

modified, so as to give rise to varieties and races different from what before existed. How different, for instance, is one kind and breed of dog from another! The question, then, is, whether organized beings can, by the mere working of natural causes, pass from the type of one species to that of another? whether the wolf may, by domestication, become the dog? whether the ourang-outang may, by the power of external circumstances, be brought within the circle of the human species? And the dilemma in which we are placed is this;—that if species are not thus interchangeable, we must suppose the fluctuations of which each species is capable, and which are apparently indefinite, to be bounded by rigorous limits; whereas, if we allow such a *transmutation of species*, we abandon that belief in the adaptation of the structure of every creature to its destined mode of being, which not only most persons would give up with repugnance, but which, as we have seen, has constantly and irresistibly impressed itself on the minds of the best naturalists, as the true view of the order of the world.

But the study of Geology opens to us the spectacle of many groups of species which have, in the course of the earth's history, succeeded each other at vast intervals of time; one set of animals and plants disappearing, as it would seem, from the face of our planet, and others, which did not before exist, becoming the only occupants of the globe. And the dilemma then presents itself to us anew:—either we must accept the doctrine of the transmutation of species, and must suppose that the organized species of one geological epoch were transmuted into those of another by some long-continued agency of natural causes; or else, we must believe in many successive acts of creation and extinction of species, out of the common course of nature; acts which, therefore, we may properly call miraculous.

This latter dilemma, however, is a question concerning the facts which have happened in the history of the world; the deliberation respecting it belongs to physical geology itself, and not to that subsidiary science which we are now describing, and which is concerned only with such causes as we know to be in constant and orderly action.

The former question, of the limited or unlimited extent of the modifications of animals and plants, has received full and careful consideration from eminent physiologists; and in their opinions we find, I think, an indisputable preponderance to that decision which rejects the transmutation of species, and which accepts the former side of the dilemma; namely, that the changes of which each species is suscep-