

BOOK REVIEWS

Advanced EPR: Applications in Biology and Biochemistry—Edited by A. J. HOFF. 918 pp. 1989. Elsevier, Amsterdam. D.FI 510. \$248.75.

Electron paramagnetic resonance has greatly developed since its discovery by Zavoisky in 1945. This book is on these new developments and applications. It is in four sections: (1) the applications of pulsed EPR; (2) new experimental methods; (3) double resonance techniques, ENDOR (electron nuclear double resonance), optically and reaction yield detected resonance; (4) new applications to biological and biochemical problems. The 25 chapters have a strong physico-biochemical slant but will be of interest to biochemists wishing to know how these techniques are being used.

Energy Transduction in Biological Membranes; A Textbook of Bioenergetics—W. A. CRAMER and D. B. KNAFF. 545 pp. 1990. Springer Verlag, New York. \$89.

This is the text for a one semester undergraduate course. The chapters are: revision of the thermodynamic background; oxidation and reduction, electron and proton transfer; membrane structure and storage of free energy; metallo-proteins; the quinone connection; photosynthesis; light and redox linked H^+ translocation, pumps, cycles and stoichiometry; transduction of electrochemical ion gradients to ATP synthesis; active transport; answers to problems; physical, chemical and biochemical constants. The text is well written and provided with many diagrams and illustrations. It will help many students increase their understanding of bioenergetics.

Journal of Chromatography, Vol. 500—Edited by R. W. GIESE, J. K. HAKEN, K. MACEK and L. R. SNYDER. 708 pp. 1990. Elsevier, Amsterdam.

In the 32 years of its existence the *Journal of Chromatography* has published more than 30,000 papers on 250,000 pages and has expanded from one volume a year to 37 volumes a year. Volume 500 in addition to the normal papers has a chapter by Michael Lederer presenting his *Journal of Chromatography Family Picture Album* with 172 photographs of chromatographers over the years.

Plant Polyphenols; Vegetable Tannins Revisited—E. HASLEM. 230 pp. 1989. Cambridge University Press, Cambridge. \$70.

The plant phenols account for the astringent taste of many plant products such as tea and wine, and are used in tanning leather. They are classified into two main groups: the proanthocyanidins and the polyesters based on gallic and/or hexahydroxydiphenic acid and their derivatives. They can form complexes with proteins and polysaccharides. This volume surveys their chemistry, origins and application.

Ivermectin and Avermectin—Edited by W. C. CAMPBELL. 363 pp. 1989. Springer Verlag, Berlin. DM 132.

Fermentation of the actinomycete *Streptomyces avermitilis* produces a series of avermectins [As]. The As are a range of

16 membered macrocyclic lactones. They have no antibacterial or antifungal properties. The milibemycins are structurally related but lack the C13 disaccharide substituent. As are powerful antihelmintics that can be injected or given orally to sheep, cattle, pigs, dogs, cats and man with very low toxicity to the host but a powerful action on the nematode worm parasites. As bind to the GABA receptors of the parasites and affects their chloride channels. At the concentrations used A does not significantly cross the mammalian blood brain barrier and so does not affect the mammalian CNS GABA receptors. As can also be used as a pesticides against insects and insect larvae. As do not persist or accumulate in the soil and rapidly photolyze in water. This volume summarizes the information on A's chemical structures, production, mode of action, toxicity, pharmacokinetics, metabolism and use. The As will soon be a billion dollar industry.

Antimicrobial Chemotherapy, 2nd edn—Edited by D. GREENWOOD. 372 pp. 1989. Oxford University Press, Oxford. Hardback \$45, paperback \$24.95.

The first edition of this book appeared in 1983. The 1980s have seen the development of the fluoroquinolones and novel beta lactam antibiotics, as well as advances in antiviral and anthelmintic agents. The book provides an up to date account of the role of antimicrobial agents (A) against bacteria, viruses, protozoa, fungi and helminths; A assays, interactions, sensitivity testing; resistance to A; pharmacokinetics, prescribing, adverse reactions, chemoprophylaxis; treatment of infections of respiratory tract, urinary tract, GI, bacteraemia and endocarditis, skin and soft tissue, bone and joints, mycobacteria, meningitis and brain abscess, viruses, VD, parasitic disease, topic use, the development and marketing of A. It includes treatment of Legionnaires disease, AIDS and salmonellosis.

Membrane Transport; People and Ideas—Edited by D. C. TOSTESON. 414 pp. 1989. American Physiological Society, Bethesda, MD. \$60.

Water movement, the sodium potassium pump, calcium pump, anion exchange and band 3 protein, secondary active transport, electrodiffusion, excitation-contraction coupling, cell connectivity, epithelial transport, and flow and diffusion are reviewed by leading workers such as Tosteson, Davson, Robertson, Skou, Hasselbach, Rothstein, Heinz, Goldman, Armstrong, Mullins, Podolsky, Loewenstein, Ussing and Pappenheimer. It's all here.

Understanding Insulin Action; Principles and Molecular Mechanisms—J. ESPINAL. 129 pp. 1989. Routledge, Chapman & Hall, New York. U.S.A. \$45. Elsewhere \$54.

An account of the chemistry, synthesis and secretion of insulin, is followed by the pathophysiology of insulin, molecular mechanisms involved in insulin action, insulin receptor, molecular mechanisms of insulin signal transduction. The insulin receptor belongs to the tyrosine kinase