

zymes involved in glycoconjugate metabolism in animal cells, with almost 800 references up to early 1985; (iv) Glycoaminoglycan Degradation, covering the degradation of glycosaminoglycan chains of proteoglycans by mammalian enzymes, which occurs predominantly in the lysosomes, but with some attention devoted to non-mammalian enzymes used as tools for structural studies.

The highly specialized nature of these reviews necessarily precludes an adequate evaluation of the contents of all of them by a single individual. To this reviewer the most accessible is the chapter on phosphodiesterases linked to DNA repair, by two well-known authorities in the field, Bernard Weiss and Larry Grossman. It succinctly, and critically, surveys what is known (up to early 1985) about the principal nucleases which participate in DNA repair, the AP-endonucleases and UvrABC nuclease. Included is an account of the modes of formation of AP-sites in DNA, their chemical structure and properties, and the mechanisms of action of AP-endonucleases, including those with associated glycosylase activities. The authors extensively discuss the mechanism of action of

UvrABC nuclease, which recognizes DNA damage resulting from the action of UV-irradiation and various chemical mutagens with bulky substituents, as well as the role of UvrA and B proteins in the preparatory process preceding removal of the oligonucleotide stretches 12–13 residues in length which contain the damaged regions. There is also a description of the concerted action of UvrABC nuclease, UvrD protein (now identified as helicase II), DNA polymerase I and ligases in the repair process, with simultaneous protection against degradation of the repaired DNA by other nucleases. In general, the authors' emphasis on mechanisms of action at the molecular level, but not to exclusion of genetic aspects, is to be commended.

As in earlier volumes, each chapter is preceded by a detailed list of contents which, in conjunction with the subject index, renders the contents more accessible even to the non-specialist. The volume includes useful cumulative author and subject indexes to volumes 1–60 inclusive.

David Shugar

The Melanotropins: Chemistry, Physiology and Mechanisms of Action

By A.N. Eberle

S. Karger; Basel, 1988

xx + 556 pages. £145.00, SFr.319.00, DM 382.00, \$212.75

This remarkable book is addressed first of all to those chemists, biochemists, physiologists, and pharmacologists who are interested in melanotropins. However, as it is appropriately pointed out in the foreword by B.I. Baker, J. Girard and A. Pletscher "anyone who believes that the melanotropins are molecules of negligible interest concerned mainly with pigment control will soon find himself disabused of such an idea on perusal of these chapters". In actual fact these hormones have a great number of actions on a number of tissues including of course the central nervous system.

This book covers the chemistry (Dr Eberle was

a former associate of Dr Schwyzer), the bioassays and the radioimmunoassays, the physiology, the cell biology, and the biochemistry of the melanotropins and of the melanin-concentrating hormone. What impresses the reader is how completely and deeply the subject matter is covered. Even allowing for the fact that Dr Eberle has been working for a decade and half on the chemistry and the mode of action of the melanotropins, his full command of the field and the clarity, precision and critical sense in this book are quite impressive. The literature reference list features nearly 2300 experimental papers.

For the workers in the area of melanotropins

this book will be a kind of bible in which they can find practically all the facts, described in a critical and clear manner. However, the importance of this book goes well beyond the area of melanotropins. Suffice it to indicate here the chapters on the structure-activity relationships, on photoaffinity labeling of the MSH-receptors, on their characterisation, and on the transmission of the signal across the membrane. These chapters will find the keen interest of everyone working on peptide hormones and indeed on biological membranes. The chapters on the binding assays, radioimmunoassays and radioactive labeling will also be

read with interest by workers in other areas.

The book is richly and beautifully illustrated; the quality of the printing etc. is very high. This 'beauty' has its price, but it would be a great pity if scientific libraries were to be discouraged by the unusual price. The scientific quality of the book is worthy of it. Indeed, scientific publishing houses ought sooner or later to make a serious investigation on the question of how prices of scientific books (and journals!) could be made more humane, by making them, e.g., less 'beautiful'.

G. Semenza

Isozymes: Current Topics in Biological and Medical Research

Volume 15: Genetics, Development and Evolution

Volume 16: Agriculture, Physiology and Medicine

Edited by M.C. Rattazzi, J.G. Scandalios and G.S. Whitt

Alan R. Liss; New York, 1987

Volume 15: 283 pages. £42.00

Volume 16: 269 pages. £41.00

These two volumes represent two of a series of three, making up the proceedings of the fifth international congress on isozymes, held in Greece in May 1986. With a delay of this length between the giving of the papers and their appearance in printed form, it is inevitable that the material has a dated feel to it. Much of the current work reported in these volumes has long since appeared in more detailed form in one or other relevant journal, while the review papers are unlikely to contain material unfamiliar to the specialist in the field. It is difficult to see a way out of this conundrum facing publishers of conference proceedings. Either they must opt for rapid publication, which entails camera-ready products, with all its inconsistency and poor presentation; alternatively they must impose long pre-conference deadlines or suffer long post-conference delays. The former is unsatisfactory for review papers which are intended for at least middle-term (if not long-term)

reference, while the latter are inimical to up to the minute reporting of work in progress. The problem with both these volumes is that they contain a mix of the two types of material, and thus in this case, the 'cutting edge' material suffers.

Volume 15 groups together, somewhat tenuously, thirteen papers under the umbrella 'Genetics, development and evolution'. To a large extent the grouping is artificial, although it is recognized that the editors may have had little control over choice of material to be published. It is unclear, however, what has determined the ordering of the papers – they do not easily fall into the groups as defined by the volume's title. The range covered is extensive, if rather diffuse, and illustrates how the subject has moved on since the early exploitation of polymorphisms to study population genetics and structure, where variation at the DNA, rather than at the protein level, in the shape of RFLPs is now rapidly taking over. Included are papers covering

The melanotropins: Chemistry Physiology and mechanisms of action. Article. Dec 1988. The diverse physiological actions of dopamine are mediated by its interaction with two basic types of G protein-coupled receptor, D1 and D2, which stimulate and inhibit, respectively, the enzyme adenylyl cyclase. Alterations in the number or activity of these receptors may be a contributory factor in diseases such as Parkinson's disease and schizophrenia. Action potential of the skeletal muscle. Mechanisms of excitation and contraction of smooth muscle. Physical manifestations of the skeletal muscle activity. Muscle fatigue. PHYSIOLOGY OF MOUTH Functions: 1/ Mechanical and chemical digestion of the food 2/ The source of the unconditioned reflexes 3/ Control of physical and chemical properties of the food. Ad 1 a Mechanical activity " mastication The anterior teeth " a cutting action The posterior teeth " a grinding action. Thee maximal closing force - incisors 15 kg - mollars 50 kg. Inervations of the muscles of chewing " 5th, 8th, 12th cranial nerves Centers " near the brain stem and cerebral cortex centers for taste. Act of mastication: The movement of the lower jaw down