

A new and most important instrument of palæontological investigation has been put in the geologist's hand by Prof. Owen's discovery, that the internal structure of teeth, as disclosed by the microscope, is a means of determining the kind of the animal. He has carried into every part of the animal kingdom an examination founded upon this discovery, and has published the results of this in his *Odontography*. As an example of the application of this character of animals, I may mention that a tooth brought from Riga by Sir R. Murchison was in this way ascertained by Mr. Owen to belong to a fish of the genus *Dendrodus*. (*Geology of Russia*, i. 67.)]

When it had thus been established, that the strata of the earth are characterized by innumerable remains of the organized beings which formerly inhabited it, and that anatomical and physiological considerations must be carefully and skilfully applied in order rightly to interpret these characters, the geologist and the palæontologist obviously had, brought before them, many very wide and striking questions. Of these we may give some instances; but, in the first place, we may add a few words concerning those eminent philosophers to whom the science owed the basis on which succeeding speculations were to be built.

*Sect. 5.—Intellectual Characters of the Founders of Systematic Descriptive Geology.*

It would be in accordance with the course we have pursued in treating of other subjects, that we should attempt to point out in the founders of the science now under consideration, those intellectual qualities and habits to which we ascribe their success. The very recent date of the generalizations of geology, which has hardly allowed us time to distinguish the calm expression of the opinion of the wisest judges, might, in this instance, relieve us from such a duty; but since our plan appears to suggest it, we will, at least, endeavor to mark the characters of the founders of geology, by a few of their prominent lines.

The three persons who must be looked upon as the main authors of geological classification are, Werner, Smith, and Cuvier. These three men were of very different mental constitution; and it will, perhaps, not be difficult to compare them, in reference to those qualities which we have all along represented as the main features of the discoverer's genius, clearness of ideas, the possession of numerous facts, and the power of bringing these two elements into contact.