

## NORTH PACIFIC OCEAN

By WILLIS EDWIN HURD

A chart showing the average positions of the cyclones and anticyclones over the North Pacific Ocean during December, 1925, reveals some abnormal as well as normal features. There was the usual high pressure area over the China coast and adjacent seas, and comparatively low pressure over central and northern Japan and thence for some distance seaward. Off the coast of middle California the North Pacific high averaged normal, but to the westward somewhat below normal; it did not cover as great an area between the Hawaiian Islands and the mainland as usual, due to active cyclones from the west and north spreading farther eastward and southward than is ordinarily the case. At Honolulu the pressure was 0.07 inch below normal, while at Midway Island it reached 0.21 inch below. From this general region of low pressure, extending north-northeastward, lay a deepening cyclonic trough culminating in a low, deeper than usual for December, and central over the northwestern part of the Gulf of Alaska, near Kodiak. West of this region there was no secondary depression of the Aleutian cyclone this month, pressure being normal at Dutch Harbor and becoming considerably above normal to the westward and northward, particularly toward the Pribilof Islands. Between St. Paul and Kodiak the mean pressure difference was 0.31 inch, the former averaging 0.18 inch above normal; the latter, 0.13 inch below. Normally the difference is only 0.03.

The table herewith shows the pressures, and their differences from the average, for the several island and coast stations.

TABLE 1.—Averages, departures, and extremes of atmospheric pressures at sea level at indicated hours, North Pacific Ocean, December, 1925

Station	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Dutch Harbor <sup>1</sup>	29.58	0.00	30.28	17th	28.96	28th.
St. Paul <sup>1</sup>	29.79	+0.18	30.50	do <sup>2</sup>	29.14	21st.
Kodiak <sup>1</sup>	29.45	-0.13	29.98	12th	28.98	14th.
Midway Island <sup>1,3</sup>	29.83	-0.21	30.14	30th	29.32	16th.
Honolulu <sup>4</sup>	29.94	-0.07	30.06	9th	29.64	19th.
Juneau <sup>1</sup>	29.69	-0.10	30.23	26th	29.06	1st.
Tatoosh Island <sup>1,4</sup>	30.03	+0.06	30.39	5th	29.35	17th.
San Francisco <sup>1,4</sup>	30.11	0.00	30.37	4th	29.74	1st.
San Diego <sup>1,4</sup>	30.01	-0.03	30.23	do	29.81	2d.

<sup>1</sup> P. m. observations only.

<sup>2</sup> 30 days.

<sup>3</sup> A. m. and p. m. observations.

<sup>4</sup> Corrected to 24-hour mean.

<sup>5</sup> Also on 18th.

During more than 20 days the weather of Midway Island and vicinity was affected by cyclones, the first of which was experienced at the beginning of the month. There was considerable wind activity on several days; the highest velocity reported was force 9, NW., on the 21st. The American cable steamer *Dickenson*, lying off Midway during a great part of December, reported gales and much drizzly weather from the 10th to the 22d. On the 18th large hail stones, mingled with excessive rain, fell during a terrific squall. Though the center of the cyclone affecting the island on these dates had moved well toward the Aleutians by the end of the month, it continued to influence the weather at Midway until the 29th.

Between the Hawaiian Islands and our west coast there were several days of rough weather, due partly to the southward spread of the cyclone central over the Gulf of

Alaska, and partly to the eastward extension of the great cyclone just mentioned. Strong gales were experienced east and northeast of Hawaii from the 19th to the 22d, and strong to whole gales near the middle of the San Francisco-Hawaii route on several days between the 17th and the 26th—being most widespread on the 25th and 26th.

At Honolulu southwest (kona) winds occurred from the 18th to the 22d, and a heavy kona rain, amounting to 1.40 inches, fell on the 18th. The maximum wind velocity was 37 SW. on the 21st, but velocities of 36 SW. and 35 SW. occurred on the 20th and 22d, respectively. The prevailing wind at this station continued to be, as heretofore for several months, from the east.

In the American Tropics gales were reported by vessels in the Gulf of Tehuantepec on the 23d, 24th, and 29th. The 23d and 24th the American steamer *Lancaster* encountered whole gales to storm winds from the north.

On the 11th a maximum wind velocity of 75 miles an hour from the south was recorded at Tatoosh Island, the storm center being over southeastern Alaska.

Along the northern sailing routes gales seem to have been comparatively infrequent east of the 170th meridian of west longitude. West of this meridian the weather was stormier, with more frequent gales. Between the Japanese coast and the meridian of 160° E. storm to hurricane velocities were reported on the 16th, 18th, 21st, and 22d, those of the 21st and 22d being due to a typhoon which was crossing the islands of Japan. This storm was experienced by the Swedish steamer *Hellenic*, Capt. Carl Camp, Cebu to Mororan, while in and near 40° 54' N., 141° 48' E. The quotation is from the report of the third officer, Mr. B. Peterzan:

December 21, 3 p. m.; barometer 29.85. The wind and sea moved to east and increased to a violent hurricane, with hard breaking sea.

12 midnight. Barometer 29.66 and dropping fast. The wind reached its highest velocity between 12 and 2 a. m., and was accompanied by tremendous squalls.

December 22, 2 a. m. Barometer 29.51. The wind suddenly died out. Above the ship the sky was clear and the stars shone bright. Round the eastern horizon much lightning. This calm period was about 25 minutes' duration, then the wind turned right over to west and came with the force as before. The sky overcast again.

4.50 p. m. Ship in port. Barometer still going down, and it reached the lowest point, 10 p. m., 28.66, then began to raise fast. Weather squally with snow and rain.

Concerning another typhoon in the Far East, see the following report by the Rev. José Coronas, S. J., of the Manila Observatory.

Fog was of frequent occurrence off the central California coast. It was observed on a number of days over the southern waters of the Gulf of Alaska, and occasionally south of the easternmost islands of the Aleutian chain, but no report of its occurrence west of the 180th meridian has yet been received.

## TYPHOONS AND DEPRESSIONS

## A TYPHOON OVER YAP IN DECEMBER, 1925

By REV. JOSÉ CORONAS, S. J.

[Weather Bureau, Manila, P. I.]

This typhoon was shown for the first time on our weather maps on December 14 to the south of Guam, in about 145° longitude E., between 8° and 9° latitude N. It moved W. on the 14th, and passed over or very close to Yap in the afternoon or evening of the 15th. The last weather report received from that station was