

A Welcome Envoy

Biochemical Messengers: Hormones, Neurotransmitters and Growth Factors

By D.G. Hardie. *New York, Chapman and Hall, 1991, 311 pages, \$35.00 (paper) and \$75.00 (cloth) (USA), \$43.95 and \$93.95 (Canada), ISBN 0-412-30350-7.*

As stated on the back cover, *Biochemical Messengers* is "not intended to be a comprehensive text in the physiological roles of all first messengers; the book provides a cohesive overview, employing unifying principles and molecular mechanisms." This the author accomplishes admirably well. Because I taught mechanisms of hormone action for many years in a medical school, I agree with Hardie's assessment of a need for a volume

devoted to biological messengers. The book's clever dissection of the message systems is a useful adjunct for teaching the topic to many levels of students.

I was struck by the elegant, simple, and clear illustrations that clarified important and complex concepts. Particularly effective is the use of bold fonts for key words. Summaries at the end of each chapter help to cement the concepts in the readers' minds. The organization of the chapters provides a refreshing and novel framework for both the teacher and the student. For example, I was impressed by the clarity of chapter 6 ("Nuclear Receptors"). However, I was at the same time disappointed by the omission of heat-shock proteins and steroid-receptor-associated proteins, resulting in a truncated view of the mechanism(s)

of steroid action. The omission may limit the long-term utility of the text.

In summary, *Biochemical Messengers* is an extremely well thought-out and well written ancillary text. The information is mostly up to date, with references to many important reviews. Because of its readability, the book will serve both as an additional reference for biomedical science students and for undergraduate and graduate medical students. Even health professionals will find the book useful in interpreting contemporary literature in endocrinology. It is highly recommended.

TEM

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Global Reproductive Endocrinology and the Ovarian Galaxy

Reproduction, Growth and Development

Edited by A. Negro-Vilar and G. Pérez-Palacios. **Serono Symposium Publications, volume 71.** *New York, Raven, 1991, \$130.00 (xv + 456 pages), ISBN 0-881-67650-0.*

Signaling Mechanisms and Gene Expression in the Ovary

Edited by Geula Gibori. **Serono Symposia, USA: Proceedings of the Eighth Ovarian Workshop on Regulatory Processes and Gene Expression in the Ovary.** *New York, Springer-Verlag, 1991, \$129.00 (xxix + 497 pages), ISBN 0-387-97653-1.*

Reproduction, Growth and Development is an anthology of papers presented at a 1990 symposium held in Acapulco, Mexico. The editors claim in the preface that

"the expected cross-fertilization in a multidisciplinary event . . . is reflected in the chapters contained in the volume. The interested reader from many disciplines should find novel and exciting information, both from basic and clinical perspectives." The volume does contain several comprehensive articles of interest to reproductive endocrinologists. However, it delivers far less than the editors claim.

Ranging in length from 4 to 15 pages, a total of 43 articles cover a broad spectrum of topics. The first few papers cover gonadal morphogenesis, male phenotypic development, differentiation and function of trophoblast, regulation of fetal adrenal growth, circadian rhythms and delivery, and regulation of pubertal onset and growth. Then follow papers dealing with the use of GnRH analogues and GRF(1-29)NH₂ as diagnostic and therapeutic tools in development and growth. A group of papers focuses on the cell

biology of testes, role of growth factors in testicular function, and human sexual behavior. Then comes a collection of papers devoted to various aspects of the GnRH-gonadotropin axis. Evaluation and treatment modalities for infertile couples as well as some future directives in contraceptive development are also discussed. The final papers deal with neuroendocrine regulation of PRL secretion and its role in reproduction and fertility.

The book draws its strength from the reputation of its contributors and editors. Some papers are presented in manuscript form and focus on limited areas; others are excellent comprehensive reviews of topical concepts. Of particular interest are a group of papers that start with the GnRH pulse generator (actually a reprint of E. Knobil's article from *Control of Puberty III*, ed. H.A. Delemarrevan de Waal et al., Elsevier Science Publishers) and focus on the GnRH-

gonadotropin axis, a series of clinical articles centering around infertility and contraceptive development, an article by C.W. Bardin on the paracrine role of Sertoli cell factors, and an article by J.F. Strauss on differentiation and function of the human trophoblast.

The wide variety of topics covered in the symposium seems to have diffused the book's focus. Because the papers have not been grouped and categorized more meaningfully, the reader is forced to search through the titles to find areas of interest. The book's high price tag is discomforting, too.

Presenting a global view of reproductive endocrinology, *Reproduction, Growth and Development* provides practicing clinicians and incoming students a comprehensive though not rich introduction to current developments in the field of reproductive endocrinology.

Signaling Mechanisms and Gene Expression in the Ovary grew out of the Eighth Ovarian Workshop held at Maryville College in Maryville, Tennessee, in 1990. In the words of the editor, Geula Gibori, the Ovarian Workshop sought to "bring together biologists from various disciplines so that they may collectively achieve a better understanding of the latest developments and define important problems in ovarian physiology." The organizers of the symposium largely achieved that objective.

The book focuses on the expression of genes regulating ovarian differentiation as well as the signaling mechanisms affecting ovarian differentiation and steroidogenesis, and is categorized into five parts. Parts I-IV include 17 invited articles (204 pages). Part V consists of 44 short submitted manuscripts (272 pages). Part I, "Gonadotropin Receptors and Transfactors," provides a comprehensive coverage of the structure of the gonadotropin receptors and the control of gonadotropin gene expression. Part II, "Signaling Pathways in the Ovary," compiles five articles on the various signaling mechanisms and includes regulation by paracrine and autocrine regulators. Part III, "Hormonal Control and Gene Expression in the Ovary," includes four articles covering inhibin activin genes, *mos* protooncogene product, genes encoding steroidogenic enzymes, and oxy-sterols. Part IV, "Relevance of Resident Ovarian White Blood Cells," covers six articles in the area of leukocyte chemoattraction, the role of interleukin 1, bacterial endotoxin, tumor necrosis factor α , and macrophages.

The book covers molecular and biochemical advances in ovarian development and differentiation until 1990 and would be useful to anyone working in the reproductive endocrine area. The contributors are international experts in the field. Though not designed as a text, the

invited articles are organized logically and integrated meaningfully.

Except for some papers in manuscript form, the invited articles generally provide a comprehensive review of the topic they address. Of special mention are the excellent reviews on the endocrine, paracrine, and autocrine regulators of the macaque corpus luteum by Richard Stouffer, regulation and role of oxy-sterols by Jerome Strauss, hormonal regulation of gonadotropin gene expression by Larry Jameson, and the structure of the gonadotropin receptors by Deborah Segaloff. The submitted manuscripts, on the other hand, highlight the various aspects of ovarian research, but not in sufficient depth. Since many of these papers will eventually appear as articles, this section could have been condensed, lowering the price as a result.

Two other Ovarian Workshops have been held since 1990 and may eclipse the Maryville workshop. Nevertheless, *Signaling Mechanisms and Gene Expression in the Ovary* will be of immense use to anyone who is working in the reproductive area and wishes to keep up with the current advances in molecular and cellular aspects of ovarian biology. **TEM**

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Maladaptation and Fertility

Stress and Reproduction

Edited by K.E. Sheppard, J.H. Boublik, and J.W. Funder. **Serono Symposium Publications, volume 86.** New York, Raven, 1992, \$98.00 (xvi + 375 pages), ISBN 0-881-67789-2.

This book contains a collection of papers presented at a conference on stress and reproduction held at Palm Cove, Australia, in 1991. There are 30 chapters by contributors from laboratories and medical institutes in Australia, France, Italy, Japan, Spain, the United Kingdom, and the United States. The articles include technical papers as well as transcripts of more general lectures. As mentioned in

the preface, the goal of the conference was to bring together investigators and participants interested in cellular and molecular biology with those working in organ and organismal areas. The specifics of some particular areas of reproductive research are presented in depth; there are also broader multidisciplinary papers, which most likely drew a diverse audience to the conference. The book, therefore, will have a larger readership than it would have if it were limited to reports of current in vitro research using advanced technology.

Many forms of physiological and psychological stress affect the endocrine system via the central and autonomic nervous systems. Although this concept

has been accepted for some time, it is only recently that accurate assessment of the electrophysiological activity of the sympathetic nervous system through microneurography could be coupled with the reliable biochemical measurements by high-performance liquid chromatography. The autonomic nervous system, particularly the sympathetic division, and adrenal medullary and cortical hormones form the core of the classic stress response. Several papers focus on analysis of nervous and endocrine system responses to specific stressors, such as strenuous physical exercise, life events, pregnancy, and child raising. Acute and chronic mental stress interferes with the reproductive process and subsequently