phylogenetic tree. Part IV of this book gives many examples of these in dealing with the evolution of specific viral taxa.

Another important concept is that of quasi-species. RNA viruses have mutation rates of about 10^{-3} /nucleotide position/replication cycle which allows rapid changes in the genome – up to 1%/year in some viral populations, such as HIV-1. Consequently, it can be seen that a genome is not 'a defined unique structure but rather ... a weighted average of a large number of different individual sequences.' In this mixture of genomes, the quasi-species, the master sequence(s) can evolve rapidly (HIV-1) or remain static for long periods of time (Avian Flu A).

As in any compilation the quality of writing and ease of comprehension varies greatly between authors. Many important concepts are covered and it is a pity that this book falls between two readerships. It is too complex for the average reader with an interest in the subject and could well be out of date for the expert.

J. B. KURTZ

PCR: Protocols for Diagnosis of Human and Animal Virus Diseases

Edited by Y. BECKER and G. DARAI. 1995. ISBN 3-540-58899-X. Springer-Verlag, Berlin. Pp. 596. DM 168.00.

The polymerase chain reaction (PCR) has become firmly established in all branches of molecular biology and has revolutionised the laboratory diagnosis of infectious disease, particularly those caused by viruses. Theoretically any infectious agent can be detected and characterised by PCR (with the possible exception of prion-associated encephalopathies) provided the nucleotide base sequence of a conserved (i.e., evolutionary stable) region of the agent's genome is known.

This spring-bound book is divided into three sections. The first describes around 50 protocols for the detection and characterisation of viruses important in human disease. Part II gives 12 protocols of particular interest to those who care for livestock. A final, short section describes improvements in DNA and RNA preparation for PCR and the use of personal computer software in the design of PCR protocols.

This is a multi-author book with over 200 contributors. Therefore, there is some repetition and inconsistency of style, but this is minimal. It is not written for a PCR novice, and assumes full knowledge of PCR basics, such as oligonucleotide primers and thermal cycling. It is an exceptionally useful book that will soon become dog-eared in any molecular biology laboratory. But, included with the book is a computer diskette containing the *whole* book as document files. The publishers should be commended for such rare courtesy.

G. BEARDS

Infection and Immunity

J. PLAYFAIR. 1995. ISBN 0-19-854926-1. Oxford University Press. Pp. 154. Hardback £20.00, paperback £9.95.

At first glance, this book appears as a yet another book on 'Immunity to Infection'. However, this one is enjoyable to

read and simple enough for even an 'interested lay person' to be able to understand it. Indeed, this is one readership population among many targeted by the author who presupposes no prior knowledge of microbiology or immunology. The targeted readership also includes students and potential students of science and medicine. Thus, as one would expect, a more informed graduate of science may find it a little simple.

The book consists of 20 short chapters that cover the important aspects of immunology, including natural and adaptive immune responses to pathogens and self antigens, the cellular basis of the humoral response and the functional attributes of the various cellular components of the immune system. In a series of lecture-style tutorials, the basic mechanisms of non-specific defence, antigen processing and presentation, immune-evasion by pathogens, immunodeficiency and autoimmunity are explained.

However, for a strict beginner a few more extensive graphical illustrations would probably have made the book even more enjoyable. The appendix consists of 10 selected infections which are discussed only briefly; this section could have been further expanded to accommodate more infections in slightly greater detail. Also, considering the target readership, the list of recommended books for further reading should have included more suitable books; for example, instead of Topley and Wilson's or Mandell's intimidating reference books, the more student-orientated medical microbiology text-book by Greenwood, Slack and Peutherer would have been more appropriate.

I certainly think there is a niche for this book among the specified target readership (i.e., beginners) and, therefore, would recommend it to first or second year students of microbiology and medicine.

D. ALA'ALDEEN

Oral Cephalosporins Volume 47 Antibiotics and Chemotherapy

Edited by R. C. MOELLER. 1995. ISBN 3-8055-6163-6. S Karger AG, Basel. Pp. 189. SFr. 216.00.

Is there a need for a book exclusively devoted to oral cephalosporins? The answer to this surely depends, in part, on whether one believes that there is a need for oral cephalosporins in the first place, and I hope that it is not too dismissive to suggest that this is far from being intuitively obvious. Certainly there are few, if any, infective conditions requiring oral therapy in which cephalosporins represent the natural first choice. The earlier compounds, like cephalexin and its almost identical congener, cephadrine, exhibit unimpressive intrinsic activity and are relatively slowly bactericidal, as their affinity for the penicillin-binding protein (PBP) targets is restricted to PBP-3. The newer ones, such as cefixime and cefibuten have important gaps in their spectrum that seriously impede their usefulness for infections in which oral therapy is appropriate. Although cefdinir and the oral cephalosporin esters are generally broader in spectrum, they still lack useful activity against enterococci, pseudomonads and bacteroides; furthermore, parenteral administration is often more appropriate when broad-spectrum therapy embracing opportunist gram-negative rods is felt to be necessary.

The contributors to this volume in the *Antibiotics and Chemotherapy* series have no such reservations, and if you

want a succinct source of comparative information on the oral cephalosporins as a group, then this may be the book for you. The eight chapters, mainly by authors in continental Europe, are admirably up to date and cover everything from chemical properties of the agents to adverse reactions, stopping off along the way to consider therapeutic use in upper and lower respiratory tract and urinary tract infections. Coverage is quite comprehensive, although there is an understandable tendency to dwell on the newer compounds. Some of the earlier oral cephalosporins, including cefadroxil, cefatrizine and cefroxadine, which are in use in some countries, receive little or no mention.

According to the publisher's statement 'this book is a valuable source of authoritative information' — and so it is; but at a sterling equivalent price of around £120 for a text of well under 200 pages (with nearly 20% devoted to references), it is scarcely a bargain.

D. GREENWOOD

50 years of Antimicrobials: Past Perspectives and Future Trends

P. HUNTER, G. DARBY and N. RUSSELL. 1995. ISBN 0-521-48108-2. Cambridge University Press. Pp. 388. £60.00, US\$ 115.00 (hardback).

This book is the latest volume in the Society for General Microbiology's Symposium series and the timing of its publication is apt as it coincides with the 50th anniversary of the Society. As suggested by the title, the book covers a large subject area, dealing with antimicrobial agents active against bacteria, viruses, fungi and protozoa. The editors have achieved a good mix of chapters that are informative, include up-to-date references and most of which are easy to read. The organisation of chapters is sometimes a little surprising, with some that address related topics not grouped together. Inevitably, this results in some minor repetition between contributions from different authors.

The book opens with the text of a lecture given by Sir Alexander Fleming in 1946 and this serves as a useful reminder of the state-of-the-art at the time. Other chapters also have a firm historical perspective covering the discovery or synthesis of new classes of antimicrobial agents and subsequent synthetic modifications made to improve their activities. Also included are chapters that tackle the questions 'Why do we still get epidemics?' and 'Why do micro-organisms produce antimicrobials?'. The book presents a number of different perspectives on established topics. For example, the chapter 'Who needs new antimicrobials?' concentrates on the need to develop agents for protozoal diseases in the developing world rather than the more usual need to tackle antibiotic-resistant bacteria in hospitals. However, as pointed out by several of the contributors, the development of new antimicrobial agents is very often profit-driven and those diseases affecting individuals in countries with the ability to pay are attractive targets.

The only real criticism is the inclusion of a chapter on the use of baculoviruses as insecticides for agricultural use. This seemed to be misplaced and out of context with the rest of the book, particularly as any future potential for developing these agents against the arthropod vectors of infectious disease is not discussed.

One point of irritation was the correct use of the new generic names *Stenotrophomonas* and *Burkholderia* for

bacteria formerly known as *Xanthomonas maltophilia* and *Pseudomonas cepacia*, respectively, in a chapter which stated, incorrectly, that the mechanism of glycopeptide resistance in enterococci is 'not known'. Similarly, in another chapter, the phrase '...*Enterococcus hirae* (formerly *Streptococcus faecalis*)...' might cause confusion. The latter species is now *Enterococcus faecalis* and is distinct from *E. hirae*, which did not exist before the inception of the genus *Enterococcus*.

Overall, this volume should definitely find a place in libraries and will be of interest to anyone working in the general field of antimicrobial agents.

N. WOODFORD

A Practical Guide to Clinical Bacteriology

J.R. PATTISON. 1995. ISBN 0-471-952-885. John Wiley and Sons, Chichester. Pp. 204. £12.95 (paperback).

This book was an enjoyable read as well as a refresher in the basic principles of clinical bacteriology and its application to modern medicine. The level of detail contained in the book suggests that it is aimed primarily at medical and dental undergraduates, junior medical staff, laboratory technicians and students of human biology rather than clinical microbiology trainees studying for MRCPPath. The layout is logical and well structured, beginning with general principles of bacteriology, classification and antimicrobial therapy. Each of the medically important genera is described in turn, in a uniform style of presentation that allows for easy reading. Although, on first impressions, some of the chapters on the more medically prevalent organisms such as staphylococci and streptococci appear brief, a large amount of information on each genus is incorporated, without overloading the reader with clinically irrelevant facts. Each of the generic chapters has a boxed resume on the first page, summarising the salient features of the genus under six subheadings—transmission, clinical features, complications, laboratory diagnosis, therapy and prophylaxis. This allows easy, rapid reference. The tables in chapter 8 discussing clinical syndromes are well laid out, again providing the essential facts and figures. The humorous illustrations are supposed to convey information about the particular aspect of bacteriology under discussion and aim to promote retention of a bacteriological principle or clinical characteristic of an organism group in an amusing manner.

For the breadth of clinical bacteriology that is covered in this book, it is good value for £12.95 and a handy quick reference source for various health-care workers interested in bacteriology.

P. FLANAGAN

Problems in Medical Microbiology

J. HOLTON, N. BRINK, P. CHIODINI and R. BENDALL. 1995. ISBN 0-632-03834-9. Blackwell Science, Oxford. Pp. 262. L14.95.

Microbiology and Immunology Casebook

J.T. BARRETT. 1995. ISBN 0-316-08132-9. Little, Brown and Co, Boston. Pp. 262. L14.50 (paperback).

The GMC has recommended that the undergraduate medical curriculum should encourage analytical thinking through problem-based learning methods and both these books claim to be a response to this directive. However, they are as