Brain work

Brain Work and Mental Activity: Quantitative Studies with Radioactive Tracers. Ed. by N. A. Lassen, D. H. Ingvar, M. E. Raichle and L. Friberg. Pp. 446. Illustrated. Copenhagen: Munksgaard. 1991.

The book contains the proceedings of an Alfred Benson symposium held in Copenhagen in 1990 and is a sequel to a similar symposium held in 1974. Like its predecessor, it is concerned with the relationship between behaviour, brain function in terms of neuronal activity and brain work as reflected by energy production and blood flow, and deals with this relationship in experimental animals and human subjects. The techniques used to measure regional brain work, are described in studies of the general organisation of mental activities in the normal human brain. Finally, the clinical measurement of regional brain work in patients with brain dysfunction leading to neurological and psychiatric disturbances, is dealt with.

All these subjects are dealt with in considerable detail and each paper is followed by discussion, which brings that paper into relation with the rest of the symposium so that the reader is never left in uncertainty. Problems, such as those of sampling of a neuronal population, when localising function and the usual problem of having either too much or too little to deal with when one studies cerebral function electrophysiologically, are clearly elucidated.

The history of the methods of visual demonstration of neural function, is excellently reviewed by Seymor Kety, a pioneer in this field. The technical difficulties and what the findings of positron emission tomography (PET) scanning mean, are dealt with very well and should be consulted by anyone who is a novice in this field, like myself.

It would seem that PET studies are the most convenient methods for studying regional brain responses during activation by measurement of the regional cerebral blood flow changes. The methods of interaction between the neuronal activities and the increased cerebral blood flow remain to be finally clarified but the methodology for doing so is available. Functional anatomy can now be seen as the topography of cerebral activity and such activity can now be studied empirically by means of PET.

There is no doubt that we are on the threshold of a tremendous explosion of information in this field when one considers that more than 500 labelled compounds have been synthesised to date for continued development of new bio-assay methods with PET. PET scanners have improved in their image quality, and this improvement will continue so that this method of investigation will play an increasing part in the neurological sciences in the future.

This highly detailed book of the highest standard is written by acknowledged authorities, and should be consulted by anyone dealing with the problem of present-day localisation of cerebral function. It is a book that should be available in every institution where neurosciences are taught.

J. C. DE VILLIERS

BOOKS / BOEKE

Neuroanatomy

Neuroanatomy for Medical Students. 2nd ed. By J. L. Wilkinson. Pp. x + 307. Illustrated. Oxford: Butterworth Heinemann. 1992.

This is one of those books that affords pleasure to read and leaves an after-image of satisfaction. It is attractively set out, lucidly written, clearly printed, simple in outline, and clearly illustrated with line drawings and, where appropriate, meaningful histological sections.

It deals with neuroanatomy in the only way in which it can become comprehensible to the novice, by starting with simple embryology. The omission of this basic step has left so many medical practitioners in a permanent state of despair about neuroanatomy. This basic element having been dealt with, the cellular elements of the nervous system are considered and the gross anatomy then considered.

The book is a mere 305 pages but it deals not only with the neuroanatomy as outlined, but has meaningful sections on applied anatomy wherever this could possibly be brought into focus on the relevant text. No student who reads this could have any question about relevance. This includes a sprinkling of CT and MRI scans as well as an arteriogram — the latter could, perhaps, have been a little more meaningful.

Wherever possible, functional implications are indicated so that the text, when one has completed it, leaves one not only with a solid foundation in neuroanatomy, but has really served as an entry into the neurosciences. The final chapter, 'Neurotransmitter pathways of the central nervous system', is probably the correct note on which to end a textbook of neuroanatomy that could have left the student with too strong a view of pure anatomical pathways.

The bibliography, concise as it is, is relevant, covers a wide field and is non-partisan.

All told, this is a delightful book, which as a standard text would benefit students in this country, who have been neglected in the teaching of the neurosciences. It is a long time since I have enjoyed an undergraduate textbook as much as this, and I think many postgraduates could benefit from it.

J. C. DE VILLIERS

Atherosclerosis

Molecular Biology of Atherosclerosis: Proceedings of the 57th European Atherosclerosis Society Meeting. Ed. by M. J. Halpern. Pp. xv + 662. Illustrated. £45. London: John Libbey. 1992.

This book is a typical example of a conference publication that has both useful and disappointing features. Useful is the collection in one volume, not too long after the holding of the relevant conference in May 1991, of a large number of readable, short reports representing a considerable amount of work being done in the field of atherosclerosis in Europe. Disappointing is the fact that most of the studies and information reported in the volume would have appeared, or will be appearing, in formal journal articles and probably in a more satisfactory and complete form. Thus one has to see whether the availability between two hardcovers of all this information will suit individual practitioners better than accumulating the same information over a period of time in the form of many different papers published all over the place.

The book is well printed and organised but the absence of an index is a serious problem. There is no way, other than by judging the content pages, of knowing where any individual topic might be covered.

Since this book also has good reports from the Commonwealth of Independent States and other countries previously not included in the general ambit of such high-level conferences, it can be seen as a particularly valuable presentation of much good work now being done by a very large number of dedicated workers over the whole extent of Europe. That alone is a plus. The book can be recommended for laboratories and lipid clinics but each prospective purchaser will have to consider the question of the choice discussed above.

W. GEVERS

Antibiotics

Antibiotic Guidelines. By H. J. Koornhof and L. D. Liebowitz. Pp. 122. Pretoria: JL van Schaik. 1991.

The importance of the use of antibiotics in the treatment of infections is not disputed. However, the way these agents have been used over the years has given rise to grave concern. Of all pharmaceutical products, antibiotics have been probably the most abused!

It is therefore timely that a locally produced guide to the use of these agents has been produced by Koornhof and Liebowitz.

The pocket-sized booklet is a mine of useful information. A pertinent introduction leads into a simplified description of the various classes of antimicrobial agents. A useful chapter looks at recommended antimicrobials for commonly isolated pathogens, and is followed by tables indicating recommended antimicrobials according to site of infection (initial therapy, alternatives and suggested duration), and the antibiotic dosage also by site of infection. The booklet ends with practical chapters examining prophylaxis (viral, bacterial and malaria) as well as adverse drug reactions.

Although initially prepared as a service to clinicians practising in the Afrox Group of Hospitals, its appeal is far wider.

The guide reads easily, is adapted to the South African healthcare arena and the antimicrobials mentioned in the text, are all available in the RSA. It is well worth the asking price and should be in the pocket of all practising doctors.

A. A. FORDER

Reproductive medicine

Reproduction, Growth and Development. By A. Negro-Vilar and G. Pérez-Palacios. Pp. xv + 440. Illustrated. $162,50. New York: Raven Press. 1991.

This book is a Serono symposia publication. The contents are therefore based on a meeting which, in this case, was held in Acapulco, Mexico, in 1990. A major bonus of these publications is that they appear shortly after the meeting. This volume was published in 1991 and therefore is topical and gives a review of current thinking.

The volume deals with a fairly wide range of subjects in reproductive medicine, and the list of authors is impressive and distinguished. The bias is towards American and South American presenters, although there are a number of authors from Europe. The subjects vary considerably and the authors are from a number of different disciplines.

There is considerable emphasis on cell biology and cell and molecular biology. New concepts in neuro-endocrine regulation of reproductive function are reviewed. There is considerable discussion of intra-uterine and early development and the subsequent effects on puberty and later development. Besides the experimental papers, there is also considerable clinical work in the field of fertility, with sections on evaluation and treatment of the infertile male and discussions on fertility regulation.

Illustrations are appropriate and have been prepared from the manuscripts submitted by the presenters at the meeting. The chapters are variable in quality and interest, but there is much of interest for clinicians working the field of reproductive biology. Because of the areas of special interest with which it deals, the book may not have universal appeal. The contents have an immediacy that is appealing and there is a considerable body of work in progress.

Z. VAN DER SPUY

Obesity research

Progress in Obesity Research 1990. Ed. by Y. Oomura, S. Tarui, S. Inoue and T. Shimazu. Pp. xiii + 688. Illustrated. £17,50. London: John Libbey. 1991.

This book represents the proceedings of the 6th International Congress of Obesity, held in Kobe, Japan, 1990. It contains over 100 papers covering the complex and widespread problem of excessively high body fat in relation to lean body mass.

The section on control of feeding behaviour and its disorders contains details mainly of animal experiments, in addition to the recognition that many well-informed and highly motivated obese individuals fail to attain permanent weight control owing to the sensory and seductive attractions of food and drink. Carbohydrate craving, chocoholism, snackfood addiction and the insiduous effect of frequent calorific drink breaks are discussed, and brown fat thermogenesis continues to be a hot topic.

Metabolism of adipocytes, fat distribution in obesity, insulin resistance, diabetogenic and atherogenic fat are discussed in addition to metabolic and arterial complications associated with android obesity.

Treatment and management of obesity questions the use of very low calorie diets, touches on childhood obesity, and, surprisingly, omits to tackle the management of yo-yo dieters or weight cyclers.

New thermogenic drugs are thought to be useful, dexfenfluramine and mazindol are evaluated, and bariatric surgery is advocated for specific cases.

This is a comprehensive, well-presented, research-orientated book that should be part of the reference library for endocrinologists, sports scientists, research dieticians, physiologists and physicians with a special interest in obesity and its complications.

G. MITTON

Epidemiology

Fetal and Infant Origins of Adult Disease. Ed. by D. J. P. Barker. Pp. xv + 343. £30. London: BMJ. 1992.

This book is more than a review of the available literature and far more than a monograph on the relationship between early influences and subsequent disease. In it, Dr D. J. P. Barker, Director of the Medical Research Council Environmental Epidemiology Unit, has put together a comprehensive series of scientific articles that give the reader an insight into the opportunities for creative epidemiological research. The articles are preceded by Professor R. J. Robinson's introduction, which briefly reviews and comments on what is to come, and sections of the book are followed by reviews that summarise and crystallise the concepts.

As stated in the title, the book examines the fetal and infant origins of adult disease. The object is to 'argue the value of a healthy environment during pregnancy and in early childhood as an investment likely to pay dividends in terms of preventing later disease'. The particular adult diseases studied include stroke, ischaemic heart disease, hypertension, chronic respiratory disease, impaired glucose tolerance and hypercholesterolaemia. The basis of the research is examination of the relationship between the various adult diseases and the maternal and/or neonatal and/or infant mortality and/or morbidity data from the period of birth of the victims of those adult diseases. Study after study shows the strongly positive correlations between low birth weights and the development of hypertension, stroke and ischaemic heart disease. This relationship holds, irrespective of adjustment for other factors such as smoking. Low birth weight also correlates with chronic bronchitis.

The interpretation of these findings is that the growth-impaired fetus is programmed for subsequent disease on the basis of dysgenesis of the systems involved. There are also correlations with early growth or disease and subsequent outcomes. These latter examples are easier to digest (e.g. the relationship between infantile and adult respiratory disease), but the weight of evidence for the fetal programming hypothesis is persuasive.

Perhaps some of the most thought-provoking work covers the relationship between low birth weight and subsequent development of non-insulin-dependent diabetes mellitus. Again, the hypothesis is that impaired fetal growth extends beyond the obvious somatic and includes organs such as the pancreas.

This is an interesting and worthwhile publication that should stimulate members of a wide range of medical and allied disciplines.

A. D. ROTHBERG