PLANT ANALYSIS AND FERTILIZER PROBLEMS

This volume is a collection of prepared papers presented at a symposium organized by the Institut de Recherches pour les Huiles et Oleagineux and under the auspices of the 8th International Botanical Congress. The informal discussions and debates following the presentation of each paper are also presented.

Papers dealing with some of the fundamental physiological relations of plant composition to growth and yield are presented by H. Lundegardh (Sweden), F. Steenberg (Denmark), A. Arland (E. Germany), T. Wallace (England) and O. Bidulph and A. S. Crafts (U.S.A.). A second group of papers concerning plant and analysis methods is presented by R. L. Mitchell, D. Nicholas (British Isles) and A. W. Specht, P. F. Smith and J. W. Resnick (U.S.A.). A third group is concerned with the application of plant analysis techniques to fertilization problems. Authors contributing to this group are J. Carles, S. Trocme, J. Fr. de Ferriere, P. Halais, A. Loue, P. Prevot and M. Ollagner, M. Ferrand and J. F. Levy (France and its colonies), L. Hershberg and R. M. Samish (Israel), C. Tamm (Sweden), W. S. Elgin (Venezuela), M. L. Salgado (Ceylon), M. Drodroff, J. L. Hardock, W. Reuthe and P. F. Smith (U.S.D.A.). Applications of plant analysis to such diverse crops are coconut, coffee, citrus, tung, grapes, deciduous fruits, wheat, sugar beet, sugar cane, oil palms, peanuts, and others are considered.

This volume is the record of the first international symposium dealing with the fundamentals, techniques and applications of plant tissue analysis methods to problems of fertilization of plants. It is evidence of the growing body of literature on this subject, the increasing number of workers interested in this field, and the value of this approach in evaluating the mineral nutrient requirements of crop plants. No worker interested in soil fertility and mineral nutrition problems of plants want to be without this valuable group of references.—WALTER REUTHER.

PERSPECTIVES AND HORIZONS IN MICROBIOLOGY

This symposium of scientific papers written by 13 eminent bacteriologists commemorates the dedication on June 7, 1954 of the Institute of Microbiology, Rutgers University. Dedication addresses by Lewis Webster Jones, President, Rutgers University; Selman A. Waksman, Director, Institute of Microbiology, and Albert J. Kluver, Professor of Microbiology, Technical University, Delft, Holland, highlight the volume.

The scientific papers are exceptionally well written and, in keeping with the title of the volume, cover a wide range of topics. The papers by Cornelius B. van Niel, André Lwoff, Joshua Lederberg, and Bernard D. Davis deal with the microbe as a living system. The subject of microbial metabolism is contained in five papers by H. A. Barker, Jackson W. Foster, Wayne W. Umbeck, Perry Wilson, and Deryck H. Petterson. Four papers by Michael Heidelberger, Frank L. Horsfall, Jr., Harry Eagle, and Robert L. Starky concern microorganisms and higher forms of life. The readability of these papers is enhanced by their brevity and clarity in presentation.

As a brief presentation of the many-sided aspects of microbiology, the volume is not only a worthwhile contribution to the reading list for graduate students, but also a valuable aid to the more mature professional bacteriologist. The reference sections of the papers are comprehensive and evidence the broad scope of the various subjects. Perhaps the major shortcoming of the volume is its paucity of illustrations. Only one paper contains half tone reproductions. It is in this vein of thought that this reviewer feels the volume will likely evoke some disappointment, since such an excellent opportunity existed to depict photographically the Institute and the contributors, as well as the various aspects of the dedication ceremonies.—O. N. Allen.

AN INTRODUCTION TO PLANT TAXONOMY

This book by the director of the Bailey Hortorium at Cornell University, is written for the adult amateur botanist and for the student of a local flora course at the college level. It is restricted to ferns, conifers and other gymnosperms and flowering plants, and the author has drawn much from his earlier book, Taxonomy of Vascular Plants (1951) in this presentation. In defining the subject of taxonomy, the author emphasizes its fundamental importance to all biological science and to an understanding of the natural resources of the world. Chapter headings include Plant Classification, Evolution and Units of Classification, Plant Structures, Collecting and Identifying Techniques, Nomenclature, Phylogeny and Biosystematics. Taxonomy in North America, Important Families and Their Characters, and a combined glossary and index.

The chapter on plant structures takes up the morphology and terminology peculiar to each group of the vascular plants—the ferns and lycopods, the gymnosperms and the angiosperms. Chapter 8 presents an interesting historical review of taxonomy in North America, and Chapter 9 presents the distinguishing characters of some 50 of the more dominant families of vascular plants. The student or amateur who has had an introductory course in botany will find this excellent, compact volume of great help. It is applicable to any part of North America.

AGRICULTURAL PROCESS ENGINEERING

This textbook should be a great aid in teaching agricultural processing to advanced students in agricultural engineering. It is the only book known to this reviewer that covers the agricultural processing field as completely.

There are only a few universities now offering an agricultural engineering curriculum with advanced courses in agricultural processing. However, it appears that the processing of agricultural products will be of increasing importance in the future. Employment in commercial processing plants should be good for agricultural engineering graduates.

Some of the information in the book is a duplication of other courses which an engineering student would take in his regular curriculum. It is probably well to have this repetition, however, as many students may not have these engineering courses.

The material on drying, evaporation, and dehydration is very good. This field of processing is one that is developing rapidly. The drying and dehydrating of farm products appears to be one practical method of preserving farm produce for use on the farm.