

their subsequent return to normal behaviour under "treatment".

A. SPENCER PATERSON.

Le Basi Fisiche dell'Energia Nervosa e del Pensiero. (The Physical Bases of Nervous Energy and of Thought.) By GIACOMO PIGHINI. Parma: Battei. 1959.

The author, who will be 90 years old this year, is a prolific writer with over 200 publications to his credit between monographs and shorter papers. He has published also a number of substantial books, some of them well in advance of current thought at the time, such as, for example, one on *Brain Biochemistry*, which was published in 1915. The interests of Pighini are very wide, as documented in a number of biographical books (on Spallanzani in 1929, on Napoleon in 1938, on Galileo in 1948, on Verdi in 1951). The present book of some 330 pages is arranged into four main portions and an epilogue. The author was already 83 years old when this book appeared in print and it is remarkable how up to date the wide reading of Pighini must have been. The main thesis is that thought processes cannot be separated from other type of better known physiological activities. The brain should be considered not only as the organ through which thought can be expressed, but also as the site of mental processes. In spite of the fact that this book must have been prepared well before 1959, when it appeared, the author gives appropriate importance to "macro-molecular structures" as the basis of various kinds of biological processes of which thought is an integral part. A very large number of quotations ranging from the Bible to Spallanzani, from Pavlov to Locke, from Peters to Balzac, from Darwin to Goethe, and from Shakespeare to Sherrington, are given as a running commentary to biochemical explanations.

The main chapters, however, are not only down to earth, but nicely written and with a great deal of information from various fields. In the first part the biophysical foundations of nervous and mental activities are discussed, and the title of the first chapter is "The mind is a function of the brain". Other chapters include "The shape of molecules and their function in living tissues to which they participate"; "Relationships between the structure of nervous elements and the conduction velocity of the stimulus"; "Bioelectrical transmissions in plants"; "The chemico-hormonal relations and the nervous system"; "The unity of ends and means in the fundamental functions of life"; these are all part of the first group of chapters. The second group goes under the heading "Anatomo-physiological

mechanism of sensory and thought processes". The third group covers "The evolution of nervous structures in relation to psychological development" and a large amount of data is presented in terms of comparative physiology, comparative psychology and developmental processes. The fourth group goes under the title of "The organic basis of comparative psychology" where, for example, the early studies on hemispherectomy by Krynauw (1950) are quoted appropriately, though so often forgotten in the English literature.

In conclusion, although the book gives the impression of being rather diffuse and somewhat rambling on occasions, it contains a great deal of well-digested and integrated information on comparative biology, psychology, biophysics with more than a sprinkle of philosophy and poetry. The book is well written and the large number of quotations are listed at the bottom of each page. The misprints are not too many considering that the price of the book is only about 23s. at the current rate of exchange.

G. PAMPIGLIONE.

Introduction to Psychology. By JAMES O. WHITTAKER. Philadelphia and London: W. B. Saunders Company. 1965. Pp. 631.

This is another American textbook of psychology covering a very wide field and profusely illustrated. It is accompanied by a student work book which contains objective type questions to test his understanding of the text. Intensive competition in this field has led to a high standard of excellence, and this book is no exception; I would rate it superior to most in general arrangement, comprehensiveness, up-to-dateness, and intelligibility. Unfortunately, it has certain defects, also common in American textbooks, precisely in those areas which are of most interest to readers of this journal, i.e. personality, mental illness, and intelligence. These defects take various forms which can only be briefly illustrated. One is their lack of scholarship, which would not be tolerated in other chapters. As an example, Whittaker attributes to Jung the view that all people are either extraverts or introverts. Even a cursory reading of Jung of course makes clear that he held a very different view. Such an error may not seem important, but the reader may like to imagine what he would feel if Whittaker had attributed the four-colour theory to Helmholtz and the three-colour theory to Hering! No textbook writer would be allowed to get away with such an error, but they have been getting away with the same misinterpretation of Jung's view for the last 30 years. Another

characteristic of the personality chapters which contrasts them unfavourably with the rest of the book is the failure of the author to be up to date. In relation to twin studies, for instance, the tired old Newman, Freeman and Holzinger book is quoted but no mention is made of Shields's much more important recent monograph. Again this would not be allowed to happen in any of the "hard core" chapters. A third criticism is that selection of material often seems to be based on popularity rather than scientific value, thus Sheldon's body types are given considerable space (without any mention of the telling criticisms of Ekman and others) but no mention is made of the much more securely based factorial studies of Burt, Rees and others. Unfortunately the writer, in falling into these errors, is only following what has become customary in American textbook writing, and in judging his book, as compared with others, this should be borne in mind; on an overall judgment Whittaker still comes out comfortably ahead of most other textbook writers.

H. J. EYSENCK.

Subcortical Mechanisms of Behaviour. By ROBERT A. McCLEARY and ROBERT Y. MOORE. New York and London: Basic Books, Inc. 1965. Pp. 148. Price 18s.

This book is the first of a series of projected volumes dealing with "Basic Topics in Psychology", published under the editorship of Edwin G. Boring. The stated aim of the series is to provide a series of books dealing with specialized topics which will supplement the many general textbooks at present available.

Until recently, study of how the brain handles complex behaviour has been concentrated on its uppermost covering, the neo-cortex. Recent experimental data now suggest, however, that the "primitive" subcortical portions of the forebrain can handle much more complicated information than was supposed even a few years ago. This present book offers what is perhaps the first cohesive synthesis of what is now known about the behavioural contributions of these primitive portions.

All parts of the brain, excluding the neo-cortex, can qualify as subcortical structures. There are thus hundreds of brain centres and nerve pathways which merit consideration. However, the authors have restricted their attention to four main subcortical areas or systems: the hypothalamus, the ascending reticular formation, the reward and punishment zones, and the limbic system. They justify this selection on the grounds that it is these four structures in particular which have been the objects of greatest research activity in recent years.

Following an initial description of the anatomy of these four subcortical structures, subsequent chapters deal with (a) the hypothalamus as it is concerned with the regulation of eating, drinking and mating; (b) the reticular formation as concerned with wakefulness, attention and consciousness; (c) subcortical mechanisms of reward and punishment; and (d) behavioural contributions of the limbic system as demonstrated by the effect of limbic lesions on emotionality, fear-motivated behaviour, and on complex behaviour and memory.

Intended readers of this book are advanced undergraduate and graduate students. It is well written, and apart from an occasional failure to define terms adequately, is easily understood. It would provide an excellent supplementary textbook for an undergraduate course in Physiological Psychology, and could also provide psychiatrists and others with a concise account of our present understanding of how the brain mediates behaviour. Although the publishers claim that books in this series will be suitable for what they term the "intelligent layman", this is clearly not the case in this instance, where a prior knowledge of the rudiments of brain structure and function would be essential for an adequate understanding of the text.

T. R. WILSON.

2. PSYCHO-ANALYSIS AND PSYCHOTHERAPY

The Maturational Processes and the Facilitating Environment. By D. W. WINNICOTT. London: The Hogarth Press and the Institute of Psychoanalysis. 1965. Pp. 295. Price 42s.

Here, under a rather forbidding title, are gathered twenty-three papers written between 1957 and 1963, on child development, parent-child relationships, and psycho-analysis. Since the argument in most of the papers is complex, intricately theoretical and speculative, the book is perhaps less likely to appeal to eclectic workers in the field than the same author's writings on the more practical and prosaic aspects of child life and development; but those deservedly popular works are all listed in an excellent bibliography appended to this book.

However complicated and involved his expositions, however doubtful the relevance of some of the case histories cited to the subject under discussion, Dr. Winnicott remains a stimulating and convincing writer with a style that can crackle and fizz. Since he excels in understanding the interplay between the young child's experience of the world and the