from furnishing its quota of observations to the final or mean conclusion. And the influence of this, it should be observed, is not self-compensating as that of local inequalities of mere density on land would be, but tells all in one direction. For water being, on the average, not more than one-third the weight of an equal bulk of land (such land as the earth's surface consists of) and only $\frac{2}{11}$ of the mean density of the globe, the force of gravity at the surface of the sea is less than at the sea-level on land by the attractive force of as much material taken at twice the specific gravity of water, or at $\frac{4}{11}$ths that of the globe, as would be required to raise the bottom to the surface. Supposing then the difficulty of observing the pendulum at sea overcome, and that the whole surface of the globe were dotted over with stations of observation equally distributed over sea and land, from whose intercomparison it were required to derive the mean co-efficient of terrestrial gravitation, or the mean length of the polar pendulum; it is evident that the sea stations would everywhere conspire to give a less result than the land. According to Dr Young (Phil. Trans., vol. cix., page 93) the attraction of an extensive flat mass of any thickness on a point in the middle of its surface is three times that of a sphere of the same materials having that thickness for its diameter. And from this it is very easy to conclude that, supposing the sea to have a mean depth of four miles (which seems not improbable) the mean defalcation of gravity at its surface, due to the deficiency of attracting matter, would be three times the attraction of a sphere four miles in diameter