

the history of the race, but to individual development. Influenced by Leibnitz's law of continuity he held the conception of an "échelle des êtres", unbroken even by death, and linking all forms of life from the lowest to the highest, a conception in which Prof. Geddes sees a reflection of ecclesiastical hierarchy, and Prof. Osborn an adumbration of the immortality or continuity of the germ-plasm. As to the unrolling of the chain throughout the ages, Bonnet believed, like Aristotle, in an internal perfecting principle, and saw in adaptation simply the realization of a predetermined harmony.

J. B. René Robinet (1735-1820) was also under the influence of Leibnitz, and supposed a continuous chain of being from stone to man. But he had not even the root-idea of evolution, for the various links of the chain were regarded not as a genetic series, but as the direct products of germs with which nature was supposed to experiment in her continual efforts after greater perfection.

Lorenz Oken (1776-1851) was a follower of Schelling, and therefore careless as to the inductive method on which the substantiation of science must always rest. If we collect his best passages a case may with some difficulty be made out for regarding him as a pioneer of modern biology; if we attend to his absurdities we are forced to regard him as a fatuous follower of intellectual will-o'-the-wisps. He found the hypothetical origin of organisms in a primitive slime (*Ur-Schleim*) which had its cradle on the shores, where water, air, and earth are joined, but we can hardly see in this a prevision of the theory that the littoral fauna is the most primitive. The *Ur-Schleim* took the form of microscopic vesicles, or Infusoria, each a spherical aggregate of an almost infinite number of mucous points, and from agglomerations of these vesicles the bodies of plants and animals were formed—a view in which Prof. Hyatt, for instance, sees a prevision of the cell-doctrine. Another doctrine which may be traced back to Oken is that of Recapitulation, a fact which modern critics of the theory would probably note as establishing a further prejudice against it.