18. Our investigations should not be limited to adul animals, but should also include the changes which they undergo during the whole course of their development. Otherwise, we shall be liable to exaggerate the importance of certain peculiarities of structure which have a predominant character in the full-grown animal, but which are shaded off, and vanish, as we revert to the earlier periods of life.

19. Thus, for example, by regarding only adult individuals, we might be induced to divide all animals into two groups, according to their mode of respiration; uniting, on the one hand, all those which breathe by gills, and, on the other, those which breathe by lungs. But this distinction loses its importance, when we consider that various animals, for example. frogs, which respire by lungs in the adult state, have only gills when young. It is thence evident that the respiratory organs cannot be taken as a satisfactory basis of our fundamental classification. They are, as we shall see, subordinate to a more important system, namely, the nervous system.

20. Again, we have a means of appreciating the relative grade of animals by the comparative study of their development. It is evident that the caterpillar, in becoming a butterfly, passes from a lower to a higher state. Clearly, therefore, animals resembling the caterpillar, the worms, for instance, must occupy a lower rank than those approaching the butterfly, like most insects. There is no animal which does not undergo a series of changes similar to those of the caterpillar or the chicken; only, in many of them, the most important ones occur before birth, during what is called the embryonic period.

21. The life of the chicken has not just commenced when it issues from the egg; for if we break the egg some days previous to the time of hatching, we find in it a living animal, which, although imperfect, is nevertheless a chicken: