

organism as a pure machine lay an answer to the great problems of life and consciousness, Theodor Schwann<sup>9.</sup> Schwann. proclaimed about 1840, on the basis of minute microscopic observation, the essential identity of animal and vegetable—*i.e.*, of all living—structure, thus taking probably the greatest step in uniting researches which had so far been carried on in a disconnected fashion. Here is the beginning of the modern theory of the organic cell—of cellular pathology, and the actual inauguration of modern biology. Twenty years later, the appearance of Darwin's 'Origin of Species' urged still further the study of the whole of organic life from a comprehensive point of view.<sup>10.</sup> Darwin. In addition it led to a closer union with the sciences of inorganic nature, an appeal being now made to palæontological and geological records in proof of the gradual development of all forms of living as well as of inanimate reality. The studies of the geologist, which up to then had been prosecuted on independent lines, joined hands not only with those of the zoologist and botanist, but likewise with the theory of cosmological genesis of the planetary system, as proclaimed at the end of the former century by Laplace in his 'Exposition du Système du Monde,' and fifty years earlier by Kant in his 'Natural History of the Heavens.' If in the course of our century, through the combined influence of travel on the one side and medicine on the other, the history of natural objects has been united in the larger conception of biology, this itself at the close of the century promises to be united with geology and astro-physics (a science almost entirely founded on the invention and on the revelations of the