

The book starts with a short but imaginative chapter, ambitiously titled "The 'Zen' of Bacterial Pathogenicity", setting the scene for what follows, suggesting the way the subject is likely to change, and emphasizing the importance of the host. There is a chapter on relevant population genetics, and the remaining 18 chapters are divided into three sections: 'Surfaces and Colonization', 'Invasion and Intracellular Growth', and 'Toxins'. They vary in the width of their coverage: from detailed chapters on specific factors,

such as iron acquisition in *E. coli* and other organisms, to more general chapters covering a whole field, for example *Salmonella* pathogenesis.

This is a book which will prove valuable to those already conversant with the outline of the subject. It deals authoritatively and interestingly with many systems not well reviewed elsewhere. Those who need it will highly value it.

S. van Heyningen

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**Modern Methods in Protein- and Nucleic Acid Research: Review Articles;** Edited by H. Tschesche; Walter de Gruyter; Berlin, 1990; ix + 446 pages; DM 330.00

This is a rather diverse mixture of 20 articles of which the overall aim is to allow chemists and molecular biologists the opportunity to evaluate a series of methods used in protein and nucleic acid research. The variety of contributions is extensive, both in area and quality, and this detracts from its usefulness to the individual as no-one will have such a wide range of interests. A second point that identifies this volume for library purchase only is the price. I would have thought that a book containing several articles promoting methodology being commercially advertised might have been subsidised by the interested companies.

Some of the papers are simply research articles and, for example, the final article on the NMR analysis of ribonuclease T1 would have been much better had it included an explanation of the background, potential and limitations of the method. In contrast, the paper on CD spectral analysis describes not only its range of application and advantages over other methods but also gives an outline of the theory, instrumentation and applications.

It is this latter type of contribution which gives this book its value. There is an interesting article on DNA diagnostics which explains nucleic acid hybridization and the use and limitations of radioactive probes in clinical laboratories. This is followed by a consideration of several, alternative probes and here the contrast with the opening article, which considers digoxigenin-dUTP labelled probes exclusively, is significant.

There are other, specialized articles on free-flow electrophoresis, tentacle-type ion exchangers, ion-spray mass spectrometry, analysis of racemization of amino acids and the raising of antibodies to thymosins. While these areas may be of value to the specialist, they are treated in a manner which

reduces their interest to the more general reader.

And yet it is difficult to be critical on these grounds as I found equally specialized articles on C-terminal sequencing of proteins and the use of spin-labelling techniques in the study of membrane proteins to be of interest. Nevertheless I feel that the best of this collection were the articles on protein crystallization and protein structure modelling which are excellent reviews that I would be happy to recommend to the graduate or even undergraduate students. Also in this category, though more specialized, were the articles on photoaffinity labelling and the erudite and comprehensive essay concerning the prediction of what might form a good epitope for generating anti-peptide antibodies.

For the molecular biologist there are valuable articles on methods of construction of oligonucleotide-directed mutations and on the problems encountered during the isolation and refolding of fusion proteins. It is a pity that these are not linked with the presentation on the construction and use of columns containing immobilized metal ions for isolation of fusion proteins with histidine tails as this is a potentially valuable technique. As it is, the latter article appears earlier in the book, distinct from the other two on a similar topic.

I would have liked to have seen more editorial input into this volume to provide a theme to tie the articles together, to correct the English and to insert Greek symbols where appropriate. Despite these criticisms, and the price, I would think this book should be on the library shelves for the half dozen or so very valuable reviews that it contains.

R.L.P. Adams

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**Protein Structural Analysis, Folding and Design;** Edited by M. Hatano; Japan Scientific Societies Press, Tokyo/Elsevier, Amsterdam, 1990; viii + 237 pages; Dfl. 185.00, \$ 97.25

The combination of site-specific mutagenesis of proteins with experimental data obtained by physico-chemical techniques, particularly X-ray crystallography, has greatly extended our

understanding of the features of protein molecules that are responsible for their 3-dimensional structures, functional properties, stabilities and, above all, their exquisite