New Jersey coast, from 6,000 to 7,900 miles; Key West, 6,956 miles; Wilmington, 6,786 miles, and Escanaba 6,690 miles. The smallest movements have occurred at Lynchburg, 2,037 miles; Nashville, 2,561 miles; Wytheville, 2,847 miles; Louisville, 2,859 miles; Indianapolis, 2,901 miles.

VERIFICATION OF "PROBABILITIES" AND CAUTIONARY SIGNALS.

The usual critical comparison of the published "Probabilities" with the weather-conditions actually following their publication shows that, on the average, for all the districts in the United States for which predictions were made, 91.94 per cent. have been verified. The per centage of omissions to predict is, for the whole country, 0.16.

During the month, the total number of Cautionary Signals ordered to be displayed at the forty-three Signal Stations on the Lakes and Atlantic coast, has been two. This is a small number, compared with that of previous months. Of the two signals displayed, one was justified by the fact of succeeding high winds. One was not justified.

NAVIGATION.

On Chart No. III., is given the usual table, showing the highest and lowest water-marks of the month. The Red river, at Shreveport, fell steadily during the month. Up to the middle of the month, the upper Mississippi was at its highest, but then fell and was very low north of Keokuk when the month closed, being six inches below bench-mark on the 31st at La Crosse, Wis. The Cumberland, at Nashville, reached its maximum height on the 19th. The lower Missouri fell towards the close of July.

The Ohio was highest on the 30th, at Louisville, Ky., and Laconia, Ind.

The floods, which were so general in the first week of August, had not become fully enough developed in July to call for extended notice in the current Review. Their history belongs to the meteorology of August.

TEMPERATURE OF THE WATER.

This item is given in the table in the lower right-hand corner of Chart No. II. Generally, the variation in the temperature of the water has been small, not exceeding 8° in the month. The exceptions or greatest variations are at Duluth, 25°; Yankton, 15°; Pittsburgh and Milwaukee, 12°; Omaha, 11°; Leavenworth, Escanaba and Marquette, 10°. The least thermometric changes have been at Augusta, Ga., 6°: Charleston, S. C., 2°; Indianola, Texas, 2°; Memphis, 3°; Eastport, Me., 5°; Savannah, 3°, and Portland, Me., 0°.

OPTICAL PHENOMENA.

(1) *Solar halos* were observed on the 1st, in New York, Ohio and Wisconsin; 3d, Maine, New Hampshire and Vermont; 5th, Illinois; 6th, New York; 8th, New Jersey, New York and Wisconsin; 9th, New Hampshire and Ohio; 10th, Kansas; 11th, Iowa; 14th, New York and Tennessee; 15th, Dakota; 17th, Illinois and Tennessee; 18th, Tennessee; 19th and 20th, Nebraska; 21st, Canada; 22d, Maine, Massachusetts, Mississippi and New York; 23d and 25th, Ohio; 26th, Nebraska and New Hampshire; 28th, Michigan and Tennessee; 29th, Massachusetts, New Hampshire, New York and Vermont; 30th, Canada and Wisconsin; 31st, Iowa, Michigan, New York, Ohio, Pennsylvania and Wisconsin.

(2) *Lunar halos* were reported as follows: On the 7th, in Louisiana, Mississippi; 8th, Louisiana, New Jersey and Wisconsin; 9th, Illinois; 10th, Illinois and Virginia; 12th, Alabama, Florida, Iowa and Texas; 13th, Alabama, New Jersey and Wisconsin; 14th, Tennessee and Wisconsin; 15th, Iowa and Tennessee; 16th, Mississippi and Ten-