BOOKS RECEIVED

The Bacteria. A Treatise on Structure and Function. Volume XI. Molecular basis of bacterial pathogenesis

Edited by BARBARA H. INGLEWSKI and VIRGINIA L. CLARK. 1990. Academic Press Inc., San Diego. Pp. 473. \$85.00.

This book is the eleventh volume in a series on the structure and function of bacteria. It deals specifically with bacterial pathogenicity and concentrates on organisms which have been thoroughly investigated. The text is divided into logical groupings of surfaces and colonisation, invasion and intracellular growth, and toxins. Within each section there are chapters by leading authors in which specific aspects of pathogenicity are dealt with. The format of the book makes it very attractive to the reader requiring specific information. The book has an excellent index which also allows easy access to specific items within the text.

Escherichia coli is the predominant organism described in the sections on surfaces and colonisation. There is also one chapter on the M protein of Group A streptococci. Notable by its absence is any reference to staphylococci and their mechanisms of attachment. The genetics of adhesion are described in detail for *E. coli* and *Neisseria* spp. Three further chapters under the heading of invasion and intracellular growth describe aspects of the pathogenicity of *Salmonella*, *Chlamydia*, and *Treponema pallidum*. The chapter on *Chlamydia* spp. deserves particular comment because it is very well illustrated, with some excellent electronmicrographs, and provides a clear overview of the invasion and intracellular growth of *Chlamydia*.

In the final section lipid A, lipopolysaccharide O-antigen, Shiga and Shiga-like toxins, and the toxins of *Vibrio cholera*, *Staphylococcus aureus* and *Pseudomonas aeruginosa* are described.

Overall, the book is comprehensive in the areas which have been selected. However, major omissions, particularly in relation to staphylococci, may limit the appeal of the book. Similarly, there is no overall view of pathogenicity with reference to newly discovered pathogens such as *Helicobacter pylori*. It would have been interesting, for example, to have had a section on the likely pathogenic mechanisms of some of these newer organisms. The book should be of particular interest to those working on the pathogenicity of *E. coli*, streptococci, *Salmonella*, and *Chlamydia*.

T. S. J. ELLIOT

Heterosexual transmission of AIDS

By N. J. ALEXANDER, H. L. GAHELNICK and J. M. SPIELER. 1990. John Wiley & Sons Inc., New York. Pp. 440. \$79.50.

This book is a timely and welcome addition to the current heated debate as to whether heterosexual spread will be a major factor in the spread of human immunodeficiency virus (HIV) in northern Europe or N. America. It is the proceedings of the Second CONRAD Programme International Workshop held in the USA in February 1989. Inevitably, as with many conference reports, some of the data are already out of date. However, it is remarkable how much remains both fresh and pertinent.

Undoubtedly, vaginal intercourse, with a per-contact infectivity rate of 0.1%, is not a particularly efficient way of transmitting HIV. The most consistent factor which has been shown to facilitate heterosexual transmission is genital ulceration. The point is made that strategies to eradicate genital ulcer disease may be the most cost effective means of preventing the spread of HIV in developing countries. Other

sexually-transmitted diseases (STD), HIV antigenaemia, low CD4 cell-count in the donor, use of oral contraceptives, and lack of circumcision have been variously implicated but not proven. However, the efficiency of barrier contraceptives in preventing HIV transmission is made clear.

The chapter dealing with behavioural changes makes a number of interesting points. Since groups with a large number of partner exchanges form the main factor in the rapid spread of HIV infection among the remainder of the population, strategies for changing behaviour should usefully concentrate on the high-risk groups, or, applying "Sutton's Law" (Chapter 27), "go where the money is"! Interestingly, work with prostitutes, both in developed and underdeveloped countries, has shown that intensive campaigns to promote the use of condoms can result in high uptake. Whether such behavioural changes are self-sustaining or whether those prostitutes who participated are a truly representative sample needs to be determined.

Chapters dealing with the virus itself are also of interest. The ability of HIV to constantly change its virulence, cell-trophism and infectivity, is increasingly recognised, and evidence exists that the *vif* gene may be involved with infectivity. Certainly we need to develop our methodology in investigating these characteristics of HIV and in applying in-vitro data to in-vivo infectivity and virulence to explain what appears to be enormous individual variation in infectivity. The chapters on animal models also makes clear that we need less expensive models that more closely reflect human HIV disease.

More work is also necessary in examining body secretions for HIV. Certainly both free and lymphocyte-associated virus can be isolated from semen and cervical secretion of infected individuals. What remains unclear is whether spermatozoa can carry the virus. This would have important implications for the use of spermicides and agents which prevent sperm penetration. The use of more sensitive methodology, such as PCR, is important in future studies, not least because of recent data demonstrating the presence of viral DNA in mothers and their offspring in the absence of anti-HIV antibody.

The final section of the book is taken up with the important area of barrier contraception and spermicides, both from the point of view of efficiency in preventing transmission, and in terms of acceptability.

In summary, the book provides a wealth of information on various aspects of the heterosexual spread of HIV, from the molecular level to that of the packaging of condoms (in which the Japanese excel). It is also a pointer to some areas for future research such as host and virus characteristics which enhance infectivity, the relationship between oral contraceptive use or lack of circumcision and HIV transmission, interactions with such STDs as gonorrhoea and chlamydial infection and the effect of such infections on the cellular components of semen, the possible associated role of anti-spermatozoal antibodies, and the efficiency, cost and acceptability of barrier contraception. I would recommend the book to anyone interested in this rapidly expanding field.

M. SHAHMANESH

Oral candidosis

By L. P. SAMARANAYAKE and T. W. MACFARLANE. 1990. Butterworth Scientific Ltd. Pp. 265. \$60.00.

This book is quite a successful anatomically-orientated review of a microbe-related phenomenon, oral candidosis. The anatomical subject is the human mouth, a physically and physiologically complex environment which is an important ecosystem for the microbiologist. I describe the

book as anatomically-orientated because it differs from organism-orientated works such as Odds' *Candida and candidosis*, or the disease-oriented *Candidiasis* by Bodey and Fainstein, both of which are broader in their coverage of the organism (Odds) or its disease involvement (both books). It is difficult to describe candidosis as anything other than a phenomenon. As the book emphasises, this is not simply an infection, a disease, or a syndrome, but a continuum from harmless commensalism to an invasive and life-threatening infection. A diagram indicates that oral candidosis results only when a limited combination of host factors, organism factors and environmental factors are present. The latter are perhaps the most loosely described of the three, and some might question just how important environmental factors are in comparison with the other two.

The mouth is an important and well-described site of *Candida* residence and infection, and the book serves a useful purpose in reviewing the oral aspects of the organism. Thus, it is particularly valuable to dental practitioners, oral pathologists and oral microbiologists. It contains several chapters reviewing the biology and disease-related aspects of the organism which are of general interest to microbiologists. There is also a useful review of oral immunology and its role in oral candidosis. The other microbiologically important chapters are concerned with laboratory diagnosis and with antifungal agents. Again these are useful general reviews for the non-expert in these fields. Personally, in the chapter on laboratory diagnosis, I would have preferred to see slightly more emphasis on quantitative aspects of isolation and perhaps less concern with sensitivity of detection of the organism, acknowledged to be present in small numbers in most of us.

The largest section of the book is concerned with the diseases, pathological changes and clinical aspects of oral candidosis. While of interest to the general microbiologist, these matters are covered essentially for a different readership from those of this *Journal*. The material is logically arranged, well-illustrated with some excellent colour photographs, and clearly forms a very useful review for the dental practitioner or oral pathologist.

Overall the book is a useful addition to the shelves of all who have a deep interest in candida disease, whether specifically oral or otherwise. However, it is a somewhat expensive book and, with its emphasis primarily on the clinical aspects of disease, it will perhaps be a library reference book rather than a personal purchase for most microbiologists.

C. W. PENN

Lyme Borreliosis II

Edited by G. STANEK, W. KRISTOFERITSCH, M. PLETSCHETTE, A. G. BARBOUR and H. FLAMM. 1989. Gustav Fischer Verlag, Stuttgart, New York. Pp 365. DM 180.

The increased awareness of the significance of Lyme borreliosis worldwide has prompted the organisation of a series of international symposia on the epidemiology, diagnosis and pathogenesis of *Borrelia burgdorferi* infections. This volume is based on selected papers presented at a conference entitled "Lyme Borreliosis Update Europe" held in Vienna in 1987, and also contains reports on two WHO workshops of Lyme borreliosis in Europe held at the above meeting and a subsequent meeting in Prague in 1989.

The data are presented in the form of short papers and cover diverse areas of interest including classification of *B. burgdorferi*, insect vectors and transmission, epidemiology, pathogenesis, clinical features, therapy and serodiagnosis. Of necessity, the work included in each chapter is selective and for the most part does not attempt to review particular subject areas as a whole. In addition, several chapters draw

together disparate areas of study and inclusion of a brief introduction to highlight the common theme would have been beneficial in some cases. This has been done in the chapter on clinical features of the disease and helps the presentation considerably. This chapter and those on therapy and serodiagnosis are particularly well presented and contain information which may be valuable for clinicians and laboratories involved in the diagnosis of *B. burgdorferi* infections. The incidence of Lyme borreliosis in various European countries and, presumably for comparison, China and Africa is discussed in the epidemiology chapter which, surprisingly, contains no information on the incidence or distribution of these infections in the UK. This may reflect the availability of information on this subject in 1987 and highlights a general criticism of the text in that some of the data presented may now be out of date or may have been superseded by subsequent publications. The latter may also explain the apparent bias of the section on pathogenesis which concentrates almost exclusively on host factors in relation to infection and only briefly considers virulence determinants of the bacterium in the infectious process, an area which has received more attention in the recent literature.

The reports of the WHO workshops provide useful information on the global impact of Lyme borreliosis and highlight areas of the disease and its diagnosis that merit further attention. A list of contact addresses of individuals working on these infections in Europe is also included.

Overall, this text should provide information of general interest to those working on Lyme borreliosis throughout Europe, particularly in relation to the clinical and serological diagnosis of this increasingly important disease. However, it is not sufficiently up to date or comprehensive to be recommended as a definitive text.

A. COCKAYNE

A Textbook of Parasitology

SUBHASH S. KELKAR & ROHINI S. KELKAR. 1990. Sangam Books. Pp. 176. £6.95.

This textbook of parasitology is a slim paperback volume. It is intended for undergraduate medical students especially for the Indian environment. It contains line drawings and some photographs but I am afraid that these have not reproduced well. Furthermore, the book is printed on rather thin paper which looks as though it will age rapidly.

The book covers all the topics that might be expected in such a text. The authors clearly have extensive experience of parasitology in India, and some sections are very well done. Other newer developments are less well covered. For example, *Cryptosporidium*, a major cause of gastroenteritis world-wide, merits less than a page, whereas *Enterobius* gets a page and a half. The sections are all organism based rather than on organ systems or disease syndromes, but perhaps parasitic disease is less easily dealt with according to clinical syndromes. There is not too much attention to taxonomy and in some cases immunity to infection is also covered. I would have liked to see a little more coverage of pathogenesis and pathogenic mechanisms.

I am not sure that this book would be recommended for medical students in the UK.

C. A. HART

CRC Handbook of laboratory safety

Edited by A. KEITH FURR. 1990. CRC Press, Inc. Boca Raton, Florida. Pp. 704. £76.00.

The stated aim of this book is to guide research personnel in the implementation of effective health and safety programmes in their facilities. The 19 contributors are