

A press report of August 8 from Tokyo gave information of a severe typhoon approaching Kyushu Island. While we have no information as to the earlier movements of the storm, a special report from the British R. M. S. *Empress of Canada*, Capt. W. T. Kinley, Fourth Officer E. R. Shaw, observer, shows the existence on the 9th of a severe storm east of Shanghai. This steamer, Shanghai to Hong Kong, ran into the gale, of force 8-9 from the north, at 12 noon (China coast time), barometer 29.32. At 1 p. m. the wind had increased to force 11 from the north-northwest, in $30^{\circ}56' N.$, $122^{\circ}37' E.$ At 2 p. m. the vessel entered the cyclone center, with light wind, and barometer 28.78. At 3 p. m. the wind was south, force 10, thereafter diminishing, as the typhoon went inland.

On the 7 p. m. (E. S. T.) map of August 31 a typhoon is shown entering the south coast of Japan near Yokohama. Press reports of September 1 indicate the serious nature of the storm as it affected Yokohama, Tokyo, and neighboring towns and cities. Some 99 persons were reported to have been killed, while damage to property was placed at approximately \$28,000,000. About 15,000 of the inhabitants of Tokyo alone were estimated to have been rendered homeless. There was much damage done to shipping, particularly in the harbor of Yokohama, where 34 passenger and freight ships were driven aground and hundreds of small boats were wrecked.

Disturbances of the Southeastern North Pacific.—There are indications from isolated reports that three tropical disturbances occurred in the waters west of Mexico during August. The American steamer *Mobile City*, Honolulu to Balboa, ran into the northerly winds of a westward moving depression late on August 1, and at 4 a. m. of the 2d, in $16^{\circ}54' N.$, $114^{\circ}42' W.$, had a barometer reading of 29.68 inches. The vessel ran out of the depression on the afternoon of the 2d, after experiencing a maximum wind of force 7 from the southwest.

Early on the 4th the same ship encountered a northeast gale of force 9, lowest barometer 29.82, near $15^{\circ} N.$, $106^{\circ} W.$ Later in the day the wind changed to southeast with lessened force. The indication is that the vessel had passed through the northern half of a second tropical disturbance moving westward in these waters.

The third disturbance was located as a depression over or close to the eastward of the Revillagigedo Islands on the morning of August 18. Twenty-four hours later it lay west or west-southwest of Cape San Lucas, with pressure reported down to 29.50 inches or lower at or near the center. The only gale, a wind of force 8, in connection with it, was reported by an unidentified ship near $25^{\circ} N.$, $114^{\circ} W.$, on the morning of the 19th. Our 7 p. m. (E. S. T.) map of the 19th shows no further evidence of the cyclone.

Fog.—Along the central part of the northern routes, specifically between about latitudes 44° and $51^{\circ} N.$, longitudes 155° and $175^{\circ} W.$, there was a concentration of fog, unusual for any summer month in that locality. Over this region fog was reported on at least 23 of the first 26 days of the month. Westward, fog diminished to about 4 days of occurrence east of northern Japan, and eastward it diminished to about 3 days in the coastal waters of Washington and Oregon. South of the 40th parallel there were only isolated occurrences of fog over the ocean, except along the California coast when it was reported on 9 days, and along the Lower California coast, on 3 days.

LATE REPORT: TYPHOONS AND DEPRESSIONS OVER THE FAR EAST, JULY 1938

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[Weather Bureau, Manila, P. I.]

Typhoon, July 4-10, 1938.—From July 4 to 7 a very shallow low pressure area moved from the Pacific across the Visayan Islands into the China Sea along a west-northwesterly course. As the disturbance approached the regions south of the Paracel Islands and Reefs, it quickly intensified into a small but violent typhoon, which inclined to the northwest, thus bringing the center to Hainan Island where it recurved to the northeast. It moved across the coast into the Continent where it disappeared during the afternoon and evening hours of July 10.

When this disturbance was crossing the Philippines, pressure values were between 755.0 mm and 756.5 mm (29.724 and 29.783 in.) with only slight indications of circulation. At Manila, the barograph trace during the early morning hours (2 to 5 a. m.) July 6, showed an irregular fall and rise of pressure. Compared with the traces on the days before and after, it was unusual inasmuch as it happened only that day. There was some rain accompanying this change of pressure; a wind shift from northeast to northwest and back to northeast (surface winds) occurred also, these events happening when the low pressure center was south of Manila. Barograph records from the provincial stations are not available at the time of writing; a later study of these may show the progress of the disturbance across the archipelago.

Observations from the S. S. *Conte Verde* gave first indications that the disturbance was intensifying. On July 7, 6 a. m. (Manila time) a pressure of 750.2 mm (29.535 in.) with east-northeast winds force 6, in latitude $16.0^{\circ} N.$, longitude $113.1^{\circ} E.$, was reported. July 8, 2 p. m., the recently established station on one of the Paracel Islands reported a pressure of 749.8 mm (29.520 in.), with south-southeast winds force 9.

Upper winds reported during the period of this storm indicate that two simultaneous surges occurred as it was crossing the Philippines. At Manila, the velocities of a southeasterly current increased from values of about 20 k. p. h. on July 5 to values between 30 and 60 k. p. h. on July 6, the velocities weakening the next day. No increase was shown at the other Philippine aerological stations. Malaya pilots received during this period also show an increase of values between 5 and 45 k. p. h. on July 4 to values between 25 and 60 k. p. h. on July 6, the direction being from the southwest quadrant. On July 7 the southwest current decreased, and on the 8th the direction changed to the east quadrant, according to the data available.

As the disturbance moved across the China Sea and approached the region of the Paracels, a southwesterly current was steadily flowing across Siam and Indo China. The proximity of the typhoon affected only the upper winds of Tourane, changing them to the northwest quadrant, no long ascents being reported and velocities between 10 and 25 k. p. h. recorded. On the 8th, the directions over Tourane changed to the northeast aloft, the typhoon being about 180 miles to the east and moving northwest. At the same time a surge seemed to have occurred over Bandon, Siam, and Saigon, Indo China. At Bandon,