tinction, there is reason to believe that those catastrophes did not usually happen, till such a change had taken place in the physical condition of the globe, as to render it no longer a comfortable habitation for beings of their organization. 5. Time enough for erosions to have taken place in the rocks, in an extremely slow manner, by aqueous and atmospheric agencies, on so vast a scale that the deep cut through which Niagara River runs, between Niagara Falls and Lake Ontario, is but a moderate example of them. We must judge of the time requisite for these deposits by similar operations now in progress; and these are in general extremely slow. The lakes of Scotland, for instance, do not shoal at the rate of more than six inches in a century.

Obj. 1. The rapid manner in which some deposits are formed at the present day; *e. g.*, in the lake of Geneva, where, within the last 800 years, the Rhone has formed a delta two miles long and 600 feet in thickness.

Ans. Such examples are merely exceptions to the general law, that rivers, lakes, and the ocean are filling up with extreme slowness. Hence such cases show only that in ancient times rocks might have been deposited over limited areas in a rapid manner; but they do not show that such was generally the case.

Obj. 2. Large trunks of trees, from twenty to sixty feet long, have sometimes been found in the rocks, penetrating the strata perpendicularly or obliquely; and standing apparently where they originally grew. Now we know that wood can not resist decomposition for a great length of time, and therefore the strata around these trunks must have accumulated very rapidly; and hence the strata generally may have been rapidly formed.

Ans. Admitting that the strata enclosing these trunks were rapidly deposited, it might have been only such a case as is described in the first objection. But sometimes these trunks may have been drifted into a lake or pond, where a deep deposit of mud had been slowly accumulating, which remained so soft, that the heaviest part of the trunks, that is, their lower extremity, sunk to the bottom by their gravity, and thus brought the trunks into an erect position. Or suppose a forest sunk by some convulsion, how rapidly might deposits be accumulated around them, were the river a turbulent one, proceeding from a mountainous region.

Obj. 3. All the causes producing rocks may have operated in ancient times with vastly more intensity than at present.

Ans. This, if admitted, might explain the mere accumulation of materials to form rocks. But it would not account for the vast number of changes which took place in their mineral and organic characters; which could have taken place, without a miracle, only during vast periods of time.

Obj. 4. The fossiliferous rocks might have been created, just as we find them, by the fiat of the Almighty, in a moment of time.

Ans. The possibility of such an event is admitted; but the probability is denied. If we admit that organic remains from the unchanged elephants and rhinoceroses, of Siberia, to the perfectly petrified trilobites and terebratulæ of the Palæozoic strata, were never living animals, we give up the whole groundwork of analogical reasoning; and the whole of physical science falls to the ground. But itis useless formally to answer an objection which would never be advanced by any man, who had ever examined even a cabinet collection of organic remains.

Inference 5.—The period before life appeared, was also immensely long.

Proof 1. We can trace indications of life into the upper part of the Cambrian series. Below this horizon there are at least 30,000 feet of stratified