**Book Reviews**

**USING COMMERCIAL FERTILIZERS**  

This book represents a carefully prepared treatise covering mainly the practical aspects of commercial fertilizer production and usage. Each of the fertilizer nutrient elements is covered in considerable detail. Secondary and trace nutrient elements are considered also. An excellent discussion of mixed fertilizers is provided.

Practical problems of commercial fertilizer usage such as methods of application, equipment for fertilizer application and economics of fertilizer usage are considered. Special problems associated with fertilizer usage such as soil conservation, animal nutrition, and special applications of chemical fertilizers are discussed.

An excellent glossary of fertilizer terms is provided. The glossary should be especially helpful in answering questions relative to fertilizer terminology.

The text should prove especially interesting and useful to high school students of vocational agriculture, for short course students in our agricultural colleges, and for all laymen in various agricultural enterprises because of the practical treatment of the chemical aspects of commercial fertilizers is omitted. Many technical workers in agricultural professions also will find the book very helpful.—F. W. Smith.

**JUTE SUBSTITUTE FIBRES**  

The subject material, Bimli-jute, roselle and aramina as jute substitute fibers has been well selected, but to American workers, these fibers will be better known as kenaf, roselle and Urena. The book is written from a broad point of view to include the research and development of these fibers in different parts of the world, including such material as is available from Russian and Indo-Chinese sources.

The work done in Florida is noticeably absent, and the reviewer feels that greater detail should have been given to work done by the Dutch in Java.

The illustrations, plates 14 and 15 on ramie defoliation, are irrelevant to the subject matter of the book. Plate 53 on the root-knot nematodes of kenaf might well have been included under the discussion of kenaf rather than Urena.

Mr. Haarer has written this book at a time when the research on jute fiber substitutes is under a state of rapid change and development. While there is a need to bring past research together in a present day publication, one may expect considerable change within the near future.—E. O. Gangstad.

**ADVANCES IN AGRONOMY, VOLUME IV**  

In a preface dated September, 1952, the editor, A. G. Norman, states that this volume continues the policy of presenting "articles of a review or progress report nature . . . likely to be of interest and assistance to a substantial group of the profession. Some papers may go beyond what is normally considered agronomy . . ." By this standard, Volume IV is a success. Most of the articles will appeal to agronomists and soil scientists in general while being valuable to specialists as well. For the pasture specialist, there are two articles. In the first, "Grassland Agronomy in Australia," H. C. Trumble reviews the development of pasture management in Australia with a commendable emphasis on ecology and on unusual plant nutrient deficiencies. In the second, R. E. Blaser, W. H. Skarda, and T. H. Taylor summarize information on "Ecological and Physiological Factors in Compounding Forage Seed Mixtures."

For those working with field crops, there is a thought-provoking article on "The Physiological Basis of Variation in Yield" by D. J. Watson, who calls attention to the significance of leaf growth and area to yield, and a practical summary on "Vegetation Control on Industrial Lands" by K. C. Barrows.

For the soil scientist, there are three authoritative reviews: "Type of Soil Colloid and the Mineral Nutrition of Plants" by A. Mehlich and N. T. Coleman; "Copper in Nutrition," by F. A. Gilbert; and "Soil Manganese in Relation to Plant Growth" by E. G. Mulder and F. C. Gerretsen.

The statement by N. E. Tolbert and P. B. Pearson, "Atomic Energy and Plant Sciences" will interest all concerned with crops and soils.

The remaining article "Soil and the Growth of Forests," by T. S. Coile attempts to cover all the regions of the United States, the major species of trees, and the influence of both the soil profile and the substrata. In doing so, it is unavoidably sketchy and variably in emphasis. This article will be helpful to some soil scientists and to foresters but will be of only passing concern to most readers of the volume.

Volume IV is interesting and well-written. Citations to previous works, experiment, tentative and up-to-date, it will be valued by anyone seeking a condensed statement of our knowledge in each of the subjects covered.—R. J. Muckenhurn.

**UNDERSTANDING IOWA SOILS**  

This well-illustrated, very readable account of the soils of Iowa is excellent. The introductory chapters on soil formation and classification make the book valuable for students of soils everywhere. The numerous photographs and three-dimensional diagrams acquaint the reader with details of natural soil structure, as well as with typical soil profiles and their landscapes in Iowa. The text is more than accurate; it is interestingly written. The authors obviously had a good time doing it, and have succeeded in making the soils of Iowa understandable to the general reader.

More than half of the book is devoted to describing the soils of the state by groups, called soil associations, of which there are 21. Each soil association is treated in a separate chapter which gives a picture of the major soils in the landscape, their present uses, and the special management practices suited to each soil type. The landscape of each soil association has a characteristic field and road pattern, and a typical placement and appearance of farmsteads. Finally, the reader's attention is focused on the precautions which must be taken by the farm operator to protect each soil from damage and to maintain its productivity far into the future.

The authors have not limited themselves to reporting facts about the soils of Iowa, but have shared with the reader the refreshing spirit of discovery which soil surveys experience as they explore anew the soil which "in all its varieties and kinds is often taken for granted." For example, we read that the Cresco-Kasson-Clyde association contains "a number of small areas of grayish soils" which "have been observed during field trips but have not yet been studied, defined and named." Soil classification is obviously a young scientific discipline, and this book is an unusually clear presentation of its findings in Iowa over the past 50 years.

In the appendix are tables of pertinent laboratory data on representative soil profiles, a bibliography, a glossary of terms, and an index. There are several typographical errors in this first edition.—FRANCIS D. HOLE.

**OUR GARDEN SOILS**  

Our Garden Soils is primarily for the home gardener who has a problem with his garden soils. Whether the soil is too thin, too sandy, too wet, too dry, too clayey, or too infertile, the principles for overcoming and working around these difficulties are discussed in "down to earth" language in this book. In addition to telling what should be done to overcome a given handicap, it tells why treatment is necessary and how to do it.

The author is chief of the Division of Soil Survey, Bureau of Plant Industry, Soil and Agricultural Engineering, U.S.D.A. The author believes that one can have a good garden on almost any kind of soil by following the principles outlined in this book.