

against the visionary and often grotesque speculations of earlier writers, geologists were carried too far in an opposite direction. In allowing themselves to believe that geology had nothing to do with questions of cosmogony, they gradually grew up in the conviction that such questions could never be other than mere speculation, interesting or amusing as a theme for the employment of the fancy, but hardly coming within the domain of sober and inductive science. Nor would they soon have been awakened out of this belief by anything in their own science. It is still true that in the data with which they are accustomed to deal, as comprising the sum of geological evidence, there can be found no trace of a beginning, though there is ample proof of constant, upward progression from some invisible starting-point. The oldest rocks which have been discovered on any part of the globe have possibly been derived from other rocks older than themselves. Geology by itself has not yet revealed, and is little likely ever to reveal, a portion of the first solid crust of our globe. If, then, geological history is to be compiled from direct evidence furnished by the rocks of the earth, it cannot begin at the beginning of things, but must be content to date its first chapter from the earliest period of which any record has been preserved among the rocks.

Nevertheless, though, in its usual restricted sense, geology has been, and must ever be, unable to reveal the earliest history of our planet, it no longer ignores, as mere speculation, what is attempted in this subject by its sister sciences. Astronomy, physics and chemistry have in late years all contributed to cast much light on the earliest stages of the earth's existence, previous to the beginning of what is commonly regarded as geological history. What-