

Book reviews

Perhaps the greatest surprise to a British reader is to find that a section entitled Disorders of Movement is yet another metabolic section with clinical neurophysiology reduced to bare essentials. Lower motor neurone physiology is largely from laboratory animals, and the introduction to its disorders has 794 references with 11 pages on hypothetical (sic) lesions with portmanteaux neologisms (Kingengelopathies).

Diabetic neuropathy is well described, though many would consider that it underestimates the axonal factor, and the section on leprosy is authoritative. The chapter on myasthenia gravis is comprehensive, but a reproduced table omits the association with epilepsy which now appears to be explicable. Congenital and dystrophic myopathies are well reviewed but need a Sparafucile (indexed forsooth).

Neuroendocrine and autonomic disorders are followed by interesting essays on pain and headache, to complete a monumental work. Apparently higher cerebral functions are not scientific. Was it worth it? Well yes, for 1977; the question is, what is its half life? Nonetheless it would be less than generous to close without congratulating the authors on an enormous job well done.

J. A. SIMPSON

**The Hypothalamus** Volume 56 of Research Publications from the Association for Research in Nervous and Mental Disease Edited by S. Reichlin, R. J. Baldessarini, and J. B. Martin. (Pp. 490; illustrated; \$45.50.) Raven Press: New York. 1978.

There have been striking changes of emphasis since the Association last reviewed the hypothalamus in 1939. From being largely speculative, the hormonal aspects are now well established and a proper subject for detailed biochemistry. Neural control of the anterior pituitary, tentatively discussed at that time, is now the major problem for discussion, and the hypophysical-portal blood system, then unknown, is now so well described as not to require a special chapter. Undoubtedly the most exciting advance is the recognition of endogenous morphinelike peptides, endorphins, and enkephalins with their promise for better understanding of the physiology of pain perception.

Increasing evidence of interaction between the hypothalamus and the

pineal gland justifies inclusion of an interesting account of the latter and its role in circadian rhythms.

This book is an excellent review of modern ideas about an important and somewhat neglected part of the brain. Not least of its value is the maintained effort to show the clinical relevance of basic studies. I wish I could be around to read the report of the next meeting on this subject. Perhaps I shall, because it is certain to be a much shorter interval next time.

J. A. SIMPSON

**Functions of the Septo-Hippocampal System** CIBA Foundation Symposium 58. (Pp. 438; illustrated; \$43.50.) Elsevier: Amsterdam. 1978.

The hippocampus is studied today with a wider range of technique than probably any other structure in the nervous system. A symposium on its function is an impressive occasion: anatomists, physiologists, neurochemists, and psychologists interact to a remarkable extent. For all this, the function of the system remains very obscure. The field is notorious for the different interpretations held among different groups. These are brought out forcefully in this book through fully documented discussions which were led effectively by the Chairman, L. Weiskrantz. The book will be a help to many who work in this field, chiefly because of these illuminating discussions.

The emphasis is on the relation of the hippocampus to the septum, a principal interface with the rest of the brain. Perhaps the most useful articles are those which attempt reviews, including the anatomy (Lynch, Swanson), the transmitters (Storm-Mathisen), and the impairment of memory with hippocampal damage (Weiskrantz). Unfortunately there is no attempt to review the physiology of septo-hippocampal influences or the generation of theta rhythm, both centrally important topics. Among the articles on more specific research is a valuable summary by Vinogradova of studies, mostly originally published in Russian, of sensory responses.

It is variously argued that the system may be a map, a comparator, a familiarity discriminator, concerned with motor activity, behavioural inhibition, and the anticipation of food. At least one of the apparent conflicts

may fortunately be disappearing, however, as experiments now reveal similarities of the memory loss with hippocampal damage in man and in other species.

A. R. GARDNER-MEDWIN

**The Self and its Brain** By Karl R. Popper and John C. Eccles. (Pp. 597; illustrated; £9.40, \$17.20.) Springer International: Berlin. 1977.

If a theory of self-awareness is to have general acceptability, it must be compatible with neurobiology as well as with the rationalisations of moral philosophy. This unique book is in three parts. In part 1, Popper—a philosopher and religious agnostic—analyses the philosophical issues of the mind-brain relationship (dualist interactionism versus parallelism or epiphenomenon), and in part 2, Eccles—a neurobiologist and believer in God and the supernatural—reviews the function of the human brain, with the recent evidence from experimental psychology and from “split-brain” subjects. They both opt for interactionism. Part 3, based on 12 recorded conversations, is a dialogue which confirms the areas of agreement but highlights conflicting opinions.

The terminology is a little unfamiliar and often makes the reader stop to consider the meaning of a straightforward sentence. For instance they use appropriately, the terms “consciousness” and “self-consciousness”, the former being the result of arousal systems, the later as “self-awareness” which they consider to be uniquely human. Popper faces the evolutionary problem by proposing that the evolution of consciousness and of conscious intelligent effort, and later of language and reasoning, should be considered teleologically, but the evolutionary pressure for natural selection of a faculty with potential but no immediate survival value is not satisfactorily accounted for, unless evolution is purposive.

I also found it necessary to memorise their three-world terminology in order to follow the arguments. In fact, the conclusions of the debate depend on its validity. World 1 is the world of physical objects, including the CNS. World 2 is the world of subjective experience and includes both “animal consciousness” and “self-consciousness”, part of which is an awareness of death as an inevitable future state. World 3 is the products of

the human mind, including language and theories as well as works of art, science, and technology. The crux of the matter lies in the interaction between these worlds, and I do not see that the argument is altered by making the unit an extended system of modules rather than "centres" or single cells. The analysis of fully conscious intelligence as an interaction between worlds 2 and 3, with the use of artefacts and speech to amplify memory and permit model building at mental as well as physical levels, is illuminating and the reconstruction theory of learning is thought-provoking. The relationship between evolution of speech and self-awareness is important. The body image concept and the results of callosal section are discussed in an interesting way; are the parietal lobes more important than the frontal for self-consciousness? Mountcastle seems to be moving in that direction.

A goal-directed brain which learns from experience by action and selection is certainly a better bet for further evolution than one depending on conditioned reflexes and associations (*pace* the behaviourists), and it can create its own evolutionary pressures. Both authors agree that the organisms only learn from experience if they are active. They are particularly impressed by Held and Hein's cats. It is also agreed that organisms actively try to impose guessed regularities (and, with them, similarities) upon the external world as it is seen by the sense organs and the self-conscious mind scanning whatever cerebral modules happen to be "open" (Eccles calls it the liaison brain), coupled with memory stores and affective drive from the limbic system. The argument leads them to conclude that the "self" can actively modify the activity of "its" brain. For this reason they reject parallelism in favour of a ghost in the machine. It is not the Ego, and the Soul is an embarrassing term: the emperor is wearing new clothes! So Eccles follows Sherrington and Granit into the dualist camp but cannot suggest a mechanism for a wind without a functioning brain unless it has a supernatural origin. Back to the Golden Bough. As to the question of *what* is the self-conscious mind, Popper does not think that the question is important. You must make up your own mind (actively of course).

J. A. SIMPSON

**Historical Explorations in Medicine and Psychiatry** Edited by Hertha Riese. (Pp. 232; \$22.95.) Springer-Verlag: New York. 1978.

This volume of historiographic studies is published as a tribute to the work of Dr Walther Riese, the distinguished philosopher and neuropsychiatrist who died in 1975. The contents reflect the wide-ranging interests of this leading thinker and, although somewhat diffuse in their materials, are unified by a sustained thread of concern with the evolution of ideas. Dr Hertha Riese, his widow, and herself an accomplished psychiatrist, has assembled an international team of 20 authors to provide a group of loosely related essays.

In the opening section of historiography, methodology, and classification, Dr Jeanne Brand (USA) usefully describes the *modus operandi* of the research orientated historian and claims that the history of psychiatry is best understood against a background of social history. Professor P. W. Harkins (USA) contributes a chapter in a section concerning the historical roots of modern medicine on the scope and limitations of Hippocrates' views in regard to the present day practice of medicine. Dr I. Galdston (USA) draws parallels, which are not always convincing, between some remarkable problem-solving dreams of patients in psychotherapy and the suppletory purification rituals of the ancient Greeks. In a section frankly devoted to the past, Dr M. Schachter (France) presents a biographical study of the personality and obscure neurological malady of Heinrich Heine. The last section is devoted to a historical-philosophical review of mind-brain relationships. Here Dr W. Goody (UK) ponders the question of cerebral adaptation to the fast-moving four-dimensional world in whose terms man is progressively thinking. In the same context, Professor H. Baruk (France) applauds the emergence of psychodynamic insights during the past 75 years but sourly criticises Freud for his indifference both to neurological and spiritual dimensions.

Readers with a flair for wisdom rather than knowledge will find much to interest them in this unusual publication. It should appeal to many neurologists, psychiatrists, and psychologists with a penchant for the philosophical side to their professional life.

A. B. SCLARE

**Therapy Options in Psychiatry** Edited by J. Connolly. (Pp. 375; £6.95.) Pitman Medical: Tunbridge Wells. 1978.

If the reader is prepared to look elsewhere for advice on drug therapy this is, by and large, a very readable and enlightening book on most aspects of psychiatric treatment. Minor reservations concern the journalistic use of single word subheadings which bear no relation to the text in the chapter on addictions, and the rather scant attention given to treatment of adolescents despite there being four chapters with psychotherapeutic orientation. The display array of headings, subheadings, and type size in the section on drugs accurately mirrors the content and presentation therein.

J. A. G. WATSON

**Electroconvulsive Therapy** Task Force Report 14. (Pp. 200; illustrated; \$7.50.) American Psychiatric Association: Washington DC. 1978.

This 200 page report deals with aspects of ECT as did the shorter memorandum by the Royal College of Psychiatrists in September 1977, and both have been prompted in part by the increasing and critical interest taken by the public in this treatment. ECT is usually effective in the treatment of "major" or "severe" (psychotic) depression, this being the main indication for use. Its value in schizophrenia and hypomania is less certain. The development of unilateral ECT, delivered to the nondominant hemisphere, has greatly reduced the memory dysfunction associated with the procedure but there is still room for doubt as to whether this mode is quite as effective as bilateral treatment. The active anti-ECT lobby in USA resulted in the passing of a Bill in California in 1977 controlling use of the treatment because of the alleged division of opinion about its efficacy. However, as the Task Force rightly states, there is no division of *informed* opinion. Nevertheless replies to a questionnaire indicated that some practitioners have ceased to employ ECT "because of legal issues and because "insurance rates are so excessive."

Although the matter of relative contraindications is dealt with rather nonspecifically and is difficult to locate because of the absence of an index, the report is excellent in all other respects.