

appearance potentials, ion intensities and the stereochemistry of ring fusion. Ions arising from simple cleavage of bonds at ring junctions normally have lower appearance potentials and higher intensities in the more labile stereoisomer. On the other hand, ions formed by rearrangement processes depend more directly on the atomic distances between interacting centres and less on the energy differences between isomers.

Although mention is made of acetate derivatives and the methyl ethers of oestrogens and methyl esters of bile acids, reference to other derivatives has been avoided. This is an unfortunate omission, particularly for hydroxylated steroids where, for example, the use of trimethylsilyl derivatives, is very widespread. The latter have proved of value from the point of view of volatility for gas chromatographic separation and

mass spectrometric introduction and as a means of directing fragmentation in the molecule. They are used extensively in characterising steroids from biological material and their exclusion underlines a lack in the book of comprehensive coverage of more highly polyfunctional compounds isolated from such sources.

This text is written primarily from a mass spectrometry mechanistic standpoint with supporting references from original papers, nevertheless, it will not overpower the reader who wishes simply to derive information about ions which arise from different structures and stereochemistries. This should be very useful to those interested in extrapolating the decomposition pathways discussed to their own studies of steroids.

A. M. Lawson

Molecular Endocrinology of the Steroid Hormones

by D. Schulster, S. Burstein and B. A. Cooke

John Wiley and Sons; London, 1976

xv + 321 pages. £ 9.75, \$ 20.00 (cloth); £ 4.75, \$ 10.00 (paper)

During the last 10–15 years, knowledge of the general biochemical mechanisms of hormone action has increased dramatically and the investigation of steroid hormone effects contributed much of the early impetus in this field. The stage has now been reached when conclusions are no longer too speculative to present in textbook form. However, to understand current ideas, some grasp of the principles of the chemistry, biochemistry and technology of steroid hormones and their trophins is essential. The great value of this book is that before embarking on an exposition of the authors' subject such a background is provided.

The book is divided into four sections, two of which are of an introductory nature. The first covers steroid structure and nomenclature, techniques for steroid analysis and for investigation of steroid biosynthesis and secretion, and finally pathways of biosynthesis. To cover such a field in approximately

70 pages allows no more than a superficial treatment but a series of well-selected references are given at the end of each chapter. There are two minor inconveniences in this section. Firstly, all the examples of steroid derivatives are tucked away in an appendix rather than included in the appropriate section. Secondly, the conventional representation of the α -bond is in some diagrams so poorly printed that only at a second glance can it be distinguished from a β -link. In other respects the illustrations are very clear.

The second preparatory section deals with the structure and function of the endocrine glands themselves. After a chapter on the hypothalamus and pituitary, consecutive chapters deal with the adrenal cortex, ovary, testis and foetoplacental unit. The section is completed by a description of steroid metabolism by the liver and kidney since this is important in the control of circulating steroid con-

centrations. The section is extremely well done, clear and concise but sufficiently comprehensive to prepare the reader for the main part of the book.

The two remaining sections discuss respectively the mechanism of action of the trophic hormones and the mechanism of action of the steroid hormones themselves. Here it is obvious that the authors have been, and continue to be, active researchers in the field. The information provided is up-to-date — the high proportion of late references is evidence of this — and the discussion reveals first hand experience of the problems of evaluating different types of data. It is a tribute to their skill that unlike so many expert treatises, they avoid the snare of excessive detail and the general ideas remain clear and easily assimilated.

Descriptions of the control of protein synthesis and the adenyl cyclase system help to make the book self-containing. Such subjects as the events following steroid binding to cytoplasmic receptors may need further reading (e.g., King and Mainwaring 'Steroid Cell Interactions' 1974).

The authors claim to aim at senior students of chemistry and medicine. This is fully justified but the reviewer feels that the book also contains much of value to more senior scientists, to those embarking on postgraduate studies and even to physicians in endocrine medicine interested in an easy updating of the scientific background to their subject.

R. Fraser

Enzymhistochemische Methoden

by Z. Lojda, R. Gossrau and T. H. Schiebler
Springer; Berlin, Heidelberg, New York, 1976
vii + 300 pages. DM 58.00, \$ 23.80

The increasing importance of histochemistry in cell biology, biochemistry, pathology and related fields demands suitable and critical collections on histochemical methods. The recent publication of 'Enzymhistochemische Methoden' by Z. Lojda, R. Gossrau and T. H. Schiebler makes a timely appearance. This book is confined to techniques in qualitative enzyme histochemistry. As stated by the authors, it is limited to selected enzymes and procedures but nevertheless it offers a great number of assays and a variety of test procedures. The conception of this book is derived primarily from applied histochemistry and practical application. The book begins with a short but informative chapter on the main principles and reaction types used for qualitative enzyme activity demonstration. Unfortunately one misses an introductory chapter on some basic properties of enzymes which would enable readers from more distant fields to gain some necessary fundamentals. The main part of the book is repre-

sented by a voluminous collection of techniques which have been successfully applied, modified or developed in the authors' laboratories. As a consequence, much practical advice is given and also special methods (e.g., gelfilm and membrane techniques) are described in detail. The methodology of the individual reactions is concisely presented. It includes a short general information on the enzyme and its occurrence, pretreatment of the tissue, composition of assay mixture and conditions of incubation, further treatment of the stained tissue samples, as well as a critical summary on the value of the method, difficulties encountered or to be avoided. It would have been advantageous, however, if composition of reaction media in this section were also given in terms of final concentrations of reactants. It is of special value that the authors have compared different procedures in many cases and present critical comments on the various methods.

D. Pette

Endocrine-Related Cancer. Endocrinology, Diabetes & Metabolism Case Reports. European Journal of Endocrinology. Journal of Molecular Endocrinology. Reproduction. Vascular Biology. Ecdysteroids are the steroid hormones of arthropods, where they regulate moulting, metamorphosis, reproduction and diapause (Koolman 1989). They probably fulfil similar roles in many other invertebrate phyla, but these have not been so extensively investigated (Lafont 1997). Ecdysteroids are also present in 5–6% of plant species (Dinan 1995a), generally at far higher concentrations than those typically found in arthropods, where they are regarded as contributing to the deterrence of invertebrate predators (Lafont et al. A steroid hormone is a steroid that acts as a hormone. Steroid hormones can be grouped into two classes: corticosteroids (typically made in the adrenal cortex, hence cortico-) and sex steroids (typically made in the gonads or placenta). Within those two classes are five types according to the receptors to which they bind: glucocorticoids, mineralocorticoids (corticosteroids), androgens, estrogens, and progestogens (sex steroids). Vitamin D derivatives are a sixth closely related hormone system with Steroid hormones are a major class of hormones characterized as being fat-soluble organic compounds that can easily pass through cell membranes. From: Estrogen Effects on Traumatic Brain Injury, 2015. Related terms The actions of the steroid hormones are mediated by the steroid hormone receptors, intracellular proteins belonging to the nuclear family of transcription factors. These receptors mediate signal transduction through genomic and nongenomic actions in a context-specific manner. Endocrinology and disorders of the reproductive system. Bernard Corenblum MD, Jessica Boyd PhD, in Endocrine Biomarkers, 2017. 8.1.4.2.7 Protein binding.