

meter was noted in any instance, except that at 5 a. m. of the 29th the Japanese steamer *Kuma Maru* recorded a reading of 29.64 inches, wind east-southeast, force 8, in 19° 37' N., 105° 45' W. The storm of the 28th-29th was evidently cyclonic in character. The squall-like hurricane wind of the 20th seems to have been of the nature of a chubasco, and the gale of the 22d as due to a violent thunderstorm.

Frequent dense fog formed along the western half of the northern sailing routes, where, according to reports tabulated between the one hundred and eightieth meridian and the coast of northern Japan, it occurred on from 40 to 50 per cent of the number of days in the month. Several vessels in that area steamed for several days at a time through a practically unbroken layer of fog. The percentage lessened rapidly with approach from central longitudes to the American coast, and in the region of the North Pacific anticyclone fog was infrequent. Along the middle California coast, however, there was a local increase to 25 or 30 per cent.

THE AURORA OF JULY 7-8, 1928, ON THE NORTH ATLANTIC OCEAN

By WILLIS E. HURD

The extraordinarily widespread aurora of the night of July 7-8, 1928, was observed not only in North America and Europe (see pp. 280-281) but over a great area of the North Atlantic Ocean in middle as well as lower latitudes. The northernmost observation of it actually reported was from 42° 40' N., in 68° 53' W. The extreme western and southern observations reported were from the Gulf of Mexico, greatest longitude, 87° 50' W., lowest latitude, 24° 08' N., which is nearly half a degree below that of Key West. Over the main body of the ocean most

reports of the phenomenon came from vessels west of the thirty-fifth meridian, between latitudes 30° and 42° N.

Generally speaking, the observational period lengthened with westward increase in longitude, some vessel observers toward the American coast reporting the display as continuous, with fluctuations in brilliancy, from 8 p. m. of the 7th until dawn of the 8th, but with the most active period in most instances preceding midnight. In some central localities the illumination was noted as covering the sky, but in the Gulf of Mexico it was seen only along the northern horizon, rising to a height of from 20° to 28°.

In central longitudes and in the Mediterranean Sea the aurora was reported as visible only during the early morning hours, or at least as being brightest after midnight.

The lights were almost generally described as consisting of mixed streamers and patches, more whitish than otherwise, but frequently of colors ranging therefrom to various shades of red, purple, and light green.

Press comments touched upon the bad radio reception noticed in the United States that night. At sea varying conditions of good and poor receptivity prevailed. In 39° 20' N., 73° 30' W., the American steamer *Ponce* reported "static almost entirely absent. Reception excellent on commercial and lower wave lengths." Near by the Panaman steamer *Managui* found "little interference due to static." In 42° 40' N., 68° 53' W., the United States Coast Guard destroyer *Wainwright* reported "unusually good reception" in a communication to the Hydrographic Office. In 35° 53' N., 34° 46' W., the American steamer *Montgomery City* found "no change in radio signals." Contrary to this was the statement from the Dutch steamer *Yselhaven*, in 35° N., 48° W., of "very bad reception during the whole night."