

PREFACE.

The object of this work is to furnish the American student with a guide to the geology of this country. To accomplish this requires a statement of the principles of Geology, derived from phenomena which the student will observe in his field exercises, a statement of the arrangement and composition of the rocks composing the earth's crust, and so much relating to palæontology as shall embrace the characteristic fossils of the sediments. I have therefore pursued a plan which accords with these views.

In the first part I have stated, as it seems to me, the most important principles of geology, and have attempted to apply them in an explanation of phenomena which belong to the primitive crust, composed as it is of the pyrocrystalline formations, and also to the business of mining.

In the second part, its principles are virtually applied to the formation of the sediments, and their succession; and I have proceeded so far as to state their physical characteristics, and to describe and locate the fossils of the oldest sediments known to geologists. There may be a difference of opinion among geologists, as to what extent a work of this kind should be illustrated, in order to carry out its plan. On this question, it has appeared to the author very desirable that all classes of animals should be well represented, not only for the pur-