The first systems of stratification, gneiss, mica schist, and so on to the lower part of the Cambrian beds, supply no vestiges of vegetable or animal life. But it would be unwarrantable to affirm absolutely that living creatures had no place in the waters which once covered those rocks, and from which they were deposited; for the heat propagated from below, through the substance of the granitic masses, and which has given a partially fused and crystalline character to the gneissic, would be effectual to dissipate all organized matter, had such existed before the high temperature was produced.

In a citation before given from Professor Phillips* we have contemplated a sketch of the forms of organic life from the earliest appearance in the slate-mountains of North Wales and Cornwall to those of the present creation. To have the mind duly impressed by a view at all approaching to completeness of the little that is known, the study of many geological works, a familiar acquaintance with collections, and an actual inspection of the rocks themselves, are, if not necessary, yet highly desirable. The first and second of these means are all that many studious persons can command; but for them let us be thankful, and by the use of them we may acquire the qualifications which are indispensable for enjoying the survey of nature upon a grand scale, whenever it may be put into our power.

The earliest appearances of life are two or three species of zoophytes, and casts (that is, impressions in mineral matter remaining after the organized substance has been dissolved and washed away) of several species of shells which have been discovered† in the slate-rocks just mentioned. The structure of those shells shows that their inhabitants stood higher in the scale of organization than our cockles and oysters. But we should not be warranted in supposing that these, should we call them twenty or thirty species, were the whole amount of the kinds of living creatures at that remote era. It is a wonder that any have escaped total obliteration. Besides these few corallines and hard shells, there might be many species of many animal orders, the remains of which have been entirely decomposed and absorbed. The fossils referred to are arranged along the surfaces of deposit, in such positions and regularity as show that the animals lived and died on the spots which have preserved their remains. An indication is thus afforded of the lapse of time, which is very impressive. An area of soft clay at the bottom of a primeval ocean was deposited, and

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* Pages 75—78.

† By the late Rev. John Josias Conybeare, the Rev. Prof. Sedgwick, and Prof. Phillips.