

New Books . . .

Plant Regulators in Agriculture

H. B. TUKEY, editor. John Wiley & Sons, Inc., New York. 1954. \$5.50. P. W. ZIMMERMAN, Boyce Thompson Institute for Plant Research, Inc., Yonkers 3, New York.

This is a compilation of 16 chapters written by 17 authors. The editor wrote the preface, the introduction, and is also a junior author of one chapter. The editor states that the book was written particularly for county agricultural agents. However, he states that the material is not intended as a handbook of recommended practices. Each chapter is more or less of a unit, though there is some overlapping. The titles are as follows: An Introduction to Plant Regulators; Principles of Plant Growth and How Plant Regulators Act; The Chemical Nature of Plant Regulators; Encouragement of Roots by Plant Regulators; Control of Flowering and Fruit Setting by Plant Regulators; Parthenocarp and Fruit Development in Relation to Plant Regulators; Abscission and Plant Regulators; Plant Regulators to Prevent Preharvest Fruit Drop, Delay Foliation and Blossoming, and Thin Blossoms and Young Fruits; Maturing and Ripening as Influenced by Application of Plant Regulators; Inhibition of Sprouting by Plant Regulators; Plant Regulators and Plant Breeding; Plant Regulators for Weed Control in Lawn, Garden, Orchard, and nursery; Plant Regulators for Weed Control in Field Crops; Plant Regulators for Weed Control in the Tropics; Plant Regulators for Vegetation Control on Non-Crop Land; Equipment and Methods for the Application of Plant Regulators.

In addition to the various chapters, the editor included a historical review in the introduction. Also included in the introduction is the report of a committee of the American Society of Plant Physiologists on nomenclature for plant hormone-like substances. However, it was not mentioned that there was one dissenting member of the committee who did not sign the report. The recommendations of the four individuals on terminology, therefore, should not be considered as universally adopted. It will be impossible to prevent scientists and laymen from saying "plant hormones" when they mean 2,4-D or indolebutyric acid. This book will be found useful not only to county agents but also to students and scientists, though, as the editor says, limitations to space have made it necessary to omit much excellent material. These omissions might have had much

less serious effect if the various authors had given due credit to sources of information and had cited the available references more judiciously. For example, the chapter on abscission has only three references—two on anatomy and one on defoliant for cotton. Many statements in this chapter need the support of reports from the various fields of research. In another important chapter with 16 references, all but two are publications from the same organization. In at least two places auxin "a" and "b" are mentioned as if they were realities. These may be minor criticisms. One should remember that it is nearly impossible to compile 16 chapters for a book without difficulties. In spite of these shortcomings, the book is sure to serve a useful purpose.

Practical Physiological Chemistry

13th Edition. PHILIP B. HAWK, BERNARD L. OSER, and WILLIAM H. SUMMERSON. The Blakiston Company, Inc., New York. 1955. \$12.00. Reviewed by F. E. DEATHERAGE, Department of Agricultural Biochemistry, Ohio State University, Columbus, Ohio.

It is indeed rare that one author can be associated with the growth of a text in science over a fifty-year period. The senior author along with his collaborators not only deserve congratulations but also the gratitude of all biochemists and related scientists for making available through the years a book of such usefulness.

From the very first paragraph of the preface one can only marvel at this work. Just to compare this 13th edition with the first published in 1907 is a sobering lesson in the growth of biochemistry. This reviewer recommends that all who can should do just that. In the first edition the reader will not find such words as vitamin, hormone, nutrition, pH, ion, etc., yet he will find a nice balance between theory and workable experimentation. In the current edition this same balance is kept and the title of the volume is still quite appropriate. It is remarkably up to date on the latest biochemical techniques as typified by the beautiful front color plate on paper chromatography of amino acids. The book is written primarily from the medical point of view but there is much of general interest and many of the procedures are applicable to biochemistry in general. Some teachers will find this book somewhat difficult to use in class because of its size and scope. However, what this volume lacks in

continuity for teaching purposes it makes up in providing a breadth of scope and concise treatment (some may think too concise) of modern concepts of biochemistry. Also this book provides in a single volume theory, laboratory procedures, and a tremendous body of factual information thus making it also a reference work of utmost value. The reader will find descriptions of how isotope tracer studies may be done, how nutrition studies and microbiological assays are carried out, or how the newer techniques of countercurrent extraction, chromatography, and spectrophotometry are applied to biological systems in order to elucidate mechanism of enzyme action. Information on intermediary metabolism is timely and up to date for a text of this type. The value of this book for many in the agricultural and food areas will be primarily as a reference work in which one can find a tremendous amount of information which may be applied also to these non medical fields. For example in the excellent index you will find the references to insecticides leads to a description of the anticholinesterase activity of the newer organic phosphates.

This volume has many excellent illustrations and is remarkably free of typographical errors. The printing and workmanship are of high quality. It is of interest that two color plates from the first editions are used in the 13th. From the standpoint of teaching it would be desirable if there was more consistency in structural formulas. For example in Chapter 7 on nucleic acids and nucleoproteins, hexagonal formulas are found for purines and pyrimidines whereas in Chapter 10 on muscular tissue and elsewhere the older rectangular formulas are used.

This is a remarkable volume. It is recommended to all chemists interested in practical biochemical problems.

A Laboratory Manual for Soil Fertility Students

Edited by DARREL A. RUSSELL and GEORGE STANFORD. Wm. C. Brown Co. 1954. \$2.00. Reviewed by RICHARD M. SWENSON, Michigan State College, East Lansing, Mich.

This laboratory manual is for use by students who are just beginning a study of the chemistry and fertility of soils. It is designed to aid in developing and illustrating principles in soil fertility rather than to take up time during the laboratory period. The principles and procedures are general enough to be