CLIMATOLOGICAL DATA FOR JULY, 1913.

DISTRICT NO. 5, UPPER MISSISSIPPI VALLEY.

GEORGE M. CHAPPEL, District Editor.

GENERAL SUMMARY.

The month was somewhat warmer and drier than usual, but this statement is inapplicable to all portions of the district, as the conditions that obtained over the northern half were quite the reverse of those that obtained over the southern half. Over the former section the month was comparatively cool and unusually wet, while over the latter section it was the warmest month in the last 12 years, and one of the driest of its name on record. The drought was especially severe in central Illinois, vegetation suffering greatly. The hot weather caused much personal discomfort, especially among urban dwellers.

No new records for high temperature were established at stations whose records date prior to July, 1901, but the extreme figures reached in that memorable month were closely approached in some instances. At Springfield, Ill., the month had 18 days with a temperature of 90° or higher, making 37 days this season with a like record.

The following table presents in condensed form the leading features of climatological interest for the various parts of the district:

Parts of States within District 5.	Temperature.				Precipitation.					
	Mean.	Departure.	Highest.	Lowest.	Average.	Departure.	Greatest total.	Least total.	Average snowfall.	Average number of days with precipitation.
North Dakota	65.1	−1.6	103	35	2.22	−0.49	4.83	0.95	.....	9
Minnesota	67.7	−1.2	100	33	5.57	+2.26	15.16	2.00	.....	11
South Dakota	68.0	−2.3	97	45	3.17	+0.34	3.23	3.11	.....	10
Wisconsin	68.7	−0.5	100	31	7.01	+3.14	10.81	3.50	.....	10
Iowa	76.0	+2.6	108	46	1.61	−2.81	6.23	T.	.....	5
Missouri	80.9	+3.7	107	48	1.40	−2.63	3.87	0.15	.....	5
Indiana	73.8	+0.7	105	45	3.80	−0.27	1.44	0.88	.....	8
Illinois	77.9	+2.5	108	41	2.04	−1.61	6.55	0.05	.....	6

TEMPERATURE.

The mean temperature for the district as a whole was 71.9°, or 0.9° higher than the normal. This average condition prevailed only over a narrow strip in the central part of the district; northward thereof the month was cooler than usual, the departure of the mean temperature from the normal being 4° over an area in North Dakota, where it was the coolest July in the last several years. Over the southern half of the district the month was warm, being the warmest month since July, 1901, over much of that territory. The highest monthly mean temperature was 82.5°, at Steffenville, Mo.; and the means were above 80° over most of the Missouri area and in southern Illinois. The lowest mean temperature was 61.4°, at Hannah, N. Dak., and Roseau, Minn. In almost all parts of the district the highest monthly temperature occurred during the closing days of the month. As a rule the temperature reached 100° or higher over the region where the mean temperature was above the normal, but over the northern half of the district the highest temperatures ranged generally between 90° and 100°, but few stations reported a monthly maximum temperature of less than 90°. The highest temperature reported was 108°, at Pella, Iowa, and Ottawa, Streator, and White Hall, Ill. The lowest monthly temperatures at the various stations occurred on or about the 10th or 24th generally, but scattered stations reported them on other dates. The lowest temperature of the month was 31°, at Hayward, Wis., on the 25th. That was the only station reporting freezing temperature, but several points in the north experienced temperatures under 40°. Light frost occurred on low ground at Trout Lake, Wis., on the 21st.

PRECIPITATION.

The abnormalities of distribution in the precipitation of the month were as marked as were the differences in temperature. Over central Minnesota the month was the wettest July on record, while in central Illinois it was the driest July in more than half a century. The average precipitation for the entire district was 3.65 inches, or 0.51 inch less than the normal. With the exception of North Dakota the precipitation was deficient in those States having an excess of temperature and vice versa. The drought in central and southern Illinois was severe, and crops have been generally damaged. In those sections July was the third consecutive month of largely deficient precipitation. The greatest monthly precipitation in the district was 15.16 inches, at Collegeville, Minn., and the least was a trace, at Ottumwa and Fort Madison, Iowa. At both La Harpe and Monmouth, Ill., stations having records covering 34 and 21 years, respectively, the month was the driest on record; 0.23 inch of rain fell at La Harpe and only 0.05 at Monmouth. The average number of rainy days was 8.

RIVERS.

A good stage of water was maintained throughout the month in the Mississippi River and navigation benefited thereby. In Wisconsin and Minnesota small streams were quite high for the season.

MISCELLANEOUS.

There was more than the usual sunshine over much of the district, this being especially true in southern sections. At Des Moines, Iowa, the percentage of the possible amount was 88, which is the highest on record for any month. The average number of clear days was 18; partly cloudy, 9; cloudy, 4. Southwesterly winds prevailed, but in North Dakota and Minnesota they were mostly northwesterly. The highest velocity reported was 58 miles an hour from the west, at St. Paul, Minn., on the 31st.

STORMS IN JULY, 1913.

Severe storms were more numerous than usual, and they caused much damage to property and loss to crops. The storm of the 4th–5th in southern Minnesota and adjoinihg Wisconsin territory was one of the notable storms of the month. Near Pipestone, Minn., it is reported to have assumed tornadic proportions, and many buildings were wrecked, trees uprooted, animals killed, and several persons injured. This storm was also severe in the vicinity of St. Cloud, Minn., and at La Crosse, Wis. On the 8th squall winds occurred over the northeastern quarter of Illinois; trees, crops, and buildings suffered to a considerable extent, and 3 or 4 persons were killed; also hail injured crops over some areas. A severe thunderstorm, accompanied by hail, visited a few counties in west-central Illinois on the 15th; one person was killed by lightning. On the night of the 26th–27th a windstorm passed over northern Wisconsin; reports indicated that this storm may have been of tornadic character at some points. Houses and barns were blown down, many telegraph and telephone poles were broken off, and damaging hail fell over a large territory. On the 30th an electrical storm passed over Cairo, Ill., and there was a heavy downpour of rain, 2.56 inches falling in 1 hour and 31 minutes. Southern Minnesota and western Wisconsin were visited by a severe electrical storm on the 31st.

THE DEVELOPMENT OF WATER POWER IN WISCONSIN, AND THE RELATION OF PRECIPITATION TO STREAM FLOW.

[By W. R. BORMANN, Assistant Observer, Milwaukee, Wis.]

The utilization of the water-power resources of this country has become one of the greatest economic questions of the present time. Wisconsin has been endowed with resources which permit of extensive investigations and experiments in the field of water-power development, and this State has been one of the most progressive in this line of work. Wisconsin now is fifth in rank with other States in developed water power, having to her credit a total of 202,952 horsepower.

The importance of the rivers of this State as a factor in the distribution of its settlement and in its development industrially and otherwise has long been recognized. Statistics show that already a vast sum of money has been expended in the construction of dams, reservoirs, etc. The capital invested in the manufacture of paper alone amounts to $13,325,000, and the money invested in public utilities and other industries which operate by water power would swell this figure enormously.

The following table shows the growth in the development of Wisconsin water powers:

	Horsepower
1870	33,700
1880	45,300
1890	56,700
1900	99,000
1905	124,400
1912	202,952

The annual saving represented by the power of 1912 over cost of an equivalent amount of steam power, computed at $20 per horsepower, amounts to over $4,000,000.

The Wisconsin rivers furnish an excellent field for the development of water power. They receive their run-off from territory within this State, and empty it into Lakes Superior and Michigan and the Mississippi River. The sources of the streams lie principally on a divide consisting of a comparatively flat highland which crosses the northern part of the State. This plateau has an altitude ranging from 1,200 to 1,600 feet above sea level. The drainage is chiefly in a southerly direction to the Mississippi Valley and through Lake Winnebago and Green Bay to Lake Michigan. The aggregate fall in the main streams is from 350 to 800 feet.

The St. Croix, Chippewa, Black, and Wisconsin Rivers drain 70 per cent of the northern half of the State, and all empty into the Mississippi River. Lake Superior rivers drain only 9.3 per cent and those flowing into Green Bay the remaining 20.7 per cent.

The St. Croix River heads in the northwest corner of Wisconsin, about 20 miles from Lake Superior, at an elevation of about 1,000 feet, and flows southerly into the Mississippi River, forming part of the boundary between Minnesota and Wisconsin. Its total fall is 344 feet in 168 miles, of which the St. Croix Falls site with 50 feet fall is developed.

Chippewa River rises within 20 miles of Lake Superior near the Michigan border at an elevation of about 1,600 feet and flows southerly into the Mississippi River, falling about 850 feet in the distance of 270 miles. The main stream is formed by the east and west branches, and the Flambeau, Red Cedar, Jump, Yellow, and Eau Claire are tributaries. About 100 feet of the available fall is developed.

Black River rises in Medford County at an elevation of about 1,200 feet and flows southerly into the Mississippi River, falling some 600 feet in a distance of 140 miles. The falls at Hatfield and Ross Eddy and at some other sites, aggregating 170 feet, have been developed.

Wisconsin River rises in a chain of lakes near the Michigan boundary, at an elevation of about 1,600 feet, and flows southerly into the Mississippi River, falling 1,050 feet in about 400 miles. This is the most important water-power stream in the State, and on it are located some power plants which date back to the earliest settlement of Wisconsin. About 350 feet of the available fall is developed.

Rock River rises in Dodge County at an elevation of about 1,000 feet and flows southerly into Illinois. No power sites are shown on this stream, and those which appear to be commercially resourceful have been developed.

Milwaukee River rises in Fond du Lac County at an elevation of about 1,000 feet and flows southerly and easterly into Lake Michigan. It falls 400 feet in about 100 miles, of which 125 feet are developed.

Oconto River rises in Forest County at an elevation of about 1,500 feet and flows southeasterly into Green Bay and Lake Michigan. The Oconto falls 950 feet in 90 miles, of which 230 feet are developed; 190 feet of the fall occurs in the lower 33 miles.

Peshtigo River rises in Forest County at an elevation of about 1,600 feet and flows southerly into Green Bay and Lake Michigan. It falls 1,040 feet in 94 miles, of which about 50 feet are developed.

Menominee River rises in western Michigan and northern Wisconsin as the Michigamme and Bruele, at elevations of about 1,600 feet. This river also flows southerly, forming part of the boundary between Michigan and Wisconsin, and empties into Green Bay and Lake Michigan. From the junction of the Michigamme and Bruele the fall is about 700 feet in 100 miles, of which 210 feet are developed.

TABLE 1.—*Climatological data for July, 1913. District No. 5, Upper Mississippi Valley.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, 0.01 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.		
North Dakota.																				
Amenia	Cass	954	17	68.3	0.0	95	29	44	24	45	2.58	− 0.73	0.62	0	8	16	3	12	w.	C. E. Wood.
Bottineau	Bottineau	1,638	21	64.0	− 1.7	99	29	41	13	45	1.55	− 1.00	0.72	0	12	10	14	7	se.	H. F. Steinmeir.
Bowbells	Burke	1,958	1	62.9	.....	96	29	40	28	47	2.12	.....	0.82	0	9	19	4	8	.....	G. H. Phelps.
Cando	Towner	1,488	12	67.0	+ 2.4	94	29	38	24	46	3.17	+ 0.28	2.00	0	8	.....	.....	.....	.....	E. T. Judd.
Crosby	Divide	.....	6	63.0	.....	90	29	43	10†	40	1.38	.....	0.64	0	4	25	3	3	nw.	H. C. Kaschau.
Devils Lake	Ramsey	1,482	8	64.2	− 3.9	95	29	44	20	38	1.47	− 2.31	0.37	0	12	13	9	9	w.	U. S. Weather Bureau.
Donnybrook	Ward	1,760	14	63.6	− 1.9	95	29	41	27†	46	1.81	− 1.15	0.51	0	8	23	5	3	nw.	C. J. Devore.
Dunseith	Rolette	.....	17	62.6	− 1.3	95	29	42	24†	39	2.85	+ 0.44	1.69	0	7	.....	.....	.....	nw.	C. E. Goodsell.
Eckman (near)	McHenry	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Geo. Yenny.
Fessenden	Wells	1,610	1	64.4	.....	96	7	39	24	45	1.66	.....	0.32	0	9	13	9	9	nw.	G. T. Seymour.
Forman	Sargent	1,249	21	67.6	− 1.6	103	29	46	24	46	2.45	− 0.47	0.90	0	6	10	14	7	nw.	A. Maltby.
Grafton	Walsh	827	21	64.8	− 2.6	93	29	37	24	41	2.02	− 0.51	0.82	0	8	22	5	4	ne.	A. R. T. Wylie.
Granville	McHenry	1,504	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. A. Christianson.
Hannah	Cavalier	1,568	8	61.4	.....	95	29	36	2	44	1.45	.....	0.51	0	5	15	11	5	nw.	J. Moffatt.
Hansboro	Towner	.....	5	63.4	.....	96	29	39	2	42	1.48	.....	0.54	0	11	28	0	3	nw.	Geo. Dale.
Hillsboro	Traill	901	7	68.6	.....	93	29	43	24	44	2.22	.....	1.08	0	11	20	7	4	w.	F. E. Mayall.
Lakota	Nelson	1,579	12	63.4	− 1.6	94	29	38	24	42	1.77	− 1.14	0.67	0	10	4	25	2	nw.	C. R. Pettes.
Langdon	Cavalier	1,615	17	62.0	.....	96	29	39	2†	42	1.88	.....	0.69	0	7	19	0	12	w.	J. Woolner.
Larimore	Grand Forks	1,134	18	65.7	− 0.5	95	29	41	24	40	2.34	− 0.69	1.18	0	10	19	6	6	nw.	J. M. Freeman.
Lisbon	Ransom	1,091	9	66.7	− 1.0	100	29	40	28	47	2.13	− 1.22	0.93	0	8	16	4	11	nw.	W. S. Adams.
McKinney	Renville	1,640	19	65.4	− 0.3	100	27	40	27†	60	3.15	+ 1.08	1.90	0	4	10	19	2	nw.	N. P. Swenson.
McLeod	Ransom	.....	1	66.7	.....	93	26	41	28	37	4.83	.....	1.79	0	8	16	7	8	n.	Martin Reinholt.
Manfred	Wells	1,605	10	64.6	− 1.5	97	29	40	24	47	1.67	− 0.79	0.34	0	8	19	9	3	nw.	P. B. Anderson.
Mayville	Traill	975	17	67.0	− 2.1	96	30	40	24	37	2.59	− 0.77	0.84	0	11	17	6	8	nw.	W. C. Gould.
Milnor	Sargent	1,097	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Hj. Edman.
Minot	Ward	1,557	17	65.6	− 2.4	96	29	46	9†	41	2.00	+ 0.04	0.76	0	8	18	3	10	w.	Louise Bates.
Minto	Walsh	820	20	65.5	− 1.6	92	29	40	2	41	2.58	− 0.21	0.95	0	11	12	12	7	nw.	S. S. Marsh.
Oriska	Barnes	1,270	8	67.1	.....	96	29	40	2†	46	1.77	.....	0.63	0	10	5	26	0	sw.	J. J. Taylor.
Park River	Walsh	998	9	65.9	.....	95	25	39	2	47	1.77	.....	1.05	0	13	24	3	4	nw.	P. J. Prochaska.
Pembina	Pembina	789	39	64.7	− 2.7	98	28†	35	24	58	0.95	− 1.64	0.60	0	6	15	8	8	w.	C. W. Shumaker.
Power	Richland	1,020	21	65.9	− 2.8	95	31	45	24	45	3.72	+ 0.37	1.50	0	7	15	7	9	nw.	J. A. Power.
Towner	McHenry	.....	11	65.1	− 1.0	97	29	41	9	45	2.16	− 0.38	0.83	0	9	3	25	3	nw.	B. Bagley
University	Grand Forks	830	21	65.9	− 1.3	91	29	41	24	35	2.86	+ 0.27	0.75	0	15	14	6	11	se.	U. S. Weather Bureau.
Wahpeton	Richland	962	19	66.0	− 3.2	96	29	46	14†	49	4.43	+ 0.37	2.00	0	8	10	11	10	nw.	Fred E. Smith.
Walhalla	Pembina	966	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ivanhoe Lee.
Westhope	Bottineau	.....	7	65.4	.....	97	29	43	9	41	1.13	.....	0.50	0	9	15	12	4	nw.	W. A. Meddaugh
Willow City	....do	1,471	21	62.9	− 2.5	95	29	37	24	44	1.46	− 0.71	0.70	0	9	12	16	3	nw.	M. A. Ostby.
Minnesota.																				
Albert Lea	Freeborn	1,229	22	72.5	+ 1.0	96	30	53	10†	32	3.17	− 0.81	1.10	0	6	15	14	2	sw.	Edward Carey.
Alexandria	Douglas	1,391	19	67.3[d]	− 2.1	94	29	49[h]	24†	38[h]	5.98	+ 2.59	1.86	0	9	12	7	12	nw.	P. O. Unumb.
Angus	Polk	870	11	64.0	− 1.7	89	29	35	24	40	3.51	+ 0.85	1.33	0	14	12	13	6	nw.	John Nadvornik.
Bagley	Clearwater	.....	7	62.6	.....	90	29	37	10	40	6.84	.....	2.50	0	8	8	22	1	nw.	Jens Nelson.
Baudette	Beltrami	1,084	3	64.5	.....	90	29†	39	2	38	4.70	.....	1.28	0	12	13	16	2	nw.	J. A. Gjelhaug.
Beardsley	Bigstone	1,090	17	69.4	− 0.2	100	29	44	10	41	2.27	− 1.17	1.00	0	8	10	14	7	nw.	G. L. Fitzgerald.
Bemidji	Beltrami	1,400	9	.....	.....	.....	.....	.....	.....	.....	5.79	.....	1.28	0	16	.....	.....	.....	.....	C. W. Warfield.
Bird Island	Renville	1,039	23	69.5	− 1.3	97	30	50	24	37	5.44	+ 2.25	1.31	0	13	19	6	6	nw.	Dr. F. L. Puffer.
Brainerd	Crow Wing	1,215	7	66.8	.....	91	30	44	24	34	6.75	.....	1.84	0	12	15	8	8	.....	Theodore Miller.
Caledonia	Houston	1,179	20	71.3[e]	+ 0.2	92[e]	30	54[e]	25	29[f]	8.93	+ 5.03	1.70	0	9	16	10	5	nw.	W. D. Belden.
Campbell	Wilkin	975	7	66.2	.....	91	29	46	24†	39	4.20	.....	1.20	0	8	15	2	14	nw.	J. T. Neisess.
Cass Lake	Cass	1,300	6	.....	.....	.....	.....	.....	.....	.....	6.10	.....	1.72	0	14	.....	.....	.....	.....	C. W. Burns.
Collegeville	Stearns	1,282	20	67.8	− 3.3	86	30	52	28	29	15.16	+11.72	3.09	0	13	13	10	8	w.	F. Tembreull.
Crookston	Polk	863	24	66.8	− 1.5	90	29	46	24	36	4.60	+ 1.31	1.63	0	10	19	4	8	sw.	A. G. Andersen.
Detroit	Becker	1,364	17	64.8	− 2.5	91	29	39	28	38	4.51	+ 0.33	1.80	0	11	26	2	3	nw.	G. W. Peoples.
Ely	St. Louis	1,330	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Iver Wisted.
Fairmont (near)	Martin	1,240	26	71.8	+ 0.6	97	29	50	23	32	2.82	− 0.67	0.89	0	8	11	17	3	nw.	W. F. Wherland.
Faribault	Rice	1,003	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. A. B. Moulton.
Farmington	Dakota	902	25	71.2	+ 0.5	95	30	50	24	31	6.21	+ 2.77	1.56	0	15	18	4	9	sw.	E. D. Akin.
Fergus Falls	Otter Tail	1,210	21	67.8	− 2.0	92	29	49	13	31	6.49	+ 2.58	3.23	0	12	10	15	6	nw.	C. E. Kissinger.
Fort Ripley	Crow Wing	1,136	5	66.8	.....	94	30	40	4	39	6.26	+ 3.50	2.13	0	9	17	0	14	s.	J. J. Tucker.
Fosston	Polk	1,289	3	.....	.....	.....	.....	42	24	.....	3.02	.....	0.82	0	15	13	16	2	nw.	O. N. Hem.
Glencoe	McLeod	1,000	16	70.5	+ 0.8	96	30	50	24	32	5.40	+ 2.34	2.50	0	6	22	7	2	s.	L. V. Koos.
Grand Meadow	Mower	1,338	25	72.2	+ 0.8	95	29†	49	24†	34	4.63	+ 0.85	1.83	0	11	25	5	1	se.	C. F. Greening.
Gull Lake Dam	Cass	1,215	2	66.8	.....	91	30	45	28	35	6.20	.....	1.26	0	15	11	15	5	nw.	U. S. Engineer Corps.
Hallock	Kittson	815	14	65.1	− 0.9	94	29	35	24	43	2.29	− 0.90	1.10	0	12	17	5	9	n.	D. A. Robertson.
Halstad	Norman	870	7	66.0	.....	94	29	40	24	41	2.00	.....	0.50	0	10	22	5	4	s.	A. G. Holstrom.
Hinckley	Pine	1,050	8	66.6	.....	93	30	43	25	34	7.19	.....	2.00	0	12	11	12	8	e.	W. R. Newman.
International Falls	Koochiching	1,112	10	64.4[d]	− 1.0	94[d]	30	36[d]	23	40[d]	5.21	+ 1.71	1.76	0	6	11[d]	13[d]	3[d]	nw.	C. Ardies.
Itasca State Park	Clearwater	1,500	2	64.0	.....	87	29†	41	10†	36	6.20	.....	1.90	0	17	8	20	3	nw.	J. A. Stillwell.
Lake Crystal	Blue Earth	990	5	70.6	.....	93	30	50	10†	28	4.58	.....	1.52	0	9	25	4	2	s.	W. P. Cobb.
Leech Lake Dam	Cass	1,301	25	64.5	− 2.3	90	30	41	10†	37	7.31	+ 3.16	2.58	0	14	5	23	3	nw.	U. S. Engineer Corps.
Little Falls	Morrison	1,115	4	66.0	.....	.....	.....	41[d]	27	40[d]	.....	.....	.....	0	.....	22	4	5	e.	William Batters.
Littlefork	Koochiching	.....	3	61.5	.....	94	30	33	25	52	3.87	.....	1.35	0	13	5	20	6	.....	O. C. Olson.
Long Prairie	Todd	1,299	21	67.1	− 1.5	93	30	40	28	41	6.91	+ 3.42	1.83	0	8	15	9	7	se.	A. L. Sheets.
Lynd	Lyon	1,175	20	69.8	− 0.1	92	30	48	28	34	5.18	+ 2.20	2.62	0	9	20	9	2	nw.	J. W. Rouse.
Mankato	Blue Earth	758	15	.....	.....	.....	.....	.....	.....	.....	4.61	+ 1.22	1.53	0	16	24	2	5	sw.	C. G. Staley.
Milaca	Millelacs	1,072	14	66.2[d]	− 2.4	94[d]	30	42[d]	25	34[d]	8.86	+ 4.43	1.50	0	11	12[d]	9[d]	6[d]	nw.	C. H. Foss.
Milan	Chippewa	955	19	67.4	− 2.5	91	29†	48	2†	34	5.62	+ 2.52	1.21	0	9	14	10	7	se.	O. K. Ojorden.
Minneapolis	Hennepin	918	22	70.4	− 1.8	97	30	53	24	30	7.75	+ 3.94	2.11	0	15	11	12	8	w.	U. S. Weather Bureau.
Montevideo	Chippewa	900	23	69.4	− 1.4	95	29	50	24†	37	6.45	+ 3.56	2.85	0	10	16	8	7	nw.	L. G. Moyer.
Moorhead	Clay	935	32	67.0	− 1.7	94	29	46	24	37	3.26	− 0.48	1.06	0	12	20	9	2	nw.	U. S. Weather Bureau.
Mora	Kanabec	1,001	8	67.1	.....	92	30	43	28	44	7.56	.....	2.38	0	12	4	17	10	w.	Hans Peterson.
Morris	Stevens	1,170	28	67.8	− 2.4	92	29	49	28	34	5.83	+ 1.89	3.67	0	9	24	3	4	nw.	D. T. Wheaton.
New London	Kandiyohi	1,215	19	69.3	− 1.4	93	30	52	25	31	8.62	+ 5.04	2.15	0	12	8	20	3	sw.	Harold Swenson.
New Richland	Waseca	1,180	19	71.4	− 0.4	96	30	51	24	29	4.84	+ 1.22	1.68	0	7	20	9	2	nw.	N. O. Tyrholm.
New Ulm	Brown	791	33	71.8	− 2.2	99	30	51	24	36	4.94	+ 1.32	1.56	0	14	8	8	15	s.	A. L. Henle.
Osakis	Douglas	1,343	5	67.0	.....	92	29†	47	28	36	4.58	.....	1.12	0	9	16	9	6	nw.	J. B. Johnson.
Park Rapids	Hubbard	1,426	23	65.4	− 2.0	90	29†	43	28	42	6.49	+ 2.70	2.80	0	16	12	3	16	nw.	Dr. P. A. Walling.
Pierz	Morrison	.....	.....	66.2	.....	90	30	43	24	36	5.78	.....	1.72	0	9	18	4	9	nw.	E. H. Kerkhoff.
Pine River Dam	Crow Wing	1,251	26	67.0	− 1.6	92	30	42	24	39	8.08	+ 4.49	2.88	0	11	12	15	4	se.	U. S. Engineer Corps.
Pokegama Falls	Itasca	1,280	26	63.3	− 2.5	89	30	39	10	41	7.95	+ 3.95	1.60	0	14	17	10	4	nw.	Do.
Redlake	Beltrami	1,152	5	64.0	.....	88	29†	43	8†	38	3.67	.....	1.60	0	4	12	17	2	n.	A. C. Goddard.
Red Lake Falls	Red Lake	1,001	.....	74.2	.....	98	29	55	26	31	.....	.....	.....	0	.....	23	2	6	sw.	E. G. Buse.
Red Wing	Goodhue	680	17	.....	.....	.....	.....	.....	.....	.....	4.28	+ 0.74	1.52	0	12	14	7	10	w.	Louis Back.
Redwood Falls	Redwood	1,050	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	E. V. Hockett.

TABLE 1.—*Climatological data for July, 1913. District No. 5*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Precipitation, in inches. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Sky. Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	Observers.
Minnesota—Continued.																				
Reeds Landing	Wabasha	681	17	.....	.....	.....	.....	.....	.....	.....	6.55	+ 2.97	2.00	0	11	19	0	12	se.	John Deschneau.
Rochester	Olmstead	991	8	70.5	.....	97	29†	49	10†	37	5.10	.....	1.40	0	7	20	3	8	s.	Mary P. Leslie.
Roseau	Roseau	1,040	3	61.4	.....	87	29	34	2†	41	3.56	.....	0.75	0	15	20	9	3	nw.	M. J. Hegland.
St. Charles	Winona	850	22	70.6	+ 0.2	93[a]	29†	46[a]	21	40[a]	4.51	+ 1.15	1.67	0	7	21[a]	5[a]	4[a]	se.	S. W. Gleason.
St. Cloud	Sherburne	1,020	36	70.0	− 0.9	96	30	50	24†	36	9.49	+ 5.88	1.84	0	11	16	6	9	nw.	State Reformatory.
St. Paul	Ramsey	940	42	69.9	− 2.2	96	30	53	11	30	6.11	+ 2.71	1.98	0	15	14	12	5	nw.	U. S. Weather Bureau.
St. Peter	Nicollet	825	18	71.2	− 0.2	98	30	46	24	40	5.08	+ 1.38	1.40	0	12	20	10	1	w.	State Hospital.
Sandy Lake Dam	Aitkin	1,234	20	62.3	− 4.6	89	30	42	24	29	5.97	+ 2.09	1.62	0	12	2	24	5	nw.	U. S. Engineer Corps.
State Sanatorium	Cass	1,336	5	65.0	.....	90[a]	30	45[a]	24	35[a]	6.69	.....	2.10	0	10	13[a]	10[a]	7[a]	sw.	Dr. G. W. Beach.
Stillwater	Washington	694	7	.....	.....	.....	.....	.....	.....	.....	7.47	.....	1.94	0	13	14	5	12	sw.	Oscar Ostrom.
Taylors Falls	Chisago	759	6	69.4	.....	95	30	47	28	33	7.98	.....	2.00	0	11	17	8	6	nw.	Minneapolis Gen. Elec. Co.
Thief River Falls	Pennington	1,137	2	63.8	.....	90	29	38	24†	48	2.91	.....	0.75	0	9	17	3	11	s.	E. W. Lown.
Tracy	Lyon	.....	.....	73.6	.....	100	30	50	24	38	5.62	.....	1.29	0	10	12	19	0	nw.	A. H. Rowland.
Warren	Marshall	859	1	67.4	.....	95	8	42	24†	41	2.16	.....	0.97	0	10	10	14	7	.....	P. H. Holm.
Warroad	Roseau	1,069	3	63.4	.....	91	29	38	2†	42	4.29	.....	1.31	0	15	23	7	1	e.	G. A. Sawyer.
Winnebago	Faribault	1,100	15	72.1	0.0	96	30	52	10†	36	2.93	− 1.63	0.80	0	8	14	13	4	se.	H. H. Haight.
Winnibigoshish	Itasca	1,300	25	66.1	− 1.1	90	30	46	10	30	7.60	+ 3.64	1.92	0	14	23	2	6	n.	U. S. Engineer Corps.
Winona	Winona	700	17	74.3	+ 1.3	100	30	52	21†	33	6.15	+ 3.15	1.86	0	8	13	12	6	nw.	P. C. Myers.
Worthington	Nobles	1,593	18	69.3	− 0.7	92	30	49	10	32	2.34	− 1.57	0.80	0	11	16	5	10	sw.	M. P. Mann.
Zumbrota	Goodhue	917	17	69.2	− 1.8	94	30	47[a]	24	34[a]	3.75	.....	1.00	0	11	12[a]	17[a]	1[a]	nw.	W. C. Rowell.
South Dakota.																				
Milbank	Grant	1,148	22	67.6	− 2.3	97	29	45	10	40	3.11	+ 0.34	1.20	0	9	17	7	7	nw.	Miss Mary Patridge.
Sisseton	Roberts	1,202	7	68.4	.....	96	29	50	2†	34	3.23	.....	1.02	0	10	16	4	11	nw.	George Gray.
Wisconsin.																				
Antigo	Langlade	1,489	19	66.4	− 1.3	90	30	42	21†	35	8.34	.....	2.84	0	11	16	2	13	sw.	Elton C. Larzelere.
Barron	Barron	1,115	22	70.0	+ 1.9	92	30	45	10	42	8.73	+ 4.87	2.04	0	12	13	14	4	nw.	Wm. A. Kent.
Beloit	Rock	750	47	73.2	+ 0.2	100	30	47	11	43	5.66	+ 2.01	1.95	0	11	17	12	2	s.	Smith Observatory.
Big St. Germain Dam	Vilas	1,590	3	64.4	.....	87	29	37	25	38	6.59	.....	1.37	0	13	14	12	5	nw.	Fred Hessen.
Brodhead	Green	812	15	74.6	+ 1.4	100	30	51	25	34	9.73	+ 5.44	3.90	0	11	18	13	0	sw.	Hector D. Kirkpatrick.
Burnett	Dodge	880	9	69.4	.....	92	3	44	11	32	4.56	.....	0.97	0	12	7	15	9	nw.	George W. Smith.
Cornell	Chippewa	993	1	66.7	.....	92	30	41	25	35	7.21	.....	2.85	0	14	13	9	9	nw.	Brunet Falls Mfg. Co.
Cottage Grove	Dane	888	2	.....	.....	.....	.....	.....	.....	.....	8.40	.....	1.91	0	13	12	17	2	sw.	John E. Mellish.
Darlington	Lafayette	867	7	73.0	.....	100	30	47	25	35	6.10	.....	2.25	0	7	16	11	4	nw.	Sever P. Nelson.
Deerskin Dam	Forest	1,685	3	63.0	.....	92	30	35	25†	43	5.66	.....	0.92	0	12	13	12	6	w.	Wm. E. O'Neal.
Delavan	Walworth	920	22	71.9	− 0.1	94	1†	45	11†	36	5.66	+ 1.36	1.49	0	12	18	9	4	sw.	Elwood S. Austin.
Dodgeville	Iowa	1,220	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Chas. H. Berryman.
Downing	Dunn	983	11	67.2	− 0.7	94	30	40	25	43	8.72	+ 4.71	2.00	0	10	6	3	22	se.	Eugene F. Stoddard.
Eau Claire	Eau Claire	800	22	70.0	− 0.8	94	30	47	25	31	6.53	+ 2.92	1.39	0	17	13	14	4	nw.	Robert D. Whitford.
Glen Flora	Rusk	1,475	1	65.4	.....	88	30	38	24	36	9.91	.....	2.47	0	14	15	11	5	nw.	G. A. Durgin.
Grand Rapids	Wood	980	14	69.0	− 0.6	96	30	44	25	34	4.56	+ 1.33	1.00	0	13	13	11	7	nw.	Geo. T. Nixom.
Grantsburg	Burnett	1,095	22	68.0	− 1.1	95	30	43	25	36	7.80	+ 3.37	1.50	0	11	22	2	7	nw.	Chester Ahlstrom.
Hancock	Waushara	1,091	21	71.0	− 0.1	95	30	44	28	39	5.33	+ 1.36	1.00	0	10	14	7	10	sw.	Frederick B. Hamilton.
Hatfield	Jackson	973	19	68.8	− 1.7	95	30	41	10	37	6.26	+ 2.23	1.74	0	12	6	17	8	nw.	Wis. Ry., Light & Pow. Co.
Hayward	Sawyer	1,107	22	66.7[f]	− 0.4	95[f]	30	31[f]	25	46[f]	.....	.....	.....	0	....	10[f]	12[f]	3[f]	s.	G. H. McElroy.
Hillsboro	Vernon	1,000	22	69.8	+ 0.5	95	30	45	25	33	6.91	+ 3.32	1.56	0	9	14	17	0	w.	Emil V. Wernick.
Koepenick	Langlade	1,683	22	64.3	− 2.8	88	30	36	21	37	9.76	+ 5.73	3.34	0	16	.....	.....	.....	sw.	Edward S. Koepenick.
La Crosse	La Crosse	714	41	71.8	− 0.8	95	30	53	25	28	5.71	+ 1.64	2.41	0	14	9	15	7	s.	U. S. Weather Bureau.
Lake Mills	Jefferson	897	22	71.4	− 0.1	94	4†	46	11	34	8.17	+ 4.19	2.38	0	12	14	16	1	sw.	S. Newton Dexter Smith.
Lancaster	Grant	1,070	22	72.6[a]	+ 0.7	98[a]	30	50[a]	11†	35[a]	.....	.....	.....	0	....	13[b]	14[b]	2[b]	sw.	Edward Pollock.
Long Lake	Oneida	1,592	5	64.0	.....	91	29	34	25	42	6.35	.....	1.03	0	16	11	16	4	w.	Louis Frank.
Madison	Dane	974	44	71.4	− 0.1	94	30	50	11	28	8.47	+ 4.48	2.47	0	14	16	10	5	sw.	U. S. Weather Bureau.
Marshfield	Wood	1,276	0	66.7	.....	93	30	40	25	35	3.50	.....	0.81	0	15	7	15	9	sw.	Agr. Exper. Station.
Mather	Juneau	962	9	68.0	.....	94	30	42	10	36	8.34	.....	2.04	0	12	13	11	7	w.	Frank Evans.
Mauston	.....do	882	17	70.0	− 0.4	92	30	48	25	32	7.06	+ 2.71	1.90	0	8	17	13	1	sw.	Eugene L. Hitchcock.
Meadow Valley	.....do	974	22	68.8	− 0.6	95	30	44	25	36	5.97	+ 1.93	1.10	0	15	3	25	3	nw.	Charles H. Johnson.
Medford	Taylor	1,420	24	67.0	− 1.7	92	30	43	21†	31	8.51	+ 4.24	1.55	0	12	18	9	4	w.	Wm. Zeit.
Merrill	Lincoln	1,267	7	68.6	.....	94	28	43	21	37	8.06	.....	2.13	0	14	6	13	12	sw.	O. F. Lueck.
Minocqua	Oneida	1,604	9	66.1	.....	91	30	44	14	30	6.60	.....	1.05	0	13	10	20	10	sw.	Benjamin W. Applebee.
Mondovi	Buffalo	738	5	69.4	.....	94	30	46	24	32	9.25	.....	1.82	0	17	13	14	4	nw.	Dr. Chas. Hebard.
Mt. Horeb	Dane	1,226	9	71.1	.....	96	30	50	7†	33	9.79	.....	3.50	0	12	19	7	5	nw.	W. M. Lewis.
Muscoda	Grant	666	4	72.8	.....	99	30	50	26	41	7.31	.....	1.60	0	9	24	1	6	nw.	Wm. Hessler.
Neillsville	Clark	996	23	69.4	− 0.4	99	4	45	21†	39	6.92	+ 3.01	1.70	0	10	.....	.....	.....	nw.	Wm. Heaslett.
New Richmond	St. Croix	990	8	68.4	.....	96	30	46	24	34	8.55	.....	1.81	0	16	10	21	0	nw.	Franc A. R. Van Meter.
Osceola	Polk	806	22	68.8	− 0.5	95	30	47	25†	36	7.66	+ 3.56	1.70	0	10	10	21	0	n.	Charles W. Staples.
Park Falls	Price	1,492	22	65.0	.....	87	3	41	25	36	6.97	.....	2.01	0	13	15	1	15	s.	Flambeau Paper Co.
Portage	Columbia	809	24	72.6	+ 0.6	95	4	52	11	29	6.61	+ 3.31	1.28	0	11	17	7	7	s.	James H. Martin.
Port Edwards	Wood	969	3	68.5	.....	95	4†	44	10†	41	4.63	.....	0.85	0	13	20	8	3	sw.	Nekoosa-Edwards Pa. Co.
Prairie du Chien	Crawford	628	22	73.6	− 0.2	99	30	52	25†	40	4.12	+ 0.54	1.52	0	8	24	0	7	nw.	James A. Gillis.
Prairie du Sac	Sauk	750	5	72.3	.....	96	4†	51	11†	33	9.55	.....	2.58	0	12	18	10	3	sw.	Wis. River Power Co.
Prentice	Price	1,551	15	64.6	− 0.7	92	30†	38	25	35	10.81	+ 6.54	3.09	0	14	4	9	18	s.	Joseph G. Lash.
Rest Lake	Vilas	1,600	0	64.8	.....	92	29	41	10†	33	7.84	.....	2.00	0	10	14	8	9	w.	A. F. Miller.
Rhinelander	Oneida	1,550	7	65.6	.....	90	30	40	20†	38	6.47	.....	1.95	0	14	16	3	12	sw.	Rhinelander Power Co.
Shullsburg	Lafayette	1,019	7	72.1	.....	96	30	47	11	36	4.72	.....	0.89	0	10	17	8	6	sw.	Harrison B. Chamberlin.
Solon Springs	Douglas	1,083	7	65.5	.....	94	30	39	25	40	6.10	.....	1.40	0	11	15	4	12	sw.	John M. Sayles.
Spooner	Washburn	1,104	19	66.6	− 2.4	95	30	42	24	35	8.23	+ 4.60	1.60	0	13	13	10	8	.....	Horace A. Bresee.
Stanley	Chippewa	1,082	9	66.2	.....	87	3†	42	25	31	4.76	.....	1.16	0	13	20	6	5	w.	W. Humphrey Scott.
Stevens Point	Portage	1,113	20	70.2	+ 0.4	94	30†	46	25	39	3.78	+ 0.44	1.00	0	5	4	20	7	sw.	Postmaster.
Sugar Camp Dam	Oneida	1,582	3	.....	.....	.....	.....	.....	.....	.....	5.49	.....	0.81	0	12	23	7	1	nw.	Lyman Haskins.
Tomahawk	.....do	1,451	0	66.5	.....	91	30†	39	25	34	7.38	.....	2.30	0	11	19	1	11	s.	Victor Extrom.
Trout Lake	Vilas	1,400	1	64.8[b]	.....	88[b]	30	41[b]	10	30[b]	5.79	.....	1.60	0	9	7[b]	14[b]	8[b]	sw.	F. B. Moody.
Twin Lakes Dam	.....do	1,625	3	.....	.....	.....	.....	.....	.....	.....	5.38	.....	2.40	0	7	14	13	4	sw.	Albert D. Hansen.
Valley Junction	Monroe	930	21	69.8	+ 0.3	94	30	45	21	38	8.54	+ 4.33	1.50	0	11	16	5	10	w.	J. J. Donahue.
Viroqua	Vernon	1,412	23	71.6	+ 0.8	94	30	50	24	31	9.27	+ 5.23	1.90	0	15	10	16	5	sw.	Henry E. Rogers.
Vudesare	Vilas	1,700	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Louis L. Thomas.
Watertown	Jefferson	824	22	70.0	− 0.6	93	3	48	11	29	4.41	+ 0.72	0.97	0	10	15	16	0	sw.	Charles J. Salick.
Waukesha	Waukesha	864	22	71.0[a]	− 0.4	94[a]	4	44[a]	11	34[a]	5.40	+ 2.02	1.12	0	11	14[a]	16[a]	0[a]	sw.	Carroll College.
Wausau	Marathon	1,212	18	66.7	− 1.9	91	30	42	21	33	6.41	+ 1.03	1.83	0	13	19	4	8	se.	A. A. Babcock, jr.
Weyerhaeuser	Rusk	1,297	11	65.8	− 2.1	93	30	40	25	34	8.78	.....	3.50	0	13	11	13	7	se.	Miss Etta Stick.
Whitehall	Trempealeau	675	22	68.9	− 1.3	92	30	41	21	38	7.50	+ 4.02	2.00	0	9	11[f]	2[f]	12[f]	w.	Hans J. Haugh.

TABLE 1.—*Climatological data for July, 1913. District No. 5*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Precipitation, in inches. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Sky. Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	Observers.
Iowa.																				
Albia	Monroe	959	15	79.2	+ 5.0	106	29	53	10†	38	0.11	− 4.82	0.06	0	2	24	7	0	sw.	J. I. Chenoweth.
Algona	Kossuth	1,213	39	74.6	+ 1.2	97	30	51	10†	33	3.11	+ 0.01	1.00	0	6	26	4	1	se.	Dr. F. T. Seeley.
Alta	Buena Vista	1,513	22	74.8	+ 2.9	99	30	53	10	34	2.27	− 2.41	0.86	0	7	19	11	1	s.	David E. Hadden.
Amana	Iowa	721	37	76.8	+ 3.1	102	29	52	21	36	0.61	− 3.64	0.38	0	5	23	6	2	s.	C. Schadt.
Ames	Story	926	37	76.4	+ 2.1	104	29	51	21	38	1.95	− 2.49	1.20	0	3	19	11	1	sw.	Iowa State College.
Baxter	Jasper	998	13	75.4	+ 2.2	103	29	52	21	33	0.82	− 4.22	0.44	0	7	27	3	1	sw.	W. R. Vandike.
Belle Plaine	Benton	886	23	76.4	+ 3.6	102	29	50	22	38	0.36	− 4.05	0.14	0	3	16	13	2	sw.	O. C. Burrows.
Belmond	Wright	1,184	3	73.8	.....	99	16	49	21	35	2.60	.....	0.97	0	5	8	23	0	s.	Geo. P. Hardwick.
Bloomfield	Davis	881	6	79.9	.....	107	29	55	21	35	0.41	.....	0.22	0	3	29	0	2	nw.	Albert Power.
Bonaparte	Van Buren	.....	22	78.5	+ 3.0	106	29	53	21	34	0.52	− 3.21	0.47	0	2	.....	.....	.....	.....	B. R. Vale.
Boone	Boone	1,134	8	77.0	.....	104	29	52	21	37	1.99	.....	1.09	0	5	23	5	3	s.	C. F. Henning.
Britt	Hancock	1,236	16	73.0	+ 1.2	97	30	50	21†	32	4.26	− 0.17	1.95	0	7	24	5	2	s.	L. M. Goodman.
Burlington	Des Moines	544	17	.....	.....	.....	.....	.....	.....	.....	0.18	− 3.44	0.12	0	3	25	1	5	sw.	Max. E. Poppe, jr.
Carroll	Carroll	1,265	23	75.0	+ 2.0	98	29†	51	10†	36	2.70	− 1.31	1.15	0	5	27	2	2	nw.	Mrs. Jos. J. Wolfe.
Cedar Rapids	Linn	733	31	78.0	+ 3.3	106	30	53	12	39	0.46	− 3.58	0.26	0	4	22	5	4	s.	R. S. Toogood.
Charles City	Floyd	1,015	22	72.5	− 1.0	100	30	50	21	33	2.81	− 0.77	1.04	0	11	8	17	6	se.	U. S. Weather Bureau.
Clear Lake	Cerro Gordo	1,241	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Oscar Stevens.
Clinton	Clinton	593	46	77.6	+ 3.8	106	30	51	11	36	1.79	− 2.41	0.74	0	7	19	11	1	sw.	A. E. Reid.
Columbus Junction	Louisa	595	12	78.2	+ 2.6	103	29	55	21†	30	0.34	− 3.67	0.22	0	3	28	3	0	sw.	J. B. Johnston.
Davenport	Scott	580	42	78.1	+ 2.7	102	29	54	11	33	0.18	− 3.37	0.10	0	4	19	9	3	sw.	U. S. Weather Bureau.
Decorah	Winneshiek	875	20	.....	.....	.....	.....	53	21†	.....	4.67	+ 0.95	1.45	0	9	.....	.....	.....	.....	F. H. Baker.
Delaware	Delaware	1,083	22	73.8	+ 1.9	100	30	51	11	34	1.40	− 2.75	0.62	0	4	16	14	1	se.	Nettie E. Ball.
Des Moines	Polk	861	35	78.2	+ 2.7	101	29	56	21	30	1.05	− 2.81	0.80	0	5	18	9	4	sw.	U. S. Weather Bureau.
Dubuque	Dubuque	639	40	75.0	+ 0.3	100	30	55	11	31	2.31	− 1.99	1.09	0	7	14	12	5	s.	Do.
Earlham	Madison	.....	11	76.6	+ 6.6	102	29	48	21	37	1.66	− 3.18	1.33	0	3	26	5	0	sw.	George Phillips.
Elkader	Clayton	727	34	.....	.....	.....	.....	.....	.....	.....	3.05	− 1.63	1.65	0	5	23	7	1	se.	Chas. Reinecke.
Elma	Howard	1,182	3	71.4	.....	97	30	47	20	34	3.93	.....	1.52	0	8	9	22	0	nw.	H. A. Moore.
Estherville	Emmet	1,298	18	72.0	+ 0.9	98	30	50	21†	35	3.65	− 0.93	1.25	0	8	16	15	0	s.	A. O. Peterson.
Fairfield	Jefferson	780	29	.....	.....	102	29	.....	.....	.....	0.06	− 3.93	0.06	0	1	25	0	6	sw.	R. M. McKenzie.
Fayette	Fayette	1,003	23	72.7	− 0.4	99	30	50	10†	34	3.43	− 0.66	1.64	0	7	28	2	1	nw.	R. Z. Latimer.
Forest City	Winnebago	1,226	19	73.4	+ 1.4	98	29†	53	24	38	3.53	− 0.15	1.26	0	8	24	5	2	sw.	J. A. Peters.
Fort Dodge	Webster	1,126	13	76.0	+ 3.5	101	30	51	21	36	2.37	− 1.66	1.00	0	4	.....	.....	.....	sw.	J. F. Monk.
Fort Madison	Lee	516	64	.....	.....	.....	.....	.....	.....	.....	T.	− 3.96	T.	0	0	10	15	6	sw.	Miss L. A. McCready.
Gilman	Marshall	1,052	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. L. Wylie.
Grand Meadow	Clayton	1,180	22	71.4	+ 0.9	93	30	53	10	30	3.80	− 0.94	1.72	0	11	6	23	2	nw.	F. L. Williams.
Grinnell	Poweshiek	1,023	21	77.2	+ 4.0	105	29	53	21	37	0.47	− 4.48	0.33	0	3	26	3	2	sw.	D. W. Brainard.
Grundy Center	Grundy	976	22	76.6	+ 4.4	102	30	50	21	36	1.91	− 2.64	0.92	0	3	25	5	1	n.	J. B. Calderwood.
Guthrie Center	Guthrie	1,077	18	77.4	+ 4.0	104	16	50	21	35	1.71	− 3.11	0.90	0	4	23	6	2	sw.	D. G. Beardsley.
Hampton	Franklin	1,155	23	75.7	+ 3.3	101	29	54	21†	36	2.34	− 2.49	1.05	0	5	11	18	2	se.	E. C. Grenelle.
Humboldt	Humboldt	1,095	25	75.4	+ 2.5	101	30	46	10†	40	2.57	− 1.37	1.05	0	9	24	6	1	n.	J. P. Peterson.
Independence	Buchanan	921	49	75.0	+ 2.1	100	29†	51	21	33	1.84	− 2.75	0.65	0	5	25	4	2	se.	R. E. Dudley.
Indianola	Warren	969	22	78.2	+ 3.5	102	29	56	10†	30	0.09	− 4.17	0.05	0	2	16	5	10	sw.	Prof. J. L. Tilton.
Iowa City	Johnson	683	53	76.3	+ 2.1	102	16†	50	21	39	0.39	− 4.09	0.23	0	4	19	8	4	sw.	Prof. A. G. Smith.
Iowa Falls	Hardin	1,170	20	73.1	+ 1.1	98	30	47	21	36	2.07	− 2.03	0.87	0	4	26	0	5	sw.	J. B. Parmelee.
Jefferson	Greene	1,052	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ora M. Hall.
Keokuk	Lee	614	42	79.7	+ 2.7	102	29	58	25	28	0.09	− 3.94	0.04	0	4	19	10	2	s.	U. S. Weather Bureau.
Keosauqua	Van Buren	644	21	78.6	+ 2.7	106	29	50	21†	42	0.06	− 4.07	0.05	0	3	12	17	2	.....	J. H. Landes.
Knoxville	Marion	920	18	78.7	+ 3.2	101	29	55	21	33	0.20	− 4.26	0.20	0	1	19	8	4	sw.	Casey and Belville.
Lacona	Warren	.....	14	.....	.....	.....	.....	.....	.....	.....	0.05	− 4.43	0.02	0	4	12	18	1	.....	J. B. Alter.
Lansing	Allamakee	632	8	72.9	.....	96	30	50	25	31	6.23	.....	1.70	0	9	23	1	7	w.	Chas. R. Serene.
Le Claire	Scott	576	13	.....	.....	.....	.....	.....	.....	.....	0.83	− 3.79	0.45	0	4	.....	.....	.....	.....	Miss M. T. Disney.
Marshalltown	Marshall	947	21	77.6	+ 4.4	104	29†	51	21	37	1.10	− 3.61	0.44	0	5	27	2	2	se.	Jacob Eige.
Mason City	Cerro Gordo	1,132	16	73.8	+ 2.3	99	30	48	10	38	2.61	− 1.45	1.12	0	7	22	9	0	e.	Dr. Roy Desart.
Monroe	Jasper	922	1	77.9	.....	104	29†	55	10†	34	0.31	.....	0.21	0	2	27	2	2	s.	J. A. Dibel.
Mount Pleasant	Henry	729	32	77.6	+ 2.0	101	29†	50	11	40	0.18	− 3.65	0.15	0	2	19	12	0	s.	J. W. Edwards.
Muscatine	Muscatine	554	53	.....	.....	.....	.....	.....	.....	.....	0.29	− 3.62	0.14	0	4	.....	.....	.....	.....	William Molis.
New Hampton	Chickasaw	1,169	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A. F. Kemman.
Nora Springs	Floyd	1,064	.....	74.8	.....	101	29†	50	21	38	3.34	.....	1.33	0	7	24	6	1	s.	Arthur Betts.
Northwood	Worth	1,122	17	70.4	− 0.8	95	30	51	24	31	2.96	− 0.96	1.58	0	7	.....	.....	.....	nw.	Chas. H. Dwelle.
Olin	Jones	760	15	.....	.....	100	29†	.....	.....	.....	1.15	− 2.82	0.50	0	4	18	13	0	sw.	Dr. F. W. Port.
Osage	Mitchell	1,184	26	73.0	+ 2.5	97	29	51	9	41	3.41	− 0.31	1.40	0	6	21	7	3	s.	Lester Coonradt.
Oskaloosa	Mahaska	843	37	77.8	+ 3.4	105	29	52	21	36	0.06	− 3.91	0.06	0	1	26	2	3	sw.	Joseph Boyd.
Ottumwa	Wapello	649	18	.....	.....	.....	.....	.....	.....	.....	T.	− 4.13	T.	0	0	24	5	2	se.	Chester Potter.
Pella	Marion	877	11	77.4	+ 1.4	108	29	48	20	38	0.25	− 4.11	0.19	0	2	28	3	0	s.	J. H. Ver Steeg.
Perry	Dallas	975	12	78.5	+ 3.9	105	29	52	10†	37	1.11	− 3.50	0.64	0	5	20	10	1	s.	S. J. Brumfield.
Pocahontas	Pocahontas	1,248	9	74.0	.....	101	30	49	10†	37	2.13	.....	0.90	0	6	27	3	1	s.	F. E. Hronek.
Rockwell City	Calhoun	.....	17	75.8	+ 2.4	99	29†	52	22	34	2.60	− 0.92	1.50	0	2	30	1	0	.....	C. M. Randall.
Sac City	Sac	1,278	37	75.1	+ 2.4	99	30	50	9	36	2.10	− 1.93	1.01	0	4	19	12	0	sw.	E. N. Bally.
St. Charles	Madison	1,070	12	77.9	+ 3.8	102	29	56	21	32	0.13	− 5.66	0.08	0	3	26	5	0	sw.	R. D. Minard.
Sigourney	Keokuk	877	17	78.2	+ 2.4	102	29	54	21	32	0.96	− 3.34	0.70	0	4	4	27	0	s.	J. T. Parker.
Stockport	Van Buren	745	11	77.6	.....	105	29	48	21	37	0.29	− 4.30	0.25	0	4	27	4	0	s.	C. L. Beswick.
Storm Lake	Buena Vista	1,440	24	75.6	+ 3.7	97	30	53	24	32	1.81	− 2.49	0.70	0	5	24	7	0	s.	Geo. H. Fracker.
Tipton	Cedar	867	14	79.2	+ 4.4	102	29	57	11	31	0.61	− 3.61	0.39	0	3	22	9	0	s.	F. K. Gregg.
Toledo	Tama	856	19	76.3	+ 2.7	102	29	50	21	36	0.54	− 3.52	0.32	0	2	29	2	0	se.	I. F. Giger.
Washington	Washington	769	31	77.9	+ 2.4	104	29	54	21	37	0.13	− 3.49	0.10	0	3	19	8	4	sw.	Wm. A. Cook.
Waterloo	Black Hawk	862	30	75.0	+ 1.5	99	30	54	10†	34	2.10	− 2.30	0.83	0	4	27	2	2	e.	Ralph B. Slippy.
Waukee	Dallas	1,039	10	76.8	+ 3.9	100	29†	52	21	33	2.41	− 3.96	1.20	0	3	30	0	1	sw.	Samuel F. Foft.
Wavely	Bremer	948	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Earl C. Moore.
Webster City	Hamilton	.....	8	76.4	+ 3.3	102	30	47	21	41	2.92	− 1.30	1.12	0	6	18	11	2	se.	C. D. Carpenter.
West Bend	Palo Alto	1,197	20	74.0	+ 1.9	98	29	50	10†	38	2.55	− 1.23	1.25	0	5	24	5	2	s.	Phil Dorweiler.
Whitten	Hardin	1,036	16	75.4	+ 2.1	99	30	51	21	32	2.38	− 1.96	1.18	0	4	24	6	1	se.	Dr. F. P. Butler.
Winterset	Madison	1.129	22	78.6	+ 4.6	102	29	53	21	33	0.63	− 5.05	0 60	0	2	24	4	3	s.	Dr. R. S. Cooper.
Missouri.																				
Gorin	Scotland	700	28	.....	.....	.....	.....	.....	.....	.....	0.22	− 4.37	0.13	0	2	15	12	4	sw.	J. W. Pulliam.
Hannibal	Marion	534	22	80.6	+ 3.2	102	17	58	22	30	0.27	− 3.48	0 12	0	5	16	11	4	sw.	U. S. Weather Bureau.
Louisiana	Pike	500	36	78.5	+ 2.5	100	16†	50	22	36	1.54	− 1.99	0 52	0	7	19	10	2	se.	J. T. Farrel.
Macon	Macon	881	1	80.7	.....	103	29	59	12†	32	1.30	.....	0.37	0	6	18	10	3	se.	John A. Cook.
Mexico	Audrain	797	36	81.2	+ 4.3	106	17	57	21	40	2.43	− 1.62	1.41	0	9	23	0	8	sw.	J. F. Llewellyn.
Palmyra	Marion	652	2	82.9	.....	105	29	60	31	40	0.35	.....	0.21	0	4	18	10	3	sw.	W. B. Markell.
Steffenville	Lewis	576	21	82.5	+ 5.8	107	29	55	21†	40	0.15	− 4.94	0.15	0	1	19	11	1	sw.	Frank Hall.
Sublett	Adair	1.000	34	79.2	+ 3.4	102	30	48	17	50	2.50	− 1.89	2.00	0	2	16[a]	13[a]	1[a]	sw.	Lewis Spriggs.
Vandalia	Audrain	776	3	82.4	.....	105	29	59	21	30	1.27	.....	0.63	0	4	22	5	4	s.	C. B. Ellis.
Warrenton	Warren	865	24	80.2	+ 2.9	104	18	58	21†	33	3.87	− 0.14	0.94	0	9	12	10	9	s.	Prof. J. H. Frick.

TABLE 1.—*Climatological data for July, 1913. District No. 5*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Precipitation, in inches. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Sky. Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	Observers.
Indiana.																				
Collegeville	Jasper	.....	14	76.2	+ 2.3	105	30	45	25	42	3.52	− 0.81	1.44	0	3	10	20	1	sw.	Otto Miller.
Knox	Starke	716	8	73.8	.....	94	30	49	25	32	4.33	.....	1.03	0	11	20	10	1	s.	W. R. R. Tatman.
Laporte	Laporte	810	17	72.4	− 1.3	96	30	46	26	41	3.76	+ 0.36	1.31	0	6	20	8	3	sw.	Wm. M. Walton, jr.
Plymouth	Marshall	790	10	72.4	.....	93	30	48	22†	33	4.29	.....	0.99	0	11	18	12	1	sw.	J. W. Siders.
South Bend	St. Joseph	726	20	74.4	+ 1.0	96	30	49	25	33	3.10	− 0.37	0.88	0	9	15	15	1	nw.	Henry H. Swaim.
Illinois.																				
Aledo	Mercer	738	13	78.0	+ 3.6	103	29	54	11†	33	0.10	− 2.47	0.05	0	3	5	25	1	nw.	William B. Frew.
Alexander	Morgan	670	20	78.8	+ 2.5	104	29	51	21	36	1.08	− 2.50	0.42	0	4	16	14	1	w.	George H. Hall.
Antioch	Lake	861	12	72.6	+ 0.2	98	30	42	11	40	3.45	− 0.34	1.00	0	7	17	10	4	sw.	J. C. James.
Astoria	Fulton	650	14	77.4	+ 3.2	102	30	50	21†	39	0.42	− 2.76	0.22	0	4	19	10	2	s.	Edward V. Bohl.
Aurora	Kane	678	34	74.0	+ 0.9	98	29†	47	11†	38	3.58	+ 0.09	1.60	0	6	26	3	2	s.	Miss Alice Holden.
Beardstown	Cass	448	.....	.....	.....	.....	.....	.....	.....	.....	0.43	− 2.84	0.23	0	.....	.....	.....	.....	.....	Mrs. L. M. Rice.
Bement	Piatt	700	6	.....	.....	.....	.....	.....	.....	.....	0.37	.....	0.28	0	3	21	10	0	nw.	Eugene Evans.
Bloomington	McLean	840	22	78.0	+ 2.8	107	30	48	25	42	1.27	− 2.44	0.78	0	4	27	1	3	s.	Prof. H. N. Pearce.
Cairo	Alexander	359	41	80.4	+ 1.8	99	18	65	22	27	4.19	+ 0.74	2.56	0	9	17	7	7	sw.	U. S. Weather Bureau.
Camp Point	Adams	732	0	.....	.....	.....	.....	.....	.....	.....	1.36	.....	0.89	0	6	14	16	1	sw.	Capt. D. M. Morris.
Carbondale	Jackson	412	8	80.6	.....	104	18	52	22	41	3.35	.....	1.64	0	10	22	8	1	sw.	State Normal University.
Carlinville	Macoupin	663	23	80.8	+ 4.1	105	17†	52	22	38	1.84	− 1.93	0.66	0	6	12	14	5	sw.	Dr. J. D. Conley.
Carlyle	Clinton	470	28	.....	.....	.....	.....	.....	.....	.....	0.89	− 2.85	0.35	0	4	.....	.....	.....	.....	Harvey O. Jones.
Chester	Randolph	380	21	.....	.....	.....	.....	.....	.....	.....	3.33	− 1.12	1.16	0	.....	.....	.....	.....	.....	Charles S. Gollon.
Clinton	De Witt	727	3	78.3	.....	104	30	49	25	39	2.02	.....	1.23	0	7	22	6	3	sw.	J. Frank Ziegler.
Cobden	Union	656	30	81.1	+ 2.4	102	5	56	21†	37	3.77	− 0.49	1.45	0	7	15	15	1	sw.	John Buck.
Dakota	Stephenson	929	8	73.5	.....	102	30	46	11	36	4.50	.....	1.08	0	11	9	21	1	sw.	Elmer G. Smith.
Decatur	Macon	685	22	79.4	+ 3.5	105	30	53	21	37	1.40	− 1.83	1.20	0	7	27	0	4	sw.	Prof. J. H. Coonradt.
Dixon	Lee	725	23	76.8	+ 2.6	102	30	50	25	37	1.47	− 2.32	0.60	0	6	24	2	5	.....	H. U. Bardwell.
Du Quoin	Perry	459	25	80.6	+ 2.2	104	18	52	22	41	3.25	− 1.02	0.92	0	9	20	11	0	sw.	G. H. Knetsger.
Dwight	Livingston	600	20	77.0	+ 1.6	106	30	47	25	40	1.61	− 1.54	1.18	0	6	18	9	4	sw.	Edward O. Welsh.
East St Louis	St. Clair	481	2	.....	.....	.....	.....	.....	.....	.....	3.62	.....	1.84	0	7	.....	.....	.....	.....	W. McK. Brown.
Edwardsville	Madison	554	14	.....	.....	.....	.....	.....	.....	.....	3.95	+ 0.55	1.52	0	8	.....	.....	.....	.....	W. H. Morgan.
Elgin	Kane	716	6	74.6	.....	98	30	47	11	37	.....	.....	.....	0	7	11	18	2	nw.	Elgin Observatory.
Ewing	Franklin	449	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ewing College.
Fairview	Fulton	733	2	.....	.....	.....	.....	.....	.....	.....	0.10	.....	0.10	0	1	.....	.....	.....	.....	Abram Wilson.
Galva	Henry	842	21	77.6	+ 3.0	105	30	51	11	39	0.66	− 3.00	0.63	0	2	24	5	2	sw.	Prof. F. U. White.
Grafton	Jersey	422	20	.....	.....	.....	.....	.....	.....	.....	1.92	− 1.98	1.10	0	.....	.....	.....	.....	.....	R. C. Goodrich.
Greenville	Bond	635	35	80.2	+ 2.7	103	18†	56	21†	40	1.86	− 1.75	0.70	0	8	27	3	1	sw.	H. W. Riedemann.
Griggsville	Pike	650	28	80.1	+ 3.4	104	29	56	21	32	0.64	− 2.68	0.28	0	5	21	8	2	sw.	G. F. Kneeland.
Havana	Mason	475	21	79.6	+ 2.2	104	17	51	25	39	1.46	− 2.50	0.90	0	5	22	6	3	s.	L. L. Eutenener.
Henry	Marshall	500	25	78.0[e]	+ 3.3	104	29†	49[c]	25	36[c]	0.51	− 3.00	0.30	0	4	22	5	4	s.	Dr. F. A. Powell.
Hillsboro	Montgomery	675	19	80.7	+ 3.9	105	30	55	21	36	1.96	− 1.83	0.98	0	5	.....	.....	.....	.....	Ira L. Woodward.
Joliet	Will	609	22	74.6	+ 0.8	101	29†	45	7†	43	3.48	+ 0.06	1.75	0	9	22	8	1	sw.	F. M. Muhlig.
Kishwaukee	Winnebago	730	25	73.6	+ 0.4	100	30	45	11	38	4.77	+ 1.19	1.06	0	14	21	10	0	sw.	George Stevens.
La Grange	Cook	657	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. F. E. Sanford.
La Harpe	Hancock	698	34	78.0	+ 1.6	107	30	50	21	40	0.23	− 4.22	0.14	0	3	26	5	0	sw.	George E. Campbell.
Lanark	Carroll	883	24	74.4	+ 1.7	103	30	46	11†	38	2.08	− 2.02	0.55	0	10	27	4	0	sw.	M. N. Wertz.
La Salle	La Salle	536	8	76.8	+ 1.5	103	30	49	11	39	1.42	− 1.85	0.91	0	7	13	16	2	sw.	U. S. Weather Bureau.
Lincoln	Logan	575	25	79.2	+ 3.2	104	30	48	25	39	1.01	− 1.96	0.55	0	5	16	14	1	s.	Prof. C. S. Oglevee.
Macomb	McDonough	700	9	.....	.....	.....	.....	.....	.....	.....	0.16	.....	0.14	0	2	.....	.....	.....	.....	State Normal University.
Manteno	Kankakee	711	2	.....	.....	.....	.....	.....	.....	.....	2.91	.....	1.63	0	5	24	5	2	sw.	J. F. Schmetzer.
Martinton	Iroquois	633	26	77.2	+ 2.9	105	29	44	25	43	2.19	− 1.07	0.80	0	5	18	9	4	.....	Joseph H. Peltier.
Mascoutah	St. Clair	425	23	81.3[d]	+ 3.1	102[c]	31	60[d]	22	32[d]	2.13	− 1.25	0.58	0	8	16	14	1	s.	Dr. R. F. Lischer.
Minonk	Woodford	745	20	77.6	+ 2.5	106	29†	48	25	41	1.95	− 1.03	1.10	0	7	21	8	2	sw.	John C. Danforth.
Monmouth	Warren	784	21	78.6	+ 3.6	106[a]	30	52	21	37[a]	0.05	− 4.04	0.05	0	1	22	4	5	w.	Dr. J. C. Hutchison.
Morris	Grundy	518	2	76.6	.....	104	30	48	24	39	2.79	.....	1.03	0	7	19	11	1	sw.	E. G. Cryder.
Morrison	Whiteside	685	19	76.2	+ 2.7	106	30	49	11†	39	1.59	− 3.02	0.50	0	8	23	7	1	sw.	S. A. Maxwell.
Morrisonville	Christian	626	14	78.5	+ 2.9	101	29	54	25	32	3.60	− 0.24	2.84	0	4	18	11	2	sw.	J. D. Lowis.
Mount Vernon	Jefferson	511	19	80.3	+ 2.4	103	18	56	22	35	1.44	− 2.57	0.51	0	5	20	5	6	s.	Theodore P. Stelle.
Nashville	Washington	503	13	.....	.....	.....	.....	.....	.....	.....	1.32	− 3.02	0.50	0	10	.....	.....	.....	.....	H. M. Potter.
Oregon	Ogle	702	4	74.5	.....	101	30	45	11	40	2.96	.....	0.95	0	5	19	10	2	s.	Samuel Ray.
Ottawa	La Salle	500	27	77.6	+ 2.3	108	30	49	11	39	2.17	− 1.54	1.00	0	7	17	3	11	sw.	Miss Maude Harris.
Pana	Christian	692	27	78.4	+ 2.0	102	30	55	25	32	1.48	− 2.34	0.57	0	3	23	4	4	.....	Dr. G. N. Gilbert.
Paw Paw	Lee	930	1	.....	.....	.....	.....	.....	.....	.....	2.72	.....	1.36	0	8	.....	.....	.....	.....	A. C. McBride.
Peoria	Peoria	609	57	78.5	+ 3.1	103	29	52	21	36	0.46	− 2.51	0.28	0	6	18	11	2	s.	U. S. Weather Bureau.
Pontiac	Livingston	546	11	78.4	+ 3.0	106	30	51	11†	42	1.13	− 1.96	0.56	0	5	10	17	4	sw.	George Butterworth.
Quincy	Adams	481	7	81.8	.....	105	29	61	21	30	0.79	.....	0.36	0	6	.....	.....	.....	.....	Fred J. Brinkoetter.
Riley	McHenry	956	54	72.7[a]	+ 1.0	96[a]	29	48[a]	11	34[a]	6.55	+ 3.01	2.55	0	12	15	14	2	sw.	John West James.
Roberts	Ford	774	2	.....	.....	.....	.....	.....	.....	.....	1.66	.....	0.71	0	5	24	6	1	sw.	R. E. Bradbury.
Rockford	Winnebago	763	21	74.3	+ 0.5	101	30	48	11	35	5.85	+ 2.13	2.65	0	10	25	3	3	.....	Dr. John R. Porter.
Rushville	Schuyler	670	22	79.6	+ 3.7	102	17†	57	21	31	0.58	− 3.14	0.48	0	4	27	4	0	sw.	H. F. Dyson.
St. Charles	Kane	700	18	74.6	+ 0.9	101	29	48	11	38	4.33	+ 0.59	2.20	0	9	20	11	0	sw.	Dr. Wm. H. Bishop.
St. Peter	Fayette	500	11	80.2	+ 2.4	103	17†	55	22†	35	2.43	− 1.70	1.07	0	6	10	19	2	sw.	M. L. Lansford.
Sparta	Randolph	538	27	80.6	+ 3.2	101	16†	54	22	37	3.32	− 0.12	1.23	0	6	23	7	1	nw.	James A. Caldwell.
Springfield	Sangamon	644	33	80.0	+ 3.5	103	29	56	25	34	1.66	− 1.24	1.32	0	6	15	13	3	sw.	U. S. Weather Bureau.
Streator	La Salle	626	20	78.0	+ 2.9	108	30	49	11†	43	1.59	− 2.06	0.79	0	6	24	4	3	sw.	Miss Lora Sweetser.
Sullivan	Moultrie	530	13	81.1	+ 4.8	106	30	52	25	39	0.30	− 2.26	0.12	0	5	21	10	0	sw.	C. A. Corbin.
Sycamore	De Kalb	855	33	74.2	+ 2.0	101	30	41	25	42	4.09	+ 0.42	1.91	0	8	24	6	1	.....	George E. Valentine.
Tiskilwa	Bureau	798	29	.....	.....	.....	.....	.....	.....	.....	0.34	− 3.55	0.10	0	5	.....	.....	.....	.....	F. I. Smueker.
Walnut	.....do	717	22	77.3	+ 1.7	105	30	49	11	40	1.27	− 2.52	0.57	0	7	19	11	1	s.	O. C. Nussle.
Warsaw	Hancock	501	15	.....	.....	.....	.....	.....	.....	.....	0.11	− 4.43	0.11	0	1	.....	.....	.....	.....	W. R. Kirkbride.
Waterloo	Monroe	719	2	.....	.....	.....	.....	.....	.....	.....	3.74	.....	0.90	0	7	.....	.....	.....	.....	Prof. J. E. Raibourn.
White Hall	Greene	573	5	80.2	.....	108	17	52	22	39	1.26	.....	0.38	0	6	24	6	1	sw.	Frank Dillman.
Windsor	Shelby	681	14	80.2	+ 4.3	108	30	50[a]	21	39[a]	0.92	− 3.10	0.71	0	3	12	17	2	sw.	Herbert Rose.
Winnebago	Winnebago	900	26	74.9	+ 1.9	103	30	46	11	38	4.89	+ 1.06	1.84	0	11	25	3	3	sw.	Frank Osborn.
Yorkville	Kendall	584	26	74.8	+ 1.8	101	29	45	11†	42	3.42	− 0.09	0.95	0	7	25	5	1	w.	Herman A. Grimwood.

[a], [b], [c], etc., indicate respectively 1, 2, 3, etc., days missing from the record.
* * Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
† Also on other dates.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for July, 1913. District No. 5, Upper Mississippi Valley.*

Stations.	Watershed.	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.		.48						.62	.13	.21	.26		.10						.40								.38		2.58
Bottineau	Mouse			.01		.04	.14				T.	.72	.11	.02		.09	.22						.02				.01	.04			.13		1.55
Bowbells	do			.13		.44					.13	.15	.27		.10		.82						.05								.03		2.12
Cando	Sheyenne		.39		.20	.03					.40	T.	.05		.02		2.00										T.		.08				3.17
Crosby	Mouse		T.		.64	T.					.10	.18			T.		.46														T.		1.38
Devils Lake	Sheyenne	.01	.07		.37	.13		.01			.15	T.	.03		.13	T.	.09	.13				.34					.01						1.47
Donnybrook	Mouse		.34		.51						.33	.06			.14	.15						.15					T.			.13			1.81
Dunseith	do		T.		.01	.09					.93	.04	.07			.01	1.69						.01								T.		2.85
Fessenden	James			.20	T.	.30						.32	.02	T.	.32		.18	.22	T.				.07								.03		1.66
Forman	Sheyenne		.25		.90				T.		.50	.15				T.	.25												T.		.40		2.45
Grafton	Red			.11		.18						.82		.02	.07		.03		.64				.15										2.02
Hannah	Pembina				.16			T.			.48		.03						.51												.27		1.45
Hansboro	Red	.05	.01		.02						.54	.08	.12		.01	.01	.40											.04		.20			1.48
Hillsboro	do		.07	.02	.04	.54	.01				.14	.15	.02		.07		1.08	T.					.08				T.		T.				2.22
Lakota	Sheyenne	T.	.18	.03	.32	T.		T.			.32	.02	.10		.04	T.	.04	.05		T.		.67		T.		T.			T.				1.77
Langdon	Pembina			.18		.44						.27	T.	.02			.69			.06			.22								T.		1.88
Larimore	Red			.26		.20						1.18	.03	.01	.18		.24		.08				.12							.04			2.34
Lisbon	Sheyenne			.25	T.	.93						.45	.05		T.		.25	T.	.02				T.							.08	.10		2.13
McKinney	Mouse			.10	.75	T.						.40					1.90				T.	T.											3.15
McLeod	Sheyenne		.23		1.79						.40	.44					.13						.98							.16	.70		4.83
Manfred	do		.26		.34						.30	.05	T.		.16		.30	.18				.08											1.67
Mayville	Red		.04	.06		.45					.13	.32			.37		.84	.13		.04			.18							.03			2.59
Minot	Mouse	T.	T.	.09		.39					.02	.76	T.		.14	.03	.19						T.								.38		2.00
Minto	Red		.19		.25						.95	.03	.05		.08		.12	.65				.13	.03						.10				2.58
Oriska	Sheyenne	.08	.10	T.	.08	.01	.11				.63				.21		.15	.02					.32				T.		.06				1.77
Park River	Red		.10	.06	.20	.05					1.05	.02	.01		.07		.08	.07		.02		T.	.02								.02		1.77
Pembina	do			.04		.10	T.		.10			.60	.10	T.	T.		T.			.01								T.			T.		0.95
Power	Sheyenne		.17	1.50							*	.70			.10		.13	T.					1.12						T.	T.			3.72
Towner	Mouse		.09		.06	.02					.67	T.	.05		.07	T.	.35					.83	.02										2.16
University	Red		.07	.09	.28	.01					.34	.75	.12		.18		.16	.07		.02		.41	.03				T.		.06	.27			2.86
Wahpeton	do			.86	2.00							.21	.08				.45		.02				.79					.02					4.43
Westhope	Mouse		.15		.11						.50	.03	.05				.16					.05					.02				.06		1.13
Willow City	do				.04	.01					.70	.11	.04		.04	.03	.44					.05											1.46
Minnesota.																																		
Albert Lea	Mississippi					.70					.20	.90											T.	.22					1.10		.05		3.17
Alexandria ‖	do			.82	1.40	.87						.16	.66	T.	T.		1.86		T.				.03	.04			.14			T.			5.98
Angus	Red		.15		.63	.03		T.			.48	1.33	.04		.08		.27	.06		.03		.03	.09					T.	.09	.20			3.51
Bagley	do		.15		.95							2.50			.50		.15	.09				2.27					.23						6.84
Baudette	Rainy	T.	T.	.01		.90		.02	T.			.58	1.28	.06			1.27					.20						.16	.07	.02	.13		4.70
Beardsley	Minnesota			.22	.04	T.			T.		T.	.42			.10	.04	1.00	.13	T.	T.			.32			T.	T.		T.				2.27
Bemidji ‖	Mississippi		.15			1.25	.11	.12				.32	1.28	.15		.03		.15		.08	.18	.63	.61				.56			.09	.08		5.79
Bird Island	Minnesota	.04		.53	1.03	.96						1.31			.21		.27	.18					.30			.12				.05	.07	.37	5.44
Brainerd	Mississippi			.31	1.84	.32						1.06	.25			.05	.45						.57				.79	.62		.02		.47	6.75
Caledonia ‖	do		.12		1.25	1.70							1.49		1.65		.10							.70					T.	1.49		.43	8.93
Campbell ‖	Red			.85	.05	1.20						.20	.40		T.		.63						.70					.17					4.20
Cass Lake ‖	Mississippi		.21	T.		1.01	.08		.06			.31	1.72	.18	.14		.43		T.	T.			1.29				.10	.41	.08		.08		6.10
Collegeville	do			3.09	2.11	1.70						1.95				2.39	1.25	.11					.29				.84	.07	.08	1.00	T.	.28	15.16
Crookston ‖	Red			.16		.33						.55	1.63	.21	.30		.80		T.	T.			.24					.30		.08			4.60
Detroit ‖	do			.30	T.	1.80						1.00	.50	.08	T.		.25		.08				.10				.15	.05		T.	.20		4.51
Fairmont (near)	Minnesota	.51			.57							.89						T.				.24			.21	.01		.04			.35		2.82
Farmington	do	.34		.58	1.42	1.56			.02			.60	.10		.11	T.	.03	.02			T.		.09			T.	T.	.10		1.10	.06	.08	6.21
Fergus Falls	Red		1.00	.01	3.23	.01						.91	.08		.02	T.	.60		.15				.43				.03		.02		T.		6.49
Fort Ripley ‖	Mississippi			.33	.24	1.40						.17	2.13				.65						.32				.60					.42	6.26
Fosston	Red		.03	.07	.21	.03						.82	.71		.17		.14	.04		.02		.17	.28				.27			.04	.02		3.02
Glencoe	Mississippi				2.50							1.25			.25		1.00													.25		.15	5.40
Grand Meadow	do	.03			.15	.53			.10			1.52			T.	T.	T.	.03			.05		.03	.33		.03	T.	T.		1.83		T.	4.63
Gull Lake Dam	do			.25	.48	.66						1.26	.40		.01	.28	.48			.02	.09		.70				.65	.86		.01		.05	6.20
Hallock	Red		.01	.02	.15	.03	.01	.10			1.10	.40	.01					.40				.01					.05						2.29
Halstad ‖	do			.18		.36	.01					.50	.04	.04	.06		.47						.24							.10			2.00
Hinckley	St. Croix			.70	.57	1.44						2.00	.08			.23	.72			.20			.12				.45		T.	.51		.17	7.19
International Falls	Rainy					1.76			.48			1.50					1.30			.12		.05								T.	T.		5.21
Itasca State Park	Mississippi		.07	.02	.94	.54						1.90	.44	.02		.01	.17			.01		.17	.72				.02	.04	.01	.25	.87		6.20
Lake Crystal	Minnesota			.26	.60	.52						.73					.11							.12		.13				1.52		.59	4.58
Leech Lake Dam	Mississippi			.21	.34	1.52		.13				2.58	.22	.12		.17	.22			.10			.97				.19	.53			.01		7.31
Littlefork	Rainy	.01		.09		1.35	.01		.05			.78	.32			.15	1.00	.02		.02						.04			.03				3.87
Long Prairie	Mississippi			1.30	1.15	1.15						1.83				.10	.93								.25	.20							6.91
Lynd	Minnesota	.23			.70	1.92						1.01						.47		.04		T.			.40				.35		.06		5.18
Mankato ‖	do		.31	.17	.61	.41						.21	.63			.02	.03	.02	.02					.03			.14	.07		1.53	.05	.36	4.61
Malaca	Mississippi			.76	1.23	1.03							1.25				1.17			T.			.46				.80	.30	.03	1.50		.33	8.68
Milan	Minnesota			.95	1.04							.65			T.	T.	.70	.56		T.			.32			.05	.14		1.21				5.62
Minneapolis	Mississippi	T.	.82	.61	1.50	.02			T.			1.70			.09	1.33	.78	.03		T.			.03			.02		.11	.32		.01	.38	7.75
Montevideo ‖	Minnesota		T.	T.	2.85	.72				T.		.18	.64				.88	.05	.51					.46			.12	T.		.04			6.45
Moorhead	Red		.08		1.06	.02					.01	.22			.01		.14			.01		.58	.14				T.			.86	.07		3.26
Mora	St. Croix			.60	.52	1.10			.01			2.38	T.		T.	.24	.77	T.		T.			.35				.57	.22	T.	.60		.20	7.56
Morris	Minnesota	T.	.70	.20	.17							.90			.03	2.31	1.36	.06					.10			T.							5.83
New London	Mississippi		.22	.60	1.65							1.32			.06	.24	2.15						.03			T.	.11	1.52			.30	.42	8.62
New Richland	Minnesota	.21			.45	1.68						1.23					T.						.19			T.				1.02		.06	4.84
New Ulm ‖	do		.02	.16	1.56	.30						.54	.48			.04	.07	T.	T.					.04		.20		.54		.77	.07	.15	4.94
Osakis	Mississippi			1.04	.46	.81						1.12	T.		T.	.08	.89	.04					.06				.08		T.		T.		4.58
Park Rapids ‖	do			.35		2.80						.32	.88	.15	.01		.64	.01	.05		.03		.48	.01			.26	.13		.03	.34		6.49
Pierz	do			.70	.40	1.72							.12			.09	.80						.65				.75					.55	5.78
Pine River Dam	do			.61	.24	2.88						1.42	.15			.63	.70						.25				.60	.40				.20	8.08
Pokegama Falls	do			.17	.09	1.54		.09	.04			1.60	.93	.21		1.10				.08			.76				.73	.42			.19		7.95
Red Lake	Red				.65			.17													1.25	1.60											3.67
Red Wing ‖	Mississippi		.06	.16	.66	1.52							.62		.04	.02	T.	.04	T.		T.			.06			.22	.02		.86		T.	4.28
Reeds Landing ‖	do		.10	.23	2.00	1.10							.86		.10	.55	.05							.10			.06			1.40			6.55
Rochester ‖	do		T.		1.40	.75							.92		1.15									.11			.15			.62			5.10
Roseau	Red			.10	.10	.36		.75	.02			.57	.39	.27			.05	.02		.07	.02	.25						.57		.02			3.56
St. Charles	Mississippi					.90			.09			1.47			.24								T.	.10		T.	.04		1.67				4.51
St. Cloud	do			1.84	1.04	1.03						1.11	.04			1.17	1.02	.12					.10							1.81		.21	9.49
St. Paul	do	T.	.47	.49	1.69	.02			T.			.85	T.	T.	.13	.72	.91	.02					.03			.01		.08	.38		.08	.23	6.11
St. Peter	Minnesota	.10		.15	1.25	.60						.80	.10		.20								.10			.05		.08		1.40		.25	5.08
Sandy Lake Dam	Mississippi			.39	.42	.91						1.62	.31			.36	.46			.13			.20				.84	.04				.29	5.97
State Sanatorium	do			.40	1.23							2.10	.40	.17	1.00	.35							.62				.33				.09		6.69
Stillwater ‖	St. Croix		T.	1.82	.60	1.68						.02	.46		.07	.16	1.94	T.	.04					.08			.06			.51	.03	T.	7.47
Taylors Falls	do			2.00	.69	1.55						1.00				.22	.65	.10					.20				.35			1.04		.18	7.98
Thief River Falls ‖	Red		.19		.65		.04				.45	.28			.11		.75					T.	.42							.02			2.91
Tracy	Minnesota	T.		.17	1.25	1.04						1.29			.02		.10	.13					T.			.67		T.		.70	T.	.25	5.62
Warren	Red		.14	.09	.15	.31					.15	.97						.21				.04					.04		.06				2.16

TABLE 2.—*Daily precipitation for July, 1913. District No. 5*—Continued.

Stations.	Watershed.	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.
***Minnesota*—Contd.**																																	
Warroad	Rainy		.02		.85			.20	.03		.95	1.31	.10			.10	.16	.10	.11	.12		.20					.02				.02		4.29
Winnebago ‖	Minnesota		.34			.71						.30	.50					T.	T.	T.				.12	.01		T.	T.		.80		.15	2.93
Winnibigoshish	Mississippi		.18			1.55		.05				1.92	.58	.35	.08	.82	.68				.10		.65					.04	.52		.08		7.60
Winona	do				1.44	1.86			T.			1.01						T.			.09		.12	.48		T.	T.	T.		1.10		.05	6.15
Worthington ‖	Des Moines				.05	.18						.80	.13				.04		.04	.02				.18		.24	.20					.46	2.34
Zumbrota	Mississippi	.06	.07	.25	.41	.47						1.00	T.		.40	T.	T.						.03			T.	.03	T.		1.00		.03	3.75
South Dakota.																																	
Milbank ‖	Minnesota		T.	T.	.04	.50						.18	.39				1.20	.02	.50					.25		T.	T.	T.		.03			3.11
Sisseton ‖	do			.30	.05		.30					.22	.14	.92	.02	1.02	.06					.20											3.23
Wisconsin.																																	
Antigo ‖	Wisconsin		.64		.15	1.00				.91		T.	1.18	.10				.68			.15			.42				2.84		.27			8.34
Barron	Chippewa	T.		1.59	.88	2.04						.81				.50	.93	.50		.01			.40				.18			.80		.09	8.73
Beloit	Rock					.72			1.53			T.	.16		1.95	.27	.22		.10	.05				.33						.07		.26	5.66
Big St. Germain Dam	Wisconsin			1.19	.22	1.03			.48			.09	1.37	.17			.30			.23			.15				.33	.62		.41			6.59
Brodhead	Rock					.91			3.90			.11	.57		1.78	.12	1.11		.05					.55						.25		.38	9.73
Burnett	do				T.	.07			.33			.04	.67	T.	.90	T.	.18	.02		.25	.02			.72						.39		.97	4.56
Cornell	Chippewa	.30		.66	*	2.85			.42			.57	.04			.24	.98	.02		.25			.05				.40			.43			7.21
Cottage Grove	Rock	.10			T.	.12			1.45			.15	1.08		1.18	.53	1.91		.03		.02		1.26						.41		.16	8.40
Darlington	do									1.25		.20	.60		.75		2.25							.85								.20	6.10
Deerskin Dam	Wisconsin	.04		.92	.90	.50			.35			T.	.90	.25			.20	T.		T.			.30				.38	.37		.55		T.	5.66
Delavan	Rock			.10					*	1.37		.07	.29		*	1.30	1.49		.04	T.				.34						.16		.44	5.66
Downing	Chippewa	T.		1.35	1.42	1.62						2.00	T.	T.	.10	1.10	.68	T.					T.				.05		T.	.20		.20	8.72
Eau Claire	do	.03	T.	.64	.65	.97			.12			.74	.02	.12	.16	1.39	.05	.03		.02			.06	.03			.24			1.26		T.	6.53
Glen Flora	do	1.04		2.47	.50	1.48			.54			.33	.11			.14	1.22	.08		.36			T.				.46	.15		1.03			9.91
Grand Rapids ‖	Wisconsin	.13	.72	.05	.06	.45	T.			.58			1.00		.03	.08	.31	T.	T.		.17			.25						.75		T.	4.58
Grantsburg	St. Croix			1.00	.33	1.00						1.25					1.50	.25		.27			.20				.25			1.25		.50	7.80
Hancock	Wisconsin		.40			.25			.47			T.	.75		.50		.60			.20				.95				.21		1.00		T.	5.33
Hatfield	Black	.26		.25	.42				.29			1.50		.06	.14	1.74							.10				.08			1.14		.28	6.26
Hayward	St. Croix			.07	.06	1.21			.50																				.67			.02	
Hillsboro	Wisconsin				.15	.40			.25			1.21		T.	1.53	.90	.26			T.				.65		T.				1.56		T.	6.91
Koepenick	do	.40		.40	.31	1.40			.77			1.00		.23		.14	.50	.11			.21		.12				.42	3.34		.30		.11	9.76
La Crosse	Mississippi	T.		.06	1.39	1.02						1.34		.20	.08	.02		T.	T.	.05			.21	.04		T.		.01	.60	.53		.16	5.71
Lake Mills	Rock				.03	T.			1.54			.02	.56	T.	2.38	.90	.64	T.	.04	.02				.82						.34		.88	8.17
Lancaster	Mississippi					.32			.27			.22	.05		.25																		
Long Lake	Wisconsin	.09	.43	.74	1.03	.72			.46				.71	.13			.46			.08			.58	.02			.17	.33			.33	.07	6.35
Madison	Rock					.43			1.25			.72		1.19	.24	2.40	.07	.01		.01			.01	1.14				.13		.45		.42	8.47
Marshfield	Wisconsin		.04	.14	.13	.31			.70				.81	T.	.02	.11	.04	T.		.20			.07	.03			.20			.60		.10	3.50
Mather ‖	do		1.38	T.	.12	.36				.64			1.23		.12	.37	2.04				.02			.54					T.	1.44	T.	.08	8.34
Mauston	do					.26			.90			.35	.50		1.90		1.10							.75						1.30			7.06
Meadow Valley	do	1.00		.03	.09	.36			.45			.80	.35	T.	.13	.80	.19	T.		.16			.06	.30			T.			1.10		.15	5.97
Medford ‖	Black		.82	.40	.83	1.15				.73			1.55				.14				.60			.68				1.15		.28		.18	8.51
Merrill ‖	Wisconsin		.63	.25	.50	.80				.96			.97	.09			.08	.83			.33			.13				2.13		.30		.06	8.06
Minocqua	do			.94	.30	1.05			.44			.20	1.05	.14			.55			.04			.25				.20	1.02		.42			6.60
Mondovi	Mississippi	.02	.03	.76	1.82	.95			.01			1.25	.02	.02	1.76	.93	.01		T.	.01			.08	.03			.29			1.26			9.25
Mount Horeb	Rock				.03	.52			3.50			.17	.25		2.10	.22	.99			.10				1.23				T.		.55		.13	9.79
Muscoda ‖	Wisconsin	.87				1.42				.41			1.60		.61		.21		T.		.05			1.44						.70			7.31
Neillsville	Black		.50	.50		.78			.55			.73				1.70				.36							.30			1.00		.50	6.92
New Richmond	St. Croix	.20	.01	1.51	1.22	1.42						.62	.02	.06	.07	1.81	.67	.06		.02			.07								.50	.29	8.55
Osceola	St. Croix		1.00	1.16	1.70			T.				1.05			T.	.65	.60	.10		T.						.20			.75		T.	.45	7.06
Park Falls ‖	Chippewa			.95	.64	1.37	.04		.52	.58	T.		.53	.20			T.	.52	T.		.08			T.			.86	.07		.61			6.97
Portage ‖	Wisconsin	.07				.20				1.02			1.05		.51	.68	.72				.31			.74	.03	T.		T.		1.28		T.	6.61
Port Edwards	do	.06	.60		.10	.24			.60			.25	.70		.33		.18			.04				.64						.85		.04	4.63
Prairie du Chien ‖	Mississippi	T.		T.		.26				.08			1.20		.08		.56		.36					1.52						.06			4.12
Prairie du Sac	Wisconsin					.49			2.58	.01		.12	.63		.63	.64	2.12				.07			1.28						.94		.04	9.55
Prentice ‖	Chippewa		.42	.51	1.52	1.07			.04	1.16			.90	.11			.03	1.10	.04		.41			T.			T.	3.09		.41			10.81
Rest Lake	do			2.00	.47	1.28			.50			T.	1.22	.26			.42						T.				.46	.79		.44			7.84
Rhinelander	Wisconsin		.06	.60	.38	.83			.16	.32			.70	.12			.65			.17			.14					1.95		.35	.04		6.47
Shullsburg	Mississippi				.34	.24			.89			.61	.43		.47	.59			.50					.43									.22	4.72
Solon Springs	St. Croix			.55	.30	1.40			.15			.50	.20			1.30	.95			.10			T.	T.				T.	.20			.45	6.10
Spooner	do			1.60	1.52	1.58		T.				.76	.15			.15	.64	.04		.08			.15				.70			.54		.32	8.23
Stanley	Chippewa	.32		.80	.13	.10			.20			.40	.34		T.	.20	.41	.02		.22			T.				T.	1.16			.46	T.	4.76
Stevens Point	Wisconsin					.45			.85				.97				.51													1.00			3.78
Sugar Camp Dam	do			.75	.60	.81			.43			.76	.21				.39			T.			.53				.25	.39		.26	.11		5.49
Tomahawk	do				.70	.10			.80				1.08				*	1.30			.20						.40	2.30		.30		.20	7.38
Trout Lake	do			1.00	.10	.17			.50			T.	1.15			T.	.35	T.		T.			.06				1.08		.78			T.	5.79
Twin Lakes Dam	do					2.40			.42				.92	.05						.25							.95			.39			5.38
Valley Junction	do	.70				.80			.40			1.10		.40	1.12	1.25				.05			1.50							1.10		.12	8.54
Viroqua	Mississippi		T.		.11	1.58			.02			.74	.72		1.35	1.42	.02		.03	.06	.15		.05	1.02		.10				1.90		T.	9.27
Watertown ‖	Rock					.20				T.			.47		.35	.82	.36	.07			.05			.97	.24			T.		.88		T.	4.41
Waukesha	Fox	.04			T.	.02			.37				1.10		.83	1.12	.41			.02				.30						.55		.64	5.40
Wausau ‖	Wisconsin	.04		.13	.13	.80				1.83			1.09				.08	.65			.18			.17				.93		.35		.06	6.41
Weyerhaeuser	Chippewa	T.		2.95	.55	2.00			.05			.56	.10		T.	.20	1.12	.07		.08			.05				.49		T.	.56			8.78
Whitehall	Mississippi		.60	.70	.50							.90		.20	2.00	.70		T.									.10	T.		.90		T.	7.50
Iowa.																																	
Albia ‖	Des Moines												.06											.05									0.11
Algona	do	.33				.50						.75											.35	1.00		.18							3.11
Alta ‖	Raccoon		.70			.17						.42	.44					T.						.46		T.			.04			.04	2.27
Amana	Iowa									T.		.38							.09	.04				.08								.02	0.61
Ames	Skunk		.34									1.20							T.				T.	.41								T.	1.95
Baxter	do		.02							.01		.44							.24	.01				.08		T.		T.				.02	0.82
Belle Plaine	Iowa		T.							T.		.14							.11	T.				.11								T.	0.36
Belmond	do	.37										.97											.70	.48		.08						T.	2.60
Bloomfield	Mississippi							T.	.22			.09				T.								T.				T.				.10	0.41
Bonaparte	Des Moines						T.					T.												.05								.47	0.52
Boone ‖	do		.24									T.	1.09						.03	T.				.57			T.			.06			1.99
Britt	Iowa	.01	.76			.08						1.95											.22	1.10		.14							4.26
Burlington ‖	Mississippi	.12	.02							T.			T.												.04								0.18
Carroll ‖	Raccoon		.41									.23	1.15						.20					.71		T.			T.				2.70
Cedar Rapids ‖	Cedar					T.							.26						.05	.09	T.			.06								T.	0.46
Charles City	do	.18			.05	.01						.96						.13		.34			.88	.16		.06		T.	.02	.02			2.81
Clinton	Mississippi					T.			.61	.11		.10	.10		T.				.74					.07				.06				T.	1.79
Columbus Junction	Iowa											.22												.08								.04	0.34
Davenport	Mississippi	T.				.10						.02			T.	T.			T.				T.	.03								.03	0.18
Decorah	do	.03	.02		T.	1.00			.53			1.45				T.			.32					.95		T.		T.		.15		.22	4.67
Delaware	do					.01			T.			.26							.62					.51								T.	1.40
Des Moines	Des Moines	T.	.12				T.	T.				.80							T.	T.			.01	.03		T.		.09					1.05
Dubuque	Mississippi				T.	T.			.64			1.09			T.			T.	.09	T.			.03	.41						.01		.04	2.31

TABLE 2.—*Daily precipitation for July, 1913. District No. 5*—Continued.

Stations.	Watershed.	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	
Iowa—Continued.																																	
Earlham	Raccoon		.29									1.33							T.					.04		T.		T.					1.66
Elkader	Mississippi		.05			.30						1.00						T.		T.				1.65						T.		.65	3.05
Elma	Wapsipinicon.	.25	.45			.20					1.42				T.		T.					.02	1.52		T.					.05		.02	3.93
Estherville ‖	Des Moines		1.25			.60						.65	.35					.05	T.					.45		.20	.10						3.65
Fairfield	Skunk																															.06	0.06
Fayette	Mississippi		.24									1.64		T.				T.		.19			.23	.97							.06	.10	3.43
Forest City ‖	Cedar	.63			.15							.20	1.06					.25		.04				1.05		.16			T.				3.54
Fort Dodge ‖	Des Moines		.30									.12	1.00											.95		T.							2.37
Fort Madison	Mississippi	T.							T.	T.		T.																				T.	T.
Grand Meadow	do		.02		.02	.10			.02			1.72			.01	.02			.28					1.25		T.				.12		.24	3.80
Grinnell	Iowa											.33							.02	T.			T.	.12									0.47
Grundy Center	Cedar		.09									.92								T.				.90						T.		T.	1.91
Guthrie Center	Raccoon		.64				.02	T.				.90							T.				T.	.15		T.		T.	T.				1.71
Hampton	Cedar	.17				.04						1.05											1.00						.08				2.34
Humboldt	Des Moines	.45	.05			.05						1.05	.06							.04			.06	.79		.02							2.57
Independence	Wapsipini'n				.03							.65							.45	.06				.65		T.						T.	1.84
Indianola	Des Moines						T.					.04							T.	T.	T.			.05		T.							0.09
Iowa City ‖	Iowa									.08			.23						T.					.06								.02	0.39
Iowa Falls ‖	do		.14										.77											.87			T.			.29			2.07
Keokuk	Mississippi	.04		T.			T.		T.			T.				.03				T.				.01				T.				.01	0.09
Keosauqua ‖	Des Moines	T.	T.					T.		.01			T.											.04	.01								0.06
Knoxville	do											.20								T.				T.				T.					0.20
Lacona	do	.01					.01					.02							T.					.01						T.	T.	T.	0.05
Lansing	Mississippi					1.70						1.35			1.30	.03			.15	.07				.80						.80		.03	6.23
Le Claire ‖	do	.45	T.			.09							T.			T.			.09	T.	T.			.08	T.		T.					T.	0.83
Marshalltown ‖	Iowa		.01			T.						T.	.44						.03	T.	T.			.42					T.			.20	1.10
Mason City	Cedar		.19			.13						.83							.07				.17	1.12		.10							2.61
Monroe	Skunk	T.					T.					.21							T.	T.						T.		T.				.10	0.31
Mount Pleasant	do																			T.				.03								.15	0.18
Muscatine ‖	Mississippi	.10								.03			.14											.02									0.29
Nora Springs	Cedar	.31			.18							1.20						.17		.02			1.33			.13							3.34
Northwood	do	.13				.18						1.58						.02	T.				.80			.03	T.	T.		.22			2.96
Olin	Wapsipini'n									.30		.25							.50	T.				.10								T.	1.15
Osage	Cedar	.12	.23			.31						1.15												1.40		T.				.20			3.41
Oskaloosa	Des Moines						T.					.06							T.					T.		T.		T.			T.		0.06
Ottumwa	do																						T.			T.							T.
Pella	do						T.					.19							T.					.06				T.					0.25
Perry	Raccoon		.15				T.					.64							.08	.03				.21	T.								1.11
Pocahontas	do	.33	.05			.20						.90											.32	.33		T.							2.13
Rockwell City	do											1.50						T.						1.10									2.60
Sac City	do	T.	.18					T.	T.			1.01							T.				.25	.66		T.						T.	2.10
St. Charles	Des Moines		.02					T.				.08												.03									0.13
Sigourney	Skunk								T.	.70		.11												.05				T.				.10	0.96
Stockport	Storm Lake						T.	T.		.01		.01			T.									.02				T.				.25	0.29
Storm Lake	Raccoon	.33				.24	T.					.70							T.					.53		.01			T.			T.	1.81
Tipton	Cedar									.39		.12	.10																				0.61
Toledo	Iowa		T.									.32												.22									0.54
Washington	Skunk											.10												.02								.01	0.13
Waterloo ‖	Cedar												.70						.38		T.			.83						T.		.19	2.10
Waukee	Raccoon		1.20									1.15							T.					.06		T.							2.41
Waverly	Cedar																																
Webster City	Des Moines	.18	.66									1.12								.04			T.	.85		T.		T.		.07			2.92
West Bend	do					.28						.90								T.			.25	1.00		.12							2.55
Whitten	Iowa		.15									1.18							.19	T.			T.	.86		T.							2.38
Winterset	Des Moines		T.					T.				.60								T.				.03									0.63
Missouri.																																	
Gorin	Mississippi	.09							.13																								0.22
Hannibal	do	.04			T.				T.			.12		.01	T.					.04	T.			T.			.06	T.	T.			T.	0.27
Louisiana	do	.30			.04						T.		.52		T.	T.	.38				.02						.03	.25					1.54
Macon	do	.32					T.	.16	.37			.31								T.					.04			T.	.10			T.	1.30
Mexico ‖	do		.09			.03		.11	.12	.14			.45			T.				1.41									.05	.03			2.43
Palmyra	do	.02		.10																.02								.21					0.35
Steffenville	do	.15		T.					T.											T.												T.	0.15
Sublett	do	T.						.50				2.00																					2.50
Vandalia	do	.19		T.					.15			.30	T.							.63													1.27
Warrenton	do	.42	.54		.06	.59			T.	.34			.53							.94					.07				.38				3.87
Indiana.																																	
Collegeville	Iroquois	T.													1.12	1.44								T.					.96				3.52
Knox	Kankakee	T.		T.	.38	1.03			.47	.53					.90	.82	T.		.02	T.	.03			.02				.11	.02				4.33
Laporte	do					T.			.76	.36					1.31	1.20	.10		.03									T.					3.76
Plymouth	do	T.			.02	.39			.63	.47					.90	.99	.56		.02					.02				.21	.08				4.29
South Bend	do				.02				.36	.38					77	.88	.22		.01					.02				.44				T.	3.10
Illinois.																																	
Aledo	Mississippi				0.5							02	T.											.03								T.	0.10
Alexander	Illinois	18			T.				T.				.42		T.	.27				.21													1.08
Antioch	do	.25							.35				.30		.90		1.00							.50						.15			3.45
Astoria	do	.16							T.			T.	.03		T.	T.				T.				T.				.22	.01			T.	0.42
Aurora	do			T.					1.40	.20					1.48	T.			.18					.18								.14	3.58
Beardstown ‖	do	T.								T.		.23		T.						.10									.10				0.43
Bement	Mississippi	.06				.28							.03																				0.37
Bloomington	Illinois	.40				.02			T.				T.		T.	.78								T.				.07					1.27
Cairo	Mississippi	.14	.03	T.				.01		.20	.06	.35	.83												.01	T.		T.		T.	2.56		4.19
Camp Point	do	.25	.10	.01								.09				.89				.02				T.				T.				T.	1.36
Carbondale	do	.04								.14	.05		1.64							.05	.02				.81			.36			.22	.02	3.35
Carlinville	Illinois	.29	.01		.11	T.							.29		T.	.48				.66													1.84
Carlyle	Mississippi	.35			.20		T.			T.			.24		T.	T.								.06	.04			T.	T.				0.89
Chester ‖	do	.01	.12						T.	.14	T.		1.16									.16			.18	.42			.22	.92			3.33
Clinton	Illinois	.01	.01			.10				T.			.05		T.	1.23				.01								T.	T.		.61		2.02
Cobden	Mississippi	.15	T.							.15	.62	T.	1.45							T.	.16				.56		T.				.68		3.77
Dakota	do	T.		T.		.44			.78	.06		.10	.37		1.08		.67		.62					.23					.07		.08	4.50
Decatur ‖	Illinois		.07	.01									.05			.55	.65			.05								.02	T.				1.40
Dixon ‖	Mississippi	T.									.60	.10			.47		.10			.10				.10									1.47
Du Quoin	do	.06			.01					.75			.92												.25			.12	.11	.61	.42		3.25

TABLE 2.—*Daily precipitation for July, 1913. District No. 5*—Continued.

Stations.	Watershed.	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—Contd.																																	
Dwight	Illinois	.02		T.	T.				1.16	.02					.06		.27			T.				T.				T.	T.			.08	1.61
East St. Louis ‖	Mississippi		1.84			.08				.02			.59		T.					.40					.09				.60				3.62
Edwardsville	do	1.10			.12								.77		T.					1.52	.15				.05			.20			.04		3.95
Fairview	Illinois	.10				T.			T.			T.	T.		T.	T.								T.				T.				T.	0.10
Galva ‖	do	T.	T.			T.				T.			T.			.63								.03	T.					T.		T.	0.66
Grafton ‖	Mississippi		.34			.08							.33							1.10					.07								1.92
Greenville	do	.29			T.								.70			.10				.33				.03	.27			.10	.04				1.86
Griggsville	Illinois	.13			.05				T.				.28		T.	.05				.13												T.	0.64
Havana	do	.10							T.			T.			.12	.30								T.				.90	.04				1.46
Henry	do	.07			.30				T.							.11			T.					.03					T.				0.51
Hillsboro ‖	Mississippi		.98			T.							.32			.06	.15			.45													1.96
Joliet	Illinois	.05		T.					1.75					.20	1.12	.20	.03		.05	.04				T.								.12	3.48
Kishwaukee	Mississippi	.01				.12			1.06	.50		.10	.08		.95	.68	.48		.27	.16				.10						.25		.01	4.77
La Harpe	do	.14		T.					.07			T.				.02								T.				T.				T.	0.23
Lanark	Mississippi					T.			.43	.07		.17	.20		.33	T.	.55		.15	T.				.12				T.		.01		.05	2.08
La Salle	Illinois	.03			T.	T.			.20						.04	.07	.87							.02					T.		.19	T.	1.42
Lincoln	Illinois	.29		T.					T.				.08		.08	.55				.01				T.				T.	T.				1.01
Macomb	do	.14		T.			T.			T.			T.		.02																		0.16
Manteno	do	T.								1.63					1.18	T.	.02							T.				T.	T.		.04	.04	2.91
Martinton ‖	do	.09								.67					.80	T.	.35															.28	2.19
Mascoutah	Mississippi	.56		T.	.33					.05		.58				T.				.16				.17	.16			.12					2.13
Minonk	Illinois	.06							.04						T.	1.10				T.				.01				.03			.09	.62	1.95
Monmouth	Mississippi								T.				T.							T.				.05									0.05
Morris	Illinois	.03		T.					1.10	.19				.41		1.03							.02									.01	2.79
Morrison	Mississippi	T.							T.	.50		.10	.32		.01		.06		.38					.11		T.		.11				T.	1.59
Morrisonville	Illinois	.40		T.	T.				T.				.14		T.	2.84				.22								T.					3.60
Mount Vernon ‖	Mississippi										.36		.51			T.				.18					.27				.12				1.44
Nashville	do		.10		.06					.04		T.	.50		.02	.02				.28				T.	.05			.20			.05		1.32
Oregon	do	T.				T.			.95	.45		T.					.95		.50					.11									2.96
Ottawa	Illinois	.07		.07					1.00	.06						.15	.60															.22	2.17
Pana	Mississippi	.57														.36				.55								T.					1.48
Paw Paw	Illinois	T.		T.	T.				.21	.35			.02		.33	T.	1.36		.01	T.	T.			.04					T.		T.	.40	2.72
Peoria	do	.08							.02			T.			T.	.28								.02				.05	.01				0.46
Pontiac	do	.18								T.					.11	.27	.56							T.				.01			T.	T.	1.13
Quincy ‖	Mississippi	.02	.32							T.			.36				.04			T.	.01				T.				.04				0.79
Riley	do	.01							2.17			.03	.07		2.55	.68			.11	.19	.03			.16		T.				.01		.54	6.55
Roberts	Illinois	.45		T.		T.			.36	.07			T.		.07	T.	.71											T.	T.		T.	T.	1.66
Rockford ‖	Mississippi	.39				.07				2.65			.27		1.61	.04	.18		.36		.17			.11			T.				T.		5.85
Rushville	Illinois						T.	T.					.04	.02	.04									T.				.48	T.				0.58
St. Charles	do	.03			T.				2.00	.20		T.	.03		1.62	.04	T.		.18		.11			.12		T.						T.	4.33
St. Peter	Mississippi	.47								T.			1.07	T.		.15				.25				.15	.34		T.	T.		T.			2.43
Sparta	do	.80	T.		T.					.97			1.23							T.					.02			.20		.10			3.32
Springfield	Illinois	.02		.03	T.				T.			.14			.02	1.32				.13													1.66
Streator ‖	do	T.				T.				.79					.01	.12	.30			T.				T.						.28		.09	1.59
Sullivan	Mississippi					.03							.08			.04				.12											.03		0.30
Sycamore ‖	do	.41								1.91			.06		1.05	.28	.08				.23			.07						T.		T.	4.09
Tiskilwa	Illinois	T.			.01	.10			T.			T.			T.	.06		T.	T.				.07						.10			T.	0.34
Walnut	Mississippi	T.								.01		T.	T.		.04	.38	.57		.22	.01				.04					T.			T.	1.27
Warsaw ‖	do	.11																	T.													T.	0.11
Waterloo	do	.90			.88					.05			.62		T.					.25				.25				.79					3.74
White Hall	Illinois	.10		T.	T.	.36				T.				.38	T.	.10				.21								T.	.11				1.26
Windsor	Mississippi	.71			T.					T.			T.			.18				.03				T.							T.		0.92
Winnebago	do				T.				1.82	.02		.05	.23		1.60	T.	.55		.38	.06				.05						.06		.07	4.89
Yorkville	Illinois								.70	.64					.95	.70			.26		.02			.15									3.42

* Precipitation included in that of the next measurement.
‡ Separate dates of falls not recorded.
‖ 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 3.—*Maximum and minimum temperatures at selected stations for July, 1913. 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	51	64	49	76	53	70	53	68	54	81	63	68	56	82	61	83	64	70	55	85	64	78	62	85	64	77	60
2	73	47	68	45	76	44	77	47	72	45	81	57	78	52	87	58	84	54	76	48	86	58	77	50	85	61	75	56
3	68	49	77	53	78	55	72	51	72	54	77	61	76	58	92	68	85	63	74	57	90	64	81	63	89	62	74	60
4	67	51	64	53	74	53	62	51	73	58	74	57	73	53	93	65	82	55	74	52	93	64	68	55	83	64	69	58
5	77	53	72	54	79	50	79	54	70	51	71	59	74	54	81	61	82	55	75	53	79	60	71	65	74	63	70	60
6	82	45	79	52	84	53	84	51	80	48	78	58	80	54	83	56	80	56	80	55	83	60	87	59	81	60	78	52
7	95	56	85	55	87	53	94	54	78	50	82	60	85	56	88	64	83	57	84	55	89	57	86	60	83	61	79	56
8	82	46	82	55	77	52	80	51	80	55	85	56	88	63	91	67	88	66	88	63	91	65	81	56	88	64	82	63
9	80	45	76	48	77	49	81	46	78	48	76	58	75	55	80	64	79	54	75	54	77	57	87	48	76	62	78	57
10	69	54	73	52	80	49	76	59	68	46	76	58	78	50	82	57	81	53	78	49	81	53	78	46	77	55	76	46
11	74	52	70	56	75	60	64	56	72	48	74	57	72	60	78	60	75	62	72	60	73	59	73	54	69	53	72	52
12	61	51	63	52	77	46	69	55	68	52	68	57	67	55	74	56	66	56	68	57	78	58	66	56	72	59	71	52
13	62	41	69	48	72	45	69	48	75	48	74	54	70	54	82	57	72	51	73	52	85	54	75	53	77	56	72	50
14	76	52	72	53	78	60	77	53	80	48	76	59	77	52	91	60	82	63	82	56	93	66	79	52	74	61	76	50
15	80	51	82	54	82	62	80	51	84	52	70	59	81	56	83	63	74	65	81	66	89	65	76	52	71	60	76	57
16	82	58	80	63	82	68	83	59	82	58	82	62	80	63	93	64	81	65	80	65	91	69	84	53	83	66	78	54
17	84	57	81	57	87	60	84	60	85	53	80	63	82	65	82	66	75	66	83	61	80	69	85	56	71	64	80	55
18	83	44	82	52	83	52	85	51	82	52	79	61	84	56	82	59	82	58	82	55	85	58	82	58	81	61	80	56
19	79	50	75	54	80	52	80	56	80	53	76	59	76	59	83	55	82	60	79	56	82	61	80	60	79	60	75	58
20	83	42	77	44	81	50	82	46	90	43	77	55	77	50	80	51	79	56	78	51	82	53	78	56	76	56	76	52
21	90	53	88	57	89	46	90	59	83	50	79	58	88	54	80	54	84	56	87	50	82	54	80	52	79	57	80	52
22	79	56	76	54	79	60	79	56	80	53	71	63	77	59	81	57	74	60	77	57	76	59	76	58	76	61	75	51
23	72	48	67	49	75	50	74	49	80	49	72	55	72	52	79	58	78	52	72	52	75	56	74	51	75	58	78	51
24	82	45	75	49	80	42	82	49	82	35	75	53	76	46	78	49	79	50	76	46	75	51	73	42	72	54	74	52
25	83	55	76	55	78	52	84	53	85	50	72	56	81	53	71	49	75	59	78	55	72	55	76	49	72	54	76	51
26	74	57	80	56	91	56	75	59	90	55	83	57	89	60	92	58	83	60	89	59	95	61	83	58	91	61	82	58
27	74	46	69	50	78	56	74	46	80	50	74	60	68	55	85	66	77	55	72	52	78	61	77	58	77	60	76	54
28	79	47	73	48	83	40	84	50	98	41	74	52	72	48	88	61	82	50	78	46	88	55	73	48	80	54	72	51
29	99	54	95	57	100	53	96	55	98	40	84	57	90	54	95	62	95	58	94	58	93	59	88	52	93	63	89	70
30	72	51	77	57	83	60	7	54	86	55	86	74	83	65	95	67	94	69	83	62	99	63	92	61	96	71	90	62
31	83	42	81	50	88	48	83	50	86	48	80	59	85	52	85	63	85	56	84	53	78	62	85	58	78	64	78	58
Mns.	77.9	50.0	75.7	52.6	80.9	52.5	78.7	52.6	79.7	49.7	77.0	58.6	78.1	55.5	84.4	59.9	80.7	58.2	78.8	55.2	84.0	59.7	79.0	54.9	79.5	60.3	76.9	55.3

Date.	Wisconsin.														Iowa.													
	Eau Claire.		Grantsburg.		Hancock.		La Crosse.		Madison.		Prentice.		Wausau.		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	87	64	86	61	88	64	91	65	82	69	82	52	85	62	90	65	87	70	88	60	85	73	87	66	84	69	82	72
2	84	60	88	52	88	63	87	62	87	67	80	51	79	60	87	59	94	66	88	60	89	70	88	69	88	66	90	68
3	90	63	86	57	94	67	94	69	91	68	81	61	88	62	86	65	98	71	93	68	93	73	93	69	92	69	91	73
4	85	65	76	57	92	70	91	64	91	73	81	63	84	66	93	66	96	75	92	69	91	75	90	74	92	75	89	76
5	80	65	75	62	88	64	80	63	78	64	81	60	75	63	84	63	90	75	80	61	87	69	89	72	83	68	90	73
6	78	57	79	54	78	57	81	61	76	60	70	52	70	56	85	57	86	62	84	57	87	61	90	65	84	62	87	66
7	82	58	83	53	85	52	84	58	80	56	78	46	77	46	90	60	93	66	89	56	88	65	91	69	87	61	90	69
8	87	63	86	64	78	63	92	64	83	63	78	54	74	58	94	67	98	68	93	65	95	72	88	72	94	66	90	69
9	82	60	77	55	77	64	76	62	74	63	72	52	72	60	85	64	86	69	75	58	86	65	84	66	78	64	91	69
10	77	51	79	46	77	48	78	54	74	56	73	39	74	46	84	51	84	59	82	51	79	61	82	60	76	60	82	61
11	75	57	72	53	75	51	67	58	75	50	73	52	68	51	74	64	80	56	71	56	87	54	77	64	76	55	89	58
12	73	59	73	53	75	57	78	58	78	59	66	55	69	56	79	56	84	53	79	57	85	63	86	60	81	60	85	62
13	76	59	75	55	80	58	83	56	82	60	61	54	69	57	87	72	99	60	85	53	94	69	94	64	89	63	95	71
14	72	58	77	54	74	57	84	63	78	58	70	55	68	51	93	68	96	65	92	67	94	70	94	76	92	68	94	76
15	76	58	72	59	77	57	84	61	81	60	76	58	75	57	92	74	101	71	89	68	93	73	98	76	87	70	94	79
16	81	61	83	59	83	60	86	67	92	64	76	56	74	58	93	74	104	73	96	70	101	75	100	77	99	72	100	79
17	80	64	77	60	82	67	79	66	82	67	74	58	75	61	87	68	94	73	86	67	94	75	98	75	87	71	100	77
18	81	62	80	57	84	64	81	63	77	66	75	62	79	61	81	66	80	70	81	60	84	70	84	69	80	67	87	72
19	79	55	79	59	80	55	83	58	80	60	75	50	78	54	84	57	86	61	82	54	86	64	87	60	83	62	87	68
20	76	53	77	51	76	53	76	55	72	57	74	42	73	52	79	56	79	60	77	54	79	61	81	62	76	58	80	65
21	79	50	80	55	80	51	80	54	77	57	74	40	76	43	83	51	86	56	81	50	82	57	83	56	80	57	83	62
22	81	56	72	60	83	60	83	68	80	60	74	54	82	56	80	57	91	58	80	55	87	65	89	61	83	63	87	65
23	75	56	73	52	80	62	78	60	75	63	74	52	75	59	77	62	81	66	76	59	82	66	80	67	78	63	81	70
24	73	50	76	54	75	49	73	55	71	58	70	41	70	48	77	52	79	57	76	52	79	58	80	59	74	58	81	63
25	74	47	77	43	74	50	71	53	69	56	72	38	70	44	76	58	80	58	75	56	80	58	82	60	72	36	82	58
26	89	58	87	56	86	58	89	61	86	58	81	54	82	55	92	64	97	58	93	62	92	62	96	68	91	60	93	65
27	86	65	83	60	88	71	85	64	86	69	81	46	86	58	83	66	90	65	82	60	91	75	87	72	89	69	87	75
28	81	53	77	45	83	44	85	57	82	64	78	45	79	55	87	57	94	64	88	56	91	69	95	65	88	64	95	72
29	88	64	89	57	91	62	91	64	90	62	88	61	87	60	96	74	104	65	97	70	102	75	101	78	99	69	102	77
30	94	72	95	73	95	68	95	73	94	70	92	67	91	64	97	75	106	77	100	71	102	75	100	77	100	74	100	78
31	90	69	86	63	94	74	83	62	84	65	92	66	80	71	89	68	89	76	80	59	91	69	85	63	88	65	93	72
Mns.	81.0	59.1	79.8	56.1	82.6	59.4	82.8	60.9	80.9	62.0	76.5	52.8	76.9	56.5	85.9	63.2	90.7	65.3	85.0	60.0	88.9	67.3	89.0	67.5	85.5	64.6	89.6	69.7

TABLE 3.—*Maximum and minimum temperatures for July, 1913. District No. 5*—Continued.

Date.	Hannibal, Mo.		Laporte, Ind.		Illinois.§§															
					Cairo.		Greenville.		La Salle.		Monmouth.		Mount 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	82	73	88	69	95	74	91	72	83	71	83	73	96	72	81	71	84	73	85	68
2	90	71	91	58	87	74	93	69	91	65	91	65	92	70	91	65	90	71	93	62
3	91	74	95	62	86	73	92	71	93	71	94	67	92	71	94	71	92	74	97	67
4	90	75	93	71	92	73	92	71	92	74	94	67	93	71	92	74	90	73	94	72
5	91	77	93	60	96	75	96	72	89	71	89	67	97	73	90	67	95	75	85	67
6	85	66	85	58	93	77	87	66	85	63	89	62	87	68	87	62	88	68	81	58
7	91	64	81	48	81	70	89	64	86	60	91	64	86	63	90	65	90	66	85	53
8	95	72	87	55	89	68	95	66	95	66	94	65	97	68	97	68	98	68	95	58
9	93	71	80	59	86	71	97	68	87	65	90	69	95	64	91	67	96	70	80	62
10	85	65	79	52	84	68	98	62	75	56	84	56	93	65	81	60	84	62	80	54
11	90	64	84	50	84	69	92	60	88	49	90	53	90	64	91	55	92	58	84	46
12	87	64	87	55	81	67	88	62	86	66	87	62	88	67	87	66	88	67	81	59
13	95	70	92	63	89	69	94	66	97	69	97	69	91	67	97	66	97	70	91	61
14	97	77	86	62	92	74	97	66	95	69	97	74	96	71	95	73	94	75	93	62
15	95	76	88	65	91	75	88	73	91	70	93	75	90	74	93	75	80	70	90	66
16	102	75	88	68	93	76	99	73	97	70	103	76	96	73	100	75	98	75	96	68
17	102	78	88	67	97	75	102	71	91	69	102	70	102	72	100	72	102	75	86	68
18	92	76	73	62	99	76	103	73	84	66	.....	67	103	73	87	67	90	71	80	60
19	88	69	80	62	86	76	88	65	85	65	92	63	92	65	87	67	88	68	82	58
20	83	69	72	58	88	70	86	68	79	59	83	59	87	62	83	58	84	65	76	56
21	83	60	73	53	82	66	85	56	81	54	85	52	84	58	83	52	81	59	80	50
22	88	58	82	50	89	65	90	56	86	60	90	60	88	56	88	57	86	61	86	55
23	84	72	78	53	90	67	96	56	81	65	83	65	95	60	80	66	88	65	78	62
24	82	64	75	60	79	70	86	68	78	58	83	57	83	70	81	61	83	63	80	55
25	84	62	75	47	85	66	87	57	82	51	85	57	84	59	83	58	84	56	75	49
26	93	69	87	46	89	72	95	65	92	61	95	61	94	65	92	62	91	65	91	55
27	89	72	93	62	90	73	95	72	91	75	90	71	97	72	90	72	94	75	93	70
28	95	71	85	70	92	75	95	71	91	72	97	67	95	71	94	71	94	75	90	62
29	102	75	95	65	90	73	103	72	102	67	105	69	100	74	103	72	103	74	100	62
30	99	73	96	76	95	68	103	71	103	72	106	72	100	70	103	73	101	78	103	69
31	98	77	86	70	94	72	101	72	90	68	95	73	98	71	94	72	97	77	90	70
Means	91.0	70.3	85.0	59.9	89.2	71.5	93.6	66.9	88.6	65.1	91.9[a]	65.4	92.9	67.7	90.5	66.5	91.0	69.1	87.1	62.7

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
§ 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.