## CHAPTER III.

## DYNAMICAL GEOLOGY.

In the days of the Greek philosophers attention had been frequently directed to the changes in the surface conformation of the earth, and the natural forces which produce them. Herodotus, Aristotle, Strabo, Seneca, Pliny, and others contributed valuable information regarding wind and weather, springs, water-courses, inundations, and earthquakes. A systematic treatment of these agencies, with reference to the changes produced in the earth's surface, was first carried out by the Belgian mathematician, Simon Stevin (1548-1620). But it was not until two centuries later, after the physical investigation of the earth's surface had been conducted along scientific lines, and had shown the influence of these agents upon the existing conformation of the earth's surface, that geologists began to correlate the past changes in the earth's surface with similar natural causes. Then dynamical geology gradually developed as a branch of study intermediate between geography and geology, which was fostered from both sides, and proved useful to geography in so far as it elucidated the present constitution of the earth's surface, to geology in so far as it served to explain the successive phases in the earlier ages.

Hutton and Playfair had expressed the view that all earlier geological events were explicable upon the basis of the forces and phenomena still in action. The Scottish geologists had pointed out the importance of realising the high antiquity of our earth, and the gigantic work that might be accomplished by physical agencies small in themselves but acting throughout long periods of time. The fame and authority of the great Frenchmen, Buffon and Cuvier, lent support, on the other hand, to the conception of repeated earth catastrophes. Approaching the subject, as they did, from the standpoint of