

observe, that he is allowed by all to have established, on an indestructible basis, many of the most important generalizations which zoology now contains; and the principal defect which his critics have pointed out, has been, that he did not generalize still more widely and boldly. It appears, therefore, that he cannot but be placed among the great discoverers in the studies which he pursued; and this being the case, those who look with pleasure on the tendency of the thoughts of the greatest men to an Intelligence far higher than their own, must be gratified to find that he was an example of this tendency; and that the acknowledgement of a creative purpose, as well as a creative power, not only entered into his belief, but made an indispensable and prominent part of his philosophy.

Sect. 3.—Establishment and Application of the Principle of the Conditions of Existence of Animals.—Cuvier.

WE have now to describe more in detail the doctrine which Cuvier maintained in opposition to such opinions as we have been speaking of; and which, in his way of applying it, we look upon as a material advance in physiological knowledge, and therefore give to it a distinct place in our history. "Zoology has," he says,¹⁹ in the outset of his *Règne Animal*, "a principle of reasoning which is peculiar to it, and which it employs with advantage on many occasions: this is the principle of *the Conditions of Existence*, vulgarly the principle of *Final Causes*. As nothing can exist if it do not combine all the conditions which render its existence possible, the different parts of each being must be co-ordinated in such a manner as to render the total being possible, not only in itself, but in its relations to those which surround it; and the analysis of these conditions often leads to general laws, as clearly demonstrated as those which result from calculation or from experience."

This is the enunciation of his leading principle in general terms. To our ascribing it to him, some may object on the ground of its being self-evident in its nature,²⁰ and having been very anciently applied. But to this we reply, that the principle must be considered as a real discovery in the hands of him who first shows how to make it an instrument of other discoveries. It is true, in other cases as well as in this, that some vague apprehension, of true general principles, such as à

¹⁹ *Règne An.* p. 6.

²⁰ Swainson, *Study of Nat. Hist.* p. 85.