Book Reviews

Annual Review of Immunology. Vol. 4, 1986, edited by William E. Paul, C. Garrison Fathman, Henry Metzger. Pp. xiv + 730, illustrated. Annual Reviews, Palo Alto, California, 1986. \$31.00 (U.S.A.), \$34.00 (elsewhere). Prices include postage and handling.

There can be few biomedical subjects that have seen so much change over the last 10 years as immunology. Indeed this branch of science has flourished so vigorously that immunology text books and journals now have great difficulty in keeping up with the advancing edges, especially in being able to convey the enormous amount of detailed information to a non-specialist, or even to parties whose main interests comprise a different compartment of immunology. It is with the aid of texts such as the *Annual Review of Immunology* that those interested in updating their knowledge of some of the more important and advancing areas of immunology can do so with the knowledge that each chapter is written by an expert in his field.

The 1986 *Annual Review* contains 24 chapters, each reviewing a single aspect of humoral and cellular immunology. As befits this age of molecular genetics this volume deals with the T-cell receptor for antigen and its role in lymphocyte activation, and the structure and functional properties of the major histocompatibility complex (MHC) that interact with that receptor. There are well focused chapters on the assembly and expansion of variable region genes and on the structural basis of idiotypes. The more complex subject of idiotypic-mimicry is also dealt with. B-lymphocyte differentiation and physiology is dealt with in depth. However, some of the most exciting contributions are those dealing with interleukins and their role in cell activation and differentiation, with some consideration being given to the possibility of interleukin 2 serving as a powerful immunotherapeutic agent. A comprehensive description of the structure and function of the high affinity IgE-Fc receptor is presented by Henry Metzger and colleagues while Hans Muller-Eberhard updates us on the membrane attack by complement.

Without doubt this compilation of 'state of the art' reviews of immunology is obligatory reading for anyone wishing to have a comprehensive update in these highly specialised areas of research. The standard of writing is excellent, but as with many books of this type, the *Annual Review of Immunology* cannot be used to quickly 'gen up' on an area, but provides a highly referenced text to enable study in depth. This book is essential for any library or department associated with immunology, and in my view is worthy of investing in by individual scientists and clinicians interested in the advancing edge of immunology. At a 1986 price of approximately £22 this book is good value and a wise investment.

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The Circulatory System, edited by Derek G. Cramp and Ewart R. Carson. Measurement in Medicine Series, Vol. 1. Pp. vii + 350, illustrated. Croom Helm, London, Sydney, 1986. £40.00.

The past fifteen or so years have seen the evolution of increasingly complex and sophisticated mathematical models of biological systems made possible by the rapid development of computing technology. Initially developed primarily as a means of furthering understanding of the operation of physiological control systems, these models have now progressed to a stage at which their role in the diagnosis of clinical disturbances and in therapeutic management is receiving growing attention. This volume is the first in a series designed to introduce these developments to clinicians and clinical scientists, an aim which the authors, based respectively in departments of chemical pathology and systems engineering, are well-placed to achieve. Five of the eight chapters clearly pursue this theme. Bert provides an exceptionally readable description of the role of modelling in the microcirculation and its practical application to the treatment of burns; Flood, Carson and Cramp review the evolution over the past 10–15 years of models for the control of body fluid volume, and in another chapter Leaning and Carson discuss models of renal function and their potential value as a guide to the treatment of renal failure and use of the artificial kidney. Two further chapters deal with the circulation. Coleman in a chapter on cardiovascular modelling formulates a simplified model of the circulation, introduces a baroreceptor control system into the model and by comparing the response of the model with the findings in experimental haemorrhage gives a clear insight into the purpose and value of modelling. Finally Parkin uses a model of the circulation to show the relative importance of the various resistances, capacitances and volumes in determining overall performance and shows how this approach can function as a guide to therapeutic intervention. However the choice of material for the remaining three chapters is puzzling. Thus the first two chapters in the book, in which Sirs discusses the biophysical aspects of the blood as a transport system and Henriksen, Sejrsen and Lassen describe the mathematical validation of a variety of indicator techniques for blood flow measurement, though written by acknowledged authorities in these fields, are hardly relevant to the main thesis. Similarly an account of the pathophysiology and diagnosis of abnormalities of fluid and electrolyte balance by Mayne is again authoritative but might equally well be found in any text of clinical physiology.

Despite the inclusion of such peripheral material and the considerable variation in the demands made on the readers' mathematical background by different contributors this volume will be read with interest. It introduces clinicians and basic medical scientists to a new and potentially exciting approach and deserves inclusion in hospital and medical school libraries.

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