which the circumnavigating voyage of the CHALLENGER is the most extensive, that one-half of the surface of the earth forms, at a certain depth below the surface of the sea, a continuous region under very uniform conditions, which are not unfavourable to the existence nor to the moderate development of animal life. This region is peopled by a fauna, not certainly of extreme poverty, and very special in its nature; its specialty consisting mainly in its great uniformity and in the prevalence of certain types. There is every reason to believe that the existing physical conditions of this area date from a very remote period, and that the present fauna of the deep-sea may be regarded as being directly descended from faunæ which have successively occupied the same deep-sea. In the meantime, changes involving lesser depths have been accompanied by the appearance and disappearance of the land and shallow-water faunæ of the Jurassic, the Cretaceous, and the Tertiary periods. That the present abyssal fauna is the result of progressive change there can be no room for doubt; but it would seem that in this case the progress has been extremely slow, and that it has been brought about almost in the absence of those causes, —such as minor and local oscillations of the crust of the earth producing barriers, and affecting climate,—on which we are most inclined to depend for the modification of faunæ.

The discovery of the abyssal fauna, accordingly, seems to have given us an opportunity of studying a fauna of extreme antiquity, which has arrived at its present condition by a slow process of evolution from which all causes of rapid change have been eliminated. A careful study of such an assemblage of forms must in time do much to throw light upon many difficult problems of distribution. Even now, with the vaguest outline only before us, derived from a single line of scattered soundings, I am prepared to admit a strong personal impression upon two points.

I believe that the study of the abyssal fauna, revealing many delicate chains of structural affinity linking the fauna of the present with that of the past, brings into prominence a new mass of facts, morphological, ontological, and palæontological, in powerful support of the doctrine of Evolution. On the other hand, it seems to me that in this, as in all cases in which it has been possible to bring the question, however remotely, to the test of observation, the character of the abyssal fauna refuses to give the least support to the theory which refers the evolution of species to extreme variation guided only by natural selection. Species are just as distinctly marked in the abyssal fauna as elsewhere, each species varying within its definite range as each species appears to have varied at all times, past and present. If all the species living on the floor of the ocean were, and had always been, in a state of instability, acted upon by external influences, and perpetually passing by insensible gradations into other species, it seems certain that the general impression drawn from a fauna such as that of the abyssal region must have been one of indefiniteness and transition. This is not the case. Transition forms, linking species so closely as to cause a doubt as to their limit, are rarely met with. There is usually no difficulty in telling what a thing is.