

is particularly well shown by comparing the North Atlantic with the North Pacific. The mean specific gravity of the water between the surface and a depth of 1500 fathoms, at lat. $30^{\circ} 22'$ N. and long. $154^{\circ} 56'$ W., in the Pacific, as determined from observations made at nine different depths on the 21st July 1875, was 1.02534, the depth being 2950 fathoms; at lat. $26^{\circ} 21'$ N. and long. $33^{\circ} 37'$ W., in the Atlantic, the mean specific gravity of the same stratum was 1.02659, from observations at nine different depths on the 3rd May 1876, the depth being 2700 fathoms. The mean temperature of the water down to 1500 fathoms, for the Pacific Station was $40^{\circ} \cdot 16$, and for the Atlantic one $45^{\circ} \cdot 53$. From observations made in the "Porcupine," in lat. 48° N. a mean temperature of $43^{\circ} \cdot 51$ was found down to 1500 fathoms, and in lat. $55^{\circ} 40'$ N. a mean temperature of $43^{\circ} \cdot 11$ down to the same depth; it is, therefore, in every way likely that a high specific gravity prevails also down to the bottom. In treating of the concentration of the North Atlantic, it has already been mentioned that that ocean is the recipient of all the brine from the Mediterranean, where evaporation goes on with great vigour. Notwithstanding the great supply of fresh water from the numerous European rivers and the Nile, which is constantly pouring into it, and the rain which falls on itself, there is a constant deficiency in the amount of water present in its basin. That this is so, is evident from the existence of a constant inflow through the Strait of Gibraltar at the surface and southern side, and outflow at the bottom and northern side of very salt water, both streams being, however, modified by tidal currents. The Mediterranean and Red Seas furnish instructive examples of what ocean water tends to become when subjected in the first case to an average climate similar to what prevails in the trade wind regions of the North Atlantic, and in the case of the Red Sea to a climate of almost perfect dryness and great heat, both being connected with the open ocean, so as to admit of interchange of water. The Baltic and Black Seas afford examples of similar seas in colder and damper climates, while the Dead Sea and the depression in which it lies show the result of completely isolating a drainage area in a very dry climate. The water of the Dead Sea is saturated, containing as much as 28 per cent. of salt. The water of the Red Sea contains 4 per cent. of salt, and that of the Mediterranean 3.6 to 3.9 per cent., thus showing the freshening effect of communication with the ocean.

It is worthy of remark that in the Norwegian Sea, which stretches from the Færøe Islands to Spitzbergen, and attains a depth of 2500 fathoms, the deep water was found to be distinctly of Atlantic origin, both on account of its high salinity and of the small amount of dissolved nitrogen which it contained. The comparatively very salt water of the Atlantic is rendered less dense by its high temperature, and is thus able to penetrate into the Arctic regions, where, on being cooled by the winter climate, it sinks down, raising the salinity of the Arctic water with which it mixes, and at the same time carrying down to the bottom approximately the temperature of freezing sea water. The distribution of