

that the whole process by which living organisms are produced would be distinctly before us. It seems to be simply the operation of electricity, and requires no intervention of special creating energy. If the question arises, Whence came such marvellous laws to exist in nature? the atheist replies that matter and its laws are eternal, having neither beginning nor end; while the Theist, who maintains this hypothesis, asserts that, when God created matter, he endowed it with such laws, having an inherent, self-executing power.

Having thus ascertained, as it supposes, how life and organization in the simplest forms may be produced, the next inquiry is, how the more perfect and complicated forms of organic beings may be developed by laws, without divine power. This constitutes the zoonomy of the subject. The French zoologist, Lamarck, first drew out and formally defended this hypothesis, aided by others, as Geoffrey St. Hilaire and Bory St. Vincent. Their supposition was, that there is a power in nature, which they sometimes denominated the Deity, yet did not allow it to be intelligent and independent, but a mere blind, instrumental force. This power, they supposed, was able to produce what they called *monads*, or rough draughts of animals and plants. These monads were the simplest of all organic beings, mere aggregations of matter, some of them supposed to be inherently vital. And such monads are the only things ever produced directly by this blind deity. But in these monads there was supposed to reside an inherent tendency to progressive improvement. The wants of this living mass of jelly were supposed to produce such effects as would gradually form new organs, as the hands, the feet, and the mouth. These changes would be aided by another principle, which they called the *force of external circumstances*, by which they meant the influence upon its development of its peculiar condition; as, for instance, a conatus for flying, produced by the internal principle, would form wings in birds; a conatus for swimming in water would form the fins and tails of fishes; and a conatus for walking would form the feet and legs of quadrupeds. Thus the organs were not formed to meet the wants, but by the wants, of the animal and plant. Of course, new wants would produce new organs; and thus have animals been growing more and more complicated and perfect from the earliest periods of geological history. Man began his course as a