BOOKS RECEIVED

Bacterial Vaccines

This volume contains twelve chapters on vaccines or related topics. Unfortunately it lacks an introduction which could have explained the purpose of the book. The material assembled does not represent the full range of bacterial vaccines for either human or veterinary use and it would have been helpful to know why these particular topics were chosen. The quality of the individual chapters varies considerably; a few summarise well established knowledge while adding little new information, others present an up-to-date resume of their fields with discussion of likely future developments. Nevertheless, the overall standard is high and the book contains a great deal of useful information.

The first chapter on bacterial toxin vaccines by J. L. McDonel inevitably duplicates some of the material which appears in later chapters dealing specifically with diphtheria, pertussis, tetanus, cholera, Escherichia coli and anthrax vaccines. Nevertheless, it provides a useful summary of the state of development and future prospects for these vaccines. The chapter by M. Wizc and colleagues on tetanus vaccines is rather disappointing, confining itself largely to a resume of current recommendations for the manufacture and control of tetanus toxoids. An indication of the current state of research on tetanus toxin and future trends in the development of improved vaccines would have added significantly to the value of this chapter.

The chapter by J. T. Poolman on polysaccharide and membrane vaccines provides a detailed treatment of this subject although the emphasis is on meningococcal vaccines, a subject also covered in chapter 6 by C. E. Frasch. Surprisingly little attention is given to gonococcal vaccines in view of the efforts which have been made to develop these. In contrast, a complete chapter by S. J. Cryz is devoted to Klebsiella polysaccharide vaccines.

P. Hambleton and P. C. B. Turnbull provide an excellent account of anthrax vaccines. Anthrax played a central role in the early development of both medical and veterinary bacteriology and for historical reasons alone deserves attention in any monograph on vaccines. Although research in this field has received very limited support in recent years, molecular studies have led to a clear understanding of the basis of virulence of Bacillus anthracis. As the authors indicate, there is scope for the development of improved vaccines against anthrax and possible approaches are discussed.

Brucella vaccines are discussed by P. Nicoletti in a chapter which mostly contains information available elsewhere. Recent developments in this field are covered only briefly. The chapter entitled "Pertussis vaccines: present status" (M. Christodoulides) is now somewhat out of date, an inevitable situation in this rapidly changing field. Nevertheless, it does provide a useful introduction to the subject and indicates directions in which developments are proceeding.

Leoproxy vaccines are reviewed by D. E. S. Stewart-Tull who comments on vaccines based on Mycobacterium leprae, either of armadillo origin or produced by rDNA techniques, but the use of vaccines derived from other mycobacteria including BCG. In a very informative chapter the author describes not only the scientific and technical difficulties to be overcome in developing leoproxy vaccines but also the possibly even more difficult political problems encountered in organising clinical trials in some countries.

The approach to vaccination against cholera/coli enterotoxins by means of synthetic peptides and fusion proteins is described by C. O. Jacob. Encouraging results have been obtained with synthetic or recombinant antigens although various problems have been encountered, not least with discontinuous epitopes. These and other aspects are discussed in this useful chapter. The last two chapters deal with antigen presentation and augmentation by adjuvants and liposomes.

Overall this is a useful volume for the reader seeking a convenient introduction to the subjects covered. It does however, provide an incomplete coverage of the field embraced by its title and this will limit its value as a reference test.

M. J. Corbel

Structure and Function of Nucleic Acids and Proteins

For some years now, it has been recognised that molecular biology must play a more significant role in medical microbiology. As knowledge in this areas has increased, we have begun to understand how changes in the structure of the genes may be translated into changes in the functional activity of the proteins they encode. This exciting area brings together molecular biology and genetics on one hand with intricate biochemical analysis and X-ray crystallography on the other. As in any rapidly developing field, there are few good books on the subject of structural-functional relationships. This book seeks to redress the balance. It is a series of papers which were given at a meeting in May 1989 and, as such, lacks the cohesive nature that would be required to lead a novice through the subject. This problem has been exacerbated by the manner in which some of the papers have been written, as they appear to be direct transcripts of what was said at the original meeting rather than self-contained articles.

The book is divided into five broad sections; the first deals with the structure of nucleic acids and proteins. In fact, the four papers in this section outline some of the techniques available in this area and how they relate to four specific investigations. This first section is definitely not for the beginner, as it assumes considerable prior knowledge. The second section is headed Nucleic Acid and Protein Interactions; the first paper gives an excellent account of the importance of tyrosine in the active site of DNA gyrase and the use of site-directed mutagenesis and transfection to demonstrate the functional effect of substituting tyrosine with other amino acids, such as phenylalanine or serine. This chapter will be of interest to anyone with more than a passing interest in the 4-quinolone antibacterial drugs and their targets. In this section, there is an interesting paper on the packaging and folding of the Adenovirus into its coat. The paper on the human genome project is written in a general manner, which will give an idea of its complexities to those unfamiliar with the project but will not excite those involved with it. The third section deals with Transcriptional Regulatory Mechanisms, and the fourth with DNA Replication and Viral Gene Expression. The fourth section has two papers on DNA replication; these two papers provide good and concise accounts for those who may wish to update their knowledge in this area and are set in excellent diagrams. The final section deals with specific eukaryotic systems and is of little relevance to medical microbiology. This is followed by a summing-up by the Chairman of the meeting, Professor Wang, in which he describes recent advances in technology. This short section is most interesting and would still have been had it been ten times longer. This book is not for reading from start to finish; indeed, it is difficult to do so. It is for dipping into as one would with an issue of this Journal—for that is what this book is, a collection of individual papers.

S. G. B. Amyes

S. G. B. AMYES