Book Reviews

ADVANCES IN AGRONOMY. VOL. II


The second volume of the series on Advances in Agronomy continues to maintain the high standards established in the first volume. Specialists in their respective fields have prepared topics dealing with cotton, soil nitrogen, vegetable production, prairie soils, Ladino clover, soil water, preservation of forage crops, coal mine spoils, and irrigated pastures. The chapter on cotton presents fiber properties, the competitive position of cotton among fibers, physiology of the plant, diseases, insect pests, and improvement through production practices, ginning methods, and breeding. The review of soil nitrogen includes factors affecting the nitrogen content of soils, nitrification, nitrogen fixation, commercial nitrogen vs. manures, and nitrogen trends in the United States. The chapter on vegetable production includes the development of new varieties, fertilization, and various techniques for growing the crops including the use of hormones for fruit set and herbicides for weed control. Prairie soil genesis, classification, and distribution are outlined and changes resulting from cultivation are reviewed. The characteristics and adaptation of Ladino clover, and the various factors affecting establishment and management are discussed. The basic concept of the soil moisture characteristic and of soil permeability is presented. These fundamental principles of soil moisture are discussed in relation to the control of soil moisture through irrigation and drainage. Problems in preserving and storing forage crops are discussed and the advantages and disadvantages of silage making, field curing, barn drying, and artificial drying are presented. The reclamation of coal mine spoils is discussed primarily in relation to the various factors affecting plant growth and land use. Pasture irrigation for arid regions is discussed and recommended practices are outlined. A list of references follows each chapter. This book would be a valuable addition to any agronomist's library. — R. R. Robinson.

SOIL CONDITIONS AND PLANT GROWTH


The eighth edition of Soil Conditions and Plant Growth has been issued in revised form by E. W. Russell. The earlier editions of the book, the first of which was published in 1912, were by Sir E. John Russell, until 1943 the director of Rothamsted Experimental Station.

Among changes listed in the new edition are enlargement of those sections on soil organisms, soil water, soil structure, and principles of soil management. The present author writes that he has purposely used the words calcium, magnesium, potassium, and sodium instead of lime, magnesia, potash, and soda, and in consequence has expressed all chemical analyses in terms of the simple cations and not of the oxide.

The book treats in comprehensive form many developing concepts about soils, which have been taking shape in recent years. It is a college level text, prepared for the student and also for the scientific farmer. It is well documented: the literature citations are printed as footnotes at the bottom of the page on which they appear. The author has conducted original research. After a general introduction the history of plant pathology is traced from biblical times to present day trends. Terminology is presented in relation to environment affecting storage and transit and to causation by soil- and air-borne pathogens. The next chapter deals with parasitism showing the interaction of suspect and host. The last three chapters consist of discussions on control through exclusion and eradication, protection, and host resistance. — J. H. Graham.

PLANT PATHOLOGY


One of the men best qualified to write a text on plant pathology has done this with the thoroughness one would expect. The book is a text planned for the basic course in plant pathology. Representative diseases are well illustrated and treated comprehensively under the following topics: symptoms, causal organism, disease cycle, control, and references. Many of the diseases described are among those with which the author conducted original research.

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MYCOTROPY IN PLANTS


The book is a review of pertinent literature on mycorrhizae and related structures. The content is carefully selected and presented in a well organized manner. Frequent interpretations and opinions by the author are given. A list of 12 lectures includes the history and distribution of mycorrhizae and the types of hosts plants and fungi involved. Physiology of the mycorrhizae also are discussed in the book. theories of mycotrophy. An extensive bibliography of over 500 citations is included. It is of particular interest that the crop plants are mycorrhizal as well as most forest trees. The author trusts that this book “may serve to show mycotrophic habit.” — J. H. Graham.

FINANCING THE FARM BUSINESS


The purpose of this book is to outline the principles of farm financing and to describe the characteristics of principal institutions that are the source of agricultural credit. An attempt is made to accomplish this objective from the viewpoint of a young farmer in 14 chapters on principles and types of commercial credit. The chapter on transferring the farm business from father to son is of prime importance since there are many such assignments of sound lease are welcome addition to the subject. The authors have been somewhat overambitious, in attempting to cover so many topics. Consequently some have suffered from brevity, while others have been overemphasized. — J. H. Graham.