

impulse to this new formation which is transmitted in propagation through the egg of the mother or the sperm of the father. The new formation exists in the parental organism only as a possibility (potential); in the descendants it becomes a reality (actual).

As this very important and very general phenomenon had hitherto been entirely neglected, people were inclined to consider all the visible variations and transformations of organic forms as phenomena of adaptation of the second series, that is, as phenomena of *direct* or actual adaptation. The nature of this latter kind of adaptation consists in the fact that the change affects the organism itself (through nutrition, etc.), and shows itself immediately by some transformation, and does not only make itself apparent in the descendants. To this class belong all the well-known phenomena in which we can directly trace the transforming influence of climate, food, education, training, etc., in their effects upon the individual itself.

We have seen how the two series of phenomena of progressive and conservative transmission, in spite of their difference in principle, in many ways interfere with and modify each other, and in many ways co-operate with and cross each other. The same is the case, in a still higher degree, in the two series of phenomena of indirect and direct adaptation, which are opposed to each other and yet closely connected. Some naturalists, especially Darwin, Carl Vogt, and Weismann, ascribe to the indirect or potential adaptation by far the more important and almost exclusive influence. But the majority of naturalists have hitherto been inclined to take the opposite view, and to attribute the principal influence to direct or actual adaptation. I con-