CLIMATOLOGICAL SUMMARY.

By Mr. P. C. DAY, Assistant Chief, Climatological Division.

TEMPERATURE AND PRECIPITATION BY SECTIONS, DECEMBER, 1908.

In the following table are given, for the various sections of the Climatological Service of the Weather Bureau, the average temperature and rainfall, the stations reporting the highest and lowest temperatures with dates of occurrence, the stations reporting greatest and least monthly precipitation, and other data, as indicated by the several headings.

The mean temperatures for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperature and precipitation are based only on records from stations that have ten or more years of observation. Of course the number of such records is smaller than the total number of stations.

Section.	Temperature—in degrees Fahrenheit.								Precipitation—in inches and hundredths.					
	Section average.	Departure from the normal.	Monthly extremes.						Section average.	Departure from the normal.	Greatest monthly.		Least monthly.	
			Station.	Highest.	Date.	Station.	Lowest.	Date.			Station.	Amount.	Station.	Amount.
Alabama	50.6	+ 4.6	Flomaton	84	16	Riverton	18	2	5.02	+ 0.83	Cedar Bluff	11.22	Lucy	0.96
Arizona	45.9	0.0	Aztec Mohawk Summit	85 85	13 9	Flagstaff	−14	18	2.96	+ 1.98	Pinal Ranch	7.62	Benson	0.71
Arkansas	46.0	+ 4.0	Pine Bluff Texarkana	82 82	15 16	Bergman Dodd City	11	2	1.50	− 2.42	Huttig	5.30	Fort Smith	0.09
California	43.2	− 3.3	Gold Run	87	28	Alturas	−23	18	2.33	− 1.78	Monumental	12.44	3 stations	0.00
Colorado	23.1	− 2.2	Hoehne	77	23	Kremmling Wagon Wheel Gap	−38 −38	21 19	1.31	+ 0.08	Dolores	7.52	Las Animas	0.00
Florida	62.9	+ 4.1	Orange City	93	1	Johnstown	24	28	1.02	− 2.08	Rockledge	2.88	Plant City	0.00
Georgia	51.9	+ 5.4	St. Marys	88	1	Diamond Tallapoosa	21 21	3, 4 8	3.75	+ 0.37	Rome	9.00	St. Marys	0.44
Hawaii (November)	70.6*	.....	Pahala, Hawaii Kihei, Maui	90 90	28 4, 26	Humuula, Hawaii	31	8	4.16†	.....	Honomanu Valley, Maui.	17.14	3 stations	0.00
Idaho	25.5	− 1.7	Guffey	56	28	Chesterfield	−31	20	1.28	− 0.71	Salem	4.46	Buhl	0.06
Illinois	32.5	+ 2.3	Du Quoin	76	17	Lanark	− 6	8	1.10	− 1.15	Martinton	2.08	Bushnell	0.13
Indiana	34.1	+ 2.0	Marengo	71	17	Judyville	− 4	5, 8	1.59	− 1.26	Vevay	2.54	Judyville	1.02
Iowa	27.2	+ 3.6	Washington	67	14	Alton; Dows	−17	7	0.57	− 0.62	Ridgeway	2.07	Greenfield, Whitten.	0.05
Kansas	35.9	+ 3.6	Independence Oswego	74	16	St. Francis	− 7	2	0.16	− 0.73	Pleasanton	1.18	6 stations	0.00
Kentucky	39.8	− 1.9	Beattyville	74	17	Loretto, Farmers	7	3	2.42	− 1.33	Middlesboro	4.90	Eubank	0.67
Louisiana	55.6	+ 4.1	Monroe	89	17	Ferriday	20	23	3.22	− 1.14	Ruston	6.75	Southern Univ. Farm	0.70
Maryland and Delaware	36.1	+ 1.2	3 stations	71	1	Oakland, Md	1	23	3.32	− 0.03	Milford, Del	5.49	Chewsville, Md	1.25
Michigan	25.3	+ 0.5	Charlotte	61	1	Ewen	−14	22	2.06	− 0.13	Gladwin	5.37	Iron Mountain	0.73
Minnesota	17.5	+ 1.4	New Ulm	57	12	Detroit	−27	7	0.79	+ 0.04	Grand Meadow	1.45	Angus	0.28
Mississippi	50.9	+ 3.5	Leakesville	83	18	3 stations	20	2, 9	4.56	− 0.22	Louisville	8.81	Laurel	1.18
Missouri	38.4	+ 4.3	Belle	80	17	Unionville	− 4	7, 8	0.85	− 1.55	Clinton	1.82	Gallatin, Linneus	0.00
Montana	24.6	+ 0.5	Wolf Creek	70	13	Bowen	−27	17	0.52	− 0.16	Snowshoe	6.35	Choteau	0.00
Nebraska	29.1	+ 1.4	Franklin, Kearney	70	26	Lynch	−24	7	0.31	− 0.28	Valentine	1.38	15 stations	0.00
Nevada	28.0	− 2.8	Logan	67	24	Halleck	−20	18	0.19	− 0.86	Lewers' Ranch	1.00	6 stations	0.00
New England‡	26.2	− 0.4	Westboro, Mass	68	1	Van Buren, Me	−39	30	3.15	− 0.88	Bar Harbor, Me	5.95	Van Buren, Me	1.00
New Jersey	34.0	+ 0.8	Indian Mills	72	1	Vineland	1	24	3.63	− 0.22	Atlantic City	5.26	Sussex	2.10
New Mexico	36.5	+ 0.6	Carlsbad	84	15	Elizabethtown Tres Piedras	−12 −12	1 18	0.27	− 0.45	Frisco	2.62	9 stations	0.00
New York	26.4	+ 0.6	Athens	67	1	Old Forge	−27	10	2.42	− 0.87	Cutchogue	4.97	Hemlock Lake	0.54
North Carolina	45.3	+ 3.5	Whiteville	84	7	Banners Elk	8	3	4.26	+ 0.43	Horse Cove	8.92	Southport	2.07
North Dakota	14.4	+ 1.4	Lisbon	62	29	Pratt	−37	6	0.38	− 0.15	Jamestown	1.57	Buford	0.00
Ohio	33.1	+ 2.4	Pomeroy	68	17	Rome Wauseon	− 2 − 2	6 10	2.83	− 0.45	Rittman	3.88	Ottawa	0.93
Oklahoma	43.2	+ 4.0	Okmulgee	86	15	Hurley	6	2	0.07	− 1.50	Vinita	0.54	16 stations	0.00
Oregon	34.7	− 2.6	Vale	72	2	Christmas Lake	−20	18	3.70	− 2.70	Glenora	18.79	Ella	0.19
Pennsylvania	32.0	+ 1.3	Hanover	74	1	Lawrenceville Saegerstown	− 2 − 2	28 6	2.86	− 0.49	Johnstown	4.61	Pocono Lake	1.26
Porto Rico	74.5	.....	Yauco	97	5	3 stations	53	3 d't's	4.51	.....	Corozal	12.54	Sabana Grande	0.00
South Carolina	50.6	+ 5.0	Waterboro	83	1	Bowman	23	9	2.84	− 0.94	Clemson College	5.90	Charleston	0.94
South Dakota	21.8	+ 0.6	Ottumwa	65	13	Pollock	−23	7	0.77	+ 0.24	Milbank	2.55	Castlewood	0.16
Tennessee	43.5	+ 3.3	Dover	75	16	Mount'n City, Rugby	9	3	4.17	− 0.45	Tracy City	9.93	Dyersburg	1.45
Texas	52.1	+ 2.8	Waxahachie	93	17	Plemons	8	19	1.15	− 0.71	San Marcos	5.13	27 stations	0.00
Utah	25.4	− 1.7	Milford	66	11	Theodore Wellington	−29 −29	20 19	0.97	− 0.16	Grayson	6.20	Lucin, Ibapah	T.
Virginia	39.0	+ 1.4	3 stations	75	1, 18	Burkes Garden	5	3	3.86	+ 0.69	Speers Ferry	8.10	Stephens City	1.35
Washington	33.2	− 2.1	South Bend	65	2	Northport, Republic	− 5	17	4.15	− 1.36	Quiniault	21.35	Ephrata	0.20
West Virginia	36.4	+ 2.1	Williamson	73	17	Arbovale, Central Station.	3	3	3.03	− 0.64	Princeton	7.36	Harpers Ferry	1.06
Wisconsin	20.8	+ 0.1	Richland Center	59	30	Solon Springs	−19	7	1.28	− 0.17	Sturgeon Bay	4.37	Solon Springs	0.20
Wyoming	22.5	− 1.0	Phillips	62	15	Fontenelle	−34	18	0.87	− 0.08	Moorcroft	2.60	Eden	T

* 53 stations; average elevation, 722 feet. † Average of 146 stations. ‡ Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut.

DESCRIPTION OF TABLES AND CHARTS.

By Mr. P. C. DAY, Assistant Chief, Climatological Division.

For description of tables and charts see page 8 of REVIEW for January, 1908.

TABLE I.—*Climatological data for U. S. Weather Bureau stations, December, 1908.*

Stations.	Elevation of instruments.			Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.									Mean wet thermometer.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.			Wind.					Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness during daylight, tenths.	Total snowfall.
	Barometer above sea level, feet.	Thermometers above ground.	Anemometer above ground.	Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hrs.	Departure from normal.	Mean max. + mean min. ÷ 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.				Total.	Departure from normal.	Days with .01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.					
New England.							29.6	0.0										72	3.36	+ 0.1										6.5	
Eastport	76	67	85	29.85	29.94	— .04	24.2	— 0.1	52	1	33	— 1	11	16	41	22	18	78	5.01	+ 1.0	18	9,123	w.	60	se.	7	0	11	20	8.5	16.1
Greenville	1,070	6	....	28.75	29.97	.....	13.9	.....	53	1	24	—20	23	3	39	....	....	....	2.59	.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland, Me.	103	81	117	29.88	30.00	— .03	26.4	— 0.7	63	1	34	3	23	19	30	23	16	67	2.92	— 0.8	11	7,434	w.	56	se.	7	11	9	11	5.2	13.5
Concord	288	70	79	29.69	30.02	— .04	24.8	— 1.6	61	1	34	— 6	24	16	26	....	....	....	2.27	— 1.1	8	4,008	nw.	28	w.	7	17	6	8	4.4	13.7
Burlington	404	12	47	29.54	30.00	— .05	21.4	— 4.1	56	1	30	— 4	23	13	37	....	....	....	1.59	— 0.1	18	10,103	s.	44	s.	4	2	8	21	8.5	14.1
Northfield	876	16	70	29.02	30.01	— .04	19.4	— 1.1	61	1	29	—12	11	9	36	17	15	83	2.62	— 0.1	18	5,988	n.	34	sw.	7	3	11	17	7.5	23.1
Boston	125	115	188	29.88	30.02	— .03	33.3	+ 1.7	67	1	41	10	6	26	28	29	24	70	2.47	— 0.9	17	8,457	w.	47	se.	7	10	8	13	5.9	3.5
Nantucket	12	14	90	30.00	30.01	— .04	37.0	+ 0.3	58	1	43	20	11	31	25	34	29	75	4.89	+ 1.2	13	12,558	w.	60	ne.	23	5	11	15	7.2	3.0
Block Island	26	11	46	30.00	30.02	— .04	36.5	— 0.1	59	1	42	19	10	31	25	33	27	69	4.62	+ 0.8	11	15,558	sw.	57	w.	7	7	7	17	6.5	3.6
Narragansett	.....	9	....	.....	.....	.....	33.7	+ 1.2	64	1	43	11	6	25	34	....	....	....	4.70	.....	10	.....	sw.	.....	.....	.....	16	5	10	....	0.7
Providence	160	57	67	29.86	30.04	— .02	32.8	+ 1.2	66	1	41	12	6	25	28	29	23	70	3.12	— 0.3	8	5,870	w.	34	se.	7	12	9	10	5.2	2.1
Hartford	159	122	140	29.86	30.05	— .02	31.6	+ 1.8	65	1	38	13	24	25	30	27	22	69	3.36	— 0.2	8	5,906	nw.	39	w.	7	6	8	17	7.1	9.6
New Haven	106	116	155	29.92	30.04	— .03	33.4	+ 1.6	67	1	41	14	24	26	27	29	23	68	4.07	+ 0.4	11	7,044	w.	37	se.	7	11	9	11	5.2	7.3
Mid. Atlantic States.							35.9	+ 1.2										73	3.02	— 0.1										6.3	
Albany	97	102	115	29.93	30.04	— .04	28.6	+ 1.1	62	1	36	8	6	21	30	25	20	72	1.58	— 1.0	10	6,054	s.	30	s.	4	6	11	14	6.3	8.7
Binghamton	871	78	90	29.06	30.02	— .07	28.5	+ 0.8	61	1	35	5	6	22	34	....	....	....	1.47	— 1.0	12	5,417	w.	31	se.	30	2	7	22	8.1	9.7
New York	314	108	350	29.71	30.06	— .03	35.2	+ 0.8	64	1	41	20	10	30	24	32	26	69	3.21	— 0.2	10	10,712	w.	50	nw.	18	7	9	15	6.2	5.1
Harrisburg	374	94	104	29.68	30.10	— .02	33.7	+ 0.9	62	1	40	20	6	26	27	29	24	69	2.07	— 0.6	12	5,314	w.	36	w.	18	8	11	12	5.7	9.1
Philadelphia	117	116	184	29.97	30.10	— .01	37.1	+ 1.4	68	1	43	23	6	31	23	34	30	77	3.12	+ 0.1	10	7,629	nw.	35	nw.	23	10	9	12	5.8	6.0
Scranton	805	111	119	29.17	30.06	— .04	30.8	+ 1.0	60	1	37	14	6	24	28	27	20	64	2.17	— 0.4	13	5,762	sw.	32	w.	7	4	6	21	7.8	13.1
Atlantic City	52	37	48	30.03	30.09	— .01	37.6	+ 1.2	68	1	45	20	3	30	26	34	29	72	5.26	+ 1.5	13	6,136	nw.	38	ne.	23	8	5	18	6.6	5.3
Cape May	17	48	52	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Baltimore	123	100	113	29.97	30.11	— .02	37.9	+ 1.0	69	1	45	23	3	31	24	33	27	68	3.04	0.0	9	4,957	sw.	26	nw.	2	11	5	15	6.1	7.5
Washington	112	59	76	29.98	30.10	— .03	37.0	+ 0.9	69	1	45	18	24	29	28	32	26	69	3.63	+ 0.5	10	4,773	nw.	38	nw.	12	9	7	15	5.9	11.5
Cape Henry	18	9	58	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lynchburg	681	83	88	29.36	30.13	— .01	40.0	+ 1.7	72	18	49	20	24	31	38	35	31	74	3.54	+ 0.3	9	3,042	nw.	24	nw.	12	7	10	14	6.4	10.9
Mount Weather	1,725	10	54	28.19	30.08	— .05	33.2	+ 1.7	63	1	41	14	3	26	31	29	24	74	1.68	— 1.4	9	12,530	nw.	60	nw.	26	8	9	14	6.4	10.2
Norfolk	91	102	111	30.01	30.11	— .02	45.4	+ 2.4	74	18	53	30	3	38	30	11	37	76	2.98	— 0.5	16	6,518	n.	39	n.	23	8	11	12	5.6	T.
Richmond	144	145	153	29.96	30.12	— .02	41.2	+ 0.2	70	18	50	20	24	33	33	....	....	....	4.72	+ 1.7	12	5,470	s.	33	sw.	1	12	8	14	5.6	17.2
Wytheville	2,293	40	47	27.68	30.13	— .02	36.8	+ 1.5	62	17	44	15	3	30	27	34	32	88	3.88	+ 0.1	13	4,558	w.	25	sw.	27	9	7	15	6.2	8.8
S. Atlantic States.							51.1	+ 4.0										73	2.65	— 1.0										5.4	
Asheville	2,255	53	75	27.72	30.15	— .01	41.3	+ 3.5	70	17	50	19	3	33	39	37	34	82	3.59	— 0.5	11	6,391	nw.	33	nw.	12	11	8	12	5.5	0.3
Charlotte	773	68	76	29.28	30.13	— .03	45.9	+ 3.0	72	18	54	26	3	38	25	41	37	76	4.06	+ 0.2	9	4,912	ne.	30	sw.	18	9	9	13	5.9	0.1
Hatteras	11	12	47	30.09	30.10	— .03	51.5	+ 2.7	74	1	58	37	11	45	27	48	46	86	4.54	— 0.6	11	11,431	n.	61	w.	25	15	8	8	4.9	
Manteo	.....	....	....	.....	.....	.....	48.6	.....	75	1	58	29	9	39	....	....	....	....	3.46	— 1.7	8	.....	n.	.....	.....	.....	13	7	11	....	
Raleigh	376	71	79	29.71	30.12	— .03	45.6	+ 2.9	75	18	54	26	3	37	30	39	33	69	3.64	+ 0.5	13	5,659	sw.	38	nw.	25	11	8	12	5.7	T.
Wilmington	78	81	91	30.04	30.13	— .02	51.6	+ 4.4	77	1	61	30	24	42	31	45	41	76	2.22	— 0.9	11	5,572	sw.	32	sw.	11	11	14	6	4.7	
Charleston	48	14	92	30.08	30.13	— .02	55.8	+ 4.5	78	1	64	38	9	48	22	49	46	79	0.94	— 2.2	7	7,340	sw.	33	sw.	12	9	11	11	5.5	
Columbia, S. C.	351	41	57	29.74	30.13	— .03	50.6	+ 3.4	77	1	60	30	9	42	33	45	40	75	2.40	— 0.5	8	5,107	sw.	30	w.	25	5	16	10	5.9	
Augusta	180	89	97	29.94	30.13	— .03	51.6	+ 4.6	76	1	61	31	9	42	33	45	41	74	2.33	— 1.1	7	4,313	nw.	28	nw.	25	8	11	12	5.9	
Savannah	65	81	89	30.07	30.14	— .01	56.2	+ 4.9	79	1	65	35	9	48	26	50	45	75	1.09	— 2.0	7	5,030	w.	27	nw.	7	10	12	9	5.3	
Jacksonville	43	101	129	30.08	30.14	.00	60.8	+ 5.6	80	1	69	39	9	52	25	56	54	86	0.90	— 2.1	5	6,027	sw.	38	w.	25	12	10	9	4.8	
Florida Peninsula.							68.9	+ 3.6										82	0.68	— 1.4										4.4	
Jupiter	28	10	48	30.07	30.10	.00	69.7	+ 3.4	83	7	76	48	27	63	24	64	61	79	1.38	— 1.5	7	6,977	se.	26	ne.	23	6	23	2	5.1	
Key West	22	10	53	30.06	30.08	.00	72.5	+ 2.4	84	7	77	59	27	68	14	67	66	84	0.70	— 1.1	6	5,965	ne.	30	w.	12	13	16	2	4.1	
Sand Key	25	41	71	30.04	30.08	.00	73.1	.....	82	8	76	62	27	71	9	....	....	....	0.24	— 1.6	3	11,069	ne.	36	nw.	13	15	16	0	4.0	
Tampa	35	79	96	30.09	30.13	+ .01	64.6	+ 5.1	81	1	74	41	27	55	29	58	55	82	0.39	— 1.6	3	5,073	ne.	23	w.	25	13	12	6	4.4	
East Gulf States.							53.7	+ 4.6										76	3.27	— 1.2										5.8	
Atlanta	1,174	190	216	28.88	30.14	— .02	48.0	+ 3.4	73	18	56	30	8	40	26	43	38	73	4.15	— 0.4	8	9,949	nw.	50	nw.	25	9	10	12	6.0	
Macon	370	78	87	29.74	30.14	— .02	51.6	+ 4.8	77	1	62	32	27	42	29	....	....	....	2.27	— 2.1	6	4,439	nw.	30	nw.	25	9	9	13	5.9	
Thomasville	273	8	58	29.85	30.15	.00	57.4	+ 4.9	82	1	69	29	27	46	36	50	47	82	1.04	— 2.6	8	4,040	nw.	24	sw.	25	12	11	8	4.6	
Pensacola	56	79	96	30.07	30.13	— .02	58.4	+ 4.5	74	1	66	36	23	50	24	....	....	....	2.31	— 1.9	7	6,877	n.	29	sw.	6	10	10	11	5.6	
Anniston	741	9	58	29.36	30.17	+ .01	49.4	+ 5.2	76	18	59	24	3	40	30	....	....	....	5.60	+ 1.1	8	4,874	nw.	30	nw.	25	11	0	20	6.8	
Birmingham	700	11	48	29.39	30.17	+ .01	49.8	+ 2.5	76	18	58	25	3	42	29	44	39	73	6.83	+ 2.2	7	5,624	n.	30	se.	6	9	8	14	6.0	
Mobile	57	98	106	30.07	30.13	— .02	57.8	+ 6.3	80	1	66	36	23	49	24	53	50	82	2.47	— 2.1	7	5,520	nw.	24	n.	31	6	17	8	6.0	
Montgomery	223	100	112	29.90	30.16	.00	53.8	+ 4.7	77	18	63	31	9	44	28	47	42	70	3.02	— 1.5	7	5,247	n.	26	nw.	25	9	10	12	5.9	
Meridian	375	84	93	29.75	30.15	— .01	51.6	+ 4.7	75	17	61	27	9	42	31	47	43	78	2.48	— 2.7	7	4,387	n.	27	nw.	25	8	11	12	6.2	
Vicksburg	247	62	74	29.88	30.16	+ .01	53.4	+ 4.0	77	18	62	32	3	45	31	47	40	68	3.98	— 1.0	10	5,311	e.	29	nw.	25	9	9	13	5.8	
New Orleans	51	88	121	30.08	30.14	+ .01	59.8	+ 5.4	83	1	68	38	3	52	25	54	51	79	1.79	— 2.7	5	6,396	n.	28	nw.	25	8	16	7	5.2	
West Gulf States.							51.9	+ 3.5										74	1.59	— 1.3										5.4	
Shreveport	249	77	84	29.88	30.16	+ .03	51.8	+ 2.9	78	17	60	32	3	43	29	46	41	72	2.13	— 2.2	9	5,255	se.	25	ne.	1	12	7	12	5.4	
Bentonville	1,303	11	44	28.72	30.12	— .01	41.3	+ 3.8	71	16	52	17	2	30	32	....	....	....	0.45	— 2.3	4	4,884	s.	24	s.	23	16	5	10	5.1	
Fort Smith	457	79	94	29.64	30.13	.00	45.6	+ 3.9	75	16	56	24	8	36	34	40	34	70	0.09	— 2.8	1	6,117	e.	32	nw.	25	13	6	12	5.4	
Little Rock	357	139	147	29.76	30.15	+ .01	47.5	+ 4.0	73	17	56	25	2	39	29	42	36	67	0.84	— 3.4	9	6,770	s.	40	w.	25	12	7	12	5.0	0.2
Brownsville	57	4	....	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Corpus Christi	20	69	77	30.10	30.12	.00	60.3	+ 3.7	81	6	67	40	22	54	25	55	53	82	1.97	+ 0.6	7	7,649	n.	47	e.	9	6	10	15	6.5	
Fort Worth	670	106	114	29.42	30.14	+ .02	50.8	+ 3.3	83	16	61	25	2	41	39	....	....	....	0.03	— 1.2	3	7,265	s.	32	nw.	18	16	7	8	4.5	
Galveston	54	106	112	30.09	30.15	+ .03	59.2	+ 2.9	73	17	64	40	22	54	22	56	54	85	2.74	— 1.0	9	8,458	n.	32	nw.	21	10	12	9	5.4	
Palestine	510	73	79	29.60	30.14	+ .02	52.6	+ 3.3	80	17	61	31	22	44	30	47	43	76	1.75	— 1.9	8	5,922	ne.	26	n.	25	5	15	11	6.5	
San Antonio	701	80	91	29.38	30.12	+ .01	56.6	+ 3.5	85	14	66	33	22	48	31	49	44	68	1.61	0.0	7	5,288	n.	33	n.	25	11	8	12	5.6	
Taylor	583	55	63	29.52	30.13	+ .02	53.6	+ 3.6	82	14	63	30	22	44	38	....	....	....	4.25	+ 1.6	8	6,071	n.	32	s.	17	13	8	10	5.0	
Ohio Val. and Tenn.							39.3	+ 2.2										75	2.64	— 0.8										6.5	
Chattanooga	762	106	112	29.34	30.17	+ .01	46.2	+ 3.6	69	17	54	27	8	39	27	41	37	74	6.67	+ 2.3	13	4,933	nw.	36	nw.	25	9	4	18	6.7	
Knoxville	1,004	93	100	29.07	30.15	— .01	42.8	+ 3.1	68	17	50	24	3	36	26	39	34	76	5.65	+ 1.5	14	3,964	sw.	30	w.	25	7	7	17	6.8	T.
Memphis	399	76	97	29.74	30.17	+ .02	46.8	+ 3.3	72	17	54	25	3	40	28	43	38	75	2.67	— 1.7	11	6,595	sw.	42	nw.	25	8	4	19	6.6	T.
Nashville	546	79	91	29.57	30.16	+ .01	42.4	+ 3.1	68	17	52	20	3	36	30	41	37	76	2.10	— 1.7	9	4,568	sw.	34	w.	25	7	10	14	6.4	T.
Lexington	989	75	102	29.04	30.14	.00	37.8	+ 1.4	67	17	45	15	2	30	30	....	....	....	2.13	— 1.2	11	8,468	sw.	36	w.	11	8	3	20	6.8	0.5
Louisville	525	111	132	29.55	30.14	.00	40.5	+ 2.4	66	17	48	18	2	33	29	36	31	71	1.85	— 1.9	7	6,284	sw.	28	w.	25	9	8	14	5.9	T.
Evansville	431	72	82	29.65	30.13	.00	40.2	+ 3.8	67	17	48	17	2	33	26	....	....	....	1.50	— 2.3	6	5,914	s.	25	s.	24	8	15	8	5.4	T.
Indianapolis	822	154	164	29.19	30.10	— .02	34.5	+ 1.9	63	17	42	11	2	27	25	30	26	73	1.54	— 1.5	8	7,899	sw.	34	sw.	26	10	10	11	5.7	3.5
Cincinnati	628	152	160	29.42	30.12	— .01	37.9	+ 1.5	65	17	46	16	2	30	31	33	28	69	1.60	— 1.3	11	5,504	sw.	24	w.	25	10	5	16	6.1	T.
Columbus	824	173	224	29.19	30.10	— .02	34.3	+ 1.5	62	18	42	14	2	27	29	30	26	74	1.59	— 1.2	11	9,549	sw.	41	nw.	7	7	12	12	6.2	0.2
Pittsburg	842	336	352	29.15	30.08	— .03	34.8	+ 0.1	60	18	41	14	3	28	33	31	25	70	1.94	— 0.8	13	9,138	w.	46	w.	7	3	11	17	7.2	1.3
Parkersburg	638	77	84	29.44	30.12	— .02	36.8	+ 1.6	66	17	44	11	3	29	32	38	30	79	2.29	— 0.5	11	4,827	s.	28	nw.	7	6	5	20	7.8	1.4
Elkins	1,940	41	50	28.00	30.13	— .01	34.6	+ 2.1	64	1	44	8	3	26	34	31	28	83	2.83	— 0.6	16	3,662	w.	28	s.	6	9	3	19	7.1	9.3
Lower Lake Region.							29.2	— 0.1										77	2.00	— 0.9										7.7	
Buffalo	767	178	206	29.15	30.00	— .06	29.6	— 0.5	49	1	35	12	23	24	28	28	24	80	2.92	— 0.4	19	15,629	w.	61	sw.	1	3	10	18	7.4	17.1
Canton	448	10	71	29.49	29.99	.....	18.9	— 3.8	53	1	29	20	10	9	40	....	....	....	2.12	— 1.5	21	9,322	sw.	65	w.	1	6	6	19	7.4	19.1
Oswego	335	76	91	29.62	30.00	— .06	28.1	— 1.1	54	1	35	7	6	21	28	28	24	82	2.32	— 1.3	19	10,476	s.	38	nw.	7	1	3	27	8.8	13.9
Rochester	523	81	102	29.43	30.02	— .04	29.4	+ 0.5	53	1	35	10	23	24	31	27	22	76	1.15	— 1.7	14	8,202	w.	40	w.	1	3	8	20	8.0	10.0
Syracuse	597	97	113	29.33	30.00	— .07	28.2	— 0.1	55	1	35	7	23	22	31	....	....	....	1.45	— 1.2	16	11,096	w.	48	w.	7	2	6	23	7.8	9.8
Erie	713	92	102	29.23	30.02	— .05	31.9	+ 0.2	52	1	37	16	8	27	28	29	24	73	2.30	— 0.8	14	10,643	w.	40	w.	7	2	5	24	8.5	10.4
Cleveland	762	190	201	29.20	30.05	— .04	32.2	+ 1.1	53	1	38	14	8	26	28	29	25	75	2.75	+ 0.2	16	13,218	sw.	48	w.	7	3	8	20	7.8	5.2
Sandusky	629	62	70	29.34	30.05	— .04	32.2	+ 1.1	52	1	38	13	8	26	30	....	....	....	1.77	— 0.6	10	7,337	w.	31	w.	7	3	14	14	6.8	3.9
Toledo	628	207	246	29.86	30.06	— .02	31.4	+ 0.9	51	15	38	9	8	25	26	28	24	73	1.80	— 0.5	9	12,620	sw.	44	w.	7	7	8	16	6.6	3.2
Detroit	730	218	258	29.22	30.04	— .03	29.8	+ 0.3	50	15	35	11	8	24	28	27	24	80	1.38	— 1.0	14	12,531	w.	46	w.	7	2	12	17	7.7	6.9

TABLE I.—*Climatological data for U. S. Weather Bureau stations, December, 1908*—Continued.

Stations.	Elevation of instruments.			Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.									Mean wet thermometer.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.			Wind.					Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness during daylight, tenths.	Total snowfall.
	Barometer above sea level, feet.	Thermometers above ground.	Anemometer above ground.	Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hrs.	Departure from normal.	Mean max. + mean min. ÷ 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.				Total.	Departure from normal.	Days with .01, or more.	Total movement miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.					
Upper Lake Region.							24.2	— 0.1										80	1.52	— 0.6										7.7	
Alpena	609	13	92	29.27	29.96	— .06	24.3	— 0.5	43	1	31	6	22	18	32	23	22	90	1.39	— 0.8	14	9,027	w.	42	w.	1	1	8	22	8.5	16.0
Escanaba	612	40	82	29.28	29.98	— .05	21.0	— 0.6	38	29	28	— 4	31	14	25	19	15	76	0.88	— 0.8	10	7,643	w.	34	nw.	27	2	6	23	8.1	12.4
Grand Haven	632	54	92	29.30	30.01	— .04	29.5	— 0.6	45	29	35	12	10	24	28	27	24	78	2.10	— 0.4	15	11,958	w.	51	nw.	7	2	6	23	8.2	15.8
Grand Rapids	707	121	162	29.22	30.02	— .03	28.4	— 0.4	45	29	34	14	2	23	23	26	24	83	1.88	— 0.7	13	8,914	w.	45	w.	30	2	5	24	8.5	7.4
Houghton	668	66	74	29.18	29.94	— .08	21.0	+ 0.1	39	30	27	3	31	15	27	....	....	....	1.33	— 1.1	20	5,669	nw.	33	nw.	1	0	4	27	9.4	19.1
Marquette	734	77	116	29.13	29.96	— .06	22.0	— 0.9	37	29	28	— 1	31	16	22	20	15	76	1.82	— 0.7	18	8,252	w.	43	sw.	30	1	6	24	8.1	19.5
Port Huron	638	70	120	29.30	30.01	— .05	27.5	+ 0.1	47	1	34	12	2	21	30	25	21	78	1.56	— 0.6	11	9,575	sw.	42	w.	1	4	9	18	7.5	17.2
Sault Sainte Marie	614	40	61	29.23	29.96	— .04	21.4	+ 0.9	40	1	28	— 2	5	15	30	20	18	86	2.66	+ 0.3	21	7,515	se.	48	w.	1	0	1	30	9.6	26.6
Chicago	823	140	310	29.15	30.06	— .02	31.3	+ 2.0	53	29	38	10	8	25	26	28	24	75	1.18	— 0.9	7	12,064	w.	52	w.	30	9	6	16	6.3	2.7
Milwaukee	681	122	189	29.28	30.04	— .02	26.1	+ 0.1	46	29	33	4	31	19	28	25	21	80	1.50	— 0.4	7	8,455	w.	40	e.	17	12	9	10	5.1	8.7
Green Bay	617	49	86	29.30	29.98	— .06	21.4	+ 0.1	40	29	29	— 4	31	14	29	19	16	78	1.40	— 0.4	12	8,489	sw.	47	w.	1	5	6	20	7.4	18.5
Duluth	1,133	11	47	28.71	29.98	— .07	16.0	— 1.7	42	26	23	—15	31	9	30	14	12	85	0.48	— 0.7	7	9,718	w.	47	w.	30	8	9	14	6.1	6.8
North Dakota.							14.8	+ 2.9										88	0.24	— 0.4										5.4	
Moorhead	940	8	57	28.99	30.06	— .02	13.4	+ 2.7	40	26	22	—18	7	5	36	13	12	94	0.48	— 0.3	9	6,612	sw.	36	nw.	30	14	6	11	4.8	4.5
Bismarck	1,674	8	57	28.22	30.10	+ .02	16.2	+ 1.2	45	13	26	—15	6	7	38	15	12	83	0.08	— 0.5	2	7,848	nw.	60	nw.	30	5	17	9	5.6	1.3
Devils Lake	1,482	11	44	28.35	30.00	— .06	10.8	+ 2.8	38	13	20	—24	6	2	33	10	9	93	0.37	0.0	8	8,778	w.	44	nw.	30	9	11	11	5.5	4.8
Williston	1,875	14	56	27.96	30.02	— .04	18.6	+ 5.0	48	26	29	—28	31	8	31	16	14	83	0.01	— 0.6	1	7,769	sw.	48	nw.	29	10	9	12	5.5	0.1
Upper Miss. Valley.							28.6	+ 2.3										74	1.01	— 0.9										5.4	
Minneapolis	....	102	208	....	....	....	21.0	....	48	14	29	— 8	31	13	34	....	....	....	1.33	+ 0.4	5	9,480	w.	47	w.	30	11	10	10	5.1	13.5
St. Paul	837	171	179	29.08	30.02	— .06	20.5	+ 1.2	46	14	29	— 9	31	12	34	19	14	75	1.28	+ 0.2	5	8,672	nw.	44	nw.	30	10	14	7	5.1	13.1
La Crosse	714	10	49	29.23	30.04	— .04	22.6	— 0.2	46	29	31	— 2	31	14	34	....	....	....	1.11	— 0.2	5	4,487	s.	23	nw.	30	7	8	16	6.2	8.0
Madison	974	70	78	28.95	30.05	— .03	23.2	+ 0.5	45	29	30	— 1	7	16	30	21	17	77	0.76	— 1.0	5	8,118	w.	35	w.	30	9	7	15	6.0	7.8
Charles City	1,015	10	49	28.95	30.07	— .03	23.2	+ 4.2	48	14	32	—11	7	15	29	21	19	86	1.16	— 0.1	4	6,086	nw.	31	nw.	30	10	9	12	5.9	4.4
Davenport	606	71	79	29.40	30.09	— .01	28.7	+ 1.5	55	14	37	1	7	21	29	26	21	76	0.40	— 1.3	5	5,986	w.	28	nw.	30	11	6	14	5.5	3.0
Des Moines	861	84	101	29.14	30.07	— .04	29.6	+ 3.9	54	28	38	— 7	7	21	31	27	23	77	0.31	— 1.0	4	6,034	nw.	28	nw.	25	8	17	6	5.2	4.1
Dubuque	698	100	117	29.31	30.09	— .01	25.8	+ 1.3	51	29	34	1	7	18	28	24	20	77	0.63	— 1.1	6	4,970	nw.	25	nw.	30	11	6	14	5.8	4.9
Keokuk	614	64	77	29.41	30.12	.00	33.4	+ 4.0	60	14	42	3	7	25	33	28	23	71	0.58	— 1.3	4	5,628	sw.	30	w.	30	16	6	9	4.4	4.0
Cairo	356	87	93	29.76	30.16	+ .01	42.1	+ 8.6	70	17	50	19	2	34	31	37	31	67	1.54	— 1.8	6	7,234	s.	32	nw.	25	12	6	13	5.4	
La Salle	536	56	64	29.51	30.11	+ .02	29.0	+ 1.5	54	29	38	4	7	20	30	....	....	....	0.83	— 1.4	5	6,718	w.	31	w.	30	10	8	13	5.5	8.5
Peoria	609	11	45	29.42	30.11	.00	29.4	+ 1.3	53	29	38	6	7	21	30	27	23	77	0.82	— 1.6	6	6,407	nw.	31	w.	30	13	6	12	5.3	3.8
Springfield, Ill.	644	10	92	29.40	30.11	— .01	33.7	+ 2.4	64	17	42	12	2	26	30	30	24	71	1.62	— 0.8	4	6,094	nw.	28	sw.	26	14	5	12	5.0	3.0
Hannibal	584	75	109	29.52	30.11	— .01	34.4	+ 3.1	63	17	44	9	7	25	37	....	....	....	1.13	— 0.5	4	6,638	sw.	38	sw.	26	16	2	13	4.7	1.6
St. Louis	567	208	217	29.49	30.11	— .02	38.9	+ 3.4	72	17	47	14	2	30	31	34	27	65	1.64	— 1.6	4	7,998	nw.	38	nw.	25	13	4	14	5.2	0.1
Missouri Valley.							30.9	+ 4.0										73	0.53	— 0.4										4.5	
Columbia, Mo.	784	11	84	29.26	30.12	.00	36.2	+ 3.3	69	16	46	10	2	26	29	....	....	....	1.23	— 0.8	2	6,314	sw.	32	sw.	26	16	4	11	4.4	3.2
Kansas City	963	116	181	29.05	30.12	.00	37.4	+ 5.9	61	14	45	9	7	29	29	32	26	67	0.27	— 1.1	3	9,305	s.	45	nw.	25	15	7	9	4.3	T.
Springfield, Mo	1,324	98	104	28.69	30.13	.00	39.6	+ 4.1	69	16	49	14	2	30	30	34	29	71	0.67	— 2.0	5	7,829	s.	39	nw.	25	16	5	10	4.3	T.
Iola	984	11	50	29.07	30.15	+ .03	37.7	+ 5.2	68	16	48	14	7	28	34	....	....	....	0.59	— 0.3	4	5,267	sw.	29	sw.	26	12	9	10	5.1	T.
Topeka	....	85	89	....	....	....	36.2	+ 5.1	61	14	46	9	7	27	32	....	....	....	0.19	— 0.7	4	6,960	s.	34	nw	30	17	8	6	3.7	T.
Lincoln	1,189	11	84	28.80	30.11	— .01	31.7	+ 4.8	64	26	42	0	7	22	37	27	21	69	0.16	— 0.5	1	7,532	s.	42	nw.	24	14	10	7	4.5	1.0
Omaha	1,105	115	121	28.88	30.11	.00	31.8	+ 4.7	60	26	40	— 3	7	24	32	27	21	68	0.26	— 0.6	3	6,672	nw.	34	n.	4	13	8	10	4.8	2.7
Valentine	2,598	47	54	27.31	30.13	+ .03	24.5	0.0	49	13	36	—13	7	13	49	21	19	83	1.38	+ 0.8	5	6,915	w.	36	nw.	24	13	15	3	4.2	14.3
Sioux City	1,135	96	164	28.83	30.09	— .03	27.2	+ 4.6	51	14	35	—10	7	19	36	....	....	....	0.34	— 0.4	4	9,324	nw.	50	nw.	30	13	12	6	4.6	2.6
Pierre	1,572	70	75	28.39	30.12	+ .02	23.6	+ 3.5	53	13	32	—11	7	15	47	20	15	69	0.60	+ 0.1	5	6,267	w.	49	nw.	30	12	15	4	4.6	6.6
Huron	1,306	56	67	28.65	30.11	+ .01	19.4	+ 3.7	46	14	29	—15	7	10	43	18	15	84	1.00	+ 0.4	7	7,489	nw.	40	nw.	30	13	10	8	4.5	10.4
Yankton	1,233	49	57	28.72	30.09	— .02	25.0	+ 2.8	53	13	34	—14	7	15	46	....	....	....	0.87	+ 0.1	7	6,347	nw.	37	nw.	30	9	11	11	5.6	6.8
Northern Slope.							25.0	+ 1.3										76	0.52	— 0.3										5.5	
Havre	2,505	11	44	27.33	30.06	+ .01	22.6	+ 1.4	52	25	34	—15	31	11	38	20	17	80	0.27	— 0.4	3	8,075	sw.	48	w.	25	13	9	9	5.0	2.7
Miles City	2,371	26	48	27.49	30.14	+ .04	26.2	+ 5.2	56	28	36	— 5	31	16	32	21	17	76	0.25	— 0.4	7	4,252	s.	43	nw.	24	11	15	5	4.5	2.5
Helena	4,110	8	56	25.81	30.15	+ .02	25.7	+ 0.9	52	25	34	— 8	1	18	32	22	18	73	0.52	— 0.3	5	5,191	w.	45	w.	28	4	12	15	6.6	6.7
Kalispell	2,962	11	34	26.99	30.16	+ .09	25.2	+ 1.3	45	28	31	3	2	19	18	23	20	80	0.47	— 1.4	12	3,290	nw.	31	sw.	24	2	7	22	8.2	2.6
Rapid City	3,234	46	50	26.60	30.14	+ .05	28.2	+ 2.2	53	26	40	— 5	6	17	49	23	17	71	0.73	+ 0.3	7	4,751	w.	37	sw.	25	9	10	12	5.4	10.2
Cheyenne	6,088	56	64	23.96	30.11	+ .02	28.6	— 0.4	52	9	38	2	1	19	37	23	16	61	0.70	+ 0.4	5	8,859	w.	52	nw.	24	15	9	7	4.2	8.3
Lander	5,372	26	36	24.64	30.22	+ .07	19.1	— 0.1	50	26	31	—19	18	7	34	16	12	76	1.03	+ 0.3	3	1,966	sw.	30	nw.	24	8	18	5	5.1	10.3
Sheridan	3,790	9	47	26.09	30.15	.....	21.6	.....	59	25	35	—16	18	8	49	18	15	81	0.92	.....	7	3,739	nw.	48	w.	25	9	10	12	5.4	12.4
Yellowstone Park	6,200	11	48	23.86	30.22	+ .06	20.0	— 1.6	38	3	28	— 9	1	12	29	17	14	79	0.48	— 1.3	9	6,310	s.	37	sw.	25	7	5	19	6.9	8.3
North Platte	2,821	11	51	27.12	30.17	+ .07	29.1	+ 2.5	55	26	42	— 4	7	17	40	23	19	80	0.20	— 0.3	5	5,261	w.	34	n.	24	15	9	7	4.0	2.9
Middle Slope.							35.9	+ 3.0										67	0.13	— 0.6										4.0	
Denver	5,291	129	136	24.72	30.13	+ .05	31.4	— 0.8	58	26	44	— 4	2	19	49	25	18	64	0.63	0.0	5	5,183	sw.	49	w.	24	15	11	5	4.0	9.7
Leadville	10,248	7	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Pueblo	4,685	80	86	25.30	30.11	+ .03	32.2	+ 0.5	64	26	45	0	1	20	42	26	18	60	0.08	— 0.4	2	4,980	nw.	59	nw.	24	17	12	2	3.1	0.7
Concordia	1,398	42	50	28.62	30.14	+ .03	34.9	+ 5.4	62	26	45	6	7	25	32	29	25	75	0.01	— 0.5	1	4,555	sw.	25	nw.	25	11	14	6	4.0	T.
Dodge City	2,509	44	54	27.47	30.15	+ .05	36.2	+ 4.6	64	26	49	14	7	24	38	28	24	72	0.04	— 0.5	3	5,951	nw.	36	nw.	24	19	5	7	3.8	0.1
Wichita	1,358	90	120	28.68	30.16	+ .05	38.0	+ 3.8	64	26	48	11	7	28	33	32	25	64	0.03	— 0.8	1	7,591	s.	35	nw.	24	15	10	6	4.2	T.
Oklahoma	1,214	10	47	28.81	30.13	+ .02	42.8	+ 4.2	73	16	54	20	2	32	32	36	30	67	0.03	— 1.7	1	11,373	s.	48	nw.	24	11	15	5	4.6	
Southern Slope.							46.7	+ 3.0										62	0.06	— 0.9										5.2	
Abilene	1,738	45	54	28.30	30.14	+ .03	49.5	+ 4.5	83	16	60	23	2	39	38	41	33	61	0.00	— 1.1	0	5,506	s.	30	s.	3	4	16	11	6.3	
Amarillo	3,676	10	49	26.30	30.10	+ .01	41.2	+ 4.8	72	16	55	18	19	27	41	32	25	62	0.00	— 0.8	0	8,337	s.	36	w.	24	25	4	2	3.1	
Del Rio	944	8	57	29.12	30.12	+ .02	54.6	+ 2.2	88	14	66	26	22	43	44	....	....	....	0.23	— 1.3	3	5,032	nw.	31	nw.	18	7	13	11	6.1	
Roswell	3,578	9	57	26.44	30.15	+ .08	41.6	+ 0.4	76	16	57	14	19	26	49	33	25	63	0.01	— 0.5	1	4,150	nw.	34	nw.	12	9	15	7	5.3	
Southern Plateau.							41.3	— 0.8										61	1.78	+ 0.8										4.0	
El Paso	3,762	110	133	26.26	30.09	+ .06	46.6	+ 1.8	76	16	57	22	21	36	32	38	27	51	0.15	— 0.4	4	7,098	nw.	40	nw.	3	12	18	6	4.9	T.
Santa Fe	7,013	33	39	23.26	30.18	+ .12	30.6	+ 0.3	52	9	42	7	19	20	35	24	19	67	0.10	— 0.7	3	6,648	ne.	33	w.	24	21	7	3	2.8	0.6
Flagstaff	6,907	8	57	23.35	30.11	+ .05	27.2	— 1.2	53	27	41	—14	18	14	43	22	19	77	5.74	+ 3.8	6	4,054	e.	42	sw.	16	13	6	12	5.0	11.6
Phoenix	1,108	50	56	28.88	30.06	+ .02	53.2	+ 1.3	75	2	64	31	18	42	32	45	36	58	1.94	+ 1.4	4	2,260	e.	20	sw.	16	12	15	4	4.2	
Yuma	141	9	58	29.93	30.08	+ .03	53.6	— 2.1	72	31	65	34	21	42	33	44	34	53	2.58	+ 2.1	5	4,781	n.	30	n.	19	20	7	4	2.8	
Brawley	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Independence	3,910	11	42	26.06	30.13	+ .01	36.6	— 5.0	59	27	50	10	16	23	42	30	22	60	0.20	— 1.4	1	3,882	nw.	26	n.	18	16	10	5	4.3	1.0
Middle Plateau.							28.0	— 2.7										72	0.92	— 0.2										4.8	
Reno	4,532	56	63	25.52	30.19	+ .04	31.4	— 2.3	59	26	43	— 1	18	20	33	26	21	69	0.16	— 1.5	3	2,034	w.	22	w.	13	13	8	10	4.6	2.6
Tonopah	6,089	12	20	24.09	30.23	.....	31.9	+ 1.8	51	25	38	7	18	26	20	27	19	62	0.08	— 0.7	2	5,646	se.	30	se.	2	15	8	8	4.1	1.4
Winnemucca	4,344	18	56	25.69	30.21	+ .03	29.3	— 1.4	55	26	44	— 5	19	15	42	22	19	73	0.03	— 1.0	1	3,903	ne.	26	s.	13	13	4	14	5.3	0.3
Modena	5,479	10	43	24.68	30.21	+ .09	24.6	— 7.1	52	8	38	—17	20	11	43	20	16	75	0.85	0.0	5	5,507	w.	34	sw.	9	10	12	9	5.2	8.4
Salt Lake City	4,366	105	110	25.70	30.18	+ .03	30.1	— 2.0	49	4	37	6	20	23	23	27	23	74	0.45	— 0.9	6	2,566	se.	38	nw.	24	5	14	12	6.0	6.2
Durango	6,546	18	56	23.69	30.23	+ .16	24.6	— 3.7	46	9	38	— 3	18	11	38	20	16	75	3.64	+ 2.2	6	3,625	nw.	24	ne.	24	15	8	8	4.0	17.1
Grand Junction	4,608	48	51	25.51	30.22	+ 0.2	23.8	— 4.4	44	16	34	— 6	20	14	33	20	17	79	1.21	+ 0.8	4	2,260	nw.	18	w.	17	17	5	9	4.3	9.0
Northern Plateau.							30.3	— 1.8										80	0.80	— 0.9										7.6	
Baker City	3,471	48	58	26.53	30.23	+ .07	26.1	— 1.3	45	28	34	0	18	19	25	24	21	81	0.37	— 1.2	7	4,008	se.	21	s.	28	6	10	15	6.4	5.5
Boise	2,739	78	86	27.31	30.26	+ .06	31.1	— 1.1	47	28	37	11	20	25	17	28	25	79	1.15	— 0.6	10	2,885	nw.	29	w.	23	4	5	22	8.0	0.9
Lewiston	757	10	51	29.38	30.21	+ .08	34.4	— 3.1	55	25	40	14	20	28	20	....	....	....	0.41	— 1.1	8	3,605	e.	43	w.	28	3	7	21	7.7	0.6
Pocatello	4,477	46	54	25.56	30.23	+ .04	26.9	— 1.5	47	4	34	—10	19	19	31	25	21	78	0.38	— 0.5	13	6,207	se.	38	sw.	24	4	11	16	7.2	3.7
Spokane	1,929	101	110	28.08	30.20	+ .12	29.0	— 1.8	47	12	34	13	17	24	15	27	24	80	1.56	— 1.1	9	4,582	sw.	35	sw.	25	2	6	23	8.2	9.4
Walla Walla	1,000	71	79	29.12	30.22	+ .10	34.2	— 1.8	61	25	39	15	18	30	20	31	28	82	0.96	— 1.1	10	3,703	s.	31	se.	25	4	6	21	8.0	0.7
N. Pac. Coast Reg.							40.1	— 1.5										87	5.67	— 2.2										7.5	
Blaine	57	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
North Head	211	11	56	29.84	30.07	+ .04	43.4	— 0.9	53	4	47	33	18	40	12	42	41	90	6.53	— 1.0	17	13,516	e.	74	s.	12	7	3	21	7.4	
Port Crescent	259	12	29	29.80	30.09	+ .11	38.6	+ 0.3	54	25	44	29	18	34	18	....	....	....	6.28	— 0.6	17	4,347	se.	36	sw.	25	1	11	19	7.2	

TABLE I.—*Climatological data for U. S. Weather Bureau stations, December, 1908*—Continued.

Stations.	Elevation of instruments.			Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.									Mean wet thermometer.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.			Wind.					Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness during daylight, tenths.	Total snowfall.
	Barometer above sea level, feet.	Thermometers above ground.	Anemometer above ground.	Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hrs.	Departure from normal.	Mean max. + mean min. ÷ 2.	Departure from normal.	Maximum.	Date.	Mean maximum.	Minimum.	Date.	Mean minimum.	Greatest daily range.				Total.	Departure from normal.	Days with .01, or more.	Total movement, miles.	Prevailing direction.	Maximum velocity. Miles per hour.	Maximum velocity. Direction.	Maximum velocity. Date.					
N.P. Coast Reg—Cont.																															
Seattle	123	185	224	29.99	30.12	+ .11	39.5	— 1.7	52	8	44	26	20	36	13	38	36	88	3.61	— 2.4	15	6,859	se.	48	s.	25	4	7	20	7.6	
Tacoma	213	113	120	29.85	30.11	+ .10	38.0	— 2.3	53	25	43	24	20	34	16	38	37	93	6.00	— 1.3	16	4,249	sw.	30	sw.	24	1	7	23	8.5	
Tatoosh Island	86	7	57	29.93	30.03	+ .07	42.6	— 1.3	52	8	46	34	15	40	10	40	37	82	10.66	— 3.9	18	17,501	e.	90	sw.	25	7	11	13	6.7	T.
Portland, Oreg.	158	68	106	29.98	30.14	+ .07	39.0	— 2.3	54	12	43	23	19	35	13	36	33	81	3.80	— 3.5	15	5,157	se.	31	sw.	25	5	8	18	7.3	0.7
Roseburg	510	9	57	29.58	30.14	+ .03	39.6	— 2.3	58	12	44	26	19	35	24	38	37	90	3.00	— 2.9	14	1,649	e.	17	sw.	23	1	10	20	8.1	
Mid. Pac. Coast Reg.							44.5	— 3.8										84	2.69	— 1.9										6.0	
Eureka	62	62	80	30.06	30.13	+ .01	47.0	— 1.0	61	25	53	30	18	40	22	44	41	81	3.91	— 3.3	14	3,586	se.	26	se.	8	6	12	13	6.3	
Mount Tamalpais	2,375	11	18	27.62	30.13	+ .01	43.0	.....	59	25	47	31	19	39	21	41	40	91	3.87	— 0.4	13	12,992	se.	52	nw.	16	15	2	14	5.1	
Point Reyes Light	490	7	18	29.56	30.08	.....	49.0	.....	59	11	53	40	28	45	12	....	....	....	2.72	.....	11	11,929	se.	71	nw.	16	12	2	17	5.7	
Red Bluff	332	50	56	29.80	30.17	+ .03	41.8	— 4.6	60	6	48	25	19	36	21	39	36	81	2.64	— 1.8	9	2,816	nw.	20	n.	16	6	5	20	7.0	1.5
Sacramento	69	106	117	30.09	30.17	+ .03	42.1	— 4.2	61	11	48	28	18	37	22	41	38	85	2.04	— 1.5	12	3,881	se.	21	sw.	4	6	7	18	7.1	
San Francisco	155	200	204	29.97	30.14	+ .02	47.0	— 3.9	61	10	52	35	20	43	14	44	41	81	2.15	— 2.1	11	3,758	ne.	22	sw.	4	11	10	10	5.3	
San Jose	141	78	88	29.98	30.14	.....	44.6	— 5.3	64	3	53	25	18	36	30	....	....	....	1.54	— 2.7	8	3,274	se.	24	se.	4	8	9	14	5.8	
Southeast Farallon	30	9	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
S. Pac. Coast Reg.							50.3	— 2.3										70	1.00	— 1.2										6.3	
Fresno	330	67	70	29.80	30.18	+ .05	41.3	— 5.5	64	4	48	29	16	35	31	39	37	88	0.57	— 1.0	5	2,340	se.	16	s.	4	3	6	22	7.7	
Los Angeles	338	159	191	29.72	30.09	+ .02	55.2	— 0.1	76	29	64	38	18	46	30	46	38	58	1.46	— 1.4	3	4,536	ne.	24	sw.	16	12	8	11	4.9	
San Diego	87	94	102	29.98	30.08	+ .01	53.7	— 2.0	69	29	61	37	19	47	24	47	42	69	0.27	— 1.6	5	3,787	nw.	26	w.	16	18	2	11	4.1	
San Luis Obispo	201	47	54	29.90	30.13	+ .02	51.2	— 1.6	73	25	61	28	19	41	35	46	39	67	1.70	— 0.6	7	3,713	nw.	24	w.	...	14	8	9	4.4	
West Indies.																															
Grand Turk	11	6	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
San Juan	82	48	90	29.88	29.96	— .01	76.6	.....	83	5	81	69	27	72	13	72	70	82	5.96	+ 1.7	27	8,807	e.	35	ne.	1	16	11	4	3.9	
Panama.																															
Christobal	17	5	60	29.84	29.86	.....	77.8	.....	84	4	82	69	15	74	....	75	74	88	9.07	.....	22	7,156	ne.	28	ne.	25	6	17	8	6.0	
Bas Obispo	172	4	30	29.68	29.86	.....	77.4	.....	89	8	85	64	17	69	....	73	72	95	6.63	.....	22	2,824	nw.	18	nw.	26	1	18	12	7.0	
Ancon	92	6	69	29.75	29.84	.....	79.6	.....	91	22	88	68	13	72	....	73	72	89	4.16	.....	22	4,905	nw.	19	nw.	14	5	13	13	7.0	
Alhajuela	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.02	.....	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Bohio	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.40	.....	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Gatun	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7.95	.....	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	

TABLE II.—*Accumulated amounts of precipitation for each 5 minutes, for storms in which the rate of fall equaled or exceeded 0.25 in any 5 minutes, or 0.80 inch in 1 hour, during December, 1908, 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 began.	Depths of precipitation (in inches) during periods of time indicated. 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.
Abilene, Tex. †	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Albany, N. Y	7	.....	.....	0.83	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Alpena, Mich	17-18	.....	.....	0.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Amarillo, Tex. †	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Anniston, Ala	6-7	7:52 p. m.	D. N.	1.81	7:56 p. m.	8:12 p. m.	0.01	0.07	0.35	0.43	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Asheville, N. C	6	.....	.....	0.90	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.21	.....	.....	.....
Atlanta, Ga	6	.....	.....	0.64	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.24	.....	.....	.....
Atlantic City, N. J	6-7	9:10 p. m.	3:05 p. m.	2.03	6:59 a. m.	7:13 a. m.	0.96	0.07	0.19	0.87	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Augusta, Ga	2	.....	.....	0.38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.36	.....	.....	.....
Baker City, Oreg	11-12	.....	.....	0.13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Baltimore, Md	7	.....	.....	0.72	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.43	.....	.....	.....
Bentonville, Ark	6	.....	.....	0.12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.10	.....	.....	.....
Binghamton, N. Y	7	.....	.....	0.34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.06	.....	.....	.....
Birmingham, Ala	6	5:40 p m.	10:15 p. m.	2.85	7:34 p. m.	9:34 p. m.	0.63	0.05	0.12	0.23	0.31	0.33	0.55	0.70	0.81	0.86	0.91	1.00	1.30	1.71	2.14
Bismarck, N. Dak	15-16	.....	.....	0.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Block Island, R. I	30	.....	.....	0.99	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.41	.....	.....	.....
Boise, Idaho	23	.....	.....	0.32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.10	.....	.....	.....
Boston, Mass	7	.....	.....	1.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.32	.....	.....	.....
Buffalo, N. Y	7	.....	.....	0.52	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.16	.....	.....	.....
Burlington, Vt	7	.....	.....	0.79	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Cairo, Ill	6	.....	.....	0.43	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.21	.....	.....	.....
Canton, N. Y	7	.....	.....	0.58	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Charles City, Iowa	16-17	.....	.....	0.76	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Charleston, S. C	12	.....	.....	0.48	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.29	.....	.....	.....
Charlotte, N. C	22	.....	.....	2.27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.40	.....	.....	.....
Chattanooga, Tenn	6	.....	.....	3.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.48	.....	.....	.....
Cheyenne, Wyo	16-17	.....	.....	0.53	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Chicago, Ill	16-17	.....	.....	0.65	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Cincinnati, Ohio	18	.....	.....	0.29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.25	.....	.....	.....
Cleveland, Ohio	17-18	.....	.....	0.99	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.14	.....	.....	.....
Columbia, Mo	29	.....	.....	0.91	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.22	.....	.....	.....
Columbia, S. C	22	.....	.....	1.11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.36	.....	.....	.....
Columbus, Ohio	30	.....	.....	0.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.10	.....	.....	.....
Concord, N. H	7	.....	.....	1.45	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.34	.....	.....	.....
Concordia, Kans	4	.....	.....	0.01	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.01	.....	.....	.....
Corpus Christi, Tex	18	12:56 p. m.	9:00 p. m.	0.70	1:36 p. m.	2:06 p. m.	0.05	0.14	0.24	0.36	0.39	0.49	0.54	.....	.....	.....	.....	.....	.....	.....	.....
Davenport, Iowa	5-6	.....	.....	0.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Del Rio, Tex	27	.....	.....	0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.10	.....	.....	.....
Denver, Colo	17	.....	.....	0.28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Des Moines, Iowa	5-6	.....	.....	0.29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Detroit, Mich	29	.....	.....	0.18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.13	.....	.....	.....
Devils Lake, N. Dak	29-30	.....	.....	0.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Dodge City, Kans	4	.....	.....	0.02	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Dubuque, Iowa	5-6	.....	.....	0.39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Duluth, Minn	17	.....	.....	0.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Durango, Colo	15-16	.....	.....	1.47	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Eastport, Me	7	.....	.....	0.82	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.15	.....	.....	.....
Elkins, W. Va	30	.....	.....	0.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.18	.....	.....	.....
El Paso, Tex	3	.....	.....	0.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.07	.....	.....	.....
Erie, Pa	17-18	.....	.....	1.04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Escanaba, Mich	17-18	.....	.....	0.36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....
Eureka, Cal	4	.....	.....	0.78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.35	.....	.....	.....
Evansville, Ind	18	.....	.....	0.34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.16	.....	.....	.....
Flagstaff, Ariz	15-16	.....	.....	2.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	*	.....	.....	.....

TABLE II.—*Accumulated amounts of precipitation for each 5 minutes, etc.*—Continued.

Stations.	Date.	Total duration.		Total amount of precipitation.	Excessive rate.		Amount before excessive 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.
Fort Smith, Ark.	29			0.09														0.04			
Fort Worth, Tex.	28			0.01														0.01			
Fresno, Cal.	2			0.26														0.02			
Galveston, Tex.	9–10			1.27														*			
Grand Haven, Mich.	16–17			0.66														*			
Grand Junction, Colo.	15–16			0.63														*			
Grand Rapids, Mich.	29			0.24														0.13			
Green Bay, Wis.	16–17			0.61														*			
Greenville, Me.	7			1.15														*			
Hannibal, Mo.	29			0.66														0.25			
Harrisburg, Pa.	30			0.21														0.08			
Hartford, Conn.	7			1.99														*			
Hatteras, N. C.	4–5	7:35 p. m.	3:15 a. m.	2.55	10:32 p. m.	11:51 p. m.	0.58	0.08	0.30	0.44	0.52	0.60	0.66	0.74	0.79	0.87	0.97	1.10	1.43		
Havre, Mont.	4–5			0.24														*			
Helena, Mont.	30–31			0.21														*			
Houghton, Mich.	20			0.15														*			
Huron, S. Dak.	16–17			0.82														*			
Independence, Cal.	2			0.20														0.07			
Indianapolis, Ind.	6			0.47														*			
Iola, Kans.	3			0.30														0.23			
Jacksonville, Fla.	12			0.54														0.51			
Jupiter, Fla.	31	8:29 a. m.	10:50 a. m.	0.83	9:51 a. m.	10:26 a. m.	0.01	0.13	0.30	0.38	0.51	0.63	0.72	0.80							
Kalispell, Mont.	22–23			0.12														*			
Kansas City, Mo.	4			0.17														0.06			
Keokuk, Iowa.	29			0.28														*			
Key West, Fla.	22			0.62														0.30			
Knoxville, Tenn.	1			0.44														0.39			
La Crosse, Wis.	16–17			0.73														*			
Lander, Wyo.	16–17			0.98														*			
La Salle, Ill.	29			0.31														0.11			
Lewiston, Idaho.	4			0.07														0.04‡			
Lexington, Ky.	30			0.63														0.20			
Lincoln, Nebr.	5			0.16														*			
Little Rock, Ark.	6			0.34														0.12			
Los Angeles, Cal.	2–3			1.36														0.31			
Louisville, Ky.	18			0.33														0.21			
Lynchburg, Va.	7			0.80														0.23			
Macon, Ga.	22			0.98														0.40			
Madison, Wis.	16–17			0.46														*			
Marquette, Mich.	17–18			0.53														*			
Memphis, Tenn.	29			0.37														0.33			
Meridian, Miss.	6			0.74														0.31			
Milwaukee, Wis.	6			0.83														0.10			
Minneapolis, Minn.	16–17			1.10														*			
Mobile, Ala.	29			1.03														0.36			
Modena, Utah.	16–17			0.52														*			
Montgomery, Ala.	21			2.11														0.52			
Moorhead, Minn.	30			0.14														*			
Mount Tamalpais, Cal.	9			1.06														0.32			
Mount Weather, Va.	22–23			0.97														*			
Nantucket, Mass.	7			1.55														0.73			
Nashville, Tenn.	18			0.33														0.32			
New Haven, Conn.	7			1.96														0.37			
New Orleans, La.	29			1.36														0.40			
New York, N. Y.	7			1.81														0.36			
Norfolk, Va.	4			0.40														0.24			
Northfield, Vt.	7			1.56														*			
North Head, Wash.	24			0.79														0.42			
North Platte, Nebr.	5–6			0.10														*			
Oklahoma, Okla.	29			0.03														0.02			
Omaha, Nebr.	5			0.23														0.06			
Oswego, N. Y.	7			0.47														*			
Palestine, Tex.	20			0.63														0.19			
Parkersburg, W. Va.	11			0.74														0.19			
Pensacola, Fla.	30			0.67														0.51			
Peoria, Ill.	29			0.38														*			
Philadelphia, Pa.	7			1.34														0.07			
Phoenix, Ariz.	3			0.69														0.19			
Pierre, S. Dak.	16–17			0.44														*			
Pittsburg, Pa.	6–7			0.61														*			
Pocatello, Idaho.	16–17			0.15														*			
Point Reyes Light, Cal.	4			0.83														0.33			
Port Huron, Mich.	17			0.72														*			
Portland, Me.	7			1.13														0.18			
Portland, Oreg.	25			0.73														0.14			
Providence, R. I.	7			1.58														0.27			
Pueblo, Colo.	17			0.02														*			
Raleigh, N. C.	22			2.34														0.33			
Rapid City, S. Dak.	16–17			0.33														*			
Red Bluff, Cal.	4			1.35														0.26			
Reno, Nev.	16			0.08														*			
Richmond, Va.	7			0.90														0.24			
Rochester, N. Y.	17–18			0.27														*			
Roseburg, Oreg.	23			0.76														0.22			
Roswell, N. Mex.	23			0.01														0.01			
Sacramento, Cal.	9			0.24														0.16			
St. Louis, Mo.	29			0.50														0.10			
St. Paul, Minn.	16–17			1.00														*			
Salt Lake City, Utah.	16–17			0.34														*			
San Antonio, Tex.	9			1.30														0.49			
San Diego, Cal.	16			0.10														0.10			
Sand Key, Fla.	22			0.18														0.18			
Sandusky, Ohio.	17			0.58														*			
San Francisco, Cal.	4			0.96														0.34			
San Jose, Cal.	4			0.33														0.21			
San Luis Obispo, Cal.	2			0.51														0.22			
Santa Fe, N. Mex.	3			0.05														*			
Sault Sainte Marie, Mich.	1–2			0.80														*			
Savannah, Ga.	17			0.78														0.26			
Scranton, Pa.	7			0.67														0.06			
Seattle, Wash.	27			0.56														0.16			
Sheridan, Wyo.	16–17			0.50														*			
Shreveport, La.	6			0.37														0.24			
Sioux City, Iowa.	16–17			0.19														*			

TABLE II.—*Accumulated amounts of precipitation for each 5 minutes, etc.*—Continued.

Stations.	Date.	Total duration. From—	Total duration. To—	Total amount of precipitation.	Excessive rate. Began—	Excessive rate. Ended—	Amount before excessive 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.
								Depths of precipitation (in inches) during periods of time indicated.													
Southeast Farallon, Cal.	4			0.85														0.41			
Spokane, Wash	22-23			0.57														*			
Springfield, Ill	29			1.32														*			
Springfield, Mo	6			0.29														*			
Syracuse, N. Y	6-7			0.26														*			
Tacoma, Wash	24			0.86														0.16			
Tampa, Fla	12			0.25														0.21			
Tatoosh Island, Wash	12			1.14														0.28			
Taylor, Tex	28	5:05 a. m.	9:45 a. m.	2.25	7:06 a. m.	8:51 a. m.	0.23	0.15	0.29	0.48	0.67	0.89	1.01	1.04	1.05	1.10	1.18	1.32	1.63	1.83	
Thomasville, Ga	22			0.26														0.15			
Toledo, Ohio	6			0.87														0.13			
Tonopah, Nev	2,16			0.04														*			
Topeka, Kans	4			0.07														0.05			
Valentine, Nebr	16,17			0.81														*			
Vicksburg, Miss	6	3:50 p. m.	8:25 p. m.	1.00	4:00 p. m.	4:11 p. m.	0.05	0.16	0.45	0.51											
Walla Walla, Wash	12			0.46														0.10			
Washington, D. C	7			0.75														0.39			
Wichita, Kans	3			0.03														0.03			
Williston, N. Dak	11			0.01														0.01			
Wilmington, N. C	12			0.66														0.44			
Winnemucca, Nev	23			0.03														*			
Wytheville, Va	22			1.32														*			
Yankton, S. Dak	16-17			0.61														*			
Yellowstone Park, Wyo.	28			0.11														*			
Honolulu, T. H	19			0.67														0.25			
San Juan, P. R	16-17	11:28 p. m.	D. N.	0.52	11:30 p. m.	11:50 p. m.	0.01	0.05	0.14	0.28	0.46										

* Partly estimated. † No precipitation occurred during month. ‡ Estimated.

RAINFALL IN JAMAICA.

Thru the kindness of Mr. Maxwell Hall, meteorologist to the government of Jamaica and now in charge of the meteorological service of that island, we have received the following data:

Comparative table of rainfall.

[Based upon the average stations only.]

OCTOBER, 1908.

Divisions.	Relative area.	Number of stations.	Rainfall. 1908.	Rainfall. Average.
	Per cent.		*Inches.*	*Inches.*
Northeastern division	25	17	11.54	15.02
Northern division	22	41	11.89	7.76
West-central division	26	20	11.90	13.30
Southern division	27	26	8.88	12.04
Means	100		11.05	12.03

The rainfall over the island for October was therefore an inch below the average.

The greatest rainfall recorded was 25.35 inches, at Bath, and the smallest recorded was 3.17 inches, at Pedro Plains.

On the 31st flood-rains threatened the estates in St. James, on the northern shore, as much as 4 inches falling in less than 2 hours.

At Georgetown, Grand Cayman, 14.16 inches fell on 21 days; the greatest fall was 2.39 on the 20th.

NOVEMBER, 1908.

Divisions.	Relative area.	Number of stations.	Rainfall. 1908.	Rainfall. Average.
Northeastern division	25	17	10.81	9.39
Northern division	22	41	5.71	5.65
West-central division	26	20	5.29	5.85
Southern division	27	26	4.29	4.71
Means	100		6.52	6.40

The rainfall over the island for November was therefore the average. The greatest rainfall recorded was 25.05 inches, at Fellowship, and the smallest recorded was 0.79 inches, at Belleisle.

At Georgetown, Grand Cayman, 3.58 inches fell on 10 days; the greatest daily fall was 1.48 inch on the 17th.

DECEMBER, 1908.

Divisions.	Relative area.	Number of stations.	Rainfall. 1908.	Rainfall. Average.
Northeastern division	25	17	13.52	9.78
Northern division	22	41	4.97	2.82
West-central division	26	20	4.44	3.81
Southern division	27	26	6.10	2.82
Means	100		7.01	4.81

The rainfall over the island for December was therefore 2 inches above the average.

The greatest rainfall recorded was 45.69 inches, at Fellowship, and the smallest recorded was 1.47 inches, at Whithorn.

At Georgetown, Grand Cayman, 2.74 inches fell on 5 days; the greatest fall was 2.50 inches on the 31st.

TABLE III.—*Data furnished by the Canadian Meteorological Service, December, 1908.*

Stations.	Pressure.			Temperature.				Precipitation.		
	Actual, reduced to mean of 24 hours.	Sea level, reduced to mean of 24 hours.	Departure from normal.	Mean.	Departure from normal.	Mean maximum.	Mean minimum.	Total.	Departure from normal.	Total snowfall.
	Ins.	Ins.	Ins.	°	°	°	°	Ins.	Ins.	Ins.
St. Johns, N. F	29.63	29.77	—.06	27.7	— 1.0	34.0	21.3	6.46	+1.43	20.3
Sydney, C. B. I	29.85	29.89	.00	27.2	— 1.0	34.4	20.1	7.45	+2.82	17.4
Halifax, N. S	29.85	29.96	.00	25.7	— 1.9	32.6	18.8	7.76	+2.64	8.0
Grand Manan, N. B	29.88	29.98	—.05	28.0	— 0.3	36.8	19.2	4.72	+0.30	10.5
Yarmouth, N. S	29.89	29.96	—.02	30.4	— 0.8	37.6	23.2	6.29	+1.25	11.3
Charlottetown, P. E. I	29.86	29.90	—.04	22.6	— 1.7	30.2	15.0	4.43	+0.77	16.1
Chatham, N. B	29.88	29.91	—.03	14.2	— 2.8	23.1	5.4	3.02	—0.20	23.6
Father Point, Que	29.89	29.92	—.03	13.0	— 2.4	20.7	5.3	3.66	+0.83	36.6
Quebec, Que	29.62	29.96	—.05	12.4	— 2.8	19.9	5.0	4.22	+0.53	37.7
Montreal, Que	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockliffe, Ont	29.34	29.98	—.03	11.0	— 4.0	21.1	0.9	2.98	+0.49	22.4
Ottawa, Ont	29.73	30.07	+.05	14.9	— 2.1	23.8	6.0	3.93	+1.02	38.6
Kingston, Ont	29.68	30.01	—.03	23.9	+ 0.2	32.1	15.6	2.16	—1.08	13.2
Toronto, Ont	29.60	30.00	—.05	29.1	+ 2.1	35.2	23.0	2.04	—0.87	16.5
White River, Ont	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Port Stanley, Ont	29.37	30.03	—.04	28.7	+ 0.3	35.3	22.2	2.83	+0.41	11.4
Southampton, Ont	29.22	.....	.....	27.9	+ 1.2	34.0	21.7	3.83	—0.15	37.4
Parry Sound, Ont	29.24	29.97	—.04	21.1	— 0.1	29.5	12.6	5.30	+0.82	53.0
Port Arthur, Ont	29.22	29.96	—.03	14.4	+ 1.2	23.7	5.2	2.73	+1.86	27.3
Winnipeg, Man	29.13	30.00	—.02	10.0	+ 5.9	17.9	2.0	0.65	—0.26	6.5
Minnedosa, Man	28.06	29.96	—.06	10.0	+ 4.3	18.7	1.2	0.28	—0.34	2.8
Qu' Appelle, Assin	27.60	29.95	—.05	11.4	+ 4.0	20.0	2.7	0.68	+0.16	....
Medicine Hat, Alberta	27.66	30.02	+.05	21.8	+ 3.6	32.5	11.1	0.12	—0.43	1.2
Swift Current, Sask	27.35	30.04	+.05	17.1	+ 1.1	25.6	8.6	0.16	—0.62	....
Calgary, Alberta	26.32	29.99	+.05	21.2	+ 3.0	32.9	9.5	0.20	—0.39	2.0
Banff, Alberta	25.28	30.08	+.14	16.1	— 3.0	23.4	8.9	1.71	+0.50	17.1
Edmonton, Alberta	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Prince Albert, Sask	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Battleford, Sask	28.14	29.97	—.02	6.2	+ 0.8	14.7	— 2.4	0.04	—0.28	....
Kamloops, B. C	28.78	30.04	+.10	24.6	— 4.3	31.1	19.0	0.90	+0.12	....
Victoria, B. C	29.97	30.07	+.10	39.8	— 1.4	43.3	36.3	4.88	—3.10	....
Barkerville, B. C	25.54	29.95	+.07	19.8	— 1.1	27.8	11.7	2.95	—0.22	....
Hamilton, Bermuda	30.00	30.16	+.04	66.4	+ 1.7	71.3	61.4	1.36	—3.18	....
Dawson, Yukon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE IV.—*Heights of rivers referred to zeros of gages, December, 1908.*

Stations.	Distance to mouth of river.	Flood stage on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
	Miles.	Feet.	Feet.		Feet.		Feet.	Feet.
Republican River.								
Clay Center, Kans	42	18	6.7	16	6.1	4–8	6.3	0.6
Smoky Hill-Kansas River.								
Abilene, Kans	254	22	0.9	2,5	0.4	27,28,31	0.6	0.5
Manhattan, Kans	160	18	3.1	1,2	2.5	8	2.9	0.6
Topeka, Kans	87	21	6.3	1	5.7	10	5.9	0.6
Missouri River.								
Bismarck, N. Dak	1,309	14	4.8	29,30	1.8	1	3.2	3.0
Pierre, S. Dak	1,114	14	2.2	31	— 0.5	1	0.9	2.7
Sioux City, Iowa	784	17	8.4	4	5.2	12	6.3	3.2
Blair, Nebr	705	15	5.3	27	3.6	4	4.2	1.7
St. Joseph, Mo	481	10	2.9	1	— 1.7	13	—0.4	4.6
Kansas City, Mo	388	21	9.6	1	4.5	14,15	5.6	5.1
Glasgow, Mo	231	21	10.3	3	6.3	21	7.7	4.0
Boonville, Mo	199	20	11.1	3	6.8	17–19	7.8	4.3
Hermann, Mo	103	24	12.5	4	5.0	29,30	7.5	7.5
Minnesota River.								
Mankato, Minn	127	18	3.3	1	2.5	29–31	2.8	0.8
St. Croix River.								
Stillwater, Minn. (a)	23	11	.....	.....	.....	.....	.....	.....
Illinois River.								
La Salle, Ill	197	18	13.2	9	12.1	14,15	12.4	1.1
Peoria, Ill	135	14	8.7	1,2,5,6, 22,23, 28–31	8.4	11–13,15	8.6	0.3
Conemaugh River.								
Johnstown, Pa	64	7	2.8	19	0.3	3,4	0.9	2.5
Allegheny River.								
Warren, Pa	177	14	1.1	19–21	— 0.7	9–11	0.1	1.8
Parker, Pa	73	20	3.4	19	0.0	10	0.9	3.4
Freeport, Pa	29	20	6.5	19,20	0.7	3,4,7,8	2.2	5.8
Springdale, Pa	17	27	11.6	20	7.6	4–10	8.4	4.0
Youghiogheny River.								
Confluence, Pa. (b)	59	10	.....	.....	.....	.....	.....	.....
West Newton, Pa	15	23	1.6	19	— 0.1	3,4	0.4	1.7
Monongahela River.								
Fairmont, W. Va	119	25	14.3	20	10.0	11	12.4	4.3
Greensboro, Pa	81	18	7.5	19,20	5.8	2,9	6.5	1.7
Lock No. 4, Pa	40	28	10.0	20	8.9	1–4	9.3	1.1
Muskingum River.								
Zanesville, Ohio	70	25	8.0	21–31	7.7	1–7	7.8	0.3
Little Kanawha River.								
Creston, W. Va	38	20	2.5	15–17	— 1.8	1–5	0.6	4.3
New-Great Kanawha River.								
Hinton, W. Va	153	14	5.5	31	2.0	1–3	3.1	3.5
Charleston, W. Va	58	30	8.6	10,13,14	5.9	30	7.3	2.7
Scioto River.								
Columbus, Ohio	110	17	1.6	1–31	1.6	1–31	1.6	0.0
Licking River.								
Falmouth, Ky	30	25	2.4	30	1.0	1–5,28	1.6	1.4
Kentucky River.								
Beattyville, Ky	254	30	3.5	25	0.3	3,4	1.4	3.2
Frankfort, Ky	65	31	7.7	26	5.6	1–3	6.4	2.1
Wabash River.								
Terre Haute, Ind	171	16	0.3	1–8	0.2	9–31	0.2	0.1
Mount Carmel, Ill	75	15	1.7	2–4	1.4	18–31	1.5	0.3
Cumberland River.								
Burnside, Ky	518	50	7.8	25	— 0.1	1,2	2.9	7.9
Celina, Tenn	383	45	8.9	27	1.2	2–5	4.0	7.7
Carthage, Tenn	308	40	6.8	28	1.1	4	3.7	5.7
Nashville, Tenn	193	40	11.7	28,29	7.5	4,6	9.6	4.2
Clarksville, Tenn	126	43	9.2	31	2.5	7	6.5	6.7
Clinch River.								
Speers Ferry, Va	156	20	4.6	8	1.1	1	2.4	3.5
Clinton, Tenn	52	25	12.0	25	4.6	1	7.9	7.4
South Fork Holston River.								
Bluff City, Tenn	35	12	5.9	8	1.6	6,21	2.6	4.3
Holston River.								
Rogersville, Tenn	103	14	7.3	8	2.6	21	3.8	4.7
French Broad River.								
Asheville, N. C	144	4	2.5	8	0.0	1,2,4–6	0.6	2.5
Dandridge, Tenn	46	12	7.7	8	1.3	1	2.8	6.4
Tennessee River.								
Knoxville, Tenn	635	12	11.1	9	1.4	1	4.4	9.7
Loudon, Tenn	590	25	9.5	8	1.6	1	4.6	7.9
Kingston, Tenn	556	25	8.7	9	2.3	1	5.2	6.4
Chattanooga, Tenn	452	33	14.0	9	2.3	1	7.5	11.7
Bridgeport, Ala	402	24	11.0	10	1.1	1	5.8	9.9
Guntersville, Ala	349	31	16.8	10	2.6	3	9.8	14.2
Florence, Ala	255	16	9.7	11	0.5	2,3	5.3	9.2
Riverton, Ala	225	32	21.4	12	8.7	2,3	15.2	12.7
Johnsonville, Tenn	95	21	13.3	13	2.0	6	7.9	11.3
Ohio River.								
Pittsburg, Pa	966	22	6.9	20	3.8	8	6.0	3.1
Coraopolis, Pa	956	25	9.9	16	5.1	22	9.3	4.8
Beaver Dam, Pa	937	27	8.1	21	1.5	9–11	3.3	6.6
Wheeling, W. Va	875	36	7.1	21	0.8	2–7,11–13	2.5	6.3
Parkersburg, W. Va	785	36	7.7	22,23	0.6	1	2.6	7.1
Point Pleasant, W. Va	703	39	6.4	23	1.2	2,3	3.4	5.2
Huntington, W. Va	660	50	10.5	28	3.6	3	6.6	6.9
Catlettsburg, Ky	651	50	11.0	28	2.3	3	5.4	8.7
Portsmouth, Ohio	612	50	10.7	29	2.7	4,5	5.9	8.0
Maysville, Ky	559	50	11.0	29	3.0	3	5.9	8.0
Cincinnati, Ohio	499	50	12.2	30	4.0	3–6	5.2	8.2
Madison, Ind	413	46	10.4	31	3.4	7,8	5.7	7.0
Louisville, Ky	367	28	5.6	31	2.2	4	3.3	3.4
Evansville, Ind	184	35	6.5	31	2.4	12,14,15	3.6	4.1
Mount Vernon, Ind	148	35	5.4	31	2.0	14	3.2	3.4
Paducah, Ky	47	40	8.8	30,31	2.2	6–8	5.4	6.6
Cairo, Ill	1	45	14.1	14	7.7	1	11.2	6.4
Neosho River.								
Iola, Kans	262	10	6.3	1	— 1.2	29–31	0.0	7.5
Oswego, Kans	184	20	21.7	1	0.8	26–31	4.0	20.9
Fort Gibson, Okla	8	22	31.0	1	10.5	27–30	15.0	20.5
Canadian River.								
Calvin, Okla	99	15	6.1	1	3.2	14,31	3.7	2.9
Black River.								
Blackrock, Ark	67	12	7.0	1	2.3	30,31	3.2	4.7
White River.								
Calicorock, Ark	272	18	6.2	3	0.0	31	1.6	6.2
Batesville, Ark	217	18	7.9	1–3	2.0	31	3.6	5.9
Clarendon, Ark	75	30	21.7	8,9	10.5	31	16.3	11.2
Arkansas River.								
Wichita, Kans	832	10	0.2	2	— 0.7	28–31	—0.4	0.9
Tulsa, Okla	551	16	15.0	1	3.1	28–31	5.2	11.9
Webbers Falls, Okla	465	23	26.5	1	7.4	31	12.9	19.1
Fort Smith, Ark	403	22	29.0	2	6.7	29	13.5	22.3
Dardanelle, Ark	256	21	25.3	3	6.1	31	13.9	19.2
Little Rock, Ark	176	23	24.8	4	5.5	31	13.6	19.3
Yazoo River.								
Greenwood, Miss	175	38	9.7	9	1.9	2,3	5.5	7.8
Yazoo City, Miss	80	25	7.4	12	— 1.0	1	3.9	8.4
Ouachita River.								
Camden, Ark	304	39	13.3	3	5.2	20,21	7.3	8.1
Monroe, La	122	40	13.2	10–12	1.9	1	9.0	11.3
Red River								
Arthur City, Tex	688	27	19.5	2	7.5	29	10.5	12.0
Fulton, Ark	515	28	23.8	5,6	10.2	29	14.8	13.6
Shreveport, La	327	29	12.0	7	0.7	1	5.3	11.3
Alexandria, La	118	36	17.5	10,11	3.6	1,2	9.4	13.9
Mississippi River.								
Fort Ripley, Minn. (c)	2,082	10	.....	.....	.....	.....	.....	.....
St. Paul, Minn. (a)	1,954	14	.....	.....	.....	.....	.....	.....
Red Wing, Minn. (a)	1,914	14	.....	.....	.....	.....	.....	.....
Reeds Landing, Minn	1,884	12	0.6	16	0.0	24–29,31	0.2	0.6
La Crosse, Wis. (d)	1,819	12	.....	.....	.....	.....	.....	.....

TABLE IV.—*Heights of rivers referred to zeros of gages*—Continued.

Stations.	Distance to mouth of river.	Flood stage on gage.	Highest water.		Lowest water.		Mean stage.	Monthly range.
			Height.	Date.	Height.	Date.		
Mississippi River.—Cont'd.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*
Prairie du Chien, Wis (a)	1,759	18	.....	.....	.....	.....	.....	.....
Dubuque, Iowa	1,699	18	3.6	22,23	1.2	7	2.8	2.4
Leclaire, Iowa (f)	1,609	10	.....	.....	.....	.....	.....	.....
Davenport, Iowa	1,593	15	2.6	1,2	0.8	9	1.8	1.8
Muscatine, Iowa	1,562	16	3.7	27	1.5	10	2.6	2.2
Galland, Iowa	1,472	8	1.4	1,2	0.5	11	1.0	0.9
Keokuk, Iowa	1,463	15	2.2	1,2	— 0.5	8	1.0	2.7
Warsaw, Ill	1,458	18	5.0	1,2	2.9	13	4.1	2.1
Hannibal, Mo	1,402	18	3.2	1-3	0.8	13,14	2.0	2.4
Grafton, Ill	1,306	23	5.2	2-5	3.0	16	4.2	2.2
St. Louis, Mo	1,264	30	11.5	5	3.0	24,25	5.9	8.5
Chester, Ill	1,189	30	9.9	6	3.6	26	5.9	6.3
Cape Girardeau, Mo	1,138	28	13.9	7	6.1	26	9.0	7.8
New Madrid, Mo	1,008	34	11.4	14,15	6.0	1	9.0	5.4
Memphis, Tenn	843	33	9.5	16,17	5.3	1,2	7.4	4.2
Helena, Ark	767	42	10.8	17,18	5.7	1-3	8.2	5.1
Arkansas City, Ark	635	42	22.2	11,12	9.3	31	15.8	12.9
Greenville, Miss	595	42	17.9	12	6.9	1	12.4	11.0
Vicksburg, Miss	474	45	19.3	13,14	5.6	1	12.9	13.7
Natchez, Miss	373	46	20.3	15	7.4	1	14.8	12.9
Baton Rouge, La	240	35	13.2	16	4.0	1,2	9.1	9.2
Donaldsonville, La	188	28	8.8	15,16	3.0	4	6.1	5.8
New Orleans, La	108	18	5.9	14,15	3.3	4	4.7	2.6
Atchafalaya River.								
Simmesport, La	127	41	18.4	15,16	3.5	1	12.5	14.9
Melville, La	103	37	21.2	16	7.4	1	15.8	13.8
Morgan City, La	19	8	4.5	11,12	3.4	3,23	4.0	1.1
Hudson River.								
Troy, N. Y	154	14	4.0	20	1.5	26,27	2.2	2.5
Albany, N. Y	147	12	3.7	11	0.3	3	2.0	3.4
Delaware River.								
Hancock (E. Branch), N. Y.	287	12	4.2	8	2.9	3	3.4	1.3
Hancock (W. Branch), N. Y.	287	10	4.7	15	2.6	4	3.9	2.1
Port Jervis, N. Y	215	14	3.0	12	1.6	4-6	2.2	1.4
Phillipsburg, N. J	146	26	1.6	11,17	0.5	6,7	1.1	1.1
Trenton, N. J	92	18	1.4	8,9	0.9	7,21-29	1.0	0.5
North Branch Susquehanna.								
Binghamton, N. Y	183	14	2.5	23	1.8	6	2.1	0.7
Wilkes-Barre, Pa	60	17	2.8	26	2.1	10	2.5	0.7
West Branch Susquehanna.								
Williamsport, Pa	39	20	2.7	21	0.4	2-8	0.8	2.3
Susquehanna River.								
Harrisburg, Pa	69	17	1.8	23	0.3	9	1.0	1.5
Shenandoah River.								
Riverton, Va	58	22	— 0.6	1	— 0.9	8-25	—0.8	0.3
Potomac River.								
Cumberland, Md	290	8	3.8	19,20	1.8	1-11	2.7	2.0
Harpers Ferry, W. Va	172	18	0.2	20,21	— 0.4	10-12	—0.1	0.6
James River.								
Lynchburg, Va	260	20	4.3	31	1.1	3-6	1.8	3.2
Columbia, Va	167	18	8.9	31	5.8	6,21,22	6.6	3.1
Richmond, Va	111	10	1.7	31	0.3	6	1.0	1.4
Dan River.								
Danville, Va	55	8	4.6	23	0.3	4,18-22	0.9	4.3
Roanoke River.								
Clarksville, Va	196	12	6.2	23	0.6	1	2.2	5.6
Weldon, N. C	129	30	31.5	24	10.8	3-6	15.7	20.7
Tar River.								
Greenville, N. C	21	22	13.5	30	4.4	2-4	7.0	9.1
Haw River.								
Moncure, N. C	171	25	23.2	23	7.3	2-3	9.2	15.9
Cape Fear River.								
Fayetteville, N. C	112	38	38.2	24	4.5	7,21	10.7	33.7
Pedee River.								
Cheraw, S. C	149	27	31.8	24	3.0	2,7,8	8.2	28.8
Smiths Mills, S. C	51	16	13.6	31	5.6	5	8.1	8.0
Lynch Creek.								
Effingham, S. C	35	12	4.6	14,15,28,29	3.5	7,8,21,22	4.0	1.1
Black River.								
Kingstree, S. C	45	12	3.3	26,27	2.0	5,14,15	2.7	1.3
Catawba-Wateree River.								
Mount Holly, N. C	143	15	5.0	23	1.8	1,11-21	2.2	3.2
Catawba, S. C	107	11	13.1	23	2.3	5	4.2	10.8
Camden, S. C	37	24	29.2	24	6.8	20	10.8	22.4
Congaree River.	*Miles.*	*Feet.*	*Feet.*		*Feet.*		*Feet.*	*Feet.*
Columbia, S. C	52	15	15.9	24	1.6	7,8,20,21	3.5	14.3
Santee River.								
Ferguson, S. C	82	12	13.8	30	8.3	9	10.6	5.5
Savannah River.								
Calhoun Falls, S. C	347	15	9.0	23	2.8	5,6	3.8	6.2
Augusta, Ga	268	32	26.0	23	7.8	1	11.0	18.2
Oconee River.								
Dublin, Ga	79	30	11.8	28	0.9	2,3,9	3.5	10.9
Ocmulgee River.								
Macon, Ga	184	18	16.9	23	2.3	1	4.7	14.6
Abbeville, Ga	51	11	11.0	31	2.5	3,4	4.3	8.5
Flint River.								
Montezuma, Ga	152	20	12.0	27	3.0	1	5.3	9.0
Albany, Ga	99	20	7.4	30,31	1.0	2,3	2.6	6.4
Bainbridge, Ga	22	22	9.5	31	4.9	1-4	5.9	4.6
Chattahoochee River.								
Oakdale, Ga	305	18	11.0	23	3.0	1	5.4	8.0
West Point, Ga	174	20	11.7	23	2.2	1	4.3	9.5
Eufaula, Ala	90	40	20.0	25	1.6	1	6.1	18.4
Alaga, Ala	30	25	17.0	25	3.0	1	6.5	14.0
Coosa River.								
Rome, Ga	266	30	18.7	8	1.0	1,5,6	4.6	17.7
Gadsden, Ala	162	22	17.5	9	1.0	1	6.5	16.5
Lock No. 4, Ala	113	17	13.5	10	0.3	1	5.2	13.2
Wetumpka, Ala	12	45	19.4	11	1.6	1	8.6	17.8
Alabama River.								
Montgomery, Ala	323	35	15.3	11	0.3	1	6.1	15.0
Selma, Ala	246	35	16.7	12	— 0.2	1	6.7	16.9
Black Warrior River.								
Tuscaloosa, Ala	90	43	40.5	8	5.0	1	14.5	35.5
Tombigbee River.								
Columbus, Miss	316	33	7.5	23	— 3.0	1	1.9	10.5
Demopolis, Ala	168	35	25.0	27	— 1.2	1	11.0	26.2
Pascagoula River.								
Merrill, Miss	78	20	2.4	11,12	1.0	1,3	1.8	1.4
Pearl River.								
Columbia, Miss	110	18	5.2	31	3.0	1-3	4.2	2.2
Sabine River.								
Logansport, La	315	25	7.5	25	3.1	19,20	5.2	4.4
Neches River.								
Beaumont, Tex	18	10	1.5	1	0.3	22	0.9	1.2
Trinity River.								
Dallas, Tex	320	25	20.3	1	4.9	30	7.0	15.4
Long Lake, Tex	211	35	10.4	8	3.0	1	6.1	7.4
Liberty, Tex	20	25	10.2	12	5.3	9	6.6	4.9
Brazos River.								
Waco, Tex	285	24	5.2	5	1.5	23-27	2.4	3.7
Hempstead, Tex	140	40	1.7	1	— 0.2	8	0.7	1.9
Booth, Tex	61	39	4.9	1	4.4	24-31	4.6	0.5
Colorado River.								
Austin, Tex	214	18	3.0	5	1.4	1,26-28	1.7	1.6
Columbus, Tex	98	24	7.8	9	6.2	3,29-31	6.7	1.6
Red River of the North.								
Moorhead, Minn (a)	284	26	.....	.....	.....	.....	.....	.....
Snake River.								
Lewiston, Idaho	144	24	2.0	6,12	0.9	20	1.6	1.1
Riparia, Wash	67	30	2.7	2,7	1.5	24	2.4	1.2
Columbia River.								
Wenatchee, Wash	473	40	6.5	1,2	6.2	8-10	6.3	0.3
Umatilla, Oreg	270	25	2.9	1,2	1.3	31	2.1	1.6
The Dalles, Oreg	166	40	3.4	1	0.5	23	1.9	2.9
Willamette River.								
Albany, Oreg	118	20	8.8	30	2.0	11,12,22	3.5	6.8
Portland, Oreg	12	15	5.4	29,30	1.5	18,19	3.1	3.9
Sacramento River.								
Red Bluff, Cal	265	23	3.9	5	1.0	21-23	1.6	2.9
Colusa, Cal	156	28	6.2	7	3.4	24	4.1	2.8
Knights Landing, Cal	99	18	5.0	7,8	2.1	22,23	2.9	2.9
Sacramento, Cal	64	25	9.6	7	6.8	21-23	7.5	2.8
San Joaquin River.								
Pollasky, Cal	203	10	0.0	1-31	0.0	1-31	0.0	0.0
Firebaugh, Cal	148	14	— 0.4	18,19,25-27	— 1.3	1-15	—0.9	0.9
Lathrop, Cal	49	14	1.2	11	0.3	1	0.7	0.9

(a) River frozen during month. (b) River frozen for 22 days. (c) River frozen for 26 days. (d) River frozen for 25 days. (e) River frozen for 29 days. (f) River frozen for 24 days.

Honolulu, T. H., latitude 21° 19′ north, longitude 157° 52′ west; barometer above sea, 38 feet; gravity correction, —0.057 inch, applied. December, 1908.

Day.	Pressure, in inches.*		Air temperature, degrees Fahrenheit.				Moisture.				Wind, in miles per hour.				Precipitation, inches.		Clouds.					
							8 a. m.		8 p. m.		8 a. m.		8 p. m.				8 a. m.			8 p. m.		
	8 a. m.	8 p. m.	8 a. m.	8 p. m.	Maximum.	Minimum.	Wet.	Relative humidity.	Wet.	Relative humidity.	Direction.	Velocity.	Direction.	Velocity.	8 a. m.	8 p. m.	Amount.	Kind.	Direction, from.	Amount.	Kind.	Direction, from.
							°	%	°	%												
1	29.97	29.96	74.0	72.0	78	70	67.0	69	66.0	78	ne.	7	e.	5	0.00	T.	8 Few	A.-cu. Cu.	s. 0	2 5	A.-cu. Cu.	nw. ne.
2	29.97	29.97	74.7	73.0	79	71	65.6	61	67.0	78	e.	7	ne.	4	0.00	0.00	5	A.-cu.	e.	8	Cu.	ne.
3	29.97	29.96	75.0	72.1	78	70	67.0	66	67.0	77	ne.	3	ne.	9	0.01	0.00	5	A.-cu.	e.	3	Cu.	ne.
4	30.00	29.99	73.0	72.5	78	70	65.5	67	66.0	71	ne.	12	ne.	10	T.	0.00	3	Cu.	e.	2	Cu.	ne.
5	30.02	30.01	74.3	72.5	79	69	67.0	68	66.0	71	ne.	8	e.	3	0.00	0.00	8 1	A.-s. Cu.	e. e.	1	Cu.	ne.
6	30.05	30.09	76.0	74.0	79	71	67.2	63	69.0	78	e.	4	ne.	14	0.00	T.	4	Cu.	e.	10	Cu.	ne.
7	30.12	30.16	75.5	74.0	78	72	67.3	65	67.0	69	ne.	24	e.	10	0.01	0.00	2	Cu.	e.	5	Cu.	ne.
8	30.16	30.14	75.0	73.0	78	69	66.0	62	68.0	78	ne.	14	ne.	20	0.00	T.	6	Cu.	e.	5 2	A.-s. Cu.	0(?) ne.
9	30.20	30.20	75.0	74.0	79	69	70.0	78	68.0	74	ne.	7	e.	15	0.03	0.05	9	Cu.	e.	6	Cu.	ne.
10	30.25	30.25	73.2	73.0	78	72	65.1	65	63.0	57	e.	15	ne.	4	0.01	0.00	9	Cu.	e.	4	Cu.	ne.
11	30.28	30.24	72.2	72.0	78	68	65.0	68	61.0	53	ne.	22	e.	9	T.	0.00	7	S.-cu.	e.	0	0	0
12	30.21	30.16	73.0	72.0	77	70	63.0	57	64.0	65	ne.	12	e.	15	0.00	0.00	7	Cu.	e.	Few	A.-s.	n.
13	30.16	30.11	74.0	71.5	76	71	62.5	52	65.5	72	e.	19	e.	9	0.00	0.00	3	Cu.	e.	8	S.	ne.
14	30.15	30.12	72.2	73.5	78	68	65.0	68	66.0	67	ne.	14	e.	10	T.	0.00	5 3	A.-cu. Cu.-s.	e. e.	6	S.	e.
15	30.12	30.11	74.7	70.0	79	68	67.0	67	68.0	90	n.	5	ne.	2	0.00	0.04	2 1	A.-cu. Cu.	e. e.	10	N.	ne.
16	30.17	30.14	74.7	73.0	78	69	66.0	64	65.0	65	e.	8	ne.	9	0.01	0.00	3 1	A.-cu. Cu.	e. e.	Few	A.-s.	se.
17	30.18	30.16	74.0	72.5	77	68	65.0	61	64.0	63	e.	17	e.	10	T.	T.	5	S.-cu.	e.	4	S.	e.
18	30.16	30.12	72.5	70.0	77	63	62.2	56	62.0	64	e.	15	ne.	16	0.00	0.19	4	Cu.	e.	2 1	Cu. Cu.-n.	e. ne.
19	30.12	30.08	72.0	70.0	76	64	64.0	65	66.0	81	ne.	12	e.	18	0.07	0.09	6	Cu.	e.	10	N.	ne.
20	30.15	30.13	66.4	71.0	74	64	65.1	94	63.0	64	e.	14	e.	9	0.96	0.21	3 5	Ci.-s. N.	0 e.	Few	S.	ne.
21	30.16	30.13	72.3	72.0	76	68	62.1	56	65.0	69	e.	5	ne.	9	0.10	0.00	4 4	Ci. Cu.	sw. e.	2	S.	e.
22	30.15	30.09	72.0	72.0	76	67	63.0	61	64.0	65	e.	13	e.	15	T.	T.	6 3	Ci.-s. S.-cu.	sw. e.	8	S.	e.
23	30.12	30.10	72.2	71.0	77	68	63.3	61	65.0	72	ne.	9	ne.	7	0.00	0.03	2 2	Ci.-s. Cu.	sw. e.	5	S.	ne.
24	30.11	30.07	71.2	64.5	75	63	63.0	63	64.0	97	ne.	11	ne.	17	0.05	0.19	4	Cu.	ne.	10	N.	ne.
25	30.11	30.08	66.5	65.0	70	61	57.7	58	58.0	66	ne.	23	ne.	15	0.60	T.	1	Cu.	ne.	2 4	S. N.	ne. ne.
26	30.08	30.00	65.0	65.0	70	61	59.5	75	59.0	70	ne.	10	ne.	12	T.	0.01	4	Cu.	e.	8	S.	ne.
27	30.09	30.06	64.2	67.5	74	61	62.1	89	63.0	78	n.	3	n.	3	0.02	0.00	7	S.-cu.	ne.	8	Cu.	ne.
28	30.10	30.07	71.0	70.0	76	66	63.0	64	63.0	68	ne.	8	e.	8	T.	0.00	4	A.-cu.	e.	7 1	A.-s. Cu.	0 ne.
29	30.05	30.00	70.6	69.0	76	67	64.0	70	64.0	76	ne.	2	ne.	10	0.00	0.00	9 Few	A.-cu. S.-cu.	w. e.	3 4	Cu. Cu.	ne. ne.
30	30.00	29.96	70.0	68.5	74	66	65.0	77	61.0	65	ne.	12	ne.	12	0.00	0.00	Few 1	A.-cu. S.-cu.	e. e.	8	A.-cu.	sw.
31	29.99	30.00	69.0	69.0	74	62	61.0	63	61.0	63	ne.	6	ne.	10	0.00	0.00	10	A.-s.	sw.	8 1 1	Ci.-s.(?) A.-s.(?) Cu.	0 0 ne.
Mean	30.109	30.086	72.1	70.9	76.5	67.3	64.4	66.2	64.5	70.8	ne.	11.0	ne.	10.3	1.87	0.81	5.5	Cu.	e.	5.6	Cu.	ne.

Observations are made at 8 a.m. and 8 p. m., local standard time, which is that of 157° 30′ west, and is 5h and 30m slower than 75th meridian time. *Pressure values are reduced to sea level and standard gravity.