Book reviews

FRONTIERS IN NEUROENDOCRINOLOGY 1973 By W. F. Ganong and L. Martini. (Pp. 438; illustrated; £9.00.) Oxford University Press: London. 1973.

This is the third book in a biennial series of volumes on neuroendocrinology. Each of the 11 chapters is written by an expert or group of experts in a specialized subject. Yet the subject matter ranges widely from the microelectrode recording of neural units in the hypothalamus to the clinical application of the new discoveries.

Pride of place is given to the study of the hypothalamic factors that regulate anterior pituitary secretion. There have been remarkable advances in our knowledge of thyrotropin releasing factor (TRF) and luteinizing hormone releasing factor (LRF), both of which have been identified as linear peptides and synthesized in the laboratory. On the other hand, corticotrophin releasing factor (CRF) has not yet been chemically identified or synthesized. There is also uncertainty about the characterization of growth hormone releasing factor (GRF). Recent work on human prolactin goes some way towards clarifying its physiological action, but there remain many difficulties in assaying the activity of prolactin inhibiting factor (PIF). Melanocyte-stimulating hormone inhibiting factor (MIF) may have been identified as a tripeptide, but here, too, there are doubts about the assays used in measuring the hormonal activities.

Evidence is put forward that TRF and other releasing hormones are formed by enzymatic action. In the case of TRF the enzymatic action may be stimulated by thyroxine or chronic cold. Thus we learn how the activity of the peptidergic neurones may be controlled by hormonal, neural, and functional factors.

Intriguing models are designed to suggest that amino acid and polypeptide hormones may act on a cell surface receptor, in contrast with steroid hormones that act at cellular level. The former mechanism would utilize cyclic AMP as a 'second messenger' or intracellular mediator of hormone release. This is thought to be the basis of the GRF-provoked growth hormone release. Cellular differentiation toward specific receptors would ensure responsiveness of the cells to the appropriate hormone. A close relationship has also been shown between the efficacy

of action of a hormone and the extent to which it becomes bound at a given site in the brain.

To a clinician, the most useful chapter is probably that dealing with the clinical effects and uses of hypothalamic releasing and inhibiting factors: it is now possible to distinguish between dysfunction of the pituitary and dysfunction of the hypothalamus, either of which may lead to hypothyroidism or to a deficiency of gonadotrophin secretion. This distinction can be made by the administration of TRF or LRF respectively.

Another chapter deals with the effects of prenatal androgen excess and insensitivity of target tissues to androgens. These effects include changes in psychological development, intellectual abilities, and sexual attitudes, as well as alterations in morphological gender. The psychological features of prenatal agonadism (Turner's syndrome) are also described.

The various causes of abnormal galactorrhoea and its relationship to the blood levels of prolactin are discussed. L-dopa is suggested as a possible therapeutic means of interrupting prolactin secretion and galactorrhoea.

The clarity of the writing and the illustrations ensure that the clinician eager to bring himself up-to-date will have no difficulty in understanding the intricacies of this expanding subject. There is also much material of clinical relevance. Each chapter is followed by an immense bibliography which should satisfy the most demanding researcher.

G. F. M. RUSSELL

PEDIATRIC OCULO-NEURAL DISEASES CASE STUDIES By J. A. McCrary III. (Pp. 232; illustrated; £4.50.) Henry Kimpton: London. 1973.

Evidently, Dr. J. Lawton Smith provided the inspiration for this book, and he must be gratified by the result. J. A. McCrary III has provided a most valuable, if somewhat unusually presented, monograph on paediatric neuro-ophthalmology.

Part I comprises a synopsis of symptoms and signs of ophthalmological disease with valuable advice on examination technique. Paediatric patients should never be rushed (*sic*). (Ophthalmologists please note!) Clinical phenomena are well presented with an adequate foundation in anatomy and