

Bioinstrumentation: Research, Developments and Applications

By Donald L. Wise. Published by Butterworth Scientific (1990). £124.00, pp. 1563. ISBN: 0-409-90234-9.

Obviously this is an immense (and multi-author) volume, mainly reflecting the tremendous interest in the area that is nowadays more generally known as 'biosensing', but in this case taking in implicitly almost any form of analytical chemistry and bioengineering that the Editor has apparently been able to think of. For those who are new to the field, there is therefore much that is of value here, though many of the chapters concentrate more on research findings than on the background, overview material which might be considered more suitable for a microbiological audience. There is also considerable overlap between some of the chapters.

For readers of this review, perhaps the main question to be answered is 'Are these devices now developed well enough so that I can use them as happily as I now use electrodes for O₂ and pH?' In general, the answer probably still remains 'No, but we're getting there', except at the research level, where for instance, Hörnsten *et al.* describe the exploitation of a semi-conductor device for the measurement of H₂ in the off-gas of fermentations, and Lloyd covers the successful use of luminescent bacteria for measuring very low levels of O₂ in similar circumstances.

Articles I found particularly germane for immediate or future microbiological use included those by Dhawan and by Palcic and Jaggi describing automated, quantitative image analysis, and one by Lessard and Wong on the analysis of complex hydrodynamic systems by listening to the relevant gurgles, whilst Mărgineanu and Vais describe the use of intact microbial cells as part of the transduction mechanism in a variety of sensors.

The technologies covered are, as usual, predominantly electrochemical and optical, with some contribution from acoustics, but overall there was no obviously logical theme to the book (and a most eclectic distinction between chapters as being 'basic', 'fundamental', 'advanced' or 'bioelectronic').

In sum, this is not a tome for the casual reader with a general interest in biosensors (there are several, much more accessible accounts), nor does it seem especially up to date (submission of most papers apparently having taken place in 1987). It is, then, for the 'insiders', who are more likely to wish to persuade their library to purchase it than to add it to their private bookshelves.

Douglas Kell, Aberystwyth

Methods in Molecular Biology, Vol. 6. Plant Cell and Tissue Culture.

Edited by J.W. Pollard and J.M. Walker. Published by Humana Press (1990). US\$69.50, pp. 597. ISBN: 0-89603-161-1.

This book contains over 50 sets of techniques relating to all aspects of plant cell, tissue and organ culture, from basic manipulations through to genetic transformation, described by some well known workers in the field. Step-by-step experimental protocols are presented that will be readily understood by the novice, but which also contain information of interest to more experienced workers. One problem with such multi-author method books can be that the authors describe their own systems in isolation, and fail to establish the generality of the techniques given. In addition, limitations on space can mean that the underlying theory is neglected. In this book, steps have been taken to overcome these problems, with some success, by including a 'Notes' section in each chapter in which many procedures are explained more fully and key variables

that may necessitate adaptation for other systems are identified. The book's main strength however lies in the diversity of the methods covered, which will ensure its value to a wide readership. Of particular interest are the many descriptions of custom-made apparatus. The literature cited is illustrative rather than comprehensive, but is reasonably up to date.

In conclusion, although a little short on theory and supporting literature, this book is probably the best of its type currently available.

Graham Warren, Sheffield

Algal and Cyanobacterial Biotechnology

Edited by R.C. Cresswell, T.A.V. Rees and N. Shah. Published by Longman Scientific and Technical (1989). £42.00, pp. 341. ISBN: 0-582-49370-2.

The declared aim of this book is to highlight the diversity in algae and cyanobacteria and its role both real and potential in biotechnology. The editors should be congratulated for producing a book which critically reviews the physiological, technical and economic constraints which algal biotechnology must overcome to convert its potential into reality. Contributions consider the production of nitrogenous compounds, fuels and secondary metabolites by these organisms and the potential of genetic manipulation. The Borowitzkas describe the steps to industrialization; bringing economic realities to algal biotechnology. John Benemann uses a crystal ball to adduce the future of algal biotechnology and concludes, surprisingly and improbably given problems of species control, that this lies in open pond production systems. This book will be of value to practitioners and students of algal biotechnology.

Howard Fallowfield, SAC, Auchincruive

Microbiological News**University of Kent Biological Laboratory Anniversary Reunion**

The Biological Laboratory, University of Kent is celebrating its 21st anniversary with a reunion on 14-15 September 1991. This event has prompted Ray Newsam to dig through the laboratory archives from which he unearthed this photograph of current and former members of staff of the laboratory taken at the annual Christmas party in 1974. All these SGM members, now professors, will be asked to re-form the group to give a

