BOOKS RECEIVED

Molecular Aspects of Immune Response and Infectious Diseases (Advances in Host Defense Mechanisms, Volume 7)

Edited by HIROSHI KIYONO, EMILIO JIRILLO, CLAUDIO DESIMONE. 1990. Raven Press, New York. Pp 224. \$102.00

In their introduction the Editors state that this volume aims to provide “an overview of the latest research on the immune response to infectious disease at the molecular and cellular level”. This book is a collection of lectures and papers given at a Conference held in July 1989. As is inevitable, such a volume suffers from two disadvantages. Firstly, the subject matter has become outdated by the time that the book appears in print—“state of the art” reviews on any of the topics are better provided by journals like *Immunology Today*, *Reviews in Infectious Diseases* or *Contemporary Topics in Microbiology and Immunology*. Secondly, the range of topics covered is idiosyncratic—presumably based on the particular interests of the conference organisers and editors; for example, only five of 22 papers in this volume relate to the immunology of infectious diseases and the chapter titled “Molecular characterisation of cytokines and their receptors” deals with IL-7 and IL-1 only, with not even a brief overview of other cytokines.

Individual chapters may appeal to particular readers; for example, I enjoyed the chapter on molecular aspects of autoimmune responses to streptococcal proteins and that on progress towards schistosome vaccines. However, I cannot recommend this book as being a critically useful addition to the bookshelf of a general reader (clinical microbiologist, infectious diseases physician or clinical immunologist) interested in the immunology of infectious diseases. Individual chapters may well turn up on bibliography lists generated by computer searches and found to be of interest.

D. S. KUMARARATNE

Principles and Practice of Clinical Virology. 2nd Edition

Edited by A. J. ZUCKERMAN, J. E. BANATVALA, J. R. PATTISON. 1990. John Wiley & Sons, Chichester. Pp. 643. £85.00.

The rapid growth and development of clinical virology has led to the production of a second edition of this book barely two and a half years after the first. The editors have enlisted the help of 39 internationally recognised experts to update and extensively revise the previous edition, incorporating new data relating to epidemiology, pathogenesis, diagnosis, prevention and management of infection. How does the second edition differ from the first, apart from a 46% increase in price compared with the launch price of its predecessor? The latest edition is printed in a bolder type, which I prefer, and is 60 pages longer. Chapters have been added on pathogenesis of viral haemorrhagic fevers and human herpesvirus 6, and the previous single chapter on hepatitis has been expanded into two. The chapter on human slow virus infections incorporates new data on the mechanisms of prion disease and there is a wealth of additional data on HTLV 1 and 2, as well as human immunodeficiency virus, in the chapter on retroviruses.

As before, the format is for chapters on the individual viruses to incorporate general information on virus taxonomy, structure and pathogenesis. This avoids the need for a series of preliminary chapters which so often dampen the reader's enthusiasm, when faced with a magnum opus. The

exception is the chapter on pathogenesis of viral haemorrhagic fevers, which I felt would have been better incorporated into a single expanded chapter on these infections. This book is exceptionally readable and unlike many books which masquerade as “clinical” texts, the title genuinely reflects the contents. Some of the authors have managed to incorporate in their bibliography reference to publications in the same year as this book; a remarkable feat for a book of this size. I commend this book both to those who are searching for a standard work on clinical virology for their department or library and those who already possess the first edition.

R. H. GEORGE

Antiviral Compounds from Plants

JAMES B. HUDSON. 1990. CRC Press, Inc., Boca Raton, Florida. Pp 200. £76

This book is an introduction to the comparatively new field of the use of plants for the production of antiviral compounds. The field clearly requires the collaboration of botanists, chemists and virologists.

The first three chapters describe virus infections, viral strategies of replication, persistence and transmission, and measures of control of virus infections. The book claims to cover viruses important in both human and veterinary medicine but, unfortunately, some important virus families, e.g., Adenoviridae, Coronaviridae and Parvoviridae, are not mentioned. Descriptions are short and somewhat out-of-date. This is a pity as such knowledge is crucial to the rational search for and design of antiviral agents. There is an unintentional mix-up of references in the first chapter.

The second chapter on viral replication is short and, in part, describes the mechanisms of action of plant compounds in relation to the steps of viral replication. The section on persistent infections and transmission are quite good; the one on variation of viruses is based on classical references but is usefully updated in the section on the mutation frequencies of viral genomes.

In the chapter on control of virus infections, vaccines are discussed mainly with regard to their disadvantages. However, the greatest successes in controlling viral infections (and for that matter infections in general) have been achieved by mass vaccination programmes (smallpox, measles, rubella, polio). I would like to have seen a more balanced account of the indications for prophylaxis and therapy in viral infections, and on the relative merits and problems of vaccines and antiviral agents.

The chapter on methodology in antiviral research is useful and provides detailed discussion on the measurement of viral targets, valid levels of inhibition of infectivity, meaningful conclusions from in-vitro tests, the number of particles per infectivity unit, and issues of the biology of the host cells and of animal models. A section is included on how to choose and purify plant materials and, as many plant extracts contain photosensitisers of potential antiviral activity, some basic data on photochemical reactions are provided.

In chapters 7–14, different groups of antiviral compounds extracted from plants are described. Each chapter contains a summary of the distribution of compounds in plants, their biological activities and biosynthesis, chemical formulae of the main compounds, a review of the relevant literature of antiviral activity to about early 1988, numerous viral inactivation curves, LD₅₀ and MIC tables, and discussions on possible mechanisms of action. For most of these chapters there are useful summary tables. The discussion of quercetin

(chapter 10) would have benefited from mentioning its implication in cocarcinogenesis in bovine enteric carcinomas. The critical approach applied by the author in these chapters was refreshing and beneficial for the non-specialist reader trying to find a way through a wealth of information. Particularly interesting are the discussions on saponins as immunostimulators and components of immunostimulatory complexes ('iscoms'), and the antiviral activity of cardiac glycosides (chapter 11).

In chapter 15, the antiviral evaluation of crude plant extracts is discussed. Most crude extracts are poorly characterised and data from different laboratories, or the same laboratory at different times, are difficult to compare. However, there is the potential of finding antiviral compounds in many of these extracts. This is also reflected in a longstanding but ill understood use of plant extracts against hepatitis B in traditional Indian and Chinese medicine.

In summary, despite some shortcuts in the introductory chapters, I regard this as a very useful and timely book and have read it with increasing interest. We are very much at the beginning of extensive use of antiviral agents, and for many chronic viral diseases against which vaccines have either failed or are not available yet, treatment with such compounds is, or will be, an important branch of medical care. Despite its specialised nature, the book should find many readers beyond the ones closely involved professionally, such as botanists, chemists and virologists.

U. DESSELBERGER

A Colour Atlas of Virology

J. VERSTEEG. 1985 [ISBN 0723416664 Limp Edition 1990]. Wolfe Medical Publications Ltd, London. Pp 240. £29.50.

A picture book is always more welcome than a text, especially on a subject as practically orientated as virology. This is a paperback edition of an already established atlas in the Wolfe Medical Atlas series. The author intends it as "a visual introduction to diagnostic virology for those who have to learn the laboratory procedures—microbiologists and pathologists in training, students of medicine, veterinary medicine, medical technology and biological sciences". The pictures and photomicrographs are well chosen and the captions succinct. The atlas includes chapters on diagnostic methods, use of experimental animals and cell culture techniques, cytopathic effect, histopathology of viral infections, and serological tests. While there is no substitute for actually doing the practical work, as someone who has recently taken the Membership Examination of the Royal College of Pathologists, I would wholeheartedly recommend this book to trainee pathologists, physicians and laboratory scientific officers. The only reservation I have is the large amount of space given to the section on the use of experimental animals. This might give the wrong impression to some of the wide readership this book is intended for; as the author points out "from an ethical standpoint as well as for financial reasons, the use of experimental animals must be restricted to the absolutely necessary".

A. R. GHOSE