latitudes 34° to 37° N., longitudes 170° E. to 180°. Here westerly gales of force 8 to 9 occurred on the 5th and 6th. The lowest pressure, 988.5 millibars (29.19 inches) was read on the American S. S. *Associated*, near 36° N., 172° E., on the 5th.

Scattered gales were reported east of Japan on the 7th and 22d, west of the California coast on the eastern slope of a strongly developed HIGH on the 9th, and west of Washington on the 22d. The U. S. Coast and Geodetic Survey vessel *Discoverer*, while near the extremity of the Alaska Peninsula on the 2d, had an east-northeast gale of force 10, with little depression of the barometer.

Typhoons.—Subjoined is a report by the Rev. Bernard F. Doucette, of the Manila Observatory, on two Far Eastern typhoons of June. One formed in the China Sea on the 3d, passed over eastern Japan during the 5th to 6th, and was last observed east of the Kuril Islands on the 8th. Related to this storm's activities east of Japan was a southeast gale of force 10, lowest barometer 998 millibars (29.47 inches) reported by the American M. S. *Cape Alava*, near 40° N., 155° E., on the 7th.

The second typhoon originated among the Caroline Islands about the 23d, and was last observed near northern Japan on July 4. On June 28 it crossed northern Luzon, where it resulted in several deaths and caused much damage to communications and crops. On the 30th it struck Hong Kong as it passed inland and inflicted some destruction. According to press reports the wind at Hong Kong attained a maximum velocity of 92 miles.

Fog.—Doubtless owing to the reduced number of ships' reports, fog appeared abnormally infrequent for June along the western half of the steamship routes where, between Japan and the western Aleutians, it usually forms in abundance during early and middle summer. This month there were few 5° east-longitude ocean areas in which fog was reported on as many as 2 or 3 days. In middle latitudes of west longitudes fog was somewhat more frequent, and in the area 35° to 40° N., 160° to 165° W., it was observed on 4 days. Along the strip 32° to 41° N., 140° to 145° W., it was noted on 6 days between the 2d and 9th. Close along the coasts, it was reported on 1 day off Oregon, 3 days off California, and on 2 days in Lower California waters.

TYPHOONS AND DEPRESSIONS OVER THE FAR EAST

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Typhoon, June 3–7, 1941.—On the morning weather map, June 3, a depression appeared over the China Sea about 250 miles west of northern Luzon. This disturbance moved in a northeasterly direction across Balintang and Bashi Channels, close to and east of Formosa, along the Nansei Islands, across Japan and passed beyond the region of observation June 7 and 8.

As this storm moved along the Nansei Islands, the pressure values reported were below 750 mm. (999.9 mb.) generally, the lowest being that from Naha, June 5, morning report, namely 745.0 mm. (993.3 mb.) with south-southwest winds, force 6. Over Japan, June 6, there were a few stations reporting values between 741.0 and 745.0 mm. (987.9 and 993.3 mb.) as the center rapidly progressed toward the ocean. The storm entered the Pacific Ocean during the morning hours of June 7, and Nemuro had 729.0 mm. (971.9 mb.) with east-southeast winds, force 5 on the morning weather map. This storm was called a typhoon because of these pressure values and the squally, rainy weather which prevailed over the Philippines up to June 6. It may have had more of the characteristics of a severe extratropical depression rather than the vortex of a typhoon, but for forecasting purposes, it was called a typhoon to insure that proper precautions were taken. No reports of casualties were printed in the newspapers.

The southwest monsoon current had been slowly advancing toward the Philippines during the latter part of May, the winds at Manila changing to the southwest quadrant on May 25. The result of this change of wind system was a trough of low pressure over the northern part of the China Sea, the Balintang Channel, and adjacent Pacific Ocean regions. Over the western portion of this trough, the depression formed because of the activity of the southwesterly current. It seems that this current of air was the strongest of all the air currents moving toward the disturbance center. For about 9 days before any center appeared, the few reports of the upper winds received from stations of Indochina and Thailand indicated that the southwesterly air stream had velocities over 50 km./hr. at various levels during this whole period and it is assumed by the writer that this air was forced toward the northern part of the China Sea before the disturbance formed. After the center had moved in a northeasterly direction for 1 day, the Philippines felt the strength of this current, intensified by the deepening center then northeast of Formosa. Velocities between 30 km./hr. and 70 km./hr. persisted over the Philippines until the storm had crossed Japan.

Typhoon, June 23–July 4, 1941.—A depression formed about 300 miles east-southeast of Yap during the morning hours of June 23. It moved in a northwesterly direction, gradually inclining to the west-northwest and then west, intensifying to typhoon strength near latitude 13°, longitude 134° during the afternoon hours of June 24. June 26, afternoon and evening, the typhoon was moving westerly along the 14th parallel of latitude and threatening the northern part of Catanduanes Island. When about 50 miles from this island, it changed its course to the northwest, avoiding southern Luzon and threatening northern Luzon. During the late night hours of June 27, the center moved across the island, passing close to and north of Palanan, Isabela Province, then between Aparri and Tuguegarao, Cagayan Province, and finally moved into the China Sea over a course close to and north of Laoag, Ilocos Notre, during the forenoon hours of June 28. A change from the northwesterly to the westerly direction occurred a short distance east-southeast of Hong Kong, and thus the center passed close to and south of the city, June 30, afternoon and evening. July 1 and the following days showed the center, very much weaker, recurving to the northeast over the Continent, and crossing the Yellow Sea, and the Sea of Japan into Japan.

According to available newspaper reports on July 2, the total loss of life during the progress of this typhoon was 19. Ten of these persons were killed in the Philippines and the rest were residents of Hong Kong. Considerable damage to crops resulted over the Philippines because of this typhoon.

The barometric minima reported from Philippine stations are as follows: Virac, Catanduanes Island, had 743.45 mm. (991.2 mb.) as the lowest value, June 27, 1:05 a. m. Palanan, Isabela Province, reported 711.23 mm. (948.2 mb.) occurring at 9:30 p. m., June 27. Tuguegarao, Cagayan Province, had its minimum at 1:50 a. m. June 28, namely 728.8 mm. (971.6 mb.). Aparri, Cagayan Province, experienced its minimum a short time after Tuguegarao, namely 3:15 a. m., 739.92 mm. (986.5 mb.) being the value. Laoag, Ilocos Norte, is the last of the stations, the minimum occurring just before the center entered the China Sea, and amounting to 738.5 mm.