

more direct route from the egg to the complete animal." This process of obscuring and shortening is determined by the law of abridged transmission, and I mention it here specially because it is of great importance for the understanding of embryology, and because it explains the fact, at first so strange, that the whole series of forms which our ancestors have passed through in their gradual development are no longer visible in the series of forms of our own individual development from the egg.

Opposed to the laws of the conservative transmission, hitherto discussed, are the phenomena of the transmission of the second series, that is, the *laws of progressive transmission by inheritance*. As already mentioned, they depend upon the fact that the organism transmits to its descendants not only those qualities which it has inherited from its own ancestors, but also a number of those individual qualities which it has acquired during its own lifetime. Adaptation is here seen to be connected with transmission by inheritance.

The fundamental importance which the *transmission of acquired qualities* possesses for the Theory of Descent, was clearly recognized as early as the beginning of our century by Lamarck, and by Darwin's grandfather, Erasmus Darwin. The new characteristics which originate in the organism through the influence of the outward conditions of life, as well as those which arise through its own individual activity (the use or non-use of organs), may be transmitted to its descendants, and the original form will thus become more or less altered. Some recent writers have set too little value upon this important phenomenon, and Weismann, in fact, completely rejects it. He maintains that