prevail in summer and winter; and how the current *probably* sets *underneath* as well as at the surface of the water. For notwithstanding the writer of the article I am examining, apprehends 'it will be found that the currents of the ocean are entirely superficial, where no land intervenes;' and though he says, 'it would be difficult to explain the perpetual egress of a current from the Polar basin into the Atlantic, without admitting a supply through the only remaining opening (Behring's Straits,) into that basin to supply the demand of the current,' I yet firmly believe that there must be a continual *underflow* of water in the ocean, as well as superficial currents; otherwise 'that universal motion of the great deep' which he and all must allow, cannot satisfactorily be accounted for. How, then, it may be asked, are these lower currents to be accounted for? The question is much easier to be put, than solved to the satisfaction of others. But I will endeavor to explain the ideas I have on the subject, as well as I can; and that too with all the diffidence of one, who knows that, though conjectures *may* perhaps be well founded, their truth depends on experiment.

"The conjectures I venture to offer are, however, founded on the known and acknowleged properties of Heat and cold. Heat is known to be the general cause of the expansion of air and water, and cold the cause of compression.—Heat rarefies, and cold condenses. The influence of the sun in rarefying the atmosphere to the greatest degree, between the tropics, together with the earth's rotation on its axis, from west to east, would produce a constant wind from east to west all round the globe, *if* no land intervened; because, the points of greatest rarefaction being successively westward; and those eastward of each other, parting successively, as