

objects and processes. The general laws which obtain in this great field, and which would correspond to Newton's laws of motion—the laws of variation and of heredity—have not yet been discovered; but it is again Darwin more than any other naturalist who has called attention to these prime movers in the living universe. He has pushed into the foreground the two great problems of "variation" and "heredity."<sup>1</sup>

40.  
Unsolved  
problems.

<sup>1</sup> Darwin in his subsequent writings urged another important problem, to which he had already in his first and greatest work drawn passing attention. This is the agency of "sexual selection." It occupies by far the larger portion of his third great work, which appeared in 1871 with the title 'The Descent of Man and Selection in Relation to Sex.' In the introduction he says, "During many years it has seemed to me highly probable that sexual selection has played an important part in differentiating the races of man; but in my 'Origin of Species' I contented myself by merely alluding to this belief. When I came to apply this view to man, I found it indispensable to treat the whole subject in full detail. Professor Haeckel is the sole author who, since the publication of the 'Origin,' has discussed in his various works, in a very able manner, the subject of sexual selection, and has seen its full importance." The problem of "sexual selection" is introduced in the 'Origin' (p. 87) in the following words: "Inasmuch as peculiarities often appear under domestication in one sex, and become hereditarily attached to that sex, the same fact probably occurs under nature; and if so, natural selection will be able to modify one sex in its functional relations to the other sex, or in relation to wholly different habits of life in the two sexes, as is some-

times the case with insects. And this leads me to say a few words on what I call Sexual Selection. This depends not on a struggle for existence, but on a struggle between the males for possession of the females: the result is not death to the unsuccessful competitor, but few or no offspring. Sexual selection is thus less rigorous than natural selection." A great deal has been written about sexual selection, and in general it may be said that the question belongs to quite a different category from that of natural selection. Some of the foremost champions of the latter doctrine, notably Mr Wallace, reject sexual selection as unnecessary in the whole scheme. The characteristic feature of natural selection is this, that it is a purely automatic process, dependent on overcrowding, whereas in sexual selection it becomes much more difficult to see how the process works automatically. Nowadays the question of natural selection is hardly any longer doubtful; it is a fact. As to sexual selection, the statistical proofs that there is a superabundance from which to choose are still wanting. To understand sexual selection, or even to define it, we need to form some conception of the reason and origin of sexual differentiation, and this cannot be arrived at without a theory of life