

# TYPHOONS AND DEPRESSIONS OVER THE FAR EAST, NOVEMBER 1938

BERNARD F. DOUCETTE, S. J.

[Weather Bureau, Manila, P. I.]

*Typhoon, November 1-11, 1938.*—A depression appeared November 1 about 120 miles southwest of Yap, moved west-northwest to latitude 10 where it changed its course to the west, increasing in strength as it proceeded. It approached Surigao Strait during the forenoon hours of November 4, crossed northern Leyte on a west by north course, continued on to Panay Island and entered the extreme northern portion of the Sulu Sea. As the storm approached the China Sea, it passed north of Cuyo and south of Culion, moving west by north and inclining to the west.

The morning weather map, November 5, showed the center to be about 60 miles west-southwest of Culion and very much stronger. It continued along a westerly course during the forenoon and changed to the west-northwest and northwest during the afternoon and evening, thus approaching the Paracel Islands and Reefs, where it moved in a northerly direction, but more slowly. On November 8, it changed to the west, inclined to the northwest, passed over Hainan Island and disappeared over the Gulf of Tong King.

As this disturbance passed over the Visayan Islands on its way from the Pacific Ocean to the China Sea, the strongest winds reported were those from the east-southeast or southeast after the center had passed the locality. At noon, Manila time, the S. S. *Taurus* reported "latitude 11°50' N. longitude 125°40' E., barometer 29.62, temperature 81, winds east-southeast 8, fresh gales from east-southeast, very heavy sea"; the center being at this time about 100 miles south-southwest of the ship's position. At 6 p. m. Manila time, Tacloban, Leyte, had east-southeast winds force 7, when the center was about 150 miles west of the locality. The lowest pressures reported were between 748 and 750 mm (29.449 and 29.528 in.) with winds not exceeding force 5 over regions adjacent to the center. For example, Capiz and Iloilo, both on Panay Island, had pressures of 749.6 mm (29.512 in.); Capiz with east-northeast winds force 4 and Iloilo with west winds force 2 (6 p. m. Manila time), the center being between the two stations. However, considerable rain fell while this storm was crossing the Archipelago, but no extensive damage was reported.

Intensification of the storm in the China Sea is best shown by the weather reported from the Paracel Island station. Winds backed from north-northeast to north-northwest, west-northwest, and west-southwest, as the storm center passed about 100 miles east-northeast of the station, on its northwesterly course. The winds were force 9 and the lowest barometer reported for synoptic purposes was 744.4 mm (29.308 in.) at 6 a. m. November 7.

During the formation of this disturbance, the upper winds from the U. S. Navy Station at Guam showed the presence of air streams from east-northeast and east directions with velocities about 30 k. p. h., which, after November 1, gradually shifted to the east-southeast, as velocities increased to values close to 50 k. p. h. As the disturbance approached and crossed the Philippines, there was scarcely any evidence of a southwest monsoon current. Only until the center entered the China Sea did southwest quadrant winds appear at Zamboanga. The remaining Philippine aerological stations had Northeast quadrant winds shifting to the southeast as the center moved toward

the China Sea, velocities between 50 and 80 k. p. h. being reported from Manila and Cebu.

*Depression, November 10-18, 1938.*—About 300 miles south-southwest of Guam a depression appeared on November 10, moved west by north, then west to the regions about 400 miles east of Samar Island. There it recurved to the northeast, November 12, changing to north, then north-northeast, and moving more rapidly as it proceeded. Observations were not available for determining its history after it reached the ocean regions east of northern Japan, November 18. Furthermore, as well as could be determined from available data, the storm was not of very great intensity over a wide area.

At Guam, the upper winds during the formation of this depression veered from east and east-northeast directions, with velocities between 30 and 50 k. p. h., to the southeast, increasing to values as high as 70 k. p. h., as the depression moved west-northwest between that station and Yap. The air streams over the Philippines and the China Sea as the depression recurved (November 12) showed that the southwest winds which started with the preceding typhoon were extending toward the Pacific by way of Zamboanga, but were checked by a strong outbreak of northerly air, caused by a distant depression in the locality of Japan. This current of cool heavy air reached San Bernardino Strait and most likely caused the Pacific depression to recurve, as well as checking the southwest winds which were gradually strengthening over Zamboanga.

*Typhoon, November 21-27, 1938.*—A disturbance appeared about 250 miles west-northwest of Palau, moved westerly, then northwesterly, to the 10th parallel of latitude where it changed its course to the west, moving rapidly across the Visayan Islands as a depression. The morning of November 24 found the center located about 60 miles west of northern Palawan, already intensifying into a typhoon. Continuing along a westerly course for a day, it then shifted to the west-northwest when about 300 miles east of southern Indo China. It entered Indo China near Quinhon on the afternoon of November 27, after which no trace of it could be found.

On November 23, this disturbance crossed the Visayan Islands as a widely extended depression, with no definite center, with weak variable winds, and pressure values between 753 and 754 mm. (29.646 and 29.686 in.), on the morning map, and between 752 and 753 mm. (29.607 and 29.646 in.), on the afternoon map. Zamboanga reported the strongest winds, west-southwest force 4, from the southern Philippine stations during this period. Over northern Luzon, however, very heavy rains set in especially along the coast and over the length of the Cagayan River, these rains caused by strong northeast monsoon winds with a southeasterly current aloft. Extensive destructive floods resulted, but with hardly any loss of life.

Observations from the S. S. *Tjisaroa* and S. S. *Silvermaple* show the intensification of this storm, once it reached the regions of the China Sea. These ships were hove to about 150 to 200 miles from the storm center as it approached the southern coast of Indo China, November 25 and 26. They had winds of force 9 (the *Silvermaple* reporting force 11 once) from the northwest quadrant, and backing to the west-southwest as the center moved north of their positions. Pressure values were between 749.3 and 751.5 mm (29.501 and 29.587 in.) during this period. Ships over the northern part of the China Sea reported northeast winds force 5, 6, and 7 as the typhoon moved from the Philippines to Indo China. It can be seen that the storm intensified to a typhoon of considerable power once it moved away from the Philippines.