

inches), which is 3.3 millibars (.10 inch) below the normal.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Pacific Ocean and its shores October 1941

| Station | Average pressure | Departure from normal | Highest | Date | Lowest | Date |
|----------------|------------------|-----------------------|-----------|------|-----------|------|
| | Millibars | Millibars | Millibars | | Millibars | |
| Barrow | 1,010.3 | -3.2 | 1,032 | 27 | 998 | 5 |
| Dutch Harbor | 1,005.0 | +9 | 1,028 | 21 | 976 | 16 |
| St. Paul | 1,004.3 | -9 | 1,028 | 21 | 990 | 31 |
| Juneau | 1,007.1 | -4.4 | 1,025 | 27 | 982 | 17 |
| Tatoosh Island | 1,016.9 | +6 | 1,028 | 2 | 1,002 | 11 |
| San Francisco | 1,015.2 | -1.1 | 1,025 | 30 | 1,004 | 4 |
| Mazatlan | 1,011.2 | +7 | 1,014 | 23 | 1,000 | 1 |
| Honolulu | 1,014.2 | -1.7 | 1,020 | 30 | 1,009 | 24 |
| Midway Island | 1,018.7 | +1.8 | 1,025 | 23 | 1,008 | 6 |
| Guam | 1,007.2 | -3.3 | 1,012 | 31 | 1,002 | 23 |
| Hong Kong | | | | | | |

NOTE.—All data based on available observations, departures compiled from best available normals related to times of observation, except Juneau, Tatoosh Island, San Francisco, and Honolulu.

Cyclones and gales of the extratropics.—Following an unusually quiet September, the weather on the North Pacific became much stormier in October. At the beginning of the month gales of force 8 occurred in several parts of the ocean in minor disturbances. Off the central California coast northwesterly winds of force 8 were observed on the 1st and 2d. In the Okhotsk Sea a westerly gale of force 8 was reported on the 3d in connection with a cyclone of that region. Along the northern routes scattered gales of like intensity were experienced from the 1st to 4th. On the 8th and 9th fresh gales occurred in a disturbed area off the coast of Washington.

The period from the 12th to the 19th was one of considerable activity over the northeastern part of the ocean, while a cyclone of great intensity was central over and near the Gulf of Alaska. As early as the 12th one vessel encountered a wind of force 11 near 58° N., 149° W., with barometer down to 997 millibars (28.85 inches). On the 14th two ships, one near 51° N., 139° W., and the other near 50° N., 157° W., had southwesterly gales of force 9, with low barometers, as the storm spread southward. On the 15th and 16th scattered gales of force 8 to 12 occurred over a wide area from the coast of southeastern Alaska to a great distance seaward. One vessel, near 48° N., 151° W., at time of lowest barometer on the 16th, reported encountering southwesterly force-10 gales throughout about a 24 hour period. Another ship reported hurricane velocities at both a. m. and p. m. observations, near 48° N., 157° W. On the 16th to 18th, barometers were very low in the central Gulf of Alaska. A ship near 53° N., 148° W., on the 16th, had a low reading of 948.2 millibars (28 inches), with a southwesterly gale of force 10 that continued well into the 17th. Another ship on the 18th, near 56° N., 145° W., had almost as low a barometer, with a northeasterly gale of force 10. On the 19th, south of Kodiak, a force-9 gale was reported.

The farthest southward spread of the storm, so far as covered by gale reports, was near 44° N., 134° W., where a force 8 wind was experienced, with only small depression of the barometer on the 18th. The farthest westward extent of the cyclone, at its time of most extensive development, was near the 180th meridian, where a ship in 42° north latitude had westerly gales of force 9 to 11 on the 15th and 16th.

From about the 23d to 25th an elongated low-pressure area extended north and south between approximately 25° and 50° N., 135° and 150° W. Scattered gale winds occurred within its boundary, but the most important

was one of force 10 from the north, encountered near 27° N., 149° W., on the 23d.

Typhoons.—Subjoined is a report, by the Reverend Bernard F. Doucette, S. J., Weather Bureau, Manila, P. I., of a depression of October 18–23, and of a typhoon of October 22–November 2, which occurred in the Far East.

In addition to the foregoing, ships' reports indicate the existence of another typhoon which occurred well to the eastward of the Ogasawara (Bonin) Islands from at least the 11th to the 14th. Our earliest reports concerning its intensity came from a ship near 24° N., 155°–156° E., on the 11th and 12th. The highest wind force was 10, from northeast, lowest barometer 993.3 millibars (29.33 inches). To the northwestward ships reported fresh northeasterly gales on the 12th, and on the 14th a vessel rode through a south gale of force 10 near 33° N., 158° E. The cyclone is thus seen to have been moving northward well out at sea.

Tehuantepecers.—The only norther gale reported in the Gulf of Tehuantepec was one of force 8, on the 13th.

Fog.—Very few instances of fog are found in ships' observations over the open Pacific. It was reported on 2 days off the Washington coast, on 1 day off Oregon, on 5 days off California, and on 3 days off the upper coast of Lower California.

TYPHOONS AND DEPRESSIONS OVER THE FAR EAST

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Depression, October 18–23, 1941.—About half way between Yap and Mindanao, a low pressure area became a depression, moving in a west-northwesterly direction on October 18 and 19. The afternoon and evening observations from stations near San Bernardino Strait indicated that the storm was intensifying, yet the morning of October 20 showed only a depression, central over Bondoc Peninsula, which had moved westerly across southern Luzon during the night. This weak center moved westerly into the China Sea. As a depression of minor importance, it moved northwest about 200 miles after leaving Verde Island Passage, then westerly to Indochina, where it disappeared.

Two lives were lost on Marinduque Island as this depression crossed the Archipelago. Considerable rain was reported from stations of southern Luzon and the Visayan Islands.

As this center was approaching southern Luzon, October 19, Virac, Catanduanes Island, reported 751.2 mm. (1,000.5 mb.), indicating that the storm was intensifying to typhoon strength. However, during the night, nothing lower than the above value was reported as the storm center moved across the Archipelago.

The upper winds over Zamboanga and Cebu changed from east quadrant to southwest quadrant on October 16. Almost at the same time, a mild surge from the east quadrant appeared over Guam. As the depression center came into existence, Zamboanga and Cebu velocities were weak, but directions showed a tendency to shift to the northwest quadrant. This tendency also appeared in the directions of the lower clouds over stations of the Visayan Islands. Because of these weak velocities and the movement of cool air from northern regions around the regions south of the center into the weak southwesterly air stream, there was no development. Velocities of the upper winds over Cebu and Zamboanga reached values of 50 and 60 k. p. h. only on October 20, when the depression center was moving toward Verde Island Passage. Other