

BOOK REVIEWS

Hormonal Proteins and Peptides—Prolactin, Vol. 8. Edited by CHOH HAO LI. Academic Press, New York, 1980. xiv + 231 pp., ill., subject index, \$29.50.

Of the pituitary hormones, prolactin is unique in the amount of investigative (and speculative) attention heaped upon it by comparative endocrinologists, sometimes unfairly. The historian might argue that the well-known concept of multiple prolactin actions may have sprung primarily from the failure to detect prolactin in the human pituitary (until recently by U. J. Lewis), and from the confounding absence of mammary glands in the submammalian vertebrates. Lacking those guidelines usually provided by medicine and by mammalian physiologists, zoologists have been forced to consider prolactin functions on an unmarked slate. Already other pituitary hormones are being viewed as functionally more adventurous as the precepts associated with their names (i.e., "growth," "melanocyte-stimulating") have become less restraining.

This volume, the latest in the valuable and distinguished series which treats the biology and chemistry of the protein (chiefly pituitary) hormones, has much to offer the student and scientist interested in the evolution of prolactin function. Two chapters are especially noteworthy. The first, by C. H. Li, summarizes many years of work, done principally in the author's laboratory, on the isolation, chemistry, and structure-function relationships of mammalian (usually sheep) prolactins. Structure-function investigations have attempted to identify those amino acid residues or fragments of the primary structure which provide the minimally essential "core" required for the various biological activities and immunological properties of prolactin. Unlike growth hormones, prolactin does

not tolerate significant derivatization, digestion, or other forms of biochemical abuse without suffering profound losses in native structure and biological activity. Interestingly, however, certain minor alterations in structure can affect one biological activity more than another. Thus, various target organ receptors in phylogenetically distant groups may recognize and bind different segments of the prolactin sequence. If so, and the point has by no means been settled, the evolution of "new" prolactin functions may have been associated with the acquisition of new wrinkles in its conformation. Save for the excellent summary of the isolation and characterization of teleost prolactin and growth hormone, an unfortunate gap in this book is its failure to include other data obtained recently by Papkoff, Farmer, Hayashida, and others on the chemistry and immunological characteristics of prolactin in additional non-mammalian vertebrates.

The principal form of sport among comparative prolactinologists has been to tabulate the many real and some supposed actions of the hormone. W. C. Clarke and H. A. Bern pander to this base emotion in the fourth chapter, but in a genuinely helpful manner. This chapter is easily the most comprehensive and yet concise exposition available on the many biological roles of prolactin. It also summarizes evidence relating to the control of prolactin secretion in diverse groups. Most of the data summarized by Clarke and Bern have been obtained since 1970. Prolactin has been positively identified chemically or immunologically in all vertebrate groups (save for the cyclostomes). Many biological functions have been completely established and certain pharmacological ones eliminated. Happily, many of the gaps and question

marks enscribed in the ancient tablets have simply disappeared.

Of less immediate interest to comparative endocrinologists, perhaps, are the two chapters on mammary gland function and mammary tumors. These (written in comprehensive fashion by J. J. Elias and by H. K. Clifton and the late Jacob Furth) are valuable, nonetheless, as they point the way to new studies on the cellular and molecular bases of prolactin function. The final contribution in this volume, by R. O. Greep, traces the careers of F. L. Hisaw and H. B. Van Dyke.

In many ways this excellent collection looks back over the classical period of prolactin studies, investigations which were focused on the discovery, physiology, pathology, and protein chemistry of prolactin. The modern era has already come to grips with the genes which encode the hormone and which are regulated by it. It can be expected that these new efforts will ultimately unmask the basis of the biological and structural diversity of prolactin at the level of the primary evolutionary substrate.

BYRON A. DONEEN
Division of Biological Sciences
University of Michigan
Ann Arbor, Michigan 48109

Management of Endocrine Disorders. By JEROME M. HERSHMAN. Lea & Febiger, Philadelphia, 1980. viii + 259 pp., ill., subject index, \$13.50

This compact book is written for practicing physicians and clinicians in training as a concise guide to the management of endocrine disorders. It contains 10 chapters by eleven authors concerning the common endocrine and metabolic disorders of man. Each chapter contains a brief clinical description of the diseases, a discussion of differential diagnosis including the appropriate endocrine tests, and a practical discussion of treatment. The topics are well presented and certainly right up to date. This book would contain little to interest

the readers of the Journal, unless perhaps they wished to review certain topics in clinical endocrinology as background for the teaching of endocrine physiology.

CHARLES J. GOODNER
Department of Medicine
Harborview Medical Center
Seattle, Washington

Current Views on Hypoglycemia and Glucagon. Edited by D. ANDREANI, P. J. LEFEBVRE, AND V. MARKS. Academic Press, London/New York, 1980. xii + 512 pp., £24.00 (U.K. only) / \$56.00.

This attractive book presents the edited proceedings of the Second European Symposium on Hypoglycemia (Rome, January 1979). The book, Volume 30 in the series, contains sixty papers of varied scope, all of which, not surprisingly, have a strong medical bias. The majority of the papers have been well written and in a style which would make them understandable to the nonspecialist.

The topics covered may be broadly divided into three categories: (1) aspects of glucagon physiology and pathophysiology; (2) hypoglycemic syndromes, including those specific to neonates and infants; and (3) functional and drug-induced hypoglycemia. We learn, for example, that glicentin is present in normal pancreatic A-cells and in glucagonomas, and are made aware of the important role of glucagon in fuel homeostasis. Unger and Orci present a fascinating account of alpha cell function in the pathogenesis of diabetes. In simple terms, it seems that the classical concept of diabetes as being a disease resulting from insulin insufficiency alone, must now be modified to account also for abnormal A-cell function. Evidence in support of their "bihormonal abnormality hypothesis" was, I thought, elegantly put: Papers on the various hypoglycemic syndromes made interesting reading also, in particular that of Polak and Bloom, who presented evidence of pancreatic somatostatin deficiency in neonatal hyperinsulinemic hypoglycemia.