basis for each genetically-determined disorder. This means that a condition that runs in some families as an autosomal dominant must differ chemically as well as genetically from a similar condition that in other families is inherited as a sex-linked recessive. The chemical difference is qualitative and not quantitative, and the apparent continuum, when intermediate clinical forms bridge the gap between typical examples of two distinct conditions, is not a true continuum but an artefact due to the variability in expression of each distinct condition.

Koch writes on the diffuse sclerosis, the phakomatoses, syringomyelia, extrapyramidal disorders, and certain disorders of exogenous or obscure aetiology; Becker on the spino-cerebellar ataxias, spastic paraplegia, the spinal muscular atrophies, and disorders of the peripheral nerves. Clinical and genetic data are combined in order to classify the various disorders, and considerable clarification is made thereby, as for instance in the ataxias. The reader is likely to differ in only one important instance from the authors, who consider as distinct disorders l'acropathie ulcéro-mutilante familiale and hereditary sensory radicular neuropathy, whereas present-day opinion in this country is that the latter is the pathological basis of the former. Differential diagnosis, synonyms, analogous conditions in animals, and a detailed genetic analysis of each disorder are valuable features: perhaps the most valuable is the very extensive bibliography. There are numerous illustrations, some of them (for example, of the conjunctival telangiectasia in the Louis-Bar syndrome) informative, but many (for example, of 'ring-spot' disease of tobacco leaves) inappropriate in a book about genetics and serving merely to inflate the price. The volume is beautifully produced, and misprints are few and far between (though Dejerine has attracted accents to his name). It should occupy an important place in every medical library.

THE BRAIN VASCULAR SYSTEM By H. A. Kaplan and D. H. Ford. (Pp. viii + 230; 176 figures. 70s.) Elsevier: Amsterdam, London, New York 1966.

This book presents the anatomy of the cerebral blood vessels in the light of our knowledge of their embryology. However, the rostral end of the neuraxis undergoes such radical changes during development that it may be reasonably doubted whether this approach makes it easier or more difficult to understand the anatomy of the blood vessels. For example, to consider the posterior cerebral and posterior communicating arteries together as one branch of the internal carotid, while admitting that the posterior cerebral artery receives its major blood supply from the basilar, seems needlessly confusing.

This apart, the anatomical section is of great value. A judicious selection and juxtaposition of photographs of brain dissections, radiographs of injected specimens, and diagrams convey a picture of the anatomy of the cerebral blood vessels with an excellence not commonly achieved. A reader would gain great profit simply from studying the illustrations with their captions. Added to this are brief but useful sections on the meninges, the formation and circulation of cerebrospinal fluid, and the blood-brain barrier in relation to the vascular system.

RESEARCH AND CLINICAL STUDIES IN HEADACHE Vol. I. An International Review. Edited by A. P. Friedman. (Pp. 221; 69 figures; 7 tables. Sw.F/DM 41.50. Karger: Basel and New York. 1967.

This is the first volume in a series intended to keep both the clinician and the research worker informed on current theories of causation, and methods of treatment, of headache.

It contains a discussion of the mechanism of vascular pain and the actions of vasoactive substances, including serotonin (5HT), by Professor Sicuteri. Drs. Curran, Hinterberger, and Lance review very fully the physiological actions of 5HT, and its possible relation to migraine and present their observations on the metabolism in migrainous subjects. The properties of the serotonergic antagonist methysergide are discussed, and full account of the results of its use in migraine prophylaxis is given. Dr. Graham reports in detail on the incidence of inflammatory fibrosis (not always reversible) during methysergide treatment. The incidence of this, and of other side-effects, and the observed failure to show a beneficial effect in some controlled trials is perhaps not sufficiently stressed, but these sections otherwise provide most useful summaries.

In other sections the psychiatric aspects, and therapy of muscle tension headaches are described by Drs. Martin, Rome, and Swenson. Dr. Hoefer discusses the implications of abnormal electroencephalograms in patients with headache, particularly the present confusion of ideas on the significance of paroxysmal patterns in migrainous subjects. There is a useful description of menstrual headache by Dr. Greene, with a brief survey of the hormonal mechanisms concerned. Finally, Dr. Carroll summarizes some clinical aspects of migraine and its variants.

The list of references following each section is excellent. The volume serves a most useful function in bringing together detailed information on particular aspects of a very discursive subject.

JUDITH M. HOCKADAY

THE ANATOMY OF THE BRAIN AND NERVES Vols. I and II. By T. Willis. Edited by W. Feindel. (Vol. I. Pp. xx + 104; illustrated. Vol. II. Pp. xii + 192; illustrated. \$37.50.) McGill University Press: Montreal. 1966.

This is a collector's piece for which we must thank the Montreal University Press, the Editor, Dr. William Feindel, and also Sir Charles Symonds for renewing or enlarging an interest in Willis as neurologist in his Harveian Oration of 1954. The book is appropriately dedicated to him and to Sir Charles Sherrington, who saw Willis as a key figure in carrying concepts of the nervous system out of the Middle Ages, and put this view of him before a wider public.

The present work is in two volumes. The first, for which Dr. Penfield writes a foreword, is a scholarly introduction to Willis and his times with some useful bibliographical details. Dr. Feindel has here enlisted expert collaborators in medical history and bibliography.

The second volume is a facsimile reproduction of the 1681 English translation by Samuel Pordage of the *Anatomy of the Brain and the Description and Use of the*

Nerves from *The Remaining Medical Works of that Famous and Renowned Physician Dr. Thomas Willis*.

The whole production is well planned and attractive, and although to some extent an artefact it does succeed in giving the feel of the original edition. It should introduce a number of new readers to a fascinating era in the development of medical thought. It is to be hoped that all medical libraries will add it to their stock. The growing number of those already interested in Willis and his times will certainly wish to possess it.

C. W. M. WHITTY

DAS VEGETATIVE NERVENSYSTEM Vol. 3 Fundamental Research; Vol. 4. Clinical and Therapeutic Aspects of Autonomic Functional Disturbances. Edited by K. Hartmann-von Monakow (Vol. 3: Pp. x + 230, 65 figures. 48 Swi. F. Vol. 4: Pp. x + 268, 41 figures. 94 Swi. F.) S. Karger: Basel and New York. 1966.

The third volume of this series of topical problems in psychiatry and neurology contains a most useful review and discussion of the part played by the autonomic nervous system in the neuro-endocrine regulation of adaptive reactions by E. Bajusz, and the fourth volume a very good review by J. B. Belloni and H. Terzian on the autonomic nervous system and mental pathology; both of these reviews are in English. E. Hagen's anatomy of the vegetative nervous system is illustrated by beautiful photographs. H. Heyck's article in German on migraine and related headaches is most interesting to English readers. He argues that the essential disorder is an arterio-venous shunt, short-circuiting the capillaries, and that this causes the ischaemia of parts of the brain. The passing of high pressure on to small, thin-walled arterioles, which are not equipped to deal with it, he argues, is responsible for oedema. Ergotamine works by closing down the small blood vessels.

P. W. NATHAN

EVOLUTION OF THE FOREBRAIN: Phylogenesis and Ontogenesis of the Forebrain. Edited by R. Hassler and H. Stephan. (Pp. viii + 464; 295 figures. DM. 96.) Georg Thieme Verlag: Stuttgart. 1966.

Forty-two papers on the structure and development of the central nervous system delivered at a symposium in Frankfurt in 1965 are gathered together under this rather ambitious title. The papers range widely over the vertebrate kingdom from teleosts to man, using techniques from gross anatomy to electron microscopy.

The great majority of the papers inevitably deal with restricted fields in a single vertebrate, and have been published in brief form which tends, in some cases, to reduce their value to the general reader, while, in others, a number of views have had to be expressed without full discussion of the relevant evidence—a feature which makes it difficult to assess their true significance.

Most of the authors relate their findings to the general concept of evolution of the brain. It is inevitable on the one hand that such speculations arising from a series of separate studies on single animals cannot readily be synthesized into a general picture, more particularly

when little account is taken of the highly specialized functional attributes of each animal which must be mirrored in the structure of the nervous system. On the other hand, those papers which attempt to give a general survey suffer equally from paucity of detailed information. Thus the book remains a series of separate contributions, and fails to live up to its title despite the excellence of many of the papers.

It is almost inevitable that a general criticism of this nature is applicable to a publication of this kind, but this should not detract from the value of the individual contributions, many of which are thought provoking and fully repay careful study. It is difficult as well as invidious to highlight particular papers from among so many, but there are excellent sections on the limbic and visual systems, on the corpus striatum and thalamus, and on the formation and differentiation of nerve cells. Even if the evolutionary significance of the findings is problematical, there is much here to stimulate students of the forebrain to undertake further studies of more localized regions in a wide spectrum of vertebrates, and it is to be hoped that such studies will include more quantitative and physiological measurements.

G. J. ROMANES

NEUROLOGICAL DIAGNOSTIC TECHNIQUES Proceedings of the 13th Annual Houston Neurological Scientific Symposium. Compiled and edited by W. S. Fields. (Pp. xii + 429; illustrated. \$16.00.) Charles C. Thomas: Springfield, Illinois. 1966.

The date of this symposium is not mentioned anywhere in the volume. The investigations required in the neurological clinic extend to every corner of clinical investigation, so it may to some readers seem inappropriate to try to bring together those which are specially used by the neurologist. Thus chapters on virology and muscle biopsy do not seem to mix very well with radioisotopic scanning or psychological testing. However, all neurologists will find something helpful and stimulating somewhere in these chapters, particularly perhaps the chapter on computer applications to clinical problems.

W. RITCHIE RUSSELL

THE GENETICS OF NEUROLOGICAL DISORDERS (Oxford monographs on medical genetics.) By R. T. C. Pratt. (Pp. vii + 310, 80s.) Oxford University Press: London. 1967.

An immense amount of work has gone into the preparation of this admirable volume, which gives an account of the genetic background to a large range of neurological disorders. The book assumes a basic knowledge of genetics and *An Introduction to Medical Genetics* by J. A. Fraser Roberts is recommended by the author for preliminary reading.

A sampling of selected subjects indicates that the subject matter is both accurate and up-to-date. The reference system is particularly notable. At the end of each section is a small list of selected references and at the end of the book is a bibliography comprising 2,814 references. Such an arrangement could well be used by