

BOOK REVIEWS

Recent Progress in Hormone Research, Vol. 45. Proceedings of the 1988 Laurentian Hormone Conference. Edited by JAMES H. CLARK. Published September 1989 by Academic Press, San Diego and London. No. of pages: 599. ISBN: 0-12-571145-X. Price: \$95.00.

Hormone research deals with all levels of biological organization, from the physiological to the molecular. In order to have a clear picture of how hormones function, one must integrate observations at these various levels of organization into a meaningful whole. Endocrinologists are on the verge of being able to accomplish such an integration, and the research reported in this volume makes this very clear. Most of the research is concerned with separating the pieces of the hormonal puzzle and putting them back together again. Such a process will eventually enable us to understand hormonal interactions from the macroscopic to the microscopic level of organization.

The following chapters are contained in this volume:

- Molecular characterization of the glucocorticoid receptor;
- Estrogen regulation of gene transcription and mRNA stability;
- Molecular and cellular biology of mammalian progesterone receptors;
- Molecular basis of regulation of ionic channels by G proteins;
- Granulosa cells as hormone targets: the role of biologically active follicle-stimulating hormone in reproduction;
- The avian pineal, a vertebrate model system of the circadian oscillator: cellular regulations of circadian rhythms by light, second messengers, and macromolecular synthesis;
- The role of glycosylphosphoinositides in signal transduction;
- Mechanisms of growth control in normal and malignant breast epithelium;
- The nerve growth factor receptor: biochemical and structural analysis;
- Parathyroid hormone-related protein: isolation, molecular cloning, and mechanism of action;
- Local factors in bone remodeling;
- Regulation of steroid hydroxylase gene expression is multifactorial in nature;
- Adipisin: regulation and dysregulation in obesity and other metabolic states.

This volume contains up-to-date information and would be very useful for endocrinologists, molecular biologists, general clinicians, and advanced students.

The Control of the Hypothalamo-Pituitary-Adrenocortical Axis. Edited by F. CLIFFORD ROSE. Published November 1989 International Universities Press, Madison, Conn. No. of pages: xxii + 446. ISBN: 0-8236-1070-5. Price: \$65.00.

Ever since the first nomad took to herding animals, the periodicity of the bodily functions of breeding animals was recognised, and the Bible has many references to these functions in man. But it was not until about 100 years ago that the two principal regulators of the body, namely the nervous and endocrine systems, were first appreciated, their close relationship probably being due to dichotomous development from primitive organisms, so that it is not surprising that the same hormones and neurotransmitters can be used by both systems.

Neuroendocrinology is now an enormous subject, but this book focuses on the relationship between the hypothalamus, pituitary and adrenal glands. The early discoveries of hypothalamic functions were made by neurologists, and it is clearly important that neuroscientists, as well as endocrinologists, are kept in touch with this rapidly developing field. This book, based on a Mansell Bequest Symposium of The Medical Society of London, should prove a useful update for this purpose.

The book contains the following chapters:

- The corticotropin-releasing factor complex;
- Turnover of corticotropin-releasing factor and vasopressin in the median eminence, and control of pituitary-adrenal activity;
- The CRF binding protein in human plasma;
- The hypothalamic response to stress;
- The effects of hypothalamic lesions on stress-induced ACTH release;
- Role of corticosteroid receptors in central regulation of the stress response;
- Metabolites of ornithine as intracellular facilitators of adrenocorticotrophin secretion;
- Corticosterone (B) replacement in adrenalectomized rats: insights into the regulation of ACTH secretion;
- Studies on the effects of chronic glucocorticoid treatment on extracellular and intracellular messengers causing adrenocorticotrophin secretion;
- Regulation of the adrenocortical axis: hypophysiotropic coding, catecholamines and glucocorticoids;
- Paracrine control of adrenocortical function;
- Central alpha-MSH binding sites and early ontogeny of MSH control;
- Ontogenetic determinants and age-dependent changes of hypothalamo-pituitary-adrenocortical axis activity in the rat: *in vitro* studies;
- The role of catecholamines in the control of secretion of ACTH in man;
- The catecholaminergic control of the hypothalamo-pituitary-adrenal axis;
- Various aspects of central cholinergic modulation of the adrenocortical axis;
- Neurotransmitter regulation of CRF secretion *in vitro*;
- Hypothalamic neurone culture as a model for studying the central control of the hypothalamo-pituitary-adrenal axis (HPAA);
- The role of sympathetic nerves in the control of adrenal cortical function;
- Extrahypothalamic neural afferents and the role of neurotransmitters in the regulation of adrenocortical secretion;
- Hypophysiotrophic neurones controlling the secretion of corticotrophin: is the hypothesis of a final common hypothalamic pathway correct?;
- Opioidergic modulation of hypothalamo-pituitary-adrenocortical function in the rat; POMC derived peptides: heterogeneity in health and disease;
- CRF in pregnancy;
- Ectopic CRH and ACTH secretion;
- Cortisol receptor resistance: the differential diagnosis of Cushing's syndrome;
- The medical treatment of Cushing's disease and Nelson's syndrome;
- Pathogenetic mechanisms of hypertension in Cushing's syndrome;
- Hypercortisolemia and mental illness;
- Interplanetary travel: is gravity needed to close the loop?

This book would be useful for neuroendocrinologists, endocrinologists, neurobiologists, and general clinicians.

Animal Growth Regulation. Edited by D. R. CAMPION, G. J. HAUSMAN and R. J. MARTIN. Published 1989 by Plenum Publishing, New York. No. of pages: 423. ISBN: 0-306-42978-0. Price: \$85.00.

The biotechnological advances of recent years have put us on the brink of unprecedented gains in animal productivity. Manipulation of animal growth rate and composition of gain is now possible by a variety of techniques. Examples include ingestion of beta-adrenergic agonists, injection of somatotropin, castration, immunization, and gene insertion. *Animal Growth Regulation* addresses modern concepts of growth regulation with an emphasis on agriculturally important animals. This emphasis is not exclusive, as many situations exist in which the only information available was generated in other species, and this information has been included for the sake of clarity and completeness.

The involvement of peptides coded by protooncogenes and of negative growth regulators, such as transforming growth factor- β , represents an emerging area of molecular biology wherein basic knowledge offers potential exploitation for growth manipulation. Opportunities also exist for regulation of protein turnover, especially from the standpoint of protein degradation. Therefore, a place was reserved for these topics in order to provide relevant basic knowledge.

The book covers the following main topics:

- Placental regulation of fetal growth;
- Endocrinology of bone formation;
- Endocrine regulation of adipogenesis;
- Autocrine, paracrine, and endocrine regulation of myogenesis;
- The expression of protooncogenes in skeletal muscle;
- Regulation of myofibrillar protein gene expression;
- Regulation of growth by negative growth regulators;
- Skeletal muscle proteases and protein turnover;
- Regulation of protein turnover;
- Energy balance regulation;
- Central regulation of growth hormone secretion;
- Mechanisms of action for somatotropin in growth;
- Regulation of somatomedin production, release, and mechanism of action;
- Sexual differentiation and the growth process;

- Potential mechanisms for repartitioning of growth by β -adrenergic agonists;
- Gene transfer for enhanced growth of livestock;
- Status of current strategies for growth regulation.

The book would be useful for people working in a wide range of disciplines including biochemistry, anatomy, histology, physiology, endocrinology, and nutrition.

Turner syndrome. Edited by R. G. ROSENFELD and M. M. GRUMBACH. Published 1990 by Marcel Dekker, New York. No. of pages: 552. ISBN: 0-8247-8108-2. Price \$150 (U.S.A. and Canada); \$180 (elsewhere).

Fifty-one years ago, Henry Turner described seven phenotypic females exhibiting short stature, sexual infantilism, webbing of the neck, low posterior hairline, and increased carrying angle of the elbow. Over the ensuing five decades, it has become apparent that the syndrome which now bears his name is a surprisingly common chromosomal disorder. Its incidence has been estimated to be between 1/2000 and 1/5000 live-born phenotypic females, and as many as one in fifteen spontaneous abortions have karyotypes consistent with classical Turner syndrome.

Early recognition of the cardinal clinical features of Turner syndrome, combined with appropriate chromosomal analysis and thorough diagnostic evaluation, permits effective and compassionate counseling of the child and family, prompt recognition of associated disorders, and timely institution of therapy directed at promoting growth and normalizing secondary sexual development. Although the underlying pathogenesis of many of the phenotypic characteristics of Turner syndrome remains uncertain, effective clinical care of these patients requires careful integration of therapy directed toward a wide variety of primary and associated abnormalities.

The following main sections are included in this book:

- Genetics, organogenesis, and incidence;
- Natural history and associated abnormalities;
- Growth hormone secretion and bone cartilage development;
- Endocrine treatment;
- Intellectual and psychological development.

This book would be useful for general clinicians, endocrinologists, gynecologists, andrologists, and biologists.