of Hutton certainly gave rise to several errors in connection with the origin of minerals and rocks. No geologist now would agree with the principle that heat has hardened and partially melted all sedimentary rocks, and just as little would he ascribe to heat the origin of flint, agate, silicified wood, etc. On the other hand, the recognised hypothesis of regional metamorphism of the crystalline schists is an extension of Hutton's conception of the action of heat and pressure upon rocks.

Hutton was the first to demonstrate the connection of eruptive veins and dykes with deeper-seated eruptive masses of granite, and the first to point out the differences of structure between superficial lavas and molten rock solidified under great pressure. In assuming that granite represents rock consolidated from a molten magma, Hutton laid the foundation of the doctrines of Plutonism as opposed to those of Neptunism.

Again, no one before Hutton had demonstrated so effectively and conclusively that geology had to reckon with immeasurably long epochs, and that natural forces which may appear small can, if they act during long periods of time, produce effects just as great as those that result from sudden catastrophes of short duration.

Hutton's explanation of the uprising of continents, owing to the expansive force of the subterranean heat, was not altogether new, nor was it satisfactory. Neither had Hutton any clear conception of the significance of fossils as affording evidence of a gradual evolution in creation. Yet in spite of these disadvantages, Hutton's *Theory of the Earth* is one of the masterpieces in the history of geology. Many of his ideas have been adopted and extended by later geologists, more particularly by Charles Lyell, and form the very groundwork of modern geology. Hutton's genius first gave to geology the conception of calm, inexorable nature working little by little—by the raindrop, by the stream, by insidious decay, by slow waste, by the life and death of all organised creatures,—and eventually accomplishing surface transformations on a scale more gigantic than was ever imagined in the philosophy of the ancients or the learning of the Schools. And it is not too much to say that the Huttonian principle of the value of small increments of change has had a beneficial, suggestive, and far-reaching influence not only on geology but on all the natural sciences. The generation after Hutton applied it to palæontology, and