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Book reviews

Leaver, C.; Sze, H. (eds.): Plant Membranes: Structure, Function and Biogenesis. (UCLA Symposia on Molecular and Cellular Biology, New Ser., Vol. 63.). New York: Alan R. Liss 1987. 461 pp. Hard bound $ 80.00.

On February 8–13, 1987, the ARCO Plant Cell Research Institute-UCLA Symposium on Plant Membranes: Structure, Function and Biogenesis was held at Park City, Utah. This volume is the result of this meeting. Although not all symposium speakers have contributed to this volume, the book nicely updates diverse ongoing research efforts in plant membrane research. It contains 6 chapters (27 articles) covering a wide variety of subjects in this field.

In chapter I, consisting of 8 articles, the structure and function of energy-transducing membranes, including mitochondrial, thylakoid, vacuolar and plasma membranes, is dealt with. The next chapter contains two contributions on the biogenesis of thylakoid membranes and examines the assembly of membrane proteins. Chapter III opens with an article written by one of the book editors (H.S.) on the use of chemical modifiers and antibodies in a study on the structure and function of the different subunits of the tonoplast H^+-ATPase. Recent progress in tonoplast secondary transport, the role of the chloroplast phosphate translocator and the mitochondrial ATP/ADP translocator in plant cell metabolism, transport of ions in a halotolerant unicellular alga, and a novel toxic amino acid into plant cells is presented in the 4 other articles of this chapter. Chapter IV contains 6 articles on the synthesis and intracellular transport of macromolecules. Protein targeting, protein secretion, the role of coated vesicles in endocytosis in plant cells, and the regulation of transport and processing of seed storage proteins are the topics dealt with in this chapter. Chapter V is headed by the title "Membrane receptors and transmembrane signalling" and reports on the role of Ca^{++} and protein phosphorylation in signal transduction in plant cells, the stimulation of protein kinases by syringomycin, a bacterial peptide toxin, and the involvement of lipid peroxidation in the hypersensitivity response of plant cells upon challenge by a fungal pathogen. The last chapter of the book consists of one article, in which the use of mutants in studies concerning the significance of fatty acid unsaturation to membrane structure, function and biogenesis is advocated.

The book gives a good overview of recent progress and current trends in plant membrane research. The collection of papers as a whole forms a useful reference volume that will be appreciated by students and researchers in the field.

A. P. R. Theuvenet, Nijmegen

Connor, J. M.; Ferguson-Smith, M. A.: Essential Medical Genetics. 2nd edn. Oxford London, Edinburgh: Blackwell 1987. 226 pp., many figs. Soft bound £ 9.95.

Three years after the appearence of the first edition of **"Essential Medical Genetics"**, the same authors have published the second edition of this modern textbook for medical and dental students. Since the publication of the first edition, progress in the field of molecular human genetics has increased enormously. Therefore, the sections on molecular genetics have been rewritten to incorporate recent advances, including the genetics of sex determination, DNA fingerprinting, molecular mechanisms of cancer, and the application of gene probes to genetic counselling.

The first part of this completely revised book deals with the basic principles of human genetics, including structure and function of the gene and chromosomes; gametogenesis; gene mapping; dominant, recessive, X-linked, and multifactorial inheritance; and population genetics. The second part focuses on the clinical application of medical genetics (immunogenetics; human molecular pathology; genetic counselling; single-gene, chromosomal, and multifactorial disorders; prenatal diagnosis; screening, prevention and treatment of genetic diseases). In the appendix special methods of human genetics are described: Chi-square test; odds and probabilities; Bayes' theorem; calculation of the coefficients of relationship and inbreeding; a self-assessment section.

This book is well illustrated. It is an excellent textbook not only for students of medicine and biology, but also for scientists and clinicians who work in the field of human and medical genetics.

F. H. Herrmann, Greifswald

Ferretti, J. J.; Curtiss III, R. (eds.): Streptococcal Genetics; 2nd ASM Conference on Streptococcal Genetics. 1st edn. Washington D.C.: American Society for Microbiology 1987. 300 pp., figs. Hard bound $ 49.00.

Since the first ASM Conference on Streptococcal Genetics was held in 1981, there has been a remarkable increase of interest in this field of microbiology. At the same time, one observes a certain shift of emphasis in the topics. While initially research in streptococcal genetics centered on the study of plasmid biology, gene transfer, and antibiotic resistance, in recent years more attention has been paid to genetic aspects of virulence, pathogenicity, and metabolism. This is mainly because streptococci are associated with many diseases as, e.g., rheumatic heart disease, glomerulonephritis, dental caries, and pneumonia. Moreover, food-processing and dairy industries are interested in elucidating streptococcal fermentation pathways. The contributions to the second conference, held in 1986, (56 in total) are arranged in 5 groups, viz., gene transfer (8), antibiotic resistance (10), pathogenic streptococci (23), oral streptococci (7), and lactic acid streptococci (8). The articles are rather diverse and highly specialized studies; concluding summaries by the editors, either at the end of the book or terminating each chapter, would have been helpful. Thus, the user has to read many articles in order to get an impression of the progress in his field of interest. The book is concluded by appendices which give practical information on (amongst others) cloning vectors, nucleotide sequences of some genes, transcription and translation initiation sequences, and mole percent G+C values of 24 *Streptococcus* species. The book will be useful to every research worker in bacterial genetics.

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