	54	76	50
13...	87	56	79	58	77	53	94	54	82	51	78	57	83	55	84	50	81	53	76	52	85	53	78	47	81	56	77	53
14...	102	58	96	57	88	50	104	65	94	55	87	65	92	60	85	60	89	58	91	58	91	59	90	60	88	66	89	61
15...	95	68	96	66	95	62	93	61	90	60	93	67	94	67	98	59	93	65	98	64	99	65	96	64	95	68	93	66
16...	80	68	80	63	94	66	92	67	81	62	91	72	80	70	102	68	98	68	93	62	101	68	87	61	88	68	92	57
17...	85	67	82	52	90	54	87	64	92	50	78	57	82	52	88	58	81	62	82	54	85	65	78	51	78	60	79	49
18...	92	58	90	58	94	49	94	64	84	50	81	50	86	52	84	52	85	50	86	49	87	55	84	40	83	58	78	50
19...	87	56	87	61	90	61	83	55	92	56	90	62	85	61	83	54	89	59	90	64	88	59	86	59	85	59	90	61
20...	91	56	90	55	91	49	89	58	90	54	94	64	87	55	91	62	92	66	93	55	96	64	87	62	93	66	89	59
21...	88	49	87	52	84	55	78	52	84	52	88	64	87	54	92	63	89	65	88	56	93	66	85	58	87	70	87	58
22...	90	61	89	54	91	50	92	55	90	50	90	62	89	58	83	65	90	64	91	53	91	68	85	65	91	65	87	57
23...	72	60	75	58	87	60	73	60	78	58	86	64	78	63	94	66	94	65	82	66	95	70	83	63	91	69	77	60
24...	80	53	79	55	86	52	85	57	79	52	84	62	81	59	89	61	89	60	82	59	89	61	79	57	84	63	76	58
25...	78	57	81	55	100	47	79	55	82	52	93	60	91	55	97	68	98	55	94	50	97	56	92	60	95	62	82	61
26...	82	45	82	52	87	49	83	46	90	51	93	63	82	54	97	65	89	58	84	54	91	62	80	60	87	60	79	60
27...	81	48	85	57	88	57	80	50	81	50	84	63	85	60	87	55	76	63	83	59	70	62	85	65	81	64	82	50
28...	75	41	82	49	91	54	81	45	78	51	91	63	86	58	93	59	92	58	88	60	91	60	87	54	90	63	84	58
29...	78	46	76	50	82	48	80	48	76	49	88	62	77	56	91	57	86	53	81	56	87	62	79	60	85	65	78	60
30...	82	48	79	49	85	49	82	48	77	44	82	56	79	50	87	53	85	51	80	52	85	55	86	56	81	59	80	57
31...	81	52	81	55	94	51	82	52	80	46	89	60	84	53	88	54	94	54	90	54	92	55	88	49	85	57	79	54
Mns	82.4	53.6	82.5	55.0	88.9	53.6	84.8	55.7	80.5	52.2	85.9	61.0	83.8	57.9	89.0	59.4	87.4	58.3	86.0	56.8	88.3	61.0	84.0	57.4	85.5	62.8	82.5	57.5

Date.	Wisconsin.														Iowa.													
	Delavan.		Eau Claire.		La Crosse.		Madison.		Mauston.		Spooner.		Wausaw.		Algona.		Cedar Rapids.§§		Charles City.		Davenport.		Des Moines.		Dubuque.		Keokuk.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	98	57	98	65	98	66	97	71	96	60	91	64	98	62	92	63	100	68	97	65	96	73	94	69	98	70	94	74
2...	97	60	93	66	93	66	95	73	95	60	87	67	95	66	87	63	95	70	93	64	88	75	91	71	93	69	82	68
3...	80	65	88	62	83	63	82	60	86	58	74	55	91	52	83	62	88	68	86	63	86	66	87	68	86	70	86	69
4...	75	56	82	50	83	56	75	56	78	47	84	45	78	48	83	55	84	61	83	59	82	59	82	64	80	59	80	61
5...	85	56	89	52	86	56	83	59	84	49	88	56	84	50	88	59	91	61	89	59	86	63	88	63	86	66	86	65
6...	94	57	88	69	90	67	88	65	90	63	84	66	88	62	83	64	93	69	88	65	91	72	87	67	89	70	89	71
7...	91	56	93	55	94	58	89	64	90	52	92	58	92	54	85	70	93	62	90	56	91	66	85	59	91	64	89	63
8...	95	62	90	60	93	61	93	64	95	58	85	64	90	59	88	58	98	63	92	59	94	69	93	61	93	63	92	67
9...	95	59	86	59	75	60	91	63	85	54	68	54	85	55	79	62	95	70	72	58	94	65	82	64	90	62	92	66
10...	85	62	82	55	85	55	81	62	83	55	78	52	80	53	81	54	88	60	83	52	86	64	84	57	84	61	82	65
11...	88	55	86	55	89	54	84	61	87	50	86	49	83	50	86	66	84	60	87	52	82	65	84	58	85	60	80	63
12...	83	66	78	58	77	60	74	64	80	59	76	55	83	57	77	56	82	63	78	55	83	66	78	62	78	62	84	68
13...	85	49	86	51	86	52	83	59	85	48	82	49	83	48	83	50	88	55	84	48	83	60	85	54	84	56	85	61
14...	88	59	91	61	86	65	84	60	86	59	89	64	88	59	86	64	86	56	82	63	84	67	81	66	82	65	86	67
15...	92	65	96	65	97	63	90	67	93	59	94	63	92	63	91	62	89	68	94	62	80	70	87	65	89	67	75	66
16...	98	63	91	69	98	66	91	63	97	72	74	59	91	64	96	68	100	67	98	64	97	68	97	65	96	67	94	67
17...	77	59	81	56	81	59	75	58	78	55	72	51	78	53	85	70	83	64	83	60	79	63	83	69	80	60	88	68
18...	77	51	80	52	81	55	76	54	80	45	80	46	80	46	83	53	83	55	82	52	79	56	80	61	79	56	78	57
19...	83	45	86	52	88	55	82	56	84	53	88	53	85	53	85	53	86	53	84	52	82	57	83	56	84	54	80	57
20...	87	54	92	65	92	64	87	63	90	65	91	57	90	63	81	68	89	56	85	63	85	62	84	61	89	64	84	61
21...	89	60	88	68	95	66	89	64	92	67	84	61	90	68	93	60	94	61	93	60	88	67	92	67	91	65	86	66
22...	80	59	88	68	84	68	80	69	86	64	88	54	89	54	84	67	79	68	76	68	82	71	86	71	83	70	83	70
23...	91	66	90	64	94	69	90	68	94	65	93	61	88	62	93	68	94	68	95	68	89	73	92	70	93	70	89	71
24...	95	72	90	65	88	66	87	65	86	62	78	61	89	64	88	68	95	73	88	64	97	74	94	68	90	74	90	77
25...	93	62	89	62	92	61	86	67	85	62	86	58	83	62	86	68	97	63	90	55	96	67	95	60	93	66	96	66
26...	98	59	88	65	94	64	90	64	90	58	83	66	85	61	90	64	95	63	93	63	93	73	91	68	95	71	87	68
27...	87	66	81	57	76	57	79	66	85	54	83	52	86	55	81	56	91	68	81	55	91	72	89	71	84	68	91	70
28...	91	64	90	58	90	60	88	65	88	60	87	57	87	59	89	69	80	66	88	64	79	66	77	68	86	67	89	69
29...	96	66	89	60	92	65	89	69	88	65	80	53	86	59	90	68	85	67	92	63	95	70	92	66	93	68	86	70
30...	85	56	81	55	83	57	80	62	84	55	78	51	80	55	83	53	88	59	84	53	86	62	83	64	83	60	84	65
31...	86	48	88	52	88	53	84	57	83	46	85	54	81	47	90	64	90	57	88	52	85	62	90	58	87	57	87	63
Mns	88.5	59.2	87.7	59.7	88.1	60.9	85.2	63.2	87.2	57.4	83.5	56.6	86.5	56.9	86.1	61.9	90.3	63.3	87.1	59.2	87.4	66.5	87.0	64.2	87.5	64.5	86.5	66.4

TABLE 3.—*Maximum and minimum temperatures at selected stations, July, 1910. District No. 5*—Continued.

Date.	Hannibal, Mo.		Laporte, Ind.		Illinois. Cairo.		Greenville.		La Salle.		Monmouth.		Mt. Vernon.§§		Peoria.		Springfield.		Winnebago.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	89	72	92	62	86	72	87	70	99	65	96	67	90	69	94	66	89	73	101	62
2	81	71	88	70	84	71	89	67	84	71	87	71	90	72	82	70	84	72	93	68
3	86	67	82	74	81	72	85	70	82	63	88	69	89	70	86	65	86	70	84	64
4	79	63	78	65	80	71	81	64	79	59	80	58	86	68	76	60	76	62	79	54
5	86	66	81	58	84	71	83	69	87	61	88	58	86	69	88	62	86	67	89	59
6	90	70	83	67	88	73	88	70	93	65	93	67	90	71	92	66	90	69	94	62
7	89	63	82	69	90	72	89	68	91	66	93	62	94	70	91	62	90	68	93	62
8	92	64	.....	61	90	72	92	70	94	65	96	62	95	68	95	62	94	67	97	62
9	90	67	96	75	86	68	89	65	95	67	98	65	87	71	95	64	89	67	99	64
10	82	66	78	69	83	68	78	68	84	67	87	67	80	65	83	63	80	67	86	62
11	81	63	89	57	87	70	85	66	84	60	84	59	83	65	83	58	83	64	89	56
12	85	65	87	67	86	72	83	65	87	64	86	65	89	68	85	65	82	68	87	64
13	85	56	82	56	88	71	85	66	83	57	87	54	89	68	84	56	83	64	89	53
14	87	66	86	54	87	72	88	68	86	62	90	62	92	67	89	66	89	68	89	58
15	77	66	90	69	88	74	81	69	84	70	79	68	88	72	76	70	79	68	91	63
16	91	70	90	64	84	74	83	67	96	68	96	64	86	66	93	69	88	68	99	63
17	83	67	81	62	90	66	85	70	78	60	90	67	88	60	80	60	82	63	80	63
18	77	60	76	52	77	67	79	60	77	56	80	53	80	66	78	58	77	57	80	52
19	80	56	83	49	79	63	82	56	85	52	87	50	82	56	83	50	81	58	86	49
20	82	57	88	52	82	63	84	61	86	58	87	56	87	55	85	54	84	60	89	63
21	84	66	89	58	87	67	86	63	88	66	90	63	89	57	86	63	85	61	92	61
22	85	68	89	65	86	69	89	67	88	70	84	66	90	65	85	66	86	66	84	66
23	89	74	89	65	87	71	88	68	91	73	95	67	88	67	91	70	89	69	94	66
24	95	77	97	71	88	74	88	73	99	72	101	74	90	70	99	69	96	74	97	75
25	94	68	90	62	94	70	93	75	95	66	100	63	98	71	97	61	96	74	95	61
26	87	67	96	58	78	70	86	68	96	69	95	69	87	68	95	70	91	69	100	65
27	94	71	85	71	91	74	94	71	93	73	95	69	97	70	95	71	94	71	87	65
28	92	72	92	65	92	75	90	69	82	65	85	62	95	69	78	64	80	66	88	67
29	85	68	88	64	90	75	84	71	95	70	94	67	89	71	90	71	87	71	94	68
30	82	65	82	63	88	73	87	66	85	64	87	59	89	72	84	61	84	68	85	56
31	86	61	78	52	84	69	86	62	85	58	88	58	86	62	83	60	86	62	88	54
Means	86.0	66.2	86.2[a]	62.8	86.0	70.6	86.0	67.2	88.1	64.6	89.9	63.3	88.7	67.0	87.1	63.6	86.0	66.8	90.3	61.2