

The result, then, of our inquiry into the evidence of the successive development of the animal and vegetable kingdoms, may be stated in a few words. In regard to *plants*, if we neglect the obscure and ambiguous impressions, chiefly fucoidal, found in some of the oldest fossiliferous rocks, which can lead to no safe conclusions, we may consider those which characterize the great carboniferous group as the first deserving particular attention. They are by no means confined to the simplest forms of vegetation, as to the Cryptogamia; but, on the contrary, belong to many of the leading divisions of the vegetable kingdom. Some of the most fully developed forms, both of dicotyledons and monocotyledons, have not yet been discovered among the first five hundred species brought to light; but there are strong grounds for presuming that a climate of the kind called maritime then prevailed, and that the wide extent of a uniform flora, and the great predominance of ferns and lycopodia, with certain tribes of Araucarian coniferæ, may have depended on certain physical conditions, such as the peculiar distribution of land and sea. Some of the families, moreover, of plants which then flourished were so widely different in their organization from any now living, that it is dangerous to found theoretical generalizations on so peculiar and anomalous a state of the vegetable world.

If we then examine the animal remains of the oldest formations, we find reptilian foot-prints in the old red sandstone, and, in rocks of the same group as well as in some silurian or primary fossiliferous limestones and shales below it, the bones and skeletons of highly organized fish. In the group next in succession (the carboniferous), cheirotherian foot-prints and the skeletons of saurians have been discovered. In other words, we have already vertebrated animals in the most ancient strata, respecting the fossils of which we can be said to possess extensive information.

In regard to birds and quadrupeds, their remains are usually wanting in *marine* deposits of every era, even where interposed fresh-water strata contain those fossils in abundance, as in the Paris basin. The secondary strata of Europe are for the most part marine, and there is as yet only one instance of the occurrence of mammiferous fossils in them, individuals of two distinct genera having been found in the slate of Stonesfield, a rock unquestionably of the Oolitic period, and which appears, from several other circumstances, to have been formed near the point where some river entered the sea. The position of these fossils is not only important as proving the existence at so remote an era of terrestrial quadrupeds, but also as demonstrating that the absence of cetacea in all the Jurassic and cretaceous rocks hitherto investigated, may have no connection whatever with the chronological development of vertebrata at successive epochs.

When we examine the tertiary groups, we find in the Eocene or oldest strata of that class the remains of a great assemblage of the highest or mammiferous order, all of extinct species, and in the Miocene beds, or those of a newer tertiary epoch, other forms, for the most part of lost species, and almost entirely distinct from the