

CHAPTER X

GENERAL BIOLOGY

ABOUT the beginning of the nineteenth century many distinguished men of science seem independently to have developed the idea that the structure of animals and their occurrence in various localities are determined by external conditions.

Lamarck in his *Philosophie zoologique* (1809) writes as follows: "The external conditions always and strongly exert their influence on all living beings. This influence is, however, difficult to ascertain, because its effects only appear, and may be recognised, after a very long time."

Goethe's zoological works all testify to his strong belief that "all living beings possess the faculty of adapting themselves to the manifold conditions presented by external influences, without, however, resigning a certain hard-earned and decided independence." In his *Skeletons of Rodents* he says that "the difference of forms is a consequence of their necessary dependence on the outer world." In his introduction to comparative anatomy he attempts to show the various influences exerted by certain climatic conditions, by water, and by air upon the shape of animals, which become altered on passing from one group of conditions to another. This again explains the fact that "no organism intended to live is conceivable without a perfect organisation." Goethe was full of such ideas, but felt the danger of following them up, and of "losing oneself in the infinite" (*Principles of Zoological Philosophy*).

Kant's view is still clearer as regards the idea of adaptations to surroundings. He endeavoured to show that all biological investigations had to take for granted that living beings are fitly organised in relation to their natural surroundings. But no definite human idea of the fitness of adaptations is of any value as knowledge. No more does any human idea necessarily correspond to the reality occurring in nature. The idea is only