

(4) Next, the general plan or laws of progress in the earth and its life.

(5) Finally, there are the active forces and mechanical agencies which were the means of physical progress, — spreading out and consolidating strata, raising mountains, ejecting lavas, wearing out valleys, bearing the material of the heights to the plains and oceans, enlarging the oceans, destroying life, and performing an efficient part in evolving the earth's structure and features.

These topics lead to the following subdivisions of the science:—

I. **PHYSIOGRAPHIC GEOLOGY**, — a general survey of the earth's surface-features.

II. **STRUCTURAL GEOLOGY**, — a description of the rock-materials in the structure of the globe, — that is, of its kinds of rocks, and of their arrangement or positions.

III. **DYNAMICAL GEOLOGY**, — an account of the agencies or forces that have produced geological changes, and of the laws, methods, and results of their action.

IV. **HISTORICAL GEOLOGY**, — an account of the earth's geological history, or the successive events or steps in the making of the rock-strata, and of the continents, seas, mountains, and valleys, in the progress of the earth's living species, and in all changes that have gone forward in the earth's development.

In the study of the science, a previous knowledge of the methods of change taught in the Dynamical section is desirable in order fully to comprehend Historical geology; and a knowledge of the actual facts and their succession given in the Historical section is desirable to understand the causes of events and methods of change. There is reason, therefore, for studying Dynamical geology before Historical as well as after it. It is here made to precede. But the last topic under it — that of the formation of mountains — will be best appreciated after the student is familiar with the facts presented in the Historical section.