

steamship *Tela*, in 33°10' N., 78°08' W., encountered a northeast gale of force 9, lowest barometer 29.75. Two hours later the wind at ship had diminished to force 6 from the northwest.

Between 6 and 7 a. m. (local time) the American steamer *Clare*, southbound, near 34°20' N., 76°35' to 76°40' W., ran into northwest gales of force 9—extreme force 10. At 8:30 a. m. the ship, with little change in position, was evidently in the center of the cyclone, with lowest barometer 29.44, wind southeast, force 2.

At 7:30 a. m., E. S. T., the storm was centered a short distance southwest of Hatteras, continuing northeastward at a speed of about 20 miles an hour, which was almost two times its progressive rate on the 30th. During the forenoon its center passed very close to Hatteras, where the maximum wind velocity, from the northwest, was at the rate of 65 miles an hour, lowest barometer 29.53.

At 2 p. m., local time, of the 31st, the American steamer *Coppename*, Castilla to Boston, reported the lowest barometer, 29.40, observed in connection with the storm. This was in the approximate position 36°08' N. 74°06' W. The ship experienced heaviest wind at 4:30 p. m. with a gale from northwest, force 9, accompanied by squalls of greater intensity. The highest recorded wind force reported by any ship was 11, north-northwest, encountered on board the Dutch steamship *Medea*, at 3 p. m. (local time), lowest barometer 29.58, in 36°48' N. 73°54' W. The next highest, force 10, north-northeast, was experienced by the French steamer *Capitaine Paul Lemerle*, at local noon, in 36° N., 75° W., barometer 29.92 (uncorrected).

Other vessels that reported gale winds in the vicinity on the 31st were the American steamer *Peten*, northwest 9, lowest barometer 29.79, in 35°08' N., 75°12' W., at noon; the American motorship *Gulfpride*, north 8, lowest barometer 29.82, near 36° N., 75° W., at noon; the American steamship *Santa Lucia*, northwest 8, lowest barometer 29.56, in 36°30' N. 73°42' W., at 2 p. m.; the American steamer *Turrialba*, southwest 8-9, lowest barometer 29.64, near 38° N. 71° W., at 7 p. m.; and the British motorship *Wellfield*, southwest 9, barometer unrecorded, near 38° N. 68° W. The *Turrialba* and the *Wellfield* met diminishing gales which continued until 1 a. m. of August 1.

Thereafter, with abating intensity, the disturbance moved toward Nova Scotia, the coast of which it crossed late on August 1, and dissipated over the lower St. Lawrence Valley during the night of August 2-3.

The report of the forecaster, Mr. Dunn, at Jacksonville, said that, "except for some road washing at Clearwater and a slight fruit loss in Pinellas County, no damage resulted from the storm" in the Florida district.

As early as the character of the disturbance off the Florida west coast became known, storm warnings were issued at 5:30 p. m. of July 29 for the coast from Palmetto to Tarpon Springs. Thereafter, through the 31st, advisories or warnings were issued for the coast as far northward as the Virginia Capes.

TYPHOONS AND DEPRESSIONS OVER THE FAR EAST, JULY 1937

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[Weather Bureau, Manila, P. I.]

Typhoon, June 30-July 5, 1937.—A low-pressure trough extending from the Philippines to the Mariana Islands, June 27 and the following days, finally manifested itself as a depression, June 30, about 550 miles in a northerly direction from Yap. As it moved westerly, it intensified and became a typhoon, the morning of July 2, about 200 miles east by south of Aparri. Its

course threatened the whole of northern Luzon, until late in the afternoon, when it shifted to the northwest, the center then passing a short distance north of Aparri and, a few hours later, a short distance south of Calayan. After crossing the central part of the Balintang Channel, it continued its northwest course across the northern part of the China Sea, losing its strength when it approached the coast line of China, filling up a short time after entering the continent.

The intensity of the typhoon is well indicated by the observations made at Calayan. A relative calm was experienced there from 9 a. m. to shortly before 11 a. m. The absolute minimum occurred at 8:45 a. m., when 718.85 millimeters (28.301 inches) was recorded, with southeast winds, force 8. At Aparri, a few hours before, 739.81 millimeters (29.127 inches) was recorded with west winds, force 8 (July 3, 4:02 a. m.).

According to reports, only one life was lost in the Philippines due to the typhoon, when a man was reported killed near Baguio. In the China Sea, however, a fishing vessel from Formosa was driven southward by the northerly winds of the typhoon and foundered near Cabugao (latitude 17°50' N., longitude 120°25' E.).

Three of the crew were drowned and the seven remaining members swam to shore. The only other marine casualty reported was the S. S. *Ronsan Maru*, which took shelter in Port San Vicente, near Aparri, and was driven ashore by the strong winds. She was refloated after the storm had passed and was not injured to any appreciable extent, according to the newspaper reports.

Typhoon, July 17-25, 1937.—Pressure values at Guam and Yap were quite low July 17 and 18, so much so that it was certain something was developing over those regions. No definite center appeared, however, until the morning of July 19, when, about 360 miles east of north of Samar, there appeared a depression. It apparently had formed during the preceding night and was moving in a west-northwest direction. It had developed into a typhoon the next morning as it was inclining to the northwest. The morning of July 21 found it located over the eastern part of the Balintang Channel, gradually inclining to the north. Late that afternoon, it was definitely moving northeast, but on the 22nd it shifted to the north, passing about 60 miles east of Naha and then less than 50 miles west of Oshima, moving in a northerly direction. On July 25 it was approaching Kiu-Siu Island, the western part of which was crossed the next day, moving north-northeast. The typhoon was in the Sea of Japan, July 27, moving north-northeast, as this article was being prepared.

When the typhoon was moving toward the archipelago, July 19 and 20, the S. S. *Steel Traveler* and the S. S. *Tjimonoeek* sent observations which definitely indicated the intensity of the storm.

On the morning of July 20, the center was nearer to these two ships than on any other day. At 5 a. m. the S. S. *Tjimonoeek* reported from latitude 12°48' N., longitude 128°00' E. a barometer of 752.4 millimeters (29.622 inches) with west-northwest winds, force 4. The S. S. *Steel Navigator* at 8 a. m. of the same day had, in latitude 13°42' N., longitude 127°36' E., north-northwest winds force 5, and a pressure of 754.1 millimeters (29.689 inches). Both ships reported rainy weather with squalls.

At this period, the typhoon was not fully developed. When it reached the Balintang Channel, the stations of Luzon did not have pressures below 750 millimeters (29.528 inches), but there was a definite circulation evident and it was certain that a center, perhaps small, existed in the Pacific east of the archipelago. When the