

## WEATHER ON THE NORTH PACIFIC OCEAN

By WILLIS E. HURD

*Atmospheric pressure.*—With the movements of cyclones over northern waters in March 1941, many of the principal centers of low pressure entered or remained for several days over the western part of the Gulf of Alaska. Kodiak this month was close to the center of the Aleutian low, with a mean pressure of 997.2 millibars (29.45 inches), which is 8.2 millibars (0.24 inch) below the March normal. Low barometer prevailed throughout higher latitudes, with a secondary center west of the Aleutian Islands.

From the California coast southwestward about two-thirds of the way to the Hawaiian Islands, several depressions of the month contributed to lower the average barometer several millimeters under the normal. The North Pacific anticyclone lay to the westward of the depressed region, and from Honolulu across Midway Island to the coast of China, the barometer averaged above the normal for March.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, March 1941, at selected stations

Stations	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Millibars	Millibars	Millibars		Millibars	
Barrow	1,025.1	+4.1	1,040	25	1,006	7
Dutch Harbor	998.9	-6.9	1,021	9	978	30
St. Paul	1,003.2	-3.6	1,029	9, 13	981	2
Kodiak	997.2	-8.2	1,016	13	984	4
Juneau	1,012.2	-1.7	1,029	9	998	20
Tatoosh Island	1,015.9	+1.3	1,034	8	989	1
San Francisco	1,013.9	-4.1	1,027	8	1,000	31
Mazatlan	1,013.1	-0.1	1,015	1-4, 11-12	1,010	22
Honolulu	1,019.0	+1.7	1,025	30	1,013	13
Midway Island	1,022.8	+4.5	1,028	14, 16-17, 31	1,002	23
Guam	1,012.3	-0.2	1,016	5	1,007	9
Manila	1,011.6	+0.6	1,016	5	1,009	9, 10, 17
Hong Kong	1,014.6	-0.6	1,022	4	1,010	23
Naha	1,016.6	+0.7	1,026	5	1,006	17
Titijima	1,017.8	+1.9	1,028	6	1,010	18
Petrovavlovsk	1,001.1	-6.0	1,016	7	985	22

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observations.

*Cyclones and gales.*—Despite the depth of the Aleutian low, which gave evidence of much cyclonic activity in higher latitudes of the North Pacific in March 1941, there were only a few reports from ships to show the existence of gale-force winds along the northern steamship routes. Early in the month, rather severe storm conditions occurred in waters east of northern Japan and the Kuril Islands, accompanied by snow squalls to heavy snows from the 2d to 7th, as reported by several vessels. In connection with this storm, the American S. S. *Illinois*, near 46° N., 155° E., had a low barometer of 976 millimeters (28.82 inches) on the 2d, followed by a northwest gale of force 8. The highest wind of record for the period was a westerly gale of force 10, reported by the American M. S. *Aurora* on the 6th, near 45° N., 156° E. On the 9th the *Aurora* ran into a further gale, of force 10 from the south, near 47½° N., 168° E.

In middle longitudes the only gales of consequence arising from passing cyclones of higher latitudes occurred on the 8th and 18th. Both were accompanied by moderately low barometer. The earlier, of force 10, was experienced by the Panamanian M. S. *California Standard*, near 43° N., 179° E.; the latter, of force 11—the highest of the month—by the Japanese M. S. *Kiyo Maru*, near 45° N., 175° W.

In middle latitudes northwesterly gales of force 9 were met in the high-pressure area north of Midway

Island on the 12th. A short distance out from Yokohama force 9 gales occurred on the 12th and 20th in cyclones of moderate intensity. Between southern Japan and Midway Island, isolated fresh gales were noted on the 1st, 8th, and 11th.

As in the preceding December and February, the stormiest part of the ocean in March was that between about 28° and 40° N., from the California coast westward to approximately 145° W. Several depressions affected this area between the beginning and ending of the month. The earliest gale, of force 8, on the 1st, occurred about 200 miles west of San Francisco, in connection with a low off the Oregon coast.

On March 2 a cyclone center appeared near 40° N., 140° W. It moved east-southeastward and on the 4th entered the middle California coast. The storm was only moderately deep, the American S. S. *La Placencia* reporting a barometer of 992.6 millibars (29.31 inches) on the 3d, accompanied by a northwest gale of force 9, near 35° N., 128½° W. The highest wind, of force 10 from west-southwest, was encountered by the American S. S. *Lahaina* late on the 2d, near 34° N., 130° W.

What appeared to be a secondary depression gathered on the 5th near 38° N., 148° W., at the southern extremity of a cyclone central over the Gulf of Alaska. From the 6th to the 14th it took a slow, meandering course, performing two distinct loops before finally entering the southern California coast. During the 6th to 8th the center oscillated between about 27° and 32° N., 140° and 135° W. To the westward lay a bank of high pressure. Between the high and the low strong northwesterly winds occurred, at times rising to force 8 and 9. The disturbance lost energy during the 9th and 10th, but on the 11th and 12th, it again exhibited local strength, with northwesterly gales of force 8 to 9 near 34°-35° N., 133° to 136° W.

On the 20th, 22d, and 23d strong northerly winds, at times rising to force 8, were experienced by vessels in the vicinity of Point Arguello. These occurred on the eastern edge of a high-pressure area lying off the California coast.

From the 26th to 31st another disturbance which formed west of California moved from approximately 35° N., 132° W., to about 40° N., 135° W., accompanied on the 26th and 27th by strong northwesterly winds, highest force 8 to 9, west of the center. The heaviest wind, a west gale of force 10, lowest barometer 994.9 millibars (29.38 inches), was reported on the 30th by the American S. S. *Matsonia*, near 34° N., 134° W.

*Tehuantepecers and Papagayos.*—Norther-type gales occurred in the Gulf of Tehuantepec as follows: of force 7 on the 14th and 15th; of force 8 on the 1st; and of force 9 on the 8th and 29th. Off the Costa Rican coast a north-easterly Papagayo of force 7 occurred on the 14th and one of force 8, on the 19th.

*Fog.*—Ships encountered a few scattered fogs on various parts of the ocean. In coastal waters they reported fog on 3 days off British Columbia; on 5 days off Washington; on 3 days off Oregon; and on 1 day off California.

## FIJI HURRICANE OF FEBRUARY 20, 1941

By WILLIS E. HURD

Through kindness of Capt. E. R. Johanson, master of the American S. S. *Monterey*, a copy of "The South Sea Weekly—Special Hurricane Edition," of March 10, 1941, has been received, containing an account of the hurricane which struck the Fiji Islands on the 20th of the preceding February.