

TABLE 4.—Mean altitudes and temperatures of significant points identifiable as tropopauses during June 1939, classified according to the potential temperatures (10-degree intervals between 310° and 409° A.) with which they are indentified (based on radiosonde observations)

Potential temperatures	Fargo, N. Dak.			Nashville, Tenn.			Oakland, Calif.			Oklahoma City, Okla.			Omaha, Nebr.			Sault Ste. Marie, Mich.			St. Georges, Bermuda			Washington, D. C.		
	Number of cases	Mean altitude (km.) m.s.l.	Mean temperature °C.	Number of cases	Mean altitude (km.) m.s.l.	Mean temperature °C.	Number of cases	Mean altitude (km.) m.s.l.	Mean temperature °C.	Number of cases	Mean altitude (km.) m.s.l.	Mean temperature °C.	Number of cases	Mean altitude (km.) m.s.l.	Mean temperature °C.	Number of cases	Mean altitude (km.) m.s.l.	Mean temperature °C.	Number of cases	Mean altitude (km.) m.s.l.	Mean temperature °C.	Number of cases	Mean altitude (km.) m.s.l.	Mean temperature °C.
310-319	3	8.9	-48.7				1	7.4	-35.0				1	8.7	-32.0	4	8.9	-46.5				1	8.7	-32.0
320-329	13	10.3	-52.0				3	9.1	-39.7				8	9.3	-43.0	8	9.3	-43.0	1	11.1	-56.0	7	11.1	-56.0
330-339	13	12.7	-55.5	4	11.3	-51.5	12	10.6	-46.3	7	11.8	-56.7	10	10.4	-45.4	12	10.7	-50.3	11	12.7	-56.9	9	12.8	-63.1
340-349	9	12.3	-58.4	24	12.3	-54.4	21	12.3	-56.1	14	12.0	-53.6	15	12.3	-55.2	15	12.0	-55.3	16	12.9	-62.2	9	12.8	-63.1
350-359	3	13.8	-67.7	17	13.5	-61.0	15	13.5	-63.0	15	13.6	-63.1	10	13.2	-59.8	12	13.0	-58.8	13	13.9	-65.9	11	13.5	-62.6
360-369				10	14.5	-64.6	4	13.5	-55.8	8	15.0	-69.9	8	14.0	-59.9	2	13.6	-59.5	6	14.9	-69.3	4	14.4	-63.8
370-379				7	15.0	-64.3	4	14.5	-59.8	8	14.9	-63.8	5	14.5	-62.4	2	13.6	-53.5	5	17.7	-71.6	2	14.8	-63.0
380-389	1	13.9	-52.0	4	15.6	-67.2	4	15.5	-64.2	4	15.9	-67.0	5	15.5	-64.0	2	15.6	-65.5	1	16.0	-70.0			
390-399				6	16.5	-68.2	5	16.0	-65.0	3	16.1	-65.3	4	16.5	-67.8	2	15.4	-60.5	2	16.4	-69.0	3	16.5	-68.7
400-409				1	16.6	-62.0							1	17.1	-68.0						1	16.0	-65.0	
All (weighted means)		11.7	-55.3		13.6	-60.1		12.7	-56.2		13.6	-61.5		13.1	-56.8		11.7	-53.3		13.9	-63.9		13.2	-60.4
Mean potential temperature	334.5			354.8			347.8			352.7			350.9			332.4			366.5			354.8		

RIVERS AND FLOODS

[River and Flood Division, MERRILL BERNARD in charge]

The report for June will be published in the July REVIEW.—Editor.

WEATHER ON THE ATLANTIC AND PACIFIC OCEANS

[The Marine Division, I. R. TANNEHILL in Charge]

NORTH ATLANTIC OCEAN, JUNE 1939

By H. C. HUNTER

Atmospheric pressure.—Pressure during June averaged practically normal near the West Indies and the eastern coast of North America, but lower than normal over the central and northwestern portions of the North Atlantic, Bermuda having a deficiency of 0.06 inch. The southeastern portion showed a small excess, and the northeastern a large one, the average of Lerwick, Shetland Islands, being 0.15 inch greater than normal. However, over most of the eastern North Atlantic there was not so great an excess of pressure as during the preceding month.

Over the higher latitudes fluctuations of pressure were both rapid and wide for the time of year.

The extremes of pressure noted in available vessel reports were 30.70 and 29.38 inches. The high mark was recorded during the forenoon of the 21st, on an unidentified vessel near 55° N., 23° W. The low mark was noted within a very few miles of Cape Race, Newfoundland, early on the 1st, by the British liner *Caledonia*.

Table 1 shows that two far northern stations had lower pressure on the 14th than the *Caledonia's* extreme low, while on the 1st the Belle Isle station recorded a pressure of 28.64 inches.

Cyclones and gales.—There were about as many reports of gales along and near the chief routes to northwestern Europe as usual during June. There were several reports of strong gales (force 9), but none of winds of any greater energy. The northwestern portion of the much-traversed area furnished some strong-gale reports for the first week. The morning of the 1st found an intense low, which had come from the interior of Canada on an easterly course, centered near the northern tip of Newfoundland; thence it turned toward the north-northeast, so that its influence on transatlantic vessels did not last long. Later cyclones of somewhat less energy caused gales soon afterward in the vicinity of the Grand Banks.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, June 1939.

Station	Average pressure	Departure	Highest	Date	Lowest	Date
Julianehaab, Greenland	29.82	-0.04	30.52	23	29.20	14
Reykjavik, Iceland	29.95	+0.17	30.71	21	29.26	14
Lerwick, Shetland Islands	29.95	+0.15	30.51	1	29.38	28
Valencia, Ireland	30.03	+0.03	30.42	9	29.50	28
Lisbon, Portugal	30.06	+0.03	30.37	9	29.89	12
Madaira	30.09	+0.02	30.21	7	29.94	25
Horta, Azores	30.20	-0.04	30.37	7	29.86	26
Belle Isle, Newfoundland	29.86	.00	30.36	26	28.64	1
Halifax, Nova Scotia	29.98	+0.01	30.28	3	29.56	6
Nantucket	29.99	+0.01	30.30	3	29.70	6
Hatteras	30.01	.00	30.21	27	29.52	23
Bermuda	30.07	-0.06	30.28	13	29.56	23
Turks Island	30.04	+0.01	30.12	16	29.91	23
Key West	30.00	+0.01	30.14	16	29.85	14
New Orleans	29.98	.00	30.19	21	29.77	14

¹ For 23 days.

NOTE.—All data based on a. m. observations only, with departures compiled from best available normals related to time of observation, except Hatteras, Key West, Nantucket, and New Orleans, which are 24-hour corrected means.

Near the fortieth parallel of latitude, about the 17th to 19th, rather stormy conditions prevailed between longitudes 65° and 35°, where such rough weather is seldom met during the early summer. A low of moderate energy, which had come from the Lake region, was central near northeastern Newfoundland on the 17th, with a trough extending far to the southward and southwestward, and this and the moderately high pressure in lower latitudes at the same time were the chief factors in causing the strong winds.

Tropical disturbance.—Elsewhere in this issue of the REVIEW is found an account of the disturbance which affected western Caribbean waters and the central and eastern parts of the Gulf of Mexico about the 12th to 16th. This low took in general a northward course and was never of great intensity.