ment and intensity of a hurricane, two things are of foremost import: First, that there be available well-distributed observations daily, or twice daily, if possible, in order to enable the forecaster to locate accurately the center of the disturbance and, second, that there be at his disposal for ready references the previous history of all hurricanes, and more particularly accurate tracks of the same. It is only by an intensive study of the past behavior of such storms that a closer knowledge and better understanding of them may be gained, thereby better enabling the forecaster to anticipate their intensity and direction of movement. To this end it is the intention of the Bureau to bring up to date the charts given by Fassig in Weather Bureau Bulletin X, showing tracks of hurricanes for the period 1876 to 1911, inclusive.

Chart No. X (XLIV—121) shows the tracks of important hurricanes that have occurred in the West Indies and adjacent waters during the period 1912–1915, inclusive. The tracks for the present year will appear in the December, 1916, issue, and in subsequent years the tracks for the current year will appear in the December number of the REVIEW for that year. This will allow sufficient time to elapse between the occurrence of the storm and the publication of its track, so that all reports giving details of the hurricane may be received at the Central Office. It is believed that this scheme will result in the preservation of an accurate record of the tracks of these destructive storms of the Antilles that will be available to all persons and on which may be based any future study or discussion of the same.

To this end it is earnestly requested that any data bearing on the history of these disturbances be forwarded to the Central Office at Washington. Such information is particularly desired from vessels at sea.

FURTHER DATA ON THE TROPICAL STORM OF JULY 12–22, 1916.

By Prof. H. C. FRANKENFIELD.

[Dated: Weather Bureau, Washington, Oct. 13, 1916.]

The following report sheds some additional light on the behavior of the tropical storm of July 12–22, 1916, a brief account of which was published in the MONTHLY WEATHER REVIEW for that month. The report was prepared by Mr. T. Edelenborsch, second officer of the steamship *Ausable*, who made the observations, and is published in the MONTHLY WEATHER REVIEW in order that the record may be made as complete as possible.

The report has been edited slightly, and the millimetric barometer readings converted into inches:

SAN JUAN, P. R., *July 28, 1916.*

To the CHIEF, *U. S. Weather Bureau,*
Washington, D. C., U. S. A.

SIR: Sailed at 10:15 a. m., July 16, 1916, from Norfolk, Va., bound for Porto Rico to load bunker coal.

Met at first fresh southeasterly breezes with cloudy sky (the greater part cumulus). At 8 p. m. the wind become more southerly and during the watch from midnight till 4 a. m. it was calm with clear sky. In the forenoon of the 17th the wind became more southerly, with a force of 2 (Beaufort scale). It now became cloudy (cumulus and cumulo-nimbus). The barometer was observed continually, as we had read in the newspapers about a hurricane that had passed Porto Rico on July 12.

The average barometric pressure was 30.04 inches, and the temperatures were not out of the ordinary.

In the afternoon of the 17th the wind increased and shifted after 4 p. m. to east-southeast, increasing until a force of 6 was reached, while the sea became more turbulent. The barometer fell a little to 29.92 inches. The daily amplitude was normal. During the watch from midnight till 4 a. m. of the 18th the wind shifted to northeast, increasing to a force of 7, the barometer fell to 29.90 inches, the sea became more turbulent. A swell started from south-southeast with passing showers. After 4 a. m. it started to rain, while the wind increased after 8 a. m. to a force of 8 and 9. The barometer at 8 a. m. read 29.86 inches, and the wind shifted to north-northeast. The barometer fell to 29.76 inches at 11 a. m. and to 29.72 at noon, and the sea was very high with overcast sky. In the afternoon the wind shifted to east-northeast, increasing to a force of 10, with heavy rainfall, dirty sky, and a very high and turbulent sea. At 1 p. m. the barometer read 29.65 inches, at 2 p. m. 29.61 inches, and at 4 p. m. 29.53 inches. During the watch from 4 p. m. to 8 p. m. the wind became more easterly, and at 8 p. m. the barometer read 29.49 inches. After 8 p. m. the wind became more east-southeasterly with a force of 10; very high and turbulent sea, heavy rain squalls with hard sky. The barometer at midnight read 29.28 inches. After this the wind increased to a force of 11 and 12, while the barometer was falling rapidly. The wind continued east-southeasterly until the ship was in the center of the hurricane, when the barometer read 28.94 inches. Heavy rain squalls. Here the seas came from all directions. About 2 a. m. of the 19th the wind went down to force 5 and hauled to southwest through south, increasing from 3 a. m.; the rain stopped and the sky cleared a little. During the heaviest wind there was a high, regular sea from east-southeast; nearing the center it became irregular, but all the time, and throughout the entire storm field, we experienced a high swell from south-southeast. After 4 a. m. the wind became more southwesterly and decreased a little. Very heavy rain squalls with phenomenal sea and overcast sky. The barometer rose, and at 8 a. m. read 29.41 inches. During the whole day the wind blew principally from southwest with a force of 9. The barometer rose continually and at 11 a. m. read 29.57 inches, at noon 29.61 inches, at 4 p. m. 29.68 inches, at 8 p. m. 29.78 inches, and at midnight 29.82 inches. There was a very high and irregular sea with high swell, and further very heavy rain squalls with overcast sky. On the following day (20th) the barometer rose steadily, the wind decreased and became more westerly, and on the morning of the 21st shifted gradually to the east, after which the usual trade wind was met. During July 20 there were still heavy rain squalls with more or less covered sky and southwest and northeast swells. When the sky cleared in the afternoon of the 20th cirrus appeared with the radiation point bearing northwest, on the morning of the 21st north, and during the remainder of the day and also on the 22d north-northeast and northeast, the sky becoming free of cirrus during the afternoon of the 22d.

Barometer readings on July 20 were as follows: 4 a. m. 29.95 inches, 5 a. m. 29.96 inches, 8 a. m. 30.04 inches, noon 30.08 inches, 4 p. m. 30.08 inches, 8 p. m. 30.12 inches, midnight 30.16 inches.

Owing to the high sea and swell it was impossible to make any speed, and we met the hurricane at about 32° 30′ north latitude and 73° west longitude.