Book Reviews

Principles of Genetics. 4th ed. Edmund W. Sinnott, L. C. Dunn, and Th. Dobzhansky. New York: McGraw-Hill, 1950. 505 pp. $5.00.

In this new edition of the classical textbook of Sinnott and Dunn, Professor Dobzhansky has joined the original authors in the difficult task of bringing the subject matter up to date. The authors have eminently succeeded in this ambitious undertaking. A comparison of the present edition with previous ones serves best to demonstrate the enormous changes genetics has undergone in the past decade.

All too frequently in revising a text, the author is satisfied when he simply adds one or two chapters containing the new developments in his science. Often these chapters are not closely connected with the remainder of the book, which continues to describe its subject matter from an older point of view. This danger has been avoided in the present edition, with the result that the newer fields of genetics are presented so as to form an integrated part of the whole science.

The first ten chapters follow the logical sequence of earlier editions by first developing the methods and results of "formal" genetics and then proceeding to the discussion of the chromosome theory of heredity. The genetics of microorganisms, *Neurospora*, bacteria, and viruses are first introduced in this part. Examples from human genetics are found scattered throughout these chapters in appropriate places, emphasizing the fact that the laws of genetics apply to all organisms, including man. The chapters dealing with chromosome behavior have been profoundly altered, incorporating the vast amount of knowledge accumulated on chromosomal rearrangements, and their bearing on the arrangement of genes in the chromosomes.

Chapter 11 is devoted to mutations. Chapters 12–14 give a condensed and clear account of the problems and results of the field of population genetics and of its bearing on evolution. The modern theory of evolution is developed in a straightforward manner. The discussion of inbreeding and heterosis, which in earlier editions formed an unconnected chapter, is incorporated in the description of population genetics. This field is presented logically, as a natural consequence of the principles developed in the earlier chapters, and should offer no difficulty to the student.

An outstanding feature of *Principles of Genetics* is the group of 4 final chapters dealing with physiological and developmental genetics. The vast amount of material obtained in this field has not been treated adequately in any other text. As a matter of fact, no complete synthesis of developmental genetics has been attempted during the past decade, and it is therefore gratifying to read this first integrated presentation from a modern point of view.

Most of the chapters are supplemented by a large number of problems, which serve not only as exercises for the principles learned in the chapter but frequently will lead to amplifications and discussions. A bibliography of a number of significant books and papers in the field covered accompanies each chapter. Illustrations were selected with great care and are well executed. As an appendix, a translation of Mendel's classical paper has been reprinted. It is to be hoped that many teachers will make use of this opportunity to introduce to their students the beautifully clear logic and presentation and the great experimental skill of Gregor Mendel.

Teachers of genetics will be gratified to find that they have here for the first time a textbook of genetics adequately representing the facts and principles of classical genetics as well as the more recent findings and problems of our own time. It is to be hoped that this book will be widely adopted in college classes.

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Handbook of Psychological Research on the Rat: An Introduction to Animal Psychology. Norman L. Munn; Leonard Carmichael, Ed. Boston: Houghton Mifflin, 1950. 598 pp. $7.50.

The word "handbook" as used in the title to this volume may suggest misleading notions about its make-up. You could not fairly say that it is not a handbook, but you could truthfully say that it is not similar in tabular and formulae content to such works as Hodgman's *Handbook of Chemistry and Physics.* It is, rather, a review and hence possesses limitations imposed by the author's task of selecting what to include from each study and then of judging what studies bear on what topics.

The book, according to Munn, is a complete survey of psychological research on the rat. Following the introductory chapter (a discourse on the general nature of research and on the care and handling of laboratory rats), the book contains the author's abstracts, evaluations, and interpretations of almost 2,600 research studies arranged under many subheadings of 9 topical headings: "Unlearned Behavior;" "General Activity;" "Motives, Emotions, and Hoarding;" "Sensory Processes;" "Sensory Processes in Maze Behavior;" "Learning;" "Some Aspects and Conditions of Learning;" "Systematic Psychology;" and "Abnormal and Social Behavior." There are 3 appendices containing, respectively, 52 references for books on comparative psychology, some additional (other than rat) references on comparative psychology, and the bibliography. Both author and subject indices appear.

A knowledge of the general manner in which Munn presents the research material may be gained from a description of Chapter II, which is entitled "Unlearned Behavior." The 190 studies mentioned in this 42-page chapter are assembled under the subheadings of fetal behavior, behavior observable at birth, male sexual behavior, female sexual behavior, reproductive behavior, inheritance of the effects of training, inheritance of induced