

perature in the North Atlantic we are indebted for the singular mildness of our winter climate. The chart Pl. VII., the general result reduced from many hundreds of thousands of individual observations, gives the distribution of the lines of equal mean temperature for the surface of the North Atlantic for the month of July; and it will be seen that the isotherms, instead of passing directly across the ocean, form a series of loops widening and flattening northwards, all participating in certain secondary deflections which give them a scalloped appearance, but all of them primarily referred to some common cause of the distribution of heat, having its origin somewhere in the region of the Straits of Florida.

These peculiarities in the distribution of temperature on the surface of the sea may usually be very immediately traced to the movement of bodies of water to and from regions where the water is exposed to different climatal conditions;—to warm or cold ocean currents, which make themselves manifest likewise by their transporting power, their effect in speeding or retarding vessels, or diverting them from their courses. Frequently, however, the current, although possibly involving the movement of a vast mass of water, and exerting a powerful influence upon climate, is so slow as to be imperceptible; its steady onward progress being continually masked by local or variable currents, or by the drift of the prevailing winds.

The Gulf-stream, the vast 'warm river' of the North Atlantic, which produces the most remarkable and valuable deviations of the isothermal lines which we meet with in any part of the world, is in