

WEATHER, FORECASTS, AND WARNINGS.

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NORTHERN HEMISPHERE PRESSURE.

Alaska.—All stations averaged below normal with the exception of Dutch Harbor. During the first decade pressure was high over the northern and western portions of this area and generally low during the second decade, while from the 23d to 29th pressure was again high. Lows occurred about the 4th, 6th, 10th, 13th-14th, 16th, 18th-19th, 21st, 27th, and last day of the month; and highs occurred about the 5th, 7th-8th, 12th, 25th, and 28th-29th.

Honolulu.—Pressure for the month averaged decidedly above the normal, being almost continuously so except during the last decade. Lows occurred on the 7th-8th, 24th, 28th-29th, and 30th; and highs on the 3d, 6th, 11th-15th, and 20th.

Iceland.—Pressure averaged decidedly below the normal for the season, being generally high during the first decade and low during the second and third decades of the month. Lows occurred on the 1st, 9th, 13th-14th, and 28th; and highs on the 4th, 6th, 11th, 23d-24th and last day of the month.

Azores.—The mean pressure for the month was about .20 inch above the seasonal average. Lows occurred on the 5th-6th, 7th-8th, and 27th-28th; and highs on the 1st-4th, 10th, 14th-19th, 21st-24th, and 30th.

Siberia.—Pressure averaged decidedly above the normal, particularly so over northern districts. Lows occurred about the 2d, 7th, 10th-11th, 18th, 20th, 27th, and 30th; and highs about the 5th, 9th, 11th-16th, 22d-23d, and 28th.

In the United States pressure was low at the beginning of the month over the Northeast and the middle plateau region, while a high-pressure area of moderate intensity stretched from the upper Mississippi Valley to the east Gulf coast.

The low area over the Northeast moved slowly northeastward to the Grand Banks during the first three days of the month.

The high area passed eastward to the Atlantic coast by the morning of the 2d, and on the morning of the 4th a pressure reading of 30.5 inches was reported at Hamilton, Bermuda.

The plateau low passed eastward and northeastward and by the morning of the 4th was over lower Michigan. Storm warnings were ordered for the west Gulf coast on the morning of the 3d, and brisk to high winds occurred over the region indicated. By the morning of the 5th the disturbance had passed to eastern Ontario, a secondary storm having in the meantime developed with center south of Nantucket. These disturbances moved slowly eastward, causing unsettled, rainy weather in the North Atlantic States until the 8th. Precipitation in connection with this storm was general from the Plains States eastward.

During the 2d pressure rose over the northern Rocky Mountain region, and on the morning of the 3d there was a high over northern Wyoming. The high passed slowly eastward, and on the morning of the 6th covered the Great Central Valleys. During the next 48 hours it had advanced to the northern upper Lake region, by the morning of the 10th to the St. Lawrence Valley, and by the following morning had passed to the ocean. Frosts occurred on the 5th over portions of Missouri, Arkansas, and eastern Texas, and on the 6th in Tennessee and the northern portions of the Gulf States, all of which were previously announced to the public.

A low appeared on the extreme north Pacific coast on the morning of the 4th, for which storm warnings were ordered on that date and storm winds occurred as announced in the advices. During the following 12 hours the storm advanced to Alberta, and by the morning of the 6th a secondary disturbance was central over Colorado. During the next 48 hours the northern center had decreased in intensity while the secondary had moved to the Texas Panhandle. Storm warnings were ordered on the 8th for the west Gulf coast and small craft warnings disseminated for the east Gulf coast from New Orleans to Carrabelle, Fla., and brisk to high winds occurred over the territory indicated. During the 9th and 10th the storm developed a trough which extended southward to the Gulf. Pressure continued to decrease in the trough, and on the morning of the 12th, when the main center was over eastern Quebec, a secondary center extended from western North Carolina to northern Florida. Pressure continued to decrease in this latter storm, although the center made little advance, remaining practically stationary until the evening of the 15th, when storm warnings were ordered for the Atlantic coast from Delaware Breakwater to Boston, and later verified by the occurrence of brisk to high winds over the region indicated. By the morning of the 16th the disturbance had passed to a position immediately off the Virginia coast and during the next 24 hours moved to Newfoundland. Precipitation was general from the Rocky Mountains eastward, some heavy falls of snow being reported in the middle Missouri Valley.

During the 8th pressure became high on the north Pacific coast and on the following morning a high center was over Montana. It passed thence southeastward to Texas by the morning of the 14th, while another had made its appearance over Lake Superior. The northern center moved eastward to Maine during the 24 hours following, and the Texas center moved to Louisiana. On the morning of the 16th high pressure covered the Great Central Valleys, and on the following morning the center was over eastern Ontario and by the 18th on the middle Atlantic coast. Frosts occurred in connection with this high over the southern Plains and west Gulf States and over portions of the lower Lake region and Ohio Valley,

warnings of which were in the majority of cases disseminated previously to their occurrence.

On the morning of the 11th there were indications of a disturbance off the north Pacific coast, and by the morning following a low center was over British Columbia. During the next 48 hours it moved to Saskatchewan, a secondary center in the meantime developing over the middle plateau. The northern center apparently decreased in intensity, while the plateau storm merged with a storm that was central on the evening of the 14th over Alberta, and by the 15th there was a single center over western Montana. The disturbance passed slowly eastward along the northern border, and by the morning of the 20th was over the Canadian maritime Provinces. This depression gave little precipitation west of the Mississippi River, while to the eastward precipitation was confined to northern States.

Following the passage of this low area, pressure increased over the Northwest, and on the morning of the 17th a high was central over western Montana. By the morning of the 20th it had advanced to Lake Superior, and frosts were reported that morning throughout the Lake region and northern portion of the Ohio Valley. The high-pressure area passed slowly southeastward and by the morning of the 22d was over the South Atlantic States and remained off the South Atlantic coast for the three or four days following. Frosts occurred in connection with this high in the Lake region, the northern portion of the Ohio Valley, and in the Middle Atlantic States and North Carolina, warnings of which were previously issued.

A low-pressure area that was over British Columbia on the 21st passed to Saskatchewan by the 22d, and storm warnings were ordered for the Great Lakes, except Superior, in the morning and for the west Gulf coast in the evening. The winds on the Lakes were only of moderate intensity, but high winds occurred on the west Gulf coast. The disturbance advanced to Manitoba by the morning of the 23d, and a secondary center was over eastern Nebraska. On the following morning there was a single center over eastern Minnesota. On the 26th the center was over the eastern lower Lake region, and on the morning following there were two centers, one over northern New York and the other over northern Virginia. By the morning of the 28th the northern center had lost its identity, while the southern disturbance had increased in intensity and was over Pennsylvania. It remained practically stationary for the next 24 hours, and on the morning of the 30th it was east of Nova Scotia. This low-pressure area was preceded by high temperatures for the season from the Lake region to New England and precipitation was general over the Rocky Mountain region and thence eastward to the Atlantic coast.

Following the passage of this low, pressure became high on the morning of the 25th over the Rocky Mountains and thence northward into Canada. Frosts were reported generally throughout the Plains States, warnings of which were issued the previous day. The high on the following morning was over the Plains States, over which region frosts again occurred. On the morning of the 27th there were highs over Minnesota and the Texas coast, and frosts were reported in eastern Nebraska, eastern Iowa, and

northern Illinois. The center of high pressure on the morning of the 28th was over Lake Superior, where it remained stationary for 24 hours. On the morning of the last day of the month it was over the lower Lake region, light frosts being reported over portions of that section.

On the morning of the 26th a low-pressure area appeared over Alberta, settled southward over the plateau region, and up to the 30th remained over that section and the northern Rocky Mountain region. By the morning of the 30th, however, it had advanced to the Plains States, having caused no precipitation thus far in its course.

The month closed with pressure low over the Canadian maritime Provinces, the northern Plains States, and Colorado, while on the Pacific coast and over the Great Central Valleys pressure was high.

Navigation opened on the Great Lakes on the 15th.

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 Jan. 1.	Average departures since Jan. 1.
New England.....	12	46.1	+2.4	+16.1	+4.0
Middle Atlantic.....	15	53.2	+2.7	+19.6	+4.9
South Atlantic.....	10	61.1	-0.2	+14.4	+3.6
Florida Peninsula ¹	9	69.5	-1.0	+12.4	+3.1
East Gulf.....	11	63.4	-1.3	+ 5.3	+1.3
West Gulf.....	11	64.5	-1.3	- 4.4	-1.1
Ohio Valley and Tennessee.....	14	54.4	-0.4	+ 7.3	+1.8
Lower Lakes.....	11	47.1	+2.0	+10.4	+2.6
Upper Lakes.....	13	43.3	+2.5	+ 0.5	+0.1
North Dakota ¹	9	46.5	+5.6	- 1.0	-0.2
Upper Mississippi Valley.....	14	51.9	+1.5	+ 2.6	+0.6
Missouri Valley.....	12	53.2	+2.7	+ 3.0	+0.8
Northern slope.....	9	45.6	+2.8	- 8.7	-2.2
Middle slope.....	6	55.2	+1.5	- 5.7	-1.4
Southern slope ¹	8	66.1	0.0	- 8.1	-2.0
Southern Plateau ¹	9	58.6	-1.5	-13.9	-3.5
Middle Plateau ¹	10	47.3	0.0	- 7.6	-1.9
Northern Plateau ¹	11	47.4	+0.5	-12.0	-3.0
North Pacific.....	7	48.0	-0.3	- 5.2	-1.3
Middle Pacific.....	7	53.6	+0.1	- 4.0	-1.0
South Pacific.....	4	58.2	+0.1	+ 2.3	+0.6

¹ Regular Weather Bureau and selected cooperative stations.

Average precipitation and departures from the normal.

Districts.	Number of stations.	Average.		Departure.	
		Current month.	Percentage of normal.	Current month.	Accumulated since Jan. 1.
New England.....	11	3.35	110	+0.30	+0.30
Middle Atlantic.....	15	3.90	130	+0.90	-0.50
South Atlantic.....	11	2.12	259	+1.30	+0.80
Florida Peninsula ¹	9	1.49	65	-0.80	+2.10
East Gulf.....	11	3.01	73	-1.10	+1.80
West Gulf.....	10	3.34	94	-0.20	+0.20
Ohio Valley and Tennessee.....	14	3.00	83	-0.60	+5.10
Lower Lakes.....	10	2.58	108	+0.20	+5.60
Upper Lakes.....	14	2.40	104	+0.10	+0.70
North Dakota ¹	9	0.82	47	-0.90	-1.40
Upper Mississippi Valley.....	15	2.50	83	-0.50	+1.00
Missouri Valley.....	12	2.73	93	-0.20	+0.30
Northern slope.....	9	1.21	75	-0.40	0.00
Middle slope.....	6	0.53	51	-0.50	-0.70
Southern slope ¹	8	1.38	61	-0.90	-1.10
Southern Plateau ¹	9	0.42	100	0.00	-0.10
Middle Plateau ¹	11	0.64	62	-0.40	-1.50
Northern Plateau ¹	11	1.05	91	-0.10	-0.70
North Pacific.....	7	1.97	60	-1.30	-5.90
Middle Pacific.....	7	1.29	59	-0.90	-7.50
South Pacific.....	4	0.49	45	-0.60	-2.10

¹ Regular Weather Bureau and selected cooperative stations.

Average relative humidity and departure from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England.....	77	+4	Missouri Valley.....	62	-3
Middle Atlantic.....	68	-1	Northern slope.....	60	+2
South Atlantic.....	65	-7	Middle slope.....	53	-4
Florida Peninsula.....	67	-7	Southern slope.....	49	-6
East Gulf.....	66	-4	Southern Plateau.....	37	+7
West Gulf.....	66	-6	Middle Plateau.....	44	-1
Ohio Valley and Tennessee.....	64	-1	Northern Plateau.....	54	-3
Lower Lakes.....	69	-1	North Pacific.....	78	+7
Upper Lakes.....	71	-2	Middle Pacific.....	69	-3
North Dakota.....	64	-4	South Pacific.....	66	-2
Upper Mississippi Valley.....	66	-2			

Average cloudiness and departure from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England.....	5.7	+0.2	Missouri Valley.....	4.4	-1.2
Middle Atlantic.....	5.2	0.0	Northern slope.....	4.9	-0.2
South Atlantic.....	3.8	-0.8	Middle slope.....	4.2	-0.4
Florida Peninsula.....	3.9	+0.1	Southern slope.....	2.9	-1.8
East Gulf.....	3.5	-1.4	Southern Plateau.....	2.3	-0.5
West Gulf.....	3.4	-1.7	Middle Plateau.....	4.2	-0.3
Ohio Valley and Tennessee.....	5.2	-0.1	Northern Plateau.....	6.1	-0.9
Lower Lakes.....	5.0	-0.7	North Pacific.....	6.4	+0.2
Upper Lakes.....	4.7	-0.8	Middle Pacific.....	3.9	-0.5
North Dakota.....	4.3	-1.0	South Pacific.....	3.4	-0.6
Upper Mississippi Valley.....	5.1	-0.1			

Maximum wind velocities.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
Bismarck, N. Dak.	16	50	sw.	New York, N. Y.—			
Block Island, R. I.	20	52	nw.	Continued.			
Buffalo, N. Y.	1	57	w.	Do.	19	55	nw.
Do.	3	52	sw.	Do.	20	60	n.
Do.	18	56	sw.	North Head, Wash.	2	50	s.
Burlington, Vt.	11	54	s.	Do.	4	64	se.
Corpus Christi, Tex.	23	52	se.	Do.	5	52	se.
Detroit, Mich.	4	50	w.	Pittsburgh, Pa.	4	50	w.
Do.	22	62	w.	Point Reyes Light, Cal.	1	52	nw.
El Paso, Tex.	22	56	w.	Do.	6	55	nw.
Louisville, Ky.	3	54	sw.	Do.	21	64	nw.
Modena, Utah	28	50	sw.	Do.	22	50	nw.
Mount Tamalpais, Cal.	1	53	nw.	Do.	26	54	nw.
Do.	4	58	nw.	Do.	27	60	nw.
Do.	5	57		Do.	29	50	nw.
Do.	6	51		Do.	30	68	nw.
Do.	26	56	nw.	Do.	30	50	s.
Do.	27	74	nw.	Sioux City, Iowa	30	50	nw.
Do.	28	66	nw.	Southeast Farallon, Cal.	30	50	nw.
Do.	29	50	nw.	Syracuse, N. Y.	1	60	nw.
Do.	30	57	nw.	Tatoosh Island, Wash.	4	54	s.
Mount Weather, Va.	1	66	nw.	Do.	20	56	sw.
Do.	4	62	nw.	Do.	21	62	s.
Do.	5	68	nw.	Do.	8	56	s.
New York, N. Y.	1	64	nw.	Taylor, Tex.	4	54	sw.
Do.	2	60	nw.	Toledo, Ohio	4	54	sw.
Do.	6	50	nw.	Wichita, Kans.	23	50	s.