

This book is exceptionally well produced and should appeal to all who have an interest in nervous mechanisms. The features one hopes for in a conference report of this kind are all present and include abstracts of chapters, author and subject indexes, full bibliographies and coverage of the discussions which followed each section of the conference.

J. F. MITCHELL

MONOGRAPH ON NORADRENALINE

The Uptake and Storage of Noradrenaline in Sympathetic Nerves

By Leslie L. Iversen. Pp. xiv + 253 + 8 plates. (London: Cambridge University Press, 1967.) 57s. 6d. net; \$11.

DURING the past decade there has been a remarkable increase in our knowledge concerning the neurotransmitter, noradrenaline. This development has been stimulated by the availability of specific and sensitive methods for the isolation and measurement of noradrenaline in tissues. These include the introduction of radioactive catecholamines of high specific activity; new histofluorescent techniques that make sympathetic nerves visible; and the sophisticated use of drugs that affect the adrenergic system. Thus, contributions have come from a variety of disciplines, including biochemistry, pharmacology, physiology and anatomy. In this monograph Dr. Iversen gives a lucid, informative account of our current knowledge of the formation, uptake, storage, release and metabolism of noradrenaline in peripheral sympathetic nerves, as well as in the central nervous system.

The first portion of the book describes the methodology for the chemical estimation of catecholamines, the pathways and enzymes involved in their biosynthesis and metabolism, the release of noradrenaline from nerves and its subsequent fate. A considerable portion of the remainder of the book deals with a newly discovered process which causes the rapid inactivation of the adrenergic neurotransmitter by uptake across the neuronal membranes and storage in vesicles within the sympathetic neurone. The uptake and release of noradrenaline in nerves and the action of adrenergic drugs are described in considerable detail. The author is very knowledgeable in this subject and he has made many of the significant contributions. Recent work on the exciting topic of the localization, storage and release of noradrenaline and other biogenic amines in the central nervous system and the effect of psychoactive drugs is described in the last chapter.

In this book considerable controversy is generated by conflicting theories, as is the case in most rapidly emerging fields of research. Dr. Iversen handles controversial questions critically but fairly, and places them in proper perspective. This monograph is concerned with an important problem in the biomedical sciences, and it should appeal to the general reader as well as the specialist.

JULIUS AXELROD

PARASITIC PROTOZOA

Malaria Parasites and Other Haemosporidia

By P. C. C. Garnham. Pp. xviii + 1114. (Oxford: Blackwell Scientific Publications, 1966.) 175s. net.

STUDENTS of the malaria parasites and other haemosporidia have depended on Wenyon's *Protozoology* as an indispensable guide for four decades. In the meantime, knowledge of these parasites has increased tremendously and a great need has developed for a modern book of comparable depth and quality. This book admirably fulfils the need with respect to the haemosporidia. It deals primarily with protozoology in both vertebrate and invertebrate hosts; clinical aspects, epidemiology, im-

munity and pathology of malaria are discussed when they have a direct bearing on the parasites.

Part I is a general review of the discovery of malaria parasites, their life cycle and morphology, classification and evaluation, and biochemistry. Part II, on the Plasmodiidae, starts with taxonomy, in which the mammalian parasites are divided into the sub-genera *Plasmodium*, *Laverania* and *Vinckeia*. It continues with detailed descriptions and illustrations of each mammalian species. The avian sub-genera *Haemamoeba*, *Giovannolaia*, *Novyella* and *Huffia* are reviewed next, and the species of avian parasites are described. This part of the book is completed by a review of the reptilian sub-genera *Sauramoeba*, *Carinamoeba* and *Ophidiella* along with descriptions of the species of parasites known in lizards and snakes.

Part III, on the Haemoproteidae, includes *Hepaticocystis*, *Haemoproteus*, etc., and Part IV discusses and describes species in the family Leucocytozoidae. Malaria parasites of doubtful status are reviewed in Part V. The final part of the book is a quite detailed description consisting of sixty-five pages of technical procedures for use in the identification of malaria parasites and studies of their life cycles.

The morphology and staining reactions of the parasites are presented in numerous coloured plates of excellent quality. Extensive reference to the literature is made throughout, which results in a useful but understandably incomplete bibliography on each subject. Taxonomy is traditionally controversial and some authorities may not concur fully with the author's decisions.

The volume is recommended as a reference book for malariologists, protozoologists and others concerned with the laboratory diagnosis of malaria, as well as a text-book for students of parasitology.

PAUL E. THOMPSON

PLANT MALADIES

Annual Review of Phytopathology

Vol. 4. Edited by James G. Horsfall in Association with Kenneth F. Baker. Pp. vii + 423. (Palo Alto, California: Annual Reviews, Inc., 1966.) \$8.50.

THIS volume, which follows the format of its predecessors, contains sixteen articles which between them cover a wide field of phytopathology. Dixon Lloyd Bailey, in an introductory chapter assessing the present position of plant pathology, detects an increasing trend among pathologists to escape from the rigid boundaries of established disciplines, and he welcomes the development of an awareness and willingness to apply relevant discoveries in pure science. Few would disagree with him. E. C. Large reviews disease measurement, particularly in Britain. Grogan and Campbell contribute an article on fungi as vectors and hosts of viruses. In addition to the now established relationship of lettuce big vein and tobacco stunt viruses with *Ospidium brassicae*, they suggest that tobacco necrosis may also prove to have a connexion with this fungus. The evidence for the possible association of cereal viruses with *Polymyxa graminis* is reviewed. The present volume also contains articles on chemical soil treatments by S. Wilhelm; virus transmission in woody plants by R. W. Fulton; air pollution in plant pathology by J. T. Middleton; pectic enzymes in tissue degradation by D. F. Bateman and R. L. Millan, and sections on host-pathogen interactions. These include epidemiology, by J. E. Crosse and K. F. Baker, and S. H. Smith, the action of toxicants—a paper on synergism among fungicides by Anna Scadavi—and chemical control—amino-acids and plant diseases by O. M. van Andel. The action of oil in disease control is discussed by L. Calpouzos, who presents a critical evaluation of experimental results, both published and unpublished, on the value of oil sprays in the control of plant