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