

observed in Formosa was that of Keelung 733.7 mm. (28.89 ins.), with hurricane winds from SW. The maximum velocity of the wind was of 48.3 m. p. s. (108 m.p.h.). The following report was received from the director of Taihoku Observatory:

The typhoon was destructive in north Formosa, causing great damage; persons killed, 18; missing, 14; and injured, 312; houses destroyed, 3,300; partially destroyed, 4,060; damaged, more than 6,000; two steamers and more than 50 junks wrecked.

From 6 a. m. of the 7th the typhoon moved west into China along the 25° latitude N.

Other depressions of less importance.—On the 10th a small cyclonic center was observed to the NE. of Formosa, between 124° and 125° longitude E., 25° and 26° latitude N. It moved NNE. across the Eastern Sea on the 11th and then ENE. across central Japan on the 12th.

Another depression was formed over the Eastern Sea on the 16th to 17th near 30° latitude N., between 126° and 127° longitude E. It moved E. by N. on the 18th and 19th to the south of Japan.

A depression traversed the southern part of Japan on the 16th, moving eastward. It is doubtful whether it really formed over the Eastern Sea ESE. of Shanghai on the 14th, or if it developed out of a low-pressure area shown in our weather maps between Hongkong and Shanghai before the 14th. In the latter case, it should be considered as a continental depression.

THE DESTRUCTIVE TYPHOON OF NORTHERN LUZON, OCTOBER 3, AND FIVE OTHER LESS IMPORTANT TYPHOONS OF THE FAR EAST IN OCTOBER, 1924

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[Weather Bureau, Manila, P. I.]

Both the Pacific and the China Sea were very stormy during the first 8 or 10 days of October. There were three typhoons, which, if not altogether simultaneous during those days, were at least partly so. The most important, however, is that which struck northern Luzon during the night of October 2 to 3 and the morning of the 3d.

Typhoon of northern Luzon, October 3.—This typhoon was shown for the first time in our weather maps on the morning of October 1 about 400 miles to the east of central Luzon near 128° longitude E. and 15° latitude N. It seems to have moved at the beginning NW. by W. and WNW., but gradually inclined more and more to the west, thus threatening the northern part of Luzon. The center traversed Luzon through the central part of Cagayan Province, the northern part of Ilocos Sur, and the southern part of Ilocos Norte. Its actual direction while traversing Luzon was either due west or even perhaps W. by S. Great damage was done not only to the three mentioned Provinces, but also to the Mountain, La Isabela, La Union, and Abra Provinces. It is considered as one of the worst typhoons ever experienced in northern Luzon.

The lowest barometric minima so far reported to our office are: Aparri, 720.63 mm. (28.37 inch.) at 4:30 a. m.; Tuguegarao, 720.90 mm. (28.38 inch.) at 4:51 a. m.; on board S. S. *Macaria*, stranded at 17° 46' latitude N., 120° 24' longitude E., 724.0 mm. (28.50 inch.) at 10 a. m.; Laoag, 726.69 mm. (28.61 inch.) at 8 a. m.; Vigan, 726.16 mm. (28.59 inch.) at 9:30 a. m.

It has been reported that in Lallo, a town 10 miles south of Aparri, the barometer fell to 707.0 mm. (27.59 inch.). In the China Sea the typhoon continued moving almost due W. with a very little inclination to the north.

The positions of the center at 6 a. m. of the 2d to the 6th are as follows:

October 2, 6 a. m., 126° 45' longitude E., 16° 25' latitude N.
October 3, 6 a. m., 121° 15' longitude E., 18° 00' latitude N.
October 4, 6 a. m., 116° 10' longitude E., 17° 55' latitude N.
October 5, 6 a. m., 111° 15' longitude E., 18° 20' latitude N.
October 6, 6 a. m., 107° 20' longitude E., 18° 50' latitude N.

Two Japan typhoons, September 28 to October 9.—On September 28 a depression was formed in the neighborhood of the Loochoos, although it developed into a real typhoon while approaching Japan on the 29th. After moving NE. on the 28th, the typhoon traversed part of Japan and the eastern part of the Japan Sea on the 29th and 30th, moving first NNE., or N. by E., and then NE. At 6 a. m. of October 1 the center was shown by our weather maps not far from the northernmost coast of Japan.

The other Japan typhoon had its origin in the Western Carolines on September 29. The center was situated at 6 a. m. of that day south of Guam and east of Yap near 145° longitude E. and 9° latitude N. It moved northward on September 29 and 30 and October 1; then WNW. on October 2 and 3; and it recurved to N. and NNE. on October 4, when near 130° longitude E. and 19° latitude N. On October 6 it inclined back to WNW. toward the northern part of the Loochoos, but then at about noon of the 7th it recurved again to NE., the center being situated near Kagoshima in the early morning of the 8th. From noon of the 8th it seems to have moved eastward and it was probably only a depression of little importance; but we do not have as yet sufficient observations to verify this.

A Balintang Channel typhoon, October 7 to 11.—This typhoon, like the first one, was apparently formed over the Pacific about 300 or 350 miles to the east of central Luzon. Its center was shown by our weather maps at 6 a. m. of the 7th near 127° longitude E. and 15° latitude N. It moved NW. by W., traversing the Balintang Channel on the morning of the 9th and reaching the China coast between Swatow and Hongkong in the afternoon of the 10th. It was apparently only an ordinary typhoon and not a destructive one, like the first Philippine typhoon of this month.

A Pacific typhoon between Yap and Guam, October 6 to 9.—Although the track of this typhoon is not so certain, as it is based only on the observations made in Guam and Yap, yet it would seem that it formed on October 6 near 142° longitude E. and 9° latitude N. It moved NNW. on the 6th and N. on the 7th and finally it recurved to ENE. on the 8th between 138° and 139° longitude E., 12° and 13° latitude N.

A depression over the Visayas, October 19.—Signs of a depression or typhoon over the Pacific east of the Visayas appeared in the afternoon of the 18th, although the 6 a. m. weather map of October 19 showed clearly that there was only a shallow depression of little importance crossing the southern part of the Visayas in a westerly direction. In the China Sea it moved to WNW., at the same time developing into a real typhoon, which reached the Indochina coast in the early morning of the 23d near 109° longitude E., 14° latitude N.