

and senior undergraduate level. This would seem to have been the outcome of the judicious choice of authors who were leaders in their fields coupled with enough editorial work to ensure reasonable digestibility. This volume of advances in enzymology and related areas of molecular biology maintains these traditions. A clear example of a review that will be of lasting value is that by Chou and Fasman on the prediction of protein secondary structure, which specifically highlights their own contribution. Already our departmental copy of this volume is well thumbed at this point.

Enzymology *per se* is represented by Pocker and Sarkanen with an encyclopaedic review of present knowledge on carbonic anhydrase, the first zinc metalloenzyme to have been discovered, and a personal state of the art account by Bollum of his terminal deoxynucleotidyl transferase. This latter enzyme whilst of considerable general enzymological interest and with important application in the newly developing area of DNA recombinant technology may have considerable biological importance in the generation of the immune response.

More in the area of molecular biology is the useful contribution by Feigelson and Kurtz on the hormonal

modulation of specific messenger RNA species in normal and neoplastic rat liver. Specific reference is made to the messengers for the proteins tryptophan oxygenase and alpha 2U-globulin whose appearance seems to be regulated at the transcriptional rather than translational level. Translation is dealt with more specifically in a stimulating article by Jukes with particular emphasis on present views regarding the evolution of the amino acid code.

Amongst other contributions, Gunsalus and Sligar very effectively up-date current knowledge concerning physical biochemistry of mixed function oxidation reactions catalysed by cytochrome *P*-450. As they point out, recent years have witnessed a quantum jump in the precision of our understanding of mixed function oxidation reactions in terms of fundamental thermodynamic and rate laws.

Finally the coenzyme aspect of enzymology is not neglected. Huennekens, Vitol and Henderson review recent information relevant to specific transport systems for essential folate compounds in both bacterial and mammalian cells.

Roy H. Burdon

Immunochemistry

An Advanced Textbook

Edited by L. E. Glynn and M. W. Steward

John Wiley and Sons; Brisbane, Chichester, New York, Toronto, 1977

x + 628 pages. £24.00

This book represents a relatively current and complete treatment of immunochemistry at an advanced level. It consists of 16 independently authored chapters covering most aspects of immunochemistry. The subjects considered include immunoglobulin structure, function, biosynthesis, genetics and abnormalities, as well as the origin of antibody diversity. Immunogenicity and antigenicity are covered both in general terms and specifically with regard to proteins, polysaccharides and collagen. Also included in this

book are chapters on the pathways of complement activation, the affinity of antigen-antibody reactions, antigen-antibody complexes, amyloid, adjuvants and cell-surface immunochemistry. All of these subjects are covered in considerable detail by contributors who are, in general, primary authorities in their areas. Most chapters thus present not only the most recent information available in an area, but also the special insights which active investigators have for their own field and its future direction.

Although most chapters are authoritative statements on the state of the field at the time of publication, a few are not as current as would be desired. Of these, some would be difficult to keep up-to-date since they contain areas which are progressing rapidly. In particular, the generally excellent chapter by Parkhouse on Ig biosynthesis will need constant and significant revisions especially in the sections on cell surface Ig and on hybrid cells. It may well be necessary in the next edition to devote an entire chapter to hybridomas, their development and cellular biology. A chapter on the structure of Ig genes would also seem a necessary and valuable addition which would complement Dr Williamson's carefully constructed chapter on the Origin of Diversity.

Although the book is thoughtfully constructed and edited, and progresses systematically throughout immunochemistry, it is unclear why chapters on collagen and amyloid are included. These are excellent chapters but seem out of place in this text. On the

other hand, if included, perhaps they should be part of a larger section on the immunochemistry of other interesting molecules. The format of the text also leads to the problem that some chapters repeat, or review in detail, information presented in other chapters. This could be remedied by tighter editing and, hopefully, will not be a major problem in the next edition.

In summary this is an excellent text which should be useful to advanced students in immunology and as a reference of the current concepts in immunochemistry. Because of its scope, completeness and the authoritative nature of the individual contributions, this book should become the standard advanced text in immunochemistry, the only conditions being that frequent revisions occur to maintain its immediacy in the more rapidly developing areas, and that the editing eliminate the unnecessary overlap among chapters.

M. W. Fanger

Biochemical Thermodynamics

Studies in Modern Thermodynamics: Volume 1

Edited by M. N. Jones

Elsevier; Amsterdam, New York, 1979

xii + 390 pages. \$73.25, Dfl 165.00

To those who believe that thermodynamic analyses underpin any proper understanding of biochemical phenomena, this volume will come as a godsend. The book contains 11 chapters contributed by internationally recognised experts in the field, each of whom has presented a review of the types of information available, the pitfalls in obtaining it, and the principles underlying its interpretation, with the underlying theme that the interactions between different molecules involved in biochemical systems should and may be expressed quantitatively and rigorously.

Following a brief overview by the editor, topics covered are model studies of the aqueous interactions of low-molecular weight species (F. Franks), confor-

mational changes in proteins, (W. Pfeil and P. L. Privalov), conformational changes in nucleic acids (H.-J. Hinz), thermodynamics of aqueous polysaccharide solutions (D. S. Reid), thermal behaviour of lipid systems and biological membranes (M. N. Jones), ligand binding of gasses to haemoglobin (S. J. Gill), calorimetric studies on blood cells (M. Monti and I. Wadsö), thermochemical studies on bacterial and mammalian cells (G. C. Kresheck), energetics of muscular contraction (A. G. Lowe) and thermodynamics and metabolism (B. Crabtree and D. J. Taylor). The editor is to be congratulated, since, despite the wide variety of topics, there is little overlap, yet, the presentation is integrated and cohesive. If any criticism