DEPRESSIONS AND TYPHOONS FOR JULY, 1909.

By Rev. José Coronas, S. J.,
Assistant Director of the Weather Bureau.

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During July no less than three typhoons crossed the northern part of our Archipelago. In addition to these we experienced the influence of three depressions which, forming in the China Sea, moved toward west or west-northwest in the direction of Indo-China or southern China. We shall discuss briefly each of these typhoons and depressions, making special efforts to establish—as far as this is feasible—those portions of their tracks which, owing to the lack of sufficient data resulting above all from the interruption of telegraphic communication, we were unable to point out at the time when the disturbances occurred.

THE HAIPHONG TYPHOON, JULY 12 TO 16, 1909.

This typhoon belongs to the type of cyclonic storms which form in the Pacific Ocean not very far from the Philippines, since neither the observations of Yap nor those of Guam give any indications of its having influenced either the Western Carolines or the Marianas.

The first typhoon warning was issued by Manila Observatory at 11 a. m. of the 12th. It read as follows:

July 12, 11 a. m.: Typhoon east of Luzon, more than 300 miles distant, direction unknown.

The speed with which this disturbance advanced was very remarkable, since the storm crossed between Aparri and Tuguegarao as early as the morning of the 13th. On this day the following warnings were cabled to the foreign meteorological centers of the Far East:

July 13, 9 a. m.: Typhoon east of northern Luzon, less than 300 miles distant, moving northwest.
July 13, noon: Typhoon crossing northern Luzon, moving west-northwest or northwest.
July 13, 5 p. m.: Typhoon west-northwest of Aparri, moving west-northwest.

On the same day we received from Hongkong Observatory two cablegrams worded thus:

July 13, 11 a. m.: Typhoon northeast of Luzon, moving west-northwest.
July 13, 1 p. m.: Typhoon in northern Luzon, moving west-northwest.

Plate IV (upper half) shows the distribution of isobars over the Philippines at 10 a. m. of the 13th and the barograph curve traced at Aparri during the passage of the storm south of that station. To judge from the curve and the small intensity of the wind observed even in the stations nearest to the path, the typhoon must have had very little development at the time when it crossed northern Luzon. No report mentions a wind velocity exceeding 8 of the Beaufort scale and even this maximum intensity was observed only in the rear of the storm when the vortex had already passed into the China Sea and probably began to increase in force.

It is quite possible that the typhoon became deformed upon entering the island and, may be, was split into two partial centers. The latter is suggested by two facts: (1) At Laoag northeast winds prevailed during the whole forenoon of the 13th and veered to south-southeast at 1 p. m. This would indicate that the vortex passed to the south of and very close to the station. Nevertheless the observer at that place sent a special telegram informing us that, according to a telephone message received from Cape Bojeador (some 16 miles north of Laoag), the barometer had fallen there to 743 millimeters, while at Laoag the minimum had been 749.90 millimeters. (2) The winds