

ELEMENTARY GEOLOGY.

PART I.

DESCRIPTIVE AND DYNAMICAL GEOLOGY.

SECTION I.

GENERAL STRUCTURE OF THE EARTH, AND PRINCIPLES OF CLASSIFICATION.

GEOLOGY, from the Greek *γη*, *earth*, and *λόγος*, *discourse*, is the history of the mineral masses that compose the earth, and of the organic remains which they contain.

The two primary divisions of the science relate to the mineral masses and the organic remains: hence Part I. will embrace exclusively the description of the structure and composition of the rocks, and the forces concerned in their production. This is *Descriptive and Dynamical Geology*. Part II. will treat of the character and distribution of organic remains. As Geology has an important bearing upon other subjects, we shall consider in Parts III. and IV. the *Relations of Geology to Religion and to the Economical interests of society*. A brief account of the *Geological structure of North America*, in Part V., will conclude the treatise.

From these statements it will appear that an acquaintance with *Chemistry* and *Mineralogy* is necessary for a thorough knowledge of the mineral masses of the earth, and an acquaintance with the structure of animals and plants, or *Zoology* and *Botany*, for the study of the organic remains. We shall presume upon some knowledge of these branches in the student.

Geology is a history, not merely in the sense of description, but as a record of events. It narrates the condition of things from the period previous to the existence of organic life, through successive dynasties of more perfect races, to the dominion of man. Physical catastrophes, and the birth and extinction of races, are indelibly written upon the stony leaves of nature's volume. But this record is much less perfect than the written history of man. It is what the history of empires would have been, had our means of knowledge been confined to the works of man's art, like the sculptures of Nineveh and Egypt, obscurely fashioned by successive nations.