

DARWINISM TODAY

*A DISCUSSION OF PRESENT-DAY SCIENTIFIC CRITICISM
OF THE DARWINIAN SELECTION THEORIES,
TOGETHER WITH A BRIEF ACCOUNT OF THE
PRINCIPAL OTHER PROPOSED
AUXILIARY AND ALTERNATIVE
THEORIES OF SPECIES-FORMING*

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PREFACE.

THIS book is written for the sake of presenting simply and concisely to students of biology and to general readers the present-day standing of Darwinism in biological science, and to outline for them the various auxiliary and alternative theories of species-forming which have been proposed to aid or to replace the selection theories.

Our actual knowledge of the factors and mechanism of organic evolution and our hypotheses and theories which serve to fill in the present gaps in this knowledge have been greatly added to and modified in the last few years. Much that the general reader includes in his conception of organic evolution, based on his reading of Darwin and Wallace and Spencer, has been materially modified and some of it proved untenable by modern investigation; while much which had no place in this earlier general understanding of evolutionary method and process may now be confidently added to it. The present time is one of unprecedented activity and fertility both in the discovery of facts and in attempts to perceive their significance in relation to the great problems of bionomics. Both destructive criticism of old, and synthesis of new hypotheses and theories, are being so energetically carried forward that the scientific layman and educated reader, if he stand but ever so little outside of the actual working ranks of biology, is likely to lose his orientation as to the trend of evolutionary advance. Precisely at the present moment is this modification of the general point of view and attitude of philosophical biologists unusually important and far-reaching in its relation to certain long-held general conceptions of biology and evolution. This modification of the general trend of evolutionary thought

must also necessarily strongly affect our conceptions of the underlying principles of such correlated sciences as sociology, pedagogy, etc. It is, then, as a means of orientation in evolutionary matters for the general reader and for the unspecialised but interested student of science that this book is prepared.

That it may not be without some special usefulness to more advanced students and biological workers there are added, in appendices to the chapters, special notes (referred to in the text by small super-numbers) in which are given numerous exact references to general or special books or papers, and accounts, in more or less detail, of particular observations, experiments, or theoretical discussions, as well as references to extended bibliographic lists of the subjects under treatment. These notes will enable students, or others interested, to look up the original sources of our knowledge of the subjects of the various chapters, and to find more detailed general or special discussions of them than can be given in this book. These notes also enable the author to introduce into the book some details of his own observations and experiments touching various evolutionary subjects.

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CHAPTER I. INTRODUCTORY: THE "DEATH-BED OF DARWINISM."

"VOM STERBELAGER DES DARWINISMUS!" This is the title of a recent pamphlet lying before me. But ever since there has been Darwinism there have been occasional deathbeds of Darwinism on title pages of pamphlets, addresses, and sermons. Much more worth consideration than any clerical pamphlets or dissertations, under this title, by *frisch-gebacrenen* German doctors of philosophy — the title alone proving prejudice or lack of judgment or of knowledge — are the numerous books and papers which, with less sensational headlines but infinitely more important contents, are appearing now in such numbers and from such a variety of reputable sources as to reveal the existence among biologists and philosophers of a widespread belief in the marked weakening, at least, if not serious indisposition, of Darwinism. A few of these books and papers from scientific sources even suggest that their writers see shadows of a death-bed.

The present extraordinary activity in biology is two-phased ; there is going on a most careful re-examination or scrutiny of the theories connected with organic evolution, resulting in much destructive criticism of certain long-cherished and widely held beliefs, and at the same time there are being developed and almost feverishly driven forward certain fascinating and fundamentally important new lines, employing new methods, of biological investigation. Conspicuous among these new kinds of work are the statistical or quantitative study of variations and that most alluring work variously called developmental mechanics, experimental morphology, experimental physiology of development, or,