

accepting a mechanical conception," we must not "fall into the very common mistake of trying to explain vital processes as being due directly to mechanical causes." It has been quite as impossible to banish the word life from the biological vocabulary as it has been to banish the word "ought" from the ethical. Biological knowledge has become purely chemical, physical, and mechanical, but not so biological thought. The question "What is life?" still haunts us. Let us see what position the foremost representatives of modern biological research have taken up to this question. We find that they can be divided into two classes.

First, there are those who have studied the phenomena of living matter solely by the means which the advancing sciences of dynamics, physics, and chemistry have placed at their command. To them biology is an applied science. The question "What is life?" is, according to their view of method, only to be solved by degrees, by bringing the forms and processes manifested in the living world more and more under the sway of observation, measurement, and possibly calculation. The central problem as to the essence of life and the

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field of pathology. After having assisted in banishing the older vitalism, he, to the dismay of many of his own school, reintroduced the conception of a vital principle in a well-known review entitled "Old and New Vitalism," in his own journal (vol. ix. p. 20). "Indeed, the living body consists, so far as we know, of substances of the same kind as we find in 'lifeless nature,' and these substances have not only no other properties and powers in

the living body, but they do not even lose any of them. . . . Nevertheless, we cannot see how the phenomena of life can be understood simply as an assemblage of the natural forces inherent in those substances: rather do I consider it necessary to distinguish as an essential factor of life an impressed derived force in addition to the molecular forces. I see no objection to designating this force by the old name of vital force."