Book reviews

THE DENERVATED MUSCLE  Edited by E. Gutmann. (Pp. 486; 152 figures. 60s.) Prague; London: Collet's. 1962. The work of this group of physiologists in Prague is well known and much admired. In recent years most of their studies have been published in Czechoslovak journals, so that this monograph (with 10 contributors) is particularly welcome and valuable.

The effect on muscle of losing its nerve fibre sets in action a series of complicated metabolic changes: Dr. Gutmann and his colleagues see in these changes an opportunity to investigate a number of fundamental biological problems and these they pursue with vigour and originality. One of the most startling observations is that denervated muscle has a higher oxygen consumption than has normal muscle. There are also many unsolved problems concerning the fibration of denervated muscle.

From the clinical point of view the treatment of denervated muscle with electrical stimulation, though reported to be effective, is based on the wholly inadequate and naïve idea that muscle atrophy is but the result of inactivity. The authors finally suggest that one of the effects of the motoneuron on muscle may be neurosecretory. This is a clear presentation of a series of original contributions to a most important problem.


The traditional concept of sensory receptors as specialized structures adapted solely for the purpose of receiving stimuli and transmitting them to nerve fibres was shattered by the discovery that muscle spindles are themselves under central control, and are not merely passive recipients and transmitters of information. As Professor Granit says in the opening contribution to this symposium, which was part of the Golden Jubilee Congress of the University of Hong Kong, 'the study of muscle spindles as organs under direct efferent control has given us a totally new picture of the problem of muscular tone, and thrown new light on that of motor regulation'. So much work has been stimulated by this discovery that even those working in the field find it difficult to be informed on every aspect. In this symposium a variety of workers with the common interest of the muscle spindle have been drawn together to exchange views.

Contributions on the structure of muscle spindles and related receptors and their distribution in muscle are here. Their electro-physiological characteristics under stretch, and their control from both spinal and supra-spinal levels are considered. Some pharmacological aspects of their activity are also included. Problems are posed, and questions which it is hoped future work will answer are set.

The production and illustrations are excellent. The book will be invaluable to those interested in this field.


The subject matter of the conference from which these papers are published was well chosen, for the problems of intercerebral hemisphere relations have in recent years become one of the chief subjects for brain research. The corpus callosum was for long considered to be an unimportant structure but now it has been proved that it is essential for the transfer of learning from one hemisphere to the other. Many of the problems of cerebral dominance in man are still to be solved, but this unique human situation allows of some special types of inter-hemisphere testing which are only beginning to be exploited. Those who are interested in this problem will find some stimulating contributions in this volume.


It is a pleasure to welcome another edition of this book. The text has been somewhat enlarged, and a bigger format has been adopted which makes the book easier to read without being too large to handle. Those sections to which new material has been added include those on neuropathy and myopathy associated with carcinoma, on coma due to metabolic and endocrine disorders, on muscular disorders due to thyroid disease, and to the neurological aspects of collagen disease. These subjects are closely related to general medicine, and their importance in neurology illustrates again both the dangers for the neurologist if he keeps apart from his general medical colleagues and the contributions he can make if he works with them.


Coma in the last resort must always be due to an upset of cerebral cytochemistry. However, there is often a very wide gap between our detailed knowledge of cell chemistry and the clinical factors which appear to cause coma. In this short book the authors outline the known biochemical mechanisms on which normal functioning of cerebral neurones depend and attempt to relate them to some clinical states. They begin by stating that two basic causes of coma at cell level must be either interference with oxygen or substrate supply or interference with enzyme systems required for utilization of oxygen or substrate. This seemingly simple analysis in fact involves a considerable complexity of additional interlocking factors, and some of these are considered in more detail. It is probable that most comas are of multiple aetiology, as the authors recognize. Interference with enzyme systems, each with its own variety of necessary catalysts,
is a wide field for investigation but the links with the clinical state (except in a few cases such as Wernicke's encephalopathy, pellagra dementia, or the coma of subacute combined degeneration) are largely speculative. This is illustrated by the chapter on therapeutic principles. The book will be of value to all those dealing clinically with cases of coma, not so much for its practical applicability as for the stimulus it gives to thought about the underlying mechanisms.


There is much current interest in the aims and methods of medical education, and experiments are to be welcomed. But it is doubtful whether the present venture will meet with general commendation. The author considers that students are often in a 'passive state of bewilderment', and to counteract this he opens with chapters on inductive reasoning and the language of empirical science. Whether the graphic and algebraic method of presenting propositions will add to or subtract from their bewilderment is debatable.

In the neurological section there are too many oversimplifications. For instance, the author states that 'a sensory loss which has only one level is a long tract sign; whereas a sensory loss which has two levels is a segmental tract sign'. Likewise, it is asserted that a lesion of the pyramidal tracts does not cause weakness of one movement in a limb while leaving the others strong. Similarly, it is said that if the mouth is strong there is no point in testing the muscles around the eye, because the mouth is weak in both upper and lower motor neurone lesions. This rule of thumb approach is adopted throughout the two volumes and it makes no attempt to utilize the fruits of the two years the student has devoted to the study of anatomy and physiology. The modern trend is to relate preclinical studies more closely to clinical work; the approach outlined here will operate to the contrary.


Dr. Williams has chosen a team mostly of young neurologists for this volume and the result is in several respects an improvement on the previous volumes. There are 18 chapters, each written by a single contributor, and many of the chapters are concerned with subjects of great contemporary interest.


This publication is a fine testimony to the resurgence of American neurology. Here, with the help of 65 experienced collaborators, we have an up-to-date work of reference which has the special advantage, from the reader's point of view, that the list of contents and the complete index appear in each volume. This greatly facilitates the use of these volumes for reference purposes.

There is something rather depressing to most neurologists in being asked to write a chapter in an enormous book of this kind, and it is remarkable that the standard of presentation is so high. It would be wrong to pick out chapters for praise or for disapproval in such a mammoth work. As must be expected, some chapters are quite brilliant and others are dull and uninspiring, but nevertheless this is a wonderful achievement and the reviewer will be thankful to have these volumes available for reference purposes.

NEUROCIRUGIA LUSO-ESJANOLA Published by the Sociedad Luso-Espanola de Neurocirugia, Valencia. 1961. This is the first volume of a projected annual series of the collected papers presented at the meetings of the Spanish-Portuguese Neurosurgical Society. The papers cover a wide range of current neurosurgical topics, and are well presented with copious references to the literature. They are mostly in Spanish, but some have summaries in English. The general format is excellent but the quality of the reproduction of angiograms and radiographs is disappointing.

This and subsequent volumes are also intended to serve as a registry of the publications and activities of the neurosurgeons in the Iberian peninsula. Neurosurgery has made enormous strides in the peninsula since the war, and this record of progress should interest the many British friends of the Spanish-Portuguese Society.


This book was written as a candidate's thesis for membership in the American Ophthalmological Society. The first chapter, which is a historical survey of the subject, is a typical introduction to a thesis, but once the author begins to describe the work of his own laboratory the book comes to life.

The physiology and pharmacology of the human extraocular muscles, which are both unique in some ways and typical of skeletal muscle in others, are described and compared with those of the extraocular muscles of other mammals. Special attention is given to electromyography of the extraocular muscles, and the physiological basis of this examination and the techniques involved are well described. There are many applications of electromyography not only in diagnosis but also in research. Among the many subjects studied by the author by this method are the innervational characteristics of the extraocular muscles, coordination of eye movements and reciprocal innervation, ocular proprioception, nystagmus, and many of the disorders of the extraocular muscles. Particular emphasis is given to the differentiation of neurogenic paralyses from myopathic or myasthenic weakness.

Isometric myography of the human extraocular muscles is a technical tour de force which the author has developed. It involves the detachment of the selected extraocular muscle from its insertion, and its connexion to a strain-gauge assembly by means of tungsten wire. By stimulating the isolated and sectioned third nerve, isometric twitches and tetani can be elicited and recorded.
by the strain gauge. Though these rather heroic measures give invaluable confirmation of the great similarity of the physiology of the extraocular muscles of the human and the cat, it does not seem to provide much information of clinical value.

This is a specialized book which will give of the greatest value to those interested in the physiology of the extraocular muscles and their clinical disorders.

ATLAS OF ELECTROENCEPHALOGRAPHY MACACA MULATTA

This work records the waking and sleeping E.E.G. activity of the Rhesus monkey from birth to puberty. Forty-seven monkeys were used in the study. Each section is compared and contrasted with similar records in man. The work will be useful as a guide to laboratory workers and will prove an essential source of reference for further comparative work in this field. A standard work on the normal is increasingly necessary as experimental lesions are used to induce what are regarded as specific changes in electrical cerebral activity. It is to be hoped that others will in due course confirm the findings of this atlas.


The reviewer is obliged to comment on this book from the English summary. The study is based on the repeated clinical examination of 133 patients with cerebral tumours (or abscesses) which caused aphasia. Special attention is paid to 'speech inattention' and 'aphasia of recall'. The relationship between aphasia, psychic disturbances, and thought processes is considered. 'In aphasia, thinking suffers because it lacks the instrument . . . by means of which all thinking operations are possible'. The author considers that most left-handers have a bilateral hemisphere dominance for speech.

PHYSIOLOGICAL CORRELATES OF PSYCHOLOGICAL DISORDER

Until quite recently much of what passed for 'psychosomatic medicine' in the United States was compounded of an uneasy alliance between psychodynamic theory and physiological inference. There are signs that this phase is now giving way to a preoccupation with the more fundamental problems of psychophysiological research. Some idea of the range of current investigations can be obtained from this collection of scientific papers presented at an interdisciplinary research conference held at the University of Wisconsin in 1961. While the familiar themes of stress, adaptation, and specificity of response receive their quota of attention it is refreshing to find so much space devoted to method, experimental design, and measurement. Most of the work reported was carried out on human subjects, much of it on healthy people. Indeed, the study of what one contributor calls the 'non-patient' is something of a 'specialité américaine'; in no other country to-day could one find experimental subjects . . . drawn from among groups of males and females (18 to 25 years of age) who, as paid volunteers, lived for periods of several months on the wards of a large research hospital'. The standard of the papers is uneven and none is outstanding. There are several useful bibliographies.

RECENT ADVANCES IN BIOLOGICAL PSYCHIATRY. Vol. 4.


PSYCHOLOGIE IN BIOLOGISCHER SICHT By W. R. Hess.

In this little book the eminent Swiss physician W. R. Hess reviews the rapidly emerging field of what is coming to be called neuropsychology. As we might expect from so distinguished a scientist, the material is presented lucidly and the conclusions are supported by a carefully chosen bibliography. If some of the inferences and assumptions might strike a theoretical psychologist or philosopher as questionable, this matters less than the fact that an experienced student of the nervous system should be concerned with its highest functions and their implications. There are still too few neurophysiologists who are prepared to tackle these problems.

THE GROWING BRAIN. By M. C. H. Dodgson. (Pp. 248; 46 figures. 50s.) Bristol: John Wright & Sons. 1962.

There are many vital problems which are intimately connected with the embryology of the central nervous system. This book aims at assisting in the understanding of many of these problems and will be useful to students of human and veterinary medicine. It is not, however, so satisfying for the specialist, as many of the sections are of necessity dealt with rather superficially.


This short monograph surveys the pathological changes in 300 consecutive necropsies in a mental hospital. The cases are divided clinically into two main groups: functional disease, where there is no evidence to suggest any structural abnormality as a background, and organic, when such evidence exists. Each group is further subdivided into clinical categories. Cerebral changes are assessed under varieties of vascular and degenerative pathology defined by the author. The main conclusion is that organic changes are in fact found more frequently in the clinical organic group than in the functional. Further analysis is given of the types of organic changes found at necropsy and their correlation with types of clinical organic syndromes. The book contains a good deal of information but it is not easily accessible.

This important presentation by a great leader in his subject must have profoundly influenced the progress of neurophysiology in recent years. These lectures remain a wonderfully clear and informative presentation, and the decision to publish them in a paperbound edition will be warmly appreciated by many.


This large book of nearly 600 pages is concerned mainly with the psychological background of higher cerebral function though there is also some reference to its cerebral basis. It is in general a congregation of opinions and observations with little critical assessment. Its rather diffuse style is reminiscent of nineteenth century German philosophy.

MACROMOLECULAR SPECIFICITY AND BIOLOGICAL MEMORY. Edited by F. O. Schmitt. (Pp. 119; 7 tables; 1 figure. $3.00.) Cambridge, Massachusetts: The M.I.T. Press. 1962.

This summary of 25 lectures given at the Massachusetts Institute of Technology explores the possibility that neuronal memory and learning may involve a chemical writing of experience in macromolecular codes in the cells of the brain. This attempt will appear unrealistic to those who think that memory must depend on changes in the synaptic organization, but the lectures are certainly stimulating and provocative.


This volume reports the Proceedings of a very valuable meeting. In particular may be mentioned the reports from Russia, Poland, and Czechoslovakia on the mass immunization of enormous populations with Dr. Sabin's strains of live polio vaccine. Other neurotropic enteroviruses were discussed and special sessions were held for the consideration of current problems in virology. Orthopaedic, neurological, and respiratory aspects were considered.


Pavlov was interested in psychiatry to some extent throughout his medical life. As early as 1900 he was working on what he considered psychopathology in animals. But it was not until he was an old man that he applied his theories to mental disease in man. In 1918, and again a decade or so later, he attended psychiatric clinics and tried to formulate diagnosis and treatment of mental disease in terms of his own physiological concepts. This book brings together his writings on this subject together with much that is only marginally relevant. It is interesting because so many of his comments are shrewd common-sense rather than conditioned reflexology. It is also difficult reading because it requires a mastering of the specialized and often rather diffuse terminology of Pavlovian physiology.


This is a useful attempt to bring scientific method to bear on the problem of a postulated epileptic personality. The authors, a panel of six, review the history of views on epilepsy and personality and then test a matched group of grand mal epileptics, psychomotor epileptics, and patients with medical illnesses. To formal psychometric tests personality disturbances in the epileptic groups were not much greater than in the medical: and there was little difference between psychomotor and grand mal groups.

It is interesting that personal psychiatric assessment sometimes evaluated changes that escaped the formal tests. Interpretations of the reasons for this will vary but it is a useful confirmation of the impression already current amongst clinicians.


This book attempts to integrate a number of widely differing sciences and arts which happen to impinge on psychosomatic medicine. There are 134 contributors and 19 sections. At the end of each section there is a brief discussion on the individual papers or chapters preceding it. There is, however, no general discussion or attempt at coordinating the various sections themselves. The discussion follows the present unhappy tradition of published symposia in giving word-for-word transcripts. This adds unnecessary bulk to a heavy volume and is at times ludicrous. There is much useful detailed information in the book, and it will be a useful reference source to some psychologists and psychiatrists who do not have the opportunity to consult the journals directly.


In this addition to Methuen's Manuals of Modern Psychology Dr. Yates has brought together and summarized a large segment of the experimental work which has been carried out in recent years on the psychological concept of 'frustration'. By so doing he has performed a service because of the theoretical importance of the subject and its close connexion with the related problems of 'conflict', 'agression', learning theory, and personality. Nonetheless, in so far as this is a monograph and not an extended review, the inexpert reader is entitled to expect more guidance than he receives through the maze of its 340 references. The final clause reads simply '... judgment on this point must be suspended': it might serve as the motto for a useful but frustrating volume.
BOOKS RECEIVED

(REview in a later issue is not precluded by notice here of books recently received.)


SCANDINAVIAN NEUROSURGICAL SOCIETY

The 17th annual meeting of the Scandinavian Neurosurgical Society will be held in the University Central Hospital, Topeliusgatan 5, Helsinki, Finland, on Friday and Saturday, 6 and 7 September 1963. Further particulars from Dr. Gunnar af Björkenst, the University Central Hospital, Topeliusgatan 5, Helsinki, Finland.

THE SIXTH INTERNATIONAL CONGRESS OF PSYCHOTHERAPY

The Royal Medico-Psychological Association, at the invitation of the International Federation for Medical Psychotherapy, will sponsor the Sixth International Congress of Psychotherapy in London in August 1964. This Congress will survey new developments in psychotherapy and their influence on psychiatry, general medicine, and society.

Further enquiries about the Congress should be addressed to: The Organising Secretary, Sixth International Congress of Psychotherapy, 184, Fleet Street, London, E.C.4.