sitivity is well presented and informative. The list of references covers just over 24 pages with a subject-index of six pages.

G PAMPIGLIONE

Problems of Aphasia Edited by Y Lebrun and R Hoops (pp 198; 65 Dutch guilders) Lisse, The Netherlands: Swets & Zeitlinger, 1979.

This book contains seven articles on topics related to aphasia. For various reasons it is a very disappointing collection. The articles are neither related to each other nor do they cover the field at all adequately. The major central issues in aphasia—the viability of the classical taxonomy based on Broca's, Wernicke's and conduction aphasia and the functional origins of the disorders so described—are never discussed. In addition the papers tend to be based on sketchy case reports, and are not well situated in modern linguistics or cognitive psychology.

The most interesting paper is a lengthy analysis by Leonard of ideokinetic aphasia and its relation to other disorders, particularly ideokinetic apraxia. Other topics discussed include alexia without agraphia, delayed auditory feedback, pantomime, prosody, acalculia and the linguistic functions of the right hemisphere.

T SHALLICE

Stereotactic Cerebral Irradiation By G Szikla (pp 340; \$48.75) Amsterdam: Elsevier, 1979.

For many years the stereotactic method has allowed an accurate and relatively safe approach to the problems presented by those pathological processes, mostly new growth, deemed inoperable and involving vital and otherwise inaccessible areas of the brain. The method has been used to guide the biopsy needle, and so help delineate the lesion, and to direct therapeutic radiation from an external or implanted source.

The advent of computed tomography with its possibilities for earlier recognition of even smaller pathological targets has given fresh impetus to the study of these techniques. To provide a meeting point for all the various disciplines involved, a symposium devoted to stereotactic cerebral irradiation was held in Paris in July 1979, and the proceedings are recorded in this well produced and well illustrated volume.

Many of the communications concern basic aspects of the methods and their application—the precise measurement of the target volume, the different radio-surgical techniques and their application, the early and late effects of local irradiation. There is a summary of current techniques and a commentary on present problems of dosage specification and other technical matters.

The section devoted to indications and results makes it clear that tumours, both benign and malignant, remain the principal indication for treatment. Some encouraging preliminary results are reported with benign and circumscribed tumours, notably craniopharyngioma and acoustic neuroma. By gamma irradiation it has proved possible to halt growth of tumour and probably to cause its replacement by scar tissue. It is with pituitary tumours, both secreting and non-active alike, where the greatest enthusiasm is evident; where future possibilities seem brightest, despite the established position of present micro-surgical methods. The successful selective blockade of growth hormone secretion from the pituitary gland in patients with acromegaly and diabetic retinopathy is particularly significant for the absence of complications. The problem of the invasive glioma clearly remains intractable, despite all the ingenuity of the therapists.

For those who are involved in stereotactic radiation therapy or who are merely interested in recent developments this volume provides a valuable insight to current work and thought and is an excellent source of reference.

JJ MACCABE

Delirium By Z J Lipowski (pp 567; \$39.75) Springfield Illinois: Charles C. Thomas, 1980.

The author tells us that this is the first monograph on delirium to be published in English. It will prove an invaluable work of reference and the early chapters, at least, can be read with pleasure. The history of the concept, the detailed clinical features, the aetiology and pathogenesis, the diagnosis and the management of delirium are all covered in great detail in the early chapters, in each case with an exhaustive survey of the literature, from the present day to classical times. The general argument of the book is that

all forms of clouding of consciousness (or of disturbance of wakefulness, hyperactive and hypoactive) stem from the same basic disorder and should be subsumed under the category of delirium, while earlier authors often confined the term delirium to hyperactive states.

The later chapters consider all the possible causes of delirium, and also consider delirium in special settings (the puerperium, surgery, old age). The main use of these chapters is as a source of references to the literature.

The book is long and sometimes repetitive, but it is a unique work and can be warmly recommended. It will be of interest to all practising clinicians including, of course, neurologists and psychiatrists.

JL GIBBONS

Frontiers in Neuroendocrinology, vol 6. Edited by L Martini and WF Ganong (pp 428; \$53.72) New York: Raven Press, 1980.

The latest volume of *Frontiers in Neuroendocrinology* provides an interesting addition to the series. Dealing largely with the isolation, synthesis and characterisation of various hormones it carries throughout an important message. Namely, that many of these hormones occur simultaneously in a number of organs. In particular the occurrence of practically all pituitary hormones within the brain as well as in the pituitary gland is emphasised. Indeed, local synthesis may well occur within the brain. So-called growth hormone in the amygdala is compelling evidence of this. An interesting chapter on peptides common to the gut and brain continues this theme showing that a number of peptides such as cholecystokinin and vaso-active intestinal polypeptide, first isolated from the gastro-intestinal tract, are now known to occur within the brain. I particularly enjoyed the chapter dealing with neurotensin, another peptide widely distributed throughout the central nervous system and also found in high concentrations in portions of the gastro-intestinal tract. The relationship between hormone-containing neuronal systems and catecholamine containing neurones is also examined in this volume. It has been demonstrated

Book reviews

that the peptides luteinising hormone-releasing hormone, somatostatin and thyrotropin releasing hormone are synthesised and transported in distinct neuronal systems in the hypothalamus. However, the peptide containing nerve terminals are in direct contact with dopamine containing terminals close to portal vessels which is taken to suggest an axo-axonic influence of catecholamines on peptide hormone release. Such a system would appear to differ from other fore-brain catecholamine systems since recent reports suggest that cholecystokinin and dopamine may be contained and released from the same nerve terminals. It is also pleasing to see that in many of the chapters contained in this volume information on the functional role of hormones in brain is included. In particular, the chapter by de Kloet and de Wied presents an elegant view of the effects of pituitary hormones on behaviour.

In all, this volume provides a valuable addition to the current literature and is well worth reading. It contains information of value to both clinicians and basic scientists and to all interested in the interaction between the nervous system and endocrine system.

PG JENNER

The Bilingual Brain. (Neuropsychological and Neurolinguistic Aspects of Bilingualism by Albert, ML & Obler, LK (xi+302; \$19.50) New York, London: Academic Press, 1978.

This book has its origins in the clinical problem of patients who did not appear to conform to the textbook characterisation of their conditions: for example, a right-handed aphasic whose right hemisphere seemed to be more involved in his linguistic behaviour than it "ought" to have been; and a bilingual aphasic who had an expressive disturbance in one language, but a receptive in the other. It was in an attempt to get to grips with clinical problems of this sort that the authors embarked on a major study of the linguistic, psychological and neurological literatures dealing with bilingualism. The fruits of their work are set out in this book together with an approach to a synthesis of the different points of view.

The introduction is given over to brief explanations of some key concepts in bilingualism theory, accompanied by some critical, cautious comments by the authors. Nevertheless, a clearer distinction might have been drawn between the pre-school *acquisition* of the first language and the later *learning* of a second or third language; similarly, between *bilingualism* and *multilingualism*. In view of the authors' conclusions about the use of both hemispheres in bilingualism, one is left wondering what multilinguals do!

A very commendable virtue of this book is the authors' intellectual honesty: they do not attempt to force or twist the results of other people's research into their own sets of hypotheses. As a result, there is a good deal of suggestion, of hypothesis (in some cases not enough, as I shall show), and only a small number of definitive conclusions. We are left with a series of ideas to test and follow up, for example, that "the language production and language perception systems are to some degree independent of each other . . ." and that "different performance on psychological and neurological tests may be a reflection of different cerebral lateralisation for the two languages of the bilingual."

The most significant conclusion that the authors reach — although it is not an original one — is that the right hemisphere plays an important, possibly even the major part, in the neural mechanisms underlying the linguistic behaviour of *right-handed* bilinguals. The evidence comes from a survey of the aphasiological literature stretching back over more than a century. Of the 108 cases reviewed, seven had (or could be inferred to have had) right-sided lesions; three of them were sinistrals, but three dextrals. (It is worth mentioning that in the tabular summary of these 108 cases, only *one* appears to be a right-handed person with a right-sided lesion. Which are the other six?) The authors are content to draw our attention to the statistically significant number of right-handed, right-lesioned patients, but, regrettably, despite their earlier, critical comments on bilingualism, they seem unwilling to speculate, as distinct from hypothesise. Could it not be

significant that the one crucial bilingual who can be traced in their summary of the 108 had Vietnamese and French as his languages? Dare one speculate that languages as typologically removed from each other as these two are may show greater divergences from the expected hemisphere/language connection than cases of languages much closer together? Perhaps one might suggest—and Albert and Obler touch on this, but do not develop the point—that there seems to be no prior reason why all the world's 3000-odd languages should be localised in exactly the same way. Presumably, differences, in certain cases quite striking ones, between the phonologies, grammars and lexicons might manifest themselves in cortical terms in distinctively different ways? At the other extreme, as it were, differences of dialect and accent within the same language should not be expected to show identical neurological substrates, and yet so much of the literature in the past has been content to gloss over these issues.

Curiously, Albert and Obler do not try to relate the discussion of "bilingual" neurology to models of "monolingual" neurolinguistic functioning (eg Whitaker). They go no further than some tantalising remarks about two languages being "organised as a single system" in true compound bilingualism—a distinction, incidentally, which might have been clarified at the beginning of the work as well as developed later within the double-hemisphere conception of the bilingual's neural behaviour. Without wishing to be unkind, the neurological framework that Albert and Obler erect to explain a bilingual's functioning is distinctly rickety.

The book has been well produced, with only a few misprints, and is marketed at a reasonable price. For these reasons, and the others already mentioned, it should be to hand wherever research is being conducted into bilingualism or, more mundanely, when bilinguals are being seen as patients in a hospital setting. A considerable amount of effort and thought has gone into its making, and despite reservations about certain sections of it, I would rate it a good intellectual investment. There is scarcely a country in the world today which is not bi-