CLIMATOLOGICAL DATA FOR JUNE, 1911.

DISTRICT NO. 4, THE LAKE REGION.

Prof. HENRY J. COX, District Editor.

GENERAL SUMMARY.

The month of June as a whole in District No. 4 was rather uneventful so far as striking and rapid changes in weather conditions are concerned. The warm weather of the previous month continued without interruption over the western and southern portions of the district until the 27th; but in the New York and Vermont sections temperatures near or somewhat below the seasonal normals prevailed, and warm and cool periods of a few days each alternated, especially in the St. Lawrence Valley and the Adirondack region. During the height of the high-temperature periods a number of prostrations were reported from the southern and western portions of the district, the tenement and congested sections of the larger cities being particularly affected.

Clear weather with an abundance of sunshine marked those portions of the district which experienced the prolonged heat, there being at Chicago 5 days on which the percentage of possible sunshine reached 100, and 13 days on which 90 per cent or over was recorded. Throughout the eastern sections partly cloudy to cloudy weather was pronounced, and while rain fell with correspondingly great frequency, it was usually quite light, so that the need for moisture mentioned in the report for May became even more accentuated by the end of the month. The prevailing winds were southwest to west over the southern sections of the district and south to southeast over the extreme eastern sections.

The following table summarizes the chief features of meteorological interest in the various portions of the district:

Portions of States lying within District No. 4.	Mean temperature.	Departure from normal.	Mean precipitation.	Departure from normal.	Greatest 24-hour precipitation.	Mean number of days—				Prevailing wind direction.
						Precipitation.	Clear.	Partly cloudy.	Cloudy.	
Minnesota	62.9	+3.1	3.11	−1.45	1.65	11	10	13	7	ne.
Wisconsin	68.0	+5.2	3.14	−0.33	2.12	8	15	10	5	sw.
Illinois	72.4	+6.1	2.54	−1.12	1.05	10	12	9	9	sw.
Indiana	71.3	+2.4	4.60	+1.33	2.05	10	15	7	8	sw.
Upper Michigan	62.1	+3.4	2.46	−0.45	2.15	9	14	9	7	w.
Lower Michigan	67.7	+2.5	3.11	+0.04	2.54	8	13	10	7	sw.
Ohio	70.3	+2.0	4.37	+0.73	4.05	10	13	10	7	sw.
Pennsylvania	67.6	+0.6	2.40	−1.35	1.09	9	7	13	10	w.
New York	62.2	−0.2	3.30	−0.62	2.68	11	11	11	8	w.
Vermont	62.3	−2.6	2.80	−0.80	0.96	13	9	10	11	s.

TEMPERATURE.

Over the highland and St. Lawrence Valley sections of New York, the Champlain watershed, and most of the Canadian Province of Ontario the mean temperatures for the month were below normal, reaching departures of from −2° to −4° in the eastern portion of this region. To the eastward and westward the mean values were greater than the seasonal averages, the excesses rising to 6° in the extreme southwestern portions of the district, where the highest June temperatures of record were experienced.

The only cool period of general extent was that of the 27th–30th, when temperatures of 10° or more below the daily normals were noted. During this time the coldest weather of the month occurred generally over the sections west and north of Lake Michigan, and also at a number of stations to the eastward as far as New York State. In northern Indiana, however, the lowest temperatures occurred on the 1st or 15th. As noted above, warm and cool periods alternated in the eastern portions of the district, but over the valley of Lake Champlain the cool weather was almost continuous throughout the month.

Light frosts were reported from a few places in Bayfield and Vilas Counties in Wisconsin and in the Upper Michigan Peninsula during the cool spell at the close of the month, but no damage of consequence occurred. Temperatures near freezing were experienced at several stations in the highlands of New York on the 24th, while over the Vermont portions of the district the cool spell of the first few days of the month was the most pronounced.

In the region of greatest heat, over the southwestern sections of the district, a number of stations recorded maximum temperatures of 100° or higher, and the absolute range for the month was 73°, from 102° to 29°.

PRECIPITATION.

In northern Indiana, northwestern Ohio, southwestern lower Michigan, and eastern upper Michigan the precipitation for the month averaged greater than is usual for June, and an excess occurred also over the lower St. Lawrence Valley. Elsewhere in the lake region there was a deficiency in the June rainfall, amounting in general to somewhat less than 1 inch.

In point of time the precipitation was well distributed, but with few exceptions the individual falls were light. However, the storms of the 4th and the 24th–26th over the watersheds of the Maumee and Sandusky Rivers were accompanied by rainfall unusually heavy, as is shown by the following 24-hour falls reported from stations in Ohio: Fremont, 2.15 inches, 3d–4th; Hedges, 4.05 inches, 25th; Toledo, 2.79 inches, 24th–25th; Wauseon, 4.04 inches, 25th–26th. At Fremont 1.50 inches fell within 1 hour on the 4th, and at Toledo 2.14 inches were recorded in 45 minutes during the storm of the 24th.

MISCELLANEOUS.

Severe storms.—Thunderstorms were of rather greater frequency than usual, especially over the southern sections of the district, and in a number of instances damage

from lightning and wind occurred, and a few cases of loss of life were reported. Thunderstorms over western and northern New York on the 11th and 12th were quite severe, as were those which passed across the middle and southern portions of lower Michigan on the 5th. Northern Ohio experienced a very severe storm on the afternoon of the 4th, regarding which Mr. J. M. Kirk, acting section director at Columbus, says:

During the afternoon of June 4 one of the most destructive storms ever experienced in the State swept across the northern part of Ohio. The path of the storm was unusually wide, reaching from the lake shore on the north to Crawford, Richland, Ashland, Wayne, Stark, and Columbiana Counties on the south.

The storm moved rapidly, passing Toledo about noon, Fremont and Tiffin between 1 and 2 p. m., and Canton between 2.45 and 4.15 p. m. All data collected show that it was a severe thundersquall, the wind moving in a straight course from a north of west direction.

The greatest amount of destruction occurred in northern Wayne and Stark Counties, where the wind appears to have attained its greatest force. In that vicinity a number of large barns were demolished, silos and windmills blown down, and many roofs damaged. Probably the greatest loss was in the destruction of forest and fruit trees. Out of 200 oak trees on one farm only 4 are left. On another timber tract of 18 acres only a few trees remain standing, and the fallen timber is so badly damaged that it can not be made into lumber. Valuable orchards were destroyed that can not be replaced in many years. The damage to fences, farm crops, and telephone lines was very large also.

Akron, Canton, and Wooster probably suffered more severely than the other towns in the path of the storm. The damage to buildings and shade trees was especially large in those cities. One death was caused in Canton by a falling tree, while in Akron several persons were injured by coming in contact with live wires.

At Norwalk one man was killed and three others injured by lightning while standing under a large tree; the wind moved a large barn several feet from its foundation and caused much damage to wires, shade trees and buildings.

In Seneca County lightning destroyed a church and killed a valuable colt and two cows. Much damage was done by hail in the vicinity of Fostoria and Tiffin.

In Erie County a freight house and several barns were destroyed by lightning.

In Sandusky County a barn was destroyed and four cows killed by lightning.

Fogs.—Dense fog occurred on 13 days at Duluth, Minn., but it was only of infrequent occurrence at the remaining observing stations of the Weather Bureau on the Great Lakes, and with few exceptions serious hindrance to navigation did not occur. On the night of the 18th fog on the Detroit River was reported so dense between 12.15 and 6.45 a. m. as to completely stop the movement of vessels, while river fog at Sault Ste. Marie on the nights of the 10th, 26th, and 27th impeded the passage of boats to a great extent.

TABLE 1.—*Climatological data for June, 1911. District No. 4, Lake Region.*

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.		
Minnesota.																				
Cloquet	Carlton	800	....	63.6	.....	93	19†	32	28	47	4.07	.....	0.94	0	10	17	3	10	sw.	S. B. Detwiler.
Duluth	St. Louis	1,133	40	59.3	+ 0.5	90	19	41	28	39	2.76	− 1.77	0.87	0	14	5	13	12	ne.	U. S. Weather Bureau.
Stephens Mine	do	1,500	4	65.2	.....	90	21†	38	28	41	3.13	.....	1.65	0	11	17	12	1	e.	Oliver Iron Mining Co.
Two Harbors	Lake	614	17	59.0	+ 2.1	87	1	39	6†	42	2.23	− 1.80	0.60	0	7	5	14	11	ne.	G. W. Watts.
Virginia	St. Louis	1,434	17	67.6	+ 6.7	94	22	36	28	39	3.36	− 0.79	1.26	0	15	7	23	0	e.	Oliver Iron Mining Co.
Wisconsin.																				
Appleton	Outagamie	795	10	72.6	+ 8.0	99	22	49	29	32	4.38	+ 0.86	2.12	0	11	19	6	5	se.	Wm. O. Thiede.
Ashland	Ashland	647	20	64.6	+ 3.2	95	21	45	29	42	1.77	− 1.66	0.70	0	8	15	14	1	e.	Sam Wheeler.
Bayfield	Bayfield	635	2	63.8	.....	94	21	42	28	37	3.20	.....	1.17	0	8	16	12	2	ne.	John P. Kiel,
Cecil	Shawano	804	13	70.1	+ 5.2	97	30	44	29	42	2.34	− 0.82	0.80	0	10	13	17	0	se.	Louis W. Schmidt.
Florence	Florence	1,293	20	66.7[a]	+ 4.9	97[a]	30	39[a]	29	45[a]	2.11	− 1.42	0.63	0	7	22	4	4	e.	Fred S. Evans.
Fond du Lac	Fond du Lac	800	25	69.6	+ 3.6	94	30†	47	29	35	2.45	− 1.08	1.70	0	8	15	4	11	sw.	Geo. W. Marshall.
Grand River Locks	Marquette	770	15	71.6	.....	97	22†	49	29	33	3.58	− 1.10	0.96	0	8	22	4	4	se.	Jerry Parkinson.
Green Bay	Brown	617	25	69.1	+ 4.0	95	22	49	26	32	2.23	− 1.32	1.24	0	8	3	22	5	s.	U. S. Weather Bureau.
Iron River	Bayfield	1,096	2	65.8	.....	97	30	37	28	44	2.54	.....	0.97	0	9	19	7	4	w.	Winfield E. Tripp.
Kewaunee	Kewaunee	590	2	64.5	.....	98	22	43	15	38	2.96	.....	1.38	0	4	18	8	4	w.	Eugene V. Kimball.
Manitowoc	Manitowoc	616	60	66.4	+ 4.2	96	23	49	1	35	5.24	+ 1.77	1.90	0	9	4	23	3	sw.	Johanna Lups.
Menasha	Winnebago	764	14	.....	.....	.....	.....	.....	.....	.....	3.85	+ 0.34	1.95	0	6	21	5	4	sw.	Geo. T. Allanson.
Menomonee Falls	Waukesha	842	2	69.9	.....	97	23	46	1	38	3.37	.....	0.80	0	9	14	11	5	sw.	Arthur H. Christman.
Milwaukee	Milwaukee	681	40	69.4	+ 5.9	98	9	51	1	33	2.34	− 1.33	1.08	0	11	15	8	7	w.	U. S. Weather Bureau.
New London	Outagamie	762	15	70.9	+ 5.6	99	23	45	28	41	3.37	− 0.67	1.45	0	8	15	13	2	se.	August H. Pape.
Oconto	Oconto	590	20	69.0	+ 4.6	96	22	48	28	35	1.87	− 1.53	0.75	0	7	17	10	3	s.	Wm. K. Smith.
Oshkosh	Winnebago	744	22	71.1	+ 5.0	98	23	49	28	36	4.57	+ 0.04	2.00	0	7	23	7	0	sw.	Evan Vincent.
Pine River	Waushara	900	16	70.6	+ 5.5	97	22	44	28	33	5.10	+ 1.25	2.00	0	8	11	14	5	sw.	Geo. H. Carpenter.
Plum Island	Door	588	3	63.0	.....	91	22	46	1	31	1.31	.....	0.40	0	8	11	9	10	se.	Geo. C. Robinson.
Plymouth	Sheboygan	843	1	68.6	.....	95	22	45	29	35	3.99	.....	1.80	0	11	13	11	6	w.	Paul O. Feldrappe.
Port Washington	Ozaukee	713	18	68.5	+ 5.9	100	22	50	1†	40	4.08	+ 1.23	2.05	0	8	12	12	6	ne.	Richard C. Kann.
Racine	Racine	633	14	70.8	+ 6.4	102	9	48	1	43	2.56	− 0.57	0.64	0	7	20	4	6	ne.	Daniel Davis.
Ripon	Fond du Lac	935	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ripon College.
Sheboygan	Sheboygan	831	12	69.4	+ 6.6	101	23	50	1	41	3.34	+ 0.20	0.92	0	8	13	14	3	se.	Louis C. Meyer.
Sturgeon Bay	Door	600	12	64.0	+ 4.0	97	22	43	1†	41	2.09	.....	0.99	0	9	14	13	3	e.	Adam N. Dier.
Superior	Douglas	671	2	59.2	.....	92	21	41	28	40	2.75	.....	0.70	0	14	15	6	9	ne.	Edward B. Banks.
Waupaca	Waupaca	857	16	70.3	+ 5.0	99	23	45	28	49	4.28	− 0.14	1.80	0	10	13	9	8	sw.	James H. Flagg.
Illinois.																				
Chicago	Cook	824	41	72.4	+ 6.1	98	9	55	1	43	2.54	− 1.12	1.05	0	10	12	9	9	sw.	U. S. Weather Bureau.
Indiana.																				
Auburn	Dekalb	874	15	67.8	+ 0.5	96	10	43	15	40	6.18	+ 2.56	2.05	0	12	16	5	9	sw.	Mrs. Josie B. Kuhlman.
Berne	Adams	849	2	71.8	.....	100	10	48	1†	39	3.19	.....	1.08	0	10	18	7	5	sw.	Henry M. Reusser.
Elkhart	Elkhart	801	9	74.1	.....	101	10	49	1	31	4.91	.....	1.97	0	9	18	10	2	se.	Dr. Miles Medical Co.
Fort Wayne	Allen	775	15	70.8	+ 2.3	96	10	50	15	29	4.41	+ 0.57	1.91	0	12	10	7	13	sw.	U. S. Weather Bureau.
Hammond	Lake	598	20	72.6	+ 4.4	102	9	45	1	40	4.14	+ 1.04	1.95	0	9	11	15	4	.....	Carson W. Whitney.
Howe	Lagrange	886	6	69.9	.....	97	23	45	15	33	6.49	.....	1.96	0	9	19	0	11	.....	James E. Zook.
South Bend	St. Joseph	726	18	71.0	+ 2.4	97	10	48	1	34	4.34	+ 1.16	1.52	0	13	14	6	10	nw.	Henry H. Swaim.
Whiting	Lake	606	2	72.7	.....	98	24	51	1†	33	3.14	.....	1.22	0	9	18	7	5	sw.	D. H. Boyd.
Michigan—Upper Peninsula.																				
Baraga	Baraga	623	9	.....	.....	102	30	.....	.....	.....	.....	.....	.....	.....	.....	18	1	11	w.	D. S. S. & A. Ry.
Bergland	Ontonagon	1,300	1	66.6	.....	98	30	36	28	39	2.41	.....	0.90	0	5	24	5	1	w.	Frank McMonigal.
Blaney	Schoolcraft	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Calumet	Houghton	1,246	23	61.2	+ 1.6	94	30	38	29	42	1.85	− 1.22	0.50	0	10	19	7	4	e.	E. S. Grierson.
Chatham	Alger	875	10	60.6	+ 3.1	88	10†	29	29	40	3.30	+ 0.27	1.24	0	11	15	10	5	n.	U. P. Experiment Sta.
Deer Park	Luce	610	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mrs. Sara E. McGaw.
Detour	Chippewa	585	10	.....	.....	.....	.....	43	28†	.....	1.50	.....	1.00	0	4	24	1	5	se.	G. C. Reed.
Eagle Harbor	Keweenaw	622	12	56.2	+ 1.4	91	30	39	5†	46	2.46	− 0.38	1.30	0	7	9	18	3	e.	John Nolen.
Escanaba	Delta	612	38	64.0	+ 3.4	90	10	44	29	30	1.99	− 1.61	0.65	0	11	11	10	9	s.	U. S. Weather Bureau.
Ewen	Ontonagon	1,147	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. B. Hatfield.
Grand Marais	Alger	610	10	56.4	+ 0.9	81	21	40	13†	33	1.08	− 1.62	0.50	0	8	17	7	6	s.	Mrs. Lena Truedell.
Green	Ontonagon	622	0	66.1	.....	95	21	44	4	38	1.72	.....	0.65	0	5	15	11	4	sw.	T. A. Green.
Houghton	Houghton	668	10	62.7	+ 3.2	99	30	42	28	44	2.62	− 0.87	0.85	0	13	13	6	11	e.	U. S. Weather Bureau.
Humboldt	Marquette	1,536	14	65.2	+ 7.3	96	30	31	29	45	0.32	− 2.56	0.30	0	3	20	2	8	w.	D. S. S. & A. Ry.
Iron Mountain	Dickinson	1,111	10	68.7	+ 7.1	100	30	43	29	46	1.53	− 1.10	0.50	0	6	17	11	2	se.	Chapin Mining Co.
Iron River	Iron	1,504	14	66.4	+ 6.8	98	30	40	6†	42	4.80	+ 0.80	1.30	0	6	20	7	3	se.	Victor D. Laing.
Ironwood	Gogebic	1,520	8	67.3	+ 6.5	92	30	40	28	36	1.37	− 1.58	0.48	0	9	19	10	1	w.	J. V. Brennan.
Ishpeming	Marquette	1,536	11	74.3[d]	+ 5.1	92	21	37	29	39	2.65	+ 0.07	0.80	0	11	10	17	3	e.	Cleveland Cliffs Iron Co.
Isle Royale	Keweenaw	610	4	47.8	.....	69	30	37	12	28	2.05	.....	0.64	0	12	10	0	20	ne.	J. A. Malone.
Mackinac Island	Mackinac	831	10	56.6	− 1.4	79	24†	35	5	37	2.36	− 1.52	0.83	0	7	6	15	9	e.	M. I. S. P. Com.
Maple Ridge	Delta	.....	5	63.7	.....	88	10†	33	29	42	3.43	.....	1.00	0	10	17	9	4	s.	Herman Johnson.
Marquette	Marquette	734	40	60.0	+ 1.5	90	10	40	29	35	5.60	+ 2.09	2.15	0	9	7	15	8	e.	U. S. Weather Bureau.
Menominee	Menominee	581	12	67.5	+ 5.9	96	22	48	28	33	1.30	− 1.90	0.39	0	7	24	4	2	sw.	C. & N. W. Ry.
Munising	Alger	631	14	60.6	+ 2.5	89	30	33	29	45	3.05	+ 0.83	0.90	0	11	11	10	9	nw.	Albert Oas.
Newberry	Luce	773	9	62.2	+ 4.2	86	19	38	29	34	3.41	+ 1.04	1.04	0	10	11	11	8	n.	John Brown.
Powers	Menominee	868	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. & N. W. Ry.
St. Ignace	Mackinac	593	21	61.0	+ 1.8	84	22	43	28	35	1.45	− 1.32	0.56	0	7	11	17	2	w.	D. S. S. & A. Ry.
Sault Ste. Marie	Chippewa	614	23	60.0	+ 2.4	80	10	41	29	37	3.19	+ 0.42	1.03	0	11	7	9	14	se.	U. S. Weather Bureau.
Thomaston	Gogebic	1,347	14	.....	.....	96	30	.....	.....	.....	2.85	+ 0.58	0.80	0	11	9	0	21	w.	D. S. S. & A. Ry.
Victoria	Ontonagon	1,263	1	66.6	.....	97	30	41	29	37	2.56	.....	0.49	0	11	19	8	3	nw.	R. S. Schultz, jr.
Watersmeet	Gogebic	.....	2	67.2	.....	97	30	38	28	43	2.61	.....	1.04	0	9	7	12	11	nw.	B. N. Grant.
Whitefish Point	Chippewa	610	21	53.6	+ 0.5	71	3†	38	29	27	2.93	+ 0.49	0.85	0	10	16	2	12	nw.	Robert Carlson.
Michigan—Lower Peninsula.																				
Adrian	Lenawee	770	33	71.2	+ 3.5	98	10†	48	13	41	4.70	+ 0.53	2.10	0	6	12	8	10	n.	B. F. Gibbs.
Allegan	Allegan	698	20	71.0	+ 3.6	97	10	43	2	42†	7.14	+ 3.61	1.77	0	11	6	14	10	w.	Pere Marquette R. R.
Alma	Gratiot	750	24	68.2	+ 2.0	94	23	44	1	37	2.57	− 0.50	1.57	0	7	9	16	5	sw.	P. M. Smith.
Alpena	Alpena	609	38	62.3	+ 2.0	89	19	45	29	32	2.95	− 0.60	1.22	0	7	7	15	8	sw.	U. S. Weather Bureau.
Ann Arbor	Washtenaw	930	31	69.2	+ 2.1	96	23	49	1	34	3.60	+ 0.12	1.21	0	10	11	11	8	nw.	University of Michigan.
Arbela	Tuscola	728	15	67.2	+ 1.5	94	23	44	29	36	3.15	− 0.18	1.21	0	9	7	16	7	sw.	Wm. Atkin.

TABLE 1.—*Climatological data for June, 1911. District No. 4*—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.
***Michigan—Lower Peninsula*—Continued.**																				
Battle Creek	Calhoun	822	27	70.8	+ 2.3	95	10	48	1	32	7.05	+ 2.86	2.05	0	9	16	6	8	sw.	Elmer E. Sager.
Bay City	Bay	593	15	68.4	+ 2.3	96	22	47	1†	34	3.80	+ 1.24	2.00	0	5	20	8	2	nw.	Pere Marquette R. R.
Benzonia	Benzie	832	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Martin S. Joiner.
Berlin	St. Clair	.....	22	66.8	+ 1.0	97	23	42	29	45	2.57	+ 0.82	1.41	0	9	5	16	9	nw.	R. O. Gould.
Big Rapids	Mecosta	906	15	67.2	+ 3.3	94	24	41	29	44	2.83	+ 0.21	1.08	0	8	17	10	3	w.	Charlie Gay.
Bloomingdale	Van Buren	.....	7	70.3	.....	94	10†	46	1	31[a]	5.59	.....	2.30	0	9	21[a]	4[a]	4[a]	sw.	John M. Haven.
Cadillac	Wexford	1,293	2	68.2	.....	94	23	42	29	41	1.54	.....	1.20	0	3	19	9	2	e.	Water & Light Co.
Cassopolis	Cass	903	10	71.0	+ 5.0	96	10	48	1	36	7.10	+ 3.30	2.20	0	9	18	4	8	sw.	Michigan Central R. R.
Charlevoix	Charlevoix	610	33	64.0	+ 1.9	90	10	40	29	36	0.63	− 1.98	0.53	0	2	16	12	2	nw.	Pere Marquette R. R.
Charlotte	Eaton	.....	7	68.3	.....	93	23	43	14	32	5.39	.....	1.75	0	9	19	6	5	w.	City of Charlotte.
Cheboygan	Cheboygan	611	21	62.7	+ 1.0	89	30	39	29	38	1.50	− 1.20	0.65	0	5	8	21	1	w.	E. A. Bouchard.
Clinton	Lenawee	830	21	70.3	+ 2.2	96	10†	47	1	40	4.20	+ 1.18	1.05	0	7	10	12	8	nw.	David Woodward.
Coldwater	Branch	984	14	70.6	+ 4.6	97	10	45	13	36	4.72	+ 0.99	1.45	0	9	15	8	7	sw.	L. S. & M. S. Ry.
Concord	Jackson	.....	6	69.3	.....	96	10	46	1†	37	6.75	.....	2.10	0	9	14	15	1	nw.	W. N. Armstron.
Croton	Newaygo	685	3	69.4	.....	94	22†	46	14	36	4.97	.....	1.41	0	9	10	16	4	sw.	G. R. Musk. Power Co.
Detroit	Wayne	730	40	69.4	+ 1.6	95	23	48	1	29	1.48	− 2.41	0.62	0	9	9	12	9	w.	U. S. Weather Bureau.
Durand	Shiawassee	799	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. J. Tobin.
East Tawas	Iosco	590	14	64.4	+ 2.4	89	22	45	29	42[a]	2.44	− 0.26	0.93	0	9	16[a]	13[a]	0[a]	sw.	Detroit & Mack. Ry.
Eloise	Wayne	640	14	70.1	+ 3.2	97	23	41	14	37	3.78	+ 1.01	2.00	0	10	13	12	5	sw.	John Gilmore.
Flint	Genesee	730	22	65.5	− 0.2	93[a]	12†	38	21	47	3.76	+ 0.89	1.90	0	9	12	7	11	w.	William L. Fisher.
Frankfort	Benzie	589	7	63.9	.....	88	24	46	1†	25	2.68	.....	1.00	0	6	17	0	13	s.	Geo. Merency.
Ganges	Allegan	665	2	68.2	.....	90	23	50	1†	27	6.65	.....	1.74	0	10	17	3	10	sw.	H. H. Hutchins.
Gaylord	Otsego	1,367	6	67.0	.....	88	26	47	29†	35	.....	.....	.....	0	.....	7	8	15	sw.	Michigan Central R. R.
Gladwin	Gladwin	794	15	69.1[d]	+ 3.7	96	10†	41	29	45[d]	1.50	− 1.11	1.50	0	1	20[d]	3[d]	3[d]	s.	Geo. R. Smith.
Grand Haven	Ottawa	628	30	67.1	+ 2.4	86	30	46	29	29	3.37	+ 0.86	1.23	0	12	13	13	4	w.	U. S. Weather Bureau.
Grand Rapids	Kent	707	22	70.4	+ 2.3	95	23	49	1	36	4.76	+ 2.24	1.29	0	11	9	13	8	w.	Do.
Grape	Monroe	625	21	69.3[d]	+ 1.6	96	10†	46	1	34[e]	4.09	+ 0.73	1.21	0	10	15	8	7	w.	Joseph W. Morris.
Grass Lake	Jackson	989	5	67.9	.....	96	21†	45	14	35	3.54	.....	1.80	0	5	20	0	10	sw.	Menzo Conklin.
Grayling	Crawford	1,147	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	S. N. Insley.
Harbor Beach	Huron	635	23	63.4	+ 1.2	94	10	40	29	39	2.25	− 0.43	0.90	0	7	20	7	3	ne.	Pere Marquette R. R.
Harrison	Clare	1,159	18	67.8	+ 3.8	94	22	43	29	40	2.05	− 0.74	1.08	0	3	19	3	8	sw.	Do.
Harrisville	Alcona	616	27	61.3	+ 0.4	93	22	43	29	36	2.78	− 0.44	0.90	0	8	12	7	11	sw.	D. W. Mitchell.
Hart	Oceana	698	19	71.0	+ 5.5	97	23	42	29	40	2.13	− 0.18	0.83	0	5	13	14	3	sw.	Pere Marquette R. R.
Hayes	Huron	620	21	66.9	+ 1.9	95	10	43	29	35	2.49	+ 0.12	1.10	0	8	5	20	5	sw.	C. F. Leipprandt.
Highland	Oakland	830	19	.....	.....	.....	.....	.....	.....	.....	2.61	− 1.11	1.03	0	8	.....	.....	.....	.....	A. D. DeGarmo.
Hillsdale	Hillsdale	1,150	14	68.3[c]	+ 2.4	94	10	46	1	33[c]	4.52	+ 0.45	1.83	0	8	15[a]	4[a]	10[a]	sw.	C. L. Herron.
Holland	Ottawa	616	5	69.4	.....	92	10†	48	1†	31	4.53	.....	1.75	0	10	14	16	0	sw.	City of Holland.
Howell	Livingston	924	19	67.8	+ 1.0	95	22	47	1	34	2.94	+ 0.16	0.95	0	10	16	2	12	sw.	Frank Sharp.
Ivan	Kalkaska	.....	22	66.4	+ 2.0	93	10	40	29	47	2.04	− 0.86	0.77	0	7	10	17	3	nw.	O. L. Giddings.
Jackson	Jackson	927	14	70.3	+ 2.2	96	23	46	1†	36	4.41	+ 0.90	0.85	0	11	17	9	4	nw.	City of Jackson.
Jeddo	St. Clair	667	22	66.2	+ 1.0	92	10	44	29	34	1.67	− 1.25	0.81	0	7	13	7	10	ne.	William Bice.
Kalamazoo	Kalamazoo	955	35	71.6	+ 3.6	96	3	47	1	37	7.52	+ 3.44	2.10	0	11	14	15	1	w.	Kalamazoo Asylum.
Lansing (Agr. College)	Ingham	820	47	68.0	+ 0.6	94	23	46	14	34	3.77	− 0.02	1.81	0	9	11	9	10	sw.	U. S. Weather Bureau.
Lansing (capitol)	....do	881	24	69.2	+ 2.1	94	23	47	1†	33	4.04	+ 0.54	1.30	0	12	12	4	14	sw.	State Board of Health.
Lapeer	Lapeer	827	12	67.8	+ 2.6	95	10	46	29	42[a]	3.85	+ 0.91	2.16	0	9	16[a]	9[a]	5[a]	w.	Michigan Home.
Ludington	Mason	586	13	66.8	+ 5.4	87	23	43	29	30	1.96	− 0.31	1.00	0	6	24	4	2	sw.	Pere Marquette R. R.
Luther	Lake	1,028	1	67.4	.....	97	23	38	14	50	1.96	.....	1.16	0	7	14	13	3	w.	John W. Nichoson.
Mackinaw	Cheyboygan	592	15	61.1	+ 1.3	87	22	46	1	37	0.84	+ 2.46	0.28	0	7	11	17	2	.....	G. R. & I. Ry.
Mancelona	Antrim	1,121	15	66.3	+ 3.5	93	30	40	14	49	1.54	− 1.37	1.50	0	3	25	3	2	e.	Do.
Manistee	Manistee	600	14	67.9	+ 5.4	94	30	47	1†	31	2.55	− 0.77	1.03	0	8	21	6	3	sw.	Pere Marquette R. R.
Midland	Midland	604	12	70.2	+ 4.5	99	22	41	29	42	1.61	− 0.88	1.00	0	6	12	12	6	se.	Do.
Morenci	Lenawee	811	4	69.4	.....	93	10†	47	14†	32	6.58	.....	1.91	0	6	11	10	9	w.	George J. Tripp.
Mount Clemens	Macomb	615	11	65.8	− 0.7	97	22	40	21††	47	2.61	− 0.64	1.85	0	8	0	24	6	ne.	Waterworks.
Mount Pleasant	Isabella	826	12	69.2	+ 3.6	100	22	42	3†	43	1.37	− 1.12	0.79	0	4	20	4	6	w.	Pere Marquette R. R.
Muskegon	Muskegon	587	15	68.3	+ 3.2	90	23	51	1†	28	3.18	+ 0.44	1.10	0	8	17	9	4	s.	G. R. & I. Ry.
Old Mission	Grand Traverse	858	17	65.4[b]	+ 2.0	96	30	45	1	36[b]	1.93	− 0.69	1.22	0	6	12[b]	14[b]	2[b]	nw.	E. O. Ladd.
Olivet	Eaton	934	21	68.8	+ 2.5	92	22	47	1	30	6.91	+ 2.79	1.31	0	12	18	2	10	s.	G. A. Knapp.
Omer	Arenac	616	12	68.0[h]	+ 5.2	94	10	42	7	46[h]	0.90	− 0.65	0.40	0	4	4[g]	8[g]	11[g]	sw.	Detroit & Mack. Ry.
Onaway	Presque Isle	826	8	63.2	+ 1.3	93	20	36	1	41	1.20	− 2.10	0.40	0	4	18	0	12	w.	Do.
Owosso	Shiawassee	731	14	70.2	+ 3.6	95	11†	47	1†	35	5.37	+ 2.50	2.54	0	11	8	18	3	sw.	Owosso Sugar Co.
Petoskey	Emmet	660	21	63.6	+ 1.4	94	30	42	29	34	0.43	− 2.41	0.12	0	6	20	8	2	w.	G. R. & I. Ry.
Plymouth	Wayne	725	14	71.1	+ 3.6	100	23	34	29	50	4.90	+ 1.68	2.10	0	6	15	2	13	sw.	Pere Marquette R. R.
Pontiac	Oakland	935	11	69.6	+ 2.0	97	23	49	29	35	2.21	− 0.31	0.95	0	8	21	5	4	sw.	Fred W. Shaw.
Port Austin	Huron	618	14	67.4	.....	94	11	41	29	39	1.90	.....	0.58	0	6	18	4	8	sw.	Pere Marquette R. R.
Port Huron	St. Clair	639	36	66.0	+ 2.2	94	10	49	1	33	1.74	− 1.50	1.05	0	7	7	11	12	ne.	U. S. Weather Bureau.
Reed City	Osceola	1,033	14	69.6	+ 4.2	97	23	36	29	47	.....	.....	.....	0	.....	16	3	11	w.	Pere Marquette R. R.
Roscommon	Roscommon	1,141	7	64.8	.....	94	10	36	21	54	1.85	.....	1.03	0	8	6	22	2	.....	State Forestry Comm.
Saginaw	Saginaw	601	9	70.8	.....	97	22	49	1†	35	2.10	.....	0.90	0	6	12	16	2	sw.	Postmaster.
Saginaw, West Side	....do	601	16	69.8	+ 2.5	96	10†	47	1	35	2.70	− 0.03	1.66	0	9	15	11	4	se.	Robert B. Hudson.
St. James	Charlevoix	681	5	62.1	.....	86	26	44	21	34	0.86	.....	0.40	0	7	13	9	8	se.	James Malone.
St. Joseph	Berrien	593	24	69.8	+ 4.5	90	22†	52	1	27	3.14	+ 0.03	1.15	0	8	14	7	9	sw.	City of St. Joseph.
Sandusky	Sanilac	790	2	64.5	.....	92	10†	41	6†	49	.....	.....	.....	0	.....	13	7	10	sw.	Pere Marquette R. R.
Saranac	Ionia	639	16	69.4	+ 2.0	97	23	44	14	40	4.63	+ 1.17	2.00	0	9	14	4	12	sw.	John Wallington.
South Haven	Van Buren	585	15	69.2[g]	+ 5.3	88	4	50	29	24[g]	4.20	+ 1.92	1.20	0	8	13[f]	11[f]	0[f]	sw.	Mrs. M. E. De Diemar.
Stanton	Montcalm	880	17	67.4	+ 0.8	96	24	40	14	46	.....	.....	.....	0	.....	17[a]	6[a]	6[a]	sw.[a]	City of Stanton.
Thornville	Lapeer	975	34	67.6	− 0.2	94	10	46	29	32	4.77	+ 1.21	2.28	0	9	5	12	13	w.	J. S. Kalkins.
Traverse City	Grand Traverse	588	14	67.0	+ 4.1	94	30	45	29	40	3.28	+ 0.96	2.40	0	3	6	13	11	ne.	G. R. & I. Ry.
Vassar	Tuscola	641	10	68.0	+ 3.0	94	10†	43	29	37[a]	2.36	− 0.58	0.71	0	5	8	16	5	sw.	Pere Marquette R. R.
Wasepi	St. Joseph	842	14	69.0	+ 3.2	94	10	47	15	33	5.77	+ 1.83	2.05	0	11	21	0	9	sw.	Charles A. Palmer.
West Branch	Ogemaw	973	7	60.6	.....	95	14	38	5	49[a]	.....	.....	.....	0	.....	14[a]	2[a]	13[a]	w.	Mich. Central R. R.
Woodlawn	Montmorency	.....	9	63.0	− 2.2	90	10	34	29	46	1.51	− 2.61	0.42	0	7	11	15	4	ne.	T. C. Mathews.
Ypsilanti	Washtenaw	736	26	69.0	+ 2.6	96	10	46	1	35	3.49	− 0.43	0.98	0	7	4	23	3	nw.	Orin J. Bemiss.
Ohio.																				
Akron	Summit	1,081	24	69.9[b]	+ 1.7	95	25	51	30	35[b]	4.99	+ 1.32	1.85	0	14	14	5	11	sw.	Prof. C. R. Olin.
Benton Ridge	Hancock	800	18	72.1	+ 2.5	95	10†	48	1	31	3.46	− 0.19	0.75	0	9	13	13	4	sw.	J. W. Powell.
Bowling Green	Wood	670	30	70.6	+ 2.6	98	23	47	1	39	5.05	+ 1.21	1.35	0	7	14	8	8	nw.	G. C. Housekeeper.
Bucyrus	Crawford	1,000	17	70.9	+ 2.1	98	10†	45	15	43	3.05	− 0.59	0.60	0	10	13	5	12	nw.	James R. Hopley.
Cleveland (1)	Cuyahoga	763	40	69.4	+ 1.5	92	23	56	1	26	2.88	− 0.80	1.19	0	10	9	13	8	w.	U. S. Weather Bureau.
Cleveland (2)	....do	754	14	70.1	+ 2.9	94	10	55	30	32	3.38	+ 0.34	1.40	0	9	12	8	10	nw.	Rev. F. L. Odenbach, S. J.
Conneaut	Ashtabula	675	1	68.4	.....	90	10	49	18†	30	2.63	.....	0.88	0	8	12	4	14	nw.	E. L. Ransom.
Defiance	Defiance	712	17	69.8[a]	+ 1.4	96	10	44[a]	1	37[a]	5.30	+ 1.64	1.52	0	13	14	4	12	sw.	John F. Heilshorn.
Findlay	Hancock	776	23	71.6	+ 1.7	98	10†	48	1	43	4.28	+ 0.27	1.15	0	10	20	6	4	nw.	Dr. E. A. Moser.

TABLE 1.—*Climatological data for June, 1911. District No. 4*—Continued.

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.		
***Ohio*—Continued.**																				
Fremont	Sandusky	628	9	71.1	.....	97	23	48	1	39	6.34	.....	2.15	0	9	16	11	3	sw.	E. Stanley Thomas.
Hedges	Paulding	725	17	70.8	+ 2.4	97	10	46	1†	41	7.22	+ 3.82	4.05	0	9	15	11	4	sw.	Charles Stutzman.
Hillhouse	Lake	997	18	67.0	+ 1.8	90	10†	44	21	34	3.47	− 0.14	0.90	0	12	10	16	4	sw.	J. W. Doncaster.
Hiram	Portage	1,260	31	68.9	+ 1.9	93	10	50	29	29	3.12	− 0.85	1.07	0	9	11	13	6	nw.	Prof. G. H. Colton.
Hudson	Summit	1,153	50	70.2	+ 2.7	98	23	47	29†	44	3.33	− 0.41	1.75	0	12	20	8	2	s.	Dr. W. J. Chamberlain.
Lima	Allen	875	12	70.0	+ 2.2	96	10	48	14†	35	4.85	+ 0.53	1.35	0	7	19	7	4	sw.	Miss Ollie De Long.
Medina	Medina	944	23	69.1	+ 1.5	96	23	44	21	43	4.20	+ 0.96	1.14	0	8	17	5	8	w.	F. W. Clark.
Montpelier	Williams	880	19	71.2	+ 3.3	96	10†	46	1	39	5.94	+ 2.11	1.35	0	9	19	8	3	w.	G. L. Laser.
Napoleon	Henry	680	24	71.2	+ 2.7	96	10†	49	1	38	5.83	+ 2.05	1.80	0	10	16	7	7	nw.	A. C. Senter.
New Bremen	Auglaize	1,038	18	70.7	+ 1.3	96	10	46	14	33	2.89	− 0.47	0.45	0	9	13	15	2	sw.	Miss Lillian Grothaus.
North Royalton	Cuyahoga	1,000	18	69.0	+ 1.4	96	23	49	21	34	2.97	− 0.52	0.90	0	8	14	12	4	w.	W. S. Edgerton.
Norwalk	Huron	719	25	70.8	+ 2.6	99	23	49	30	41	4.73	+ 1.27	1.89	0	9	10	14	6	w.	Dr. Albert Sheldon.
Oberlin	Lorain	855	36	70.4	+ 2.5	98	23	48	30	41	3.33	− 0.04	0.98	0	9	17	6	7	w.	Prof. F. F. Jewett.
Ottawa	Putnam	720	16	70.8	+ 1.5	96	10	48	1†	38	3.94	+ 0.65	0.82	0	11	1	23	6	s.	Prof. J. T. Maidlow.
Sandusky	Erie	629	34	70.8	+ 2.0	96	10	55	15	28	3.90	+ 0.08	1.72	0	9	12	10	8	w.	U. S. Weather Bureau.
Tiffin	Seneca	775	29	70.9	+ 1.4	94	10†	50	1	31	4.58	+ 0.62	1.53	0	10	14	14	2	w.	Prof. T. H. Sonnedecker.
Toledo (1)	Lucas	769	40	71.0	+ 1.6	96	23	52	1	27	7.86	+ 4.48	2.79	0	7	14	9	7	sw.	U. S. Weather Bureau.
Toledo (2)	do	606	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. A. Krance, S. J.
Upper Sandusky	Wyandot	854	28	71.0	+ 1.3	96	10	50	15	38	2.43	− 1.80	0.70	0	9	7	18	5	nw.	Robert E. Tracht.
Vickery	Sandusky	588	18	70.1	+ 1.8	98	23	50	1†	40	4.91	+ 1.58	1.92	0	9	11	10	9	sw.	John W. Barr.
Wauseon	Fulton	780	39	70.1	+ 1.5	97	23	46	1	38	7.65	+ 3.66	4.04	0	13	10	12	8	w.	Thomas Mikesell.
Willoughby	Lake	649	17	.....	.....	.....	.....	.....	.....	.....	2.47	− 0.39	0.75	0	10	11	6	13	w.	C. M. Richardson.
Pennsylvania.																				
Erie	Erie	658	38	67.6	+ 0.6	85	10	53	29	22	2.40	− 1.35	1.09	0	9	7	13	10	w.	U. S. Weather Bureau.
New York.																				
Adams Center	Jefferson	540	20	64.9	− 0.6	84	11†	45	24	28	3.60	− 0.26	1.04	0	11	11	15	4	s.	A. E. Cooley.
Angelica	Allegany	1,340	28	63.4	− 0.5	90	11	37	17	40a	3.34	− 0.88	1.44	0	16	4	11	15	w.	Charles P. Arnold.
Appleton	Niagara	270	20	65.6	+ 1.0	91	11	44	1	34	1.18	− 1.88	0.42	0	7	11	11	8	nw.	H. A. Van Wagoner.
Auburn	Cayuga	715	42	65.1	− 0.7	88	27	47	17	30	4.00	− 0.10	2.33	0	8	20	8	2	nw.	A. H. Underwood.
Avon	Livingston	585	16	66.8	+ 1.5	90	11	42	17	33	1.73	− 1.49	0.97	0	6	11	15	4	.....	W. G. Markham.
Blue Mountain Lake	Hamilton	1,750	11	.....	.....	.....	.....	.....	.....	.....	4.85	+ 0.14	0.97	0	11	17	5	8	w.	B. F. Merwin.
Brockport	Monroe	537	15	67.6	+ 1.5	93	11	45	17	37	1.11	− 1.96	0.51	0	8	7	19	4	w.	W. H. Lennon.
Buffalo	Erie	767	60	66.3	+ 1.2	83	25	52	29	22	2.23	− 0.91	1.15	0	12	8	17	5	sw.	U. S. Weather Bureau.
Canton	St. Lawrence	448	17	62.8	− 2.3	87	27	41	24	35	2.59	− 0.84	0.95	0	15	9	8	13	s.	Do.
Cape Vincent	Jefferson	246	6	63.4	.....	82	27†	45	24	27	3.16	.....	1.71	0	10	7	11	12	s.	V. M. Rice.
Carvers Falls	Washington	243	13	61.4	− 2.6	85	27†	42	5†	37	1.92	− 2.31	1.20	0	3	23	3	4	s.	Washburn Fancher.
Chazy	Clinton	151	11	66.0	+ 1.6	86	19†	43	3	31	2.24	− 1.00	0.55	0	8	21	3	6	n.	W. R. North.
Dannemora	do	1,490	6	63.6	.....	86	27	46	3†	27	3.89	.....	0.82	0	16	12	12	6	w.	Dr. W. N. Thayer.
Elba	Genesee	500	12	65.0	+ 0.4	90	11	39	18	42	0.90	− 2.13	0.30	0	4	15	9	6	sw.	Joseph S. Wilford.
Fayetteville	Onondaga	530	10	66.2	− 0.1	92	11	44	21	34	3.81	− 0.88	1.01	0	16	12	9	9	se.	Dana H. Wells.
Faust	Franklin	1,550	.....	60.0	.....	84	19	39	4†	37	4.73	.....	0.73	0	15	.....	.....	.....	.....	Santa Clara Lumber Co.
Gabriels	do	1,729	9	58.4	.....	83	27	33	24	40	4.74	.....	1.02	0	18	12	5	13	w.	H. E. Allbands.
Harkness	Clinton	622	9	63.0	− 0.4	85	19	42	3†	33	3.21	− 0.08	0.59	0	15	20	7	3	w.	J. W. Harkness.
Hemlock Lake	Livingston	900	13	65.3	− 0.7	87	11	44	21	28	2.26	− 1.04	0.69	0	8	9	8	13	nw.	D. H. Westbury.
Hunt	do	1,321	12	66.2	− 0.3	94	11	43	30	35	1.70	− 2.15	0.60	0	7	4	24	2	nw.	W. S. Barager.
Ithaca	Tompkins	928	33	65.6	− 0.6	94	11	44	17	36	3.59	− 0.29	1.98	0	10	7	11	12	nw.	U. S. Weather Bureau.
Keene Valley	Essex	1,000	13	62.0	− 0.7	90	27	37	4	48	4.07	+ 0.32	1.04	0	16	14	5	11	sw.	E. R. Wells.
King Ferry	Cayuga	.....	11	.....	.....	.....	.....	.....	.....	.....	2.36	− 1.51	1.22	0	8	16	8	6	nw.	Lucius A. Goodyear.
Lake George	Warren	350	14	64.1	− 0.3	87	19†	46	3	36	3.62	− 0.57	0.80	0	12	8	13	9	sw.	Charles Forsell.
Lake Placid Club	Essex	1,864	3	55.3	.....	84	27	34	4	36	3.87	.....	0.60	0	14	9	11	10	nw.	Henry Van Hoevenberg.
Le Roy	Genesee	920	21	66.2	+ 0.1	91	11	47	29	32	3.04	− 0.36	1.13	0	11	8	8	14	nw.	F. W. Ball.
Lockport	Niagara	650	24	65.9	− 0.3	86	11	47	16†	32	2.16	− 0.35	0.96	0	11	11	6	13	sw.	J. E. Wakeman.
Lowville	Lewis	900	44	61.6	− 1.4	90	11	38	24	38	3.97	+ 0.37	1.55	0	7	15	6	9	w.	Charles J. Rice.
Moira	Franklin	200	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nehasane	Herkimer	1,750	3	58.4	.....	82	11	34	24	40	5.12	.....	1.59	0	18	11	13	6	nw.	L. W. Brown.
Ogdensburg	St. Lawrence	175	27	66.2	+ 1.2	86	18	45	5	37	2.65	− 0.90	0.77	0	9	11	17	2	se.	State Hospital.
Old Forge	Herkimer	1,733	3	59.5	.....	84	11	37	24	39	7.35	.....	2.68	0	17	12	6	12	w.	Mrs. S. W. Nelson.
Oswego	Oswego	335	41	62.8	− 1.0	86	27	48	1	24	6.67	+ 3.24	2.22	0	11	4	18	8	w.	U. S. Weather Bureau.
Otto	Cattaraugus	1,410	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Palermo	Oswego	460	52	.....	.....	.....	.....	.....	.....	.....	4.82	+ 1.56	1.00	0	9	16	7	7	sw.	E. B. Bartlett.
Perry City	Schuyler	1,038	31	63.8	− 1.1	88	27	40	17	39	3.86	− 0.21	1.11	0	10	7	13	10	nw.	W. H. Jeffers.
Philadelphia	Jefferson	485	5	63.8	.....	87	12	40	24	35	3.01	.....	1.31	0	14	8	17	5	w.	E. D. Babcock.
Potsdam	St. Lawrence	300	35	65.0	+ 0.7	89	28	42	24	32	4.84	+ 1.12	1.38	0	17	.....	.....	.....	.....	A. E. Sutherland.
Raquette Lake	Hamilton	.....	3	58.9	.....	81	11	40	24	34	5.03	.....	1.18	0	15	14	4	12	w.	R. J. Dunning.
Rochester	Monroe	523	82	66.6	+ 0.5	92	11	49	17	28	2.04	− 1.09	0.75	0	10	5	14	11	w.	U. S. Weather Bureau.
Romulus	Seneca	719	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shortsville	Ontario	740	12	65.4	− 0.1	86	11†	47	29	28	1.69	− 1.93	0.43	0	8	12	13	5	sw.	C. H. Latting.
Skaneateles	Onondaga	.....	16	.....	.....	.....	.....	.....	.....	.....	4.98	+ 0.72	2.05	0	11	.....	.....	.....	.....	Edward Conron.
Syracuse	do	597	9	64.5	− 2.4	87	11	49	17	26	3.22	− 0.67	0.91	0	13	7	11	12	nw.	U. S. Weather Bureau.
Ticonderoga	Essex	344	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tupper Lake	Franklin	1,522	11	59.4	− 0.5	82	28	38	1†	37	4.54	+ 0.30	0.73	0	15	18	2	10	w.	Aaron W. Maddox.
Volusia	Chautauqua	1,167	12	65.4	+ 1.7	90	11	41	29	26	1.56	− 1.86	0.63	0	7	7	19	4	sw.	Benjamin Breads.
Wanakena	St. Lawrence	.....	1	59.9	.....	85	27	35	24	45	3.25	.....	0.65	0	15	6	14	10	nw.	J. Otto Hamele.
Watertown	Jefferson	737	19	64.5	− 1.5	87	27	45	24	32	2.91	− 0.56	1.42	0	11	14	6	10	sw.	H. P. Dunlap.
Wedgewood	Schuyler	1,430	22	64.2	− 1.4	91	11	38	2	29	3.35	− 0.79	0.99	0	13	16	9	5	nw.	O. F. Corwin.
Westfield	Chautauqua	837	15	66.0	+ 0.7	86	10	48	16†	28a	1.92	− 1.73	0.49	0	9	.....	.....	.....	.....	John R. Rogers.
Youngstown	Niagara	.....	9	.....	.....	.....	.....	.....	.....	.....	1.56	.....	0.91	0	6	4	26	0	w.	B. V. Brookins.
Vermont.																				
Burlington	Chittenden	404	4	62.8	− 1.0	86	28	42	4	34	2.54	− 0.72	0.52	0	13	6	13	11	s.	U. S. Weather Bureau.
Cornwall	Addison	507	17	64.1	− 3.0	84	19	45	2†	30	3.00	− 0.33	0.75	0	13	12	6	12	n.	C. H. Lane.
Enosburg Falls	Franklin	601	19	62.7	− 2.5	86	27	36	3	43	3.22	− 1.33	0.96	0	12	11	11	8	n.	L. H. Pomeroy.
Northfield	Washington	876	24	59.0	− 3.7	84	28	37	4	37	2.36	− 0.89	0.43	0	17	7	9	14	s.	U. S. Weather Bureau.
Wells	Rutland	750	19	62.8	− 2.9	85	27	44	24	32	2.86	− 0.75	0.73	0	11	10	8	12	s.	E. R. Pember.

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 June, 1911. District No. 4, Lake region.*

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	Total.
Minnesota.																																
Cloquet	Lake	T.	0.65		0.82				0.34		0.07	0.51				0.02	0.45			T.						0.94	0.17			0.10		4.07
Duluth	do		.06	0.40	.34	0.09			.41	0.02	01	.23	T.			.01	.12							T.	T.	.87	.11		T.	.08	0.01	2.76
Stephens Mine	do		.03	.30		.15			.07	T.	.14	.57	.02							.02						.06	1.65			.12	T.	3.13
Two Harbors	do	T.	.50	.15	.50	T.			.16	.07	T.						T.			T.						.60	.25			T.		2.23
Virginia	do	.16	.09	.16		.12			.61	.01		.57	.02			.03				.09						.06	1.26	.06		.10	.02	3.36
Wisconsin.																																
Appleton	Fox		.06	.71	2.12		0.73		.04				.06				.07	0.02								01	.55			.01		4.38
Ashland	Lake	.04	.08		.70				.31											.18						.19	.21			.06		1.77
Bayfield	do		.38	.10	1.17				.34							T.				.61						.34	.13			.07		3.20
Cecil	Fox		.50	.80		.21	1.00		.13				.03				.03	.02	.45								.16			.01		2.34
Florence	Menominee		.52		.63				.13	.18			.38							T.							.21	.06				2.11
Fond du Lac	Fox		.11	1.70	.26				T.			T.	.07				.18	.02								.06	T.			.05		2.45
Grand River Locks	do		.50	.80	.13		.96		.03			.13	T.				.66													.37		3.58
Green Bay	Lake		T.	.41	1.24		.19		.04			.04	.12				.16										.03			T.		2.23
Iron River	do	.05			.97	T.	.05		.35	T.				0.07		T.	.28									.44	.25			.08		2.54
Kewaunee	do			.45	1.38		.51						.62																			2.96
Manitowoc	do		.08	.80	1.90	.05	.90		.05				.32				.11										.97					5.24
Menasha	Fox		.85		1.95		.65		T.			T.	T.				.03									T.	.35			.02		3.85
Menomonee Falls	Lake		.22	.80	.38		.77		T.		T.	.23	.14				.52	.14							T.	.17				T.		3.37
Milwaukee	do		.18	.97	.08		.40		.01		T.	.11	.01				.37	.15							0.05	T.	T.			.01		2.34
New London	Fox		.03	.54	1.45		.70		.10								.12										.35			.08		3.37
Oconto	Lake		.27	.30	.11	.25			.05				.14							T.							.75					1.87
Oshkosh	Fox		.15	1.12	2.60		.68		T.								.35										.15			.12		4.57
Pine River	do		.20	1.16	2.00		.58		.05		T.	T.	T.				.40	T.								T.	.54			.17		5.10
Plum Island	Lake	.04	.27	.01	.40				.05			.07	.30												.17							1.31
Plymouth	do		.16	1.80	.83		.82		.01				.06				.18	.04								.05	.03			.01		3.99
Port Washington	do		.15	2.05	.25		.85				.05						.10	.12								.51						4.08
Racine	do		.20	.64			.33					.21	.14				.51	.53							T.		T.					2.56
Ripon	Fox																															
Sheboygan	Lake		.15	.92	.82	.05	.65		T.				.46				.18	.11								T.		T.		T.		3.34
Sturgeon Bay	do	.19	T.	.21	.99	.01	.25		.04			.01	.27												T.		.12					2.09
Superior ‖	do		.10	.05	.70	T.	.11		.50		.06	.01	.21				.03	.03						T.		.34	.52	.04		.05		2.75
Waupaca	Fox		.09	.39	1.80		.79		.06			.02					.32									.56	.02			.23		4.28
Illinois.																																
Chicago	Cook		.09	.01	T.		.03					.29	T.		0.01		.49	.59							.80	.09	.14					2.54
Highland Park			.14	.02							.57						*	1.81							.33	.21						3.08
Indiana.																																
Auburn ‖	Maumee	.51		.50	.06	.07	.35						.15	.03		.12		1.16	.10						T.	1.08	2.05					6.18
Berne	do			1.08		.02	T.					T.	.01	T.	T.		.19	.75	.12						.30	.38	.32	.02				3.19
Elkhart	St. Joseph		.06	1.43			.17							.13	.09		.31	.63								1.97	.12					4.91
Fort Wayne	Maumee		T.	.66	.19		.19					.01	.01		.14		.29	.61							.38	1.80	.11	.02				4.41
Hammond	Lake Michigan		.18	T.			.08	T.					.36		T.		.28	.72							1.95	.12	.35		.10			4.14
Howe ‖	St. Joseph	.60		.88	.35			.43						.15				.85								1.96	1.09	.18				6.49
South Bend ‖	do	.35		.67	.11	.01	.01						.09	.02			.03	.87	.11							1.52	.43	.12				4.34
Whiting	Lake Michigan		.02		.11			T.				.23	T.		.03		.11	.44							.78	1.22		.20				3.14
Michigan—Upper Peninsula.																																
Baraga	Lake																															
Bergland	Ontonagon		.37		.90				.45			T.	.55												T.	T.	.14	T.				2.41
Blaney	Manistique																															
Calumet	Lake	.02	T.		.13	T.			T.	.08	.34		.49				.09							T.	.05	T.	.50	.11	T.	.04		1.85
Chatham	do		T.	.01	.07	.01	T.			.01	.97	.22	1.24												.07		.27	.40		.03		3.30
Deer Park	do																															
Detour	St. Marys				.20					.20	1.00													.10								1.30
Eagle Harbor	Lake		.01		.01	.02				1.30	.23	T.	.39				T.	T.	T.			T.		T.	.50				T.	T.		2.46
Escanaba	do	.20	.48		.11				.02	.47	.07	.28	.29				T.							.02	.01		.04				T.	1.99
Ewen	Ontonagon																															
Grand Marais	Lake		T.		.10					.08	.10	.05	.50											T.	.20		.05					1.08
Green	do		T.	.25					.27	.65		T.	T.			.10										T.	.45					1.72
Houghton	do	.05	.02		.32				T.	.13	.67	T.	.35				.05			.02		T.		T.	.08	.01	.84	.02		.06		2.62
Humboldt	Escanaba				.01				.01			.30																		T.		0.32
Iron Mountain	Menominee	T.	.50		.23		T.		.13				.36												.06			.25				1.53
Iron River	do		1.10	.10	.90				.10	1.30		T.	1.30								T.				T.		T.	T.				4.80
Ironwood	Lake	.06			.04	.12			.10			T.	.18				T.			.15						.48	.19	.05				1.37
Ishpeming	Escanaba	T.	T.	.05		.05			T.	.30	.80		.60	.40			T.								.05		.20	.10	.05	.05		2.65
Isle Royale	Lake				.32				.03	.15	.18		.03				.33						.03	.06	.64		.10	.06		.12		2.05
Mackinac Island	do		.04	T.	.12	T.	T.	.52	.83	T.	.07														.51	T.		.27				2.36
Maple Ridge	do		.39		.10						.47	.04	.78	.14								.11		.10	.30			1.00				3.43
Marquette	do		.07		.24				T.	.51	1.64	.40	1.70				T.								T.		.95	.01	T.	.08		5.60
Menominee	Menominee	.30	.10		.39	.06			.08			.10	.27														T.					1.30
Munising	Lake		T.	.06	.06	.05					.81	.45	.90	.01								.46			.13	.02		.10		T.		3.05
Newberry	Tequamenon		.03	.03	.08					.24	.35	1.04	.07												.80	.63		.14			T.	3.41
Powers	Lake																															
St. Ignace	do		.05	T.	.06				.27	.07	.56	.12										T.			.32			T.			T.	1.45
Sault Ste. Marie	St. Marys				.35	.02				.40	.71	.48	.15									.05		.42	.04		.55	T.	T.		.02	3.19
Thomaston	Lake	.10	.20		.65				.80		.05		.20				.15									.40	.10	.10		.10		2.85
Victoria	Ontonagon	.02	.07		.49	.01			.28		.38	T.	.48	T.												.10	.39	.01		.33		2.56
Watersmeet	do	.02	.25		.58	T.			.11	.22		T.	.29				.03	T.			T.						1.04	T.		.07		2.61
Whitefish Point	do				.30	.03		.02		.56	.30	.35		.08						.23				.50	.06							2.93
Michigan—Lower Peninsula.																																
Adrian	Raisin			.42	1.68								.12					.65							1.35	.48						4.70
Allegan	Kalamazoo		.17	1.02	1.77		.62					.12	.08				.14	.63							1.21	.94	.44					7.14
Alma	Saginaw			.12	1.57	.12						.06	.12							T.						.52	.06					2.57
Alpena	Lake		T.		.12		T.		T.	.58		.50	1.22	T.								T.		.05		.16	.32	T.			T.	2.95
Ann Arbor	Huron		.02	.29	.73	1.21	.04				T.	.06	.17					.37								.46	.25					3.60
Arbela	Saginaw		.02			1.21	.11					.27	.24							.19						.81	.19		.11			3.15
Battle Creek	Kalamazoo		T.	.19	2.05	.34	.38					.75	T.				T.	.72							.20	1.20	1.22					7.05
Bay City	Saginaw				2.00	.60						.30	.70	.20																		3.80
Benzonia	Betsie																															
Berlin	Clinton			T.	.14	1.41	.01	T.	T.	.01		.31	.36	.06	T.	T.										.04	.23					2.57

TABLE 2.—*Daily precipitation for June, 1911. District No. 4*—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	Total.
Michigan—Lower Peninsular—Con.																																
Big Rapids	Muskegon			.46	1.08	.44	.04					.48	.18													.13	.02					2.83
Bloomingdale	Lake			.85	2.30		.53					.20	.12				.12	.51							.35	.61						5.59
Cadillac	Manistee				1.20							.14	.20																			1.54
Cassopolis	St. Joseph			1.80	.20		.30								.40		.40	.45							.75	2.20	.60					7.10
Charlevoix	Lake											.10																				
Charlotte	Kalamazoo			.87	.53	.93	.30					T.	.08					.40							.47	1.75	.07					5.39
Cheboygan	Cheboygan		T.		.10				.40		.25		.65									.10			T.							1.50
Clinton	Raisin			.33	.63	1.05					.05							.68								.90	.56					4.20
Coldwater	St. Joseph		T.	.50	.73	.15	.80					.25	.14				T.	.50							T.	1.45	.20					4.72
Concord	Kalamazoo		T.	.35	1.38	.83	.25					.12	.16	T.			T.	.75							2.10	.81	T.					6.75
Croton	Muskegon		.12	.54	.87	.11	.28	T.			1.40	.17	.07													1.41	T.					4.97
Detroit	Detroit		.01	.12	.62	.02	.07			T.		T.	.10	T.			T.	.06	T.	T.						.46	.02	T.				1.48
Durand	Saginaw																									.30						
East Tawas	Lake		.20		.40					.12		.20	.35	.05											.15	.93	.04					2.44
Eloise	Rouge		T.	.05	.47	.69	.08			.01		T.	.10				.28	.03								2.00	.07					3.78
Flint	Saginaw				.15	1.90	.03					.40	.15	.20												.45	.38	.10				3.76
Frankfort	Betsey			.10	1.00							.30	.30													.18	.80					2.68
Ganges	Lake		.05	.69			1.07					.37	.22				.06	.44							1.74							4.64
Gaylord	Cheboygan																															
Gladwin	Saginaw					1.50						T.	T.													T.						1.50
Grand Haven	Grand		.06	.64	.97		.49		T.		.06	.52	.19				.13	.11							.07	.10	.03					3.37
Grand Rapids	do		.03	.65	1.09		.55	T.				.10	.13				.08	.04							1.07	.84	.18	T.				4.76
Grape	Raisin			.23	.73	.82					.15	.02	.03	T.				.53						.04		1.21	.33					4.09
Grass Lake	Grand		T.	.40	.43		T.			T.				T.				.46								1.80	.45					3.54
Grayling	Au Sable																															
Harbor Beach	Lake				.10	.90				.10		.15	.50	.10													.40					2.25
Harrison	Saginaw				1.08							.53	.44																			2.05
Harrisville	Lake		.10		.20					.50		.24	.90												.24	T.	.52				.08	2.78
Hart	Pentwater		.30	.32	.60		.83																			.08						2.13
Hayes	Pigeon				1.10	.15				.12		.23	.30	.09									.25				.25					2.49
Highland	Huron			.11	.36	1.03	.28						.31	.06												.21	.25					2.61
Hillsdale	St. Joseph		T.	.50	1.63	.58	.40					.16	.12				T.	.65							T.	.48						4.52
Holland	Lake		.08	.32	1.66							.15	.14				.06	.32							1.15	.60		.05				4.53
Howell	Saginaw		.05	.30	.40	.10	.15					.02	.05	.02											.90	.95						2.94
Ivan	Manistee				.45				T.			.05	.50	.09				.14							.77	T.			.04			2.04
Jackson	Grand			T.	.35	.85	.45	.10				.10	.09	.05				.72							.38	.78	.54					4.41
Jeddo	St. Clair		T.			.81				.14		.25	.31	.04												.04	.08					1.67
Kalamazoo	Kalamazoo		.45	2.10	.35		.28					.21	1.35				.78	.43							.75	.16	.66					
Lansing (Agr. Col.)	Grand		.04	.50	1.81		.05					.62	.16					.03								.44	.12					3.77
Lansing (capitol)	do		.05	.48	.38	1.30	.02	T.	T.			.48	.15	.01				.04								.87	.11	.1[illegible]				4.04
Lapeer	Saginaw		.12		.11	2.16	.20					.62	.10	.12												.36	.12					3.85
Ludington	Pere Marquette		.30	.12	1.00	.07							.42	.05																		1.96
Luther	Manistee	.03		.18	1.16	.16						.09	.30	.04																		1.96
Mackinaw	Lake		.06	.04	.01						.25	.06													.28		.14				T.	0.84
Mancelona	do		T.		.03	T.			T.		T.	T.	.01	T.				T.					T.		1.50	T.	T.		T.			1.54
Manistee	Manistee		.15	.25	1.03		.48					.10	.17	.2[illegible]												.11						2.55
Midland	Saginaw		T.		.10	.20				T.		.20	.10	.01												1.00		T.				1.61
Morenci	Maumee			.50	1.91		.18								T.			.68	.01							1.40	1.00					6.58
Mount Clemens	Clinton				.03	.07	1.85	T.			.05		.25	.30	.03			T.								.03	T.					2.61
Mount Pleasant	Saginaw	.10		.33	.79																					.15						1.37
Muskegon	Muskegon		.10	.80	.30		1.10					.35	.23	T.			.10	T.								.2[illegible]						3.18
Old Mission	Lake		.10		.20				T.	.06		.28													1.22	.07						1.93
Olivet	Kalamazoo		.35	.45	.70	1.31	.31					.74		.23			.07	.39							.90	1.00	.40					6.91
Omer	Lake											.20	.40													.20	.10					.90
Onaway	Cheboygan									.30	.20		.30														.40					1.20
Owosso	Saginaw		.01	.08		1.70	.15					.34	.09	.06			.02									2.54	.20	.18				5.37
Petoskey	Lake		.10		.12				.02	.05		.10	.04																			0.43
Plymouth	Rouge		.10	.30	T.	1.00	T.						.50					.90								2.10						4.90
Pontiac	Clinton		T.	.10	.05	.95				T.		T.	.38	.03												.30	.27	.12				2.21
Port Austin	Lake					.58				.43		.05		.46									.35		.03							1.90
Port Huron	St. Clair		T.		1.05	.01				.11		.21	.17	T.		T.										.04	.15		T.			1.74
Reed City	Muskegon																															
Roscommon	Au Sable				.34				.01			.03	.23	.03									.13		1.03		.05					1.85
Saginaw	Saginaw		.25			.45	T.					.20	.25	.05			T.									.90						2.10
Saginaw, West Side	do		.06		.43	.08	T.		.02			.16	.16	.04												1.06	.09					2.70
St. James	Lake		.40		.05						.14		.06												.17		.02	.02				0.86
St. Joseph	St. Joseph			1.15			.90					.04	.05				.16	.32							.12	.40		T.				3.14
Sandusky	Lake																															
Saranac	Grand			.76	.33	2.00	.45					.15	.18					T.							.35	.20	.21					4.63
South Haven	Lake		.40	1.00	.40	.60	.20					1.20	.20												.20							4.20
Stanton	Grand																															
Thornville	Saginaw		.15		.15	2.28	.35					.35	.49	.10												.30	.60					4.77
Traverse City	Lake				.70								.18												2.40							3.28
Vassar	do			T.		.71						.45	.25				T.			.35						.60	T.					2.36
Wasepi	St. Joseph		.03	1.03	.83		.53					.20	.13				.25	.47							.22	2.05	.03					5.77
West Branch	Lake																															
Woodlawn	Au Sable		.36		.18	.03		T.	T.			.42		.15				.15							.22		T.	T.				1.51
Ypsilanti	Lake		T.	.29	.76	.98						T.	.07	T.				.51							T.	.70	.18					3.49
Ohio.																																
Akron ‖	Lake	.38		.09	.11	1.85		.01					.20	.03	.09			.02	.25						*	*	1.44		.52			4.99
Benton Ridge	Maumee		T.	.53	.57	.21	.28										.02	.75							.34	.10	.66	T.				3.46
Bowling Green	Lake			.31	1.35	.21												.35							.65	.85	1.33	T.				5.05
Bucyrus ‖	Sandusky	.45		.05	.20	.60					T.							.05	.55						T.	.30	.60	.05	.20			3.05
Cleveland (1)	Lake			.01	.71	.03	T.	T.		T.		.01	T.	.07				.26							.03	.23	.34	1.19	T.			2.88
Cleveland (2)	do		T.	.02	.82	.20						.01		.12				.31							T.	.25	.25	1.40				3.38
Conneaut	do	.09				.84						.10	.05	.15												.88	.42	.10				2.63
Defiance ‖	Maumee	.51		.29	.08	.31	.42	.02					T.	.03	T.	.07	T.	.60	.12						.04	1.29	1.52	T.				5.30
Findlay ‖	do	.68		.17	.34	1.15	.08	.18										.10	.48						T.	.92	.18					4.28
Fremont	Sandusky			.23	2.15	.29				.04		.02						.42	.02						1.32	1.85						6.34
Hedges	Maumee			.63	.28		.37								.25		.22	.75							.50	4.05		.17				7.22
Hillhouse	Lake			.07	.02	.56	T.	.04				.41	.07	.23	.08			.12								.47	.50	.90				3.47
Hiram	do		T.	T.	.21	.84	T.					.04	.16		.03			.30							T.	1.07	.03	.44				3.12
Hudson	do			.10	.26	.38	.02					.02	.09	.01	.05			.27							.11	1.75		.27				3.33
Lima	Maumee		T.	.60		T.						T.			.60		.27	.68							T.	.75	1.35	.60				4.85
Medina	Lake		T.	.03	.81	1.14						.10		T.				.40							.34	.76		.62				4.20
Montpelier	Maumee		T.	.50	.86		.58					.17		T.	T.		.10	.47							.91	1.35	1.00					5.94
Napoleon	do		T.	.42	1.16		.11					.37					.02	.44	.03						.03	1.45	1.80					5.83
New Bremen	do			.42	.37							T.			.50		.25	.45							.32	.30	.18	.10				2.89

TABLE 2.—*Daily precipitation for June, 1911. District No. 4*—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	Total.
Ohio—Continued.																																
North Royalton	Lake				.24	.50								.06				.32							.50	.90	.10	.35				2.97
Norwalk ‖	do	.40			.47	1.89		.02			T.							.03	.43							.40	.81		.28			4.73
Oberlin	do			.10	.65	.98						.01		.03				.39							.38	.38		.41				3.33
Ottawa	Maumee		T.	.58	.65	.05	.32					.06			T.		.30	.55	.02						.04	.55	.82	T.				3.94
Sandusky	Lake		T.	.11	.99	.02	T.	T.		.10		.04		T.				.48							.35	1.63	.18					3.90
Tiffin	Sandusky		T.	.28	1.53	.68	.05			.04		T.					T.	.50							1.07	.34	.05	.04				4.58
Toledo (1)	Maumee		T.	.26	1.96		T.	T.				.61	T.	T.			T.	.53							2.30	1.70	.50					7.86
Toledo (2)	do																															
Upper Sandusky	Sandusky			.48	.23	.43	.07			T.				T.			T.	.70	T.		T.					.09	.20	.05	.18			2.43
Vickery	Lake			.22	1.49	.43	.06			.07		T.						.54	T.						.10	.29	1.71					4.91
Wauseon ‖	Maumee	.51		.40	.56	.87	.02	.10					.02	.01				.37	.23						.03	.49	4.04					7.65
Willoughby ‖	Lake			.02	.53			.01				.10	.05	.09				.12								.75	.30	.50				2.47
Pennsylvania.																																
Erie	Lake		T.	T.	.35	.74		T.		T.		.01	.78	.04										.03		.08	.33	.04				2.40
New York.																																
Adams Center	Lake Ontario	.48				1.04	T.	T.		T.	T.		.71	.21	.12	T.	17	T.			.21		.20	T.	T.	T.	T.	.42	.02	.02		3.60
Angelica	Genesee	.02	.39	.03		.28		.09	T.		.13	.30	1.14	.02	.06	.02	T.				.07		.65				.21	.22	.01			3.34
Appleton	Lake Ontario		T.		T.	.24	T.			T.	.06	.14	.42			.04							T.	.11		T.	.17					1.18
Auburn	Oswego					.58	.09				.05	.40	.37			T.	T.				T.		.18	T.	T.	T.	.33	2.00				4.00
Avon	Genesee					.97	T.					.20	.10										T.			.23	.13	T.	.10			1.73
Blue Mountain Lake	Raquette	.43				.65		.97		.63		.20		.47	.55								.17				.27	.34			.17	4.85
Brockport	Lake Ontario		.01			.10					.07	.51	.02		T.					.02			T.	.01			.36	.01				1.11
Buffalo	Lake Erie		.20		T.	1.15	.07	.01	T.	T.	.02	T.	.24	.03	T.	T.					.04		T.		.02	.22	.21	.02				2.23
Canton	Grass	.09				.26		.17	.09		.11	.70	.25	.06	.06	.07	.31			.13	T.		.12			.13	.04					2.59
Cape Vincent	St. Lawrence					1.71	.11	.07			.13		.69			T.	.14			.02			.24					.03	.02			3.16
Carvers Falls	L. Champlain							1.20							.32		.40															1.92
Chazy	do	.48									.55	.08	.40	.18			.25				.25		T.						.05			2.24
Dannemora	do	.82	.03			.01	.12	.15	.12		.52	.04	.38	.44	T.	.02	.30				.43		.08					.30	.13			3.89
Elba	Lake Ontario		T.			.30	T.				T.	T.	T.	T.		T.									.30	.10	.20					0.90
Faust	Raquette	.67				.16		.31	.33		.04		.12	.72	.21	.32	.23				.10		.10			.73		.55	.14			4.73
Fayetteville	Oswego	.07				.27	.13				.30	.12	.70	.06	.03		.20				.06		.54	.01	.03	.04	T.	1.01	.24			3.81
Gabriels	St. Regis	.62				.03		.40	.17		.40	.10	1.02	.35	.12	.05	.10	.45				.37	.24	T.		.05		.06	.19	.02		4.74
Harkness	L. Champlain	.31				.04		.08	.11		.59	.22	.28	.25		.03	.32				.31		.05				.45	.15	.02			3.21
Hemlock Lake	Genesee				.67						.10	.12	.57										.10	.16			.24	.30				2.26
Horseshoe	St. Lawrence	.78	.11		.12	.36	.10	.18			.08	.10	.14	.91	.11	.10	.38			.08	.05		.09			.76	.06	.02				4.53
Hunt	Genesee		.20			.02						.21	.27		.13												.60	.27				1.70
Ithaca	Oswego	.01		T.		.80	.02	.05			T.	1.98	.65	T.	.03		T.				T.		.02	.02	.01	T.	T.	T.				3.59
Keene Valley	Ausable	.83				.19	.04	.67		.33	.03	1.04	.09	.12	.06	.10	.18				.14		.08			.12			.05			4.07
King Ferry	Oswego	.14				.12	.27				.44	1.22	.02	T.	.12								T.						.03			2.36
Lake George	L. Champlain	.61		.04		.12		.80	.23				.36	.23	.06	.71	.12						T.			T.	.03		.31			3.62
Lake Placid Club	Ausable, W. Br.	.60	T.			.15	T.	.37	.15		.18	T.	.25	.56	.28	.37					.43	T.	.12	T.		.31	T.	T.	.05	.05		3.87
Le Roy	Genesee		.02			.30	.02				.04	.02	.06		T.									.17	.11	1.11	1.13	.06				3.04
Lockport	Lake Ontario		T.		T.	.96	.02			T.	.05		.65	.03	.02	.01							.12		.15	.10	.05					2.16
Lowville	Black	.05				1.55	.05	T.					1.08			T.	T.				.22							.80	.22			3.97
Moira	St. Lawrence																															
Nehasane	Black	.83				.70	.02	.03	.07		.02	.06	1.59	.47	.06	.44	.31				.01	.02	.12	T.		.12		.19	.06			5.12
Ogdensburg	St. Lawrence	.77				T.	.30	T.	.10		.20	.02	.52		T.		.35			T.	.27		T.				T.	.12				2.65
Old Forge	Black	1.25	.02			1.14	.21	.02	.03		.04		2.68	.25	.55	.22	.15				.03		.05			.17		.44	.10			7.35
Oswego	Lake Ontario				T.	1.46	.02		T.		.01	1.86	.59	.28		T.	.14				.02		.53	T.		T.	.88	.88				6.67
Otto	Lake Erie																															
Palermo	Lake Ontario					.73					.08	.70	.51	.62			T.						.40	.03			.75	1.00				4.82
Perry City	Oswego					.06	1.11	.08			T.	.92	1.06								.06			.02	.05			.34	.16			3.86
Philadelphia	St. Lawrence	.31				1.31	.05	.04			.05		.39	.03	.14	.04	.12				.03		.09			T.		.39	.02			3.01
Potsdam ‖	Raquette	.09	.75				.22	.03	.24			.21	1.38	.59	.11	.02	.30	.05			.28			.17			.33	.05	.02			4.84
Raquette Lake	do	1.05				.68		.22			.09	.12	1.18	.23	.08	.51	.29				.06		.08			.04		.35	.05			5.03
Rochester	Genesee		T.		T.	.11	.02				.37	.06	.02	T.	T.	.01							.03	T.		.75	.62	.05				2.04
Scottsville	Oswego					.16					.19	.56								.04				.08		.11	.70	.27				2.11
Shortsville	do		T.			.16	.30				.03	.41	.32	T.										T.		T.	.01	.43	.03			1.69
Skaneateles	do	.48	T.	T.		.48	.47				.20	.25	.05	.40	T.		T.				T.	T.	.28	T.		.07		.25	2.05			4.98
Syracuse	do	T.		T.		.70	.05				.10	.41	.38	.03	.02		.22				T.		.35	.01		.04	.16	.75				3.22
Ticonderoga	L. Champlain																															
Tupper Lake	Raquette	.48				.16		.31	.33		.04		.12	.72	.21	.32	.23				.10		.10			.73		.55	.14			4.54
Volusia	Lake Erie		T.	T.	.63							T.	.20	T.	.05	T.		.04								.03	.48	.13				1.56
Wanakena	Oswegatchie	.38				.65		.07	.01		.15		.40	.12	.14	.24	.35				.14		.08			.10		.28	.14			3.25
Wards Creek	Raquette																															
Watertown	Black	.19				1.42	T.				.03	.09	.45	.11	.02	.05	.05				T.		.18					.32				2.91
Wedgewood	Oswego	.04	T.			.08	.63				T.	.68	.99	.04	.04		.05						.09	.20	.14	T.	.01	.36				3.35
Westfield	Lake Erie		.09	T.		.49	.01	T.		.03			.33	.09	.21	T.										T.	.49	.18				1.92
Youngstown	Lake Ontario					.91				.06	.08	T.	.04			T.							.20	.27		T.	T.	T.				1.56
Vermont.																																
Burlington	Champlain	0.22	T.			0.10	T.	0.10			0.44	0.24	0.26	T.	0.03	0.18	0.29			0.17	0.36		0.05			0.10		T.	T.			2.54
Cornwall	do	0.75				T.	.05	0.35			0.10	0.10		0.10	0.30	0.05	T.			0.05	0.15		0.05			0.55	T.		0.40			3.00
Enosburg Falls	do	0.96	0.06					0.05			T.	0.23	0.30	0.22	0.15	0.15	0.67			T.	0.28	0.06						T.	0.09			3.22
Northfield	do	0.29	0.01			0.01		0.01			0.37	0.42	0.09	0.03	0.08	0.02	0.26			0.20	0.24	0.05	0.01			0.12			0.15			2.36
Wells	do	0.61		T.		0.09	T.	0.45			0.05		0.28	0.73	0.05	T.	0.32				0.06	T.	0.15			T.	T.		0.07			2.86

* 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 June, 1911. District No. 4, Lake Region.*

Date.	Duluth, Minn.		Wisconsin.						Chicago, Ill.		Fort Wayne, Ind.		Upper Michigan.										Lower Michigan.					
			Florence.		Green Bay.		Milwaukee.						Escanaba.		Ewen.		Houghton.		Marquette.		Sault Ste. Marie.		Alpena.		Battle Creek.		Cadillac.	
	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	82	54	80	45	83	51	82	51	82	55	76	50	76	48	.....	.....	77	50	71	54	65	41	77	46	78	48	72	44
2	64	44	70	56	73	58	69	56	71	65	76	59	66	57	.....	.....	64	50	64	44	70	48	65	55	74	58	71	57
3	54	42	75	56	73	56	70	53	86	62	80	61	72	55	.....	.....	64	49	57	44	75	52	65	52	78	59	75	56
4	55	41	77	57	72	60	71	57	95	64	84	67	65	56	.....	.....	69	47	64	47	65	53	59	51	80	62	71	57
5	57	42	78	55	76	57	76	57	76	62	85	67	65	55	.....	.....	64	50	60	44	70	53	68	49	84	62	78	57
6	76	42	76	58	76	57	81	55	76	65	79	65	66	55	.....	.....	74	48	62	50	66	49	56	50	79	62	73	56
7	77	51	81	48	77	54	69	55	71	59	77	58	63	49	.....	.....	78	55	66	51	74	54	66	50	74	58	69	53
8	66	46	66	52	66	54	66	55	79	60	82	56	60	55	.....	.....	70	54	66	55	70	50	65	48	75	53	72	55
9	67	45	90	59	90	64	98	65	98	67	90	61	75	56	.....	.....	75	53	75	49	71	55	80	55	91	60	84	63
10	82	46	90	63	89	73	97	74	98	74	96	69	90	60	.....	.....	80	57	90	56	80	56	81	59	95	75	90	70
11	69	54	78	64	76	58	80	57	83	60	84	61	79	56	.....	.....	69	53	72	53	71	51	80	60	90	65	81	63
12	73	54	67	52	66	53	69	56	72	58	73	57	59	54	.....	.....	64	52	59	50	70	49	68	54	74	56	72	55
13	74	51	70	52	76	56	75	59	73	60	70	56	69	55	.....	.....	68	50	64	55	58	46	64	53	70	54	66	55
14	77	53	75	44	78	56	71	57	71	62	70	53	75	50	.....	.....	75	50	67	55	67	44	75	49	74	50	74	57
15	67	58	.....	.....	79	57	80	60	80	62	78	50	73	55	.....	.....	74	51	63	51	64	44	74	51	79	65	77	55
16	74	51	78	47	77	60	70	57	72	62	64	60	70	58	.....	.....	73	55	67	49	79	42	69	52	72	60	76	59
17	74	52	82	54	75	58	67	57	67	62	67	58	76	57	.....	.....	74	51	64	48	75	48	68	56	64	58	75	60
18	85	57	88	51	84	59	76	59	72	62	79	59	73	55	.....	.....	84	54	75	53	74	50	82	56	82	52	83	60
19	90	64	88	55	88	65	86	64	79	66	85	62	89	60	.....	.....	84	59	95	58	76	50	89	57	85	65	85	55
20	71	51	82	55	82	65	84	66	86	70	89	61	79	62	.....	.....	72	56	64	54	71	53	78	56	89	60	82	58
21	90	51	92	55	89	60	82	63	82	69	85	62	89	60	.....	.....	92	54	82	56	76	47	75	50	88	56	86	45
22	79	51	93	70	93	71	97	72	93	74	93	64	90	69	.....	.....	79	57	81	54	76	57	89	65	93	63	90	76
23	51	44	84	58	92	62	95	76	94	76	94	69	71	55	.....	.....	61	47	66	46	61	51	68	51	94	65	94	71
24	54	44	76	53	82	58	78	66	80	71	84	71	69	55	.....	.....	80	50	77	50	66	52	63	52	85	60	82	55
25	77	46	86	59	79	65	75	65	80	71	80	68	78	61	.....	.....	83	56	79	61	77	55	66	59	83	69	80	63
26	72	49	84	61	85	65	86	64	87	70	86	69	72	64	.....	.....	83	59	84	58	74	63	71	60	87	70	86	69
27	59	43	71	53	68	56	74	59	81	60	82	66	72	50	.....	.....	63	45	66	45	65	45	81	57	80	70	82	62
28	55	41	59	44	65	49	66	55	67	56	74	60	57	45	.....	.....	54	42	47	40	52	43	64	49	72	60	66	49
29	56	42	71	39	73	49	70	57	71	63	78	55	61	44	.....	.....	64	42	63	40	67	41	61	45	78	60	74	42
30	75	45	97	52	94	63	91	66	90	68	84	59	78	59	.....	.....	99	55	89	54	74	55	70	55	88	58	91	60
Mns.	70.1	48.5	79.4	54.0	79.2	59.0	78.4	60.4	80.4	64.5	80.5	61.1	72.3	55.7	.....	.....	73.7	51.7	69.3	50.8	70.0	49.9	71.2	53.4	81.2	60.4	78.6	57.9

Date.	Lower Michigan—Continued.						Ohio.								Erie, Pa.		New York.								Vermont.			
	Detroit.		Muskegon.		Saginaw, West Side.		Cleveland.		Lima.		Sandusky.		Toledo.				Buffalo.		Canton.		Rochester.		Syracuse.		Burlington.		Northfield.	
	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	77	48	70	52	79	47	71	56	76	49	75	56	77	52	64	55	59	53	61	52	68	54	62	52	61	54	65	54
2	80	61	69	55	78	59	77	63	75	56	79	62	79	62	75	62	72	57	72	49	68	54	68	55	72	53	71	47
3	73	63	73	60	79	57	73	65	72	61	74	63	77	62	73	63	74	61	71	44	74	61	76	57	70	44	71	38
4	73	60	80	60	81	58	75	60	83	64	74	62	74	61	78	62	78	58	77	47	78	55	77	52	76	42	73	37
5	82	59	74	59	81	58	75	60	85	64	80	62	84	62	72	60	71	59	63	53	74	57	71	50	63	53	60	45
6	69	57	74	60	68	57	74	60	79	63	70	63	76	60	64	58	70	54	68	52	64	54	61	49	69	52	65	51
7	66	55	74	60	64	56	63	57	72	62	65	59	68	56	64	58	67	60	67	53	70	58	68	56	67	57	67	52
8	73	56	76	57	78	51	69	61	70	58	69	62	73	59	72	58	72	61	75	55	77	62	75	59	77	55	77	46
9	77	64	82	65	86	62	79	62	87	58	81	61	84	62	79	62	76	58	79	51	79	58	79	56	79	52	79	45
10	95	70	86	67	96	70	91	70	96	67	96	71	96	72	85	70	74	68	73	59	85	65	81	62	68	57	70	50
11	83	67	78	63	82	69	87	70	91	70	90	68	87	66	85	69	80	68	81	61	92	67	87	64	74	61	66	55
12	69	60	68	55	74	55	74	66	80	57	74	63	75	60	79	57	78	60	79	63	81	61	79	60	68	56	59	50
13	64	57	68	53	65	54	66	58	70	58	69	59	68	59	66	58	66	57	73	56	70	60	76	59	71	56	63	49
14	73	53	70	52	79	48	69	58	68	48	72	59	73	56	68	58	69	56	64	54	70	55	63	55	70	60	68	57
15	79	55	72	53	81	52	73	58	75	48	79	55	80	56	69	55	70	55	70	51	69	54	64	54	71	54	68	54
16	77	59	68	52	79	55	73	60	70	60	77	61	77	61	70	54	70	56	66	49	68	50	63	52	64	52	63	48
17	67	61	70	51	80	61	66	59	72	56	66	59	66	60	71	57	75	54	75	48	74	49	71	49	73	52	71	45
18	84	58	78	58	87	54	74	59	80	54	77	62	80	58	76	57	76	58	80	52	80	52	76	53	79	54	79	46
19	87	65	76	60	90	59	80	60	81	69	86	61	87	65	79	60	76	62	82	57	84	58	81	58	82	55	83	46
20	87	61	83	65	86	61	83	66	88	58	84	67	89	66	75	65	76	62	67	52	75	61	71	58	70	53	69	50
21	80	56	81	58	88	53	77	57	85	60	78	61	81	61	75	59	71	56	69	45	73	53	67	51	67	51	62	47
22	93	66	86	70	96	68	88	62	92	57	92	64	93	66	83	68	74	66	69	55	81	60	79	60	66	50	69	44
23	95	66	90	72	89	63	92	70	93	59	95	72	96	72	79	62	78	56	67	49	71	58	69	54	66	56	64	46
24	79	60	84	56	88	57	76	67	83	63	77	69	78	68	71	60	73	56	70	41	70	55	74	50	69	46	70	38
25	82	67	80	72	81	65	83	69	80	68	84	69	80	69	83	66	83	64	75	50	82	63	77	60	71	46	72	38
26	85	70	81	65	86	70	86	70	83	73	87	69	86	68	83	70	76	69	83	60	82	66	82	64	78	57	68	54
27	81	64	80	66	82	72	85	67	83	68	84	71	83	67	80	69	78	68	87	70	86	70	87	67	83	69	79	62
28	73	58	68	58	72	56	72	62	73	58	73	66	75	62	69	61	70	55	78	55	73	54	75	56	86	64	84	57
29	72	54	72	62	76	49	66	59	77	56	70	59	71	59	67	53	69	52	64	51	68	51	62	51	69	54	67	46
30	81	61	86	65	88	56	75	57	84	55	76	60	81	62	75	57	78	59	82	47	79	53	76	50	79	49	78	42
Mns.	78.5	60.4	76.6	60.0	81.3	58.4	76.4	62.3	80.1	59.9	78.4	63.2	79.8	62.3	74.3	60.8	73.3	59.3	72.9	52.7	75.5	57.6	73.2	55.8	71.9	53.8	70.0	48.0

[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.