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THE PRESENT STATUS OF THE BIOGENETIC LAW[1]

THE biogenetic law or the doctrine of recapitulation not long ago ranked as one of the most important principles of biology. In recent years it has been attacked repeatedly both from the botanical and zoological sides. Since the basal data upon which it is founded have not at any time been called in question and in fact have rather increased in number and importance, as a result of the more recent historical and developmental study both of plants and animals, it becomes a question of interest to discover why this change of attitude has taken place. One of the most important reasons for the momentary eclipse of the doctrine of recapitulation is doubtless the present vogue of the doctrine of mutation. It is distressing apparently to the mutational state of mind to grant that the past history of living beings is an important factor in their present organization. If it be generally true that new species can originate all at once by saltation or sudden change, the past history of such species becomes a matter of less importance and it naturally follows that the possibility of such a past being recorded in their developmental stages becomes highly problematical. As a consequence of this situation we have heard much destructive criticism of the biogenetic law on the part of zoologists of mutational tendencies, such as Montgomery, Morgan and others. It has been asserted, for example, that the gill arches of the mammalian embryo do not indicate, as was previously supposed, an aquatic habit on the part of ancestral forms from which on the basis of paleontological and developmental evidence, the warm-blooded animals have come. It is plausibly suggested that the undoubted presence of gill-arches in the mammalian embryo is an embryonic response to the early aquatic existence in the maternal amniotic fluid. In other words, it is asserted that what the morphologist and the paleontologist explain in terms of the biogenetic law as vestiges of a former state represent merely a larval adaptation, which is of no evolutionary significance. This is substantially the position assumed by Morgan in his "Critique of Evolution," which has recently enjoyed a great vogue.

There is another group of critics of the biogenetic law, whose objections are based too exclusively on a Paleozoic point of view. This group presents an interesting resemblance to those whose training makes

[1] Address delivered by invitation before Section K, British Association for the Advancement of Science, Toronto meeting, August, 1924.