tries themselves so that they could eventually take over the laboratories. As well as financial support, travel grants and fellowships were given to laboratories working on arboviruses in many other countries.

The Rockefeller Foundation Virus Laboratory, New York, which moved to Yale in 1964 as the Yale Arbovirus Research Unit, acted as a coordinating laboratory, as a centre for training and for the evolution of new techniques, and as a reference laboratory for identification and classification of the spate of new arboviruses which were isolated. This intensive research continued for a period of some 20 years but, with a change of emphasis in the activities of the foundation, has recently been curtailed, some would think prematurely.

The purpose of this book is chiefly to give an account of the activities of the central and, to a lesser extent, of the field laboratories. Part 1, consisting of four chapters, deals with the development, application, and interpretation of the classical techniques of neutralisation, haemagglutination-inhibition, and complement fixation tests as applied to the diagnosis of arbovirus infection in man and animals and the identification of isolates. Previously unpublished material is used to illustrate some points but scant reference is made here, or elsewhere, to the development of new techniques such as the use of mammalian or insect cell cultures for arboviruses.

In the second and largest part, comprising ten chapters, the principles of the method of classification of arboviruses into antigenic groups, evolved at the Rockefeller Foundation Laboratories, is explained. This is followed by a systematic description of most of the arboviruses known at the time of writing, from Group A to the ungrouped viruses. Details are given of the isolation, of the classification and of the epidemiology of the viruses in man and animals, as far as this is known, and of their importance as pathogens. Many are still in search of a human disease with which they can be identified. In the third part, of seven chapters, there are general discussions about the world distribution of arboviruses, and of their vectors and vertebrate hosts, which give useful summaries. These are followed by brief discussions of their significance for man and clinical manifestations. Finally, the specific problems of dengue and yellow fever in the Caribbean are described.

As a monument to the notable work of the Rockefeller Foundation in the field of arboviruses this book fulfils its primary objective. As a reference book for the serious worker it is less satisfactory. Much is omitted about fundamental work, some of the epidemiology is dealt with perfunctorily, and there is little reference to recent manifestations

such as the dengue shock syndrome. The most useful sections of the book are the second part and some of the third which, with the extensive bibliography, are ready sources of knowledge.

C. C. DRAPER

Pituitary

The Pituitary Gland: A Comparative Account. By R. L. Holmes and J. N. Ball. Pp. x+397. (Biological Structure and Function.) (Cambridge University London, February 1974.) £10; \$28.50.

THE first chapter of this book deals briefly, but adequately, with a general appraisal of the embryology, morphology and physiology of the pituitary gland. The next few chapters deal with morphology and cytology of the various parts of the gland in mammals beginning with the pars distalis. Perhaps the most confusing aspect of pars distalis cytology lies in the nomenclature used to describe different cell types. Although a functional name is to be preferred, for example thyrotroph for TSH cells, in many cases this is not possible, and the use of other systems of nomenclature, though no fault of the authors, makes this a difficult chapter to read.

A major fault in this chapter, which also deals with staining techniques, and the ultrastructure of the pars distalis, lies in the omission of any reference to the use of the peroxidase-labelled antibody method for identifying cell types. This technique has been widely used in both light and electron microscope studies in the last few years.

The beauty of the opening colour plate whets the appetite for the subsequent micrographs; the identification of cell types in electron micrographs is certainly adequately described, but nearly all of the electron micrographs are of poor quality.

Chapter 4 deals with the pars tuberalis and pars intermedia, serving to point out the lack of knowledge of these two subdivisions of the pituitary. A general outline of the neurohypophysis, which includes the median eminence, follows in chapter 5, with chapter 6 covering the basis for a neural control of the pars distalis. There is a certain amount of repetition of chapter 1 here, but the objective approach of the authors makes this chapter very useful for anyone looking for a brief appraisal of the historical and comparative evidence, for and against, a neurovascular control of pars distalis function.

The next eight chapters are concerned with a comparative account of pituitary structure and function, with a greater emphasis on structure, and

it is in these chapters that the book becomes an invaluable information source for both research workers and teachers. The importance of the portal vessels is not diminished, but to be able quickly to refer to those members of the animal kingdom which have an anterior pituitary gland, but no portal vessels, demonstrates that our dogmas sometimes need deflating.

In each of these eight chapters, information is divided under subheadings; for example in the chapter on teleosts a general paragraph is followed by sections covering the overall structure in several teleost species. This is followed by a description of the histophysiology of the pars distalis, with very useful sections devoted to different cell types from both a morphological and a physiological viewpoint. Hypothalamic control of the teleost pars distalis is then considered from the physiological viewpoint, with several subsequent pages devoted to the pars intermedia. A consideration of neural lobe and hypothalamus follows, and anatomical aspects of hypothalamic control of the anterior pituitary end the chapter. I feel that if these subdivisions had been tabulated, either in the list of contents, or at the beginning of each chapter, the use of this book as a reference source would have increased further.

But any book which goes into such detail in describing the pituitary gland in vertebrate groups from fish to man will be a useful addition to libraries.

H. M. CHARLTON

Not only frog and rabbit

Comparative Vertebrate Morphology. By Douglas and Molly Webster. Pp. xiv+517. (Academic: New York and London, January 1974.) \$32. £15.35.

THIS is an interesting new book on vertebrate morphology, set in clear, readable type and well illustrated. The adjective "comparative" in the title is fully justified, each organ system being illustrated for an example of each extant class or order, as appropriate, and the text similarly trying to cover each extant group. The book certainly does not follow the usual 'dogfish-frog-rabbit' format. Moreover, the text is heavily slanted towards a functional morphological approach, which will undoubtedly make more interesting reading for students than several of the rival texts. The book concentrates on extant vertebrates, though the phylogenetic relationships expressed by current palaeontological opinion are fully appreciated, and used frequently in diagrams. There are a