CLIMATOLOGICAL DATA FOR MARCH, 1911.

DISTRICT NO. 5, UPPER MISSISSIPPI VALLEY.

GEO. M. CHAPPEL, District Editor.

GENERAL SUMMARY.

March, 1911, was in some respects similar to March, 1910, but the points of similarity were not as well marked or as extreme as those of last year. The temperature was above and the precipitation below the normal; the amount of snowfall was less than usual and there was an excess of sunshine, and as a whole the past month was very pleasant and devoid of any marked characteristics, except that the wind movement was above the average for March. In fact, the conditions were much nearer the normal than they were in the same month last year. Reports from all parts of the upper Mississippi Valley show that the weather was favorable for all kinds of outdoor operations; and, while the temperature was considerably above the normal, it was sufficiently low, especially during the last decade, to retard the growth of vegetation and prevent the development of fruit buds except in the extreme southern portion of the district. As a result, the fruit crop is in less danger of injury by cold weather that may possibly come within the next few weeks than it was at the close of March, 1910, when several kinds of fruit trees were in full bloom as far north as northern Iowa. The snow that was on the ground in the northern section of the district at the end of February melted gradually, and most of the moisture therefrom was absorbed by the soil. At the end of the month the ground was in excellent condition in all sections, and much farm work in the way of plowing, seeding small grain, and preparing ground for corn had been done.

TEMPERATURE.

The temperature was above the normal in all parts of the upper Mississippi Valley, except over the small portion of Indiana within this district, the monthly means for the several States being as follows: North Dakota, 29°; Minnesota, 32.8°; South Dakota, 34°; Wisconsin, 33.5°; Iowa, 39.2°; Missouri, 44.4°; Indiana, 37.5°; and Illinois, 41.1°, and the average departure ranged from −1.6° in Indiana to +8.7° in North Dakota. The excess of temperature was considerably greater in the northern than it was in the southern sections of the district. Over North Dakota and the extreme northern portions of Minnesota and Wisconsin the first decade was the coldest and the lowest temperatures, which ranged from −16° to −25°, were generally recorded on the 4th. In the central and southern sections the coldest period was from the 15th to the 18th, and the lowest temperatures were recorded at most stations on the 16th. The highest temperatures were recorded on the 20th or 21st, except in Missouri and Illinois where they occurred on the 11th. Temperatures of zero or below were confined to North Dakota and the northern and central portions of Minnesota and Wisconsin.

The monthly mean temperature for the district, as shown by the records of 290 stations, is 36.3°, which is 4.9° above the normal. The highest monthly mean was 50.4°, at Cairo, Ill., and the lowest 20°, at Pembina, N. Dak. The highest temperature was 86°, at Cairo and Cobden, Ill., and Warrenton, Mo., on the 11th, and the lowest −25°, at Angus, Bagley, and Roseau, Minn., on the 4th.

PRECIPITATION.

The precipitation was below the normal in all sections, and at all but 14 stations in the district. There were 2 stations in Minnesota, 5 in Wisconsin, 3 in Iowa, 2 in Missouri, and 2 in Illinois that reported amounts above the normal, but the excess in each case was small, except at Fort Madison, Iowa, where 4.84 inches fell, which is 2.08 inches above the normal. The average amounts, with the departure from the normal for the various States, are as follows: North Dakota, 0.16 inch, −0.70 inch; Minnesota, 0.58, −0.68; South Dakota, 0.37, −0.88; Wisconsin, 1.15, −0.74; Iowa, 1.02, −0.99; Missouri, 2.18, −0.34; Indiana, 1.84, −1.62; Illinois, 1.64, −1.25 inches. From northern Iowa northward over Minnesota and the Dakotas there was practically no precipitation until the 26th of the month, but over the eastern and southern parts of the district there was a more equitable distribution as to time, more or less precipitation being recorded from the 5th to 8th, 11th, 12th, and 21st to the 22d. From the 26th to the close of the month the precipitation was quite general in all sections. Over the southern sections most of the precipitation was in the form of rain, but in the Northern States it was about equally divided between rain and snow.

The average precipitation for the district, as shown by the records of 306 stations, is 1 inch, which is 0.93 inch below the normal. The greatest amount, 4.84 inches, occurred at Fort Madison, Iowa, and none occurred at Hansboro and Park River, N. Dak. The greatest amount in 24 consecutive hours, 2 inches, occurred at Fort Madison, Iowa.

The average depth of unmelted snowfall was 2.4 inches. The averages for the several States or parts of States within the district were as follows: North Dakota, 1.3 inches; Minnesota, 2.5 inches; South Dakota, 0.5 inch; Wisconsin, 4.8 inches; Iowa, 1.2 inches; Missouri, 1.5 inches; Indiana, 3.3 inches; and Illinois, 1.6 inches. The greatest amount was 22 inches, at Vudesare, Wis., and none occurred at several stations in the southern part of the district. Measurable precipitation occurred on an average of four days.

MISCELLANEOUS.

Low humidity and brisk winds dried the soil, putting it in excellent condition for cultivation and seeding small grain.

RIVERS.

At the close of the month the rivers were all clear of ice except in the northern part of the district, and they were all low for the season. Navigation opened on the Mississippi as far north as Clinton, Iowa, on the 10th.

Mr. J. H. Spencer, local forecaster, Weather Bureau, at Dubuque, Iowa, reports:

At the close of the month the Mississippi River was free of ice above La Crosse, Wis. It was open at Dubuque during the entire month, and opened at Prairie du Chien, Wis., on the 11th. The Wisconsin was open at Muscoda, Wis., during the entire month; at Grand Rapids, Wis., after the 8th; while at Wausau, Wis., it was frozen during the entire month. The upper Mississippi River continued low for the season, ranging at Dubuque from 1.6 to 4.3 feet. It was lower at the close of the month than at the beginning. The Wisconsin River rose steadily during the month, owing to melting snows; at Grand Rapids, Wis., it ranged from 1.4 feet on the 9th to about 4.2 feet during the last week.

Dr. Luke Roberts, cooperative and river observer at Clinton, Iowa, writes:

The huge ice pack which broke away from the bridge piers at 5.15 p. m., March 2, practically cleared the river so that boats could again move safely. The first boat to appear at the wharf was the *Mary Belle*, from Albany, Ill., at 9 a. m., March 10. The *Eclipse* touched this port on her way up the river, about one hour later than the arrival of the *Mary Belle*. The *Artemus Gates* left her winter quarters in the Beaver Slough on the 14th. The highest stage of the Mississippi River at Clinton during the month was 3.3 feet, on the 1st. The lowest stage was 1.9 feet, on the 21st, and the mean stage 2.4 feet, which is the lowest mean for March for many years. The normal stage for March is 5.7 feet, or 3.9 feet above that of March, 1911.

The Mississippi River at Davenport remains unusually low, the stage on the 31st being but 2.4 feet.

DRAINAGE AND ENGINEERING NOTES.

The United States Army engineer having charge of the Des Moines River survey reports the following work done during March:

Twenty-five per cent of the contours were drawn and inked, making this part of the work 97 per cent complete, and the tracings were 14 per cent completed. An estimate of the cost of providing clearance at the 42 bridges crossing the Des Moines River was made. During April contours will be completed and work will be in progress on tracings, estimates, and report.

The low stage of the Mississippi River at Keokuk, Iowa, favors the construction work on the water-power dam, which work is being pushed rapidly.

The Mississippi River Power Co. has issued the first number of an illustrated and descriptive bulletin pertaining to the construction of the water-power dam on the Mississippi River between Keokuk, Iowa, and Hamilton, Ill., at the foot of the Des Moines Rapids. The bulletins will be issued at frequent intervals, timed to illustrate important stages in the progress of the work, and the illustrations, together with the text describing them, will enable the reader to attain a reasonable familiarity with the methods employed in the building of the work from the beginning to its completion.

Hamilton County, Iowa, will spend more than $400,000 in drainage work this year. The largest project is the Pray-Glaman ditch, which was established by the board of supervisors on March 30. Its estimated cost is above $100,000.

INVESTIGATION OF THE WATER RESOURCES OF MINNESOTA.

By ROBERT FOLLANSBEE, Assoc. M. Am. Soc. C. E., district engineer, United States Geological Survey.

As a result of legislation enacted at the 1909 session of the Minnesota Legislature, a cooperative agreement was entered into by the United States Geological Survey and the State Drainage Commission whereby the work of investigating the water resources of Minnesota was undertaken by the former organization. A new district was created with headquarters in St. Paul, and active work commenced in May, 1909.

RIVER DISCHARGE.

The rivers of Minnesota play an important part in the welfare of the State, being of great importance in the matter of municipal water supplies, outlets for sewage disposal and drainage systems, development of water power, navigation, and in an uncontrolled condition are frequently a menace to property by overflowing their banks during periods of high water. To determine accurately their value as a source of supply for the various usages, it is necessary to know the amount of water flowing in each river at flood, medium, and low-water stages. As records of flow to be of the most value must extend over a period of years, on account of the great inequalities of flow from year to year, it was important that this branch of investigations be undertaken as soon as possible. Accordingly, the first work undertaken was the establishment of gaging stations on the following streams:

MINNESOTA GAGING STATIONS.

Rainy River Basin.—Rainy, at International Falls; Big Fork, at Big Falls; Little Fork, at Little Fork.

Red River Basin.—Wild Rice, at Twin Valley; Red Lake, at Thief River Falls; Red Lake, at Crookston; Thief, near Thief River Falls; Clearwater, at Red Lake Falls; Ottertail, near Fergus Falls; Pelican, near Fergus Falls.

Mississippi River Basin above Minnesota River.—Mississippi, near Fort Ripley; Mississippi, at Anoka; Crow Wing, at Nimrod; Crow Wing, at Pillager; Long Prairie, near Motley; Sauk, near St. Cloud; North Branch Crow, near Rockford; South Branch Crow, near Rockford; Crow, at Rockford; Rum, at Onamia; Rum, at Cambridge.

Minnesota River Basin.—Minnesota, near Odessa; Minnesota, near Montevideo; Minnesota, near Mankato; Whetstone, near Big Stone, S. Dak.; Lac Qui Parle, at Lac Qui Parle; Chippewa, near Watson; Redwood, near Redwood Falls; Cottonwood, near New Ulm; Blue Earth, at Rapidan Mills.

Mississippi River Basin below Minnesota River.—Mississippi, at St. Paul; Cannon, at Welch; Zumbro, at Zumbro Falls; North Branch Root, near Lanesboro; Root, at Houston.

St. Croix River Basin.—Kettle, near Sandstone; Snake, at Mora.

St. Louis River Basin.—St. Louis, near Thomson; Whiteface, at Meadowlands; Cloquet, at Independence.

Cedar River Basin.—Cedar, near Austin.

Des Moines River Basin.—Des Moines, at Jackson.

The gaging stations are all of the standard current-meter type, which was described in the article published in the Monthly Weather Review for March, 1910, entitled "The Work of the Water Resources Branch of the United States Geological Survey in the Ohio River Valley," by Mr. A. H. Horton.

Although all of the above stations have been maintained for a shorter period than two years (with a few exceptions) the low-water records already obtained may be considered very nearly the absolute minimum discharge on account of the exceedingly dry weather in the latter half of 1910.

RIVER SURVEYS.

As soon as the gauging stations were established, the work of surveying the rivers was undertaken for the general study of water-power development, drainage, and flood prevention. It was not the intention to make final detailed surveys, but to obtain such information as would indicate their most prominent physical features, leaving the detailed surveys to be made by those interested in the various projects.

The river surveys were commenced in September, 1909, and carried on without interruption until June, 1910, there being two parties constantly in the field. As a result of this work, the following surveys were made:

River.	Limits of survey.	Distance in miles.
Cannon	Mouth to Faribault	61
Cloquet	Mouth to Brimson	70
Crow Wing	Mouth to Crow Wing Dam	89
Ottertail	Sec. 6, T. 132 N., R. 44 W., to Phelps Dam	51
Red Lake River	Red Lake, at Crookston	143
Root	Mouth to Orion Mill, above Chatfield	107
Rum	Mouth to Onamia	142
St. Louis	Scanlon to Skibo	149

In addition to the above, a survey of Mille Lac Lake was made in cooperation with the State Board of Health.

The method used in making the river surveys was that of the transit and stadia, making a magnetic traverse of the river and using the transit as a level in carrying elevations. By tying to standard Government bench marks on most of the surveys all elevations were referred to mean sea level.

DEVELOPED WATER POWER.

The third line of investigation carried on was a census of the developed water powers of the State. A large majority of the water-power plants, including all of the larger ones, were visited and information obtained from the owner or operator regarding head, turbine installation, average power developed, sufficiency of water supply, and kindred subjects. The information regarding the remaining plants was obtained by correspondence. From this census the following table has been compiled:

Developed water power in Minnesota in 1910.

Drainage basin.	Plants.	Wheels.	Installed horse-power.	Average horse-power developed.
Mississippi River	109	374	118,040	76,120
Hudson Bay	24	60	18,140	15,000
Lake Superior	2	20	49,000	22,000
Total	135	454	185,180	113,120

A detailed report covering the above work has been made to the State Drainage Commission and published as a public document.

TABLE 1. *Climatological data for March, 1911. 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	14	29.2	+ 7.4	66	25	− 5	4	45	T.	− 0.08	T.	T.	0	23	4	4	nw.	C. E. Wood.
Bottineau	Bottineau	1,638	16	24.2	+ 8.4	54	20	− 6	4	39	0.23	− .81	.11	6.6	4	11	6	14	se.	J. A. Kemp.
Cando	Towner	1,488	10	27.6[j]	+ 7.3	55	27	3	3	45[j]	.25	− .19	.25	2.0	1					E. T. Judd.
Crosby	Divide		5	27.8		58	23	− 10	4	39	.19		.11	2.0	2	25	3	5	sw.	H. C. Kaschau.
Devils Lake	Ramsey	1,482	6	28.0	+ 9.5	56	25	− 4	4	40	.16	− .85	.07	.7	5	11	10	10	n.	U. S. Weather Bureau.
Donnybrook	Ward	1,760	12	27.8	+ 6.7	67	20	− 10	4	43[b]	.33	− .77	.29	.4	2	18	6	7	nw.	C. J. DeVore.
Dunseith	Rollette		14	26.0	+ 9.0	53	24	− 5	15	27	.20	− .65	.10	2.0	2	25	3	3	w.	L. H. Trowbridge.
Edmore	Ramsey	1,524	6																	H. R. Aslakson.
Forman	Sargent	1,249	17	40.7	+17.5	74	20	8	15	50	.10	−1.03	.10	1.0	1	19	3	9	nw.	A. Maltby.
Grafton	Walsh	827	20	28.9	+10.1	60	24†	− 15	4	40[a]	.11	− .70	.11	.3	1	14	11	6	nw.	A. R. T. Wylie.
Granville	McHenry	1,504	5	29.2		64	20	− 15	4	41[a]	.10		.08	2.0	2				nw.	W. A. Christiansen.
Hannah	Cavalier	1,568	6	23.4		50	24	− 10	15	33	.10		.10	1.0	1	18	3	10	nw.	J. Moffatt.
Hansboro	Towner		3	26.0		54	24	− 5	4†	35	.00		.00	.0	0	19	7	5	nw.	Geo. Dale.
Hillsboro	Traill	901	6	31.8		64	25	− 7	4	41	.15		.15	T.	1	8	18	5	nw.	F. E. Mayall.
Lakota	Nelson	1,519	5	26.6		68	25	− 6	3	34[a]	.08		.07	1.5	2	4	25	2	nw.	C. R. Pettes.
Langdon	Cavalier	1,615	16																	J. Woolner.
Larimore	Grand Forks	1,134	16	30.6	+11.1	56	20	6	3	26	.30	− .64	.30		1	20	2	9	nw.	Reuben Gray.
Lisbon	Ransom	1,091	7	32.8	+ 4.8	72	25	− 2	4†	51	T.	− .85	T.	T.	0	19	7	5	nw.	H. K. Adams.
McKinney	Renville	1,640	17	28.2	+11.3	66	20	− 16	4	44	.15	− .68	.15	1.5	1	18	10	3	se.	H. P. Swenson.
Manfred	Wells	1,605	10	29.6		62[a]	20	− 10	4	47[a]	.36		.20	1.0	4	10	15	6	nw.	P. B. Anderson.
Mayville	Traill	975	15	36.0	+ 9.1	64	25	9	15	50	.16	− .62	.11		2	21	9	1	nw.	W. C. Gould.
Minot	Ward	1,557	13	30.6	+13.1	68	20	− 6	4	42	.26	− .64	.22	2.4	2	23	3	5	w.	J. J. Bates.
Minto	Walsh	820	18	28.8	+ 9.6	64	25	− 15	4	39	.13	− .79	.12		2	16	8	7	n.	S. S. Marsh.
Oriska	Barnes	1,270	6	31.8		64	20†	− 4	4	38	T.		T.	.0	0	6	23	2	nw.	W. E. Williams.
Park River	Walsh	998	8	29.1		63	25	− 8	4	34	.01		.00	.0	0	16	14	1	w.	A. Heyward.
Pembina	Pembina	789	13	20.0	+ 2.3	52	25	− 12	22	36	.33	− .78	.10	3.3	8	12	14	5	w.	C. W. Shumaker.
Power	Richland	1,020	19	31.4	+ 9.2	67	24†	− 8	4	41	.20	− .62	.10	2.0	2	15	9	7	nw.	J. A. Power.
Pratt	McHenry		6																	C. H. Butts.
Towner	do		3	29.0		62	20	− 13	4	38	.40		.25	3.0	3	20	9	2	w.	B. Bagley.
University	Grand Forks	830	19	28.2	+ 6.5	65	25	− 16	4	40	.24	− .53	.21	.3	2	14	12	5	n.	H. E. Simpson.
Wahpeton	Richland	962	19	32.0	+ 5.3	65	24†	0	4	44	.10	− 1.01	.10	.5	1	14	10	7	nw.	E. G. Burch.
Walhalla	Pembina	966	7																	C. H. Lee.
Westhope	Bottineau		5																	C. W. Clark.
Willow City	do	1,471	18	24.6	+ 7.7	58	20	− 18	1	40	.10	− .42	.10	1.0	1	18	7	6	w.	M. A. Ostby.
Minnesota.																				
Albert Lea	Freeborn	1,229	20	36.6	+ 7.3	74	21†	3	15	46	.35	− 1.03	.20	2.0	2	7	21	3	nw.	Edward Carey.
Alexandria	Douglas	1,391	17			68	25				.36	− .71	.28	.7	3	21	1	9	nw.	P. O. Unumb.
Angus	Polk	870	9	25.4		62	25	− 25	4	45	.25		.19	.6	4	18	9	4	n.	John Nadvornik.
Bagley	Clearwater		5	27.2		60	25	− 25	4	50	.43		.37	3.0	2	7	23	1	nw.	Jens Nelson.
Beardsley	Bigstone	1,090	17																	Roy A. Smith.
Beaulieu	Mahnomen	1,200	9	29.6		64	21	− 24	3	46	.90		.60	9.0	2	14	11	6	nw.	Dr. P. A. Slattery.
Bird Island	Renville	1,039	21	34.6	+ 6.6	73	21	− 3	15	47	.17	− .84	.06	.7	4	8	9	14	nw.	Dr. F. L. Puffer.
Caledonia	Houston	1,179	18	34.0	+ 3.5	74	21	7	6	41	.76	− .57	.45	2.0	5	13	3	15	nw.	W. D. Belden.
Campbell	Wilkin	984	2	31.6		68	25	1	1	53	.26		.12	.4	4	15	3	13	nw.	J. T. Nelsess.
Cass Lake	Cass	1,300	4								.90		.45	0.5	5					C. W. Burns
Collegeville	Stearns	1,282	18	35.8	+ 7.2	72	21	− 2	15	37	.46	− .68	.37	1.2	3	20	8	3	nw.	F. Tembreul.
Crookston	Polk	863	21	26.6	+ 5.4	59	25	− 13	4	42	.10	− 1.06	.10	1.0	1	17	5	9	s.	A. G. Andersen.
Detroit	Becker	1,364	15	28.8[d]	+ 6.7	66	22	− 20	4	52[d]	.48	− .43	.25	3.0	4	13	16	2	nw.	G. W. Peoples.
Fairmont (near)	Martin	1,240	24	36.3	+ 7.6	69	21	4	15	36	T.	− 1.57	T.	T.	0	16	13	2	nw.	W. F. Wherland.
Faribault	Rice	1,003	14	37.6	+ 6.3	74	21	1	15	40	.71	− .46	.38	3.5	9	16	11	4	nw.	Dr. A. C. Tanner.
Farmington	Dakota	902	23	36.2	+ 7.9	75	21	3	15	50	1.14	− .75	.35	2.2	6	10	14	7	nw.	D. F. Aikin.
Fergus Falls	Ottertail	1,210	19	32.8	+ 7.2	60	13	− 3	15	35	.82	− .18	.75	2.0	5	11	14	6	nw.	C. E. Kissinger.
Fort Ripley	Crow Wing	1,136	4	32.2		68	21	− 4	15	42	.13	− .87	.13	1.0	1	18	0	13	n.	J. J. Tucker.
Fosston	Polk	1,289	2	29.1		61	25	− 19	4	44	1.80		1.10		3	17	9	5	nw.	O. N. Hem.
Fram	Marshall										T.		T.	T.	0	2	22	7	sw.	A. W. Clark.
Glencoe	McLeod	1,000	15	38.4	+ 9.5	75	21	− 1	1	50	T.	− .86	T.	T.	0	19	10	2	s.	F. B. Reed.
Grand Meadow	Mower	1,338	23	35.3	+ 7.3	76	21	4	16	41	.60	− 1.22	.40	2.5	4	13	14	4	nw.	C. F. Greening.
Gull Lake Dam	Cass	1,315		32.2		63	20†	− 8	15	42	.38		.37	1.0	2	20	7	4	n.	G. A. Williams.
Hallock	Kittson	815	12	23.4	+ 3.3	60	24†	− 22	4	50	.02	− 1.34	.02	.2	1	17	7	7	n.	D. A. Robertson.
Halstad	Norman	870	5	28.0		73	25	0	1†	52	.50		.50	5.0	1	23	4	4	s.	A. G. Holstrom.
Hinckley	Pine	1,050	6	32.4		71	21	− 5	16	43[a]	.69		.32	5.0	3	7	15	9	n.	W. R. Newman.
International Falls	Koochiching	1,112	3	28.4		60	25	− 10	15	42	.96		.30	7.1	7	12	16	3	w.	Rees Roe.
Kelliher	Beltrami		4	29.4		60	14†	− 14	4	49	.43		.20	5.3	3	8	17	6	nw.	A. Gilmour.
Lake Crystal	Blue Earth		4	38.0		73	21	5	15	42	.20		.20	T.	1	20	6	5	nw.	W. P. Cobb.
Leech Lake Dam	Cass	1,301	23	28.1	+ 6.8	60	25	− 16	4	41	1.58	+ .31	1.01	7.1	4	3	24	4	w.	Hans Olson.
Litchfield	Meeker	1,134	2																	N. Y. Taylor.
Little Fork	Koochiching			25.6		60	25	− 22	4	47	.59		.31	4.5	3	19	9	3		O. C. Olson.
Long Prairie	Todd	1,299	19								.50	− .66	.50	T.	1	19	7	5	nw.	R. M. Sheets.
Lynd	Lyon	1,175	19	37.6	+ 9.1	75	21	2	18	52	.66	− .51	.42	.5	3	22	5	4	nw.	J. W. Rouse.
Mankato	Blue Earth	758	12								.30	− .68	.20	T.	2	12	7	12	sw.	Sadie H. Blake.
Maple Plain	Hennepin	1,023	18																	G. W. Richards.
Milaca	Millelacs	1,072	13	33.4	+ 6.8	74	21	− 4	15	41	.30	− .58	.30	3.0	1	11	16	4	nw.	C. H. Foss.
Milan	Chippewa	955	17	35.2	+ 7.5	71	25	− 1	15	41	.35	− 1.10	.30	.2	2	5	25	1	nw.	O. K. Opjorden.
Minneapolis	Hennepin	918	20	36.0	+ 6.0	75	21	0	15	45	1.25	− .40	.88	4.6	6	13	11	7	nw.	U. S. Weather Bureau.
Montevideo	Chippewa	900	21	38.0	+10.6	73	25	2	15	46	.43	− .88	.20		3	13	13	5	nw.	L. G. Moyer.
Moorhead	Clay	935	30	31.2	+ 9.8	65	24	− 2	4	41	.23	− .91	.16	1.5	5	19	6	6	nw.	U. S. Weather Bureau.
Mora	Kanabec		6	33.4		74	21	− 5	16	40	.72		.33	5.0	5	20	10	1	s.	Hans Peterson.
Morris	Stevens	1,170	26	34.4	+ 9.0	68	25	0	15	44	.50	− .45	.45	1.0	2	23	3	5	nw.	D. T. Wheaton.
New London	Kandiyohi	1,215	17	33.2	+ 6.7	75	9	2	30	40	.34	− .94	.27	T.	2	13	17	1	sw.	Harold Swensen.
New Richland	Waseca	1,180	17	37.0	+ 6.0	72	21	5	15	44	.49		.25		4	13	16	2	nw.	N. O. Tryholm.
New Ulm	Brown	791	31	36.4	+ 8.3	72	21†	4	15†	46	.70	− .85	.37	.6	4	9	0	22	nw.	A. J. Eckstein.
Osakis	Douglas	1,343	4	34.2		68	21	− 3	15	46	.30		.30		1	17	7	7	s.	J. B. Johnson.
Park Rapids	Hubbard	1,426	21	28.7	+6.9	62	21	− 7	4	48	.73	− .33	.35	4.3	3	15	4	12	nw.	Dr. P. A. Walling.
Pine River Dam	Crow Wing	1,251	24	30.8	+ 8.4	59	+13	− 7	4	39	.80	− .39	.60	T.	2	21	7	3	nw.	Neil McKay.
Pokegama Falls	Itasca	1,280	24	28.8	+ 7.9	60	25	− 15	4	40	1.24	− .16	.99	2.0	4	10	18	3	nw.	A. L. Mampel.
Red Lake	Beltrami	1,152	3	28.6		61	25	− 18	4	42	.35		.35	2.0	1	12	16	3	s.	A. C. Goddard.
Red Wing	Goodhue	680	15								1.15	− .30	.94	6.0	7	12	3	16	se.	Louis Bach.
Redwood Falls	Redwood	1,050	4	38.8		74	21	4	15	41	.20	− .56	.20	2.0	1	16	12	3	nw.	N. B. Andersen.
Reeds Landing	Wabasha	681	16								.47	− .68	.22	3.0	6	9	4	18	nw.	John Deschneau.
Rochester	Olmsted	991	6	34.2		65	25	3	16	36	.65		.30	2.0	3	13	2	16	s.	S. R. Case.
Roseau	Roseau	1,040	3	26.0		60	25	− 25	4	49	.17		.14	2.5	2	15	13	3	nw.	A. Waag.
St. Charles	Winona	850	20	36.6	+ 7.6	74	22	2	16	65	.75	− .65	.50	2.5	3	11	10	9	se.	S. W. Gleason.
St. Cloud	Sherburne	1,020	33	36.0	+ 9.0	75	21	− 2	15	40	.87	− .53	.70	2.5	3	15	8	8	nw.	J. H. Capser.
St. Paul	Ramsey	837	40	35.4	+ 7.2	74	21	1	15	40	.74	− .86	.51	2.1	5	11	16	4	s.	U. S. Weather Bureau.

TABLE 1.—*Climatological data for March, 1911. 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.**																				
St. Peter	Nicollet	825	17	38.4	+ 6.2	69	20†	0	18	53	1.00	− 0.35	1.00	0.0	1	11	14	6	s.	F. W. Kruger.
Sandy Lake Dam	Aitkin	1,234	18	27.5	+ 3.9	54	24	− 9	4	34	.70	− .60	.70	4.0	1	9	16	6	nw.	A. Newstrom.
State Sanatorium	Cass		3	31.0		60	25	− 8	15	38	1.22		1.06	2.5	3	17	9	5	w.	Dr. W. J. Marcley.
Stillwater	Washington	694	6								.70		.52	1.7	3	12	6	13	nw.	Oscar Ostrom.
Taylors Falls	Chisago	759	4	35.0		73	21	− 1	16	51						14	6	11	s.	Minneapolis Gen. Elec. Co.
Warroad	Roseau	1,069	2	25.4		60	25	− 24	4	51	.35		.35	3.5	1	18	5	8	nw.	J. H. Sawyer.
West Concord	Dodge	1,232	2	37.4		73	21	1	15	49	.45		.45	T.	1	15	14	2	nw.	H. H. Orcutt.
Windom	Cottonwood	1,336	4																	T. C. Richmond.
Winnebago	Faribault	1,100	12	39.2	+ 7.7	74	21	5	15	46	.20	− 1.11	.10	2.0	2	12	14	5	nw.	H. H. Haight.
Winnibigoshish	Itasca	1,300	23	29.2	+ 7.5	58	13	− 10	4	36	1.49	+ .30	1.22	10.1	3	15	11	5	nw.	John Duncan.
Winona	Winona	700	15	38.2	+ 6.3	76	21	5	15	41	.81	− .72	.35	4.0	7	13	7	11	nw.	P. C. Myers.
Worthington	Nobles	1,593	16	35.2	+ 5.7	70	20	3	15	41	T.	− 1.45	T.	T.	0	23	1	7	s.	M. P. Mann.
Zumbrota	Goodhue	917	15	36.9	+ 6.7	73	21	− 2	15	46	.84		.30	1.0	6	13	17	1	nw.	W. C. Rowell.
South Dakota.																				
Milbank	Grant	1,148	20	34.0	+ 6.2	72	20	1	15	53	.37	−0.88	0.30	0.5	2	21	5	5	nw.	I. T. Patridge.
Wisconsin.																				
Antigo	Langlade	1,489	17	30.1	+ 3.6	65	21	− 3	15	49	1.16		.40	5.3	7	19	0	12	w.	Elton C. Larzelere.
Barron	Barron	1,115	20	32.3	+ 6.8	71	21	− 3	15	47	.88	− .75	.43	4.5	4	14	12	5	nw.	Wm. A. Kent.
Beloit	Rock	750	45	37.2	+ 3.0	72	21	10	15†	38	.17	− 2.04	.14	.3	3	22	0	9	w.	Smith Observatory.
Big St. Germain Dam §	Vilas	1,590	1	28.6		65	21	− 10	18	46	1.39		.50	12.5	8	17	2	12	sw.	Oscar Brehmer.
Brodhead	Green	812	13	37.9	+ 3.4	76	21	7	16	48	.15	− 2.38	.15	T.	1	15	10	6	nw.	Hector D. Kirkpatrick.
Burnett	Dodge	880	7	34.4		74	21	7	16	42	.21		.18	1.0	3	11	6	14	nw.	Geo. W. Smith.
Cottage Grove	Dane	888									.42		.21	.2	5	9	14	8	sw.	John E. Mellish.
Darlington	Lafayette	867	5	35.4		76	21	5	16	50	.40		.30		2	19	1	11	nw.	S. P. Nelson.
Deerskin Dam §	Forest	1,625	1	35.6		59	21	5	15	41	1.59		.50	8.7	6	16	6	9	sw.	Wm. E. O'Neal.
Delavan	Walworth	920	20	35.8	+ 4.3	73	21	6	16	46	.80	− 1.05	.38	T.	5	15	4	12	nw.	Elwood S. Austin.
Dodgeville	Iowa	1,116	11																	Geo. H. Butler.
Downing	Dunn	983	9	33.9[e]		75	21	0	15	47[e]	.12		.10	T.	3	3[b]	5[b]	21[b]	sw.	Eugene F. Stoddard.
Eau Claire	Eau Claire	800	20	36.4	+ 7.7	77	21	2	15	47	1.34	− .70	.60	5.7	7	12	10	9	nw.	Robert D. Whitford.
Grand Rapids	Wood	1,021	12	32.6	+ 3.0	71	21	3	16	39	2.64	+ 1.05	.90	10.3	8	10	10	11	w.	Willis B. Raymond.
Grantsburg	Burnett	1,095	20	35.4	+ 9.2	74	20	− 2	15	41	1.64	− .11	.60	7.5	5	5	11	15	nw.	Theodore Olsen.
Hancock	Waushara	1,091	19	34.6	+ 5.2	69	21	5	15†	54	1.38	− .40	.65	4.0	5	13	6	12	sw.	Frederick B. Hamilton.
Hatfield	Jackson	973	17	32.8	+ 4.4	72	21	− 4	17	60	2.05	+ .76	.76	6.0	6	15	6	10	s.	Walter S. Woods.
Hayward	Sawyer	1,197	20	31.4	+ 7.0	70	21	− 5	15	58	1.55	− .18	.55	6.5	6	13	8	10	s.	William E. Swain.
Hillsboro	Vernon	1,000	20	33.8	+ 4.5	75	21	2	16	53	.64	− 1.40	.50	1.0	3	12	14	5	sw.	Emil V. Wernick.
Koepenick	Langlade	1,683	20	24.9	− 1.1	65	21	− 10	16†	43	2.80	+ .94	.90	13.0	8	2	22	7	sw.	Edward S. Koepenick.
Lac du Flambeau §	Vilas		1	29.8		68	21	− 6	17	47	2.07		.86	14.1	9	17	2	12	s.	W. J. Lovett.
La Crosse	La Crosse	714	39	37.2	+ 6.3	75	21	7	15	39	.87	− .78	.58	2.4	7	7	9	15	s.	U. S. Weather Bureau.
Lake Mills	Jefferson	897	20	36.0	+ 3.9	76	21	9	16	43	.49	− 1.69	.28	1.1	7	11	13	7	sw.	S. Newton, Dexter Smith.
Lancaster	Grant	1,070	20	36.7	+ 5.5	76	21	6	16	46	.80	− .95	.59	2.5	3	12	15	4	sw.	Edward Pollock.
Long Lake	Oneida	1,592	3	27.1		62	22	− 20	18	65	1.76		.65	11.4	8	15	8	8	s.	Louie Frank.
Madison	Dane	974	42	35.8	+ 5.7	75	21	7	15	39	.47	− 1.74	.27	.4	5	11	3	17	nw.	U. S. Weather Bureau.
Mather	Juneau	962	7																	Frank Evans.
Mauston	do	882	15	37.6	+ 7.4	81	21	0	16	50	.36	− 1.67	.36		1	14	2	15	sw.	Eugene L. Hitchcock.
Meadow Valley	do	974	20	33.8	+ 5.5	70	21	− 3	18	49	1.89	+ .46	.53	6.0	6	7	15	9	s.	Charles H. Johnson.
Medford	Taylor	1,420	22	31.2	+ 5.0	70	21	− 1	15†	45	1.20	− .25	.45	4.0	6	14	13	4	s.	William Zeit.
Merrill	Lincoln	1,267	5	32.6		73	22	0	16	56						19	1	11	w.	Wm. T. Hunter.
Minocqua	Oneida	1,604	7	29.8		65	21	− 6	18	42	1.41		.37	5.5	8	7	16	8	s.	Benjamin W. Applebee.
Mondovi	Buffalo	738	3	35.8		76	21	3	15	47	1.29		.50	6.0	8	17	7	7	nw.	Dr. Charles Hebard.
Mount Horeb	Dane	1,226	7	35.2		76	21	3	16	41	.82		.35	1.0	4	15	7	9	s.	W. M. Lewis.
Muscoda	Grant	666	2	35.5		78	21	8	16	48	.51		.45	.2	2	16	6	9	nw.	Henry Eckstein.
Nellisville	Clark	996	21	33.9	+ 6.1	73	21	− 3	18	45	1.87	− .27	1.41	2.0	4	11	3	17	nw.	Wm. Heaslett.
New Richmond	St. Croix	990	6	35.4		74	21	− 2	15	42	1.40		.40	6.0	4	10	17	4	nw.	Franc A. R. Van Meter.
Osceola	Polk	806	20	35.0	+ 8.4	72	20	0	15	40	.41	− 1.49	.38	.5	2	17	2	12	s.	Charles W. Staples.
Park Falls	Price	1,492	20	29.2[d]		68	21	− 7	15	50[d]	1.55		.65	3.3	4	18	2	7	w.	Flambeau Paper Co.
Portage	Columbia	809	22	36.4	+ 5.3	75	21	8	15†	53	.45	− 1.36	.25	3.0	3	15	7	9	nw.	Jeremyah Hanifan.
Port Edwards	Wood	969	1	33.8		81	21	− 5	18	61	1.33		.68	6.0	6	9	6	16	nw.	Nekoosa-Edwards Paper Co.
Prairie du Chien	Crawford	690	20	37.2	+ 4.4	79	21	8	16	47	.53	− 1.38	.49	1.0	2	16	4	11	s.	James A. Gillis.
Prentice	Price	1,551	13	27.8	+ 3.6	62	21†	− 11	18	53	1.57	+ .30	.45	7.4	7	11	2	18	s.	Joseph G. Lash.
Rhinelander	Oneida	1,550	5	30.2		67	21	− 4	15	56	1.46		.50	6.7	9	14	8	9	sw.	John Lind.
Sauk City	Sauk	758	3																	Killen Derleth.
Shullsburg	Lafayette	1,019	5	35.5		63	25	5	16	41	.79		.54	4.5	3	13	9	9	s.	Harrison B. Chamberlin.
Solon Springs	Douglas	1,083	5	31.2		64	22	− 5	15	37	.43		.20	3.8	4	10	7	14	sw.	John M. Sayles.
Spooner	Washburn	1,104	17	31.1	+ 5.7	69	21	− 7	15	40	.44	− 1.49	.20	2.0	3	11	5	15	w.	Horace A. Bresee.
Stanley	Chippewa	1,082	7	33.5		73	21	− 1	15	45	1.04		.33	4.7	6	15	3	13	nw.	W. Humphrey Scott.
Stevens Point	Portage	1,113	18																	Garry E. Culver.
Sugar Camp Dam §	Oneida	1,582	1								1.32		.44	6.0	8				s	Robert Hayes.
Twin Lakes Dam §	Vilas	1,625	1								1.30		.50	11.2	8	4	20	7	s.	Albert D. Hansen.
Valley Junction	Monroe	930	19	34.6	+ 5.4	69	21	3	15†	51	1.80	− .21	.41	2.0	8	15	3	13	nw.	Frederick Muermann.
Viroqua	Vernon	1,412	21	36.6	+ 6.2	75	21	5	16	50	.64	− 1.50	.33	1.5	5	10	10	11	nw.	Henry E. Rogers.
Vudesage	Vilas	1,600	3	26.0		57	21	− 10	16†	47	2.72		.72	22.0	12	16	7	8	sw.	Louis L. Thomas.
Watertown	Jefferson	824	20	35.0	+ 3.9	74	21	9	16	44	1.13	− 1.21	.50	.0	4	11	11	9	s.	Charles J. Salick.
Waukesha	Waukesha	864	20	35.6	+ 3.4	74	21	8	16	46	.42	− 1.75	.33	.5	4	10	17	4	sw.	Carroll College.
Wausau	Marathon	1,212	16	31.8[e]	+ 3.2	70[e]	21	3	16	39[e]	1.70	− .14	.46	7.5	9	17	4	10	w.	George H. Halder.
Weyerhaeuser	Rusk	1,297	9	30.4		72	21	− 4	15†	47	1.43		.56	10.7	7	11	13	7	sw.	Miss Etta Stiles.
Whitehall	Trempealeau	675	20	37.4	+ 6.9	76	21	− 4	16	63	1.40	− .18	.80	5.0	5	17	0	14	nw.	Hans J. Haugh.
Iowa.																				
Albia §	Monroe	959	13	39.8	+ 2.2	77	21	11	15	39	1.94	+ .04	.75	1.0	6	19	9	3	w.	J. I. Chenoweth.
Algona §	Kossuth	1,213	37	38.0	+ 8.4	76	21	6	15	41	.27	− 1.29	.27	3.0	1	20	7	4	s.	Dr. F. T. Seeley.
Alta	Buena Vista	1 513	20	37.3	+ 6.7	72	20†	8	15	41	.47	− 1.19	.25	4.0	3	18	9	4	nw.	David E. Hadden.
Amana	Iowa	721	35	39.2	+ 6.7	77	21	12	15	41	1.01	− .99	.50	4	6	14	13	4	nw.	C. Schadt.
Ames	Story	926	35	41.5	+ 8.0	83	21	10	15	48	.57	− .84	.29	T.	2	17	12	2	nw.	Iowa State College.
Baxter §	Jasper	998	11	40.4	+ 3.8	80	20	10	15	46	.87	− 1.34	.37	2.5	8	16	12	3	sw.	W. R. Vandike.
Belle Plaine	Benton	828	21	38.6	+ 5.2	79	21	11	15	40	.88	− 1.63	.45	2.0	6	13	14	4	nw.	S. P. VanDike.
Belmond	Wright		1	37.0		77	21	6	15	42	.83		.50	3.7	6	4	20	7	nw.	Geo. P. Hardwick.
Bloomfield §	Davis		4	41.2		78	21	12	16	49	1.52								nw.	C. R. Davis.
Bonaparte §	Van Buren		20	41.2	+ 3.2	78	21	14	16	40	1.97	− .58	.75	T.	4					Hon. B. R. Vale.
Boone	Boone	1,134	6	38.2		74	21	8	16	37	.36		.26	T.	2	19	10	2		Carl Fritz Henning.
Britt §	Hancock	1,236	14	37.2	+ 6.1	77	21	5	15	42	.48	− 1.02	.22	2.5	3	15	13	3	s.	L. M. Goodman.
Buckingham	Tama		11								.46	− 1.76	.35		4					J. S. Guynn.

TABLE 1.—*Climatological data for March, 1911. 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—Continued.																				
Burlington	Des Moines	544	15	39.9	+ 0.1	80	21	15	16	40	2.78	− 0.08	0.93	3.5	5	14	10	7	nw.	Max E. Poppe, jr.
Carroll	Carroll	1,265	21	38.0	+ 5.3	74	20	9	15	46	.61	− 1.43	.41	2.0	2	15	13	3	nw.	Mrs. Jos. J. Wolfe.
Cedar Rapids	Linn	733	29	37.0	+ 3.4	77	21	13	16	40	1.28	− .76	.80	.5	5	20	2	9	w.	R. S. Toogood.
Charles City	Floyd	1,015	20	36.4	+ 8.0	77	21	8	15	36	.98	− .94	.85	1.3	4	8	8	15	nw.	U. S. Weather Bureau.
Clear Lake §	Cerro Gordo	1,241	13	38.1	+ 6.4	70	21	11	27	41	1.08	− .51	.60	4.2	4	13	1	17	s.	Oscar Stevens.
Clinton	Clinton	593	44	39.4	+ 5.9	78	21	9	16	46	1.43	− 1.59	.55	2.0	4	10	12	9	.....	Luke Roberts.
Columbus Junction §	Louisa	595	10	41.2	+ 2.2	77	21	14	16	37	1.08	− 1.43	.55	1.0	5	22	5	4	se.	J. B. Johnston.
Davenport	Scott	580	40	40.7	+ 5.3	74	21	14	15	30	1.08	− 1.13	.9	T.	9	13	11	7	nw.	U. S. Weather Bureau.
Decorah	Winnishiek	875	18	36.1	+ 4.5	78	21	5	16	49	.68	− 1.37	.....	3.0	3	.....	.....	.....	.....	F. H. Baker.
Delaware	Delaware	1,083	20	37.2	+ 5.6	74	21	9	16	42	.78	− 1.05	.42	1.5	5	14	13	4	nw.	William Ball.
Des Moines	Polk	861	33	40.6	+ 4.9	76	21	13	15	34	1.14	− .51	.45	1.2	7	14	4	13	w.	U. S. Weather Bureau.
Dubuque	Dubuque	639	38	38.9	+ 5.7	76	21	12	15	37	.52	− 1.09	.36	1.1	4	11	7	13	s.	Do.
Earlham	Madison	.....	9	40.6	.....	76	21	13	15†	44	1.47	− .29	.89	1.0	7	16	5	10	nw.	George Phillips.
Elkader	Clayton	727	32	37.6	+ 5.8	68	21	8	18†	47	.56	− 1.35	.43	2.5	3	16	9	6	nw.	Chas. Reinecke.
Elma	Howard	.....	2	36.2	.....	76	21	5	16	39	1.10	.....	.73	2.5	4	7	19	5	nw.	H. A. Moore.
Estherville	Emmet	1,298	16	35.8	+ 6.8	71	20	3	15	46	T.	− 1.44	T.	T.	0	21	0	10	s.	A. O. Peterson.
Fairfield	Jefferson	.....	27	41.0	+ 7.2	76	21	16	16	36	1.37	− 1.20	.60	.6	4	18	7	6	nw.	R. Monroe McKenzie.
Fayette §	Fayette	1,003	21	36.6	+ 5.4	78	21	7	16	44	1.10	− 1.16	.60	2.0	5	14	10	7	nw.	R. Z. Latimer.
Forest City §	Winnebago	1,226	17	35.7	+ 6.0	77	21	2	16	38	.25	− 1.31	.16	T.	2	14	12	5	w.	J. A. Peters.
Fort Dodge	Webster	1,126	11	37.0	+ 3.6	76	21	8	15†	40	.35	− 1.91	.13	1.5	3	21	1	9	s.	J. F. Monk.
Fort Madison	Lee	516	62	.....	.....	.....	.....	.....	.....	.....	4.84	+ 2.08	2.0	2.0	4	13	7	11	s.	Miss L. A. McCready.
Gilman	Marshall	1,052	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. L. Wylie.
Grand Meadow	Clayton	1,180	20	38.6	+ 7.3	78	21	7	15	45	.98	− 1.16	.65	3.0	4	9	14	8	sw.	F. L. Williams.
Greene	Butler	.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. L. Cole.
Grinnell	Poweshiek	1,023	19	41.0	+ 7.9	80	21	11	15†	45	1.22	− .52	.48	1.2	6	14	10	7	w.	D. W. Brainard.
Grundy Centers §	Grundy	976	20	39.6	+ 7.0	78	21	9	15	46	.66	− 1.16	.57	.....	2	20	0	11	nw.	J. B. Calderwood.
Guthrie Center §	Guthrie	1,077	16	40.5	+ 5.1	74	21	12	15	47	.69	− .71	.60	T.	4	21	3	7	nw.	D. G. Beardsley.
Hampton	Franklin	1,155	21	38.7	+ 8.4	79	21	8	15	38	.83	− 1.42	.75	2.2	4	10	17	4	nw.	E. C. Grenelle.
Humboldt	Humboldt	1,095	23	39.5	+ 7.7	77	21	7	15	43	.67	− .93	.54	6.3	3	24	2	5	sw.	Henry S. Wells.
Independence §	Buchanan	921	47	40.6	+ 9.8	77	21	12	16	48	.56	− 1.07	.46	T.	2	18	6	7	nw.	R. E. Dudley.
Indianola	Warren	969	20	41.6	+ 5.5	76	21	13	15	42	1.63	+ .31	.53	1.0	7	15	5	11	nw.	Prof. J. L. Tilton.
Iowa City	Johnson	683	51	37.1	+ 3.1	78	21	8	19	47	1.39	− 1.05	.40	1.0	7	16	1	14	nw.	Prof. A. G. Smith.
Iowa Falls	Hardin	1,170	18	35.8	+ 3.9	76	21	7	16	43	.68	− 1.05	.55	1.0	3	17	7	7	nw.	J. B. Parmelee.
Jefferson §	Greene	.....	12	40.6	.....	75	21	10	15	45	.34	− 1.34	.33	T.	2	18	7	6	se.	M. E. Hall.
Keokuk	Lee	547	40	43.2	+ 5.3	76	11	18	16	34	1.79	− .58	.95	T.	6	16	12	3	nw.	U. S. Weather Bureau.
Keosauqua	Van Buren	644	19	39.8	+ 1.6	79	21	13	16	48	1.67	− .87	.72	2.0	6	7	18	6	.....	J. H. Landes.
Knoxville §	Marion	920	16	41.4	+ 4.0	76	21	13	15	46	1.60	+ .03	.50	2.5	6	18	6	7	sw.	Casey & Bellville.
Lacona	Warren	.....	12	.....	.....	.....	.....	.....	.....	.....	1.67	− .83	.54	2.0	9	5	21	5	.....	J. B. Alter.
Le Claire	Scott	576	11	.....	.....	.....	.....	.....	.....	.....	1.30	− 1.34	.40	1.8	8	.....	.....	.....	.....	Miss M. T. Disney.
Marshalltown	Marshall	947	19	37.8	+ 4.4	78	21	10	16	49	.79	− 1.89	.27	.....	6	16	4	11	nw.	Ralph B. Reasoner.
Mason City §	Cerro Gordo	1,132	14	36.6	+ 5.0	77	21	6	15	37	.82	− .86	.40	3.0	3	13	13	5	nw.	J. S. Mills.
Mount Pleasant §	Henry	729	30	41.2	+ 4.5	75	21	16	15	35	2.11	− .32	.69	4.3	6	16	10	5	nw.	J. W. Edwards.
Muscatine	Muscatine	.....	51	.....	.....	.....	.....	.....	.....	.....	.95	− 1.84	.33	.2	8	.....	.....	.....	.....	William Molis.
New Hampton §	Chickasaw	1,169	14	36.4	+ 4.7	77	21	8	15†	47	.61	− 1.40	.16	1.5	2	21	2	8	s.	A. F. Kemman.
Newton §	Jasper	944	23	39.7	+ 4.6	77	21	12	15†	50	1.11	− .49	.55	.2	4	14	8	9	.....	Hon. J. P. Beatty.
Northwood §	Worth	1,222	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Chas. H. Dwelle.
Olin §	Jones	760	13	39.2	+ 4.1	79	21	12	16	47	1.02	− 1.52	.52	.....	4	19	8	4	.....	M. H. Crissman.
Osage	Mitchell	1,184	24	38.6	+ 9.5	76	21	6	15	42	1.10	− .66	.74	4.0	4	16	9	6	nw.	Dr. A. D. Bundy.
Oskaloosa §	Mahaska	843	35	40.7	+ 5.5	78	21	13	15†	39	1.52	− .34	.72	1.2	6	18	1	12	nw.	Joseph Boyd.
Ottumwa	Wapello	649	16	41.2	+ 2.5	75	18	15	15	38	.70	− 1.44	.40	1.0	2	15	7	9	nw.	Chester Potter.
Pella	Marion	877	9	40.9	.....	78	21	14	16	43	.94	.....	.36	2.0	6	27	0	4	nw.	J. H. Ver Steeg.
Perry §	Dallas	975	10	40.2	+ 3.3	74	21	10	15	43	.72	− 1.42	.50	1.0	3	14	13	4	nw.	Ed. S. Gray.
Plover	Pocahontas	1,426	15	38.0	+ 5.9	75	21	5	18	43	.45	− .76	.25	3.5	3	24	6	1	nw.	J. S. Smith.
Pocahontas §	do	1,248	7	38.4	.....	75	21	7	15	45	.53	.....	.41	3.8	2	21	5	5	nw.	F. E. Hronek.
Ridgeway §	Winneshiek	1,215	13	39.0	+ 5.9	78	21	7	16	42	1.19	− 2.02	.69	3.2	4	14	13	4	s.	Arthur Betts.
Rockwell City §	Calhoun	.....	15	39.8	+ 6.2	75	21	7	16	46	.80	− 1.28	.60	8.0	2	17	9	5	.....	C. M. Randall.
Sac City	Sac	1,278	35	38.5	+ 7.2	75	21	12	18	49	.45	− 1.07	.20	2.5	3	.....	.....	.....	nw.	E. N. Baily.
St. Charles §	Madison	1,070	10	41.2	+ 3.0	77	21	15	15	36	1.55	− .39	.60	.8	7	20	7	4	nw.	R. D. Minard.
Sigourney §	Keokuk	877	15	40.1	+ 3.2	78	21	13	15†	45	.98	− 1.08	.44	.2	5	8	20	3	s.	J. T. Parker.
Stockport §	Van Buren	.....	9	40.6	.....	78	21	14	16	43	1.94	− .39	.79	1.0	6	19	6	6	s.	C. L. Beswick.
Storm Lake	Buena Vista	1,440	22	39.2	+ 9.0	70	20†	6e	15	38e	.25	− 1.07	.23	T.	2	.....	.....	.....	nw.	Prof. Warren Ingold.
Stuart	Guthrie	1,216	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. P. Fox.
Tipton §	Cedar	807	12	40.8	+ 4.2	75	21	16	15†	36	1.25	− 1.62	.57	T.	5	21	5	5	nw.	F. K. Gregg.
Toledo §	Tama	856	17	39.6	+ 4.9	79	21	9	15	40	1.01	− .90	.48	1.0	4	19	8	4	nw.	I. F. Giger.
Wapello §	Louisa	588	13	41.1	+ 3.7	74	21	17	16	34	1.16	− 1.26	.45	2.5	5	19	9	3	nw.	G. W. Schofield.
Washington	Washington	769	29	41.6	+ 7.4	76	21	15	15	35	.59	− 1.67	.32	.8	6	13	16	2	sw.	F. Sherman.
Waterloo	Black Hawk	862	28	38.0	+ 6.2	79	22	10	15†	39	.71	− 1.04	.33	.8	5	17	8	6	se.	Ralph B. Slippy.
Waukee	Dallas	1,039	8	39.6	.....	77	21	12	15†	39	.91	.....	.40	.6	7	18	8	5	nw.	Samuel F. Foit.
Waverly §	Bremer	948	15	38.8	+ 6.0	76	24	8	15	40	.74	− 1.21	.74	.....	1	20	7	4	s.	Earl G. Moore.
Webster City	Hamilton	.....	6	39.9	.....	78	21	9	15†	45	.23	.....	.17	T.	2	10	12	9	nw.	C. D. Carpenter.
West Bend §	Palo Alto	1,197	18	37.9	+ 6.9	76	21	4	15	39	.38	− 1.22	.30	3.5	3	.....	.....	.....	.....	Phil. Dorweiler.
Whitten §	Hardin	1,036	14	39.4	+ 6.1	77	21†	7	15	52	.75	− .53	.60	1.0	2	20	5	6	se.	Dr. F. P. Butler.
Winterset §	Madison	1,129	20	41.0	+ 5.3	76	21	14	15†	43	1.61	− .32	.75	.2	5	14	6	11	nw.	Dr. Robt. S. Cooper.
Missouri.																				
Gorin	Scotland	700	25	.....	.....	.....	.....	.....	.....	.....	2.26	− .30	.86	T.	5	9	11	11	nw.	J. W. Pulliam.
Hannibal	Marion	534	19	43.8	+ 2.2	82	11	18	16	36	2.87	− .19	1.32	.5	10	13	10	8	sw.	U. S. Weather Bureau.
Louisiana	Pike	500	33	45.0	+ 1.8	81	11	15	16	42	2.86	+ .27	1.54	1.5	4	22	5	4	nw.	J. T. Farrell.
Mexico §	Audrain	797	33	44.0	+ 1.7	82	11	16	16	47	1.87	+ .78	.48	4.0	10	19	3	9	nw.	J. F. Llewellyn.
Steffenville	Lewis	576	18	43.9	+ 1.3	79	10	11	16	41	2.21	− .65	1.26	T.	3	14	14	3	nw.	Frank Hall.
Sublet	Adair	1,000	....	35.3f	− 4.4	75	21	13	16	41f	2.30	− .41	1.50	T.	3	11g	8g	5g	sw.	Lewis Spriggs.
Vandalia	Audrain	776	....	45.3	.....	81	11	17	16	44	2.10	.....	1.40	.8	3	24	5	2	ne.	C. B. Ellis.
Warrenton §	Warren	865	21	44.6	+ 2.6	86	11	16	16	47	1.42	− 1.98	.44	4.0	9	13	8	10	nw.	Dr. J. H. Frick.
Indiana.																				
Collegeville	Jasper	.....	12	38.8	− 2.3	73	21	9	16	42	1.68	− 1.63	.75	1.5	6	11	11	9	w.	Otto Miller.
Knox	Starke	716	6	37.6	.....	72	21	10	16	40	2.30	.....	.94	4.0	7	11	14	6	w.	W. R. R. Tatman.
Laporte	Laporte	810	15	36.9	− .9	70	21	12	16†	43	1.51	− 1.62	.82	7.4	7	11	10	10	n.	Wm. M. Walton, jr.
Plymouth	Marshall	790	8	36.6	.....	69	21	10	16	38	1.86	.....	.61	2.3	9	12	10	9	w.	J. W. Siders.

TABLE 1.—*Climatological data for March, 1911. District No. 5*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				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 rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Illinois.																				
Aledo	Mercer	738	11	40.5	+ 0.3	76	21	13	16	37	1.37	− 0.78	.56	2.0	4	15	11	5	nw.	Wm. B. Frew.
Alexander	Morgan	670	18	42.2	+ .4	76	21	14	16	44	1.55	− .90	.94	T.	7	13	8	10	s.	George H. Hall.
Antioch	Lake	861	10	35.4	− 1.5	74	21	8	16	46	.23	− 1.06	.15	.5	2	15	6	10	n.	J. C. James, jr.
Astoria	Fulton	650	12	42.0	+ .8	78	21	16	16	39	3.03	+ .42	1.50	T.	7	14	9	8	nw.	Ed. V. Bohl.
Aurora	Kane	687	32	37.4	+ 2.3	75	21	8	16	45	1.13	− 1.49	.61	2.8	6	8	8	15	sw.	W. Holden.
Bement	Piatt	700	4	42.1	.....	75	21	11	16	40	2.23	.....	1.02	T.	6	21	3	7	s.	Rev. C. S. Adams.
Bloomington	McLean	840	20	41.1	+ 1.0	76	21	11	16	36	2.34	− .73	1.35	T.	4	16	5	10	nw.	Prof. H. N. Pearce.
Cairo	Alexander	359	33	50.4	+ 3.4	80	11	22	16	34	.77	− 3.25	.49	1.9	9	11	9	11	n.	U. S. Weather Bureau.
Carbondale	Jackson	412	6	49.7	.....	84	11	16	16	43	1.85	.....	.51	8.2	8	16	5	10	nw.	State Normal Univ.
Carlinville	Macoupin	663	21	44.3	+ 1.2	74	21	15	16	37	1.75	− 1.22	.82	T.	6	20	5	6	nw.	R. O. Purviance.
Clinton	Dewitt	727	1	40.8	.....	76	21	11	16	38	1.96	.....	1.07	T.	4	17	9	5	nw.	J. F. Ziegler.
Coatsburg	Adams	763	19	42.9	+ 2.4	77	11	17	16	36[b]	.....	.....	1.45	.....	.....	15	8	8	s.	Dr. J. R. Lambert.
Cobden	Union	656	28	56.2	+ 3.4	86	11	17	16	41	2.22	− 2.49	.84	4.5	6	12	7	12	n.	John Buck.
Dakota	Stephenson	929	6	37.2	.....	75	21	6	16	42	.37	.....	.25	T.	4	11	17	3	s.	Rev. G. W. Kerstetter.
Decatur	Macon	685	20	41.1	− .2	75	21	12	16	44	1.83	− 1.33	.86	T.	7	19	5	7	nw.	Prof. J. H. Coonradt.
Dixon	Lee	725	21	38.0	+ 2.4	76	21	12	16	46	.67	− 1.72	.18	.5	6	20	7	4	.....	H. U. Bardwell.
Du Quoin	Perry	459	23	46.6	− .7	84	11	18	16	37	1.38	− 2.67	.67	3.0	7	16	9	6	nw.	G. H. Knetzger.
Dwight	L ingston	600	18	39.2	+ 1.9	76	21	10	16	42	2.10	− .56	1.17	2.5	6	10	9	12	nw.	Ed. O. Welch.
Elgin §	Kane	716	4	38.0	.....	73	21	9	16	41	.31	.....	.14	T.	4	7	20	4	s.	Elgin Observatory.
Galva	Henry	842	19	37.5	+ .2	75	21	10	16	47	1.27	− 1.17	.32	3.0	7	16	4	11	nw.	Prof. F. U. White.
Greenville	Bond	635	33	44.2	+ 1.7	76	21	16	16	34	1.91	− 1.68	1.10	2.5	8	11	5	15	se.	M. S. Oudyn.
Griggsville	Pike	650	26	44.8	+ 3.1	77	11†	17	16	38	1.97	− .68	.98	T.	3	14	13	4	nw.	Geo. F. Kneeland.
Havana	Mason	475	19	42.4	+ 2.3	77	21	17	16	45[a]	2.11	− .81	1.50	T.	2	10	19	2	w.	F. and C. Borgelt.
Henry	Marshall	500	23	40.2	+ 2.5	77	21	11	16	46	1.79	− .66	1.16	4.0	4	14	7	10	nw.	Dr. F. A. Powell.
Hillsboro	Montgomery	675	17	44.9	+ 1.3	75	21	16	16	38	1.92	− 1.32	.90	.0	6	18	0	13	w.	Ira L. Woodward.
Joliet	Will	541	20	36.8	− .6	74	21	11	16	45	1.39	− 1.37	.78	1.0	8	13	8	10	nw.	F. M. Muhlig.
Kishwaukee	Winnebago	730	23	37.2	+ 2.7	75	21	7	16	43	.70	− 1.87	.26	1.0	7	16	9	6	nw.	Geo. Stevens.
La Grange	Cook	657	19	37.6	+ 1.5	77	21	8	16	44	1.32	− 1.19	.49	1.6	5	18	2	11	w.	Prof. F. E. Sanford.
La Harpe	Hancock	698	32	42.1	+ 3.4	79	21	16	16	48	1.90	− 1.04	1.01	T.	4	19	9	3	nw.	Geo. E. Campbell.
Lanark	Carroll	883	22	37.5	+ 3.5	76	21	4	16	38	.71	− 1.45	.25	1.0	4	19	3	9	nw.	M. N. Wertz.
La Salle	La Salle	536	33	39.4	+ 2.6	76	21	13	16	38	1.31	− 1.51	.63	2.2	7	12	10	9	w.	U. S. Weather Bureau.
Lincoln	Logan	482	23	42.0	+ 2.3	76	21	13	16	41	2.32	− .51	1.27	T.	4	14	11	6	se.	Prof. C. S. Oglevee.
Martinton	Iroquois	633	24	37.8	+ .7	78	21	10	16	44	1.50	− 1.09	.75	1.0	5	16	6	9	nw.	Jos. H. Peltier.
Mascoutah	St. Clair	425	21	47.1	+ 3.0	81	12	17	16	44	2.24	− 1.66	.88	5.0	7	13	15	3	nw.	Geo. Henrich.
Minonk	Woodford	745	18	40.4	+ 2.0	76	21	10	16	40	2.43	− .07	1.30	6.0	5	11	14	6	nw.	O. M. Davison.
Monmouth	Warren	784	19	41.6	+ 2.6	78	21	13	16	40	2.25	− .07	.79	3.3	6	18	3	10	s.	Hugh R. Moffet.
Morrison	Whiteside	685	17	39.0	+ 3.0	76	21	9	16	45	.82	− 1.98	.36	.7	5	15	10	6	w.	S. A. Maxwell.
Morrisonville	Christian	638	12	41.4	− 1.9	72	23	15	16	47[r]	1.57	− 1.09	.75	T.	7	21	4	6	se.	J. D. Lowis.
Mount Vernon	Jefferson	511	17	46.6	+ 1.0	81	19	15	16	43	1.59	− 3.13	.67	1.0	6	13	9	9	s.	Theo. P. Stelle.
Oregon	Ogle	702	2	37.6	.....	76	21	7	16	41	.77	.....	.32	2.5	3	14	6	11	w.	Samuel Ray.
Ottawa	La Salle	500	25	40.1	+ 2.5	76	21	13	16	42	1.80	− .97	1.00	T.	5	9	3	19	sw.	Miss M. M. Harris.
Pana	Christian	692	25	43.5	+ 2.1	75	21	15	16	35	1.91	− 1.31	.86	.0	6	26	0	5	w.	C. W. Sibley.
Peoria	Peoria	609	33	40.2	+ 3.2	76	21	13	16	38	2.64	− .32	1.28	.1	8	13	11	7	s.	U. S. Weather Bureau.
Pontiac	Livingston	546	9	40.8	.....	75	21	12	16	40	2.32	.....	1.02	5.0	6	11	11	9	s.	Geo. Butterworth.
Riley	McHenry	956	52	36.6	+ 4.9	74	21	8	16	36	.68	− 1.73	.25	1.2	5	8	9	14	nw.	John West James.
Rockford	Weinnbago	763	19	36.8	+ 2.7	75	21	9	16	39	.55	− 1.91	.15	.....	8	16	4	11	.....	Hosmer C. Porter.
Rushville	Schuyler	670	20	43.3	+ 2.5	77	21	16	16	36	2.33	+ 0.01	1.50	T.	3	13	6	12	w.	H. F. Dyson.
St. Charles	Kane	700	16	37.4	+ .8	74	21	8	16	42	1.40	− 1.75	.52	3.0	6	10	14	7	nw.	Dr. Wm. H. Bishop.
St. Peter	Fayette	.....	9	44.4	.....	75	10	16	16	39	2.31	.....	.86	T.	5	12	13	6	nw.	M. L. Lansford.
Sparta	Randolph	538	25	46.4	+ 1.1	81	11	18	16	37	2.08	− 1.84	.97	8.5	7	16	6	9	nw.	Jas. A. Caldwell.
Springfield	Sangamon	644	33	42.6	+ 3.5	74	21	17	16	35	1.86	− 1.21	1.08	T.	7	11	5	15	w.	U. S. Weather Bureau.
Streator	La Salle	626	18	37.8	− 1.2	76	21	12	16	44	1.77	− 1.16	1.20	2.0	6	23	4	4	n.	Edw. F. Sweetser.
Sullivan	Moultrie	530	11	42.5	− 1.1	77	21	11	16	39	2.16	− .88	1.24	T.	5	15	12	4	nw.	C. A. Corbin.
Sycamore	De Kalb	855	31	36.8	+ 3.1	75	21	7	16	47	.74	− 1.67	.30	1.0	4	18	3	10	nw.	Miss E. J. Davis.
Walnut	Bureau	717	20	39.2	+ 1.0	74	21	11	16	37	.78	− 1.90	.30	T.	5	12	13	6	s.	O. C. Nussle.
White Hall	Greene	573	3	43.0	.....	76	21	14	16	41	1.98	.....	1.11	T.	7	17	4	10	w.	Dr. R. A. Pritchett.
Windsor	Shelby	681	12	42.6	+ .4	74	21	13	16	39	1.87	− 1.04	.90	.7	9	17	6	8	nw.	Herbert Rose.
Winnebago	Winnebago	900	24	37.5	+ 3.1	75	21	8	16	43	.61	− 2.05	.25	2.0	4	21	6	4	s.	Frank Osborn.
Yorkville	Kendall	584	24	37.4	+ 2.4	74	21	9	15	42	.61	− 1.64	.50	T.	3	14	8	9	w.	Herman A. Grimwood.
Zion	Carroll	938	17	38.3	+ 3.0	77	21	8	16	43	1.02	− .98	.85	1.8	3	23	3	5	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 March, 1911. 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.													T.									T.			T.			T.
Bottineau	Mouse	0.04																T.		T.							0.02			0.06		0.11	0.23
Cando	Sheyenne													T.																	0.25		.25
Crosby	Mouse		T.		T.										T.														0.02		.11	.06	.19
Devils Lake	Sheyenne	.01		T.	T.													0.02	T.							0.02			.07	T.	.04		.16
Donnybrook	Mouse	T.	T.	T.											T.		T.									T.		T.	.04	T.	.29	T.	.33
Dunseith	do																							T.	T.					.10	.10		.20
Edmore	Sheyenne																																
Forman	do				T.																						.10						.10
Grafton	Red			T.														T.									.11		T.				.11
Granville	Mouse																									.02			T.			.08	.10
Hannah	Pembina	T.		T.	T.												.10		T.							T.			T.	T.			.10
Hansboro	Red																																.00
Hillsboro	do																	T.									T.			.15			.15
Lakota	Sheyenne	T.		T.	T.											T.		.07	T.				T.						.01	T.	T.		.08
Langdon	Pembina																																
Larimore	Red																										.30						.30
Lisbon	Sheyenne								T.							T.		T.									T.						T.
McKinney	Mouse			T.														T.											T.		.15	T.	.15
Manfred	Sheyenne			T.														.10								T.	.20	.04		T.	.02		.36
Mayville	Red			T.																						T.	.11			.05			.16
Minot	Mouse	T.		0.04	T.													T.									T.			T.	T.	.22	.26
Minto	Red			.01																						.12			T.				.13
Oriska	Sheyenne																													T.			T.
Park River	Red																																.00
Pembina	do																																
Power	Sheyenne																									T.	.10			.10			.20
Pratt	Mouse																																
Towner	do																									.10					.05	.25	.40
University	Red	T.		T.	T.											T.		.03	T.						T.		.21		T.	T.	T.		.24
Wahpeton	do																	T.							T.		.10						.10
Walhalla	Pembina																																
Westhope	Mouse																																
Willow City	do																									T.					.10		.10
Minnesota.																																	
Albert Lea	Mississippi									T.		T.															.20	T.	T.	.15			.35
Alexandria ‖	do	T.	T.		T.																						.28	.04		.04	T.		.36
Angus	Red	.02		T.														.02	T.								.19		.02	T.			.25
Bagley	do																								T.	*	.37		.06	T.			.43
Beardsley	Minnesota																																
Beaulieu	Red																T.	T.									.60			.30			.90
Bird Island	Minnesota	T.									.04															T.	.06	.04		.03			.17
Caledonia ‖	Mississippi								T.			.01										T.					.10	.45	.10	.10			.76
Campbell ‖	Red	T.			.02											T.											.10	.02		.12	T.		.26
Cass Lake ‖	Mississippi																			.25								.45	.05	.10	.05		.90
Collegeville	do				T.	T.						T.				T.											.37	.07		.02			.46
Crookston ‖	Red	.10	T.		T.													T.		T.							T.			T.	T.		.10
Detroit ‖	do	.05	T.		T.	T.									T.			T.		T.							.25	.12		.06			.48
Fairmont (near)	Minnesota									T.																T.	T.						T.
Faribault	Mississippi	T.				.04			.01	.02		.01						T.								.03	.38	.17	T.	.03	.02		.71
Farmington	do	T.				.10				T.		.27				T.		.02								T.	.35	.32		.08			1.14
Fergus Falls	Red	.01		.01														T.							T.	T.	.75			.04	.01		.82
Fort Ripley ‖	Mississippi							T.	T.	T.																	T.	.13		T.			.13
Fosston	Red	.20														T.											1.10				.50		1.80
Fram	do			T.													T.		T.										T.				T.
Glencoe	Mississippi																										T.						T.
Grand Meadow	do								T.	T.	T.	T.						T.				T					.40	.09	.03	.08	T.		.60
Gull Lake Dam	do																									.01		.37		T.			.38
Hallock	Red	.02																	T.														.02
Halstad ‖	do																										T.		.50				.50
Hinckley	St. Croix																										.28	.32		.09			.69
International Falls	Rainy	.02	.15		T.	.30										T.		.02	T.	.02					T.		.25	T.	T.	.20			.96
Kelliher	Red	.05	T.	T.		T.	T.								T.	T.		T.		T.							.18			.20	T.	T.	.43
Lake Crystal	Minnesota			T.																							.20			T.			.20
Leech Lake Dam	Mississippi				T.															.03						.09	1.01			.45			1.58
Litchfield	do																																
Little Fork	Rainy					.13																					.15			.31			.59
Long Prairie	Mississippi	T.																								T.	.50			T.			.50
Lynd	Minnesota											.04					T.										.42		.20				.66
Mankato ‖	do					T.	T.																					.20		.10			.30
Maple Plain	Mississippi																																
Milaca	do										T.																.30						.30
Milan	Minnesota			T.																							.30			.05			.35
Minneapolis	Mississippi	T.			.01					T.		.26			T.			.06								T.	.84	.04		.04			1.25
Montevideo ‖	Minnesota											T.															.11	.12		.20			.43
Moorhead	Red	T.		.01												T.		.02							T.	T.	.16		.02	.02			.23
Mora	St Croix					.03						.01															.33	.30		.05			.72
Morris	Minnesota		T.																							T.	.45			.05			.50
New London	Mississippi				T.																					.07	.27			T.			.34
New Richland	Minnesota	T.		T.						.17		T.														.02	.25	T.		.05			.49
New Ulm ‖	do		T.	T.		T.					T.		.05			T.										.03	.25	.37		T.			.70
Osakis	Mississippi				T.																						.30			T.			.30
Park Rapids ‖	do	T.				T.										T.										T.	.30	.35		.08			.73
Pine River Dam	do																									.20	.60			T.			.80
Pokegama Falls	do	T.	.02	T.		T.												T.		T.						.15	.99			.08			1.24
Red Lake	Red	T.																	T.					T.			.35		T.	T.			.35
Red Wing ‖	Mississippi					T.	.04				.04		.02						.07							T.	.02	.94	.02		T.		1.15
Redwood Falls	Minnesota											T.																.20					.20
Reeds Landing	Mississippi						.04				.22								.03								.02	.12	T.	.04	T.		.47
Rochester ‖	do									T.	.15																T.	.30		.20			.65
Roseau	Red																												.03	.14			.17
St. Charles ‖	Mississippi										T.																.20	.50		.05	T.		.75
St. Cloud	do									T.																	.70	.14		.03			.87
St. Paul	do	T.	T.		.01	T.				T.	T.	.12			T.			.05								T.	.51			.05			.74
St. Peter	Minnesota																										1.00						1.00
Sandy Lake Dam	Mississippi																										.70			T.			.70
State Sanatorium	do																									.05	1.06			.11			1.22
Stillwater ‖	St. Croix					T.	T.		T.	T.		T.	.08														T.	.52		.10			.70
Taylors Falls	do																																
Warroad	Rainy																													.35			.35

TABLE 2.—*Daily precipitation for March, 1911. 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	
***Minnesota*—Con.**																																	
West Concord	Mississippi																										.45	T.		T.	T.		.45
Windom	Des Moines																																
Winnebago ‖	Minnesota				T.					T.																T.		.10		T.	.10		.20
Winnibigoshish	Mississippi	T.	T.	T.		T.													T.						T.	.07	1.22			.20			1.49
Winona	do					T.				.15		T.						.02				.01					.16	.35		.11	.01		.81
Worthington ‖	Des Moines									T.																		T.		T.			T.
Zumbrota	Mississippi					.04				.08	T.	T.						.04								T.	.30	.08		.30			.84
South Dakota.																																	
Milbank ‖	Minnesota						T.																				.30	.07					.37
Wisconsin.																																	
Antigo	Wisconsin		T.			.40				T.		.29						.03				T.					.32	.03		.08		.01	1.16
Barron	Chippewa	T.											.25					.10									*	.43		.10			.88
Beloit	Rock																									*	.14	T.	.02	.01	T.	T.	.17
Big St. Germ'n Dam	Wisconsin	T.	T.			.50				T.		.26					T.	.17								T.	.04	.30	T.	.09	.02	.01	1.39
Brodhead	Rock					T.																					.15	T.			T.		.15
Burnett	do		T.			T.				T.						T.		T.		T.			.06				.05	T.		.10	T.	T.	.21
Cottage Grove	do				.01						.01		T.										.17				.21	.02		T.	T.	T.	.42
Darlington ‖	do																						.10				.30			T.			.40
Deerskin Dam	Wisconsin		T.		T.	.46				T.		.19				T.		.10				T.				T.	.16	.50		.18		T.	1.59
Delavan	Rock					.01				T.		.20										.16					.38		T.	.05	T.		.80
Dodgeville ‖	do																																
Downing[a]	Chippewa									T.		.10															.01	.01		T.			.12
Eau Claire	do	T.				.09				T.		.22						.06								.06	.21	.60		.10			1.34
Grand Rapids ‖	Wisconsin					.05	.08				.33							*	.24				T.					.90	.36	.32	.36		2.64
Grantsburg	St. Croix					.05						.44														.45	.60		.10				1.64
Hancock	Wisconsin					.10				.65								T.				T.					.33	T.		.20	.10	T.	1.38
Hatfield	Black					.25				.18							.25										.55	.76	.06				2.05
Hayward	St. Croix		T.			.30				T.		.35						.05								T.	.55	.10		.20		T.	1.55
Hillsboro	Wisconsin					T.				.04		T.				T.		T.				T.					.50	T.	T.	.10	T.	T.	.64
Koepenick	do		.10			.50				.10		.50						.10									.90	.30		.30		T.	2.80
Lac du Flambeau	Chippewa	.04				.30				.06		.25				T.		.20								T.	.86	.06		.26		.04	2.07
La Crosse	Mississippi	T.	T.			T.			T.	.06	T.	T.						.01				.01					.46	.16	.05	.12	T.	T.	.87
Lakemills	Rock					.02				.04								T.		T.			.03				.28	.06		.02	.04	T.	.49
Lancaster	Mississippi																										.59	.04		.17			.80
Long Lake	Wisconsin	T.	T.			.30						.41				T.		.10	T.							.10	.65	T.		.15	.02	.03	1.76
Madison	Rock					T.				T.		T.				T.		T.				.11	.05				.23	.04		.04	T.	T.	.47
Mather ‖	Wisconsin																																
Mauston	do					T.				T.		T.						T.									.36	T.		T.			.36
Meadow Valley	do					T.				.42						T.		.10				.02					.53	.50		.32	T.		1.89
Medford	Black					.10						.35				.10											.45	.10		.10		T.	1.20
Merrill	Wisconsin																																
Minocqua	do	T.				.26						.23				T.		.14								.05	.27	.37	T.	.07	T.	.02	1.41
Mondovi	Mississippi					.08				.14		.03						.14				.02					.30	.50		.08	T.		1.29
Mount Horeb	Rock					T.	T.																.30				.35	.05		.12			.82
Muscoda ‖	Wisconsin					T.																					T.	.45		T.	.06		.51
Neillsville	Black					.10			.20										.16									1.41					1.87
New Richmond	St. Croix								T.	T.	T.	.30														T.	.40	.30		.40			1.40
Osceola ‖	do	T.				T.				T.		T.						T.									.38	T.		.03			.41
Park Falls[d]	Chippewa		T.		.45					T.		.25				T.		T.										.65			.20		1.55
Portage	Wisconsin									.04									T.								.16	T.		.25			.45
Port Edwards	do					.06				.23	T.							.06									.68	.06		.20	.04	T.	1.33
Prairie du Chien ‖	Mississippi																						T.					.49			.04		.53
Prentice	Chippewa		.05							T.		.21						.21								T.	.32	.26		.45		.07	1.57
Rhinelander	Wisconsin	T.	.02			.27				T.		.32	.05			T.		.11									.11	.50		.07	.01		1.46
Sauk City	do																																
Shullsburg	Mississippi																						.07				.54			.18			.79
Solon Springs	St. Croix					.08						T.														T.	.05	.10		.20			.43
Spooner	do		T.								T.	T.						T.								T.	.14	.10		.20		T.	.44
Stanley	Chippewa	T.				.13				T.		.20						.05									.17	.33		.16		T.	1.04
Stevens Point	Wisconsin																																
Sugar Camp Dam	do					.16				T.		.44				T.		.12								.06	.10	.30		.10	.04		1.32
Twin Lakes Dam	do					.50				.03		.20				.03		.10								T.	.23	.10		.11	T.		1.30
Valley Junction	do					.15				.41	.14	T.						.08				.17					.41	.31		.13			1.80
Viroqua	Mississippi				T.	T.				.02													T.	T.			.33	.13	.02	.14	T.		.64
Vudesare	Wisconsin	.04	.05		.05	.72				.06		.30				.03		.26					T.			T.	.26	.50		.40	T.	.05	2.72
Watertown ‖	Rock						.07			T.													.16					.40			.50		1.13
Waukesha	Fox					.02																	.02				.33	T.	T.	.05	T.	T.	.42
Wausau	Wisconsin		T.			.25				.06		.21						.10		T.		T.					.46	.38		.17	.04	.03	1.70
Weyerhauser	Chippewa					.22				T.		.13			T.			.08								.08	.22	.56		.14	T.		1.43
Whitehall	Mississippi					T.				.10								.10									.80	.30		.10			1.40
Iowa.																																	
Albia ‖	Des Moines							.75					.20	T.									.35				.38	.25		.01	T.		1.94
Algona	do								T.														T.				T.	T.	.27	T.			.27
Alta ‖	Raccoon																											.25		.20	.02		.47
Amana	Iowa							.08					.11										.25				.50	.01	T.	.06		T.	1.01
Ames	Skunk							.28		T.																	.29	T.	T.	T.		T.	.57
Baxter	do							.23		.02													.11				.37	.02	.08	T.	.02	.02	.87
Belle Plaine	Iowa							.12	T.	T.			T.										.12			T.	.45	.15	.02	.02	T.	T.	.88
Belmond	do								.08		T.					T.						.13	T.				.25	.25	.10	.02	T.		.83
Bloomfield	Mississippi																																1.52
Bonaparte	Des Moines							.75					.50										.07				.65	T.		T.			1.97
Boone ‖	do							.26															T.				T.	.10		T.			.36
Britt	Iowa																										.22	T.	.18	.08	T.		.48
Buckingham	Cedar							.07															T.				.35	.03		.01			.46
Burlington ‖	Mississippi						T.		.93					.60										T.				.15	T.	.90	.20		2.78
Carroll ‖	Raccoon						.41																				.20	T.					.61
Cedar Rapids ‖	Cedar							.03	T.		T.		T.				T.						.30				T.	.80	.05		.10	T.	1.28
Charles City	do																					.03					.85		.06	.04		T.	.98
Clear Lake	do																										.18	.20	.60	.10			1.08
Clinton	Mississippi					T.						.05	T.										.50				.55			.33			1.43
Columbus Junction	Iowa					T.		.27					.13										T.				.55	.04	T.	.09			1.08
Davenport	Mississippi					T.		.02				.10	.18									.03	.21				.49	.01	.03	.01	T.	T.	1.08
Decorah	do																											.43		.25			.68
Delaware	do						T.	.02															.13				.42	.14		.07			.78
Des Moines	Des Moines						.16	.21		T.	T.	.02	T.									.25					.25	.20	.05	T.		T.	1.14
Dubuque	Mississippi					T.																T.	.03				.36	.01		.12	T.	T.	.52

TABLE 2.—*Daily precipitation for March, 1911. 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—Con.																																	
Earlham	Raccoon						T.	.89			T.		.05									.10	.09				.24	.05	.05	T.			1.47
Elkader	Mississippi																						T.			.43	.03		.10				.56
Elma	Wapsip'con					T.																T.					.73	.20	.05	.12			1.10
Estherville ‖	Des Moines																										T.	T.	T.	T.			T.
Fairfield	Skunk								.53			T.	.12														.60	T.	T.	.12			1.37
Fayette	Mississippi					T.																.06	.09				.60	.20		.15	T.	T.	1.10
Forest City ‖	Cedar																										.16			.09			.25
Fort Dodge ‖	Des Moines															T.							.13				T.	.12		.10			.35
Fort Madison	Mississippi							1.20					.90														2.00	.74					4.84
Gilman	Iowa																																
Grand Meadow	Mississippi					.01																	.12					.65		.20			.98
Greene	Cedar																																
Grinnell	Iowa							.20			T.					T.						T.	.22			T.	.48	.02	.10	.20		T.	1.22
Grundy Center	Cedar																					.09					.57	T.					.66
Guthrie	Raccoon							.60	T.													T.					.02	.03	.04	T.		T.	.69
Hampton	Cedar																					.04				.02	.75		.02				.83
Humboldt	Des Moines																										.04	.54	.09	T.			.67
Independence	Wapsipini'n																										.46	.10		T.			.56
Indianola	Des Moines						T.	.45			T.		T.									.06	.47				.27	.20	.10	.08		T.	1.63
Iowa City ‖	Iowa							.15					.13										.18				.40	.37	T.	.06	.10		1.39
Iowa Falls ‖	do					T.							T.										.07			T.	T.	.55		T.	.06		.68
Jefferson	Raccoon							.33																					.01				.34
Keokuk	Mississippi					T.	.50	.45					.35									.04					.44	.01	T.	T.			1.79
Keosauqua ‖	Des Moines							.72					.20	.15									.10				.25	.25					1.67
Knoxville	do							.50			T.		.10									T.	.37				.38	.15	.10	T.		T.	1.60
Lacona	do						.05	.43			.01		.02										.54	T.		T.	.42	.10	.09	.01			1.67
Le Claire ‖	Mississippi						T.	T.					.22	.12								.28					.20	.40	.01	.03	.04	T.	1.30
Marshalltown ‖	Iowa						T.	.27		T.						T.							.06				.24	.20		.01	.01		.79
Mason City	Cedar																										.32	.40	.10				.82
Mount Pleasant	Skunk							.69				T.	.09										.04				.57	.10	T.	.02		T.	2.11
Muscatine ‖	Mississippi							.18	.04				.12	.03									.10				.33	.12	.03	T.	T.		.95
New Hampton	Wapsipini'n					T.																T.					.46	.15	T.				.61
Newton	Skunk							.04	.55																		.50	.02					1.11
Northwood	Cedar																																
Olin	Wapsipini'n												.30										.10				.52			.10			1.02
Osage	Cedar					T.																T.					.74	.22	.10	.04			1.10
Oskaloosa	Des Moines							.72					.03									.14					.57		.03	.03		T.	1.52
Ottumwa	do							T.				T.	.30														.40	T.		T.	T.		.70
Pella	do							.31				T.	T.			T.						T.	.09				.31	.05	.12	.06	T.	T.	.94
Perry	Raccoon							.50																			.12	T.	.10	T.			.72
Plover	Des Moines																										T.	.25	.10	.10		T.	.45
Pocahontas	do																										T.	.41	.12	T.			.53
Ridgeway	Mississippi					T.										T.						T.					.69	.08	.08	.34			1.19
Rockwell City	Raccoon																										T.	.60	.20	T.			.80
Sac City	do							T.																			.20	.20	.05			T.	.45
St. Charles	Des Moines						.02	.60		T.	T.											.02	.45				.38	.04	.04	T.			1.55
Sigourney	Skunk							.35					T.										.10				.44	.02	T.	.07			.98
Stockport	do							.79				T.	.31										.07				.65	T.	.02	.10			1.94
Storm Lake	Raccoon																									T.	T.	.23	.02				.25
Stuart	do																																
Tipton	Cedar					.11		.09															.37				.57			.11	T.	T.	1.25
Toledo	Iowa							.27															.20				.48		.06	T.		T.	1.01
Wapello	do					T.		.26					.40										.04				.45	.01		T.			1.16
Washington	Skunk						.14						.02									.03						.32	.06	.02			.59
Waterloo ‖	Cedar							.02	T.														.09				.25	.33	T.	.02	T.	T.	.71
Waukee	Raccoon						T.	.40			T.											.20	.05				.20	.01	.03	.02		T.	.91
Waverly	Cedar																										.74	T.					.74
Webster City	Des Moines								T.		.03	T.															.17	T.	T.	T.		T.	.23
West Bend	do								T.	T.												T.					.03	.05	.30	T.			.38
Whitten	Iowa							T.															T.				.60	.15		T.			.75
Winterset	Des Moines						T.	.75	T.	T.	.01		T.									.30	.25				.30	T.	T.	T.		T.	1.61
Missouri.																																	
Gorin	Mississippi							.86					.80									.08					.47	.05					2.26
Hannibal	do					T.	.18	1.14				.33	.31								T.	.02	.01				.44	.05	T.	.04		.05	2.57
Louisiana	do	T.				T.		1.54					.70					T.									.45			T.		.17	2.86
Mexico ‖	do					.02	T.	.48					.45				T.		.04				.04				.29	.09		.04	.02	.40	1.87
Steffenville	do					T.	1.26					.30															.65			T.		T.	2.21
Sublett	do							1.50					.30														.50						2.30
Vandalia	do							1.40				.62																				.08	2.10
Warrenton ‖	do	.03				.05	.02	.36	T.				.07														.44	.11			.01	.33	1.42
Indiana.																																	
Collegeville	Iroquois					T.	.08	.05	T.				.40			T.							.20				.75	T.		.20	T.	T.	1.68
Knox	Kankakee					T.	.03	.10					.94			T.							.23				.69	T.		.24	.07	T.	2.30
Laporte	do		T.			T.	.05						.82			T.											.22	.05	T.	.27	.09	.01	1.51
Plymouth	do			T.		.02		.10					.61			T.							.25				.59	.03		.19	.05	.02	1.86
Illinois.																																	
Aledo	Mississippi					T.		.23	T.				.55														.56	.03		T.			1.37
Alexander	Illinois					.02		.94					.14					T.									.38	.02	T.	.04	T.	.01	1.55
Antioch	do					T.																					.15			.08		T.	.23
Astoria	do					.01	T.	1.50					.75										.01				.70	.01		.05	T.	T.	3.03
Aurora	do					.06							.15										.15				.49	.12		.16			1.13
Bement	Mississippi					.03	.04	1.02					.28														.84	T.			.02		2.23
Bloomington	Illinois					.01		1.35					.42										T.				.56	T.	T.	T.			2.34
Cairo	Mississippi	.02				.14	.02	T.					T.	T.				.01	T.				.02			.08	.41		.04	.03			.77
Carbondale	do	.22				.31	T.	.20					.02					T.	.07								.51		T.	.07		.45	1.85
Carlinville	Illinois					.11	.01	.82					.05					T.	.11								.65	T.			T.	T.	1.75
Carlyle	Mississippi	.05				.40		1.60										.40	.20								.90					.05	3.60
Chester ‖	do	.22				.12	.02	.08											.01								.66	.02		.02	.01	.22	1.38
Clinton	Illinois					.09		1.07					.17														.63	T.	T.	T.	T.	T.	1.96
Coatsburg	Mississippi							1.45					.73														.42	T.					
Cobden	do	.15				.36		.40																			.84	T.	.17	T.		.30	2.22
Dakota	do												.03										.06				.25	T.		.03	T.	T.	.37
Decatur ‖	Illinois						.17	.86					.20						.01				.01				.50	.08	T.	T.	T.		1.83
Dixon ‖	Mississippi						T.						.10	.08									.18				.09	.15	T.	.07		T.	.67
Du Quoin	do					.21	.15	.08					T.					.05	T.				T.				.67		.02	T.		.20	1.38
Dwight	Illinois					T.		.37					1.17										.03				.48	T.		.03	.02	T.	2.10

TABLE 2.—*Daily precipitation for March, 1911. 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—Continued.																																	
East St. Louis ‖	Mississippi	0.03				0.01	0.16	0.72	0.45														0.08				0.70	0.05				0.20	2.40
Edwardsville	do	T.				.06		1.04										0.36					.02				.67					.16	2.31
Elgin	Illinois					T.							0.02										.04				.14	T.		0.11			.31
Galva ‖	do						T.	.30					.32	0.29									.01				.19	.15	0.01		T.	T.	1.27
Grafton ‖	Mississippi						.20	.87					.20						0.85								.14	.08					2.46
Greenville	do					.03	.08	1.10										.30	.10				.05				T.			.05		.20	1.91
Griggsville	Illinois					T.		.98					.55											T.			.44	T.		T.	T.		1.97
Havana	do					T.		1.50					.61														T.		T.	T.			2.11
Henry	do					T.		.32				T.	1.16										T.				.24	T.		.07	T.		1.79
Hillsboro	Mississippi					.12			.90					.05					T.					T.				.85					1.92
Joliet	Illinois					.02		T.				0.01	.77			T.							.13				.35	.08	T.	.02	T.	.01	1.39
Kishwaukee	Mississippi					.02							.11										.08				.26	.07		.14	0.02	T.	.70
La Grange	Illinois					T.							.30			T.											.49	.10	T.	.35	.08		1.32
La Harpe	do							1.01					.35										T.				.41			.13			1.90
Lanark	Mississippi									T.			.22				T.						.16				.25	T.	T.	.08	T.	T.	.71
La Salle	Illinois					T.		.13				.07	.56										.12				.35	.05	T.	.03	T.	T.	1.31
Lincoln	Illinois					.10		1.27				T.	.41			T.							T.				.54	T.			T.	T.	2.32
Loami	do					T.		1.05				T.	.08					T.									.50	T.	T.	T.	T.	T.	1.63
Martinton ‖	do					T.	.25					T.	.75										T.				.32		.08	.10		T.	1.50
Mascoutah	Mississippi	.01				.17		.50										*	.33				.05			T.	.88		T.	T.	T.	.30	2.24
Minonk	Illinois					.10		.60					1.30										T.				.40	.03		T.	T.		2.43
Monmouth	Mississippi					.13		.73					.79										.03				.52	.05					2.25
Morrison	do					T.		T.				T.	.10										.22				.36	.09		.05		T.	.82
Morrisonville	Illinois					.01	.09	.75					.07					T.									.59	T.			.04	.02	1.57
Mount Vernon ‖	Mississippi	.05					.23	.50																			.67			.04		.10	1.59
Oregon	do												.20														.32			.25		T.	.77
Ottawa	Illinois					T.	.20						1.00														.47	.10		.03	T.	T.	1.80
Pana	Mississippi					.03	.01	.86					.09					T.	.09				T.				.83		T.	T.	T.	T.	1.91
Peoria	Illinois					.01	T.	.92				.20	1.08										.02				.37	.03	T.	.01	T.		2.04
Pontiac	do					.12		.50					1.02			T.							.05				.55	T.		.08	T.		2.32
Riley	Mississippi					T.				T.			.11			T.							.10				.25	.09		.13	T.		.68
Rockford ‖	do					.01	.01					T.	.15										.06				.12	.09		.04	.07		.55
Rushville	Illinois					T.	1.50					.58										T.					.25			T.			2.33
St. Charles	do					.02						T.	.18			T.				T.			.23				.52	.15		.30	T.	T.	1.40
St. Peter	Mississippi					.20		.86										.15	.35				T.				.75					T.	2.31
Sparta	do	.11				.15	.01	.42																			.97		T.	.02		.40	2.08
Springfield	Illinois					.10	.02	1.06				T.	.09					T.				T.	T.				.54	.01	T.	.04	T.	T.	1.86
Streator ‖	do							.18	.04				1.20										.04				.04	T.	T.		.27	T.	1.77
Sullivan	Mississippi					.19	1.05						.30					T.									.57			T.	T.	.05	2.16
Sycamore ‖	do						T.						.10														.30	.20		.14	T.		.74
Tiskilwa	Illinois			0.15									.50														.33	T.			.06		1.04
Walnut	Mississippi					T.		.02					.29										.07				.30	T.		.10			.78
Warsaw ‖	do						.65						.33														.42	T.					1.40
White Hall	Illinois					.04		1.11					.10					.10									.58	T.		.01	T.	.04	1.98
Windsor	Mississippi					.09		.90					.03					.02	.01								.70	.05	T.		.05	.02	1.87
Winnebago	do					T.							.08										.08				.25	T.		.20		T.	.61
Yorkville	Illinois					.01	T.						T.			T.							.10				.50	T.		T.	T.		.61
Zion	Mississippi					T.																	.07				.85	T.		.10	T.	T.	1.02

TABLE 3.—*Maximum and minimum temperatures at selected stations for March, 1911. 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	22	−8	26	9	25	7	30	0	22	−4	33	19	30	−7	36	15	38	4	30	16	36	20	30	16	37	23	26	16
2	30	4	29	14	31	19	36	20	28	8	37	22	29	13	47	20	43	19	32	18	45	21	33	16	42	23	34	10
3	26	8	29	0	32	11	30	15	22	−10	35	18	28	−4	38	19	35	18	30	4	27	25	29	7	34	25	28	−3
4	24	−6	26	−4	40	−2	30	−6	24	−12	31	2	29	−13	45	12	48	10	29	−2	35	14	27	−7	30	13	24	−10
5	23	0	25	10	34	−2	22	15	18	−5	48	26	29	−10	38	27	44	22	32	15	54	21	42	18	49	26	44	16
6	32	10	32	11	34	12	39	12	22	8	42	28	34	12	44	26	53	24	35	13	44	24	37	25	36	28	35	25
7	36	10	42	10	49	7	44	18	32	6	47	32	38	17	57	28	65	44	47	20	64	27	41	30	44	29	44	32
8	38	18	43	31	54	27	45	28	38	18	55	38	44	18	50	35	67	40	54	35	53	34	54	33	50	36	51	33
9	32	19	38	22	60	28	42	32	22	8	58	38	40	30	44	36	65	29	52	21	61	38	53	34	58	34	47	29
10	42	17	44	22	64	24	49	25	32	16	50	24	45	15	52	37	56	24	58	20	51	23	50	14	51	26	48	14
11	34	24	38	25	54	25	37	29	28	10	56	23	39	23	56	34	59	50	41	26	56	24	54	30	51	34	46	35
12	43	12	43	20	54	30	48	20	36	16	46	23	44	19	47	24	52	18	50	19	61	23	45	17	44	24	42	16
13	44	18	49	34	67	16	54	33	48	24	61	32	52	19	51	23	68	27	64	30	63	32	59	35	57	31	58	32
14	33	25	42	2	52	30	35	23	32	28	57	33	40	30	62	30	48	34	44	7	61	37	50	18	59	19	54	18
15	25	−5	17	−1	27	2	23	1	30	20	35	−2	21	−2	38	5	34	2	20	1	28	4	21	−6	19	1	21	−8
16	33	−5	40	15	49	6	45	4	22	12	36	9	38	0	28	4	46	17	46	12	42	4	30	−3	33	9	28	−8
17	26	9	27	11	36	20	32	12	28	8	36	27	27	17	39	21	36	18	36	16	40	17	31	21	36	22	29	18
18	38	9	45	20	61	13	46	25	32	12	47	13	45	13	43	9	56	10	55	14	52	11	46	7	45	15	45	10
19	44	18	51	26	70	32	56	22	35	16	57	28	53	17	53	26	65	20	62	27	60	14	51	29	53	31	50	30
20	54	17	55	32	69	27	69	29	26	14	62	31	54	32	65	31	70	30	62	30	68	28	59	39	62	35	54	30
21	50	24	49	28	50	25	54	31	30	12	72	44	48	32	76	35	71	42	55	29	72	33	56	34	74	43	55	33
22	39	22	38	25	46	20	42	28	32	16	57	26	36	26	61	26	58	25	41	25	48	26	48	26	46	29	44	25
23	52	20	48	22	60	10	60	21	35	14	45	20	43	21	48	17	51	12	48	15	51	18	48	16	45	23	41	17
24	51	25	54	35	60	28	57	28	42	18	59	32	58	25	54	25	62	30	65	35	63	19	57	30	59	31	55	30
25	45	28	56	35	72	22	53	34	52	22	63	43	59	28	63	37	73	40	64	25	72	33	55	24	65	45	57	31
26	28	18	37	11	48	23	34	21	22	15	60	25	28	23	55	30	45	45	45	13	52	47	46	22	53	22	40	23
27	26	3	27	4	35	5	30	8	22	0	31	9	26	6	32	14	33	8	30	6	33	11	26	8	28	14	30	6
28	44	5	45	21	53	5	53	11	32	12	39	17	40	10	27	18	43	21	43	19	39	11	34	12	34	22	32	5
29	35	24	35	23	40	27	42	28	28	15	38	28	30	22	40	20	44	24	36	24	43	25	30	25	38	28	32	26
30	34	16	40	19	45	17	35	17	25	10	38	21	35	16	37	18	43	22	40	17	41	21	34	17	38	24	37	10
31	27	7	24	7	35	16	28	15	22	0	39	21	24	10	39	20	33	22	28	14	38	23	32	16	34	21	28	9
Mns.	35.8	12.5	38.5	17.4	48.6	17.1	41.8	19.3	29.6	10.5	47.4	24.2	38.3	14.8	47.3	23.3	51.7	24.2	44.3	18.2	50.1	22.8	42.2	19.5	45.3	25.4	40.6	17.7

Date.	Wisconsin.														Iowa.													
	Delevan.		Eau Claire.		La Crosse.		Madison.		Mauston.		Spooner.		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	40	19	36	22	37	22	36	18	35	20	33	20	31	20	39	16	40	17	38	19	48	23	42	21	38	22	40	23
2	40	22	45	21	50	24	41	22	44	20	34	11	32	15	52	19	49	22	52	20	49	27	53	26	47	27	49	27
3	40	25	37	25	39	29	37	27	42	25	30	13	34	16	39	26	43	24	39	24	46	32	46	31	41	30	53	32
4	34	20	34	13	35	18	30	20	34	17	32	14	34	11	38	17	36	26	35	18	47	27	39	25	35	25	43	30
5	34	19	37	24	36	30	32	22	32	21	38	3	28	18	51	31	38	25	38	30	40	31	50	34	35	29	45	33
6	34	25	36	26	40	30	33	23	38	31	35	25	28	24	44	26	42	31	44	26	38	30	40	30	35	28	41	34
7	43	25	38	26	45	31	43	29	38	26	37	24	40	24	58	32	49	31	55	32	51	33	46	33	52	32	53	34
8	50	27	54	35	54	35	50	29	54	28	47	34	42	23	46	36	54	30	53	33	53	37	53	35	51	33	58	37
9	55	36	44	38	49	40	52	38	50	38	50	32	46	36	61	36	52	35	49	38	63	41	65	41	55	41	68	40
10	50	30	53	23	55	30	49	31	56	29	46	19	44	25	55	24	54	32	53	26	53	34	53	33	52	35	57	37
11	60	31	48	38	56	.....	58	36	60	44	45	33	44	34	60	36	63	31	58	38	66	44	67	41	61	41	76	42
12	56	30	47	36	45	26	42	30	55	28	40	20	38	26	48	25	42	37	45	24	52	29	46	34	49	33	62	35
13	48	19	56	22	52	22	47	26	52	24	52	28	.....	21	55	22	48	24	51	20	46	28	51	24	50	24	46	27
14	54	27	61	38	65	32	57	30	77	33	57	26	.....	20	65	32	62	23	65	29	57	30	67	33	60	31	60	30
15	45	10	49	2	32	7	38	7	36	10	27	7	.....	6	42	6	21	18	29	8	41	14	37	13	37	12	40	19
16	30	6	31	6	32	9	29	9	35	0	0	25	30	3	40	14	30	13	31	11	31	14	40	18	30	14	35	18
17	46	24	35	24	34	22	42	23	.....	.....	30	19	30	12	45	22	46	17	43	22	52	26	49	25	46	24	58	30
18	40	16	44	8	43	15	39	20	58	11	40	9	34	4	48	7	43	21	44	14	44	24	46	20	42	22	47	26
19	52	30	52	26	53	32	50	31	53	31	50	21	50	29	57	26	54	20	54	26	54	36	58	34	52	36	56	35
20	62	33	62	35	63	37	59	41	61	35	57	32	54	35	69	33	66	33	66	32	65	38	71	39	63	41	69	43
21	73	27	77	32	75	36	75	36	81	31	69	29	70	31	76	43	77	37	77	41	74	46	76	52	76	39	76	49
22	62	34	64	32	48	31	54	32	46	30	41	28	69	30	63	27	50	41	55	29	55	35	53	35	55	36	60	46
23	42	22	48	23	46	27	40	28	44	22	41	19	39	22	49	18	47	29	48	22	48	30	48	29	46	30	50	32
24	49	20	56	27	54	26	49	26	52	21	55	27	49	21	61	29	53	28	55	28	52	31	57	33	52	28	53	31
25	62	30	64	43	63	40	62	33	62	37	60	41	59	36	68	42	64	31	64	38	66	36	66	41	64	36	68	34
26	56	45	59	46	55	45	54	46	64	48	53	34	58	37	60	32	52	38	50	28	58	48	59	28	55	48	62	48
27	50	24	49	19	45	21	49	22	56	23	35	15	48	20	37	11	33	21	31	15	50	20	39	18	49	23	54	25
28	38	21	33	18	29	19	30	21	42	20	32	11	28	12	34	10	38	17	29	21	41	24	35	25	39	23	47	27
29	37	25	38	23	43	24	41	24	41	25	35	23	39	23	44	18	44	21	42	22	48	29	49	23	42	27	50	30
30	37	21	39	24	39	27	34	25	43	23	36	18	39	21	42	21	36	29	36	26	37	31	43	26	36	30	41	30
31	41	20	37	25	41	24	37	26	38	22	30	15	33	23	43	24	42	25	40	24	44	28	43	31	41	28	46	33
Mns.	47.1	24.6	47.2	25.5	46.9	27.5a	44.8	26.8	49.3a	25.8a	41.7	20.5	41.8a	21.9	51.3	24.5	47.4	26.7	47.4	25.3	50.6	30.8	51.2	30.0	47.9	29.9	53.6	32.8

TABLE 3.—*Maximum and minimum temperatures at selected stations for March, 1911. 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	37	23	40	20	36	28	36	24	41	24	45	30	41	26	41	21	37	24	40	19
2	47	29	38	29	50	28	45	27	45	29	51	26	50	26	46	28	46	29	44	25
3	58	31	39	31	62	38	57	31	45	33	53	35	65	38	50	29	54	32	41	25
4	45	31	35	25	53	39	49	30	36	28	46	25	50	32	40	29	41	31	35	21
5	53	34	37	18	63	38	55	30	38	28	39	28	59	31	40	28	46	30	34	22
6	46	37	40	32	63	49	56	40	39	31	40	33	60	33	40	33	43	37	37	26
7	52	37	41	22	71	45	47	39	47	31	51	33	45	40	46	32	46	35	48	30
8	58	31	56	31	60	39	55	31	50	30	55	31	57	30	54	31	54	30	51	28
9	71	40	59	23	81	48	70	39	64	38	68	36	73	33	65	38	70	39	59	33
10	56	36	55	35	65	48	63	40	51	35	56	31	70	41	52	33	57	40	50	30
11	82	46	64	33	86	54	73	45	65	44	69	42	79	43	67	43	69	44	61	30
12	59	32	61	31	73	39	68	36	54	27	66	31	74	47	57	29	64	31	53	30
13	47	28	47	17	50	37	53	30	47	24	47	18	54	35	47	27	48	29	50	22
14	58	25	55	22	58	37	55	30	54	25	59	26	59	34	55	25	56	32	55	24
15	48	22	47	12	47	26	46	21	35	15	52	17	45	35	45	16	47	20	45	13
16	38	18	31	12	39	22	36	16	32	13	33	13	40	15	32	13	35	17	32	8
17	61	33	47	22	66	35	59	30	51	27	49	24	50	23	54	28	60	30	46	24
18	46	28	43	29	53	38	52	27	42	28	46	20	65	32	44	24	45	27	44	19
19	58	34	50	28	68	45	60	37	52	32	56	33	81	38	54	32	56	34	51	30
20	71	44	58	32	74	44	69	40	63	39	69	39	79	38	65	35	66	40	65	35
21	76	44	70	31	78	52	76	42	76	38	78	39	67	46	76	38	74	43	75	32
22	58	40	58	35	69	47	61	46	59	33	69	46	52	33	61	37	58	40	65	40
23	52	31	43	23	51	39	54	30	45	28	53	25	55	28	48	25	49	32	50	24
24	54	34	47	20	56	34	53	29	52	26	55	25	65	34	53	27	52	27	53	20
25	70	34	64	21	68	44	67	33	67	31	69	29	74	40	68	33	67	32	65	30
26	59	42	58	45	66	48	57	46	57	48	60	47	56	42	57	46	56	47	55	45
27	46	27	50	25	60	39	51	32	52	24	52	29	57	34	53	21	54	28	53	24
28	56	26	31	24	65	41	58	28	41	23	42	20	66	32	46	22	53	27	38	20
29	53	32	34	28	63	37	56	35	45	30	52	29	61	32	49	30	50	34	42	25
30	42	29	35	30	50	39	40	30	37	30	40	30	44	33	37	30	40	31	39	29
31	45	32	38	28	46	36	42	29	44	26	49	25	42	29	46	25	47	31	42	22
Mns	54.9	32.6	47.5	26.3	61.0	39.8	55.5	33.0	49.2	29.6	53.8	29.5	59.2	34.0	51.2	29.3	52.9	32.4	49.0	26.0