

Aside from the generally calm seas and quiet weather the appearance of fog was most frequently noted by shipping. East of the 180th meridian fog occurred during the first six or eight days of the month over the northern routes and sporadically thereafter at least until the 18th. West of the 180th meridian, fully 40 per cent of the observers reported fog during the early half of June, and several reported it practically throughout the remainder of the month.

Pressure changes, except in the typhoon region and thence over the Aleutians and eastward, were moderate. At Honolulu the absolute range of pressure was only 0.25 inch. Here unusually cloudy conditions prevailed, with the lowest percentage of sunshine in 18 years of record. It was also the calmest June on record.

The eastern North Pacific high-pressure area did not assume control of weather conditions until the 10th. Previously a shallow but well-defined low-pressure area had hung off the American coast. After the 16th another shallow depression nosed its way into the high-pressure area from the westward completely severing it from about mid-ocean to British Columbia until about the 19th. Owing to these and other changes, the average pressure over much of this region was below normal.

The Aleutian low-pressure area was especially prominent from the 7th to the 9th and from the 20th to the 24th; and was again assuming energetic indications on the 30th. The circulation over this area was weak, however, and no gales of consequence seem to have occurred.

In Mexican and Central American waters conditions were reported quiet except for a gale to the southward of Salina Cruz on the night of the 3d, due to the oncoming summer conditions peculiar to this locality at the beginning of the rainy season.

In the Far East reports received up to the 17th of the month show five cyclones passing near or over Japan. Of these two were of continental origin, giving moderate to strong gales; two were semi-tropical depressions; and the fifth, a storm which persisted from the 8th to the 11th of the month, was a typhoon of considerable intensity. The typhoon originated to the northwestward of Luzon, moved northeastward, and disappeared at sea to the eastward of Japan. The Yellow Sea depression of the 15th-17th seems to have been instrumental in breaking the rather serious drouth which had been existing over western Japan. Two other storms of this region, which originated during the last days of May disappeared on the 1st or 2d of June near the 150th meridian, giving reported gales of force 7.

Of the storms of continental origin enumerated in the foregoing, that which passed out to sea to the northward of Formosa on the 6th, gave moderate to whole gales, especially on the 7th and 8th. The American steamer *Nanking*, Capt. T. H. Dobson, Observer E. J. Anderson, reports the following:

June 8th, 2 a. m.: Lat. 34° 50' N., long. 142° 30' E., fresh ENE. wind, overcast, heavy wind and rain squalls, horizon hazy. Wind increased steadily, so by noon it was blowing force 9. Raining very hard, horizon very hazy. Wind hauling around to NE. 4 p. m.: Lat. 34° 50' N., long. 144° E.; barometer reading 29.23; wind north, force 9; raining hard, with very heavy wind and rain squalls. 12 midnight: Lat. 34° 25' N., long. 145° 48' E.; wind NW., 7; bar. 29.39; sea rough; partly cloudy; passing heavy wind and rain squalls. [correction of -0.19 applied to barometer readings.]

Another depression, but of little known intensity appeared over the Japanese Archipelago about the 24th. On the 26th and 27th gales of force 7 to 9 were reported by two steamships from between latitudes 40° and 45° N., longitudes 160° and 165° E., with pressure as low as 29.37 inches. The relation between this depression and the one noted to the westward on the 24th is obscure.

The American S. S. *Victoria*, Capt. C. S. Davis, Observer M. C. Reaber, Seattle to Nome, while near 57° N., 167° W., on the 11th reported occasional snow squalls. On the 12th the observer states: "Ship in heavy floe ice at 1 a. m., lat. 62° 02' N., long. 167° 59' W. No ice north of 62° 30' N."

THE MANILA TYPHOON OF MAY 23, 1922.

By REV. JOSE CORONAS, S. J.

(Weather Bureau, Manila, P. I.)

The first typhoon of the season traversed the central part of the Philippines in a northwesterly direction on May 20 to 23, the center having passed practically over Manila in the morning of the 23d. Fortunately for the city, however, the typhoon was here very abnormal, as the winds were not very strong, even the barometer was rising rapidly after the passing of the vortex. Hence Manila missed the worst of the storm, and although the barometric minimum in the present case, 742.3 mm. (29.22 inches), was somewhat lower than in the two previous typhoons of August 31, 1920, and July 4, 1921, yet the damage done was much smaller, the maximum velocity of the wind, even in a few isolated gusts, having not been higher than 60 miles per hour.

The center, as just stated, passed practically over Manila, though a little to the west, as was shown by winds veering very rapidly (less than two hours) from NNW. and N. to the E. and S. and by the relative calm, which was clearly observed for about 23 minutes, from 8:01 to 8:24 a. m.

Our weather map for 2 p. m. of the 19th showed the typhoon over the Pacific about 200 miles to the east of Mindanao. The center passed near Surigao to the north between 5 and 6 p. m. of the 20th, and at 6 a. m. of the 21st it was situated over the northernmost part of Cebu Island near 124° longitude E. and 11° latitude N., moving approximately to NW. by W. The typhoon was headed for Mindoro, but a slight inclination of the track to the north caused it to go from Romblon to Marinduque and from Marinduque to Manila. After striking Manila, however, it took again the former direction to NW. by W., thus entering the China Sea near and to the south of Iba.

The following are the most important barometric minima recorded in the Philippines in this typhoon:

Place.	Date.	Hour.	Pressure.	
			Mm.	Inches.
Surigao.....	20	5:45 p. m.	744.95	29.33
Maasin, Leyte.....	20	10:50 p. m.	746.90	29.41
Romblon.....	22	9-10 a. m.	746.90	29.41
Boac, Marinduque.....	22	8:30 p. m.	741.90	29.21
Lucena, Tayabas.....	23	1:15 a. m.	747.70	29.44
Sta. Cruz, Laguna.....	23	4:50 a. m.	746.10	29.37
Manila.....	23	8:20 a. m.	742.30	29.22
Iba.....	23	3:00 p. m.	747.29	29.42

While the rate of progress of the typhoon between Surigao and Maasin was 8 or 9 miles per hour, it decreased later to such an extent that from Romblon to Boac the storm moved at the rate of only 5.6 miles per hour. When nearing Manila it increased again to about 8 miles per hour and from Manila to Iba the rate of progress was even greater than 10 miles per hour.

According to the observations at hand it would seem that the typhoon filled up on the 26th in the China Sea off Hainan.

Besides this Manila typhoon there was only one other shown by our weather maps during this month in the whole Far East. It appeared south of Guam on May 2, not far from 145° longitude E. and 10° latitude N. and moved northwestward between Guam and Yap.