

mally, be driven from the persuasion that the end which the arrangements of the satellites seem suited to answer is really one of the ends of their creation.

CHAPTER VI.

The Stability of the Ocean.

WHAT is meant by the stability of the ocean may perhaps be explained by means of the following illustration. If we suppose the whole globe of the Earth to be composed of water, a sphere of cork, immersed in any part of it, would come to the surface of the water, except it were placed exactly at the centre of the earth; and even if it were the slightest displacement of the cork sphere would end in its rising and floating. This would be the case whatever were the size of the cork sphere, and even if it were so large as to leave comparatively little room for the water; and the result would be nearly the same, if the cork sphere, when in its central position, had on its surface prominences which projected above the surface of the water. Now this brings us to the case in which we have a globe resembling our present earth, composed like it of water and of a solid centre, with islands and continents, but having these solid parts all made of cork. And it appears by the preceding reasoning, that in this case, if there were any disturbance either of the solid or fluid parts, the solid parts would rise from the centre of the watery sphere as far as they could: that is, all the water would run to one side and leave the land on the other. Such an ocean would be in *unstable* equilibrium.

Now a question naturally occurs, is the equilibrium of our present ocean of this unstable kind, or is it stable? The sea, after its most violent agitations,