

such a system of counter-currents, hold at least, in some degree, the relation of the supposed water and oil.”¹

“There can be no doubt that Maury concludes that the waters in intertropical regions are expanded by heat, and those in polar regions are contracted by cold, and that this tends to produce a surface-current from the equator to the poles, and an under-current from the poles to the equator.”²

With regard to increased specific gravity produced by excess of salt, Captain Maury says,—

“The brine of the ocean is the ley of the earth. From it the sea derives dynamical power, and its currents their main strength.”³ “One of the purposes which in the grand design it was probably intended to accomplish by leaving the sea salt and not fresh, was to impart to its waters the forces and powers necessary to make their circulation complete.”⁴ “In the present state of our knowledge concerning this wonderful phenomenon (for the Gulf-stream is one of the most marvellous things in the ocean), we can do little more than conjecture. But we have the causes in operation, which we may safely assume are among those concerned in producing the Gulf-stream. One of these is the increased saltiness of its water after the trade-winds have been supplied with vapour from it, be it much or little; and the other is the diminished quantum of salt which the

¹ Captain Maury, *op. cit.*

² On Ocean Currents. Part III. On the Physical Cause of Ocean Currents. By James Croll, of the Geological Survey of Scotland. (*Philosophical Magazine*, October 1870.)

³ Captain Maury, *op. cit.*

⁴ *Ibid.*