

Steroid biochemistry

Biochemistry of Steroid Hormones. Edited by H. J. Makin. Pp. x+358. (Blackwell Scientific: Oxford and London, 1975.) £16.50.

THE stated aims of this book are to provide a simple and concise source of information on steroid biochemistry for preclinical and BSc students, and an introduction to the subject for postgraduates. In seven chapters, several experts deal with the subject from structure and nomenclature of steroids through biosynthesis of cholesterol and steroid hormones, to control of steroidogenesis and catabolism and excretion. Two useful chapters on methods of estimation of steroids follow. The remaining five chapters deal with the physiology and pathology of steroid endocrine systems, and include chapters on the endocrinology of the menstrual cycle and pregnancy, inborn errors of corticosteroid biosynthesis and molecular mechanisms of steroid hormone action.

Generally speaking, the book fulfils its aims very well, in that it provides a comprehensive and reasonably up-to-date account of this enormous and frequently daunting subject, well illustrated by means of key experimental data, without burdening the reader with an indigestible welter of detail. Perhaps the most forbidding aspect of steroid biochemistry to a newcomer is the apparent complexity and variety of structure and interminable pathways of biosynthesis and catabolism. These problems, although not hedged, are dealt with in a sympathetic and matter-of-fact fashion. The difficulty is acknowledged and the aim is to establish and reveal the order and logic behind the structure and metabolism of these compounds. These aims are started in the first

paragraph of the first chapter, by Professor Kellie, which in itself should go a long way to allaying the fears of the reader.

As always, criticisms can be made of details, and these are inevitably subjective to some extent. For example, in Fig. 4.10, the major biosynthetic route to 11β -hydroxy-4-androstenedione in the adrenal cortex is presented as proceeding from cortisol. Although this may be a conversion product of secreted cortisol, the major route to its biosynthesis in the adrenal gland itself is surely from C-19 precursors. Also, at the end of the book there is a pull-out scheme of steroid biosynthesis designed to assist readers of individual chapters, which may be too scanty in detail to achieve its aim.

These are, however, inevitable and minor criticisms of what is a very pleasing and useful book, which should prove of great benefit to student and teacher alike, although the price, at £16.50, might be somewhat daunting to both. **Evan Simpson**

Tracking down nuclear particles

Nuclear Tracks in Solids: Principles and Applications. By Robert L. Fleischer, P. Buford Price and Robert Walker. Pp. xix+605. (University of California: Berkeley, Los Angeles and London, November 1975.) £20.50.

FOR scientists in the UK the field of nuclear tracks in solids must surely be a frustrating example of the one that got away! Work at Harwell in the late 1950s showed that damage trails in mica produced by fission fragments could be made visible in the electron microscope. This observation was sufficient to initiate a tremendously fruit-

ful collaboration between the American authors of this book, who, within a few years, demonstrated that such damage trails could be enlarged by etching so as to be visible optically, showed that a whole range of materials other than mica would store similar tracks and applied the technique to a great variety of fields. They have now crowned their achievement with an excellent book which treats in detail many aspects of nuclear tracks in solids and conveys a vivid impression of how important this technique has become.

The book is divided into three parts. The first deals with formation of particle tracks, principles of track etching and methods by which particles may be identified by the damage trails they leave behind them. The second discusses the application of track techniques in the Earth and space sciences through fission track dating of rocks, glasses, and so on, the study of the present flux of energetic particles in space, and of stored records of past fluxes of such particles in meteorites and lunar rocks. The final part of the book deals in rather less detail with applications of the technique to nuclear physics, element mapping in rocks and other materials, radiation dosimetry and many other diverse areas in science and technology.

The book is very well written and beautifully illustrated with photographs and diagrams which considerably aid understanding of the text. The mix of information given and information only referred to in other sources is very well judged and the many references, given as appendices at the end of each chapter, have each been given a title which much increases their usefulness.

This is an excellent book worth every penny of its purchase price. It must rapidly become a standard work indispensable to those most directly involved and of great interest to many others in allied fields. **R. N. F. Walker**
P. H. Fowler

Analysing metal compounds

Mass Spectrometry of Metal Compounds. Edited by J. Charalambous. Pp. 297. (Butterworth: London and Boston, Massachusetts, 1975.) n.p.

THE first four chapters of the book deal with the theory of mass spectrometry, instrumentation and techniques. The next five chapters are concerned with specific groups of metal compounds, whereas the last chapter discusses analytical aspects

of the mass spectrometry of metal chelates. Finally, an appendix gives a table of nuclidic masses and abundances of the naturally occurring isotopes. There are over 400 references, many of which occur in the literature of the past decade or so, illustrating the rapid growth of inorganic mass spectrometry during the period.

There are a few minor criticisms of the book. In the first place it is surprising that in a comprehensive review of the energetics of molecular ionisation, no mention is made of the electron monochromator of Lossing, which provides the most accurate

method of determining ionisation and appearance potentials by mass spectrometry. Again the classical equation $k(E) = v[(E - E_0)/E]^{n-1}$ is used in discussing fragmentation kinetics, in spite of the fact that it is known to be an extremely bad approximation. On the positive side, references are made to studies of negative ions, which are becoming increasingly important.

Within the confines of production from typescript, the book is well produced. It should become an essential addition to the library of anyone working in the fields covered.

Allan Maccoll