DESCRIPTION OF TABLES AND CHARTS.

Table I gives the data ordinarily needed for climatological studies for about 158 Weather Bureau stations making simultaneous observations at 8 a. m. and 8 p. m., daily, 75th meridian time, and for about 41 others making only one observation. The altitudes of the instruments above ground are also given.

Table II gives a record of precipitation, the intensity of which at some period of the storm's continuance equaled or exceeded the following rates:

Duration (minutes)	5	10	15	20	25	30	35	40	45	50	60
Rates per hour (inches)	3.00	1.80	1.40	1.20	1.08	1.00	0.94	0.90	0.87	0.84	0.80

It is impracticable to make this table sufficiently wide to accommodate on one line the record of accumulated falls that continue at an excessive rate for several hours. In this case *the record is broken at the end of each 50 minutes*, the accumulated amounts being recorded on successive lines until the excessive rate ends.

In cases where no storm of sufficient intensity to entitle it to a place in the full table has occurred the greatest precipitation of any single storm has been given, also the greatest hourly fall during that storm.

The tipping-bucket mechanism is *dismounted* and removed when there is danger of snow or water freezing in the same. Table II records this condition by entering an asterisk (*).

Table III gives, for about 30 stations of the Canadian Meteorological Service, the means of pressure and temperature, total precipitation and depth of snowfall, and the respective departures from normal values except in the case of snowfall.

Chart I.—Hydrographs for several of the principal rivers of the United States.

Chart II.—Tracks of centers of high areas; and

Chart III.—Tracks of centers of low areas. The roman numerals show the chronological order of the centers. The figures within the circles show the days of the month; the letters *a* and *p* indicate, respectively, the observations at 8 a. m. and 8 p. m., 75th meridian time. Within each circle is also given (Chart II) the last three figures of the highest barometric reading or (Chart III) the lowest reading reported at or near the center at that time, and in both cases as reduced to sea level and standard gravity.

Chart IV.—Temperature departures. This chart presents the departures of the monthly mean temperatures from the monthly normals. The normals used in computing the departures were computed for a period of 33 years (1873 to 1905) and are published in Weather Bureau Bulletin "R," Washington, 1908. Stations whose records were too short to justify the preparation of normals in 1908 have been provided with normals as adequate records became available, and all have been reduced to the 33-year interval 1873–1905. The shaded portions of the chart indicate areas of positive departures and unshaded portions indicate areas of negative departures. Generalized lines connect places having approximately equal departures of like sign. This chart of monthly temperature departures in the United States was first published in the MONTHLY WEATHER REVIEW for July, 1909.

Chart V.—Total precipitation. The scale of shades showing the depth is given on the chart. Where the monthly amounts are too small to justify shading and over sections of the country where stations are too widely separated or the topography is too diversified to warrant reasonable accuracy in shading, the actual depths are given for a limited number of representative stations. Amounts less than 0.005 inch are indicated by the letter T, and no precipitation by 0.

Chart VI.—Percentage of clear sky between sunrise and sunset. The average cloudiness at each Weather Bureau station is determined by numerous personal observations between sunrise and sunset. The difference between the observed cloudiness and 100 is assumed to represent the percentage of clear sky, and the values thus obtained are the basis of this chart. The chart does not relate to the nighttime.

Chart VII.—Isobars and isotherms at sea level and prevailing wind directions. The pressures have been reduced to sea level and standard gravity by the method described by Prof. Frank H. Bigelow on pages 13–16 of the REVIEW for January, 1902. The pressures have also been reduced to the mean of the 24 hours by the application of a suitable correction to the mean of the 8 a. m. and 8 p. m. readings at stations taking two observations daily, and to the 8 a. m. or the 8 p. m. observations, respectively, at stations taking but a single observation. The diurnal corrections so applied will be found in the Annual Report of the Chief of the Weather Bureau, 1900–1901, volume 2, Table 27, pages 140–164.

The isotherms on the sea-level plane have been constructed by means of the data summarized in chapter 8 of volume 2 of the annual report just mentioned. The correction, t_0–t, or temperature on the sea-level plane minus the station temperature as given by Table 48 of that report, is added to the observed surface temperature to obtain the adopted sea-level temperature.

The prevailing wind directions are determined from hourly observations at the great majority of the stations; a few stations having no self-recording wind-direction apparatus determine the prevailing direction from the daily or twice-daily observations only.

Chart VIII.—Total snowfall. This is based on the reports from regular and cooperative observers and shows the depth in inches and tenths of the snowfall during the month. In general, the depth is shown by lines inclosing areas of equal snowfall, but in special cases figures are also given. Chart VIII is published only when the general snow cover is sufficiently extensive to justify its preparation.

Chart IX.—Average values of pressure, temperature, and prevailing wind directions, and storm tracks over the North Atlantic Ocean, *for the corresponding month of last year*.

[Chart XLIV—121, illustrates text by Weightman, pp. 521-522; Charts XLIV—122 to 124, illustrate paper by W. G. Reed, p. 509.]

TABLE I.—*Climatological data for Weather Bureau stations, September, 1916.*

Districts and stations.	Elevation of instruments.			Pressure.			Temperature of the air.														Precipitation.			Wind.											
	Barometer above sea-level.	Thermometer above ground.	Anemometer above ground.	Station, reduced to mean of 24 hours.	Sealevel, reduced to mean of 24 hours.	Departure from normal.	Mean max.+mean min.÷2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew point.	Mean relative humidity.	Total.	Departure from normal.	Days with 0.01 inch or more.	Total movement.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.	Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.	Snow on ground at end of month.
	Ft.	Ft.	Ft.	In.	In.	In.	°F.	°F.	°F.		°F.	°F.		°F.	°F.	°F.	°F.	%	In.	In.		Miles.								0-10	In.	In.
New England.							60.8	+ 0.5										79	2.48	− 0.8										4.6		
Eastport	76	67	85	29.93	30.01	−0.02	55.8	+ 0.6	79	14	64	41	20	48	27	52	49	82	2.41	− 0.6	9	6,091	s.	30	nw.	30	12	10	8	5.2	0	0
Greenville	1,070	6	.....	28.85	30.02	.....	56.2	.....	81	13	66	35	11	46	37	.....	.....	.....	4.23	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0
Portland, Me.	103	82	117	29.93	30.05	.00	58.8	− 0.8	83	14	67	42	26	51	27	54	50	76	1.47	− 1.7	11	5,857	s.	28	se.	29	15	6	9	4.6	0	0
Concord	288	70	79	29.73	30.04	− .02	59.2	+ 0.1	87	14	71	36	20	48	35	.....	.....	.....	4.37	+ 1.2	8	3,412	se.	23	nw.	2	16	7	7	4.3	0	0
Burlington	404	11	48	29.58	30.01	− .05	60.2	+ 1.3	84	14	69	37	30	51	32	.....	.....	.....	4.06	+ 0.7	12	8,516	s.	36	s.	21	7	11	12	5.9	0	0
Northfield	876	12	60	29.10	30.04	− .02	55.4	+ 0.8	85	14	68	32	26	43	43	52	49	81	3.00	+ 0.2	11	5,096	s.	26	s.	29	10	6	14	6.1	0	0
Boston	125	115	188	29.91	30.05	− .02	65.0	+ 2.3	90	14	74	44	30	56	28	58	55	74	1.90	− 1.3	8	6,934	sw.	31	s.	15	14	12	4	3.9	0	0
Nantucket	12	14	90	30.05	30.06	− .02	63.5	+ 0.7	82	14	70	49	12	57	22	59	56	83	1.44	− 1.3	7	10,354	sw.	35	n.	30	15	11	4	4.4	0	0
Block Island	26	11	46	30.03	30.06	− .02	63.3	− 0.8	81	8	69	44	30	57	18	60	57	82	0.82	− 2.2	8	10,596	sw.	48	nw.	19	18	4	8	4.2	0	0
Narragansett Pier	.....	9	.....	.....	.....	.....	62.3	− 0.5	84	14	71	38	20	54	28	.....	.....	.....	1.65	.....	7	.....	sw.	.....	.....	.....	22	3	6	.....	0	0
Providence	160	215	251	29.88	30.05	− .02	63.4	+ 0.2	88	8	73	43	12	54	28	58	55	78	0.86	− 2.3	10	8,463	sw.	36	nw.	30	14	12	4	4.2	0	0
Hartford	159	122	140	29.88	30.05	− .02	63.4	+ 1.7	89	8	74	42	17	53	34	58	55	79	3.46	0	8	5,376	s.	27	s.	28	15	9	6	4.3	0	0
New Haven	106	117	155	29.94	30.06	− .01	64.3	+ 0.4	91	8	74	43	30	55	28	58	54	73	2.54	− 1.2	8	6,526	s.	38	s.	29	15	12	3	3.7	0	0
Middle Atlantic States.							65.9	− 0.7										73	3.12	− 0.1										4.0		
Albany	97	102	115	29.93	30.04	−0.03	63.2	+ 0.9	86	14	73	39	30	54	30	56	52	71	3.96	+ 0.8	10	5,831	s.	29	se.	29	18	5	7	3.8	0	0
Binghamton	871	10	69	29.12	30.05	− .02	61.9	+ 1.9	87	14	74	35	30	50	37	.....	.....	.....	4.05	+ 1.3	12	3,220	s.	20	n.	5	9	11	10	5.3	0	0
New York	314	414	454	29.73	30.06	− .02	66.0	− 0.5	89	8	74	44	30	58	24	59	54	72	2.98	− 0.6	9	11,703	s.	60	nw.	8	13	14	3	4.2	0	0
Harrisburg	374	94	104	29.69	30.09	+ .01	65.1	+ 0.2	89	8	75	43	30	55	28	57	52	70	6.50	+ 3.6	6	4,020	nw.	40	w.	8	16	8	6	3.9	0	0
Philadelphia	117	123	190	29.96	30.09	+ .01	68.5	+ 1.1	92	8	77	45	30	60	25	60	55	69	2.44	− 0.9	7	6,911	sw.	36	nw.	8	16	10	4	3.5	0	0
Reading	325	81	98	29.73	30.08	.....	65.9	.....	90	8	76	41	30	55	30	58	53	70	2.62	− 1.0	7	4,345	sw.	29	nw.	8	13	13	4	4.2	0	0
Scranton	805	111	119	29.22	30.07	.00	62.2	0.0	87	14	74	36	30	50	35	56	52	73	4.35	+ 1.5	10	4,306	sw.	24	n.	9	14	10	6	4.6	0	0
Atlantic City	52	37	48	30.03	30.08	+ .01	66.4	− 1.2	89	8	72	45	30	60	25	61	58	75	1.47	− 1.6	9	5,550	sw.	24	s.	29	15	10	5	3.7	0	0
Cape May	18	13	49	30.09	30.11	+ .04	66.5	− 2.5	90	8	74	44	30	59	22	62	.....	.....	5.29	+ 2.3	8	5,965	s.	30	nw.	29	16	10	4	3.7	0	0
Sandy Hook	22	10	57	30.04	30.06	.....	67.0	.....	90	8	74	49	30	60	22	60	57	74	1.29	.....	7	11,834	s.	56	nw.	8	15	12	3	3.7	0	0
Trenton	190	159	183	29.86	30.06	.....	66.1	.....	92	8	76	41	30	56	29	58	55	75	2.51	− 1.1	7	7,575	s.	39	s.	29	12	14	4	4.3	0	0
Baltimore	123	100	113	29.96	30.09	+ .01	67.6	− 1.0	94	8	77	46	30	58	27	60	56	70	1.82	− 2.0	7	6,460	s.	44	nw.	8	13	12	5	3.7	0	0
Washington	112	62	85	29.96	30.08	.00	66.6	− 1.5	93	8	78	41	20	55	33	59	56	77	2.57	− 1.0	7	3,818	s.	26	n.	30	16	8	6	3.8	0	0
Lynchburg	681	153	188	29.35	30.09	+ .01	66.8	− 1.6	92	7	79	38	20	54	38	58	55	74	2.55	− 1.1	9	4,139	n.	35	n.	7	21	7	2	3.5	0	0
Norfolk	91	170	205	29.99	30.09	+ .03	70.3	− 1.4	90	8	77	49	30	64	26	63	59	72	3.53	− 0.5	9	8,440	ne.	46	w.	8	15	7	8	4.3	0	0
Richmond	144	11	52	29.94	30.09	+ .02	68.2	− 2.6	93	8	79	42	20	57	31	60	57	76	2.01	− 1.4	8	5,174	ne.	31	nw.	7	19	4	7	3.3	0	0
Wytheville	2,293	49	55	27.75	30.10	+ .03	61.4	− 2.2	86	7	73	34	20	50	40	56	53	84	3.03	− 0.3	8	3,096	nw.	23	sw.	28	15	10	5	3.9	0	0
South Atlantic States.							72.2	− 0.8										77	2.92	− 1.8										3.9		
Asheville	2,255	70	84	27.78	30.10	+0.03	63.9	− 1.1	88	7	75	40	30	53	36	56	54	78	1.72	− 1.3	8	4,682	nw.	31	e.	10	15	10	5	4.0	0	0
Charlotte	773	153	161	29.25	30.08	+ .01	70.0	− 0.7	93	7	79	45	20	61	25	61	56	68	0.88	− 2.3	5	6,946	ne.	28	nw.	8	16	11	3	3.2	0	0
Hatteras	11	12	50	30.05	30.06	.00	73.2	− 1.5	85	7	78	58	30	68	18	68	66	81	2.73	− 2.6	9	9,496	ne.	44	n.	29	12	4	1	3.9	0	0
Manteo	12	4	46	.....	.....	.....	71.2	.....	94	2	79	49	26	63	.....	.....	.....	.....	5.00	− 0.3	5	.....	e.	.....	.....	.....	19	5	6	.....	0	0
Raleigh	376	103	110	29.69	30.08	+ .01	69.4	− 1.2	93	7	79	45	30	60	29	62	58	73	1.42	− 1.9	9	4,997	ne.	25	ne.	30	15	9	6	3.6	0	0
Wilmington	78	81	91	29.98	30.06	+ .01	72.0	− 1.1	92	7	81	51	30	64	27	66	64	83	4.57	− 0.7	8	5,035	ne.	26	ne.	5	15	7	8	4.1	0	0
Charleston	48	11	92	29.99	30.04	.00	75.1	− 1.1	89	7	82	54	30	68	23	69	66	78	2.76	− 2.7	8	7,455	ne.	31	ne.	10	19	9	2	3.0	0	0
Columbia, S. C.	351	41	57	29.69	30.06	+ .01	73.0	− 0.7	92	7	83	48	21	63	34	64	59	70	2.23	− 1.2	6	4,654	ne.	22	ne.	12	15	11	4	3.6	0	0
Augusta	180	62	77	29.86	30.05	.00	74.1	− 0.3	93	6	84	51	21	64	32	66	63	77	3.45	− 0.3	5	3,742	ne.	20	ne.	11	16	9	5	3.6	0	0
Savannah	65	150	194	29.97	30.04	+ .01	75.2	− 0.2	91	6	83	54	30	67	26	68	66	79	2.10	− 3.5	7	7,360	ne.	35	e.	10	10	14	6	4.9	0	0
Jacksonville	43	209	245	29.96	30.01	+ .01	76.8	− 0.5	90	24	83	62	21	70	26	70	68	81	5.25	− 2.8	11	8,608	ne.	36	ne.	8	9	15	6	5.4	0	0
Florida Peninsula.							80.5	− 0.5										78	4.52	− 2.8										5.2		
Key West	22	10	64	29.91	29.93	−0.01	81.7	− 0.8	89	11	87	72	18	76	16	75	73	75	4.38	− 2.4	16	6,269	e.	35	sw.	15	9	16	5	4.8	0	0
Miami	25	71	79	29.93	29.96	.....	79.6	− 1.9	86	17	85	70	30	74	15	74	72	79	4.81	− 4.8	20	5,641	e.	29	s.	14	6	11	13	6.2	0	0
Sand Key	23	39	72	29.89	29.92	− .02	81.0	.....	87	17	84	71	15	78	15	76	74	77	2.59	.....	13	8,670	e.	42	s.	13	10	16	4	4.5	0	0
Tampa	35	79	96	29.94	29.97	.00	79.6	+ 1.3	92	6	88	66	24	72	23	72	69	79	6.28	− 1.1	12	4,455	ne.	27	ne.	4	8	15	7	5.5	0	0
East Gulf States.							74.6	0.0										74	2.83	− 0.9										3.4		
Atlanta	1,174	190	216	28.85	30.07	+0.02	71.4	− 0.7	91	7	81	46	30	62	28	62	58	68	2.84	− 0.7	4	6,530	e.	36	nw.	29	19	6	5	3.7	0	0
Macon	370	78	87	29.66	30.05	+ .02	73.4	+ 0.5	93	7	84	48	30	63	31	65	62	73	2.51	− 0.9	6	3,962	ne.	25	nw.	29	19	6	5	3.3	0	0
Thomasville	273	49	58	29.72	30.01	.00	76.0	− 0.8	92	2	86	49	30	66	30	67	63	73	3.29	− 1.0	7	3,107	ne.	15	se.	9	15	9	6	4.1	0	0
Pensacola	56	140	182	29.95	30.01	+ .02	76.8	− 1.1	90	2	84	51	30	70	22	69	66	76	2.58	− 2.6	11	8,362	ne.	44	s.	10	14	10	6	4.1	0	0
Anniston	741	9	57	29.30	30.08	+ .05	72.0	+ 0.7	93	7	84	45	30	60	36	.....	.....	.....	2.38	− 1.2	8	3,565	se.	20	e.	10	22	8	0	2.5	0	0
Birmingham	700	11	48	29.32	30.07	+ .04	73.6	− 0.4	94	7	85	44	30	62	32	63	60	73	2.63	− 0.9	9	4,266	n.	25	s.	10	16	10	4	3.5	0	0
Mobile	57	125	161	29.95	30.01	+ .01	77.0	+ 0.5	93	9	86	50	30	68	27	69	66	76	6.68	+ 1.7	9	6,653	n.	33	se.	9	14	11	5	3.7	0	0
Montgomery	223	100	112	29.80	30.04	+ .02	75.0	− 0.8	93	7	85	45	30	65	26	66	62	70	1.66	− 1.2	8	4,263	ne.	23	n.	2	15	13	2	3.5	0	0
Corinth	469	6	.....	.....	.....	.....	71.5	.....	95	7	86	39	30	58	44	.....	.....	.....	0.92	.....	6	.....	se.	.....	.....	.....	14	11	5	.....	0	0
Jackson	304	5	.....	.....	.....	.....	75.3	.....	97	2	88	43	30	62	41	.....	.....	.....	2.80	.....	12	.....	ne.	.....	.....	.....	16	12	2	.....	0	0
Meridian	375	85	93	29.64	30.03	+ .01	73.6	+ 0.9	92	2	85	44	30	62	36	65	62	74	1.48	− 2.0	6	3,397	ne.	19	ne.	24	23	6	1	2.3	0	0
Vicksburg	247	65	74	29.77	30.05	+ .03	74.4	− 0.4	92	10	84	45	30	65	26	66	63	77	3.88	+ 0.5	4	3,981	ne.	33	se.	25	22	5	3	2.8	0	0
New Orleans	51	76	84	29.95	30.00	+ .02	79.3	+ 1.3	94	9	87	56	30	72	22	71	68	75	3.13	− 1.7	10	4,030	ne.	22	ne.	29	15	12	3	3.5	0	0
West Gulf States.							76.7	+ 0.6										69	2.44	− 1.0										3.4		
Shreveport	249	77	93	29.76	30.02	+0.02	76.2	+ 0.5	95	4	87	46	30	65	32	66	61	68	1.46	− 1.8	4	4,359	s.	22	e.	11	19	9	2	3.1	0	0
Bentonville	1,303	11	44	28.68	30.03	+ .01	69.0	+ 0.1	93	5	81	34	29	57	35	.....	.....	.....	4.34	+ 0.9	9	2,387	s.	23	s.	27	19	9	2	3.2	0	0
Fort Smith	457	79	94	29.54	30.01	.00	74.0	+ 1.3	96	5	85	43	29	63	31	64	59	67	3.61	+ 0.4	6	5,560	e.	41	nw.	27	18	10	2	3.1	0	0
Little Rock	357	139	147	29.67	30.04	+ .01	72.8	− 0.3	94	7	82	45	30	64	29	64	60	71	1.95	− 1.3	10	5,338	e.	50	nw.	21	17	8	5	3.3	0	0
Brownsville	57	3	40	.....	.....	.....	80.0	.....	93	28	88	57	30	71	26	.....	.....	.....	3.21	.....	11	.....	se.	.....	.....	.....	.....	.....	.....	.....	.....	.....
Corpus Christi	20	69	77	29.96	29.98	+ .03	79.4	+ 0.4	89	9	85	65	30	74	16	73	70	77	1.15	− 2.8	7	8,637	se.	36	ne.	29	8	16	6	5.0	0	0
Dallas	512	109	117	29.47	30.01	.....	77.6	.....	96	3	88	45	29	67	29	.....	.....	.....	1.31	.....	6	6,134	se.	31	n.	28	17	11	2	3.4	0	0
Forth Worth	670	106	114	29.28	29.98	− .01	77.4	+ 0.7	96	4	88	46	30	66	31	64	56	57	0.73	− 2.2	5	6,882	s.	35	n.	28	14	10	6	3.7	0	0
Galveston	54	106	114	29.95	30.01	+ .03	79.4	0.0	89	10	84	60	29	74	17	72	69	72	4.24	− 1.2	7	6,886	s.	33	n.	28	22	6	2	2.5	0	0
Houston	138	111	121	29.86	30.00	.....	78.6	+ 0.1	94	8	88	51	30	70	24	.....	.....	.....	2.45	.....	6	4,642	se.	28	se.	25	14	14	2	3.3	0	0
Palestine	510	64	72	29.47	30.00	+ .01	77.0	+ 2.3	95	8	87	46	30	67	28	67	63	72	3.02	− 0.2	4	4,401	s.	26	se.	8	18	10	2	3.6	0	0
San Antonio	701	119	132	29.26	29.98	+ .03	78.0	+ 0.9	94	8	88	52	30	68	27	67	63	69	3.78	+ 0.8	7	4,866	sw.	40	ne.	25	20	9	1	2.9	0	0
Taylor	582	55	63	29.42	30.03	+ .06	77.2	+ 0.3	97	8	88	45	30	66	32	.....	.....	.....	0.50	− 2.5	4	5,108	s.	25	nw.	28	10	19	1	4.2	0	0

TABLE I.—*Climatological data for Weather Bureau stations, September, 1916*—Continued.

Districts and stations.	Elevation of instruments: Barometer above sea-level.	Elevation of instruments: Thermometer above ground.	Elevation of instruments: Anemometer above ground.	Pressure: Station, reduced to mean of 24 hours.	Pressure: Sealevel, reduced to mean of 24 hours.	Pressure: Departure from normal.	Temperature of the air: Mean max.+mean min.÷2.	Temperature of the air: Departure from normal.	Temperature of the air: Maximum.	Temperature of the air: Date.	Temperature of the air: Mean maximum.	Temperature of the air: Minimum.	Temperature of the air: Date.	Temperature of the air: Mean minimum.	Temperature of the air: Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew point.	Mean relative humidity.	Precipitation: Total.	Precipitation: Departure from normal.	Precipitation: Days with 0.01 inch or more.	Wind: Total movement.	Wind: Prevailing direction.	Wind: Maximum velocity: Miles per hour.	Wind: Maximum velocity: Direction.	Wind: Maximum velocity: Date.	Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.	Snow on ground at end of month.
	Ft.	Ft.	Ft.	In.	In.	In.	°F.	°F.	°F.		°F.	°F.		°F.	°F.	°F.	°F.	%	In.	In.		Miles.								0-10	In.	In.
Ohio Valley and Tennessee.							**66.6**	**− 1.4**										**70**	**2.72**	**0.0**										**3.7**		
Chattanooga	762	189	213	29.28	30.09	+0.03	70.9	− 0.3	92	7	81	46	30	61	32	61	56	66	1.62	− 1.6	7	4,835	s.	28	s.	8	17	11	2	3.8	0	0
Knoxville	996	93	100	29.04	30.08	+ .02	68.6	− 0.8	92	7	80	43	30	58	31	61	57	73	2.84	0	7	2,849	ne.	20	sw.	28	18	7	5	3.4	0	0
Memphis	399	70	97	29.66	30.08	+ .05	72.0	− 0.8	91	10	81	45	30	63	26	63	59	69	1.07	− 2.0	6	5,310	n.	32	nw.	28	19	6	5	3.3	0	0
Nashville	546	168	191	29.51	30.09	+ .03	69.2	− 2.3	92	6	80	42	30	58	37	60	56	68	1.92	− 1.8	7	5,680	ne.	45	nw.	22	19	6	5	3.3	0	0
Lexington	989	193	230	29.04	30.09	+ .02	66.7	− 1.2	89	7	76	39	30	57	28	.....	.....	.....	2.75	+ 0.3	6	8,517	sw.	30	sw.	27	21	5	4	2.6	0	0
Louisville	525	219	255	29.51	30.09	+ .03	68.3	− 1.6	92	7	78	40	30	58	31	59	53	65	4.12	+ 1.5	6	7,554	s.	46	s.	27	19	5	6	3.1	0	0
Evansville	431	139	175	29.60	30.07	+ .01	69.4	− 0.3	92	6	80	41	30	59	30	61	56	70	2.57	− 0.1	4	7,305	s.	48	s.	27	16	11	3	3.6	0	0
Indianapolis	822	194	230	29.19	30.07	+ .01	65.4	− 1.3	90	7	76	39	30	55	29	56	50	65	2.26	− 0.8	8	8,227	s.	46	sw.	27	14	11	5	3.9	0	0
Terre Haute	575	96	129	29.43	30.05	.....	65.9	.....	92	6	77	38	30	55	33	57	52	68	1.24	.....	8	6,755	s.	46	s.	27	9	18	3	5.0	0	0
Cincinnati	628	11	51	29.40	30.08	+ .01	65.2	+ 0.5	90	7	76	36	30	54	33	57	52	69	3.29	+ 1.0	9	4,627	s.	28	sw.	27	19	7	4	3.6	0	0
Columbus	824	173	222	29.21	30.08	+ .01	63.9	− 2.0	90	7	75	35	30	53	31	55	50	67	1.54	− 1.0	9	7,597	sw.	42	w.	6	17	6	7	3.5	0	0
Dayton	899	181	216	29.10	30.05	.....	64.4	− 3.0	91	7	75	36	30	54	32	56	52	71	5.90	+ 3.4	10	6,914	sw.	39	sw.	27	16	10	4	3.8	0	0
Pittsburgh	842	353	410	29.17	30.07	− .01	64.2	− 1.9	87	6	74	38	19	55	28	56	50	66	1.63	− 0.8	9	7,591	sw.	32	sw.	21	13	9	8	4.4	0	0
Elkins	1,940	41	50	28.08	30.12	+ .04	60.3	− 1.6	86	6	74	31	30	46	43	53	51	86	4.87	+ 2.0	9	2,166	w.	22	w.	8	13	9	8	4.5	0	0
Parkersburg	638	77	84	29.44	30.10	+ .02	64.2	− 1.9	90	7	76	35	30	53	35	57	54	76	3.18	+ 0.5	11	3,567	se.	19	nw.	28	17	8	5	4.1	0	0
Lower Lake Region.							**62.9**	**− 0.2**										**68**	**2.56**	**− 0.2**										**5.1**		
Buffalo	767	247	280	29.20	30.02	−0.04	62.0	− 0.9	80	27	68	38	30	56	22	56	51	69	1.38	− 1.8	11	12,271	sw.	50	sw.	8	11	6	13	5.5	0	0
Canton	448	10	61	29.51	29.98	.....	60.1	+ 0.8	86	7	70	31	30	50	32	.....	.....	.....	3.42	+ 0.6	13	7,259	sw.	32	sw.	29	9	10	11	5.6	0	0
Oswego	335	76	91	29.65	30.01	− .05	62.8	+ 0.1	90	7	71	38	30	55	27	55	51	70	1.98	− 0.8	15	7,032	s.	26	sw.	21	8	13	9	5.3	0	0
Rochester	523	97	113	29.47	30.04	− .02	62.8	+ 0.9	90	7	72	36	30	54	30	55	50	68	1.01	− 1.3	12	5,535	sw.	26	w.	16	12	7	11	5.1	0	0
Syracuse	597	97	113	29.40	30.05	− .02	62.2	+ 0.6	87	7	71	36	30	54	28	55	51	72	4.12	+ 1.3	15	7,673	s.	29	sw.	23	8	15	7	5.4	0	0
Erie	714	130	116	29.27	30.03	− .03	63.3	− 0.6	88	7	71	40	30	56	27	56	52	69	4.47	+ 1.0	15	10,244	s.	54	sw.	7	9	11	10	5.4	0	0
Cleveland	762	190	201	29.23	30.05	− .01	63.7	− 0.6	92	7	72	41	19	56	31	56	52	71	2.84	− 0.4	11	9,970	s.	42	w.	7	9	14	7	5.0	0	0
Sandusky	629	62	103	29.36	30.04	− .02	64.6	− 0.7	95	7	73	41	16	56	36	56	50	64	2.03	− 0.6	8	8,466	sw.	42	nw.	7	9	14	7	5.0	0	0
Toledo	628	208	243	29.37	30.05	− .01	64.8	+ 0.7	92	7	74	40	30	56	31	55	49	61	2.16	− 0.2	10	9,831	sw.	48	sw.	7	14	12	4	4.0	0	0
Fort Wayne	856	113	124	29.13	30.05	.....	62.8	− 2.7	91	7	74	34	30	52	34	55	49	66	1.96	.....	9	6,483	sw.	40	sw.	27	11	13	6	4.9	0	0
Detroit	730	218	245	29.25	30.04	− .02	63.1	0.0	90	7	71	38	30	55	24	55	50	68	2.74	+ 0.3	7	7,565	sw.	68	nw.	7	9	15	6	4.9	0	0
Upper Lake Region.							**58.2**	**− 1.2**										**76**	**3.82**	**+ 0.7**										**5.9**		
Alpena	609	13	92	29.32	29.99	−0.04	56.9	− 0.4	85	12	66	29	30	48	29	52	50	81	1.50	− 2.0	11	8,196	nw.	35	w.	15	6	14	10	5.5	T.	0
Escanaba	612	54	60	29.30	29.96	− .05	54.0	− 2.9	72	11	61	32	29	47	24	50	48	81	5.07	+ 1.5	15	5,969	s.	31	s.	30	8	6	16	6.2	0	0
Grand Haven	632	54	92	29.32	30.00	− .04	60.0	− 1.1	81	11	68	35	30	52	28	54	50	73	4.28	+ 1.1	14	8,219	s.	37	n.	4	13	7	10	4.3	0	0
Grand Rapids	707	70	87	29.25	30.02	− .03	61.4	− 0.4	87	12	70	37	30	52	31	54	50	72	2.43	− 0.7	12	4,053	s.	20	nw.	4	5	12	13	6.2	0	0
Houghton	684	62	99	29.20	29.92	− .08	54.5	− 1.6	77	9	61	37	28	48	28	.....	.....	.....	6.17	+ 2.6	18	6,750	e.	35	nw.	3	6	6	18	7.1	0.3	0
Lansing	878	11	62	29.08	30.02	.....	60.4	− 0.9	88	7	72	30	19	48	39	53	49	75	2.17	− 0.4	10	3,916	sw.	20	sw.	27	8	15	7	5.4	0	0
Ludington	637	60	66	29.30	29.99	.....	58.2	.....	76	6	65	38	29	52	28	54	50	76	2.95	.....	14	7,916	s.	34	s.	20	11	7	12	5.3	0	0
Marquette	734	77	111	29.16	29.97	− .03	55.1	− 1.7	78	9	62	35	28	48	25	50	47	78	5.74	+ 2.2	16	7,741	w.	37	s.	30	5	7	18	7.1	T.	0
Port Huron	638	70	120	29.32	30.01	− .05	60.8	− 0.1	91	7	70	31	30	52	30	55	50	71	1.23	− 1.4	8	7,784	sw.	30	sw.	22	10	14	6	5.0	0	0
Saginaw	641	48	82	29.32	30.01	.....	60.8	.....	90	6	72	32	30	50	33	53	49	71	1.51	− 1.6	9	6,367	s.	29	s.	27	6	12	12	6.2	0	0
Sault Sainte Marie	614	11	61	29.28	29.97	− .05	54.4	+ 0.1	77	9	62	32	30	47	29	51	48	86	9.35	+ 5.9	20	6,107	nw.	29	nw.	17	4	6	20	7.8	0	0
Chicago	823	140	310	29.15	30.03	− .01	64.4	− 0.2	89	7	72	39	29	56	26	56	50	64	2.24	− 0.8	8	8,839	sw.	37	nw.	5	14	7	9	4.3	0	0
Green Bay	617	109	144	29.30	29.96	− .06	58.2	− 0.9	83	6	67	33	16	50	29	53	49	77	3.27	+ 0.2	13	7,641	sw.	43	w.	5	6	10	14	6.5	0	0
Milwaukee	681	119	133	29.26	30.00	− .03	60.2	− 1.3	87	11	68	36	29	52	29	53	49	74	5.21	+ 2.3	11	6,772	sw.	30	s.	20	16	3	11	4.7	0	0
Duluth	1,133	11	47	28.73	29.95	− .03	53.0	− 3.7	76	19	62	30	29	44	30	47	45	81	4.25	+ 0.7	10	8,678	sw.	36	w.	14	6	8	16	7.1	T.	0
North Dakota.							**55.4**	**− 1.6**										**72**	**1.30**	**− 0.1**										**4.4**		
Moorhead	940	8	57	28.92	29.93	−0.03	56.4	− 0.2	90	3	67	29	29	46	42	51	48	85	2.46	+ 0.2	12	5,742	nw.	32	se.	9	14	9	7	4.2	0	0
Bismarck	1,674	8	57	28.17	29.95	+ .01	56.8	− 0.3	93	3	70	21	15	44	48	48	42	68	0.70	− 0.5	8	6,955	nw.	40	nw.	20	15	9	6	4.1	0	0
Devils Lake	1,482	11	44	28.31	29.88	− .06	55.0	− 0.6	92	3	67	21	15	43	42	47	41	68	0.89	− 0.5	9	7,647	sw.	38	nw.	20	13	8	9	4.8	T.	0
Grand Forks	835	12	89	.....	.....	.....	54.8	.....	89	3	67	28	17	43	41	49	.....	.....	1.19	.....	9	.....	se.	38	sw.	10	11	11	8	.....	0	0
Williston	1,872	41	48	27.93	29.91	− .02	54.2	− 5.3	90	3	67	28	22	41	40	46	41	68	1.26	+ 0.4	7	6,453	w.	39	w.	30	12	11	7	4.7	0	0
Upper Mississippi Valley.							**62.8**	**− 1.3**										**73**	**3.71**	**+ 0.2**										**4.7**		
Minneapolis	918	10	208	28.96	29.93	.....	59.8	.....	91	5	69	35	29	50	31	.....	.....	.....	2.42	− 1.2	13	7,986	s.	36	s.	10	8	6	16	6.5	0	0
St. Paul	837	201	236	29.04	29.95	−0.04	59.2	− 1.1	90	5	68	33	29	50	33	.....	.....	.....	1.81	− 1.6	13	8,397	nw.	45	s.	10	9	14	7	5.2	T.	0
La Crosse	714	11	48	29.20	29.97	− .04	59.7	− 2.0	90	6	70	31	29	50	35	.....	.....	.....	4.75	+ 0.6	11	3,223	s.	20	w.	20	9	6	15	6.2	0	0
Madison	974	70	78	28.97	30.00	− .03	59.4	− 1.7	85	6	68	33	16	51	28	54	50	74	5.73	+ 2.6	13	6,568	s.	28	sw.	26	8	9	13	5.9	0	0
Wausau	1,247	4	.....	28.64	29.97	.....	55.2	.....	80	6	65	28	18	46	34	.....	.....	.....	5.99	.....	17	.....	se.	.....	.....	.....	8	8	14	6.2	T.	0
Charles City	1,015	10	49	28.91	29.98	− .02	59.5	− 2.2	90	4	71	29	29	48	38	53	51	81	6.19	+ 3.4	13	4,746	nw.	48	nw.	6	8	14	8	5.5	0	0
Davenport	606	71	79	29.35	30.01	− .02	64.0	− 0.7	92	5	74	33	29	53	32	56	51	71	2.82	− 0.3	10	5,286	sw.	27	w.	21	15	8	7	4.2	0	0
Des Moines	861	84	97	29.08	29.98	− .04	64.3	− 0.7	94	5	75	31	29	53	34	56	50	56	1.72	− 1.4	7	5,555	sw.	35	sw.	16	15	8	7	4.0	0	0
Dubuque	698	81	96	29.27	30.02	− .01	62.2	− 1.4	89	4	72	35	29	52	33	55	51	72	6.19	+ 2.6	12	4,453	s.	24	sw.	5	11	14	5	4.6	0	0
Keokuk	614	64	78	29.35	30.02	− .01	65.2	− 1.2	93	5	76	34	29	55	33	58	55	75	3.41	− 0.6	6	5,275	s.	29	sw.	21	18	9	3	3.3	0	0
Cairo	356	87	93	29.67	30.04	− .01	69.6	− 0.6	92	6	79	43	29	60	29	62	58	74	2.07	− 0.4	7	5,503	s.	36	w.	27	16	10	4	3.6	0	0
Peoria	609	11	45	29.38	30.05	+ .01	63.6	− 0.7	94	5	75	34	29	52	35	56	53	77	3.73	+ 0.6	6	4,321	s.	25	ne.	5	16	10	4	3.6	0	0
Springfield, Ill	644	10	91	29.36	30.03	− .02	65.7	− 0.7	93	5	76	38	29	55	32	57	52	71	3.35	0.0	8	5,724	s.	29	nw.	5	11	14	5	4.5	0	0
Hannibal	534	74	109	29.47	30.04	+ .01	66.2	− 1.7	94	5	77	35	29	55	36	.....	.....	.....	2.77	− 0.8	7	5,981	sw.	28	sw.	20	18	7	5	3.3	0	0
St. Louis	567	265	303	29.44	30.04	.00	68.3	− 1.7	94	5	77	41	29	59	25	60	56	70	2.69	− 0.2	5	8,922	s.	56	s.	27	19	5	6	3.5	0	0
Missouri Valley.							**64.8**	**− 0.5**										**67**	**2.48**	**− 0.2**										**3.5**		
Columbia, Mo	781	11	84	29.21	30.04	+0.01	66.8	− 1.0	96	5	78	34	29	55	36	.....	.....	.....	4.43	+ 1.6	4	4,855	s.	28	w.	28	15	6	9	4.1	0	0
Kansas City	963	161	181	28.98	30.00	− .02	67.8	+ 0.3	95	5	77	39	29	58	28	58	53	65	4.96	+ 1.2	8	7,929	s.	41	s.	26	20	8	2	2.9	0	0
St. Joseph	967	11	49	28.97	30.00	.....	67.3	.....	97	5	78	33	29	56	33	58	53	68	3.51	.....	6	5,777	se.	28	nw.	28	17	8	5	3.4	0	0
Springfield, Mo	1,324	98	104	28.66	30.05	+ .02	68.2	+ 0.3	92	5	79	35	29	57	30	58	53	66	1.19	− 2.6	7	7,210	s.	34	s.	27	19	9	2	2.8	0	0
Iola	984	11	50	28.98	30.01	.00	68.4	− 0.2	95	5	80	32	29	57	34	.....	.....	.....	5.56	+ 2.2	9	4,370	s.	24	sw.	26	18	9	3	3.0	0	0
Topeka	983	85	101	.....	.....	.....	68.2	− 0.1	97	5	79	34	29	57	33	.....	.....	.....	2.03	− 1.5	6	7,281	s.	35	w.	7	16	10	4	3.5	0	0
Drexel	1,299	10	53	28.60	29.98	.....	63.5	.....	92	6	76	28	29	51	36	55	51	73	0.75	.....	4	7,340	s.	33	sw.	6	15	10	5	3.9	.....	.....
Lincoln	1,189	11	84	28.72	29.97	− .02	65.3	+ 0.1	97	4	78	29	29	53	37	55	49	65	1.03	− 1.6	5	7,556	s.	40	n.	28	17	10	3	3.4	0	0
Omaha	1,105	115	122	28.82	29.98	− .02	65.4	− 0.4	95	6	76	34	29	55	32	56	50	66	1.76	− 1.3	6	5,737	s.	29	nw.	28	15	11	4	3.8	0	0
Valentine	2,598	47	54	27.28	29.98	+ .02	60.2	− 2.1	93	1	75	28	15	45	53	50	43	64	0.32	− 1.5	7	6,821	nw.	36	s.	8	21	7	2	3.1	0	0
Sioux City	1,135	94	164	28.76	29.97	− .01	62.2	− 1.9	96	4	73	31	29	51	36	55	51	73	3.41	+ 0.9	12	8,961	s.	47	nw.	4	17	10	3	3.4	0	0
Huron	1,306	59	74	28.57	29.97	+ .01	59.2	− 0.4	89	4	72	28	15	46	46	51	47	73	1.78	+ 0.1	7	8,106	se.	42	nw.	7	13	11	6	4.5	0	0
Pierre	1,572	70	75	28.30	29.96	+ .01	62.2	− 0.6	93	3	75	31	15	49	54	52	45	61	1.06	0	5	6,618	nw.	47	n.	6	18	8	4	2.9	0	0
Yankton	1,233	49	57	28.64	29.95	− .03	62.8	− 0.5	98	4	75	32	29	51	40	.....	.....	.....	2.89	+ 0.4	9	5,716	se.	36	nw.	13	10	15	5	4.7	0	0

TABLE I.—*Climatological data for Weather Bureau stations, September, 1916*—Continued.

Districts and stations.	Elevation of instruments.			Pressure.			Temperature of the air.												Precipitation.			Wind.										
	Barometer above sea-level.	Thermometer above ground.	Anemometer above ground.	Station, reduced to mean of 24 hours.	Sealevel, reduced to mean of 24 hours.	Departure from normal.	Mean max.+mean min.÷2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.	Mean wet thermometer.	Mean temperature of the dew point.	Mean relative humidity.	Total.	Departure from normal.	Days with 0.01 inch or more.	Total movement.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.	Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Total snowfall.	Snow on ground at end of month.
	Ft.	Ft.	Ft.	In.	In.	In.	°F.	°F.	°F.		°F.	°F.		°F.	°F.	°F.	°F.	%	In.	In.		Miles.								0-10	In.	In.
Northern Slope.							56.2	− 1.1										57	0.95	− 0.2										3.6		
Billings	3,140	5					55.6		94	8	73	23	28	38	56				1.15								14	12	4			
Havre	2,505	11	44	27.31	29.93	−0.01	55.4	− 2.2	86	2	69	26	28	42	44	48	42	69	1.42	+ 0.4	12	5,505	sw.	36	sw.	3	16	6	8	4.5	0	0
Helena	4,110	87	114	25.82	29.98	+ .01	55.2	− 1.0	92	2	68	28	28	43	39	45	38	58	1.69	+ 0.6	8	6,411	sw.	45	sw.	26	10	10	10	4.9	T.	0
Kalispell	2,962	11	34	26.93	29.97	+ .01	53.0	− 0.9	85	2	66	29	14	40	39	46	40	67	1.63	+ 0.3	8	3,159	w.	24	e.	2	12	11	7	4.4	0	0
Miles City	2,371	26	48	27.45	29.98	+ .03	60.8	− 0.4	102	2	75	34	15	46	46	50	44	66	1.35	+ 0.4	7	4,016	n.	28	w.	4	20	8	2	3.0	0	0
Rapid City	3,259	50	58	26.60	29.99	+ .03	59.6	+ 0.5	95	3	74	33	14	45	40	47	34	45	0.07	− 1.2	5	6,450	w.	40	n.	13	21	5	4	2.8	0	0
Cheyenne	6,088	84	101	24.06	29.96	.00	55.8	− 1.4	83	8	70	26	28	42	37	44	34	51	1.00	+ 0.1	5	8,557	nw.	46	nw.	27	18	6	6	3.5	T.	0
Lander	5,372	60	68	24.68	29.98	+ .02	55.6	+ 0.4	89	2	74	28	28	38	46	42	28	42	0.13	− 0.9	3	3,833	sw.	32	n.	26	20	7	3	3.1	T.	0
Sheridan	3,790	10	47	26.11	29.99		55.2		95	2	73	25	15	37	51	43	34	57	0.56		6	3,629	nw.	40	nw.	27	21	6	3	2.9	T.	0
Yellowstone	6,200	11	48	23.93	30.01	+ .04	49.0	− 4.4	80	1	64	21	14	34	44	38	28	51	0.71	− 0.3	8	5,541	s.	42	sw.	2	12	10	8	4.4	1.1	0
North Platte	2,821	11	51	27.10	30.00	+ .03	62.8	− 0.4	94	4	78	30	29	48	52	51	45	63	0.70	− 0.8	5	4,589	s.	30	n.	13	20	5	5	2.9	0	0
Middle Slope.							68.6	− 0.8										59	1.61	− 0.6										3.2		
Denver	5,202	106	113	24.78	29.97	+0.01	61.4	− 1.3	90	8	76	33	29	47	45	47	36	47	0.80	− 0.1	8	5,169	se.	32	nw.	27	16	10	4	3.2	0	0
Pueblo	4,685	80	86	25.32	29.96	.00	63.2	− 1.2	92	4	79	30	29	48	48	48	39	49	T.	− 0.6	0	4,452	nw.	33	nw.	5	23	7	0	2.1	0	0
Concordia	1,392	50	58	28.54	30.00	+ .01	67.2	− 0.9	100	5	80	32	29	55	35	56	50	63	2.70	+ 0.1	5	6,027	s.	32	e.	7	12	14	4	4.1	0	0
Dodge	2,509	11	51	27.43	30.00	+ .02	67.0	− 1.2	96	4	80	34	29	54	38	56	50	67	1.15	− 0.6	7	7,507	s.	35	se.	9	13	16	1	3.8	0	0
Wichita	1,358	139	158	28.56	29.97	− .03	69.3	− 0.5	94	10	80	39	29	58	31	59	52	61	0.86	− 2.3	6	9,536	s.	48	s.	26	14	15	1	3.1	0	0
Altus	1,410	5	0				74.2		98	10	88	40	29	61	38				3.27		6		se.				21	4	5		0	0
Muskogee	652	4					74.5		100	5	88	36	29	61	36				1.56		6		s.				23	4	3		0	0
Oklahoma	1,214	10	47	28.74	30.00	+ .01	72.2	+ 0.1	94	7	84	39	29	60	32	61	56	67	2.54	− 0.2	8	9,250	s.	43	n.	28	20	9	1	2.6	0	0
Southern Slope.							72.1	− 0.7										61	1.28	− 1.3										3.1		
Abilene	1,738	10	52	28.19	29.97	+0.01	75.6	+ 1.4	97	9	88	44	29	64	34	61	53	55	0.88	− 2.3	4	6,982	s.	32	ne.	28	20	5	5	3.2	0	0
Amarillo	3,676	10	49	26.30	29.98	+ .02	67.8	+ 0.1	91	10	81	40	29	55	38	57	52	66	1.76	− 0.6	8	8,174	s.	35	n.	14	18	12	0	2.7	0	0
Del Rio	944	64	71	28.97	29.94	.00	76.7	− 2.2	91	9	84	54	30	69	25				2.11	− 0.4	7	6,140	se.	29	n.	12	17	11	2	3.4	0	0
Roswell	3,566	75	85	26.39	29.95	+ .03	68.2	− 2.1	89	26	82	41	29	55	43	57	50	63	0.37	− 1.9	3	4,615	s.	39	nw.	10	15	15	0	3.0	0	0
Southern Plateau.							70.0	− 0.6										47	0.92	− 0.1										2.4		
El Paso	3,762	110	133	26.20	29.88	0.00	73.0	+ 0.3	90	22	84	50	29	62	32	58	48	50	0.55	− 0.9	5	6,997	e.	35	e.	28	21	6	3	2.8	0	0
Santa Fe	7,013	57	66	23.33	29.91	− .02	60.8	+ 0.2	82	7	72	39	29	49	31	48	55	53	1.45	− 0.2	9	4,975	e.	26	nw.	18	13	16	1	3.8	0	0
Flagstaff	6,908	8	57	23.43	29.92	+ .03	55.4	− 0.1	77	7	71	30	24	40	43	45			1.78		11		w.	38	sw.	22	18	10	2			
Phoenix	1,108	76	81	28.69	29.81	.00	80.9	− 0.5	104	1	95	55	28	67	40	66	58	52	1.66	+ 0.6	4	3,345	e.	27	se.	4	25	1	4	2.0	0	0
Yuma	141	9	54	29.63	29.77	− .01	84.0	+ 0.1	109	1	99	59	26	69	44	67	57	48	0.01	− 0.2	1	3,361	sw.	25	sw.	19	23	4	3	2.2	0	0
Independence	3,910	11	42	25.96	29.90	+ .04	65.6	− 3.5	90	1	83	38	12	48	46	50	32	33	0.07	0	1	4,206	se.	33	se.	2	26	2	2	1.2	0	0
Middle Plateau.							62.6	0.0										37	0.42	− 0.2										1.8		
Reno	4,532	79	81	25.48	29.92	−0.03	61.7	+ 2.0	89	14	79	33	11	44	46	46	32	41	0.35	+ 0.1	3	4,261	w.	32	w.	2	24	4	2	1.5	0	0
Tonopah	6,090	12	20	24.11	29.92		63.4		82	1	74	39	11	53	30	45	27	29	0.17	− 0.3	3	6,193	se.	34	nw.	9	26	3	1	1.1	0	0
Winnemucca	4,344	18	56	25.62	29.98	+ .05	59.1	− 1.4	92	1	79	26	11	39	55	43	28	39	0.26	− 0.1	1	3,958	ne.	28	sw.	2	27	1	2	1.4	0	0
Modena	5,479	10	43	24.65	29.93	+ .01	60.4	+ 0.2	85	13	78	32	11	42	47	44	28	37	0.71	− 0.4	4	7,658	w.	52	sw.	17	21	9	0	2.5	0	0
Salt Lake City	4,360	147	189	25.62	29.93	− .02	65.3	+ 0.2	90	1	77	39	11	54	32	49	35	36	0.50	− 0.4	2	5,369	se.	42	w.	22	20	8	2	2.0	0	0
Grand Junction	4,602	82	96	25.40	29.94	− .01	65.5	− 0.9	88	4	79	42	28	52	35	49	36	39	0.50	− 0.4	4	5,538	se.	37	sw.	5	19	10	1	2.6	0	0
Northern Plateau.							60.8	− 0.4										45	0.25	− 0.5										3.4		
Baker	3,471	48	53	26.46	30.03	+0.04	55.6	− 1.4	88	1	71	31	28	40	42	45	36	53	0.28	− 0.5	5	4,458	se.	18	nw.	22	19	5	6	3.0	0	0
Boise	2,739	78	86	27.16	29.99	+ .02	62.5	+ 0.6	95	1	77	37	10	48	38	49	35	40	0.05	− 0.4	1	3,418	nw.	22	w.	9	21	5	4	2.5	0	0
Lewiston	757	40	48	29.18	29.99	+ .01	63.0	− 0.5	96	1	78	36	28	48	45				0.45	− 0.2	6	2,021	e.	22	w.	7	17	5	8	3.8	0	0
Pocatello	4,477	60	68	25.48	29.94	− .02	60.2	− 0.5	90	1	75	29	28	45	42	45	29	35	0.01	− 0.9	1	6,311	se.	44	sw.	3	17	11	2	2.9	0	0
Spokane	1,929	101	110	27.95	29.99	+ .01	59.6	+ 0.8	90	1	73	35	28	47	41	48	37	52	0.56	− 0.4	6	4,049	ne.	29	sw.	26	14	7	9	4.5	0	0
Walla Walla	991	57	65	28.92	29.99	− .01	64.2	− 1.2	92	1	76	40	28	52	34	53	43	47	0.15	− 0.8	5	3,351	s.	28	w.	26	17	6	7	3.8	0	0
North Pacific Coast Region.							59.9	+ 1.1										76	0.66	− 1.8										4.9		
North Head	211	11	56	29.83	30.05	+0.02	56.7	+ 0.5	80	14	61	45	30	52	23	54	51	87	1.29	− 0.6	7	8,869	nw.	38	nw.	30	11	8	11	5.2	0	0
North Yakima	1,076	4					61.8		88	1	76	35	28	48	38				0.19		2		nw.				22	6	2		0	0
Seattle	125	215	250	29.93	30.06	+ .05	58.8	+ 0.9	78	15	67	44	29	51	28	53	48	72	0.70	− 1.2	5	5,046	n.	30	sw.	3	10	9	11	5.2	0	0
Tacoma	213	113	120	29.84	30.06	+ .04	58.6	+ 1.0	80	15	68	43	27	50	33	54	50	74	0.50	− 2.0	3	3,944	n.	26	ne.	13	11	11	8	5.1	0	0
Tatoosh Island	109	7	57	29.95	30.05	+ .04	53.4	+ 0.4	73	14	58	44	30	48	24	51	49	88	0.97	− 5.2	8	8,196	s.	49	ne.	14	13	7	10	4.5	0	0
Medford	1,425	4	80				64.8		96	14	84	36	26	46	51				0.37		4		e.				17	4	9		0	0
Portland, Oreg.	153	68	106	29.87	30.03	.00	62.5	+ 1.9	85	15	72	45	30	53	34	55	49	65	0.71	− 1.1	4	3,711	nw.	25	ne.	14	8	12	10	5.4	0	0
Roseburg	510	9	57	29.48	30.03	+ .01	62.6	+ 2.1	93	15	76	42	28	49	44	55	49	68	0.59	− 0.4	5	1,746	n.	12	n.	30	15	10	5	3.8	0	0
Middle Pacific Coast Region.							63.9	+ 0.5										60	0.89	+ 0.1										3.1		
Eureka	62	73	89	29.95	30.02	+0.01	55.8	+ 0.9	75	11	61	44	20	50	26	53	50	85	0.38	− 0.7	3	4,150	n.	39	n.	26	11	9	10	5.1	0	0
Mount Tamalpais	2,375	11	18	27.53	29.97	+ .03	65.6	− 0.5	89	14	73	46	25	58	23	51	39	47	1.29	+ 0.7	4	10,735	w.	72	nw.	8	23	4	3	2.0	0	0
Point Reyes Light	490	7	18	29.42	29.93		55.8	− 0.3	80	27	61	45	12	51	27				2.36		4	13,106	nw.	64	nw.	8	10	9	11	5.7	0	0
Red Bluff	332	50	56	29.55	29.90	− .03	73.1	− 0.8	98	19	87	48	17	59	42	56	40	37	0.08	− 0.7	2	3,808	se.	30	nw.	26	24	4	2	1.7	0	0
Sacramento	69	106	117	29.84	29.91	+ .02	70.2	+ 1.1	96	13	85	48	24	56	38	57	46	53	0.16	− 0.2	2	5,590	s.	29	n.	26	24	3	3	1.5	0	0
San Francisco	155	209	213	29.79	29.96	+ .02	62.2	+ 2.9	87	27	71	50	20	54	31	55	52	79	1.20	+ 0.9	3	6,132	sw.	32	sw.	29	18	7	5	3.3	0	0
San Jose	141	12	110	29.82	29.97		64.8	+ 0.1	93	13	79	44	18	51	42				0.78	+ 0.4	2	3,715	nw.	24	s.	30	22	5	3	2.5	0	0
South Pacific Coast Region.							66.5	− 0.8										71	0.84	+ 0.6										2.9		
Fresno	327	89	98	29.54	29.89	+0.02	73.2	− 1.1	100	15	88	52	26	58	39	57	44	42	0.38	+ 0.1	2	5,504	nw.	32	nw.	21	26	3	1	1.0	0	0
Los Angeles	338	159	191	29.56	29.92	+ .04	65.2	− 1.3	83	29	74	53	8	56	27	58	55	80	0.77	+ 0.7	1	3,458	sw.	14	sw.	22	19	8	3	3.3	0	0
San Diego	87	62	70	29.82	29.91	+ .02	64.4	− 2.5	80	29	69	56	14	60	15	60	59	87	0.25	+ 0.2	1	4,199	nw.	19	nw.	12	14	13	3	4.2	0	0
San Luis Obispo	201	32	40	29.74	29.96	+ .03	63.3	+ 1.8	96	13	76	45	10	50	42	56	52	76	1.94	+ 1.5	2	2,685	nw.	22	w.	25	18	9	3	3.1	0	0
West Indies.																																
San Juan, P. R.	82	8	54	29.85	29.93	−0.01	80.0		89	12	85	72	5	75	16				8.52	+ 1.7	20	5,958	se.	44	e.	5	5	17	8	5.6	0	0
Panama.																																
Balboa Heights	118	7	97	29.74	29.86		79.4		90	13	85	71	17	73	18	75	74	91	8.02	+ 0.4	21	4,207	nw.	29	ne.	16	0	7	23	8.2	0	0
Colon	25	5	71	29.83	29.86		80.8		90	20	87	74	17	75	16	76	74	87	10.41	− 2.1	25	4,881	se.	31	ne.	3	0	7	23	8.4	0	0

TABLE II.—*Accumulated amounts of precipitation for each 5 minutes, for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes, or 0.80 in 1 hour, during September, 1916, at all stations furnished with self-registering gages.*

Stations.	Date.	Total duration. From—	Total duration. To—	Total amount of precipitation.	Excessive rate. Began—	Excessive rate. Ended—	Amount before excessive rate began.	5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
Abeline, Tex.	1-2			0.51														.32			
Albany, N. Y.	15	D. N. a. m.	12:50 p. m.	2.06	3:31 a. m.	4:49 a. m.	0.11	0.09	0.21	0.35	0.42	0.51	0.63	0.79	0.96	1.00	1.05	1.10	1.42		
Alpena, Mich.	[1] 31-1			0.57														0.17			
Amarillo, Tex.	23-24			0.99														0.72			
Anniston, Ala.	28	3:08 p. m.	5:20 p. m.	1.26	4:12 p. m.	4:57 p. m.	0.11	0.17	0.43	0.47	0.48	0.53	0.70	0.79	0.86	1.14					
Asheville, N. C.	28	7:35 p. m.	11:25 p. m.	1.14	8:01 p. m.	8:23 p. m.	0.15	0.12	0.29	0.44	0.52	0.55									
Atlanta, Ga.	28	5:55 p. m.	8:35 p. m.	1.45	6:54 p. m.	8:00 p. m.	0.06	0.10	0.27	0.38	0.42	0.55	0.69	0.83	0.99	1.07	1.16	1.26	1.39		
Atlantic City, N. J.	15			0.35														0.24			
Augusta, Ga.	14	6:50 p. m.	D. N. p. m.	2.09	7:41 p. m.	8:21 p. m.	0.05	0.16	0.36	0.52	0.70	0.89	1.00	1.08	1.20	1.22					
					9:59 p. m.	10:07 p. m.	1.72	0.20	0.33												
Baker, Oreg.	2			0.07														0.04			
Baltimore, Md.	22			0.54														0.37			
Bentonville, Ark.	[1] 31-1	11:20 p. m.	7:40 a. m.	1.08	6:26 a. m.	7:01 a. m.	0.33	0.09	0.17	0.28	0.40	0.55	0.63	0.72							
	1	7:10 p. m.	7:50 p. m.	0.50	7:15 p. m.	7:37 p. m.	0.01	0.08	0.20	0.36	0.46	0.49									
	27	5:40 p. m.	7:25 p. m.	0.87	5:47 p. m.	6:07 p. m.	0.01	0.28	0.55	0.67	0.72										
Binghamton, N. Y.	14-15			1.34														0.61			
Birmingham, Ala.	18	12:41 p. m.	2:15 p. m.	0.75	12:47 p. m.	12:58 p. m.	0.01	0.21	0.39	0.40											
Bismarck, N. Dak.	24-25			0.14														0.13			
Block Island, R. I.	8-9			0.43														0.30			
Boise, Idaho	9			0.05														0.04			
Boston, Mass.	5-6			0.62														0.23			
Buffalo, N. Y.	7-8			0.65														0.49			
Burlington, Vt.	29	11:00 a. m.	11:50 a. m.	0.59	11:09 a. m.	11:40 a. m.	0.02	0.10	0.14	0.24	0.37	0.47	0.55	0.57							
Cairo, Ill.	27-28			0.74														0.40			
Canton, N. Y.	22-23			1.06														0.77			
Charles City, Iowa	6	5:54 p. m.	9:40 p. m.	1.60	5:55 p. m.	6:23 p. m.	0.01	0.09	0.22	0.60	0.89	0.94	1.03								
	26	2:54 p. m.	10:00 p. m.	1.65	5:31 p. m.	5:49 p. m.	0.29	0.08	0.54	0.79	0.82										
Charleston, S. C.	15	4:22 p. m.	5:45 p. m.	1.42	4:22 p. m.	5:15 p. m.	0.00	0.06	0.08	0.19	0.42	0.50	0.52	0.94	1.23	1.27	1.34	1.40			
Charlotte, N. C.	15			0.31														0.27			
Chattanooga, Tenn.	28			0.63														0.47			
Cheyenne, Wyo.	10-11			0.75														0.20			
Chicago, Ill.	5	5:45 p. m.	7:58 p. m.	0.55	5:48 p. m.	6:08 p. m.	0.01	0.17	0.31	0.37	0.43										
Cincinnati, Ohio	6	3:33 p. m.	4:50 p. m.	0.79	4:18 p. m.	4:34 p. m.	0.03	0.12	0.45	0.67	0.75										
Cleveland, Ohio	7			0.47														0.31			
Columbia, Mo.	27	2:15 a. m.	D. N. a. m.	1.41	3:22 a. m.	4:22 a. m.	0.07	0.15	0.16	0.32	0.58	0.72	0.76	0.78	0.84	0.87	0.89	1.06			
Columbia, S. C.	29			1.26														0.67			
Columbus, Ohio	1			0.34														0.27			
Concord, N. H.	15			2.39														0.48			
Concordia, Kans.	7	11:43 a. m.	1:22 p. m.	1.58	11:52 a. m.	12:27 p. m.	0.01	0.08	0.19	0.42	0.85	1.02	1.25	1.44							
Corpus Christi, Tex.	12			0.57														0.53			
Davenport, Iowa	5	4:38 p. m.	7:15 p. m.	0.67	6:24 p. m.	6:37 p. m.	0.14	0.31	0.40	0.44											
Dayton, Ohio	5	3:03 p. m.	4:41 p. m.	1.85	3:44 p. m.	4:16 p. m.	0.04	0.21	0.59	0.87	1.21	1.75	1.79								
		4:57 p. m.	9:40 p. m.	1.66	7:16 p. m.	8:00 p. m.	0.65	0.20	0.24	0.32	0.52	0.64	0.74	0.81	0.90	0.96					
Del Rio, Tex.	12	10:30 a. m.	4:25 p. m.	1.77	11:18 a. m.	11:32 a. m.	0.11	0.10	0.32	0.51											
					12:14 p. m.	12:46 p. m.	0.88	0.05	0.15	0.29	0.39	0.53	0.60	0.64							
Denver, Colo.	10-11			0.68														0.19			
Des Moines, Iowa	26			0.42														0.33			
Detroit, Mich.	7	8:07 p. m.	8:26 p. m.	0.61	8:07 p. m.	8:19 p. m.	0.00	0.16	0.54	0.61											
	27	6:15 p. m.	10:42 p. m.	1.06	6:20 p. m.	6:27 p. m.	0.02	0.25	0.29												
Devils Lake, N. Dak.	25			0.22														0.20			
Dodge City, Kans.	10-11			0.71														0.20			
Dubuque, Iowa	4	D. N. a. m.	8:35 a. m.	2.02	5:07 a. m.	5:41 a. m.	0.08	0.15	0.34	0.64	0.78	0.94	1.00	1.06							
					7:51 a. m.	8:14 a. m.	1.32	0.16	0.35	0.48	0.61	0.66									
	5	11:31 a. m.	12:02 p. m.	0.63	11:45 a. m.	11:57 a. m.	0.08	0.13	0.46	0.53											
	† 5	12:27 p. m.	1:08 p. m.	0.82	12:35 p. m.	1:05 p. m.	0.01	0.05	0.11	0.16	0.27	0.66	0.81								
	11-12	9:46 p. m.	D. N. a. m.	0.74	9:49 p. m.	10:32 p. m.	0.01	0.18	0.25	0.27	0.36	0.43	0.46	0.54	0.62	0.66					
Duluth, Minn.	5	6:00 a. m.	11:55 p. m.	0.79	11:06 a. m.	11:27 a. m.	0.05	0.19	0.42	0.61	0.69	0.72									
Eastport, Me.	16			1.06														0.25			
Elkins, W. Va.	8	8:00 p. m.	10:00 p. m.	0.56	9:08 p. m.	9:36 p. m.	0.06	0.09	0.21	0.33	0.40	0.44	0.49								
El Paso, Tex.	1			0.42														0.37			
Erie, Pa.	7	6:38 p. m.	8:05 p. m.	1.10	6:40 p. m.	7:30 p. m.	0.01	0.08	0.19	0.25	0.39	0.42	0.42	0.45	0.81	0.98	1.08				
	7-8	10:10 p. m.	11:15 a. m.	1.32	5:23 a. m.	5:38 a. m.	0.62	0.28	0.38	0.48											
Escanaba, Mich.	4	9:50 a. m.	1:20 p. m.	1.09	11:22 a. m.	11:40 a. m.	0.22	0.10	0.24	0.36	0.46										
Eureka, Cal.	2			0.13														0.06			
Evansville, Ind.	1	3:40 p. m.	6:00 p. m.	1.96	3:42 p. m.	3:49 p. m.	0.01	0.31	0.33												
					4:53 p. m.	5:25 p. m.	0.58	0.15	0.37	0.65	0.83	1.06	1.31	1.36							
Flagstaff, Ariz.	8-9			1.06														*			
Fort Smith, Ark.	7	2:57 p. m.	5:16 p. m.	1.38	3:41 p. m.	4:22 p. m.	0.13	0.06	0.15	0.20	0.41	0.54	0.75	0.91	1.09	1.15					
	27	8:23 p. m.	10:10 p. m.	0.69	8:31 p. m.	8:47 p. m.	0.06	0.22	0.44	0.59	0.62										
Fort Wayne, Ind.	5-6	8:40 p. m.	D. N. a. m.	0.92	9:36 p. m.	9:56 p. m.	0.01	0.15	0.45	0.58	0.63										
Fort Worth, Tex.	24-25			0.62														0.36			
Fresno, Cal.	30-1 [2]			0.31														0.09			
Galveston, Tex.	12-13	11:35 p. m.	D. N. a. m.	0.68	11:39 p. m.	11:55 p. m.	0.01	0.25	0.52	0.62	0.64										
	24	12:50 p. m.	3.15 p. m.	1.85	1:49 p. m.	2:25 p. m.	0.33	0.13	0.27	0.58	0.71	0.91	1.27	1.41	1.43						
Grand Haven, Mich.	4-5	7:39 p. m.	D. N. a. m.	1.82	7:40 p. m.	8:25 p. m.	T.	0.14	0.36	0.52	0.74	0.95	1.17	1.32	1.39	1.47					
Grand Junction, Colo.	8-9			0.28														0.17			
Grand Rapids, Mich.	4	8:12 p. m.	9:45 p. m.	0.63	8:15 p. m.	8:31 p. m.	0.01	0.14	0.34	0.47	0.50										
Green Bay, Wis.	26	10:24 a. m.	10:50 a. m.	0.33	10:29 a. m.	10:39 a. m.	0.02	0.15	0.31												
Hannibal, Mo.	27			1.74														0.44			
Harrisburg, Pa.	14-15	8:20 p. m.	7:50 a. m.	4.90														*			
Hartford, Conn.	15	12:20 p. m.	1:22 p. m.	1.06	12:34 p. m.	1:08 p. m.	0.04	0.15	0.35	0.44	0.58	0.73	0.89	1.01							
Hatteras, N. C.	5-6			2.04														*			
Havre, Mont.	2			0.18														0.18			
Helena, Mont.	3	6:07 a. m.	12:15 p. m.	0.86	6:18 a. m.	6:32 a. m.	0.04	0.21	0.40	0.48											
Houghton, Mich.	3-4	9:05 p. m.	9:40 a. m.	2.04	4:14 a. m.	4:36 a. m.	0.59	0.23	0.33	0.37	0.47	0.51									
Houston, Tex.	13	3:18 p. m.	10:20 p. m.	1.29	5:10 p. m.	5:24 p. m.	0.62	0.17	0.29	0.36											
	24	11:42 a. m.	12:15 p. m.	0.58	11:48 a. m.	12:06 p. m.	0.01	0.16	0.38	0.50	0.57										
Huron, S. Dak.	6	8:05 p. m.	D. N. p. m.	0.71	8:13 p. m.	8:27 p. m.	0.03	0.19	0.40	0.48											
Independence, Cal.	30			0.07														0.03			
Indianapolis, Ind.	6	7:07 p. m.	9:15 p. m.	0.69	7:12 p. m.	7:39 p. m.	0.01	0.09	0.14	0.22	0.38	0.54	0.56								
	27	7:07 p. m.	11:15 p. m.	1.02	7:38 p. m.	8:28 p. m.	0.02	0.13	0.26	0.35	0.39	0.42	0.50	0.60	0.61	0.70	0.80				
Iola, Kans.	11	6:26 p. m.	8:04 p. m.	1.20	7:13 p. m.	7:37 p. m.	0.02	0.51	0.76	0.95	1.10	1.16									
	11	8:25 p. m.	9:28 p. m.	1.81	8:27 p. m.	9:14 p. m.	0.01	0.19	0.45	0.79	1.02	1.08	1.12	1.31	1.47	1.70	1.80				
	11-12	10:45 p. m.	D. N. a. m.	1.42	11:39 p. m.	12:30 a. m.	0.22	0.14	0.23	0.37	0.36	0.60	0.68	0.72	0.85	0.91	1.14	1.19			
Jacksonville, Fla.	8	12:13 p. m.	3:12 p. m.	0.64	1:15 p. m.	1:24 p. m.	0.15	0.21	0.39												
	9	2:00 p. m.	4:00 p. m.	0.82	2:12 p. m.	2:24 p. m.	0.01	0.21	0.57	0.71											
	12	2:20 p. m.	9:30 p. m.	1.99	6:03 p. m.	7:30 p. m.	0.31	0.10	0.21	0.32	0.37	0.42	0.62	0.63	0.63	0.63	0.83	0.88	1.32	1.46	
	17	D. N. a. m.	D. N. a. m.	0.65	2:11 a. m.	2:27 a. m.	0.12	0.15	0.31	0.45	0.47										
Kalispell, Mont.	9			0.29														0.19			
Kansas City, Mo.	26-27	10:05 p. m.	3:20 a. m.	1.49	1:33 a. m.	2:04 a. m.	0.17	0.05	0.13	0.26	0.50	0.65	0.76	0.79							
					2:40 a. m.	3:00 a. m.	0.98	0.09	0.25	0.40	0.50										

[1] August 31. [2] October 1. * Self-register not working. † Record partly estimated. ‡ No precipitation during the month.

TABLE II.—*Accumulated amounts of precipitation for each 5 minutes, for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any five minutes, or 0.80 in 1 hour, during September, 1916, at all stations furnished with self-registering gages*—Continued.

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive rate began.	Depths of precipitation (in inches) during periods of time indicated.													
		From—	To—		Began—	Ended—		5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
Keokuk, Iowa	11	6:30 p. m.	8:10 p. m.	1.23	6:43 p. m.	7:27 p. m.	0.01	0.10	0.21	0.25	0.32	0.40	0.65	0.82	1.01	1.10					
Key West, Fla	4	5:40 p. m.	7:05 p. m.	0.78	6:13 p. m.	6:30 p. m.	0.02	0.17	0.48	0.70	0.74										
	7	11:05 a. m.	12:15 p. m.	0.52	11:39 a. m.	12:04 p. m.	0.01	0.07	0.09	0.16	0.31	0.51									
	15	D. N. p. m.	D. N. p. m.	0.52	10:27 p. m.	10:43 p. m.	0.01	0.22	0.40	0.49	0.55										
	17	D. N. p. m.	D. N. p. m.	0.64	11:16 p. m.	11:37 p. m.	0.01	0.21	0.40	0.52	0.58	0.61									
Knoxville, Tenn	18	12:08 p. m.	12:35 p. m.	0.55	12:13 p. m.	12:29 p. m.	0.01	0.14	0.39	0.50	0.54										
La Crosse, Wis	6	6:36 p. m.	D. N. p. m.	0.79	6:41 p. m.	6:55 p. m.	0.01	0.26	0.37	0.46											
	26	3:45 p. m.	9:35 p. m.	2.01	5:26 p. m.	5:51 p. m.	0.04	0.23	0.43	0.63	0.93	1.15									
Lander, Wyo	9			0.04														0.04			
Lansing, Mich	27			1.34														0.44			
Lewiston, Idaho	7–8			0.21														0.08			
Lexington, Ky	14			0.40														0.33			
Lincoln, Nebr	5			0.44														0.29			
Little Rock, Ark	21	4:45 p. m.	6:50 p. m.	0.47	6:17 p. m.	6:30 p. m.	0.09	0.20	0.29	0.38											
Los Angeles, Cal	30			0.77														0.56			
Louisville, Ky	1–2	1:41 p. m.	D. N. a. m.	2.38	1:34 a. m.	2:37 a. m.	1.12	0.06	0.16	0.26	0.37	0.45	0.51	0.64	0.74	0.77	0.84	1.05	1.21		
Ludington, Mich	27			0.89														0.27			
Lynchburg, Va	8	3:55 p. m.	4:25 p. m.	0.36	4:14 p. m.	4:23 p. m.	0.01	0.29	0.35												
Macon, Ga	3	3:11 p. m.	4:06 p. m.	0.39	3:14 p. m.	3:24 p. m.	0.01	0.18	0.33												
	14–15	D. N. p. m.	D. N. a. m.	1.03	11:36 p. m.	12:00 p. m.	0.30	0.17	0.28	0.39	0.58	0.66									
Madison, Wis	5	12:38 p. m.	2:55 p. m.	0.94	12:50 p. m.	1:10 p. m.	0.01	0.20	0.42	0.64	0.75										
	6–7	10:45 p. m.	D. N. a. m.	1.73	10:58 p. m.	11:33 p. m.	0.02	0.20	0.35	0.43	0.49	0.58	0.64	0.72							
					12:21 a. m.	12:38 a. m.	0.90	0.15	0.23	0.29	0.46										
Marquette, Mich	6–7	6:04 p. m.	6:00 a. m.	2.43	6:39 p. m.	7:09 p. m.	0.04	0.45	0.74	0.96	1.10	1.21	1.27								
					8:24 p. m.	8:42 p. m.	1.47	0.18	0.28	0.35	0.41										
Memphis, Tenn	22			0.73														0.32			
Meridian, Miss	†8	3:40 p. m.	6:05 p. m.	0.68	3:48 p. m.	4:17 p. m.	0.03	0.07	0.19	0.31	0.41	0.49	0.54								
Miami, Fla	15	11:41 a. m.	11:50 a. m.	0.28	11:43 a. m.	11:48 a. m.	0.01	0.25													
	19	1:55 p. m.	6:35 p. m.	0.86	2:07 p. m.	2:26 p. m.	0.01	0.09	0.26	0.40	0.51										
	30	3:15 p. m.	6:45 p. m.	0.92	3:22 p. m.	3:46 p. m.	0.01	0.16	0.31	0.65	0.81	0.87									
Milwaukee, Wis	6–7	11:55 p. m.	7:20 a. m.	2.61	2:31 a. m.	3:11 a. m.	0.64	0.22	0.48	0.56	0.60	0.66	0.72	0.83	0.95						
					5:35 a. m.	5:45 a. m.	1.98	0.24	0.41												
Minneapolis, Minn	12			0.70														0.27			
Mobile, Ala	2–3	8:03 p. m.	D. N. a. m.	2.96	8:12 p. m.	8:48 p. m.	0.01	0.10	0.24	0.33	0.49	0.65	0.83	0.90	0.93						
					10:16 p. m.	10:44 p. m.	0.97	0.28	0.68	1.23	1.57	1.82	1.90								
	10–11	11:40 a. m.	D. N. a. m.	1.08	12:55 p. m.	1:27 p. m.	0.03	0.22	0.40	0.49	0.56	0.64	0.69	0.71							
	28	D. N. a. m.	8:30 a. m.	1.24	5:11 a. m.	5:37 a. m.	0.27	0.05	0.11	0.19	0.35	0.45	0.49								
					7:54 a. m.	8:06 a. m.	0.87	0.24	0.30	0.34											
Modena, Utah	30			0.56														0.30			
Montgomery, Ala	2	4:00 p. m.	5:20 p. m.	0.65	4:17 p. m.	4:42 p. m.	0.09	0.07	0.20	0.37	0.44	0.55									
Moorhead, Minn	9–10			1.16														0.48			
Mount Tamalpais, Cal	21–22			0.68														0.31			
Nantucket, Mass	30			0.54														0.30			
Nashville, Tenn	14	10:15 a. m.	10:40 a. m.	0.40	10:15 a. m.	10:26 a. m.	0.00	0.15	0.38	0.40											
New Haven, Conn	29			0.94														0.33			
New Orleans, La	4	3:16 p. m.	4:20 p. m.	0.66	3:16 p. m.	3:35 p. m.	0.00	0.22	0.40	0.59	0.64										
	5	8:50 a. m.	9:35 a. m.	0.51	9:06 a. m.	9:20 a. m.	0.08	0.11	0.30	0.41											
	11	11:05 p. m.	12:40 p. m.	1.03	11:37 a. m.	12:20 p. m.	0.11	0.12	0.20	0.21	0.25	0.36	0.47	0.62	0.47	0.82					
New York, N. Y	29	3:42 p. m.	9:25 p. m.	0.76	3:47 p. m.	4:02 p. m.	T.	0.22	0.36	0.47											
Norfolk, Va	5–6	10:15 p. m.	6:30 a. m.	0.88	1:30 a. m.	1:46 a. m.	0.18	0.13	0.29	0.41	0.44										
	29	2:40 p. m.	4:45 p. m.	0.76	2:52 p. m.	3:21 p. m.	0.01	0.12	0.27	0.31	0.48	0.58	0.65								
Northfield, Vt	15			1.08														0.60			
North Head, Wash	7–8			0.45														0.16			
North Platte, Nebr	9			0.46														0.40			
Oklahoma, Okla	7	8:35 p. m.	9:05 p. m.	0.55	8:40 p. m.	8:54 p. m.	0.02	0.14	0.33	0.51											
Omaha, Nebr	10–11			1.18														0.36			
Oswego, N. Y	2			0.29														0.24			
Palestine, Tex	8	2:10 p. m.	3:20 p. m.	1.44	2:15 p. m.	3:03 p. m.	0.01	0.21	0.39	0.50	0.65	0.78	0.95	1.10	1.22	1.36	1.40				
	13	1:00 p. m.	7:20 p. m.	1.15	1:07 p. m.	1:35 p. m.	0.01	0.17	0.35	0.61	0.83	0.96	1.04								
Parkersburg, W. Va	7	3:40 a. m.	5:50 a. m.	0.78	4:52 a. m.	5:22 a. m.	0.06	0.13	0.24	0.29	0.45	0.55	0.68								
	14	3:34 p. m.	4:01 p. m.	0.48	3:37 p. m.	3:47 p. m.	0.01	0.29	0.45												
	28	4:12 p. m.	7:10 p. m.	0.72	4:38 p. m.	4:52 p. m.	0.01	0.28	0.57	0.62											
Pensacola, Fla	2	9:25 p. m.	10:40 p. m.	0.80	9:47 p. m.	10:06 p. m.	0.02	0.09	0.33	0.51	0.67										
Peoria, Ill	5–6	8:17 p. m.	5:00 a. m.	1.35	8:37 p. m.	9:05 p. m.	0.01	0.33	0.45	0.52	0.70	0.79	0.84								
	12	3:43 p. m.	5:30 p. m.	0.85	3:51 p. m.	4:15 p. m.	0.03	0.15	0.33	0.49	0.50	0.59									
Philadelphia, Pa	8	1:58 p. m.	4:00 p. m.	1.44	2:53 p. m.	3:40 p. m.	0.30	0.20	0.24	0.39	0.46	0.54	0.72	0.89	1.02	1.08	1.11				
Phoenix, Ariz	9	12:40 p. m.	1:20 p. m.	0.47	12:58 p. m.	1:10 p. m.	0.02	0.09	0.38	0.44											
Pierre, S. Dak	6	5:55 p. m.	6:58 p. m.	0.64	6:01 p. m.	6:13 p. m.	T.	0.25	0.45	0.53											
Pittsburgh, Pa	28–29			0.58														0.30			
Pocatello, Idaho	22			0.01														0.01			
Point Reyes Light, Cal	30	10:30 a. m.	7:30 p. m.	1.59	2:55 p. m.	3:52 p. m.	0.18	0.10	0.18	0.28	0.40	0.47	0.50	0.52	0.56	0.64	0.72	0.82			
Port Huron, Mich	21			0.24														0.21			
Portland, Me	15–16			0.65														0.33			
Portland, Oreg	2			0.19														0.16			
Providence, R. I	15–16			0.38														0.15			
Pueblo, Colo	5			T.														T.			
Raleigh, N. C	15	2:05 p. m.	3:00 p. m.	0.58	2:11 p. m.	2:18 p. m.	0.02	0.33	0.40												
Rapid City, S. Dak	6			0.02														0.02			
Reading, Pa	15			1.08														0.40			
Red Bluff, Cal	30			0.06														0.03			
Reno, Nev	21–22			0.33														0.07			
Richmond, Va	7			0.34														0.34			
Rochester, N. Y	7			0.26														0.21			
Roseburg, Oreg	2–3			0.38														0.20			
Roswell, N. Mex	12			0.30														0.24			
Sacramento, Cal	21			0.15														0.11			
Saginaw, Mich	27			0.66														0.31			
St. Joseph, Mo	11–12	5:40 p. m.	D. N. a. m.	1.13	1:27 a. m.	1:48 a. m.	0.15	0.28	0.45	0.51	0.59	0.62									
St. Louis, Mo	7	1:57 p. m.	7:24 p. m.	0.88	1:57 p. m.	2:23 p. m.	0.00	0.18	0.28	0.37	0.53	0.59	0.63								
	27	4:08 p. m.	7:45 p. m.	1.11	4:27 p. m.	4:37 p. m.	0.02	0.28	0.81												
St. Paul, Minn	6			0.66														0.20			
Salt Lake City, Utah	22			0.43														0.30			
San Antonio, Tex	12	3:50 p. m.	7:50 p. m.	1.00	4:00 p. m.	4:32 p. m.	0.01	0.17	0.34	0.46	0.59	0.65	0.71	0.74							
	25	2:31 a. m.	5:18 a. m.	2.20	2:56 a. m.	3:14 a. m.	0.04	0.15	0.30	0.41	0.44										
					3:57 a. m.	4:55 a. m.	0.66	0.15	0.36	0.64	0.78	0.90	1.01	1.12	1.23	1.32	1.40	1.52			
San Diego, Cal	30			0.25														0.13			
Sand Key, Fla	7			0.84														0.39			
Sandusky, Ohio	27–28			0.98														0.46			
San Francisco, Cal	30			0.72														0.25			

* Self-register not working. † Record partly estimated. ‡ No precipitation during the month.

TABLE II.—*Accumulated amounts of precipitation for each 5 minutes, for the principal storms in which the rate of fall equaled or exceeded 0.25 inch in any 5 minutes, or 0.80 in 1 hour, during September, 1916, at all stations furnished with self-registering gages*—Continued.

Stations.	Date.	Total duration. From—	Total duration. To—	Total amount of precipitation.	Excessive rate. Began—	Excessive rate. Ended—	Amount before excessive rate began.	5 min.	10 min.	15 min.	20 min.	25 min.	30 min.	35 min.	40 min.	45 min.	50 min.	60 min.	80 min.	100 min.	120 min.
San Jose, Cal	21			0.60														0.25			
San Luis Obispo, Cal	29-30			1.66														0.41			
Santa Fe, N. Mex	5	7:10 p.m.	10:15 p.m.	0.56	8:28 p.m.	8:42 p.m.	0.04	0.22	0.38	0.44											
Sault Ste. Marie, Mich	3-4	7:30 p.m.	5:20 p.m.	5.39	1:15 a.m.	1:34 a.m.	0.15	0.08	0.29	0.40	0.49										
					7:06 a.m.	8:03 a.m.	1.63	0.12	0.14	0.32	0.39	0.49	0.51	0.55	0.60	0.77	0.90	1.09			
					8:38 a.m.	8:56 a.m.	2.87	0.12	0.33	0.42	0.46										
					10:18 a.m.	11:03 a.m.	4.04	0.15	0.22	0.30	0.41	0.48	0.52	0.64	0.79	0.86					
	26-27	5:27 p.m.	D. N. a.m.	0.76	10:22 p.m.	10:27 p.m.	0.33	0.25													
Savannah, Ga	13-14			1.03														0.34			
Scranton, Pa	14-15	10:40 p.m.	9:31 a.m.	2.34	11:43 p.m.	11:59 p.m.	0.15	0.12	0.34	0.52	0.57										
Seattle, Wash	8			0.53														0.34			
Sheridan, Wyo	9-10			0.48														0.27			
Shreveport, La	12			0.89														0.78			
Sioux City, Iowa	9-10	6:30 p.m.	4:35 a.m.	1.86	12:41 a.m.	1:02 a.m.	1.00	0.20	0.28	0.37	0.54	0.58									
Spokane, Wash	23			0.21														0.09			
Springfield, Ill	27			2.18														0.55			
Springfield, Mo	1-2			0.53														0.23			
Syracuse, N. Y	14-15			1.47														0.42			
Tacoma, Wash	2			0.46														0.35			
Tampa, Fla	4	2:15 p.m.	3:16 p.m.	0.42	2.24 p.m.	2:37 p.m.	0.01	0.14	0.31	0.35											
	8	2:14 p.m.	2:33 p.m.	0.36	2:18 p.m.	2:26 p.m.	0.01	0.31	0.34												
	8	3:39 p.m.	5:20 p.m.	1.15	3:41 p.m.	3:49 p.m.	0.02	0.29	0.36												
					4:41 p.m.	4:55 p.m.	0.39	0.36	0.63	0.76											
	17	3:30 p.m.	4:30 p.m.	0.84	3:33 p.m.	4:12 p.m.	0.01	0.17	0.22	0.36	0.42	0.45	0.58	0.69	0.76						
Tatoosh Island, Wash	7			0.39														0.21			
Taylor, Tex	25			0.33														0.28			
Terre Haute, Ind	1			0.41														0.39			
Thomasville, Ga	9	1:20 p.m.	5:25 p.m.	1.00	1:27 p.m.	2:00 p.m.	0.01	0.13	0.32	0.46	0.52	0.63	0.71	0.77							
	10	12:52 p.m.	3:20 p.m.	0.52	1:40 p.m.	1:54 p.m.	0.07	0.24	0.36	0.44											
Toledo, Ohio	26			1.03														0.42			
Tonopah, Nev	22			0.13														0.06			
Topeka, Kans	11	7:08 a.m.	10:05 a.m.	0.55	8:46 a.m.	9:08 a.m.	0.02	0.08	0.15	0.28	0.42	0.47									
Valentine, Nebr	5-6			0.22														0.14			
Vicksburg, Miss	11	11:18 a.m.	3:50 p.m.	1.77	12:26 p.m.	1:26 p.m.	0.03	0.06	0.19	0.30	0.45	0.60	0.91	1.12	1.26	1.35	1.41	1.55			
	25	6:51 p.m.	10:30 p.m.	1.80	6:53 p.m.	7:14 p.m.	0.01	0.33	0.65	0.93	1.32	1.39									
Walla Walla, Wash	9			0.05														0.05			
Washington, D. C	15	11:06 a.m.	2:10 p.m.	1.17	11:13 a.m.	11:38 a.m.	0.01	0.29	0.48	0.67	0.80	0.87									
Wichita, Kans	3			0.48														0.17			
Williston, N. Dak	24			0.20														0.17			
Wilmington, N. C	5	D. N. a.m.	4.10 p.m.	2.41	2:05 p.m.	3:33 p.m.	0.76	0.05	0.12	0.21	0.33	0.47	0.58	0.65	0.77	0.85	0.92	1.08	1.39	1.65	
Winnemucca, Nev	22			0.26														0.07			
Wytheville, Va	28-29	9:05 p.m.	5:55 a.m.	1.33	9:54 p.m.	10:14 p.m.	0.31	0.16	0.27	0.37	0.47										
Yankton, S. Dak	10	12:15 a.m.	3:30 a.m.	0.77	12:36 a.m.	1:02 a.m.	0.10	0.13	0.32	0.39	0.44	0.58	0.60								
Yellowstone Park, Wyo	26-27			0.36														*			

* Self-register not working. † Record partly estimated. ‡ No precipitation occurred during month.

TABLE III.—*Data furnished by the Canadian Meteorological Service, September, 1916.*

Stations.	Altitude above M. S. L.* Jan. 1, 1916.	Pressure. Station, reduced to mean of 24 hours.	Pressure. Sea-level, reduced to mean of 24 hours.	Pressure. Departure from normal.	Temperature of the air. Mean max.+mean min.÷2.	Temperature of the air. Departure from normal.	Temperature of the air. Mean maximum.	Temperature of the air. Mean minimum.	Temperature of the air. Highest.	Temperature of the air. Lowest.	Precipitation. Total.	Precipitation. Departure from normal.	Precipitation. Total snowfall.
	Feet.	*Inches.*	*Inches.*	*Inches.*	°*F.*	°*F.*	°*F.*	°*F.*	°*F.*	°*F.*	*Inches.*	*Inches.*	*Inches.*
St. Johns, N. F	125	29.73	29.86	−0.11	54.6	+0.6	61.3	47.8	76	37	2.52	−1.19	0
Sydney, C. B. I	48	29.96	*30.00*	− .01	59.6	+3.1	69.5	49.6	83	38	2.78	−0.50	0
Halifax, N. S	88	29.91	*30.01*	− .03	59.1	+1.5	69.7	48.4	81	38	2.70	−1.01	0
Yarmouth, N. S	65	29.95	30.02	− .03	56.6	+0.5	64.2	49.0	76	37	2.29	−1.16	0
Charlottetown, P. E. I	38	29.94	29.98	− .03	59.0	+1.7	66.9	51.2	79	40	1.64	−1.76	0
Chatham, N. B	28	29.95	*29.97*	− .03	58.2	+2.8	68.1	48.3	84	35	2.32	−0.39	0
Father Point, Que	20	29.92	29.94	− .04	51.4	+1.0	59.6	43.2	77	36	3.65	+0.52	0
Quebec, Que	296	29.66	29.98	− .03	56.4	+1.3	64.0	48.8	76	37	5.12	+1.45	0
Montreal, Que	187	29.78	29.98	− .06	59.3	+0.9	67.4	51.2	80	40	4.05	+0.75	0
Stonecliffe, Ont	489	29.36	*29.96*	− .07	56.0	+0.3	66.2	45.9	82	31	3.03	−0.25	0
Ottawa, Ont	236	29.72	*30.04*	.00	58.9	+1.5	67.7	50.1	83	36	3.06	+0.37	0
Kingston, Ont	285	29.70	30.01	− .03	60.9	+0.9	68.7	53.2	80	33	2.92	+0.12	0
Toronto, Ont	379	29.60	*29.97*	− .09	61.2	+2.2	71.2	51.1	90	35	1.66	−1.59	0
White River, Ont	1,244	28.52	*29.91*	− .07	47.8	−2.5	59.0	36.6	74	18	2.35	−0.42	0.5
Port Stanley, Ont	592	29.39	30.03	− .03	59.6	+0.1	67.7	51.6	79	32	2.42	−0.31	0
Southampton, Ont	656	29.30			59.8	+2.3	68.0	51.7	86	36	3.16	+0.22	0
Parry Sound, Ont	688	29.28	29.97	− .06	58.1	+2.1	67.1	49.2	84	28	4.82	+1.15	0
Port Arthur, Ont	644	29.21	29.92	− .06	51.9	−0.3	60.4	43.5	76	26	5.11	+1.63	0
Winnipeg, Man	760	29.04	29.87	− .07	53.6	+1.1	64.3	43.0	79	27	2.03	0.00	T.
Minnedosa, Man	1,690	28.06	29.85	− .09	51.8	+1.3	63.4	40.2	79	24	1.78	+0.42	0.5
Qu'Appelle, Sask	2,115	27.61	29.85	− .07	50.2	−0.9	62.9	37.5	80	24	5.39	+4.06	T.
Medicine Hat, Alberta	2,144	27.60	*29.87*	− .05	56.5	+1.5	70.5	42.4	84	29	1.11	−0.07	0
Swift Current, Sask	2,392	27.32	*29.87*	− .05	53.4	+0.3	66.9	39.9	81	25	1.46	+0.24	0
Calgary, Alberta	3,428	26.40	*29.91*	− .01	52.3	+2.5	65.8	38.8	80	23	0.84	−0.52	T.
Banff, Alberta	4,521	25.38	*29.95*	+ .02	47.7	+1.9	60.4	35.0	71	25	1.82	+0.15	2.3
Edmonton, Alberta	2,150	27.59	*29.87*	− .03	50.8	+1.5	62.3	39.3	79	29	2.83	+1.50	T.
Prince Albert, Sask	1,450	28.31	*29.86*	− .04	50.7	+2.3	63.4	37.9	80	26	1.00	−0.28	1.0
Battleford, Sask	1,592	28.13	*29.85*	− .05	52.0	+0.2	64.5	39.5	81	23	1.05	−0.20	0
Kamloops, B. C	1,262	28.74	30.02	+ .05	57.6	+0.2	70.1	45.1	81	33	0.36	−0.49	0
Victoria, B. C	230	29.79	30.04	+ .03	56.7	+1.9	64.4	48.9	80	43	0.35	−1.81	0
Barkerville, B. C	4,180	29.74	30.06	+ .08	44.1	−2.6	54.2	34.0	69	22	2.62	−0.29	4.5
Hamilton, Bermuda	151	29.91	30.07	.00	77.2	−0.2	82.9	71.5	87	68	6.98	+0.47	0

* The altitudes given above were furnished by the Director of the Canadian Meteorological Service, Mar. 9, 1916, and refer to cisterns of barometers at the respective stations. Where sea-level pressures and departures are *italicized* new reduction factors are in course of computation.—C. A., jr.

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