

hold his pre-eminence down to the end of his life, and through all the great changes which occurred in the rapid development of the science. For nearly 45 years, his works have been the text-books of geologists, and though the great impetus which they primarily gave has thrown the study of the earth forward into an entirely new position:—the last editions of the *Elements* and *Principles* are still in the van of the science.

The position which he thus occupied is one to which he was in every way justly entitled. His large and judicial mind had always a clear perception of the true method of natural history. He saw that the foundations of our knowledge of geology were to be laid in extensive and accurate collections of facts, and in reasoning on these by severely inductive methods. This idea he carried out in his *Elements of Geology*. But in his *Principles* he opened up a new field, not as has been crudely conceived by some commentators on his work, one of the nature of deduction as distinguished from induction, but rather another inductive investigation, leading to general conclusions as to the changes now in progress, in order that by a fair use of analogy a key might be found to the interpretation of the facts and conclusions obtained by the study of the geological monuments of past ages. He has himself well stated this view of the case in the preface to the tenth edition of the *Principles*.

Viewed in this way, the Lyellian Geology rests on two inductive bases—the first relating to the facts discoverable in the earth's crust, and the second to the changes now in progress under our observation—and the connection of these by an analogy founded on identity of causes or conditions and identity of effects. This mode of treating the history of the earth was especially that of Lyell, and it was this that constituted his greatest contribution to the growth of modern geology.

Injustice has been done to the Lyellian method by two misconceptions, propagated perhaps by injudicious friends rather than by opponents, and which have arisen from a failure to enter into the grand comprehensive views of this great reasoner.

One of these is the representation that Lyell was thoroughly uniformitarian, in the sense of maintaining that similar changes had been taking place throughout all geological time. It is true that he objected to any explanation of geological changes by imaginary cataclysms not warranted by observation of similar facts; but no one was more ready than he to receive any