

ELEMENTARY LECTURE ON GEOLOGY.

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In attempting to prepare a paper for this Society on the subject of Geology, I must confess I have found myself at a considerable loss to know how best to discuss it—for such is its greatness and so limited the time at my disposal that the utmost economy of material must be exercised in order to touch even upon the leading points. I have thought however that possibly a brief sketch of the views held from time to time as to the origin and early history of our earth might be of interest first of all, and then we might present a brief outline of the several systems into which the science is generally divided.

Strictly speaking, Geology is the science which tells us about the earth. It investigates the many changes which have taken place on its surface, both in relation to organic and inorganic matter as well as the causes which have produced these changes and the influence which they have exercised. It may for the sake of convenience be considered under three heads, structural, dynamical and historical, though some authors make a much more elaborate division of the subject. Of these the first, *Structural geology*, deals with the general form and structure of the earth, the kinds of rock, whether *sedimentary* or *stratified* or igneous and unstratified with their mode of occurrence, either *plutonic* or deepseated, not reaching the surface, or *eruptive*, volcanic and reaching the surface. It takes cognizance also of the metamorphic rocks and the manner in which the metamorphism has been effected, as well as the general condition of the earth's crust, as affected by faults, joints, veins, etc. It also considers the origin and structure of mountains and many similar subjects connected with the earth's architecture.

The second, *Dynamical geology*, treats of the forces or agencies by which the several changes have been effected, whether aqueous, igneous or organic. Among the first of these, the *aqueous*, may be classed rivers, seas, glaciers, &c. The 2nd, or *igneous*, refers to the agency of the internal heat of the earth, as volcanoes and their resulting effects, geysers, etc.; whilst the 3rd, or *organic*, includes, 1st, vegetable accu-