

BOOK NOTICES AND REVIEWS.

Kostychev's Chemical Plant Physiology. By DR. S. KOSTYCHEV, Member of the Russian Academy of Science, Professor in the University of Leningrad. Translated and edited by Charles J. Lyon, Ph.D., Assistant Professor of Botany at Dartmouth College. P. Blakiston's Son & Co., Inc., Phila., 1931. XV + 497 pages. Portrait and forty-five illustrations. 16.5 × 24 Cm. Price \$6.00.

"This book is an up-to-date rendition of a volume which appeared in German in 1926 as part one of the 'Lehrbuch der Pflanzenphysiologie.' The first volume was entitled 'Chemische Physiologie' with the implication that the second volume would deal with the physical aspects of plant physiology." The second volume has not yet appeared but the popularity of the first led the author to revise it late in 1929 for this translation. There are "many radical changes in the subject matter."

The title might be misleading so we quote the author, "Chemical plant physiology is often called 'biochemistry of plants' It deals only with questions of material transformations in plants." The subject matter is well arranged as follows: "First there is an exposition of the assimilation of the elements required by plants. Then follows the description of the transformations of the assimilated foods in connection with the various vital requirements of plants. Finally there is a discussion of the biochemical processes which furnish energy to plants All these processes are treated as chemical reactions."

The titles of the eight chapters will give a better idea of the scope of the work: The Foundations of Chemical Plant Physiology; The Assimilation of Solar Energy by Green Plants and the Primary Synthesis of Organic Compounds; Chemosynthesis and the Assimilation of Molecular Nitrogen; Plant Nutrition with Prepared Organic Compounds; The Mineral Nutrition of Plants; Carbohydrates and Proteins: The Transformation of These Substances in the Plant; Secondary Plant Substances; Respiration and Fermentation.

To those who do not know Dr. Kostychev's attainments, we might say that his work in almost every phase of this field makes him unusually well qualified for such a task. Of the hundreds of references given in the footnotes, at least two hundred must be to original papers by either the author alone or with the twenty-six different co-authors. One does not have to read far to learn that Kostychev has a good his-

torical background of botany and chemistry. Even so he has not overstressed it. Various theories are well developed and handled. The author finishes with his own ideas. This greatly helps the student.

We question the advantage of as much physical chemistry as given in the first chapter. Where the biochemistry of secondary plant substances cannot be explained we would take the opportunity of pointing out more chemical relations; *e. g.*, in the terpenes how oxidation, reduction, hydration, dehydration and rearrangement will lead from one to another. The same can be said for lactic and pyroracemic acids, also succinic, malic, tartaric, and fumaric acids.

Being pharmaceutical-minded we looked in the index for some plant products of interest to the profession. We could not find the following: oleoresin, gum resin, sapotoxin, and sapogenin. The author has evidently called oleoresins, balsams. Under saponins we found the term sapogenin defined.

Great credit must be given the author for backing up so many statements with a large bibliography ranging from the master pioneers to very recent articles. We regret to find that only the senior authors, of the papers cited, are indexed.

The editor has done well. He was especially fitted for the task, having translated in 1927 Kostychev's *Pflanzenatmung*, 1924. The book is mechanically well done and almost free from typographical errors. It should be warmly received by plant physiologists, biochemists, and allied professions. We hope that it will be revised periodically.—P. A. FOOTE.

Fighting Disease with Drugs.—The Story of Pharmacy. Edited by JOHN C. KRANTZ, JR. Published for the National Conference of Pharmaceutical Research. The Williams & Wilkins Company, Baltimore. Price \$2.00.

Reference to this book has been made editorially in this issue of the *JOURNAL* and this notice is to call further attention to this important volume, because of the opportunity afforded by it for giving good pharmaceutical publicity. Every druggist will want a copy and, probably, after seeing it, more of them for presentation to physicians and friends of pharmacy.

Without going into details of an extended review a list of the contributors and their