
Book Reviews

Goldberger, R.F.; Yamamoto, K.R. (eds.): Biological Regulation and Development. Vol. 3A. Hormone Action. New York, London: Plenum Press 1982. xiv + 346 pp., several figs., several tabs. Hard bound £ 39.50.

This volume is the third in a series on biological regulation and development. The foregoing volumes dealt with mechanisms of gene expression and cell function in prokaryotes and eukaryotes. This is the first of two volumes on endocrine topics, selected to illustrate general biological principles rather than to provide an up-to-date overview of the field or to deal with the latest developments in endocrinology. The book contains some highly readable and clearly written chapters on such topics as neuro-endocrine interrelations, hormonal regulation of transepithelial transport, transmembrane mediated communication, and metabolism of cell surface receptors. It also contains an original contribution on linguistic analysis of hormone action. Conclusion: hormonal communications employ relatively simple syntactical rules and bear short messages. Although this volume has been carefully edited and printed, it shows some of the drawbacks of a multi-author approach: inequality of the contributions in thoroughness and relevance to the main subject. A chapter on the regulatory mechanisms of metabolic pathways in *Tetrahymena* has no apparent relation to endocrinology, although it is a clear demonstration of the complexity of intracellular pathways. Moreover, there was a long delay between submission of the contributions and their publication. Nevertheless, this volume can be recommended for cell biologists, endocrinologists and developmental biologists.

S.E. Wendelaar Bonga, Nijmegen

Schlesinger, M.J.; Ashburner, M.; Tissieres, A.: Heat Shock: From Bacteria to Man. Cold Spring Harbor: Cold Spring Harbor Laboratory 1982. 440 pp., several figs. Hard bound \$ 54.00.

This book consists of papers about heat shock phenomena, presented at a meeting held at Cold Spring Harbor Laboratory in May 1982. The Introduction is followed by the presented papers which are divided into 5 sections: organisation and transcription, chromatin structure, regulation, proteins and the last section physiological response. The summary and a list of the posters are the last part of the book. Heat shock is a stimulus that can induce changes in gene activity. The response to heat shock involves de novo transcription of the heat shock genes resulting in the synthesis of a few specific proteins – the heat shock proteins (hsp). The mechanism of this induction appears to be similar in a variety of eukaryotic (insects, mammals and amphibia) and even prokaryotic organisms. Also remarkable is the homology (in nucleotide sequence and differential control) between prokaryotic high temperature response genes and the major heat shock genes of *Drosophila* and yeast; this establishes the conservation of these hsp genes in evolution.

The contributions to this volume review the present state of the study of the response of cells to heat shock (and other stress stimuli) and the title of the book gives as much as it promises, there are many articles on bacteria and *Drosophila* and much on mammalian systems including four on man; in addition there are a few on *Xenopus*, *Tetrahymena*, *Dictyostelium* and yeast and a little on higher plants.

I agree with the authors that a considerable increase in the work on higher cells, including man, can be expected in the future, because the response to stress which is supposed to protect the cell against excessive injury appears to be a universal phenomenon and therefore it is of universal importance.

The book will be interesting to researchers in zoological and medical sciences, microbiologists and molecular geneticists and less interesting to agriculturalists and botanists.

M.M.A. van Herpen (Nijmegen)