

XXXVIII. THE PRIMEVAL STORM.

ORIGIN OF THE OCEAN.

LET us now attempt to trace the physical history of that planetary mass which was destined to become the earth. We contemplate it in a state of fire-mist. Here are no water, no atmosphere, no rocks, no organic forms. In this fire-mist, however, were the elements of all the forms of matter which were to exist in or upon the earth, in the long progress of its history. Here were the calcium and the oxygen and the carbon which molluscan life would appropriate for its shelly coverings. Here was the stuff which, long ages after, was destined to swim as a fish in the wide ocean. Here were the ultimate elements which were to grow in forests or wave in tinted sea-weeds. Here was the matter which, in the course of time, would be organized in human bodies—the solid bones were there, the graceful contours of the flesh, and the crimson life-blood destined to glow in the maiden's cheek. Only Infinite Mind could embody in one plan, things so contrasted and so remote in time.

The moon, on what seems to me the most probable view, had already been separated, but was still much nearer the earth than at present, and performed its revolution in a shorter period. The earth's axial rotation was correspondingly more rapid. Earth and moon mutually exerted powerful tidal actions (see also Talk XX). Each changed the form of the other from the simple oblate spheroid shaped by rotation, to a prolate modification of this. That is, each by its attraction drew the other into a form slightly elongated. The elongation was a "deformative tide" or "bodily tide." Of course, the moon was much more deformed than the earth. The tidal elevation on the moon, at its present distance, is one hundred and thirty-four times that on the earth. Those tidal interactions have always existed, and still exist.

I can not affirm that the matter of the earth was now all fire-mist suspended in a continuous gas. There must always