

by the fact of *anthropo-teleology*, has outlived its usefulness, and, where still called in, becomes a burden to the advancement of science. In astronomy, the nebular hypothesis, which Kant founded and Laplace demonstrated, has completely superseded it. In chemistry and physics, the atomic theory, formulated as a philosophy by Democritus and established as a science by Dalton, renders it redundant. In biology, the law of adaptation, clearly stated by Lamarck, and that of selection, cumulatively demonstrated by Darwin, and the inter-operation of these and heredity, thoroughly set forth by Spencer and Haeckel, have freed this field from teleological trammels almost as completely as those of the less complex sciences have been freed from them. And thus is science marching relentlessly forward, and reclaiming one field after another that had been so long given over to dogmatic conceptions, until there is now scarcely room to doubt that its conquest must ultimately become complete.

But what is it that has thus been accomplished? It is nothing less than the establishment of the antitheses or empirical propositions of Kant's antinomies. They have been removed from the domain of transcendental philosophy, subjected to scientific methods, such as are applied to all other problems, and proved as other propositions are proved, by the inductive method. The eternity of matter and motion and the infinitude of space have passed into scientific postulates, while the uninterrupted and unlimited causal dependence of all phenomena in their relation of antecedence and sequence is the fundamental axiom from which all scientific investigation now proceeds. *The entire self-sufficiency of the universe* is the great truth which advancing intelligence is daily perceiving more clearly.

But we are more especially concerned here with the two rival modes of thought. It is incorrect to suppose that the causal process is wholly excluded from the minds of those who think habitually upon the dogmatic side. The expressions *teleological* and *genetic* only represent the two extremes. All teleologists reason more or less, but it is within the safe limits of known premises. They, too, recognize natural laws as operating within certain spheres, whose extent is measured by the amount of each one's knowledge. In some, the field of natural law is confined to the every-day physical phenomena around them—the running of water, the falling of bodies, the action of the winds, etc. In others, with a wider outlook, it may include all the phenomena of astronomy, physics, chemistry, and the present known facts of geology. Still others, somewhat better informed, may reject geological cataclysms, but account for all vital phenomena on teleological principles. Not a few believe biology to rest on a mechanical basis, but deny this of psychology. And there are even some physicians who, from their familiarity with mental changes brought about by direct dealings with the brain, have been thoroughly convinced that thought is a product of nervous organization, but who, nevertheless, cannot be brought to regard social phenomena as reducible to law. To all these various grades of dogmatism must be added that still more complex compromise, nowadays considerably in vogue, which one of its eminent defenders (Professor Asa Gray, "Darwiniana," chapter 13) has called "Evolutionary Teleology,"