

Baltic and the northern seas contain.”¹ “Now, here we have on one side the Caribbean Sea and Gulf of Mexico with their waters of brine; on the other, the great Polar Basin, the Baltic, and the North Sea, the two latter with waters that are but little more than brackish. In one set of these sea-basins the water is heavy, in the other it is light. Between them the ocean intervenes; but water is bound to seek and to maintain its level; and here, therefore, we unmask one of the agents concerned in causing the Gulf-stream.”²

As Mr. James Croll has very clearly pointed out, Captain Maury's two causes tend to neutralize each other.

“Now it is perfectly obvious that if difference in saltness is to co-operate with difference in temperature in the production of ocean currents, the saltest waters, and consequently the densest, must be in the polar regions; and the waters least salt, and consequently lightest, must be in equatorial and intertropical regions. Were the saltest water at the equator and the freshest at the poles, it would tend to neutralize the effect due to heat, and, instead of producing a current, would simply tend to prevent the existence of the currents which otherwise would result from difference of temperature.” “According to both theories it is the differences of density between the equatorial and polar waters that gives rise to currents; but according to the one theory, the equatorial waters are *lighter* than the polar, whilst according to the other theory they are *heavier* than the polar. Either the one theory or the other may

¹ Captain Maury, *op. cit.*

² *Ibid.*