

several species of birds and butterflies. * * * Air in vortex sultry, though no change was noticed in the dry bulb. Drumming in ears felt by nearly all observers. * * * Left vortex, taking approximately two minutes before encountering wind of maximum velocity, which was well over 125 miles per hour. Force of wind leveled the sea down; sheets of sea water and rain made visibility so poor that the sea alongside the vessel could not be distinguished from the bridge. * * * No green seas taken aboard. * * * At 9:30 a. m. weather had moderated sufficiently to enable vessel to hold her course and continue the voyage.

Hurricane velocities were experienced by the *President Hayes* until 8:35 a. m., by which time the pressure had risen to 29 inches. This barometric rebound, together with the preceding fall, constitutes the most rapid observed change in pressure of equal magnitude of which the writer has knowledge.

The accompanying table of gales and storms lists all vessels that have thus far sent tabular information of these Mexican hurricanes to the Weather Bureau.

At Honolulu the prevailing wind direction for September was east, and the maximum velocity was at the rate of 27 miles an hour from the east on the 7th.

At Tatoosh Island maximum velocities exceeding 60 miles an hour occurred as follows: 4th, 66 miles, from SW.; 18th, 64, E. The first occurred in connection with a strong development of the Aleutian cyclone in the Gulf of Alaska; the second, with a considerable pressure gradient existing between the oceanic anticyclone and a continental high to the northward.

Fog lessened greatly in occurrence since August, especially along the western half of the upper Pacific routes. The areas of most frequent observance were along the California coast south of the 40th parallel, where the percentage of occurrence ranged from 25 to 35; and over that part of the ocean bounded by the 45th and 50th parallels, 150th and 165th meridians of west longitude, where the percentage was about 30. Fog was noted southwest of the Bay of Panama on the 3d.

STRONG SOUTHWEST MONSOON

In a letter received from Lieut. B. C. Jackson (late R. N.) of the British steamship *Khosrou*, dated Karachi, August 24, 1927, appears the following statement:

I have had seven years experience on the Bombay, Red Sea, Persian Gulf, Bay of Bengal, and South Indian Ocean routes, and have never experienced a monsoon to compare with this year's between Aden and Colombo, especially in the vicinity of Socotra and Bombay, for heavy seas and high conspicuous swell, the wind keeping to the SW., instead of veering to the westward, as it generally does after clearing longitude of 55° E. All ships arriving in Bombay were reporting a bad passage across.

TYPHOONS AND DEPRESSIONS

FIVE TYPHOONS IN THE FAR EAST DURING SEPTEMBER, 1927

By REV. JOSÉ CORONAS, S. J.

[Weather Bureau, Manila, P. I.]

This month has been rather remarkable for the absence of typhoons, especially in the Philippines and Formosa. There was none in Formosa and only one in the Philippines, and even this one was not of a great extension and not very severe except in only one town in the eastern coast of Luzon.

In our article for last month we mentioned a typhoon which was shown by our weather maps of August 22 about 500 miles to the east of San Bernardino Strait and moved NW. by N. on the 22d and 23d; then we said that it moved very slowly for about four days to the east of northern Luzon and of the Balintang Channel, and that it seemed to be inclining again westward by the time we were writing such article. We may add here that the typhoon increased again its rate of progress on the 28th; that on

the 29th it inclined westward and traversed southern Formosa in the form of a shallow depression. But it passed near to the north of Pratas at 6 a. m. of the 30th and to the south of Hong Kong shortly after noon of the same day, moving WSW. or W. by S. It would seem, however, that after passing south of Hong Kong it inclined northwestward and struck the China coast west of the English Colony.

The Associated Press announced on September 26 that the Exchange Telegraph had received a report to the effect that 5,000 persons perished in Kwantung Province, when an immense tidal wave and typhoon struck the Chinese coast early in the month, 20,000 homes having been damaged and 400 junks and sampans destroyed, the loss being estimated at \$1,000,000. As there was no typhoon in that place at the beginning of September, we presume that the news refers to the last day of August, and that the typhoon was the one mentioned above.

The typhoon of Baler in central Luzon: September 17.—This typhoon was shown clearly for the first time on September 16, at 6 a. m. to the east of central Luzon, not far from 130° longitude E. and 15° latitude N. It moved rather rapidly to W. by N., and struck the eastern coast of Luzon during the night of the 17th, practically destroying the municipality of Baler. We have not received as yet any report from our observer at Baler, and so we can not give the barometric minimum observed at that station. Although the typhoon was much felt in the province of Pangasinan and the northern part of Nueva Ecija, yet it was not so severe as when it struck the eastern coast. The typhoon kept the same direction, W. by N., across the China Sea between Luzon and Indochina.

The approximate position of the center at 6 a. m. of the period September 17 to 20 was as follows:

September 17, 6 a. m., 125° 20' longitude E., 15° 15' latitude N.
September 18, 6 a. m., 119° 20' longitude E., 16° 20' latitude N.
September 19, 6 a. m., 115° 45' longitude E., 16° 55' latitude N.
September 20, 6 a. m., 110° 10' longitude E., 17° 30' latitude N.

Three typhoons between Bonins and Japan.—Typhoons appeared on our weather maps on August 25 and 26 about 300 miles west of the Ladrone Islands near 140° longitude E. and 15° latitude N. It moved northwest until the 29th, when it began to recurve northeastward near 130° longitude E. and 23° latitude N. On September 1 and 2 the typhoon was still moving northeastward to the SE. and E. of central Japan.

The second typhoon was shown in our weather maps of the 21st over 300 miles southwest of the Bonins and moved NE. and ENE. on the following days, 22d and 23d, passing north of the Bonins at about noon of the 23d.

The third typhoon was probably formed on the 26th to 27th east of the Loochoos, not far from 133° longitude E. and 25° latitude N. It moved northeastward on the following days, 27th to 30th, passing north of the Bonins on the 29th.

In connection with this typhoon we may mention a tornado that did considerable damage near the eastern boundary line of the city of Manila between 7 and 8 p. m. of September 17, when heavy thunderstorms were prevailing in Manila and near-by provinces. The tornado seems to have formed in the easternmost part of Pandacan, an eastern barrio of Manila, and to have moved mainly in a southeasterly or south-southeasterly direction toward San Felipe Nery, San Pedro Macati, and the Cemetery of Fort McKinley. The greatest damage was done to San Pedro Macati.

One typhoon over Japan, September 10 and 14.—This typhoon was of rather small diameter and could not be