exchange of manufactured and natural productions, are carried on, to the social and intellectual advantage of man.

Oceans are collections of water in valleys, and their basins must present the same inequalities as are observed upon the surface of the land. Mountains, hills, and valleys are to be found in the bed of the ocean as well as on dry land; and the causes which effected changes in the relative positions of the one must have had some and a similar influence upon the other. The depth of the sea, therefore, must vary considerably in different places. But there is much difficulty in ascertaining the depth at any place; for not only are substances moved more readily in water than in the atmosphere, on account of their loss of weight in that medium, but they are also subject to rapid transportation by currents. On these accounts, there are many situations in which the heaviest sounding-lead can be of little or no value. Lord Mulgrave sounded in the Northern Ocean in a place where he gave out 4700 feet of line without finding a bottom, and Mr. Scoresby could not find a bottom in one part of the Greenland Sea at the depth of 7200 feet. According to the calculations of La Place, in his "Mécanique Celeste," founded upon the oscillations of the ocean, the mean depth of the water is a fraction of the difference produced in the diameter of the earth by the flattening of the poles, and it has been estimated at between two and three miles.

LEVEL OF THE SEA.

From the universal law by which water is known to be governed, it might be deduced that the surfaces of all connected bodies of water must be on the same level; and if there were no deranging causes, this would be the case, and the surface of the ocean would give the precise form of the earth. The great law of gravitation has its action in this as well as in all other instances; and water, wherever situated, not only seeks the lowest places it can reach, but also attempts to maintain the same level. But it is impossible that there can be a universal level at any moment, so long as the disturbing causes, intimately connected with the present physical condition of the earth, exist. The influence of the moon producing tides is one of these causes, and occasions a considerable difference in the height of the water, in near as well as distant parts of the same ocean or sea. The level is