

THE WEATHER OF THE MONTH.

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PRESSURE.

The distribution of mean atmospheric pressure for May, 1907, over the United States and Canada is graphically shown on Chart VI, and the average values and departures from the normal are shown for each station in Tables I and V.

The pressure distribution during May, like that for April, maintained the type common to that of winter over the greater portion of the United States and Canada, and as a result weather commonly expected in March prevailed in nearly all districts during the entire month of May. The great continental area of high pressure over the interior of British America, while reduced somewhat in intensity from that of winter, appears to have remained largely intact during the month, and a vast accumulation of cold air still remained over that region, to be thrown off as areas of high pressure to drift southeastward over the districts from the Rocky Mountains to the Atlantic.

High pressure beyond the northern border of the United States maintained a nearly constant drift of cold surface winds from northerly districts, which, augmented by the unusual southerly paths of the lows, brought unseasonable weather far to the south of the usual limits of such weather for May. Pressure over nearly all interior districts of the United States and Canada, as in the preceding month, was higher than the average, with the most pronounced excess over the northern districts.

Over the upper Missouri Valley and northward over Manitoba the excess varied from +.10 to +.14 inch, while southward the excess above the normal diminished rapidly, and along the Gulf coast, pressure was slightly lower than the average. A slight excess prevailed over the immediate Pacific coast, but over most of the territory west of the Rockies pressure was slightly lower than the average.

TEMPERATURE.

The unseasonably cold weather that characterized the month of April continued without material interruption during the entire month of May, especially over the districts east of the Rocky Mountains, and the month as a whole appears to have been colder over a greater extent of territory than any previous month of the same name during the period of reliable observations. The accumulated deficiency of temperature for the two months, April and May combined, has no known precedent and largely exceeds that of any previous combination of the same months in the history of the Weather Bureau.

The nearly constant presence of high barometric pressure along the northern border of the United States and over the British Provinces from western Ontario to the Rocky Mountains, and diminishing pressure southward, due to the development and passage of numerous areas of low barometer over the southern Rocky Mountain and west Gulf districts, brought all portions of the United States east of the Rocky Mountains, except the Florida Peninsula, under the influence of frequent cold northerly winds, instead of warm southerly winds, which, with the normal May distribution of pressure, generally prevail over these districts.

The month opened with an area of high pressure and decidedly cold weather over all northern districts, the southern movement and increased intensity of which brought to some of the districts along the eastern slope of the Rocky Mountains the lowest temperatures ever recorded in May. At Cheyenne, Wyo., a minimum temperature of 8° occurred on the morning of the 3d, 12° colder than any previous May temperature recorded at that point in a period of thirty-seven years. The above-mentioned cold area spreading southward and eastward brought killing frosts, during the 3d and 4th, from the panhandle of Texas northeastward to the Great Lakes.

About the 10th another high pressure area with unseasonably cold weather overspread all northern districts from the Great Lakes to the Rockies, and during the succeeding two days brought killing frosts from the Lake region and upper Ohio Valley eastward over the northern portion of the Middle Atlantic States and New England.

Cold weather accompanied by killing frosts again overspread the Great Plains districts from the 13th to 15th, carrying the line of freezing temperature into Oklahoma and western Arkansas, and again from the 19th to 22d cold weather dominated all northern districts, with killing frosts in the Lake region and the interior and mountain districts of the Middle Atlantic States.

While no severe cold weather occurred during the greater part of the last decade of the month, the temperature was generally below the normal, and cool, cloudy, unsettled weather interfered seriously with the development of vegetation.

The monthly mean temperature was below the normal for the month over all districts of the United States, except the Florida Peninsula, the States of Washington and Oregon, the western portion of Idaho, and a narrow strip along the coast of California. Over the upper Missouri Valley, the Great Plains, Mississippi and Ohio Valley districts and Lake region the average was from 6° to 10° below the normal, the monthly values as a rule being lower than any previously recorded in May.

Maximum temperatures did not reach 90°, except in southern Georgia and western Florida, in a narrow strip from south-central Texas northward thru Oklahoma, Kansas, eastern Nebraska and western Iowa, and over southern Arizona and the great valleys of California and Oregon between the Coast and Sierra Nevada ranges of mountains. Freezing temperatures occurred in all the mountain districts of the West, and from the panhandle of Texas northeastward over Oklahoma, Missouri, the greater part of the territory north of the Ohio River, the interior of the Middle Atlantic States and the whole of New England, except along the coast.

PRECIPITATION.

The distribution of precipitation during May, 1907, is graphically shown on Chart IV by appropriate shading or by figures representing the actual amount of fall.

The rainfall in May is usually heaviest, from 4 to 6 inches, in the district from the Mississippi River westward to the one hundredth meridian, and from the Texas coast northward to Iowa.

During May, 1907, precipitation was generally deficient in the northern portion of the above district, especially over the eastern portions of Kansas and Nebraska, and central Missouri. The area of heaviest rainfall occupied the lower Mississippi Valley, where amounts from 10 to nearly 30 inches were recorded. In the south-central portions of Louisiana the monthly falls were the greatest on record, while all portions of the State received amounts much in excess of the average, resulting in flooding of much land and serious damage to agricultural interests. Precipitation was also heavy locally in central Florida, in western South Dakota and eastern Montana, over Utah and locally in Arizona and New Mexico.

Precipitation was slightly above the average over most of the Atlantic coast districts south of southern New England, and decidedly above the normal in the lower Mississippi Valley and Gulf States, where heavy falls were of frequent occurrence and seriously interfered with the progress of the season's operations. It was also above the normal locally in Florida, over Texas, and the entire Rocky Mountain region, where the falls were of frequent occurrence and the amounts sufficient for all requirements. Precipitation was generally deficient

from New England westward over New York, Pennsylvania, the Lake region, over the States bordering on the Mississippi River from St. Louis northward, and over the lower Missouri Valley. In the latter district the deficiency was quite marked, but the excess of cloudiness and the generally cool weather prevented rapid evaporation, and the lack of precipitation was rather beneficial than otherwise.

Over the western portion of the Plateau districts and the Pacific coast States the precipitation was uniformly deficient. In all districts where rain usually occurs the distribution thru the month was such that no long periods of dry weather occurred, and no serious lack of moisture prevailed at any time.

The drought that had prevailed since the autumn of last year over the central and southern portions of the Florida Peninsula was generally broken about the middle of the month, thus terminating one of the longest periods of generally deficient rainfall in the history of the State.

At Key West from November 4, 1906, to May 16, 1907, a period of 194 days, the total precipitation amounted to but 2.08 inches, less than 20 per cent of the normal, and the greatest amount of fall for any single storm during that period was 0.29 inch.

SNOWFALL.

Measurable amounts of snowfall occurred over the northern tier of States from New England westward and generally over the Rocky and Sierra Mountain ranges, and the elevated portions of the Plateau region.

Snowfall was relatively heavy over the central Rocky Mountain region, especially over portions of Colorado and Wyoming, where the falls were frequent and at times so heavy and wet as to seriously interrupt telegraphic and telephonic communication. The total fall at some of the higher elevations amounted to as much as 5 feet.

The snowstorm of the 3d over northern Kansas, the whole of Nebraska, and the western portions of Iowa and Missouri covered those districts to depths of from 3 to 8 inches, and was probably the latest date in May on record in those districts when snow was so general, and covered the ground to such depths.

On account of the prevailing cool weather no rapid decrease occurred in the volume of snow in the mountains; the melting was slow and much of the water resulting therefrom found its way into the soil. The run-off was therefore moderate, but being well distributed thru the month maintained a good flow of water in most of the streams in those districts.

HUMIDITY AND SUNSHINE.

The amount of moisture in the atmosphere was slightly less than the average from New England westward to the Great Lakes and the Upper Mississippi Valley, also over the northern portions of North Dakota and Montana and generally over the Pacific coast districts.

It was generally in excess over the Gulf States and lower Mississippi Valley and from 10 to 15 per cent above the average over the Great Plains, Rocky Mountains, and most of the Plateau districts.

More than the normal amount of sunshine prevailed over the Florida Peninsula and over the valleys of California and Oregon between the coast and Sierra Nevada ranges of mountains.

Over the remainder of the country sunshine was deficient, and largely so in the lower Mississippi Valley and adjacent districts.

The month, as a whole, may be classed as one which the elements of cold, frost, clouds, rain and snow successfully conspired to render unusually unfavorable for the development of vegetation or the prosecution of the usual outdoor occupations, and the retardation of the season so pronounced at the end of April was even more apparent at the end of May.

WEATHER IN ALASKA.

From telegraphic reports received thru the courtesy of the Chief Signal Officer and from cooperative observers in that territory, it appears the weather for May was comparatively mild and remarkably free from severe changes. The day temperatures were well above the freezing point, and the night temperatures but slightly and at infrequent intervals below that point.

Much clear weather prevailed, and in the interior the precipitation appears to have been light, with but little snow.

The Yukon River was open for navigation by the 3d of the month, and at North Fork, near the international boundary, and but a short distance south of the Arctic Circle, the observer reports that corn, peas, radishes, onions, lettuce, and cabbage were up and doing well.

Average temperatures and departures from the normal.

Districts.	Number of stations.	Average temperatures for the current month.	Departures for the current month.	Accumulated departures since January 1.	Average departures since January 1.
		°	°	°	°
New England	12	49.4	- 5.4	-15.4	- 3.1
Middle Atlantic	16	57.2	- 4.4	- 7.5	- 1.5
South Atlantic	10	68.9	- 0.9	+ 5.0	+ 1.0
Florida Peninsula *	8	77.1	+ 1.4	+11.1	+ 2.2
East Gulf	11	70.1	- 2.2	+13.2	+ 2.6
West Gulf	10	67.7	- 5.0	+14.0	+ 2.8
Ohio Valley and Tennessee	13	60.3	- 4.9	+ 0.5	+ 0.1
Lower Lake	10	50.2	- 7.0	-10.8	- 2.2
Upper Lake	12	44.7	- 7.5	-10.2	- 2.0
North Dakota *	9	44.5	- 8.7	-18.2	- 3.6
Upper Mississippi Valley	15	54.3	- 7.6	- 3.4	- 0.7
Missouri Valley	12	54.9	- 7.1	- 0.3	- 0.1
Northern Slope	9	48.2	- 4.8	- 3.0	- 0.6
Middle Slope	6	56.5	- 6.4	+ 8.1	+ 1.6
Southern Slope *	7	62.6	- 6.5	+13.9	+ 2.8
Southern Plateau *	12	60.1	- 4.7	+ 8.3	+ 1.7
Middle Plateau *	10	52.0	- 3.5	+14.9	+ 3.0
Northern Plateau *	12	54.8	- 0.1	+ 1.0	+ 0.2
North Pacific	7	54.7	+ 1.6	- 0.4	- 0.1
Middle Pacific	8	59.2	- 0.3	+ 1.8	+ 0.4
South Pacific	4	61.1	- 0.4	+ 4.8	+ 1.0

* Regular Weather Bureau and selected cooperative stations.

In Canada.—Director R. F. Stupart says :

The mean temperature for May was below the average thruout Canada, except in British Columbia and the Yukon Territory, where small positive differences were recorded. The negative departures from average were especially large from Saskatchewan to New Ontario, ranging between 10° in the former province, and 13° in the latter district. In Quebec differences were from 2° to 7°, and in the Maritime Provinces from 3° to 4°. An excess of from 2° to 4° occurred in British Columbia, and of 5° in the Yukon Territory.

Average precipitation and departures from the normal.

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
		Inches.		Inches.	Inches.
New England	12	3.15	91	-0.3	-3.4
Middle Atlantic	16	3.90	108	+0.3	-3.4
South Atlantic	10	4.37	110	+0.4	-6.6
Florida Peninsula *	8	5.94	168	+2.4	-4.4
East Gulf	11	7.31	182	+3.3	+0.2
West Gulf	10	6.33	143	+1.9	-2.2
Ohio Valley and Tennessee	13	4.02	103	+0.1	-0.7
Lower Lake	10	2.98	88	-0.4	-0.9
Upper Lake	12	2.52	76	-0.8	-1.2
North Dakota *	9	1.52	68	-0.7	-1.8
Upper Mississippi Valley	15	3.24	78	-0.9	-1.0
Missouri Valley	12	3.51	85	-0.6	-1.8
Northern Slope	9	3.32	143	+1.0	0.0
Middle Slope	6	3.00	93	-0.6	-1.5
Southern Slope *	7	3.43	92	-0.3	-1.6
Southern Plateau *	12	0.69	141	+0.2	+1.7
Middle Plateau *	10	1.44	153	+0.5	+1.4
Northern Plateau *	12	1.29	78	-0.4	+0.1
North Pacific	7	1.38	50	-1.4	-6.4
Middle Pacific	8	0.54	35	-1.0	+2.3
South Pacific	4	0.06	17	-0.3	+1.7

* Regular Weather Bureau and selected cooperative stations.

In Canada.—Director Stupart says :

There was an almost general deficiency in precipitation over the Dominion, the widest departures from average occurring in British Columbia, where in most districts the rainfall was less than 1 inch. In the western provinces the aggregate of rain and melted snow was very generally less than half the average, but some few stations in northern Alberta and northeastern Saskatchewan recorded an average amount. In Ontario, it was only in Algoma, Nipissing, and the Niagara Peninsula that a normal amount was recorded, other parts of the province, and also western Quebec, showing a deficiency of between 30 and 40 per cent. In eastern Quebec and the northern portions of the Maritime Provinces, including Prince Edward Island, it was slightly in excess, while other districts showed a small deficiency.

Maximum wind velocities.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Buffalo, N. Y.	27	61	sw.	North Head, Wash.	18	60	se.
Canton, N. Y.	13	55	sw.	North Platte, Nebr.	20	60	sw.
Do.	27	50	w.	Oklahoma, Okla.	14	54	nw.
Cleveland, Ohio	27	50	w.	Pensacola, Fla.	31	50	s.
Jacksonville, Fla.	8	56	se.	Pierre, S. Dak.	25	55	e.
Lewiston, Idaho	10	62	w.	Pittsburg, Pa.	4	50	nw.
Lincoln, Nebr.	12	50	s.	Point Reyes Light, Cal.	2	55	nw.
Do.	17	52	n.	Do.	3	84	nw.
Do.	22	52	nw.	Do.	4	50	nw.
Memphis, Tenn.	6	52	w.	Do.	5	50	nw.
Modena, Utah	11	58	sw.	Do.	12	50	nw.
Mount Tamalpais, Cal.	2	50	nw.	Do.	22	52	nw.
Do.	3	76	nw.	San Antonio, Tex.	8	56	nw.
Do.	23	58	nw.	Sand Key, Fla.	11	50	sw.
Do.	24	64	nw.	Sioux City, Iowa	12	52	s.
North Head, Wash.	9	70	se.	Southeast Farallon, Cal.	3	54	nw.
Do.	10	64	se.	Toledo, Ohio	26	52	sw.

Average relative humidity and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England	74	-1	Missouri Valley	65	0
Middle Atlantic	72	0	Northern Slope	66	+8
South Atlantic	76	+2	Middle Slope	65	+4
Florida Peninsula	76	0	Southern Slope	60	-1
East Gulf	78	+7	Southern Plateau	39	+7
West Gulf	79	+4	Middle Plateau	51	+5
Ohio Valley and Tennessee	69	+3	Northern Plateau	50	-6
Lower Lake	71	0	North Pacific	76	0
Upper Lake	70	-2	Middle Pacific	70	-1
North Dakota	65	+3	South Pacific	69	0
Upper Mississippi Valley	69	+1			

Average cloudiness and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England	6.3	+0.8	Missouri Valley	5.9	+0.5
Middle Atlantic	5.7	+0.5	Northern Slope	6.1	+0.7
South Atlantic	5.0	+0.6	Middle Slope	5.7	+0.9
Florida Peninsula	4.0	-0.5	Southern Slope	5.0	+0.5
East Gulf	6.4	+2.7	Southern Plateau	2.9	+0.7
West Gulf	6.1	+1.2	Middle Plateau	4.8	+0.7
Ohio Valley and Tennessee	5.6	+0.5	Northern Plateau	4.6	-1.0
Lower Lake	5.5	+0.3	North Pacific	6.0	+0.1
Upper Lake	6.1	+0.6	Middle Pacific	4.9	+0.7
North Dakota	6.0	+0.7	South Pacific	3.5	-0.7
Upper Mississippi Valley	6.0	+0.8			