BOOK REVIEWS, continued

De Brabantse Biesbosch: A Study of Soil and Vegetation at a Freshwater Tidal Delta

The Dutch Text (Vol. B) apparently carries on an extended discussion of all material relative to this study. The English text to which this review is confined was intended to be a summary of the book. It was apparently further shortened due to publication costs. For this reason the English summary will be difficult for those who do not already have considerable background in the subjects discussed.

The study of geological, pedological and ecological factors of a typical Dutch landscape have been approached with ambition and scholarship. Active geomorphological processes are described in many of the pictures. As it is of stratigraphy, sedimentation and erosion are discussed in relation to landscapes. Pedologists and conservationists who have given some thought to dealing with the soils which are to be flooded and drained will be interested in the formula for subsidence. The author has shown evidence to distinguish between fresh water and marine sediments by their particle size distribution. Material relating to ecology in addition to description of physical environment referred to above includes vegetation maps, plant community descriptions and photographs of many of them. Also, sequence photographs of a developing area are shown. The many supporting maps and graphs represent much work and carry considerable information.

Volume A has been translated into English and too often retains Dutch word order. In this respect it is not up to the standard of comparable publications from the Netherlands.

John F. Fleming, SCS, USDA, Beltsville, Md.

Rapports Du Sol Et De La Vegetation

It is well-known that edaphic factors influence the nature of the vegetation growing on a particular site; it is also realized that vegetation plays an important role upon the formation and nature of soil. The First Symposium of the Societe Botanique de France, held in Paris in June 1959, met to consider these inter-relationships and bring about an exchange of views and ideas between agronomists, pedologists and botanists. This book contains the papers of 36 contributors to the Symposium, as well as the comments offered by those attending.

The papers have been grouped under the following headings: influence of vegetation on soil formation processes, influence of vegetation on soil conservation, influence of vegetation and soil organic matter on fungal and bacterial flora, influence of soil on plant associations, influence of toxic salts on vegetation, and influence of soil on volunteer and cultivated plants. The majority of papers draw upon semi-tropical and tropical regions for the examples and situations discussed, although a few deal with situations encountered in metropolitan France.

This book will be of interest to the advanced student of plant-soil relationships; however, the major emphasis of the contributors has been placed on those relationships existing between natural vegetation and warm-climate soils, limiting its value to the student interested in vegetation-soil relationships in temperate and other climates. - Henry A. Fishbourg, University of Tennessee, Knoxville.

The Australian Environment, 3rd Edition

This book was prepared originally by the CSIRO in Australia for the benefit of delegates to an agricultural conference held in Australia in August 1949. Its purpose at that time was to provide delegates with some understanding of the history and present stage of development of the agriculture of Australia and its environmental background. The present third edition was prepared under the general supervision of Professor C. W. Looper to meet a continuing demand for this informative volume.

The book contains chapters on the physical geography, climate, soils, and natural vegetation of Australia as well as chapters on the development of agriculture, water and irrigation, pastures, and animal husbandry. There are many enlightening maps, figures, and photographs. The book represents a happy compromise between an easily readable account of the Australian environment and a reference volume with many useful statistics on climate, soils, vegetation, and agricultural activities. For the reader who wishes to inform himself further, some selected references are appended to each chapter. A subject index will have increased the usefulness of the book as a reference source. This volume is highly recommended for those who are about to visit Australia or for agricultural scientists who would gain a better understanding of reports on Australian research if they were more familiar with the background and environment of the work.

-C. H. M. van Bavel, USDA, Water Conservation Lab., Tempe, Ariz.

Toxic Phosphorus Esters

This book will be of interest to agriculturists, physiologists, biochemists, and scientists engaged in the area of chemical warfare. It is intended to serve two functions: a reference book on organophosphate research and to show how our understanding of the events that follow organophosphate poisoning of animals can be understood in terms of events at the molecular level. The author considers his book to be a summary of the first phase of organophosphate research; a phase which will permit a more sophisticated approach to the whole question of organophosphate action.

The book has been carefully organized into sections on Nonenzymatic Reactions, Reactions with Cholinesterases in Vitro, Enzymic Degradation and Activation in Vitro, Effects on Isolated Whole Tissues, Effects in Mammals, Insects and Plants, and Selective Toxicity and Techniques. Each chapter is followed by a very extensive list of references and an author's index for the entire text is included. Two appendices are included: Electronic Interpretations, and Structure of Organophosphates. The former will aid the reader in understanding the action of these compounds in the living plant and animal. The latter is simply a convenient summary of many of the organophosphorus compounds.

A very good discussion of several analytical methods and the problems involved in their use is found in the techniques section. In most cases, the reader is referred to original articles for exact details.

The chapter of most interest to agronomists is on 'Effect in Plants' in which the author gives a very brief discussion of systemic activity, considerable discussion on metabolism of these compounds in plants, a tabulation of sources of residue data on plants and plant parts and a brief treatment of phytotoxicity.

Entomologists will be interested in the chapter on 'Effects in Insects.' This includes considerable detail on the results of poisoning, such as, the inhibition of cholinesterase and the accumulation of acetylcholine. There is also a section on ovicidal action and distribution of the organophosphates in the various insect tissues. In addition to the detailed discussion in the section on enzymic degradation and activation in vitro, this chapter also discusses metabolism in vitro. Resistance to these compounds and antagonism and synergism are also discussed.

A large part of this text is devoted to effects of organophosphates in mammals. The book, therefore, will have broad application in many areas of biological endeavor in peace and war. Many specific compounds are treated separately in this chapter as well as in the section on plants.

The text is abundantly supplied with tabular and graphic data and, where possible, equations are given showing metabolic pathways and degradation products. In general, the author has performed an excellent service in bringing together a large number of references in a very specialized area of endeavor.

For chemists and physiologists, the book will be of considerable value and easily readable by those who may not have limited use by agronomists. - Charles F. Eno, University of Florida, Gainesville.