

The Metabolism and Toxicity of Fluoride—G. M. WHITFORD. 160 pp. 1989. Karger, Basel. S.Fr 147. DM 176. \$98.

Fresh mackerel, sardines, salmon and cod have a fluoride (F) content between 6 and 27 ppm. Brewed tea has 1–6 ppm, depending on the amount of tea used. Most foods have a F content between 0.01 and 1.0 ppm. USA water ranges between 0.37 and 1.04 ppm. F is removed from the body via the kidneys. The lethal dose of F for a 70 kg man is 5–10 g of sodium fluoride; i.e. 32–64 mg/kg body weight. This is the LD₁₀₀. The probable toxic dose is 5 mg/kg body weight. Now that dental caries have been reduced in children, the general fluoridation of water is being criticised, since F can be more selectively administered in toothpaste.

Medical, Biochemical and Chemical aspects of Free Radicals, 2 volumes—Edited by O. HAYASHI, E. NIKI, M. KONDO and T. YOSHIKAWA. 1560 pp. 1989. Elsevier, Amsterdam. \$514. D.Fl. 975.

This is the published proceedings of the 4th meeting of the Society for Free Radicals held in Kyoto. There are two introductory reviews: (1) disturbances of free radical reactions—a cause or consequence of cell injury?; and (2) the biological implications of oxygen radical mediated inactivation of enzymes. The remaining 300 papers are grouped into sections on iron complexes (58 pages); active oxygen (132 pages); vitamin E (111 pages); antioxidants (276 pages); superoxide dismutase (156 pages); assay methods (160 pages); lipid peroxidation (54 pages); lipid peroxide (60 pages); prostaglandins (54 pages); ischaemia reperfusion (76 pages); pathology (268 pages); and cancer (86 pages).

Molecular and Cellular Aspects of the Drug Addictions—Edited by A. GOLDSTEIN. 238 pp. 1989. Springer, New York. \$59.

The development of the ligand binding techniques by Goldstein led to a great increase in our understanding of the drug-receptor complex and the changes in receptor properties, and also provided a valuable screening test for new drugs. The present volume has chapters on the nature of addiction; drug seeking behaviour; bradykinin and pain; neurochemical aspects of addiction; molecular and cellular actions of ethanol; presynaptic inhibition/facilitation and second messenger systems; and molecular genetics of neuro-psychiatric disorders.

Computer-Aided Drug Design—Edited by T. J. PERUN and C. L. PROBST. 493 pp. 1989. Marcel Dekker, New York. \$99.75 (USA and Canada); \$119.50 (elsewhere); \$49.75 (for class use if 5 or more copies ordered).

With a knowledge of the efficacy of a range of related chemical compounds, it is possible to design new chemicals that can have increased efficacy and fewer side effects. In the past, this was done using the knowledge, experience and hunches of skilled research workers. These are still required, but they can be helped by computer-aided drug design (CADD). This volume has chapters on: introduction to CADD; use of computer graphics; molecular mechanics and dynamics; X-ray crystallography; NMR; enzyme kinetics; CADD evaluation of the angiotensin converting enzyme inhibitors; CADD modeling of inhibitors of renin; inhibitors of dihydrofolate reductase; anti-viral drug design; conformationally constrained opioid peptides; inhibitors of cholate uptake. The pitfalls and successes of CADD are described, and the book is a very useful introduction to the subject.

Bioorganic Marine Chemistry, Volume 3—Edited by P. J. SCHEUER. 175 pp. 1989. Springer, Berlin. DM 148.

The topics covered in this volume are: peptides from marine organisms; sperm activating peptides from sea urchin egg jelly; pharmacology of conus shell toxins; natural products inhibiting marine settlement and overgrowth; feeding attractants for gastropods; marine antineoplastic (anti-tumour) agents (bryostatin I stimulates bone marrow cells and also functionally activates neutrophils).

Resources and Applications of Biotechnology—Edited by R. GREENSHEILDS. 441 pp. 1989. Macmillan, Basingstoke, U.K. £60.

The volume discusses the applications of Biotechnology to a wide range of systems, such as: leaching of mineral ores using bacteria; micro-organisms used for removal of metals from sewage; water treatment; earthworms for treatment of sewage; chemiluminescence; industrial enzymes; thermophil bacteria to produce stable enzymes, ethanol production; BP protein from natural gases; cell cultures; monoclonal antibodies; cell adhesives; cyanobacteria for nitrogen fixation and production of hydrogen for fuel; algae for production of glycerol; improved treatment of haemophilia, diabetes, etc; biomaterials in prosthesis; and the future of biotechnology. It provides a readable overview of the advantages and problems of present-day biotechnology.