

of vertical movements effected by extremely slow agencies, so as to make the whole work immeasurably long.

But when we have gone back to the commencement of animal existence on the globe, we have taken but one step in our review of its early history. The next backward step embraces that wide period during which the stratified, non-fossiliferous rocks, far thicker than the fossiliferous, were deposited; probably by the agency of fire and water. Or if we adopt the metamorphic theory of Mr. Lyell, we shall be still more deeply impressed by the length of that period, during which these rocks were in a course of deposition, consolidation, and metamorphosis. For he supposes them originally deposited from water, just as mud, sand, and gravel now are accumulating in the ocean's bed, and to have enveloped organic beings, as similar materials now do. Next the whole were consolidated, so as to form the exact prototype of the existing fossiliferous rocks; and finally it underwent almost complete fusion, by the slow propagation of internal heat upwards, until all the organic contents were obliterated, and a crystalline structure was substituted. Nay, according to this theory, other systems of rocks, of an analogous character, may have preceded the present primary stratified ones, and have been at length entirely melted into the unstratified; so that we cannot say when organic life first began on the globe. But I will not press this theory, because most of the ablest geologists reject it, at least in its full extent. And we have a period long enough to confound the imagination, if we take the common view, which supposes the non-fossiliferous rocks to have been deposited from water, at a temperature too high to admit the existence of organic beings.

We have now gone back to that point in the earth's history when a crust had begun to form over the shoreless ocean of melted matter, of which we have reason to suppose it was then composed. Shall we attempt to trace back that history any farther? The light does, indeed, grow dim, and the clew more and more uncertain, the farther we recede along the track of the earth's existence. Still there are some scattered rays that seem to recall to us a condition of the earth still earlier than that in which it constituted a molten globe. It may have been dissipated into vapour, like a comet, or a nebula; and subsequently, by the slow radiation of its heat, have been condensed