BOOK REVIEWS

The Entry of Fission Products into Food Chains

This hard-bound volume is a collection of reports on the biological studies made with fission products from atomic weapons trials held in Australia in October 1956. A paper-bound edition was published by the United Kingdom Atomic Energy Authority in May 1959 as Report No. T 37/58 of the Atomic Weapons Research Establishment. The present volume is unchanged except for the addition of two short reports on studies with fission products from a megaton weapon fired at Christmas Island in 1957.

The studies include measurement of the retention of fallout on grass and legume vegetation, distribution of individual fission products in ruminants, sheep, and dairy cattle, and excretion of fission products in cow's milk. Calculations of radiation dosage absorbed by cattle, turkey, and skeleton are illustrated.

The reports are not well coordinated and the book would have gained much in readability from a more detailed introduction and more rigorous editing to eliminate repetitious material from the individual reports. The individual reports give original data and adequate description of the methods used. These reports are valuable source material for specialists concerned with biological effects of radioactive fallout.—RONALD G. MENZEL, SWORD, ARD, USDA, Beltsville, Md.

pH Measurement and Titration

This book contains practical discussions of problems of interest to all who measure pH values. The first two chapters contain a review of the basic theory of the nature of solutions and the definition of pH and the other 13 chapters deal with problems of measurement. Theoretical and mathematical treatments are used only as needed to help the reader understand the likely errors and limitations in using various types of equipment. Discussions of value to research workers in soils and agronomy are: buffer solutions, colorimetric methods, glass electrodes and reference electrodes, liquid junctions, pH measuring instruments, E. M. F.-temperature characteristics of pH cells, techniques of buffer standardization of pH meters with glass-electrode assemblies, and pH titrations and automatic pH titrations. Two chapters that might be of little value to soils and agronomy specialists deal with industrial pH measurements and automatic pH control. Although these may be of interest to fertilizer technologists, they are specialized for a text in courses in soils or agronomy, it would be a valuable reference book for a departmental or personal library. The teacher of soil chemistry will find it a help in preparing lectures and discussions.

The author has used the sign of electrode half potentials according to the European system and most of the materials used for examples are products of Great Britain. These factors, however, do not represent a serious problem in the use of the book.

—PARKER F. FRATT, Citrus Exp. Sta., University of California, Riverside.

Soil Erosion by Wind and Measures for Its Control on Agricultural Lands


The reviewer found this book to be a scholarly and thoughtfully presented text. The kinetics and energetics of wind erosion and its control. Lest this frighten the reader, it is hurriedly added that it is interesting reading and study material that can be easily understood by both the technician and layman.

This authoritative and rather comprehensive book was prepared by the staff of the Agricultural Engineering Branch, Land and Water Development Division of the Food and Agricultural Organization of the United States. The final draft was written by a consultant, Dr. J. S. Robins whose regular assignment is with the Soil and Water Conservation Research Division, AHS, USDA, Fort Collins, Colo. In addition, credit is given to other research scientists who are specialists in the field of wind erosion control. Material was supplied by the Agricultural Research Service of the United States, by the Soil Conservation Authority, Victoria, Australia, and by various field officers of FAO.

Considering the rather complicated mechanisms of soil movement by wind, the author has done a good job of keeping the discussions simple and to the point. The causes of wind erosion and control methods are well stated and illustrated. Readers with only a small knowledge of soils and wind erosion can profit by studying the book.

The book contains six chapters with short, concise and descriptive titles. The processes of soil erosion by wind is covered in one chapter. Measures of wind erosion control including an excellent treatment of the role of various conservation practices in a wind erosion control program occupies the second chapter. A discussion of soil erosion in lesser developed countries gets a chapter. Another chapter includes a short dissertation on legislative and collective action to control wind erosion. Finally, one chapter is devoted to a summary which lists in a comprehensive way the soil and plant management principles which are necessary to a successful wind erosion control program regardless of where in the world the problem exists. In addition, there is included a rather exhaustive list of references bearing on the problem.

The reviewer believes that the principles of wind erosion control described in this booklet must be adhered to if wind erosion is to be controlled. The more nearly the needed related or complimentary control measures are integrated and fitted to the needs of the particular soil for a given wind erosion situation, the more nearly will the destructive forces of the wind be kept under control.

This book provides a good working knowledge of wind erosion and its control to anyone who reads it. It would be a good addition to the library of any technician working with wind erosion and should constitute excellent reference material for teaching this aspect of soil conservation. It covers the field well and in a rather simplified manner.—D. G. CHANG, Soil Conservation Service, USDA, Fort Worth, Tex.

Potassium Symposium 1960: Potassium in the Animal Organism


The proceedings include the 13 papers and formal discussions presented in the four working sessions of the 1960 symposium, together with several short communications from other research workers. Approximately half of the formal papers are in English, with the remainder in French or German. Most papers include an extensive bibliography and a summary in four languages, English, French, German and Spanish.

The first section of the proceedings (opening session) contains the introductory address by the congress chairman, together with short discussions by Netherland's officials on the agriculture of that country and the nature of agricultural advisory services.

The function of K in the normal animal organism is the theme of the second section. The physiological significance and biochemistry of K are discussed. Although the paper dealing with the distribution of K in different tissues, organs, and fluids of various animal species is entirely in French, without benefit of English summary, the numerous tables and extensive bibliography make it an important contribution. Discussions on the role of K in various physiological processes lead to the general conclusion that cellulae K is largely present as free ions. Various theories are advanced to explain the preferential absorption of K by cells against a concentration gradient. The importance of K in activating numerous enzyme systems (where Na often is inhibitory or has no effect) is outlined.

Papers and communications constituting the third session of the Congress deal with disorders linked to K deficiency or (continued on page vi)