

THE BEGINNINGS OF SCIENCE

Biologically and Psychologically Considered

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原书缺页

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TO
MY WIFE

WHOSE CONSTANT ENCOURAGEMENT
AND NEVER-WAVERING CONFIDENCE
HAVE BEEN THE SOURCE OF THE
AUTHOR'S MOST FRUITFUL STUDIES

PREFACE

IT is now some ten years since the need of a volume in non-technical language, describing the relationship between Philosophy and the Laboratory Sciences, was brought home to the author, and with the end in view of filling that need, he began the series of studies which have made this book possible.

Six of the chapters have already appeared in print in the University of Dallas Quarterly Bulletins during the past few years, while much of the remaining material has been used in class-room and public lectures.

Students from all schools have seemed so one-sided in their viewpoint, that the desire to make them realize that many varying conclusions may often be drawn from the same facts, with just as much validity, has led to the often repeated stressing of this fact throughout these pages; and, having noticed that most students lose the thread of their reading when too many foot-notes are employed, we have tried, wherever possible, to embody what is usually placed in foot-notes, in the main portion of the paragraph.

Contrary to most volumes written on any subject, we have tried to present *both sides* when there were two, or more should that be the case. We have likewise tried to show where much error may be found in the teaching of both high-school and college students, in that not sufficient stress is laid on the all-important difference between **FACTS** and **INTERPRETATIONS**—on the varying and often contradictory beliefs of writers on Evolutionary Science—on the deplorable

lack of logical and philosophical thinking—on the fallacy of permitting the student to assume that because an hypothesis is necessary for experimental purposes, it must be true; and that because every teacher in a given school may uphold a doctrine, it does not follow that all men hold it, for the head of the department usually employs only those teachers who think along similar lines, or very often are the result of his own training, they having been his own pupils.

W. H. Mallock has well said that the laboratory man has had to go to school to philosophy, and it is this point we wish to emphasize more than any other.

We have therefore tried to present NECESSARY STUDIES, which *must* form the foundation of any valid interpretation of any facts found, by placing a goodly list of books and articles in our chapter on “Suggested Readings” that will bring home the ideas expressed in this Preface and permit a far more comprehensive knowledge of LIFE in general than any course or courses the average student is likely to get at any institution, unless he specialize for many years.

In other words, the object and aim of the author has been to show what is necessary for a broad, logical, and clear-cut view of Life; what theories are held by able men in all the various walks of life; where and how they agree and where and how they do not agree—to give perspective.

Great pains have been taken to make every statement, date and reference accurate, but should any errors have crept in, the author will consider it a favor to have his attention called to them.

Thanks are due to all the members of the faculty of the University of Dallas for their ready assistance and kindness, but especially to the Reverend Peter P. Finney, C.M., Ph.D., Professor of Philosophy, whose kindly suggestions

and wide knowledge in his chosen field have been of untold assistance.

Thanks are also due to my assistant, Mr. Fred Rich, B.A., for the careful drawings he has made for these pages.

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University of Dallas, Texas.

April 6, 1917.

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THE BEGINNINGS OF SCIENCE

CHAPTER I

BIOLOGICAL LABORATORIES

The Reason for Their Existence

MORE and more the classics are being neglected for the modern scientific courses: class-room is converted into laboratory and the subjects of interest to a past generation of college men and women seem to have gone from the halls of learning and left in their stead but echoes—echoes which are ever and ever growing fainter until sometimes it seems that even *they* will shortly cease. And then come the questions: “Why has the college and high-school curriculum so changed?” and “Of what value are the new studies?” Questions which ever and ever become more insistent in their demand for an adequate answer.

The student, when challenged, quite naturally wishes to defend himself, but how often he fails we know too well; men and women, though long since away from the class-room, who yet find their interests along scientific lines and possess that faculty of wanting to know a “why” for everything; parents who cannot understand why their children should not pass through the same training as did they; and that great mass of boys and girls who find themselves unable to attend any

of our schools of higher learning, but spend their leisure moments in working, and dreaming, and yearning for the time when better things await them, and who now treasure every scrap of scientific wisdom and fact, but, who, unable to explain the practical value of it all, find heartaches which so often come from being condemned and misunderstood by those at home—for all these this little volume is written, and it is hoped that what is herein contained, may stimulate to efforts along lines that will make its readers capable of knowing “WHY.”

It is well at the outset, to bear in mind that practically every discussion has at least two sides, and often many more. An example that comes to mind is the public library. There are those who insist that the object of a library must be to furnish those particular books which people *wish to read*; yet certainly something may be said for those who believe that only a few of the wished-for volumes should be kept, and these but incidentally—only in order that they may lead men and women to wish for those that are really worth-while—just as an introduction to the literature that means something—that has been written in the sweat and blood of the great and wondrous of all ages—and whose pages throb with life, and show that human nature is ever the same; that the same hopes, the same longings, the same loves and hates, the same sorrows, and the same bitterness as well as the same contentment and glory have ever been with us all—may it not be that the latter school have some right to their view also?

In the educational world, the two schools may be said to consist of those who believe in “culture” for its own sake, and those who, being more in harmony with their time, insist on “usefulness.” The former believe that men and women who have had the opportunities of gathering that which is