

they can be securely made, are of extreme interest in their bearing on geological speculations.

The means by which plants and animals are now diffused from one place to another, have been well described by Mr. Lyell.³ And he has considered also, with due attention, the manner in which they become imbedded in mineral deposits of various kinds.⁴ He has thus followed the history of organized bodies, from the germ to the tomb, and thence to the cabinet of the geologist.

But, besides the fortunes of individual plants and animals, there is another class of questions, of great interest, but of great difficulty;—the fortunes of each species. In what manner do species which were not, begin to be? as geology teaches us that they many times have done; and, as even our own reasonings convince us they must have done, at least in the case of the species among which we live.

We here obviously place before us, as a subject of research, the Creation of Living Things;—a subject shrouded in mystery, and not to be approached without reverence. But though we may conceive, that, on this subject, we are not to seek our belief from science alone, we shall find, it is asserted, within the limits of allowable and unavoidable speculation, many curious and important problems which may well employ our physiological skill. For example, we may ask:—how we are to recognize the species which were originally created distinct?—whether the population of the earth at one geological epoch could pass to the form which it has at a succeeding period, by the agency of natural causes alone?—and if not, what other account we can give of the succession which we find to have taken place?

The most remarkable point in the attempts to answer these and the like questions, is the controversy between the advocates and the opponents of the doctrine of the *transmutation of species*. This question is, even from its mere physiological import, one of great interest; and the interest is much enhanced by our geological researches, which again bring the question before us in a striking form, and on a gigantic scale. We shall, therefore, briefly state the point at issue.

Sect. 3.—Question of the Transmutation of Species.

WE see that animals and plants may, by the influence of breeding, and of external agents operating upon their constitution, be greatly

³ Lyell, B. iii. c. v. vi. vii.

⁴ B. iii. c. xiii. xiv. xv. xvi.