
Science and Sanity

Count Korzybski presents in this monumental treatise a point of view, which, if adopted generally, would revolutionize and rationalize our modes of thought. He discusses and illustrates from an enormous variety of situations the desirability and the present (1934) necessity of the employment of a non-Aristotelian, non-elementalistic sematics, in which the concept of non-identity is fundamental. It is only through such a system of psycho-logic reactions that sound scientific thinking may occur and that one may progress from unsanity to sanity.

Count Korzybski shows how many prevalent fallacies and confusions are based upon misconceptions of the nature of language, particularly upon verbalisms dealing with fallacious identification. He deals exhaustively with the nature of verbal, mathematical and scientific symbolisms, and the conditions which give them their representative value. For sane thinking, these symbols should conform as closely as possible to the realities of the nature of the universe and life. To secure such conformity and establish it by training is a very urgent problem of our times. Implications of the outcomes of such training in the solution of scientific, social, and political problems are far-reaching and important.

The author has brought together within the compass of this volume an astounding wealth of material. His discussion of the problem from the physiological, neurological and mathematical points of view has been proclaimed as masterly by many specialists in these fields. The text is difficult; its ideas are new. The reader will find himself struggling with them, but realizing their importance, should adopt them for his own.—JOHN W. PRICE.

Science and Sanity, by Alfred Korzybski. A Publication of the International Non-Aristotelian Library Publishing Co. The Science Press, Distributors, Lancaster, Penn. 1933.

BOOK REVIEWS

How genes act.

In spite of the wide acceptance of modern genetic theories, the embryologist finds himself frequently doubting the role of the genes in embryonic development. This book, written as an attempt to reconcile the theory of the gene with the deep-seated and fundamental characters of developing organisms, is by one who is himself both a geneticist and an embryologist, and thus peculiarly fitted for such a task. Morgan accepts as complete neither the hypothesis that all the genes are acting all the time in the same way, nor the hypothesis that different batteries of genes come into action as development proceeds. In their place he suggests a third hypothesis, that initial differences in protoplasmic regions affect the activity of the genes, which in turn affect the protoplasm, thus creating a series of reciprocal reactions. This hypothesis is elaborated as the book unfolds, through cleavage, gastrulation, development of isolated blastomeres, and other experimental anomalies, parthenogenesis, regeneration, and the determination of sex. The book does not leave the reader feeling that any of the problems are definitely settled, or even partially solved, but it does raise many pertinent questions, and it does provide genuine stimulation to further thought and research. L. H. S.

Embryology and Genetics, by T. H. Morgan. vii+258 pp. New York, Columbia University Press, 1934. $3.00.

Development and its experimental analysis.

From the vast fund of literature on experimental embryology, the authors of this volume have selected the pertinent contributions to early development and differentiation, and by means of careful synthesis and critical evaluation have woven them into a connected whole. Crucial experiments have now been performed on many phases of the developmental process, and a book such as this with authoritative interpretations is indeed welcome. A particularly illuminating chapter is devoted to the much-discussed question of the genetic basis of embryology. The book is well illustrated, and the bibliography is arranged in a unique and useful form, giving subject-matter and page of citation in the volume for each reference. Descriptive embryology is rapidly giving way to physiological embryology, and thanks to volumes such as this, he who runs may read. L. H. S.

Elements of Experimental Embryology, by J. S. Huxley and G. R. DeBeer. xiii+514 pp. Cambridge, at the University Press; New York, the Macmillan Co. 1934.

Accurate Measurements

The author, a son of Professor A. N. Whitehead, has had an extensive experience in the design, construction and use of precision apparatus, particularly during his years as an expert for the British navy. The result is a book which, in the opinion of the reviewer, should be familiar to every graduate student who hopes to do precision work and which will prove equally valuable to scientists of more extensive experience with instruments.

The sections dealing with the theory of errors presents, rather than the idealized mathematical theory restated, a new kind of treatment of the problem based on design in relation to use. In it the author points out particularly some much neglected facts about the securing of accurate judgments and pointer readings by the observer or manipulator of the instruments. Part II deals with Design, again in a stimulating new way. The book is not addressed to the designing technician, but will be chiefly valuable to all classes of researchers who use instruments of precision.—S. RENSHAW.

The Design and Use of Instruments and Accurate Mechanisms, by T. N. Whitehead. xii+283 pp. New York, the Macmillan Co. 1934.

Biological Principles as Illustrated by the Protozoa

This second edition of a standard work by the dean of American protozoologists gives evidence of considerable reorganization and new material, although the general purpose and plan of the book remain the same. It is today without question the student's best and most reliable source of information on the broader and more fundamental aspects of the life of the Protozoa. The concept of a changing organization influenced by continued metabolism is still the central theme of the book.

To this edition a valuable chapter on ecology and parasitism has been added. The author's decision to omit the Phytomastigophora entirely, leaving them to the botanist, will be regretted by many, although it must be admitted, however reluctantly, that this solution of the problem of duplication will probably be generally adopted in time. Typography, paper, and binding of the new book conform to the highest standards.—W. J. KOSTIR.

The Biology of the Protozoa, by Gary N. Calkins. 2nd edition, 607 pp. Philadelphia, Lea and Febiger. 1933.

Glacial Geology.

This photo-lithoprint of the author's manuscript is divided into four main parts and is, as the title shows, in a modified outline form. Part I deals with Mountain glaciers and glaciation. Part II handles Continental glaciers and glaciation. Part III considers the Pleistocene glacial succession. Part IV is entitled Miscellaneous and covers the Driftless area, Causes of Pleistocene glaciation, duration of the Quaternary, life of the Pleistocene, and the Economic geology of the Drift. There are 10 plates containing 89 figures; these are well selected and are a very definite addition to the outline. As in any treatment of glacial geology there are points open to argument but this does not deduct from the value of the work. Needless to say it gives the author's **inferences** which he endeavors to keep separate from **observations,** a very excellent idea. It is perhaps unfortunate that this outline had to be reproduced by photo-lithoprint as most of us find typing more difficult to read than printing. This may prove however a good point as it will probably cause the author to revise and enlarge the outline more often than would be the case if it was set up in type. In as far as I know it has a field to itself and should prove very useful to students both in and out of glaciated areas. WILLARD BERRY.

Outline of Glacial Geology by F. T. Thwaites. 115 pp., paper bound. Ann Arbor, Edwards Brothers. 1934.

Within the Atom

A truly delightful book written by H. A. Wilson has appeared under the above title. It is a strictly up-to-date discussion of the progress made since the beginning of the century to solve the riddle of the atom, suitable to be given to the layman or the beginning student. It is delightfully and fascinatingly written, the language of mathematics having been replaced by the language of everyday speech; and while many times reading much like a story or a fairy tale, only very little of the actual meaning of the physics involved is sacrificed. It is an account of the complete collapse of the old concepts of nineteenth century physics and the rise and triumph of the quantum theory, told by a man who himself has played a part in the revolution and who has a clear vision of the direction in which modern physics will head in the future. The book comes durably bound in cloth, printed on good paper in large, clear type, and is sincerely recommended to the reader desiring a glimpse of the physical world as visualized by contemporary physicists. For use in introductory or survey courses so much in demand in colleges and universities at the present time, the reviewer feels it is one of the most suitable that has come to his attention.—H. H. NIELSEN.

The Mysteries Within the Atom, by H. A. Wilson. x+146 pp. New York, D. Van Nostrand Co., 1934. $2.50.