

PRECIPITATION.

This element is graphically exhibited on Chart No. III. The rain-fall at San Francisco was 1.02 inches. There is a very striking excess of rain in a large irregularly-shaped belt of country, extending throughout the lower Missouri and lower Ohio valleys, and having a variable but average breadth of 175 miles. Within this wide-spread region the June rain-fall has been from 8 to 12 inches. For several hundred miles around this belt the rain-fall has been in large excess. It has also been in decided excess in New England and the Lower Lake region. The deficiencies are in the Middle States, about one inch below the normal quantity, and the Upper Lake region, about .60 of an inch. But in the Western Gulf States also the deficiency (1.60 inches) is very large.

The explanation of the very large excess of rain in the Upper Mississippi, the lower Missouri and lower Ohio valleys is obvious, if we connect the abnormally low temperature (see previous article) in these sections with the prevailing southerly and vapor-laden winds. As fast as the latter could bring the moisture of the Gulf region, it has been condensed by the low temperature, producing often copious and torrential rains. On the 17th, 5.02 inches of rain fell at Omaha within eight hours. Several similar falls were reported at other stations in these sections. While somewhat destructive to railroads, these very heavy rain-storms swept millions of grasshoppers from the fields, and greatly brightened the agricultural prospects.

Rainy days.—The number of days on which rain in any quantity has fallen during the month averages about as follows: New England, 11; Middle States, Lower Lake region, and the Ohio and upper Mississippi valleys, 15; South Atlantic and Eastern Gulf States, Missouri and the lower Mississippi valleys and the Upper Lake region, 10; Texas and Indian Territory, 5.

RELATIVE HUMIDITY.

This element averages 80 per cent. for the immediate coast of New Jersey and New England and 75 per cent. on the South Atlantic coast. Elsewhere over nearly the entire country east of the western plains the average is from 65 to 70 per cent. It is, as usual, very low at the Rocky Mountain stations, being 33 per cent. at Cheyenne, 29 at Salt Lake City, and 28 at Denver.

WINDS.

The prevailing winds have been from southeast to southwest over all the country east of the Rocky Mountains. From the Ohio valley to the Gulf the direction has been nearly due south.

Total movement of the air.—The larger total movements of the air for the month have been: at Kitty Hawk, N. C., 11,048 miles; Cheyenne, 9,332; Sandy Hook, 8,479; Indianola, 8,417; Erie, 7,606; Peck's Beach, N. J., 7,963; and Squan Beach, 7,210. The smallest, at Lynchburg, 2,092; Wytheville, 2,605; Augusta, 2,611; Nashville, 3,140; Vicksburg, 3,219; Montgomery, 3,248; Morgantown, 3,352.

VERIFICATIONS.

The critical comparison of the published predictions with the weather actually following them, shows that, on the average, for all the districts predicted for, 87.5 per cent. of the predictions have been verified.

During the month 31 Cautionary Signals have been ordered at the 43 Signal Stations on the Lakes and Atlantic coasts. Of this number, 22 have been justified by the fact of succeeding high winds. There were 4 partly justified or of doubtful necessity. The remaining 5 were not justified.

NAVIGATION.

It appears that navigation was universally resumed, without ice-obstruction, before June set in on the Lakes and rivers.

The extreme depth of water in the Mississippi and its tributaries, is shown by the table on chart No. III: In the extreme upper and lower Mississippi and the upper Ohio, the lowest stage of water is seen toward the close of the month. But in the lower Missouri, it was otherwise, the water rising to its highest on the 25th, 28th, and 29th. In the central Mississippi, from Keokuk to Memphis, the highest water was recorded on the 29th and 30th.

Ice in the North Atlantic.—The ice-drift and icebergs in the North Atlantic have been, as also noticed in the last Review, unusually large and late. During the whole month of June, vessels making Canadian and American ports, were in jeopardy from ice-obstructions. In the early part of June the steamer Golden Horn, in latitude $47^{\circ} 33'$, and longitude $49^{\circ} 30'$, was detained ten days amid ice-fields and icebergs. On the 11th, the steamship State of Nevada, latitude $43^{\circ} 23'$, longitude $47^{\circ} 26'$ came in collision with a large iceberg, staving in fore-castle head and damaging her plates considerably. June 24th, the steamship City of Brussels, in latitude $42^{\circ} 25'$, longitude $49^{\circ} 18'$, and on June 22d, the steamship State of Louisiana, in latitude 42° and 43° , and longitude 48° and 49° , passed large icebergs. On the 21st, the steamer Bermuda found the Straits of Belle Isle completely blocked with ice, and had to steer 175 miles to the southeast to get clear, but was still embayed in the ice for a considerable time. The steamship Scandinavian, while off the coast of Newfoundland, on the 29th of June, sighted no less than 100 icebergs, many of them of monstrous size. The steamship Caspian, which touched at St. Johns on July 1st, was five days among the icebergs, and previous to that day, steamships could not get to St. Johns on account of ice-obstructions.

TEMPERATURE OF THE WATER.

The details of water temperatures appear on the table in lower right-hand corner of Chart No. II.

The least thermometric variations in the water on the Atlantic coast are at Eastport, Maine, and Portland, Maine,— 5° to 3° respectively. The greatest range is at Wood's Hole, Massachusetts, where it is 16° . On the Lakes, the monthly range of temperature has been about 11° . In the interior rivers it has been from 9° to 12° . The greatest variation reported is 25° . at Duluth.

ATMOSPHERIC ELECTRICITY.

Thunder storms.—This item is noticed in part on page 4, as many of the local storms, there recorded, were attended by electrical phenomena. Thunder storms were reported at one or more stations every day in June, except on the 9th. After the middle of the month, they became quite general over the whole country. None were reported in New England before the 7th.