Book Reviews

The History and Philosophy of Knowledge of the Brain and its Functions. Edited by F. N. L. POYNTER. Oxford: Blackwell Scientific Publications, 1958; pp. 224. Illustrated. 30*s*.

The papers in this volume were presented at an Anglo-American symposium, planned as an historical introduction to the First International Congress of Neurological Sciences. They are almost all of the highest quality, as one would expect from the list of contributors, which includes such men as Penfield, Lewis, Brain, McIlwain, le Gros Clark and Walshe. In the first session concepts of mind and brain in classical and non-Western antiquity are discussed. The limitations of good clinical observations, e.g. those of Hippocrates, unsupported by anatomical knowledge and related to untestable speculations, are pointed out. The second session considered old and new concepts of consciousness and the origin of language. The third session was devoted to mediaeval, Cartesian, and seventeenth-century ideas and observations, and the final two sessions discussed aspects of nineteenth-century and contemporary theory.

The dependence of neuro-anatomy on advances in technique emerges clearly. Dr. Woollam, e.g., points out that modern anatomical ideas are based on the study of the brain preserved in formalin. Unless it is fixed and hardened, the brain resembles an amorphous gruel of which one of the few distinguishing features is that it possesses cavities. Hence for nearly two thousand years the meninges and ventricular cavities were considered of the first importance. It is repeatedly shown that theories of brain function at any period depend both on anatomical knowledge and on current philosophical preconceptions. Dr. Veith's account of Oriental theories gives a beautiful example of this. She shows that in Tibetan speculations on consciousness the brain was ignored, both because surgery and dissection were considered an infringement of the sacredness of the body, and because of the belief that man is composed of the same elements, and functions according to the same principles, as the universe. Hence to understand him it is necessary to study the cosmic forces, not the body.

The symposium includes illuminating accounts of little-known theorists, e.g. Professor Lewis's paper on Reil, as well as more general historical surveys. It should prove a valuable storehouse of evidence and ideas for anyone interested in the development of scientific theory.

A History of Neurology. WALTHER RIESE. New York: M.D. Publications, Inc., 1959; pp. 223. $4.00.

There exists a direct relationship between the difficulties of historiography and the complexities of the subject being considered. Thus a survey of the progression of ideas concerning the skin, the liver or other relatively simple anatomical structures is not a very exacting labour. But he who deals similarly with the nervous system, which is still mostly a mystery, finds himself not only in poorly charted terrain, but, in addition, he is encompassed by the thickets of philosophy and the morasses of psychology. Furthermore, as Dr. F. Martí-Ibáñez points out in the foreword to this book, the history of neurology, unlike that of other specialties, has been complicated

by a conflict between the clinical and scientific observations of the anatomical structures involved and the philosophical contemplation of them.

Dr. Walther Riese, whose contributions to this subject are already well known, has ventured to write an account of the development of man's knowledge of the nervous system. He deals first with basic neurological concepts and shows that Jacksonian interpretations, reflecting as they did ideas put forward by Haller, Cullen, von Baer and Herbert Spencer, can be identified with Galenic and Aristotelian principles. The history of conduction of the nervous impulse, with no mention of Galvani, is dealt with next; the author finds less scope here for philosophical considerations. The third chapter is concerned with reflex action and begins with Rhazes's simple statement regarding the pupil, which may or may not allow him to be considered the first to express the idea of the reflex, and ends with Goldstein's complex, psychological analyses and interpretations of reflex actions. The history of the doctrine of cerebral localization with further development of the subject in the following chapter, covers seventy-nine pages (44% of the book), and much shorter chapters on pain, diagnosis, prognosis and treatment follow in an orderly progression.

Neurologists, with and without historical interests, will find much to censure in this book, and a few of the more important criticisms may be mentioned. Firstly, the title is inappropriate as the work considers the history of neurological ideas rather than that of specialty itself and of the men who have established it. Dr. Riese is, however, in harmony with Thomas Buckle, the self-educated, Victorian historian who stated that 'the real history of the human race is the history of tendencies which are conceived by the mind and not of events which are discerned by the senses', and the task he has tackled is highly commendable. One feels, however, that the author, having concluded that the global view of the nervous system is the most appropriate present-day interpretation, assembles historical evidence in its favour. His conclusion is in all probability correct, but the feeling that only part of the story is being told is inescapable. The cerebral cortex is considered at great length, but the equally important basal ganglia, ventricles, brain stem and cerebellar hemispheres receive scant mention. Language functions and their defects are subjects bristling with difficulties and obscurity so that to deal with them from an historical point of view is by no means easy. But at times Dr. Riese includes detail which would be more appropriate in a technical discussion of the subject.

There is a good bibliography of 175 references followed by a 'Neurological Chronology' in which authors and their main achievements are tabulated beside major events in world history. This is a praiseworthy, if rather half-hearted, attempt to correlate medicine with the world around it, an aspect which too many medical historians neglect. The author's selection of individuals is puzzling, as both Brown-Séquard and Sherrington, amongst others, are excluded; the inclusion of contemporaries may likewise be challenged. Furthermore, he states that the discovery of Wilson's disease followed Von Economo's work. A list of neurological societies and associations conclude the volume; the reason for their inclusion and the method of selection escape this reviewer.

The author's style, like his subject, is often involved and complicated. There are very few typographical errors, but the inclusion of one page of illustrations seems to be inconstant (three of four copies inspected) and no reference is made to them in the text. There are useful subject and name indexes.

This book is intended for the experienced clinician who can use his knowledge to comprehend and evaluate the author's philosophical conjectures. Important an

objective as this is, an equally laudable task is to help the more junior person in his praiseworthy attempt to supplement his knowledge of present-day neurology by increasing his knowledge of its past. Such a history of neurology is still awaited.

EDWIN CLARKE

De Motu Locali Animalium (1627). WILLIAM HARVEY. Edited, translated and introduced by Gweneth Whitteridge. Cambridge University Press. 1959; XII, pp. 163. 60*s*.

In *De Motu Cordis* Harvey promises a special treatise on animal movement and the structure of muscle in general. It was never published, however, and its script was assumed to have been destroyed by the Parliamentary soldiers. The evidence for this does not seem to have been substantial at any time. In fact, the preparatory notes for the treatise are extant in a manuscript in the British Museum (Sloan 486, ff. 69–118 v). In 1847 R. Willis described them as 'notes on the muscles, vessels and nerves and on the locomotion of animals'. They are here published for the first time together with a comprehensive introductory commentary, a translation and an apparatus in which the passages from Harvey's sources referred to in the text are given in full. The treatise comprises two distinct works bundled together and possibly separated by nine years in time of production (1618–27)—the first dealing with the muscles and the second with animal movement. Most of the quotations come from the relevant Aristotelian treatises: *De Motu Animalium* (698*a*–704*a*), *De Incessu Animalium* (704*a*–714*b*) and *De Spiritu* (481*a*–486*b*). Apart from Galen the most quoted additional authority is Fabricius ab Aquapendente, Aristotelian naturalist and Harvey's teacher in Padua; among others Thomas Erastus (1523–83), the famous adversary of Paracelsus, is cited as the author of a treatise *On Convulsion*. On the other hand, Robert Fludd (1574–1637), Paracelsist, Rosicrucian and mystical cosmologist is also mentioned (p. 94)—in connexion with the motive spirit and its power of contracting and relaxing. Fludd calls himself Harvey's friend. At an early date he supported Harvey's discovery on grounds of mystical philosophy (see *Bull. Hist. Med.* 1935, III, 278–9). It was Fludd who made contraction and expansion the basic operative principle in the cosmos—a 'mysterium' accessible to ocular demonstration by means of a universal instrument that was something between a thermometer and barometer. It is interesting that Harvey should refer to Fludd in this context, as the latter was hardly original, but borrowed the 'principle' from Telesius. In Fludd's days it was called by Bacon 'quite fundamental and catholic' (for detail see *Bull. Hist. Med.* 1935, III, 272).

Harvey closely follows the Aristotelian lead, but adds some results of inductive observation and reasoning, for example on the erroneous idea (shared by Fabricius and finally refuted by Stenonis in 1667) that sinew is the essential component of muscle.

The work thus provides a further authentic guide into Harvey's workshop and into the world of ideas that exercised his mind. As such alone it is invaluable. Moreover its broad comparative-anatomical outlook again shows the fruitfulness of Aristotelianism in Harvey's hands. The singular crispness and incisiveness of some aphoristic discussions of fundamental problems amply reward the perusal of a treatise which otherwise may be found somewhat dry. It is in these passages that the author's deep concern with general philosophical ideas and even mystical beliefs (such as the parallelism of macrocosm and microcosm) comes to the surface.

Just as divine Nature pursues an architectonic end making of diverse things one . . . by