Climatological Data for October, 1910.

DISTRICT No. 4, LAKE REGION.

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GENERAL SUMMARY.

The month of October, 1910, in Climatological District No. 4 was generally warm and pleasant, and, as a whole, quite favorable for outdoor work. The mean temperature ranged higher than that of the same month of 1909 by about 2° in the Vermont section, increasing westward to a difference of more than 8° in the extreme southwestern portions of the district. The absolute maximum temperatures recorded were, as a rule, from 4° to 8° above those for October of the previous year, except in the regions of New York and Vermont, where they fell below by from 2° to 4°. The precipitation in October, 1909, was considerably less than that of the present month over most portions of the district east of the sections around the western end of Lake Superior.

The high temperatures of the first 25 days of the month delayed the first falls of snow in the northern and western portions of the district to dates much later than the average, and this was true also of the damaging and killing frosts. The continuation of abnormally warm weather over the southern and western portions during this period resulted in unusual conditions in the growth of certain kinds of vegetation. Along the western shore of southern Lake Michigan many of the hardier plants were still in flower at the close of the month; while in northern Ohio lilacs were reported to be in bloom, and in a number of places a second crop of strawberries was gathered. Mr. W. S. Currier, in charge of the Toledo office of the Weather Bureau, reports that from the 20th until near the close of the month home-grown strawberries were for sale in limited quantities, and that one grower had sold a quantity of 3 bushels or more. Reference was made in the September report to a second crop of strawberries grown in the vicinity of Sandusky, Ohio.

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

Portions of States lying within District No. 4.	Mean.									
	Temperature.	Departure from normal.	Precipitation.	Departure from normal.	Snowfall.	Number of days.				Prevailing wind direction.
						.01 inch or more precipitation.	Clear.	Partly cloudy.	Cloudy.	
	°	°	Inches.	Inches.	Ins.	Ins.				
Minnesota	46.2	+ 3.3	1.09	− 1.97	0.3	5	15	9	7	sw.
Wisconsin	52.4	+ 3.3	1.43	− 0.99	0.1	6	16	8	7	sw.
Illinois	53.6	+ 5.4	1.79	− 0.76	T.	7	14	12	5	sw.
Indiana	55.7	+ 2.4	2.41	− 0.07	3.0	7	18	4	9	sw.
Upper Michigan	47.8	+ 3.5	2.80	− 0.18	4.5	9	14	5	12	w.
Lower Michigan	52.8	+ 3.0	2.50	− 0.22	1.8	7	14	7	10	sw.
Ohio	55.6	+ 3.1	4.29	+ 1.89	0.4	7	17	6	8	sw.
Pennsylvania	54.8	+ 2.1	5.00	+ 1.28	4.3	9	9	13	9	s.
New York	50.0	+ 1.6	3.34	− 0.05	1.2	10	12	9	10	nw.
Vermont	47.6	+ 1.1	2.76	+ 0.02	1.2	14	7	10	14	s.

There was a decided excess of clear, sunshiny weather over the southern and western portions of the district, reaching an average of more than 16 days throughout northern Ohio, northern Indiana, and the southwestern shore of Lake Michigan. The amount of cloudiness increased from this area northeastward to an average of 14 days over the Lake Champlain watershed. The regions of abundant sunshine and those of high mean temperature were coincident to a marked degree, as were the areas of greatest cloudiness and heaviest precipitation. It is remarkable also that the lines connecting places having 10 clear days, 10 cloudy days, and 10 days with .01 inch or more of precipitation followed the same general path, describing an arc through Upper Michigan, northern Lower Michigan, Lake Erie, and central New York State.

TEMPERATURE.

The mean temperature for the month was above normal throughout the entire district, the average excess increasing from about 1° in the extreme eastern to nearly 4° in the northwestern sections. The greatest excess occurring at any station of long record was 5.4° at Chicago, Ill. Only two stations, both in New York State, reported deficiencies in mean temperature: Moira, −1.5°, Ogdensburg, −0.4°. Over the sections of the district lying in Illinois, Indiana, and Ohio the mean temperature of the month was slightly over 55°; while in the Valley of Lake Champlain, northeastern New York, the northern portion of Lower Michigan, and the Lake Superior region the mean temperature was slightly below 50°. In the remaining portions the mean temperatures ranged between 50° and 55°. The average daily range was from 15° to 20°, being somewhat greater in the Peninsula of Lower Michigan than in the other sections of the district.

The month opened with temperatures generally above normal, and warm weather continued over the areas from the 85th meridian westward practically without interruption until the 27th. In the regions east of the 85th meridian a cool period prevailed from the 7th to the 13th, during which the first killing frosts of the season occurred at most stations in New York, and at several stations in Vermont. The 3d–6th and the 14–19th were periods of decided warmth. During the former practically all localities in the eastern sections experienced the greatest heat of the month, the highest temperatures being general over northern Ohio on the 3d and over New York and Vermont on the 5–6th. In the western portions of the district the maximum heat of October occurred during the warm spell of the 14–19th, most stations recording their highest temperature on the 18th or 19th. A case of heat prostration was reported at Duluth, Minn., on the afternoon of the 18th, where, although the temperature reached but 78°, it is probable that the air was sultry, as a period of showery weather had just set in following a dry spell of 14 days. This case is the first of its kind on record in Duluth during October, and, indeed, prostrations from heat are rare in that city even in the summer months. The highest temperature recorded at any station in the district during the month was 93° at Concord, Mich., on the 14th.

With the passage eastward of a storm center and the following area of high barometric pressure during the last decade of the month, the temperature dropped sharply, the fall beginning in the northwestern sections on the 27th and becoming general on the 28th. The coldest weather of the month prevailed during this period, with temperatures below the freezing point, and it continued cold until the 30th. Over the western portions of the district the first killing frosts of the season occurred during this time at many stations (from 2 to 3 weeks later than usual).

PRECIPITATION.

There were, in general, two rainy periods during the month, one covering from 3 to 6 days of the first decade, and the other of greater extent lasting through practically all of the last decade. Between these two periods was an interval of fair weather, many stations recording from 10 to 14 days with no appreciable amounts of rainfall. Over the extreme eastern portions of the district, however, the division between these

rainy periods was not so distinct, and precipitation occurred on a greater number of days than over the remaining sections.

The precipitation was above normal over portions of the Upper Michigan Peninsula, the counties of southwestern Lower Michigan, and northwestern Indiana, northern Ohio, Erie and Niagara counties in western, and the northern tier of counties in northern New York State, and in northwestern Vermont. An excess of more than 1 inch occurred in northern Ohio, extending thence northeastward in a narrow strip through the St. Lawrence region. Elsewhere there was a deficiency in the monthly amounts, reaching more than 1 inch in the extreme western Lake Superior region, the western shore of Lake Michigan, the northern portion of Lower Michigan, those counties in New York lying along the southern border of the district, and in the southern portion of the Lake Champlain Basin. From this it will be seen that the geographical distribution of precipitation in October was peculiar, and decidedly irregular, the region of greatest depth, of course, following the narrow belt of greatest excess mentioned above. The reason for this peculiar distribution of precipitation is to be found in the fact that the principal storms of the month passed farther to the north than is usual in October.

The following, relative to the precipitation conditions in Ohio during the month, is from the report of Mr. J. Warren Smith, section director at Columbus:

Precipitation and floods.—There was a great difference in the amounts of precipitation received in the Maumee Valley and those in the middle and eastern counties. In the extreme northwestern counties the total fall for the month was less than 2 inches, while in parts of Ashtabula, Lake, and Lorain counties it was over 6 inches. At nine of the central stations it was the greatest October rainfall on record. The high record was due to exceptionally heavy rains that fell on the 4–7th. On the 5th and 6th the downpour was almost continuous, and at many points it was the greatest rainfall on record for so short a period in October. The excessive rainfall for the period of the 4–7th at a few of the stations was as follows: Benton Ridge, 4.36; Bucyrus, 4.85; Findlay, 4.55; Fremont, 4.60; Lima, 4.40; New Bremen, 5.00; Norwalk, 4.27; Oberlin, 5.01; Sandusky, 4.17; Tiffin, 4.43; Upper Sandusky, 5.02, and Vickery, 4.22.

Much damage was done by flooding in the Sandusky Valley. The Sandusky River was 0.5 foot above the flood stage on the 7th at Tiffin and Fremont. Slight damage was done at Fremont, but in the vicinity of Tiffin and above that city the damage to corn standing in the shock in the lowlands amounted to thousands of dollars. It is reported that one man lost 60 acres of corn and another 35 acres. Telegrams were sent both of these places on the morning of the 6th, advising them that the river would reach flood stage. The heavy rainfall flooded all low places in Crawford, Hancock, and Wyandot counties. Newly-seeded wheat lands on the hillsides were badly washed.

Snow.—During the passage of the storm of the last decade, referred to in a previous paragraph, heavy and unprecedented falls of snow occurred in several localities on the 28–29th. Seven inches of snow lay along the southwestern shore of Lower Michigan on the morning of the 29th, the fall breaking all previous October snow records as to depth for that section. Deep snow extended for probably 100 miles along the shore, but decreased rapidly toward the interior, there being but 0.1 inch at Grand Rapids. Over Marshall, St. Joseph, and Elkhart counties, in northern Indiana, 15 inches of snow fell during this time, but the depths decreased in all directions, and most of the surrounding stations reported but a trace. The counties in northeastern Ohio and northwestern Pennsylvania also received heavy falls of snow on the 28–29th, the depths ranging from 4 to 6 inches; and at Volusia, N. Y., snow to a depth of 4 inches fell on the 28th. Considering the exceptionally heavy falls in these localities, it is surprising that practically no damage resulted; and there was but small delay caused to transportation, and but slight interruption in the various wire and light services.

The total snowfall for the month was very light in the western Lake Superior region, where the average was but 0.3 inch. The large average amounts shown in the table above for the southern portions of the district are, of course, due to the unusually heavy falls which occurred in the localities affected by the storm of the 28–29th.

MISCELLANEOUS.

Auroras.—Auroras were observed at Escanaba, Mich., on the 1st; at Northfield, Vt., on the 7th and 10th; at Burlington, Vt., on the 7th, 10th, and 26th, and at Canton, N. Y., on the 1st, 7th, 12th, and 13th. That observed at Canton on the 13th was of unusual brilliance and activity, and was accompanied by an auroral cloud of greenish white.

Fog.—Dense fog over the lower St. Clair River and at St. Clair Flats on the 14th caused the grounding of the steamers *Ashley* and *Rockefeller*. Fogs were prevalent over the region between western Lake Erie and southern Lake Huron on the 5th, 8th, 14th, 15th, 18th, 21st, and 31st.

Hail.—Light hail was reported from several places in Ohio on the 16th and 25th.

Windstorms.—Although high wind velocities were reported from many stations during the month, but little damage occurred. During the high wind of the 19th on Lake Superior the steamer *Moreland*, laden with 11,000 tons of iron ore, struck on a reef at Eagle River, and was still aground at the close of the month. At Rochester, N. Y., high winds on the 1st caused some damage to orchards in the vicinity.

TABLE 1.—*Climatological data for October, 1910. District No. 4, Lake Region.*

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, .01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Minnesota.																				
Duluth	St. Louis	1,133	39	47.6	+ 2.4	79	15	23	29	30	0.81	− 1.93	0.29	0.0	6	11	10	10	w.	U. S. Weather Bureau.
Floodwood	....do	1,257	6	44.0	.....	73	16	17	29	42	1.35	.....	0.62	1.0	4	21	3	7	sw.	M. H. Schussler.
Mount Iron	....do	1,510	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Oliver Iron Mining Co.
Stephens Mine	....do	1,500	3	44.8	.....	86	17	12	29	54	1.12	.....	0.50	0.4	6	14	9	8	sw.	Do.
Two Harbors	Lake	614	16	48.2	+ 3.2	81	15†	22	29	42	0.75	− 2.49	0.50	0.0	2	13	15	3	ne.	George W. Watts.
Virginia	St. Louis	1,434	16	46.4	+ 4.3	81	17	20	29	43	1.41	− 1.49	0.70	0.2	5	14	11	6	nw.	Oliver Iron Mining Co.
Wisconsin.																				
Appleton	Outagamie	795	11	53.3	+ 4.4	80	18	23	29	34	1.14	− 0.61	0.45	0.8	8	19	6	6	sw.	Wm. O. Thiede.
Ashland	Ashland	647	16	50.2	+ 2.4	86	17	27	29	46	1.09	− 1.75	0.44	0.0	10	19	3	9	s.	Sam Wheeler.
Bayfield	Bayfield	635	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ruben V. Ryder.
Cecil	Shawano	804	3	51.7	.....	81	17†	22	29	44	1.65	.....	0.70	T.	5	14	12	5	sw.	Louis W. Schmidt.
Chilton	Calumet	860	16	51.7	+ 2.5	82	18	22	29	39	0.98	− 1.23	0.55	T.	7	13	15	3	sw.	Daniel V. Jones.
Crandon	Forest	1,060	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Calvin T. H. Riggs.
Florence	Florence	1,293	19	47.4	+ 3.2	78	18	21	29	41	2.86	+ 0.26	1.20	T.	5	17	4	10	sw.	Fred S. Evans.
Fond du Lac	Fond du Lac	800	24	52.8	+ 4.3	85	17	22	29†	43	0.64	− 1.41	0.37	T.	6	18	5	8	sw.	Geo. W. Marshall.
Grand River Locks	Marquette	770	14	51.6	.....	83	18	16	29	38	0.87	− 2.11	0.40	T.	4	20	3	8	s.	Jerry Parkinson.
Green Bay	Brown	617	24	52.0	+ 4.9	80	18	24	29	34	1.41	− 0.96	0.74	T.	5	8	10	13	sw.	U. S. Weather Bureau.
Iron River	Bayfield	1,096	1	49.7	.....	85	17	20	29	37	0.84	.....	0.29	1.0	8	15	6	10	sw.	Harry C. Hall.
Kewaunee	Kewaunee	590	1	51.8	.....	74	19	24	29	30	1.37	.....	0.82	T.	4	18	5	8	s.	Eugene V. Kimball.
Manitowoc	Manitowoc	616	59	52.8	+ 4.5	78	11	24	29	33	1.07	− 1.47	0.63	T.	7	14	6	11	s.	Johanna Lups.
Menasha	Winnebago	764	13	.....	.....	.....	.....	.....	.....	.....	1.07	− 1.48	0.51	0.0	4	22	1	8	sw.	George T. Allanson.
Menominee Falls	Waukesha	842	1	53.2	.....	80	17	21	29	34	1.62	.....	0.72	T.	4	22	5	4	sw.	Arthur H. Christman.
Milwaukee	Milwaukee	681	40	54.8	+ 4.6	82	3	26	29	30	1.24	− 1.15	0.60	T.	7	16	8	7	w.	U. S. Weather Bureau.
New London	Outagamie	762	14	51.6	+ 2.9	82	17†	21	29	41	1.30	− 1.15	0.55	0.0	4	15	6	10	sw.	August H. Pape.
Oconto	Oconto	590	19	51.8	+ 3.3	81	18	22	29	38	2.37	+ 0.13	0.81	0.0	6	14	12	5	s.	William K. Smith.
Oshkosh	Winnebago	744	21	52.9	+ 3.5	83	17†	19	29	39	0.74	− 1.39	0.30	T.	6	20	11	0	sw.	Evan Vincent.
Pine River	Waushara	900	15	52.0[c]	+ 3.2	83	18	19	29	39[c]	1.02	− 1.33	0.33	T.	9	12[c]	11[c]	5[c]	sw.	George H. Carpenter.
Plum Island	Door	588	2	51.0	.....	69	16	32	29†	24	3.55	.....	0.90	T.	8	9	10	12	s.	John P. Whelan.
Plymouth§	Sheboygan	843	....	52.9	.....	83	17	24	29	37	0.85	.....	0.48	0.3	6	16	11	4	s.	Paul O. Feldrappe.
Port Washington	Ozaukee	713	17	53.6	+ 4.2	78	11†	23	29	28	0.87	− 1.08	0.42	0.5	3	16	5	10	se.	Richard C. Kann.
Racine	Racine	633	13	55.4	+ 2.9	83	3	20	29	31	2.13	+ 0.54	0.90	T.	7	18	6	7	s.	Daniel Davis.
Ripon	Fond du Lac	935	....	53.4	.....	82	17	27	29	32	0.97	.....	0.42	T.	6	17	6	8	w.	Ripon College.
Sheboygan	Sheboygan	831	12	54.0	+ 3.5	79	1	22	29	30	1.05	− 1.34	0.52	T.	6	15	11	5	sw.	Louis C. Meyer.
Sturgeon Bay	Door	600	12	51.1	+ 3.8	74	18†	28	29	32	2.84	.....	0.81	T.	7	15	10	6	sw.	Adam N. Dier.
Superior	Douglas	671	1	47.8	.....	79	18	22	29	35	0.80	.....	0.27	0.0	7	17	11	3	sw.	Edward B. Banks.
Waupaca	Waupaca	857	14	52.5	+ 4.3	85	17	20	29	44	1.31	− 0.98	0.37	0.0	7	16	3	12	sw.	James H. Flagg.
Illinois.																				
Chicago	Cook	824	40	58.6	+ 5.4	84	17	27	29	25	1.79	− 0.76	1.10	T.	7	14	12	5	sw.	U. S. Weather Bureau.
Indiana.																				
Auburn	DeKalb	874	14	51.4	+ 0.4	81	16	27	29	39	1.30	− 1.00	0.42	0.0	6	19	2	10	w.	Mrs. Josie B. Kuhlman.
Berne	Adams	849	....	56.0	.....	84	3	28	29†	33	3.68	.....	1.84	T.	8	20	5	6	sw.	H. M. Reusser.
Elkhart§	Elkhart	801	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. Miles Medical Co.
Fort Wayne	Allen	775	14	56.6	+ 2.9	86	3	28	29	37	1.71	− 0.71	0.76	T.	7	18	3	10	sw.	Orion E. Mohler.
Hammond	Lake	598	19	57.8	+ 4.0	88	17	19	29	35	1.01	− 0.80	0.51	0.0	4	18	7	6	.....	Carson W. Whitney.
Howe	Lagrange	886	5	53.6	.....	85	3	28	29	40	1.68	.....	0.53	3.0	4	17	6	8	w.	James E. Zook.
South Bend	St. Joseph	726	17	55.6	+ 2.5	83	3	25	29	37	4.66	+ 2.24	2.29	15.0	12	17	3	11	sw.	Henry H. Swaim.
Whiting	Lake	606	....	59.1	.....	87	14	24	29	31	2.82	.....	1.10	T.	5	19	3	9	sw.	D. H. Boyd.
Michigan—Upper Peninsula.																				
Baraga	Baraga	623	8	50.0	.....	86	17	11	28	53	.....	.....	.....	.....	.....	20	0	11	w.	D., S. S. & A. Ry.
Bergland	Ontonagon	1,300	....	.....	.....	85[a]	19	.....	.....	.....	4.16	.....	0.98	9.0	11	11	9	11	w.	Frank McMonigal.
Blaney	Schoolcraft	.....	3	.....	.....	.....	.....	.....	.....	.....	3.32	.....	1.30[b]	1.0	8	13[b]	1[b]	15[b]	nw.	Dr. S. S. Hackwell.
Calumet	Houghton	1,246	22	47.4	+ 3.5	80	17†	23	28	35	2.22	− 0.98	0.59	4.0	11	15	4	12	w.	E. S. Grierson.
Chatham	Alger	875	9	45.2	.....	80	18	22	29	40	3.10	.....	0.70	3.9	12	10	8	13	sw.	U. P. Experiment Station.
Deer Park	Luce	610	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Mrs. Sara E. McGaw.
Detour	Chippewa	585	9	49.2	.....	87	22	25	29†	46	4.41	.....	2.70	T.	5	20	0	11	se.	Dr. F. E. Cameron.
Eagle Harbor	Keweenaw	622	11	49.4	+ 7.0	80	17	30	28†	36	1.63	− 1.11	0.62	0.4	9	13	5	13	w.	John Nolen.
Escanaba	Delta	612	37	48.6	+ 3.5	71	8	21	29	23	3.04	− 0.05	1.56	1.1	8	8	7	16	s.	U. S. Weather Bureau.
Ewen	Ontonagon	1,147	9	47.5	.....	83	17	17	29	42	2.86	.....	1.00	16.0	7	18	2	11	w.	W. B. Hatfield.
Grand Marais	Alger	610	9	45.8	.....	70[a]	5†	28	29	26	2.60	.....	1.00	2.0	9	12	5	14	s.	Mrs. Lena Truedell.
Houghton	Houghton	668	9	48.2	+ 4.2	86	17	26	27	42	2.34	− 0.84	0.57	4.0	9	10	7	14	w.	U. S. Weather Bureau.
Humboldt	Marquette	1,536	13	45.8	+ 3.9	79	18	9	29	48	2.44	− 0.31	0.50	12.0	8	14	6	11	w.	D., S. S. & A. Ry.
Iron Mountain	Dickinson	1,111	9	51.0	.....	80	18	24	28†	41[a]	2.36	.....	0.80	T.	5	15[a]	11[a]	4[a]	sw.	Chapin Mining Co.
Iron River	Iron	1,504	13	46.0	.....	83	18	14	29	49	2.39	.....	0.80	T.	5	19	10	2	nw.	Victor D. Laing.
Ironwood	Gogebic	1,520	7	48.6	.....	81	17	18	29	35	3.27	.....	1.85	11.0	9	16	6	9	w.	Prof. J. V. Brennan.
Ishpeming	Marquette	1,536	10	46.8	+ 1.4	79	18	8	29	37[a]	2.40	− 1.02	0.60	9.5	10	13[a]	8[a]	9[a]	nw.	Cliv'd'Cliffs Iron Co.
Isle Royale	Keweenaw	610	3	46.4	.....	66	17	28	28	21	1.36	.....	0.46	T.	5	16	2	13	n.	John H. Malone.
Mackinac Island	Mackinac	831	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	M. I. S. P. Com.
Maple Ridge	Delta	.....	4	46.0	.....	78	18	15	29	40	2.48	.....	1.01	6.0	8	15	5	11	s.	Herman Johnson.
Marquette	Marquette	734	39	49.4	+ 3.7	83	18	24	29	32	3.53	+ 0.34	1.11	11.5	10	8	10	13	nw.	U. S. Weather Bureau.
Menominee	Menominee	581	11	52.5	+ 3.0	78	18	24	29	27	2.91	+ 0.51	1.18	0.0	4	21	5	5	sw.	C. & N. W. Ry.
Newberry	Luce	773	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	D., S. S. & A. Ry.
Powers	Menominee	868	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. & N. W. Ry.
St. Ignace	Mackinac	593	20	49.8	+ 4.2	79	19	25	29	38	4.19	+ 1.67	0.93	T.	10	15	11	5	w.	D., S. S. & A. Ry.
Sault Ste. Marie	Chippewa	614	22	46.0	+ 2.6	78	19	25	29	37	2.83	− 0.43	1.12	T.	11	5	9	17	nw.	U. S. Weather Bureau.
Thomaston	Gogebic	1,347	13	46.2	+ 1.7	82	17	19	29	47	2.53	+ 0.44	0.90	6.0	8	12	9	10	n.	D., S. S. & A. Ry.
Victoria	Ontonagon	1,263	....	48.1	.....	84	17	21	29	35	2.83	.....	0.83	10.5	11	19	2	10	nw.	R. S. Schultz, jr.
Watersmeet	Gogebic	.....	1	46.7	.....	81	17	21	28†	43	2.03	.....	0.60	4.5	10	12	5	14	n.	B. N. Grant.
Wetmore	Alger	878	13	47.0	+ 3.0	80	18	14	4	49	2.40	− 0.38	0.90	4.0	6	17	0	14	n.	D., S. S. & A. Ry.
Whitefish Point	Chippewa	610	20	47.8	.....	69	19	25	29	30	2.30	.....	0.70	0.4	14	11	4	16	nw.	Robert Carlson.
Michigan—Lower Peninsula.																				
Adrian	Lenawee	770	32	55.6	+ 3.6	87	3	23	29	41	1.55	− 1.32	0.67	T.	5	15	9	7	s.	B. F. Gibbs.
Allegan	Allegan	698	19	54.8	+ 3.8	88	16	29	29	39	2.87	+ 0.11	1.14	T.	7	0	19	12	sw.	Pere Marquette R. R.
Alma	Gratiot	750	23	51.4	+ 2.9	81	18†	23	29	34	3.25	+ 0.61	1.40	T.	8	16	7	8	sw.	P. M. Smith.
Alpena	Alpena	609	37	49.3	+ 3.4	83	18	26	29	36	3.47	+ 0.04	1.04	2.1	13	10	10	11	nw.	U. S. Weather Bureau.
Ann Arbor	Washtenaw	930	30	53.8	+ 3.9	83	3†	23	30	34	1.85	− 0.81	0.68	T.	9	16	5	10	nw.	University of Michigan.
Arbela	Tuscola	728	14	51.9	+ 1.9	83	18	21	29	40	3.70	+ 0.92	1.73	0.0	7	0	13	18	sw.	Wm. Atkin.
Battle Creek	Calhoun	822	26	53.4	+ 1.6	81	18	25	29	32[b]	2.84	+ 0.57	1.45[b]	0.5	8	14[b]	6[b]	9[b]	sw.	Elmer E. Sager.
Bay City	Bay	593	14	53.4	+ 3.3	83	18†	22	29	35	2.75	− 0.29	1.25	0.0	5	16	10	5	nw.	Pere Marquette R. R.
Bensonia	Benzie	832	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Martin S. Joiner.
Berlin	St. Clair	.....	21	57.8	+ 2.9	84	18	22	29	38[a]	1.33	− 1.50	0.78	T.	5	11[a]	11[a]	8[a]	sw.	R. O. Gould.
Big Rapids	Mecosta	906	14	50.6	+ 2.5	81	18	21	29	41	2.47	− 0.43	1.05	T.	9	15	10	6	sw.	Charles Gay.
Bloomingdale	Van Buren	.....	6	55.6	.....	83	17	26	30	34	2.62	.....	1.35	3.0	6	20	4	7	se.	John M. Haven.
Cadillac	Wexford	1,293	1	50.2[d]	.....	80	18	19	29	43[f]	3.48	.....	.....	5.5	....	13[g]	6[g]	5[g]	s.	A. J. Teed.
Cassopolis	Cass	903	9	56.2	.....	82	3	27	29†	38	3.40	.....	2.20	1.4	4	22	0	9	sw.	Michigan Central R. R.
Charlevoix	Charlevoix	610	32	52.0[e]	+ 2.6	78	19	28	29	27[e]	2.55	− 0.03	0.70	2.0	....	14[a]	5[a]	8[a]	sw.	Pere Marquette R. R.

TABLE 1.—*Climatological data for October, 1910. District No. 4*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Precipitation, in inches. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Sky. Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	Observers.
Michigan—Lower Peninsula—Cont'd.																				
Charlotte	Eaton		6	52.7		81	3	23	29	38				0.0		14	10	7	sw.	City of Charlotte.
Cheboygan	Cheboygan	611	20	50.2	+ 2.3	75	19	30	7†	34	5.81	+ 3.33	1.62	T.	8	5	14	12	nw.	E. A. Bouchard.
Clinton	Lenawee	830	20	54.0	+ 2.5	85	3†	23	9	36	1.29	− 1.11	0.62	0.0	4	17	7	7	sw.	David Woodward.
Coldwater	Branch	984	13	55.9	+ 2.3	84	3	26	29	35	1.38	− 1.85	0.40	2.0	6	18	5	8	sw.	Lake Shore & Mich. So. Ry.
Concord	Jackson		5	56.8		93	14	23	29	46	1.19		0.45	T.	4	18	11	2	sw.	Dr. W. N. Armstrong.
Croton	Newago	685	2	53.6		81	18	26	29	36	2.10		1.25	T.	8	8	15	8	sw.	G. R. Mus. Power Co.
Detroit	Wayne	730	39	54.6	+ 2.9	82	3	26	29	29	1.07	− 1.31	0.73	T.	7	14	9	8	w.	U. S. Weather Bureau.
Durand	Shiawassee	799	3	54.6		85	18	24	29	34	1.94		0.74	T.	6	19	6	6	sw.	Grand Trunk Ry.
East Tawas	Iosco	590	13	49.9	+ 1.1	73	11	22	29	33	3.23	+ 0.30	1.00	0.0	8	20	6	5	w.	Detroit & Mackinac Ry.
Eloise	Wayne	640	13	54.6	+ 2.1	83	3	25	29	37	1.24	− 1.23	0.58	T.	7	15	8	6	sw.	John Gilmore.
Flint	Genesee	730	21	52.8	+ 4.0	83	18	22	30	38	1.99	− 0.06	0.61	1.0	7	17	7	7	s.	Wm. L. Fisher.
Frankfort	Benzie	589	6	52.5		71	17	28	29	28	3.22		0.78	0.0	8	7	0	24	s.	Capt. Geo. Morency.
Ganges	Allegan	665	1	54.8		83	3	28	29	32	4.40		1.39	15.0	10	19	3	9	sw.	H. H. Hutchins.
Gaylord	Otsego	1,367	5	50.8		76	18	24	28	32	1.31		1.12	T.	3	15	0	16	nw.	Michigan Central R. R.
Gladwin	Gladwin	794	14	54.8[b]	+ 6.8	83	18	27	7	43[b]	2.15	− 0.20			3	15[b]	5[b]	3[b]	sw.	Geo. R. Smith.
Grand Haven	Ottawa	628	29	53.0	+ 2.8	80	17	27	29	30	2.48	− 0.01	0.76	8.0	7	14	10	7	s.	U. S. Weather Bureau.
Grand Rapids	Kent	707	21	54.0	+ 3.9	82	18	26	29	29	3.17	+ 0.63	1.70	0.1	10	12	12	7	sw.	U. S. Weather Bureau.
Grape	Monroe	625	20	54.3	+ 2.5	87	3	23	29	38	1.28	− 0.76	0.70	T.	7	18	8	5	w.	Joseph W. Morris.
Grass Lake	Jackson	989	4	54.0		82	3	22	29	32	1.64		0.35	1.0	8	19	0	12	sw.	Menzo Conklin.
Grayling	Crawford	1,147	21																	Dr. Oscar Palmer.
Harbor Beach	Huron	635	22	52.3	+ 3.0	80	18	27	29†	34	1.30	− 1.56	0.30	1.0	8	15	3	13	sw.	Pere Marquette R. R.
Harrison	Clare	1,159	17	51.2	+ 3.9	83	18	20	29	40	1.75	− 1.07	1.02	0.0	3	21	2	8	sw.	Do.
Harrisville	Alcona	616	26	49.1	+ 1.1	76	5†	22	29	44	3.45	+ 0.73	1.28	0.0	12	8	13	10	sw.	Dr. D. W. Mitchell.
Hart	Oceana	698	18	53.4	+ 3.8	78	3†	26	31	35	3.78	+ 1.02	1.60	25.0	7	13	8	10	sw.	Pere Marquette R. R.
Hayes	Huron	620	20	54.5	+ 4.6	83	2	30	30	49[a]	2.68	− 0.09	0.73	0.0	5	17	0	14		C. F. Leipprandt.
Highland	Oakland	830	18								1.60	− 0.94	0.64							A. D. De Garmo.
Hillsdale	Hillsdale	1,150	13	52.8	+ 0.7	81	3	24	29	30	1.65	− 1.41	0.52	2.0	9	17	3	11	sw.	Prof. C. L. Herron.
Holland	Ottawa	610	4	54.0		83	3	28	29	33	3.73		1.48	7.0		15	10	6	sw.	City of Holland.
Howell	Livingston	924	18	52.4	+ 2.9	81	3†	22	29	35	1.51	− 0.65	0.60	0.0	7	19	4	8	sw.	Frank Sharp.
Ivan	Kalkaska		21	49.8	+ 3.4	80	18	13	29	39	3.41	+ 0.68	0.75	4.5	9	9	14	8	sw.	O. L. Giddings.
Jackson	Jackson	927	13	55.2	+ 2.6	85	3	23	29	34	2.10	− 0.59	0.57	1.5	8	17	8	6	w.	City of Jackson.
Jeddo	St. Clair	667	21	52.1	+ 2.6	83	18	23	30	33	1.77	− 0.77	0.61	0.0	5	15	5	11	sw.	William Bice.
Kalamazoo	Kalamazoo	955	34								2.13	− 0.57	0.64	1.0	8	16	4	11	w.	Kalamazoo Asylum.
Lansing (Agr'l. College)	Ingham	820	46	51.8	+ 3.1	82	18	23	29	31	2.27	− 0.17	0.93	0.6	8	16	5	10	sw.	U. S. Weather Bureau.
Lansing (Capitol)	....do	881	23	54.0	+ 4.5	83	3†	24	29	29	2.61	− 0.24	0.80	0.5	8	16	4	11	sw.	State Board of Health.
Lapeer	Lapeer	827	11	53.4	+ 2.4	84	18	24	30	36	1.60	− 0.40	0.56	T.	5	12	12	7	nw.	Michigan Home.
Ludington	Mason	586	12	52.8[e]	+ 2.3	75	17	25	31	31[e]	2.93	+ 0.69	0.76	4.0	7	11	9[e]	6[e]	sw.	Pere Marquette R. R.
Luther	Lake	1,028	0	50.4		83	18	15	29	40	3.09		0.98	5.8	11	13	10	8	w.	John W. Nichoson.
Mackinaw	Cheboygan	592	14	48.8	+ 1.0	82	19	28	7	38	3.25	− 0.20	0.95	0.0	7	12	3	16	nw.	Grand Rapids & Ind. Ry.
Mancelona	Antrim	1,121	14	51.2	+ 4.0			10	29		3.89	+ 0.79	1.10	2.0	8	17	1	13	ne.	Do.
Manistee	Manistee	600	13	53.8	+ 5.2	81	19	28	29	32	3.62	+ 1.37	0.83	12.0	8	21	3	7	sw.	Pere Marquette R. R.
Midland	Midland	604	11	49.2	− 0.9	80	3†	20	29	49						17	4	10	n.	Do.
Montague	Muskegon	660	7																	Gerard A. Whitbeck.
Morenci	Lenawee	811	3	55.4		84	3	25	29	38	1.76		0.59	T.	8	16	6	9	sw	George J. Tripp.
Mount Clemens	Macomb	615	10			80	14†				1.44	− 0.70	0.78	0.0	5	17	8	6	sw.	Water Works.
Mount Pleasant	Isabella	826	11	50.4	+ 1.7	76	1†	28	13	36	1.14	− 1.08	0.74	0.0	3	16	1	14	w.	Pere Marquette R. R.
Muskegon	Muskegon	587	14	53.4	+ 2.3	78	3†	26	29	32	2.45	− 0.24	0.80	6.0	4	14	5	12	w.	Grand Rapids & Ind. Ry.
Old Mission	Grand Traverse	858	16	51.7	+ 2.0	80	18†	25	29	31	3.72	+ 0.77	0.63	0.0	13	3	22	6	sw.	E. O. Ladd.
Olivet	Eaton	934	20	52.2	+ 3.2	79	3	24	29	30	2.81	− 0.17	0.83	1.5	7	20	2	9	s.	Prof. G. A. Knapp.
Omer	Arenac	616	11											0.0		10	10	11	sw.	Detroit & Mackinac Ry.
Onaway	Presque Isle	826	7	52.5		81	19	28	13	40	4.50		1.10	0.0	8	5	4	22	sw.	Do.
Ovid	Clinton	760	20																	Dr. B. L. Bates.
Owosso	Shiawassee	731	13	54.2	+ 2.4	82	18	24	29	32[a]	3.79	+ 1.28	2.00	2.0	7	14[a]	15[a]	1[a]	w.	Owosso Sugar Co.
Petoskey	Emmet	660	20	50.6	+ 2.6	80	19	24	29	35	1.50	− 1.30	0.32	T.	9	10	11	10	w.	Grand Rapids & Ind. Ry.
Plymouth	Wayne	725	13	54.2	+ 2.5	85	18†	22[a]	29	44[a]						19	0	12	sw.	Pere Marquette R. R.
Pontiac	Oakland	935	10	54.0	+ 5.5	86	2	25	29	36	1.95	− 0.42	0.63	T.	8	17	6	8	sw.	Fred W. Shaw.
Port Austin	Huron	618	14																	Pere Marquette R. R.
Port Huron	St. Clair	639	35	52.1	+ 2.6	80	18	26	29	30	1.22	− 1.51	0.57	T.	6	12	6	13	sw.	U. S. Weather Bureau.
Reed City	Osceola	1,033	14	53.2[e]	+ 5.1	90	6	22[k]	29	32[k]	1.20	− 1.94	1.00	T.	3				sw.	Pere Marquette R. R.
Roscommon	Roscommon	1,141	6	49.0		80	18	17	29	44	2.46		0.85	1.5	9	13	9	9	sw.	State Forestry Com.
Saginaw	Saginaw	601	8	53.5		81	3	25	29	33	2.37		0.90	T.	7	9	16	6	nw.	Postmaster.
Saginaw, W. S.	....do	601	15	52.6	+ 2.6	83	18	23	29	35	2.83	+ 0.20	0.84	T.	10	17	8	6	sw.	Robert B. Hudson.
St. James	Charlevoix	681	4	49.4		75	18	31	29†	43[a]	3.08		0.67	T.	8	7	12	12	sw.	Rev. N. Wilhelm.
St. Joseph	Berrien	593	23	56.3	+ 3.9	84	3	24	28	39	3.86	+ 1.04	1.30	3.0	8	16	5	10	sw.	City of St. Joseph.
Sandusky	Sanilac	790	1	53.4		84	18	22	29	43[a]	2.69		1.28	0.0	3	18[a]	4[a]	8[a]	s.	Pere Marquette R. R.
Saranac	Ionia	639	15	53.2	+ 4.2	84	19	21	29	37	3.61	+ 0.53	1.47	0.0	7	13	6	12	sw.	John Wallington.
South Haven	Van Buren	585	14								2.80	+ 0.51	0.80	12.0	6	20	6	5	sw.	Mrs. M. E. De Diemar.
Stanton	Montcalm	880	17	52.6	+ 4.1	82	18	20	27†	33[a]				0.5		17[a]	1[a]	12[a]	sw.	City of Stanton.
Thornville	Lapeer	975	33	51.9	+ 1.2	79	18	22	29†	32	2.30	− 0.74	0.82	2.0	8	13[d]	5[d]	9[d]	nw.	Dr. J. S. Caulkins.
Traverse City	Grand Traverse	588	13																	Grand Rapids & Ind. Ry.
Vassar	Tuscola	641	9					26	29†		2.47		0.80	0.0	4	8[a]	16[a]	6[a]	sw.	Pere Marquette R. R.
Wasepi	St. Joseph	842	13	55.0	+ 3.0	82	3†	28	29†	34	2.35	− 0.60	0.68	2.0	6	20	0	11	sw.	Chas. A. Palmer.
Webberville	Ingham	884	8	52.8		82	18	22	29	35	1.71		0.48	T.	7	12	10	9	sw.	I. R. Wadsworth.
West Branch	Ogemaw	973	7	46.6		86	2	30[a]	21†	36				T.		15[a]	7[a]	8[a]	n.	Michigan Central R. R.
Woodlawn	Montmorency		8	47.0		80	18	13	29	44	3.42		0.50	5.5	15	8	12	11	sw.	T. C. Mathews.
Ypsilanti	Washtenaw	736	25	53.4	+ 3.8	84	3	23	9	38	1.35	− 1.21	0.60	0.0	7	10	17	4	nw.	Orin J. Bemiss.
Ohio.																				
Akron	Summit	1,081	23	55.8[a]	+ 4.2	84[a]	3	27[a]	29†	37[a]	4.11	+ 1.89	2.40	0.8	10	17	3	11	sw.	Prof. C. R. Olin.
Benton Ridge	Hancock	800	17	56.1	+ 3.0	84	3	26	29	32	5.02	+ 2.95	2.60	T.	6	17	7	7	sw.	J. W. Powell.
Bowling Green	Wood	670	30	55.2	+ 2.9	87	3	25	29	38	4.31	+ 1.75	1.60	T.	5	16	8	7	sw.	G. C. Housekeeper.
Bucyrus	Crawford	1,000	15	54.5[a]	+ 2.9	88[a]	3	23	29	41[a]	6.13	+ 3.88	3.20	T.	6	23	1	7	s.	James R. Hopley.
Cleveland (1)	Cuyahoga	762	39	56.0	+ 2.9	84	3	33	30	32	3.79	+ 1.06	2.05	T.	6	15	7	9	se.	U. S. Weather Bureau.
Cleveland (2)§	....do	754	13	55.6	+ 2.6	84	3	31	30	34	5.70	+ 3.08	2.35	0.5	7	19	3	9	sw.	Rev. F. L. Odenbach, S. J.
Conneaut	Ashtabula	675		55.0		83	3	28	30	38	6.69		2.01	6.0	12	9	8	14	nw.	E. L. Ransom.
Defiance	Defiance	712	16	55.6	+ 2.6	86	3	24	29	38	1.93	− 0.43	1.02	0.4	6	20	4	7	sw.	John F. Heilshorn.
Findlay	Hancock	776	21	54.0	+ 1.3	89	3	25	29†	40	5.80	+ 3.68	2.60	T.	7	23	4	4	sw.	Dr. E. A. Moser.
Fremont§	Sandusky	628	9	55.8		85	3	25	29	38	5.00		3.05	T.	6	20	3	8	sw.	E. Stanley Thomas.
Hedges	Paulding	725	16	56.1	+ 3.6	84	3	25	29	36	2.27	+ 0.28	1.50	T.	4	19	3	9	sw.	Charles Stutzman.
Hillhouse	Lake	997	18	54.9	+ 3.3	82	3†	26	30	39	6.06	+ 2.00	2.05	1.0	11	17	8	6	nw.	J. W. Doncaster.
Hiram	Portage	1,260	26	55.0	+ 4.2	82	3	27	30	39	3.97	+ 1.12	1.41	1.0	8	15	9	7	nw.	Prof. G. H. Colton.
Hudson	Summit	1,153	49	54.4	+ 2.9	83	3	25	30	40	5.37	+ 2.68	2.70	0.0	9	19	9	3	n.	Dr. W. I. Chamberlain.
Lima	Allen	875	11	54.6	+ 1.8	83	3	26	29	29	4.95	+ 2.99	2.00	T.	5	23	0	8	sw.	Miss Ollie De Long.
Medina	Medina	944	22	56.2	+ 4.0	86	3	25	29	38	4.59	+ 2.19	2.03	2.0	6	18	5	8	s.	F. W. Clark.
Montpelier	Williams	880	18	55.6	+ 4.5	85	3	24	29	36	1.71	− 0.54	0.50	T.	5	16	3	12	w.	G. L. Laser.
Napoleon	Henry	680	24	57.1	+ 4.1	86	3	26	29	37	1.87	− 0.09	1.00	T.	5	19	4	8	s.	A. C. Senter.
New Bremen	Auglaize	1 038	17	56.5	+ 2.7	85	3	27	30	34	5.48	+ 3.57	2.24	T.	6	20	4	7	w.	Miss Lillian Grothaus.

TABLE 1.—*Climatological data for October, 1910. District No. 4*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Precipitation, in inches. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Sky. Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	Observers.
Ohio—Cont'd.																				
North Royalton	Cuyahoga	1,000	18	54.8	+ 1.9	84	3	25	29	38	4.74	+ 2.29	2.00	0.0	5	17	9	5	nw.	W. S. Edgerton.
Norwalk	Huron	719	24	54.2	+ 1.3	86	3	26	29†	41	5.25	+ 2.93	2.25	0.0	6	16	7	8	sw.	Dr. Albert Sheldon.
Oberlin	Lorain	855	35	55.7	+ 3.9	83	3	26	30	38	6.04	+ 3.78	2.65	T.	7	15	7	9	s.	Prof. F. F. Jewett.
Ottawa	Putnam	720	18	55.8	+ 2.7	86	3	19	30	37	3.30	+ 1.41	2.00	T.	7	2	21	8	sw.	Prof. J. T. Maidlow.
Sandusky	Erie	629	33	56.2	+ 2.3	85	3	28	29	33	4.91	+ 2.48	2.33	T.	8	15	9	7	sw.	U. S. Weather Bureau.
Tiffin	Seneca	775	28	55.6	+ 3.5	83	3	27	29	33	5.03	+ 2.79	2.45	T.	9	17	6	8	s.	Prof. T. H. Sonnedecker.
Toledo (1)	Lucas	769	39	56.2	+ 3.6	85	3	27	29	33	2.34	+ 0.08	1.54	0.1	8	18	7	6	sw.	U. S. Weather Bureau.
Toledo (2)§	....do	606	6	56.4	.....	86	3	26	29	34	1.97	.....	1.08	T.	8	18	3	10	sw.	J. A. Krance, S. J.
Upper Sandusky	Wyandot	854	27	56.1	+ 2.9	85	3	26	28	35	5.22	+ 2.97	2.58	T.	4	16	6	9	w.	Prof. R. J. Kiefer.
Vickery	Sandusky	588	17	56.8	+ 4.0	88	3	25	29	40	5.12	+ 2.75	2.41	T.	6	15	6	10	sw.	John W. Barr.
Wauseon	Fulton	780	38	55.0[a]	+ 4.0	87[a]	3	22[a]	29	38[a]	1.91	− 0.52	0.89	0.3	9	17	8	6	s.	Thomas Mikesell
Wellington	Lorain	856	16	56.0	+ 2.8	85[a]	4	26	29	41[a]	4.39	+ 2.27	2.31	0.2	6	20	3	8	nw.	W. D. Warren.
Willoughby	Lake	649	16	.....	.....	.....	.....	.....	.....	.....	2.50	− 0.42	1.10	.....	5	6	15	10	s.	C. J. Richardson.
Pennsylvania.																				
Erie	Erie	713	37	54.8	+ 2.1	80	3	32	30	30	5.00	+ 1.28	1.86	4.3	9	9	13	9	s.	U. S. Weather Bureau.
New York.																				
Adams Center	Jefferson	540	19	51.4	+ 3.9	78	19	27	13†	33	5.77	+ 1.34	2.72	5.0	9	12	10	9	n.	A. E. Cooley
Angelica	Allegany	1,340	27	49.9	+ 3.0	77	4†	19	30	43	2.62	− 0.39	0.85	1.0	10	4	14	13	w.	Chales P. Arnold.
Appleton	Niagara	270	19	52.2	+ 2.2	78	4	29	30	30[a]	4.36	+ 1.68	1.68	T.	6	9[a]	12[a]	9[a]	nw.	H. A. Van Wagoner.
Auburn	Cayuga	715	41	51.7	+ 2.0	83	6	25	30	34	2.84	− 0.61	1.46	T.	7	20	7	4	n.	A. H. Underwood.
Avon	Livingston	585	15	52.0	+ 1.7	76	1†	26	30	36	2.94	+ 0.39	1.00	T.	6	7	14	10	.....	W. G. Markham.
Blue Mountain Lake	Hamilton	1,750	10	.....	.....	.....	.....	.....	.....	.....	2.62	− 1.41	0.42	5.0	9	17	2	12	w.	B. F. Merwin.
Brockport	Monroe	537	14	52.6	+ 1.2	80	4	26	29	36	3.69	+ 0.67	1.12	3.0	10	10	12	9	w.	W. H. Lennon.
Buffalo	Erie	767	59	53.4	+ 1.9	78	3	28	29	32	5.26	+ 1.73	1.91	0.2	12	9	12	10	sw.	U. S. Weather Bureau.
Canton	St. Lawrence	448	16	47.6	+ 0.4	78	4	21	13	34	4.41	+ 1.07	1.76	0.6	13	9	8	14	sw.	Do.
Cape Vincent	Jefferson	246	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Verne M. Rice.
Carvers Falls	Washington	243	12	51.1	+ 2.8	84	6	22	30	39	1.25	− 1.73	0.46	0.0	5	20	5	6	s.	Washburn Fancher.
Chazy	Clinton	151	10	49.9	+ 1.7	77	6	25	30	37	5.36	+ 2.64	1.25	0.8	11	10	6	15	n.	W. R. North.
Dannemora	....do	1,490	5	46.8	.....	79	6	20	29	39	3.79	.....	0.79	3.0	15	11	3	17	w.	W. N. Thayer.
Elba	Genesee	500	11	49.8	0.0	78	4	22	30	37	3.00	+ 0.23	1.15	T.	7	14	8	9	sw.	Jos. S. Wilford.
Fayetteville	Onondaga	530	9	53.0	.....	82	6†	25	13	36	1.93	− 1.47	1.01	T.	8	15	5	11	nw.	Dana H. Wells.
Gabriels	Franklin	1,729	8	45.8	.....	80	6	16	30	46	4.16	.....	0.80	1.5	17	14	3	14	nw.	Sanatorium.
Harkness	Clinton	622	8	48.4	.....	82	6	24	13	37	2.31	.....	0.37	.....	13	20	1	10	w.	J. W. Harkness.
Hemlock Lake	Livingston	900	12	52.2	+ 1.0	77	6	27	13	35	2.34	− 0.22	1.44	T.	3	15	5	11	sw.	D. H. Westbury.
Hunt	....do	1,321	11	53.4	+ 2.6	82	18†	20	30	41	2.79	− 0.14	1.28	0.0	5	11	17	3	nw.	W. S. Barrager.
Ithaca	Tompkins	928	32	51.8	+ 2.3	82	6	26	30	37	2.29	− 0.88	1.21	T.	7	9	11	11	nw.	U. S. Weather Bureau.
Keene Valley	Essex	1,000	12	49.0	+ 1.4	82	6†	22	30	46	2.39	− 1.08	0.45	0.2	16	13	5	13	s.	E. R. Wells.
King Ferry	Cayuga	.....	10	.....	.....	.....	.....	.....	.....	.....	2.11	− 1.37	1.00	T.	7	15	7	9	nw.	Lucius A. Goodyear.
Lake George	Warren	350	13	51.2	+ 1.6	81	6	25	31	40	1.58	− 1.91	0.74	T.	8	16	11	4	n.	Charles Forsell.
Lake Placid Club	Essex	1,864	2	42.6	.....	73	6	15	31	39	3.34	.....	0.49	13.0	15	8	10	13	nw.	Henry van Hoevenberg.
Le Roy	Genesee	920	20	52.1	+ 4.3	82	18	25	30	37	2.92	+ 0.32	0.95	0.9	9	11	8	12	nw.	F. W. Ball.
Lockport	Niagara	650	23	51.6	+ 0.2	77	4	27	29†	32	4.51	+ 1.87	1.43	0.8	11	14	7	10	sw.	J. E. Wakeman.
Lowville	Lewis	900	43	47.0	+ 0.8	82	6	20	30	45	4.10	+ 0.71	1.30	.....	10	15	7	9	w.	Charles J. Rice.
Lyndonville	Orleans	.....	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Milton St. John.
Moira	Franklin	200	10	46.6	− 1.5	79	5	25	13	35	4.21	+ 1.46	1.30	2.0	12	4	15	12	w.	C. E. McBride.
Nehasane	Hamilton	1,750	2	44.6	.....	78	6	14	30	48	4.87	.....	0.91	4.3	16	9	11	11	s.	A. C. Heyburn.
North Lake	Herkimer	1,822	9	46.7	+ 1.1	75	4	18	22†	.....	.....	.....	.....	.....	.....	16	7	8	.....	H. A. Paull.
Ogdensburg	St. Lawrence	175	26	49.8	− 0.4	76	5	28	13	36	4.03	+ 1.69	1.34	T.	13	10	17	4	nw.	State Hospital.
Old Forge	Herkimer	1,733	2	46.3	.....	80[c]	20	16	13†	44[c]	3.96	.....	0.70	T.	15	16	6	9	w.	Stuart W. Nelson.
Oswego	Oswego	335	40	51.8	+ 0.6	80	6	28	30	33	3.38	+ 0.04	0.92	1.1	11	8	8	15	s.	U. S. Weather Bureau.
Otto	Cattaraugus	1,410	6	51.8	.....	78	22	22	30	38	3.40	.....	1.10	0.0	9	14	8	9	.....	William Winke.
Palermo	Oswego	460	51	.....	.....	.....	.....	.....	.....	.....	2.22	− 1.33	0.90	1.0	11	13	7	11	sw.	E. B. Bartlett.
Perry City	Schuyler	1,038	30	51.5	+ 3.7	83	6	21	30	40	2.78	− 1.11	1.53	0.9	7	12	6	13	nw.	W. H. Jeffers.
Philadelphia	Jefferson	485	4	50.0	.....	79	6	22	13	36	5.63	.....	1.63	3.5	13	9	12	10	sw.	E. D. Babcock.
Plattsburg	Clinton	170	60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	T. P. Davison.
Potsdam	St. Lawrence	300	34	48.0	+ 2.9	78	5	24	13	44	5.15	+ 2.81	1.02	.....	19	13	0	18	w.	A. E. Sutuerland.
Raquette Lake	Hamilton	.....	2	45.5	.....	75	6	20	30	36	3.75	.....	0.62	3.0	16	8	3	20	sw.	R. J. Dunning.
Rochester	Monroe	523	81	52.8	+ 2.0	81	18	30	30	33	2.95	+ 0.09	1.12	2.2	10	9	11	11	sw.	U. S. Weather Bureau.
Romulus	Seneca	719	18	53.2	+ 2.0	82	6	27	31	35	1.16	− 2.06	0.76	.....	5	6	15	10	nw.	John H. Coryell.
Shortsville	Ontario	740	11	52.0	+ 0.5	80	18	27	30	42	2.16	− 0.68	0.69	.....	7	15	10	6	nw.	C. H. Latting.
Skaneateles	Onondaga	.....	15	.....	.....	.....	.....	.....	.....	.....	2.34	− 1.39	0.85	.....	11	.....	.....	.....	.....	Edward Conron.
Syracuse	....do	597	8	51.8	+ 0.8	83	6	29	30	36	1.53	− 1.68	0.67	0.4	10	10	7	14	s.	U. S. Weather Bureau.
Ticonderoga	Essex	344	12	.....	.....	.....	.....	.....	.....	.....	1.29	− 1.45	0.60	T.	7	.....	.....	.....	s.	Eva M. De Lano.
Trudeau	....do	1,620	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Daniel Smith.
Tupper Lake	Franklin	1,522	10	46.4	.....	79	19	18	13	41	3.50	.....	0.50	1.5	14	16	0	15	w.	Aaron W. Maddox.
Volusia	Chatauqua	1,167	11	52.0	+ 1.1	79	18	26	30	35	3.89	+ 0.05	1.12	4.0	9	12	12	7	s.	Benjamin Breads.
Wanakena	St. Lawrence	.....	0	46.3	.....	80	19	16	29	45	4.78	.....	1.36	.....	12	13	9	9	sw.	J. Otto Hamele.
Watertown	Jefferson	737	18	50.6	+ 0.8	78	6	25	30	34	5.49	+ 1.74	1.92	2.0	12	13	4	14	sw.	H. P. Dunlap.
Wedgewood	Schuyler	1,430	21	51.8	+ 2.4	82	6	23	30	33	1.69	− 1.71	0.52	T.	10	15	12	4	sw.	Orlando F. Corwin.
Westfield	Chatauqua	837	14	53.8	+ 1.2	80	18	29	30	35	3.91	+ 0.17	1.70	2.0	9	.....	.....	.....	.....	John R. Rogers.
Youngstown	Niagara	.....	8	.....	.....	.....	.....	.....	.....	.....	3.75	.....	1.48	0.0	4	11	16	4	n.	B. V. Brookins.
Vermont.																				
Burlington	Chittenden	404	3	47.8	+ 0.9	81	6	30	30	31	3.34	+ 0.18	0.98	2.9	13	4	11	16	s.	U. S. Weather Bureau.
Cornwall	Addison	507	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	C. H. Lane.
Enosburg Falls	Franklin	601	19	48.4	+ 1.1	81	6†	24	31	39	4.51	+ 1.70	0.83	1.5	16	8	9	14	nw.	L. Howe Pomeroy.
Northfield	Washington	876	24	45.8	+ 2.2	82	6	19	31	38	1.68	− 0.80	0.39	0.5	15	4	11	16	s.	U. S. Weather Bureau.
Rutland	Rutland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	H. L. Hindley.
Wells	....do	750	19	48.2	+ 0.2	80	6	23	30	31	1.53	− 1.02	0.32	0.0	10	13	8	10	s.	E. R. Pember.

[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 October, 1910. District No. 4, Lake Region.*

Stations.	River basins.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Minnesota.																																	
Duluth	Lake	T.	.28	.06															.29	T.	T.	.15			T.	.02		.01					0.81
Floodwood	do		.30																.62		.07							.36					1.35
Mount Iron	do																																
Stephens Mine	do		.04											.20						.50		.25					T.	.07	.06				1.12
Two Harbors	do		.50	T.																		.25											0.75
Virginia	do		.05	T.										.11					T.	.70		.20						.35	T.				1.41
Wisconsin.																																	
Appleton	Fox		.06	.21	.12																	.45	.03				.07	.09	.11				1.14
Ashland	Lake		.44	.07										.05						.04	.10	.16	.05			.11	.02	.05					1.09
Bayfield	do																																
Cecil	Fox		.48		*	.08																.70	.05				.24	.10					1.65
Chilton	do		.11	.02	.02	T.										T.						.55	.07			T.	.03	.18	T.				0.98
Crandon	do																																
Florence	Menominee		.94	.43																		*	1.20					.29					2.86
Fond du Lac	Fox		.02	T.	.05	.01															T.	.37	.05				T.	.14	T.				0.64
Grand River Locks	do		.07	.25	.15																	.40	T.					T.					0.87
Green Bay	Lake		.18	.17																	T.	.74					.25	.07	T.				1.41
Iron River	do		.20	.05										.03						.05	.05	.25	.02					.10					0.84
Kewaunee	do			.06	.04																	.82					.45	T.	T.				1.37
Manitowoc	do		.04	.10	.04	*	.03															.63					.20	03					1.07
Menasha	Fox		.09	.28																		.51					T.	.19					1.07
Menominee Falls	Lake			.06	.64	T.															T.	.72						.20					1.62
Milwaukee	do		T.	.26	.34	.02	.11													T.	.02	.47					.02	T.	T.				1.24
New London	Fox		.20	.25																		.55					.30	T.					1.30
Oconto	Lake		.72	.16																	.20	.81				.03	.45						2.37
Oshkosh	Fox		.04	.05	.15																	.30	.10				T.	.10	T.				0.74
Pine River	do		.22	.17	.01															.01		.33	.07			.01	.03	.17	T.				1.02
Plum Island	Lake		.70	.30	.08																	.90	.25				.72	.44	.16				3.55
Plymouth	do		.17	.01	.04	T.															T.	.48					T.	.12	.03				0.85
Port Washington	do			*	.40																.42							.05					0.87
Racine	do		T.	.90	.48	.01	.12														.02	.58						.02	T.				2.13
Ripon	Fox		.13	.08	.10																	.42	.11					.13					0.97
Sheboygan	Lake		.25	.08	10	T.															.03	.52	.07					T.	T.				1.05
Sturgeon Bay	do		.53	.81	.05																	.80	.11			T.	.43	.11	T.				2.84
Superior‖	do		.27	.05	.01															.25		.11	.09			.02	T.						0.80
Waupaca	Fox		.17	.37																.02		.33	.17				.03	.22					1.31
Illinois.																																	
Chicago	Lake Michigan			.96	.14	.16	.23														.03	.26			T.			.01	T.				1.79
Indiana.																																	
Auburn‖	Maumee			T.	.20	.17	.13	.33														T.	.42						.05				1.30
Berne	do				.46	.80	1.84															.44	.02			.01		.09	.02				3.68
Elkhart‖	St. Joseph																																
Fort Wayne	Maumee			.05	.40	.02	.76															.39				T.		.02	.07				1.71
Hammond	Lake Michigan				.51																.08	.40	.02										1.01
Howe‖	St. Joseph				.50		.35																.53						.30				1.68
South Bend‖	do				2.29	.19	.05	.03								.02						.12	.39			.01		.06	.10	1.30	.10		4.66
Whiting	Lake Michigan			T.	1.10	1.00	.29													.02	T.	.41						T.					2.82
Michigan—Upper Peninsula.																																	
Baraga	Lake																																
Bergland	Ontonagon		.19	.98	.50										.10						.19	.33	.10					.10	.80	.77			4.16
Blaney	Manistique	.18	.12		1.30									.59								.45	.85				.20	.12	.10				3.32
Calumet	Lake	.06	.21	.26										.59	T.					.08	T.	.42	.17				.07	.20	.13	.03			2.22
Chatham	do		.58	.15										.02						.32	.09	.70	.68	.03			.10	.06	.18	21			3.10
Deer Park	do																																
Detour	St. Marys							2.70	.12												.31		.96					.32	T.				4.41
Eagle Harbor	Lake	.05	.15	.20										.40	T.					.02	T.	.62					.15		.03	.01			1.63
Escanaba	do		.80	.14																.01		1.47	.09			T.	.36	.10	.07				3.04
Ewen	Ontonagon		1.00	.10										.10						.03			.03					1.00	.60				2.86
Grand Marais	Lake	.20	.15	.20	.20				.05											.05		1.00	.50	T.					.25	T.	T.		2.60
Houghton	do		.49	.19										.53						.03	T.	.55	.02				.07	.35	.11	T.			2.34
Humboldt	Escanaba		.42	.36										.10							.20	.36					T.	T.	.50	.30	.20		2.44
Iron Mountain	Menominee		.75	.08																.04		.69					.80	T.	T.				2.36
Iron River	do		.70	.45																	T.	.80	.34					.10	T.				2.39
Ironwood	Lake		1.85	.08										.01						T.	.03	.34				.21	.04	.40	.31	T.			3.27
Ishpeming	Escanaba			.30										.05	T.					.15	.10	.50	.30				.05	.30	.60	.05			2.40
Isle Royale	Lake	.20	.24	.21										.46							.25							T.	T.				1.36
Mackinac Island	do																																
Maple Ridge	do	.03	80	.10	.04																	.72	1.01				.18		.60				3.48
Marquette	do		.49	.57		T.								.03						.12		.97	.14				.02	.10	.59	.50			3.53
Menominee	Menominee		.81	.12																		1.18					.80						2.91
Newberry	Tequamenon																																
Powers	Lake																																
St. Ignace	do	.49	.93		.45	T.	T.		T.						T.						.50	.42	.58	.16		.10	.27	.29	T.	T.			4.19
Sault Ste. Marie	St. Marys		.15	1.11	.04				.13					.21	.03					.07		.78	.09	.01	T.		.21		T.				2.83
Thomaston	Lake	.90	.30	.10										.05						T.	T.	.43	.15					.30	.30				2.53
Victoria	Ontonagon		.64	.19										.05	T.					.05	.04	.44	.26				.06	.83	.20	.07			2.83
Watersmeet	do		.60	.35																.04	.02	.35	.08			.04	.10	.30	.15				2.03
Wetmore	Lake		.90	.20																		.85					.05		.20	.20			2.40
Whitefish Point	do	.17	.03	.33	.19				.05					.01	.46	T.				.10	.01	.15	.70				T.	.02	.06	.02			2.30
Michigan—Lower Peninsula.																																	
Adrian	Raisin				.18		.67										.12					.48						.10	T.				1.55
Allegan	Kalamazoo			.11	1.14															.09	.91	.10						.11	.41				2.87
Alma	Saginaw			.57	1.40	T.	.20														T.	.60	.09				.18	.17	.04				3.25
Alpena	Lake		.30	.33	.76	.01	.17		.01	T.										.12	.20	.35	.15		T.	T.	.48	.44	.15	T.			3.47
Ann Arbor	Huron			.19	.11	.11	.68															.54				.03	.03	.12	.04				1.85
Arbela	Saginaw			.11	1.73		.74															.22	.70				.11	.09					3.70
Battle Creek	Kalamazoo			.25	1.45		.18										.10					.50	.07					.12	.17	T.			2.84
Bay City	Saginaw			.25	1.25		.75														.10		.40										2.75
Benzonia	Betsie																																
Berlin	Clinton			.01	.15	T.	.78															.33	.06	T.				T.	T.				1.33
Big Rapids	Muskegon			.02	.61	T.	.14															1.05	.06				.22	.12	.21	.04			2.47
Bloomingdale	Lake			.14	1.35		.29														T.	.74	.05				T.		.05	T.			2.62
Cadillac	Manistee		.14	.07	.85		.12																		1.00		.15	.45	.40	.30			3.48
Cassopolis	St. Joseph			T.	2.20																	.70						T.	.30	.20			3.40
Charlevoix	Lake	.05				.42														.48		.60	.20				.70	.10					2.55
Charlotte	Kalamazoo			.25	.95	T.	.23										T.																
Cheboygan	Cheboygan	.10	.50	.05	1.62				T.							T.					1.04	.50	1.00					.10	T.				5.81
Clinton	Raisin			T.	.16	T.	.62															.41	.10										1.29
Coldwater	St. Joseph			.20	.16	T.	.32															.40	.05					T.	.25				1.38
Concord	Kalamazoo			T.	.32	T.	.30										.12				T.	.45	T.					T.	T.	T.			1.19
Croton	Muskegon			.03	.36		.14														.05	1.25	.02				T.	.16	.09	T.			2.01
Detroit	Detroit				.07	.01	.72														T.	.16			T.	.01	.06	.04					1.07

TABLE 2.—*Daily precipitation for October, 1910. District No. 4*—Continued.

Stations.	River basins.	Day of month. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.
Michigan—Lower Peninsula—Cont'd.																																	
Durand	Saginaw				.74	T.	.55															.19	.26				.10	T.	.10				1.94
East Tawas	Lake		.20	.30	1.00		.30														.08	.35					.70	.30					3.23
Eloise	Rouge				.10	T.	.58															.26	.16				.01	.10	.03				1.24
Flint	Saginaw			.05	.40		.60																.61				.08	.05	.20				1.99
Frankfort	Betsie		.30		.60																.39	.78					.30	.50	.15	.20			3.22
Ganges	Lake			.05	1.39	.05	.22														.15	.87	.03					.15	.99	.50			4.40
Gaylord	Cheboygan																					.08	.11				1.12	T.					1.31
Gladwin	Saginaw			.10	1.90																	.15											2.15
Grand Haven	Grand			.55	.22	T.	.08													T.	T.	.76					T.	.13	.51	.23			2.48
Grand Rapids	...do			1.54	.16	.06	.16													.05	.03	1.01	.07			T.	T.	.08	.01	T.			3.17
Grape	Raisin				.12	.11	.70															.28	.02					.01	.04				1.28
Grass Lake	Grand			.06	.22	.25	.35															.33	.12					.16	.15	T.			1.64
Grayling	Au Sable																																
Harbor Beach	Lake				.30		.15																.30			.05	.10	.25	.15	.10			1.30
Harrison	Saginaw																				.24	1.02					.49						1.75
Harrisville	Lake	.10	.05	.20	1.28		.27		.02												.22	.25	.15			.03	.18	.70					3.45
Hart	Pentwater				.80		.16															.30					.02	.10	.80	1.60			3.78
Hayes	Pigeon					.25	.73														T.	.42	.63					.65	T.				2.68
Highland	Huron			.11	.37		.40															.64	.08										1.60
Hillsdale	Saint Joseph			.03	.52	.03	.41										.02				T.	.49	T.					.05	.05	.05			1.65
Holland	Lake			.14	1.48		.20										.01				.16	1.00	.02					.02	.25	.44	.01		3.73
Howell	Saginaw			.10	.40		.60															.25	.01				.05	.10	T.				1.51
Ivan	Manistee		.35	.26	.59	.02															T.	.75	.18				.35	.57	.34	T.			3.41
Jackson	Grand			.13	.50	.11	.57										T.					.42	.08					.14	.15	T.			2.10
Jeddo	St. Clair				.46		.61															.37	.28				T.	.05					1.77
Kalamazoo	Kalamazoo			.64	.50	.40															.14	.10				.05		.15	.15	T.			2.13
Lansing (Agri. Col.)	Grand			.22	.82	.06	.35															.56	.03				.11	.12					2.27
Lansing	...do			.15	.80	T.	.76														T.	.56	.05				.10	.10	.09				2.61
Lapeer	Saginaw				.37		.56																.17	.45			.05		T.	T.			1.60
Ludington	Pere Marquette			.65	.47																	.76	.42				.19		.37	.07			2.93
Luther	Manistee		.03	.10	.74		.17															.98	.10	.01			.18	.34	.38	.06			3.09
Mackinaw	Lake		.30		.95				T.					T.							.75	.25	.47				.21	.32					3.25
Mancelona	...do		.10	T.	1.10		T.														.05	1.00	.40				.25	.59	.40				3.89
Manistee	Manistee		T.		.37																.20	.83	.22			T.	.17	.63	T.	.80	.40	T.	3.62
Midland	Saginaw			.10	2.00	.10																T.	T.				T.	T.					
Montague	White				.44																								2.00	.80			
Morenci	Maumee			.02	.17	.02	.59										.39					.25	.10					T.	.22				1.76
Mount Clemens	Clinton				.20	.08	.78															.35	.03				T.	T.					1.44
Mount Pleasant	Saginaw																				.74	.23					.17						1.14
Muskegon	Muskegon				.65	T.																.60	T.			T.			.40	.80			2.45
Old Mission	Lake		.63	.26	.13	.03															.32	.59	.19	.06		.08	.47	.51	.32	.13			3.72
Olivet	Kalamazoo			.37	1.07		.36										.01				T.	.76	.07					.17	T.	T.			2.81
Omer	Lake																																
Onaway	Cheboygan	.30	.65	.45	.25		.20														.75		1.10					.80					4.50
Ovid	Grand																																
Owosso	Saginaw			.04	.66		2.00															.26	.46				.10		.27				3.79
Petoskey	Lake		.12		.10	.12			.24													.32	.10				.22	.24	.04				1.50
Plymouth	Rouge				.75		1.00																										
Pontiac	Clinton			.15	.10	.05	.55	.02														.40	.05				.63	T.	T.	T.			1.95
Port Austin	Lake																																
Port Huron	St. Clair				.15	.01	.43														T.	.57	T.		T.	.04	T.	.02	T.				1.22
Reed City	Muskegon			.15	.05																	1.00						T.		T.			1.20
Roscommon	Au Sable		.06	.01	.25		.12															.85					.52	.50	.10	.05			2.46
Saginaw	Saginaw		T.	.12	.90		.65														.02	.52	T.	T.	T.		.15	.01					2.37
Saginaw, W. S.	...do		T.	.22	.80	.03	.84														.02	.45	.11	T.	T.		.10	.23	.03				2.83
St. James	Lake	.60	.60		.40															.06		.67	.30				.23	.22	T.				3.08
St. Joseph	St. Joseph			.20	1.30	.75	.11																.25					.20	.75	.30			3.86
Sandusky	Lake				.52		1.28																.89										2.69
Saranac	Grand			.38	1.47		.42															1.03	.20				.09	.02					3.61
South Haven	Lake				.40		.20															.60						.40	.80	.40			2.80
Stanton	Grand				.12	.06																2.00						.05					
Thornville	Saginaw			.12	.48		.82															.28	.22		.08			.12	.18				2.30
Traverse City	Lake																																
Vassar	Saginaw				.55		.57															T.	.80					.55	T.				2.47
Wasepi	St. Joseph			.67	.68		.18															.60						.02	.20				2.35
Webberville	Grand			.22	.42	T.	.32															.48	.10		T.	T.	.11	.06					1.71
West Branch	Lake																				.07					T.		.06	T.				
Woodlawn	Au Sable	.10	.10	.20	.50	.06	.10		.04							.02					.30	.50	.38	.05		T.	.50	.42	.15				3.42
Ypsilanti	Lake			T.	.05	.01	.60															.57				T.	.01	.06	.05				1.35
Ohio.																																	
Akron‖	Lake	T.				.07	2.40	.68								T.						.01		.55		.24	.02	.01	.05	.08	T.		4.11
Benton Ridge	Maumee				.66	1.10	2.60										.40					.21						.05					5.02
Bowling Green	Lake				.27	.90	1.60										1.16					.38				T.		T.	T.				4.31
Bucyrus‖	Sandusky					1.00	3.20	.65										.80				T.	.45					.03	T.	T.			6.13
Cleveland (1)	Lake				.11	1.43	1.53															.46	T.		T.	.10		.16	T.	T.	T.		3.79
Cleveland (2)	...do				.12	2.05	2.35															.66		T.		.15		.32	.05				5.70
Conneaut	...do	.01				.58	2.01	.20															.89	.08		.57	.01	.09	1.90	.22	.13		6.69
Defiance‖	Maumee			T.	.23	.20	1.02										.14				T.	.30						T.	.04	T.			1.93
Findlay‖	...do				T.	1.21	2.60	.74										.81					.32				.06	.06	T.	T.			5.80
Fremont	Sandusky				1.05	.50	3.05										.16						.40			T.	.04		T.				5.00
Hedges	Maumee				.15	.16	1.59															.37							T.	T.			2.27
Hillhouse	Lake	.10				.66	2.05	.42															.55	T.		.85	.07	.15	1.00	.15	.06		6.06
Hiram	...do	T.			T.	1.00	1.41	.16															.68	T.	T.	.53	T.	.06	.08	.05			3.97
Hudson	...do					1.52	2.70	.15									.03						.59		.04	.20			.12	.02			5.37
Lima	Maumee				.84	1.56	2.00															.32						.23	T.				4.95
Medina	Lake					2.03	1.60	.06															.60		T.	.19		T.	.11				4.59
Montpelier	Maumee				.48		.15	.50														.48					.10	T.					1.71
Napoleon	...do				.21	.21	1.00										T.					.32	.13		T			T.	T.	T.			1.87
New Bremen	...do				.89	1.87	2.24															.19				T.		.25	.04	T.			5.48
North Royalton	Lake					1.80	2.00	.20															.56			.18							4.74
Norwalk‖	...do					.62	2.25	1.40															.77			.06		.15					5.25
Oberlin	...do				.06	1.47	2.65	.83														.37	.53						.13	T.			6.04
Ottawa	Maumee				.38	.53	2.00										T.				T.	.32	.02					.04	.01				3.30
Sandusky	Lake				.71	1.38	2.08														T.	.66	.01			.01		.04	.02	T.			4.91
Tiffin	Sandusky				.14	1.24	2.45	.60									.09	T.			T.	.24	.02			.09		.16	T.	T.			5.03
Toledo (1)	Maumee				.25	.48	1.15										.01				T.	.34	.04			T.		.05	.02				2.34
Toledo (2)	...do				.30	.32	1.08										.04	T.				.21	.06					.04	.02				1.97
Upper Sandusky	Sandusky				T.	1.42	2.58	1.02													.20							T.	T.				5.22
Vickery	Lake				.74	1.07	2.41										T.					.83	.02			.05				T.			5.12
Wauseon‖	Maumee			.03	.23	.24	.89										T.				T.	.39	.05			T.		.04	.03	.01			1.91
Wellington	Lake					1.28	2.31																.61		T.	.10	.05	T.		.04			4.3
Willoughby‖	...do				1.10																	.60			.23			.15	.42				2.59

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TABLE 2.—*Daily precipitation for October, 1910. District No. 4*—Continued.

Stations.	River basins.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Pennsylvania.																																	
Erie	Lake				T.	1.01	1.58	T.								T.						.70	.14		T.	.65	.01	.37	.53	.01	T.		5.00
New York.																																	
Adams Center	Lake					.43	2.72	.38		.09														.19		1.14		.32	.30	.20			5.77
Angelica	Genesee	.04				.07	.85	.31														T.	.50	.01		.47		.15	.14	.08			2.62
Appleton	Lake				T.	1.17	1.68	.10		T.													.30			.73		.38	T.	T.			4.36
Auburn	Oswego					.22	1.46																.20			.70		.10	.08	.08			2.84
Avon	Genesee					.20	1.00	.38															.40		T.	.83		.13	T.	T.			2.94
Blue Mountain Lake	Raquette	.23								.27						T.							.23	.25		.21		.27	.38	.42		.36	2.62
Brockport	Lake					.35	1.00	.24															.27	.08		1.12		.27	.05	.28	.03		3.69
Buffalo	Lake	.03			.12	.98	1.38	T.														.01	.81		.01	1.25	.11	.15	.39	.02	T.		5.26
Canton	St. Lawrence	.11			.01	.18	1.74	.01		.33					.12	.04					T.		.12			1.08		.41	.21	.05			4.41
Cape Vincent	do																																
Carvers Falls	Lake									.15													.36	.12		.16		.46					1.25
Chazy	do	.20					.68	.98		1.25	.15				.10	T.								.40		.50	.60	.45	.05				5.36
Dannemora	do	.27	.50			.05	.47	.37		.06	.03				.07	T.				T.	T.		.23	T.	.05	.30	.79	.45	.10	.05			3.79
Elba	do					.30	.90	.10															.30			1.15		.20	.05	T.			3.00
Fayetteville	Oswego	T.				.12	T.	1.01		T.	.03												.04	.13		.27	T.	.23	T.	.10	T.		1.93
Gabriels	Lake	.15	.20		.02	.15	.43	.72		.10	.05				.15	.04	.02						.80	.05		.65	.27	.22		.14			4.16
Harkness	do	.25					.10	.27		.02	.02				.24								.22	.02		.25	.37	.25	.24	.06			2.31
Hemlock Lake	Genesee						1.44																.18			.72				T.			2.34
Hunt	do					.47	1.28																.30			.46		.28					2.79
Ithaca	Oswego						1.07	.14		T.			T.			T.							.23	.01	.06	.70		.08	T.	T.			2.29
Keene Valley	Au Sable	.35	.21			.09	.07	.16		.17	.11				.03						T.		.11	.09	.06	.27	.10	.45	.08	.04			2.39
King Ferry	Oswego					.09	1.00																	.20	T.	.55	.05	.16		.06			2.11
Lake George	Lake	.06				T.		.02		.31													.20	.02		.11		.74	T.	.12			1.58
Lake Placid Club	Au Sable, W. Br.	.33	.03		T.	.05	.33			.33					.08	.05					T.		.21	.05	T.	.49	.20	.33	.41	.35	.10		3.34
Le Roy	Genesee				T.	.25	.95	.16															.50	.11	T.	.65	T.	.17	.09	.04			2.92
Lockport	Lake				.02	.81	1.43	.31															.42	.03	T.	.85		.39	.05	.29	.01		4.51
Lowville	do	.18				.25	1.30	.08		.33												.18		.18		.50		.35		.75			4.10
Lyndonville	do																																
Moira	St. Lawrence		.11			.06	1.22	.34		.10					.20	T.			T.		T.		.13			1.30	.06	.42	.16	.11			4.21
Nehasane	Lake	.17	.12		T.	.40	.60	.45		.72	T.		T.		.01	.03	T.						.28	.25		.66	.16	.68	.23	.08	.03		4.87
North Lake	do			.50										.75																			
Ogdensburg	St. Lawrence	.51	.01			.10	1.34	.21		.16					.15	.02	T.					.06		.03		1.00	.02	.42	T.	T.			4.03
Old Forge	Lake	.09	.03			.33	.21	.70		.28	.12												.38	.28		.68	.06	.47	.18	.10	.05		3.96
Oswego	do	T.	T.	T.	T.	.92	.67	.01		T.					T.								.44	.30	T.	.43	.01	.10	.23	.21	.06		3.38
Otto	do					.23	1.10	.48															.29	.89	.08			.15	.12	T.	.06		3.40
Palermo	do			T.		.05	.90	.46														.02	.20	.10	.06	.10		.21	.04	.08			2.22
Perry City	do					.09	.43	1.10															.21	T.		.72		.14		.09			2.78
Philadelphia	St. Lawrence	.18	T.		T.	.37	1.63	.42		.34					T.	.02							.33	.22	1.13		.06	.47	.40	.06			5.63
Plattsburg	Lake																																
Potsdam	St. Lawrence	.09	.20			.02	.91	1.02		.18	.30				.05	.18	.04		.02					.15	.02	.34	.75	.35	.11	.17	.25		5.15
Raquette Lake	Raquette	.10	.20			.14	.19	.62		.47	.06					.03							.51	.08	.10	.30	.03	.57	.27	.08			3.75
Rochester	Genesee					.54	1.02	.03															.32	.01	T.	.66	.04	.07	.04	.22			2.95
Romulus	Oswego					T.	.34	.41															T.			T.	.18		.08		.15		1.16
Shortsville	do					.34	.69	.23																		.65	T.	.08	.06	.11			2.16
Skaneateles	do					.15	.85	.18														.13	.10	T.	.12	.50	.07	.05	.15	.04			2.34
Syracuse	do			T.		.09	.66	.01		T.					T.								.14	.08	.02	.19		.28	.02	.04			1.53
Ticonderoga	Lake									T.				.02	.01	.01							.15			.20		.60	.30	T.			1.29
Trudeau	do																																
Tupper Lake	Raquette	.30	.15			.07	.50	.50		.30	.18					.03							.40	.05		.40	T.	.50	.10	T.	.02		3.50
Volusia	Lake					.09	1.12	.39															.61	.06		.60	.02	.24	.76				3.89
Wanakena	Oswegatchie	.25				.61	1.36	.22		.55						.03							.28		.70	.01	.56	.20	.01				4.78
Watertown	Lake	.05			T.	.41	1.92	.25		.34					T.	.01							.27	.45		1.03		.27	.35	.11			5.49
Wedgewood	Oswego					.04	.47	.24														.01	.24	.05		.52		.09	.01	.03			1.69
Westfield	Lake					.38	1.70	.21															.39	.28	T.		.09	.31	.49	.06	T.		3.91
Youngstown	do				T.	1.37	1.48	.08																		.82							3.75
Vermont.																																	
Burlington	Lake	.21			T.	.13	.51	.20		.36					.02	T.	T.				.20		.26	.05	T.	.98	.05	.37	.19	.01			3.34
Cornwall	do																																
Enosburg Falls	do	.42	.58		T.	.07	.13	.83		.10	.03				.12	.01					T.		.20	.10		.58	.75	.38	.06	.15			4.51
Northfield	do	.24	.15		T.	.07	.04	.04		.17	.03				.01	.01							.28	.10		.12	.01	.28	.13				1.68
Rutland	do																																
Wells	do	.05				T.		.07		.11	.08												.32	.26		.12	.11	.27	.14				1.53

TABLE 3.—*Maximum and minimum temperatures at selected stations, October, 1910. District No. 4, Lake Region.*

Date.	Duluth, Minn.		Wisconsin. Florence.		Green Bay.		Milwaukee.		Chicago, Ill.		Fort Wayne, Ind.		Michigan, Upper Peninsula. Escanaba.		Ewen.		Houghton.		Marquette.		Sault Ste. Marie		Michigan, Lower Peninsula. 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...	67	43	69	48	69	52	70	57	74	62	78	58	63	44	65	36	57	40	61	44	55	38	61	43	71	45	65	53
2...	55	47	50	39	59	48	63	56	70	57	72	39	57	40	53	35	51	40	54	41	45	32	52	36	68	40	55	35
3...	63	47	70	44	76	59	82	62	82	65	86	49	64	56	67	50	69	51	73	53	64	45	66	52	72	50	75	45
4...	65	42	60	43	63	51	70	57	72	65	72	63	58	49	65	43	66	45	63	47	62	52	64	58	71	62	68	60
5...	56	38	66	48	68	52	68	55	75	64	71	65	70	48	63	45	61	47	72	46	68	50	77	52	75	62	69	58
6...	60	33	56	30	60	44	57	47	64	53	67	50	57	41	57	25	52	39	51	40	50	37	52	36	68	45	59	40
7...	70	47	67	29	66	42	66	46	61	48	67	34	60	43	69	29	73	37	69	44	63	32	58	32	60	31	63	32
8...	64	45	67	51	71	50	70	48	69	49	71	34	71	49	65	55	65	45	68	47	58	46	59	44	66	34	65	43
9...	54	37	68	40	59	44	57	47	58	52	65	42	55	42	63	48	55	41	51	43	50	39	51	38	57	42	55	44
10...	72	46	72	37	66	41	68	45	67	49	67	34	60	41	65	47	74	41	77	47	64	35	69	33	65	33	60	32
11...	57	46	77	44	76	49	78	52	75	54	75	39	63	45	75	35	63	43	62	45	67	43	68	47	70	45	71	46
12...	46	40	55	32	53	44	63	51	62	56	69	44	49	39	60	35	43	35	45	36	48	33	52	38	62	45	60	39
13...	50	43	61	31	68	44	64	51	71	52	73	41	55	45	63	35	51	43	55	36	50	34	52	43	68	37	63	32
14...	60	48	59	45	58	48	68	50	78	56	81	48	54	46	65	49	50	44	50	46	54	47	56	47	80	51	.....	.....
15...	79	49	74	41	70	44	75	50	74	54	77	52	65	42	75	49	72	43	76	45	63	47	71	47	.....	.....	67	41
16...	62	49	69	39	69	49	70	55	83	64	84	53	62	49	74	32	67	45	60	49	57	40	68	43	72	55	71	46
17...	70	48	77	36	79	45	77	55	84	62	85	53	61	44	83	41	86	44	76	55	65	37	58	39	78	53	77	41
18...	78	58	78	56	80	58	74	58	78	65	85	53	68	55	78	40	82	58	83	56	77	49	83	50	81	53	80	56
19...	58	34	68	40	72	45	80	50	81	56	83	50	64	43	68	40	68	37	70	38	78	41	81	55	80	57	.....	.....
20...	38	30	44	30	47	40	50	44	57	49	68	57	48	38	45	40	41	34	42	37	48	34	61	41	65	46	.....	.....
21...	38	33	45	30	54	41	55	44	57	45	61	49	53	38	41	29	45	36	45	37	47	33	53	45	56	46	.....	.....
22...	49	32	47	32	54	35	55	39	56	42	55	42	51	37	48	34	46	40	48	40	48	39	48	39	51	40	.....	.....
23...	53	33	54	26	57	33	59	38	60	41	62	34	52	33	57	26	53	35	56	36	44	36	51	36	56	38	.....	.....
24...	54	37	56	34	63	47	61	49	64	51	66	36	60	42	54	35	54	41	57	43	50	38	60	37	58	42	79	36
25...	53	36	52	36	52	42	54	44	59	47	63	47	54	39	52	37	51	40	53	41	51	35	57	38	59	38	54	40
26...	50	34	42	34	50	39	57	40	72	47	67	36	44	39	48	35	48	42	46	42	46	31	53	35	.....	.....	45	36
27...	40	29	39	29	42	32	44	35	51	36	65	43	41	31	44	26	43	26	43	29	41	31	45	34	58	32	45	32
28...	29	25	32	22	37	28	38	29	41	31	43	30	34	23	31	24	34	26	32	26	33	26	35	26	42	31	34	25
29...	39	23	34	21	37	24	38	26	40	27	43	28	38	21	32	17	36	29	37	24	37	25	37	26	38	25	36	19
30...	51	34	52	27	56	33	59	31	59	34	58	29	55	35	48	28	50	33	55	32	48	34	51	33	52	28	45	28
31...	51	32	54	29	58	34	58	42	60	43	63	34	50	36	49	22	49	35	53	35	53	31	51	32	61	32	57	33
Mns	55.8	39.3	58.6	36.2	60.9	43.1	62.8	46.9	66.3	50.8	69.1	44.1	56.0	41.1	58.8	36.2	56.6	39.8	57.5	41.3	54.3	37.7	58.1	40.5	64.1[b]	42.7[b]	60.7[f]	39.7[f]

Date.	Michigan, Lower Peninsula. Detroit.		Muskegon.		Saginaw, W. S.		Ohio. Cleveland.		Lima.		Sandusky.		Toledo.		Erie, Pa.		New York. Buffalo.		Canton.		Rochester.		Syracuse.		Vermont. 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...	71	50	64	59	70	54	70	58	67	61	73	58	75	54	68	53	68	50	71	44	71	50	72	50	71	48	68	47
2...	61	45	65	43	61	37	58	52	65	42	60	52	62	48	55	49	55	43	54	38	54	43	52	42	54	36	51	38
2...	82	53	78	54	80	48	84	52	83	54	85	52	85	52	80	50	78	46	70	44	78	47	69	44	62	33	61	31
4...	71	64	71	62	71	63	80	65	74	64	76	65	75	64	80	66	77	64	77	62	80	64	77	59	70	55	71	48
5...	71	64	66	60	77	60	70	64	76	65	70	65	71	64	74	65	69	64	77	63	75	65	78	66	76	62	77	63
6...	64	46	66	48	67	43	65	50	65	45	66	49	64	46	68	49	66	48	71	45	72	50	83	47	81	50	82	56
7...	55	43	60	34	62	31	53	48	57	39	55	47	55	40	52	46	55	43	54	35	50	42	50	40	52	36	56	30
8...	65	47	63	40	67	36	64	42	60	40	64	43	68	45	64	41	62	36	62	31	64	33	59	37	59	34	57	25
9...	53	45	62	42	56	43	56	51	63	39	56	50	58	46	57	50	58	48	56	43	57	48	56	49	51	44	51	34
10...	61	44	60	33	65	33	56	46	61	37	56	50	64	43	54	49	58	45	54	38	56	46	50	44	55	41	52	34
11...	73	47	68	52	73	44	72	46	70	42	72	47	74	48	64	49	62	58	64	48	68	51	66	50	66	42	64	32
12...	57	43	63	50	61	40	61	44	58	47	61	49	59	49	60	40	62	39	49	29	58	38	59	36	53	37	62	34
13...	64	46	67	35	63	36	66	41	71	42	63	42	64	45	59	38	59	33	48	21	55	34	53	29	46	33	48	32
14...	78	53	66	57	66	49	74	59	76	57	79	59	80	58	70	55	65	56	52	31	68	52	65	51	46	37	47	36
15...	71	52	61	44	72	48	67	58	75	55	68	56	73	53	67	58	62	51	54	31	60	50	60	49	50	36	49	41
16...	73	56	72	55	74	51	66	57	72	57	68	59	73	58	66	56	66	52	62	38	65	50	64	52	62	47	61	39
17...	75	56	78	48	78	43	76	54	72	58	79	57	78	56	64	47	67	44	65	36	68	42	65	43	64	36	62	32
18...	82	58	78	52	83	50	81	60	79	56	78	60	83	56	80	58	74	56	73	39	81	48	78	46	68	40	67	32
19...	74	59	77	58	81	57	76	57	73	55	78	57	77	57	77	57	76	60	74	57	79	55	77	59	74	57	73	40
20...	64	49	71	49	67	46	68	55	65	53	66	56	67	50	72	54	71	48	64	36	68	48	69	46	69	39	73	42
21...	61	47	56	44	55	46	75	47	61	51	66	48	66	49	70	50	66	44	53	30	60	44	61	40	53	33	55	39
22...	49	42	50	44	53	43	50	44	53	41	48	43	52	44	57	44	65	43	53	44	60	45	53	45	45	40	43	34
23...	55	38	60	37	56	34	51	42	48	35	54	40	59	42	52	46	51	41	46	40	49	42	46	39	50	39	47	40
24...	60	45	60	37	61	38	61	42	54	40	61	42	61	42	61	45	60	43	55	30	59	39	57	43	52	38	53	36
25...	56	43	54	42	59	38	55	48	55	46	55	46	57	46	56	45	57	41	52	36	54	41	51	39	52	40	54	37
26...	55	39	57	44	50	35	59	45	59	39	65	42	65	42	53	43	54	41	46	28	52	35	49	34	45	36	43	32
27...	60	34	48	40	49	34	64	39	60	40	65	37	67	35	63	35	59	42	56	37	60	39	64	40	53	32	50	28
28...	41	28	40	32	39	29	42	34	43	30	42	34	41	31	42	33	43	31	38	30	43	34	44	32	44	32	46	30
29...	40	26	38	26	41	23	39	35	40	26	40	28	42	27	39	34	37	28	33	28	38	30	39	31	36	30	38	25
30...	52	31	48	31	51	29	48	33	52	33	51	31	54	29	44	32	45	28	41	25	43	30	42	29	39	30	38	22
31...	60	38	60	31	62	31	60	40	59	34	61	39	61	39	56	40	55	42	52	39	56	38	52	40	42	32	44	19
Mns	63.0	46.2	62.2	44.6	63.6	41.7	63.5	48.6	63.4	45.9	63.9	48.5	65.5	47.0	62.1	47.6	61.4	45.4	57.3	37.9	61.3	44.3	60.0	43.6	56.1	39.5	56.0	35.4