

Book reviews

Nover, L.; Neumann, D.; Scharf, K.-D.: Heat Shock and Other Stress Response Systems of Plants. Results and Problems in Cell Differentiation Vol. 16. Heidelberg, Berlin, New York: Springer 1990. 170 pp., 38 figs. DM 89.00.

Organisms exposed to rapidly changing environmental conditions can cope with this stress situation by inducing molecular, metabolic and physiological events. The best studied environmental stress factor and its subsequent effect in organisms is the temperature-induced reaction that is known as "heat-shock response". This stress response, a reprogramming of cellular activities to ensure survival during the stress period and resumption of normal cellular activities in the recovery period, is not only similar for all types of stressors, but the induction of heat-stress proteins is recognized as a conserved trait in all kinds of organisms, including plants.

The 16th volume in the "Series of Topical Volumes in Developmental Biology, Results and Problems in Cell Differentiation" deals with "Heat Shock and Other Stress Response Systems of Plants", but places a strong emphasis on the synthesis of stress metabolites and proteins in plants. One could wonder about the publication of a complete volume almost solely concentrated on plants, when the cell biological aspects dealt with are focused on the synthesis of stress proteins that are virtually identical in all organisms. The only reason I can think of for writing a book dedicated to plants would be the meager citation of research on plants in books dealing with this 'hot' topic. But then it is strange that not all publications about stress response in plants are dealt with in this volume and that the understanding of the general response in plants will be, and I cite, "based on mostly unpublished material from our laboratories".

Nevertheless, the scientific scope of the book, at first glance, is enormous. This book has, apart from the Introduction, a reference and a subject index, two other parts: *Heat-shock response* and *Other plant stress response systems*. The first part deals with the following subjects: plant heat-shock proteins and genes; control of gene expression; changes of cell ultrastructure and biochemical functions related to this; induced thermotolerance and intracellular localization of heat-shock proteins; heat-shock effects on chloroplasts and mitochondria. In the second part attention has been given to: general stress response and interaction of stressors; phytohormones and other stress modulators; oxidation stress; heavy metal stress; anaerobic stress; low temperature stress; water deficiency stress; starvation; wounding stress; biogenic stress by pathogen attack; stress-induced protective effects against DNA damage.

Although the authors have not succeeded in convincing me about the need for this book, this volume contains a nice compilation of results. M. M. A. van Herpen, Nijmegen

Papp, Zoltán (with the cooperations of R. H. Lindenbaum): Obstetric Genetics. 1st edn. Budapest: Akadémiai Kiadó 1990. 627 pp., 218 figs., 48 tabs. Hard bound \$ 69.00.

Modern obstetrics today is of great importance in the field of the prevention of genetic diseases. In the last two decades many different techniques have been developed for prenatal diagnosis. In this book the author presents an excellent review on the problems involved in medical genetics within the special framework of obstetrics. There are 80 chapters which cover all of the problems in clinical genetics and obstetrics concerning the prevention of biochemical genetic diseases, congenital malformations, ethical problems, genetic counselling, pathology of pregnancy, embryopathology, chromosomal aberrations and

techniques of prenatal diagnosis. This book represents the great experience of the author in this field.

For all this some critical remarks are necessary. MPS VIII – DiFerrante syndrome is not accepted as mucopolysaccharidosis. The classification of mucopolysaccharidosis is obsolete. It's not correct to classify the Zellweger syndrome as a multiple malformation syndrome.

The text is intelligible and the illustrations and tables are of good quality and easy to understand. This book is recommended to obstetricians, pediatricians, clinical geneticists and physicians interested in medical genetics, and also to students of medicine. G. Seidlitz, Greifswald

Green, M. H.: Classic experiments in modern biology. New York: W. H. Freeman and Co. 1991. ix+208 pp. \$ 15.95.

While the title sounds quite interesting, it is difficult to define the overall concept of the book, and I reviewed it with constantly changing impressions. The bulk of its contents are concerned with a few of the important techniques currently employed to understand cellular and molecular events in animal systems.

In the first chapter, although the author prefers to scratch the surface of microscopy in general, a brief reference to the recent techniques of laser scanning microscopy and S.T.M. could have been informative and helpful to any student of modern biology. The subsequent 4 chapters are well presented and include an overview of methods and some theory behind certain procedures, particularly in protein and mRNA analysis, cell culture studies and genetic engineering.

All of the chapters are fairly well annotated with illustrations and figures. The questions at the end of each chapter help to consolidate the skills and information provided in the respective chapters, and the brief list of references therein directs the student to further reading on the subject.

For new students in the field, there is a glossary that should help them to understand the words and jargon that biologists routinely use. The author must be congratulated on producing a fairly well-balanced analysis of experimental details and techniques, highlighting both theoretical and practical considerations. Because the book offers a sound foundation to the newcomer, it is this book that I recommend to the students of Biology 1 at the University of California, San Diego.

U. K. Tirlapur, Siena

Cantor, C. R.; Caskey, C. T.; Hood, L. E.; Kamely, D.; Omenn, G. S.: Biotechnology and Human Genetic Predisposition to Disease. New Jersey: John Wiley & Sons 1989. 241 pp., 56 figs., 18 tabs. Hard bound \$ 75.00.

The proceedings of two symposia on biotechnology and on human genetic predisposition to disease held in 1989 are included in this volume. The papers describe advances in molecular diagnosis, progress in the search for a number of significant disease genes, steps towards the eventual possibility of gene therapy and improvements in our understanding of DNA damage and repair. The book focuses on the advances that have been made in DNA technology, examining new methods for large-scale genome mapping, DNA sequencing, and protein structural analysis. Significant discussions underscore the pervasive and powerful influence of the polymerase chain reaction in all areas of DNA manipulation and analysis. This book will be of interest to clinicians and researchers working in the areas of human molecular genetics. F. H. Herrmann, Greifswald