

many inferior branches ; including the history of minerals, of organic fossils, and of alluvial deposits ; with other matters which it is not here necessary to specify.

These objects are not merely adapted to the gratification of speculative curiosity, but are, in many cases, conducive to the wants or luxuries of mankind, to innumerable uses in the arts of life. Thus it becomes necessary to form accurate records of their places, by means of mineral topography, to indicate the precise circumstances under which they exist, the modes by which they may be best obtained, and the varieties of character which they present : the whole constituting a body of investigations by which geology is raised to the rank of a practical science.

If now, as in the other branches of natural history, every rock and substance were visible, or could be exhibited by the mere efforts of industry, or if the geological surface of the earth were, like its geographical details, within the reach of actual measurement and examination, time and industry alone would procure for us all the information which could be required, whether for the purposes of curiosity or use. A perfect accumulation of facts would, as in botany, shortly form the materials of a science, to which the philosopher would superadd those analogies or distinctions by which nature has classified or separated all its objects.

But such is the condition of the earth's surface, and such its structure, that we can make little progress in its study without in some degree inverting this process. As in geometrical synthesis or in chemical science, we must extend the conclusions and results obtained from the observation of a certain number of facts, to the purpose of discovering others ; and thus