forms are partially maintained and continuously altered.[1] These three conceptions deserve and have received special attention by a class of students who, since the beginning of the nineteenth century, have termed themselves biologists. On what lines of reasoning their studies have been conducted, and to what general results they have led, I propose to discuss in the following chapter, which might be appropriately entitled the "Biological view of Nature" in the narrower sense of the term. In order to distinguish the studies which I shall have to deal with in that chapter from those which have occupied us in this and the last chapter, which deal largely but not exclusively with living things, I have preferred to give to it the title, "On the Vitalistic[2]

[1] To these — according to some naturalists — might be added the factor of adaptation, so prominently put forward by Lamarck and his followers. But adaptation is one of the causes of variation, as natural selection is a consequence. The latter is a physical necessity wherever overcrowding exists; whereas the scope of adaptation, which is an undeniable fact so far as individuals are concerned, is, so far as it regards inheritance — *i.e.*, the development of the race — a much controverted question. It comes under the larger problem of the influence of environment, and will occupy us again in later chapters. Among the most valuable contributions to this subject are Mr Herbert Spencer's articles on the "Factors of Organic Evolution," published in the 'Nineteenth Century' in 1886, and separately, with additions, in 1887. In these essays he also shows how Darwin himself in his later writings includes the influence of environment as an important factor in development. (See p. 29 *sqq.* of the reprint.)

[2] As the two terms "biological" and "vitalistic" might, according to their etymology, mean the same thing, it may be appropriate to offer some explanation of the reasons which have induced me to adopt the latter term for the purpose indicated in the text. Biology means the science of life. This can only be studied in living things. Living things, however, are formed entirely of the same elementary substances as we find in inorganic or not living things, and are very largely formed through the same chemical and physical processes as we find among the latter. And as our scientific — *i.e.*, exact, accurate, and useful — knowledge has all begun with the study of inorganic phenomena, it is natural that biologists should have attacked the problems of living nature from the side of the similarity or sameness which they presented when compared with lifeless nature. The main progress in physiology