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BOOK REVIEW

BORSELLINO, A., OMODEO, P., STROM, R., VEGLI, A. WANKE, E. (ed.): DEVELOPMENTS IN BIOPHYSICAL RESEARCH. Proceedings of the Congress on Developments in Biophysical Methods held in Parma, 1979. — Plenum Press, New York—London 1980. 365 pp., \$ 42.50.

The book is a collection of papers presented at the 4th biennial meeting of the Italian Biophysical Society held in Parma in October 1979, and published by the Plenum Publishing Corporation with great promptitude. The contents of individual papers reflect the extent of the contemporary biophysical research carried out in Italian physiological and biochemical laboratories; several reviews by invited guests (E. Neher, R. H. Adrian, S. Ottolenghi, G. Zaccari) cover fields less cultivated in Italy. The presented papers are compiled into five parts.

The first part concerns excitable membranes and includes comprehensive critique of the principles, and the significance of conductance measurements of individual channels by the method of fluctuation analysis of membrane noise (F. Conti), or by the patch clamp method suitable for estimation of synaptic channel conductance and duration of their opening (E. Neher). Electrophysiologists will be interested in the paper by R. H. Adrian in which gating currents and the dielectric behaviour of cell membranes are discussed. A new and very promising approach to understanding the mechanism of selective ionic permeabilities is the incorporation of ionic channels into membranes. This trend appears in the second part of the volume which also includes various studies on nonexcitable membranes. The photopigment from the honeybee eye and hemocyanin channels are discussed. Membrane transport activation energies are treated by Bellucci, Gaeta and collaborators from Naples, and nonlinear transport coefficients by Monticelli and Celentano. In the third part various items of photobiological interest are discussed; there is a review of the primary photochemical events in bacteriorhodopsin by Dinur, Honig and Ottolenghi.

Contributions to the fourth part of the volume concern protein structure and function, e.g. magnetic properties of hemoglobins, conformational changes of protein molecules produced by organic solvents or hydrogen peroxide, protective effects of D₂O in thermal denaturation of methemoglobin and polyfunctionality of horse liver alcohol dehydrogenase. Finally, the fifth part contains various studies on nucleic acids, e.g. using neutron scattering and spectrophotometry together with a computer investigation of polynucleotide sequences in a number of genes, studies on binding of 9-aminoacridines by DNA, the effects of mutagenic and carcinogenic compounds on physico-chemical properties of DNA, and the role of compartmentation in the control of RNA and protein synthesis in baker's yeast.

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