

which possesses it, and to extend the dimensions of its parts up to a limit which it itself imposes. [The Law of Growth.]

II. The production of a new organ in an animal body results from a new need which continues to be felt, and from a new movement which this need originates and sustains. [The Law of Functional Reaction.]

III. The development of organs and their power of action are always in proportion to the functioning of these organs. [The Law of Use and Disuse.]

IV. All that has been acquired, *tracé*, or changed in the structure of individuals during the course of their life is preserved by generation [heredity], and transmitted to new individuals which proceed from those that have undergone these changes. [The Law of Use-Inheritance.]

Johann Wolfgang Goethe (1749-1832), "the greatest poet of evolution", took into his skilled hands the lyre which Empedocles had tuned, but which, since the time of Lucretius, had given forth no music. Even Erasmus Darwin only wrote prose in verse. We cannot in our partiality repress the futile wish that Goethe had loved poetry less and science more, since his was certainly one of the greatest intellects that has ever dealt with evolution problems. Profoundly influenced by the Greeks, by the *Naturphilosophie*, and by Buffon, he remained unfortunately ignorant of Lamarck, just as the latter was unaware of Erasmus Darwin, all of which seems strange to us to-day, when a professor in a small university town in Germany can scarce give a lecture of moment without its being echoed through three continents. Although Goethe was a thorough-going evolutionist, combining the theories of Buffon and Lamarck, his main contribution to ætiology was in great part indirect, through his development of the principles of morphology. He placed the theory of homologies on a securer basis, and elaborated the conception of "unity of type" (1796), which has had such a persistent influence on morphological studies. Goethe was also one of those who see in evolution an expression of laws of growth, and seem to have hold of some idea