not the author personally believes in such things as low-temperature leaks. The diagrams of actual apparatus are often too schematic to be of great use; for example, the transfer tube and valve on pages 53 and 55, of the design of both of which I disapprove. There is a mention of the use of spontaneous oscillations as a means of liquid level indication, but no description of this odd phenomenon nor any warning of its often annoying and occasionally horrifying effects.

All of those are, however, minor criticisms. The book contains a mass of useful cryogenic information. Generally it gives highly commendable critical comparisons of various experimental methods, such as those used in calorimetry, and for the first time collects really valuable critical data on emissivities and on total thermal conduction and expansion coefficients between room temperature and 1° K.

J. F. ALLEN

A BIOCHEMIST'S GUIDE TO THE NERVOUS SYSTEM

Biochemistry and the Central Nervous System

By Prof. Henry McIlwain. Second edition. Pp. vii+288. (London: J. and A. Churchill, Ltd., 1959.) 45*s*.

IT is a considerable achievement for Prof. McIlwain to have produced a second edition of his book (already translated into Spanish and Japanese) in such a relatively short time. The need for a new edition is some indication of the rapid increase in our knowledge of the biochemistry of the nervous system to which the author and his colleagues at the Maudsley Hospital have made valuable contributions.

The layout of this book follows the previous pattern though there have been extensive revisions and additions. There is, for example, a new chapter, which is very much to the point, on the relation of the brain to the body as a whole, and the section on brain lipids has been considerably modified in the light of recent observations. Knowledge of the metabolism and functions of proteins in the brain is still somewhat limited, but until Table 6, on the chemical nature and diversity of brain proteins, can be extended it is likely that progress on this particular aspect will be slow. I was again impressed by details given about the rates of chemical reactions in brain and their relation to the speed of cerebral processes, information which is becoming more valuable as it becomes more extensive.

Much useful information is summarized in diagrams and tables (Fig. 34 and Table 28 are instances of this). It is perhaps significant that one of the column headings in Tables 8 and 9 has been changed from "acid-labile phosphate of adenosine triphosphate" to "acid-labile phosphate of purine nucleotides" in the second edition, thus indicating that the free nucleotide content of cerebral tissues is more complex than had previously been indicated.

The chapter on chemical factors in nervous transmission is an extremely able résumé of a mass of information, and some indication of the speed at which this subject is developing can be deduced from the fact that references to the possible role of γ-aminobutyric acid as a pharmacologically active agent are all dated 1955 or later. Biochemical aspects of the action of depressants and excitants receive their due, and in view of the current multiplication of drugs this summary is of some considerable value. Perhaps the one surprising omission in the book is an appraisal of the extensive work of Geiger and his colleagues on the metabolism of the isolated, perfused brain *in situ*.

Elsewhere the author of this volume has remarked, "Until the central problems of neurochemistry have been successfully tackled and we see more clearly how the nervous system utilizes its large energy supply in nervous transmission and in maintaining the system in a state of readiness to react, and how the brain is moulded to an animal's experience, chemical aspects of most of the neurological sciences—and above all, material approaches to nervous, mental and emotional diseases—remain as empirical as was organic chemistry before the advent of structural formulæ". If this book promotes further studies on this intriguing but complex subject then we shall all have been well served. Indeed, it can be recommended to anyone who wishes to learn something of the biochemical processes underlying nervous activity and the relevance of these processes to a study of mental diseases. A comprehensive bibliography at the end of each chapter and, for a book of its size, a monumental index, make it an extremely useful handbook in a field where suitable handmaidens are hard to come by.

G. B. ANSELL

FAUNA OF NETHERLANDS NEW GUINEA

The Animal World of Netherlands New Guinea

By Dr. L. D. Brongersma. Pp. 71. (Groningen: J. B. Wolters, 1958.) n.p.

THE island of New Guinea remains little known to the majority even to-day, and its fauna has received little attention through television or in popular published work. It is one of the remaining major areas in which new zoological discoveries are likely to be made and is a region as yet little touched by commercial development. Its animals, despite their affinities with Australia, are unique and much work remains to be done before they are fully surveyed. Geographically, the island and its outliers form the most western extension of the Sahul shelf, and the study of the fauna is vital to the zoogeography of Australasia. For these reasons the publication of a semi-popular account of the fauna of New Guinea is both timely and welcome. Dr. L. D. Brongersma has produced an interesting and factual book, based on his radio talks on the subject. Written for the layman, the book is concerned with the novel and unusual, but also contains much of interest to the specialist. Notable peculiarities among mammals, birds, reptiles, amphibians, fish and crustaceans are described, with notes on their habits, ecology, economic value and sometimes history. The text is enlivened by field observations, line drawings and photographs. The author stresses the need for nature conservation in New Guinea, with emphasis on the dangers of uncontrolled commercial development and ill-considered introduction. A short chapter and a map of the Sunda and Sahul shelves give a background to the origin of the fauna, and the book concludes with a useful account of the zoological exploration of New Guinea. The author, whose aim was to encourage interest in the fauna of New Guinea and its conservation, has written a thoroughly readable account of the novelties and notable animals of the island.

J. E. HILL