eony of plant structure, with the concepts fully developed. The present book is designed to serve as a shorter text for a one semester course in plant anatomy. The developmental and functional approach of the earlier book has been retained and the treatment of material taken into account research information made available during the past few years. A study of the older book, and the original work contained chapters on the cell wall and protoplasm, these are now discussed in connection with parenchyma, collenchyma, and sclerenchyma. The xylem and vascular cambium tissues are treated in a sequence facilitating the explanation of cell arrangement. Discussion of apical meristems is made an integral part of the chapters on roots and stems, instead of receiving separate treatment as in the earlier book. A study of the apical meristems in relation to the plant parts they initiate permits easy introduction of new research in this field. A discussion of embryo development is taken up before treating with the individual tissues and organs. Introduction of the structure of vascular and non-vascular areas is made easier by discussing first the relatively simple structure of the root and then relating it to the more complex stem.

An extensive glossary dealing with recent concepts and terms relating to the field is a valuable part of the text. The illustrations, many of which are new, are excellently executed and labeled, as are those of the older book. Also, as in the earlier book, the text is fitted to the student is the treatment of references. These are noted by name and year in the text and are assembled at the end of each chapter. Most of the references listed have been published since the appearance of the earlier book, and while this necessitates its use for reference to the older and classic work, this should not prove a serious handicap to the student.

This book appears to be well designed to serve its purpose as a text for an introductory course in plant anatomy, and should find wide acceptance for this use. — David A. Sander, Dept. of Agronomy, Oklahoma State University.


This book deals with the cultivation of the banana. It contains a brief but comprehensive section on the botany of the edible banana. It also contains sections dealing with the cultivation and management of the crop including climate and soil relations, physiological stage of growth and formation of the fruit, and a brief treatment of the structure of the distributive trades. A comprehensive treatment of banana insect pests is given since this area has not been previously covered by previous texts. A good summary is given of the existing status of research on banana disease. The chapters are also devoted to the utilization of the fruit and other parts of the plant and to a general account of banana breeding.

This book is written to meet the needs of three groups of workers: first, the research worker who needs a ready source of information with bibliographies; second, the government agricultural official who needs a source of information on cultivars and on agricultural aspects of banana cultivation; and third, the planter who may wish to understand why a certain practice is recommended and whether in what particulars he can safely depart from locally accepted methods of management. Because of the heterogeneous audience a short summary to each chapter is provided.

There are 6 color plates and 87 black and white photographs used in the text to illustrate various aspects of the banana industry. Numerous tables and charts are also included as part of the text. This book probably will become a standard reference for anyone interested in banana culture.— S. C. Wiggans, Department of Horticulture, Oklahoma State University, Stillwater.


Legumes of Texas is a sound, well-written treatment of the native and introduced legumes found in that state. They total 391 taxa of which 120 do not occur in any other state, although many of the latter are found in adjacent Mexico. It includes keys to the species, ecological notes, flowering dates, common names if applicable, selected synonymy, chromosome numbers if known, and distribution maps for 176 of the taxa. It is a much-needed taxonomic study, valuable not only to taxonomists, ecologists, cytologists, and other associated workers in scholastic fields, but also to those in more-or-less applied areas, inasmuch as it presents basic taxonomic information without which they would be unable to function adequately. How can this book be digested?

This data is often accompanied by comments concerning possible utility. An example is to be found on page 223 under "Lespedeza texana" where it is stated that this species "appears to offer much promise as breeding stock for the development of successful central Texas perennial legumes. It is drought resistant and produces best growth in late summer in this area. Crosses with L. violacea, L. repens, or L. procumbens might prove significant in any planned agronomic use with this species."

The value of this book might have been enhanced by even short species-descriptions, but anyone desiring knowledge concerning the Leguminosae of Texas will do well to obtain this work.— U. T. Waterfall, Department of Botany and Plant Pathology, The Research Foundation, Oklahoma State University, Stillwater.


This comprehensive book brings together and interprets in a scholarly but non-pedantic manner the recent literature of Central Europe, mainly from Germany and Austria, basic in an understanding of soil classification and economic land utilization. Some 570 articles are cited from Austria, the U.S.A. and Great Britain; the U.S.A. and Great Britain are also cited and their work compared with that of continental workers. I note in particular pp. 213-230, the comparison of U.S.A. soil survey procedures (U.S.D.A. Soil Survey Manual) with those of European countries. The book has six main headings: (A) Importance of Soil Minerals, 46 pp; (B) Geological Formations and Strata, 28 pp; (C) Basic Processes of Soil Formation and Development, 139 pp; (D) The Describing of Mature Soils, 17 pp; (E) Description of Soils of Central Europe and Especially of Austria, 159 pp; and (F) Application of Soil Science to Economic Land Use, 171 pp. The book is completed by an author and comprehensive subject matter index, 23 pp.

These main headings are not indicated at the tops of the corresponding book pages. This makes unhandy the finding of the pages of literature citations at the chapter ends, but has enabled more words per page and per dollar to be presented. With scientific books costing what they do, I would rather have the extra information than the page. The publishing house is an old one (1748) and respected. The print is large (except for subsidiary material) and clear. The old, hard-to-read German letters are completely missing. Conventional Latin letters, even to the double "ess", are used. As for illustrations, the book has a unique feature. Twelve soil profiles has been painted by the artist G. Schwartz and these have been reproduced in color; they lend beauty as well as clarity to the book; the paintings bring out features which colored slides do not. Professor Franz writes from the viewpoint of an ecologist. On p. 178 in a section on soil physics he points out that soil structure studies in tilled soil should "never be made without careful root investigations of the profile". On p. 179 he cites the fractions of CO₂ due to microorganism and root respiration. On p. 182 he tabulates, from Hungarian data, suctions exerted by plant roots (sudagrass 11.1 atmospheres, the least; rye 29.5-34.5 atmospheres, the most). On p. 479 he gives the increased earthworm populations resulting from various fertility treatments. The interrelation between soil life and soil properties is stressed. I have found this a readable and refreshing book. It has opened my eyes to recent European soil science progress and practice. I recommend it to my colleagues. I shall recommend it to my students to meet their German language requirement and to learn European Soil Science.—Don Kirkham, Iowa State University.


This book is divided into four parts. Part I provides the user with the basic information on the role and effects of the individual