

of creation, and that without a consideration of all the facts furnished by the study of the habits of animals, by their anatomy, their embryology, and the history of the past ages of our globe, we shall never arrive at the knowledge of the natural system of animals.

Let us now consider some of these topics more specially.

SECTION II.

SIMULTANEOUS EXISTENCE OF THE MOST DIVERSIFIED TYPES UNDER IDENTICAL CIRCUMSTANCES.

It is a fact which seems to be entirely overlooked by those who assume an extensive influence of physical causes upon the very existence of organized beings, that the most diversified types of animals and plants are everywhere found under identical circumstances. The smallest sheet of fresh water, every point upon the seashore, every acre of dry land, teems with a variety of animals and plants. The narrower the boundaries are, which may be assigned as the primitive home of all these beings, the more uniform must be the conditions under which they are assumed to have originated; so uniform, indeed, that in the end the inference would be, that the same physical causes could produce the most diversified effects.¹ To concede,

¹ In order fully to appreciate the difficulty alluded to here, it is only necessary to remember how complicated, and at the same time how localized the conditions are under which animals multiply. The egg originates in a special organ, the ovary; it grows there to a certain size, until it requires fecundation, that is, the influence of another living being, or at least of the product of another organ, the spermary, to determine the further development of the germ, which, under the most diversified conditions, in different species, passes successively through all those changes which lead to the formation of a new perfect being. I then would ask, is it probable that the circumstances under which animals and plants originated for the first time can be much simpler, or even as simple, as the conditions necessary for their reproduction only, after they have once been created? Preliminary, then, to their first appearance, the conditions necessary for their growth must have

been provided for, if, as I believe, they were created as eggs, which conditions must have been conformable to those in which the living representatives of the types first produced, now reproduce themselves. If it were assumed that they originated in a more advanced stage of life, the difficulties would be still greater, as a moment's consideration cannot fail to show, especially if it is remembered how complicated the structure of some of the animals was, which are known to have been among the first inhabitants of our globe. When investigating this subject, it is of course necessary to consider the first appearance of animals and plants, upon the basis of probabilities only, or even simply upon that of possibilities; as with reference to these first-born, at least, the transmutation theory furnishes no explanation of their existence.

For every species belonging to the first fauna and the first flora which have existed upon earth, special