

BOOK REVIEWS

Plant and Cell Culture: by H. E. STREET (ed.), Botanical Monographs, Vol. 11. Blackwell Scientific Publications, Oxford, 1973, 512 pp. £12.50.

Plant tissue and cell culture has rapidly become an important tool in plant physiology and biochemistry. Therefore, a book that provides a guide to the recent advances of culture techniques and points to the manifold possibilities that are opened up by these techniques must greatly be welcomed. Various authors have made contributions to this book, each an expert and authority in the respective field of plant tissue and cell culture. The book covers aspects of laboratory organization (Street), callus and cell culture techniques (Yeoman, Street), the isolation of protoplasts (Cocking and Evans), general cytology of cultured cells (Yeoman and Street), single cell clones (Street) as well as pollen and anther culture (Sunderland). In addition to these chapters devoted mostly to techniques, the book outlines some aspects of applications, e.g. organization-organogenesis and embryogenesis (Reinert), growth of plant parasites in tissue culture (Ingram) and finally Street reviews "Old problems and new perspectives". Excellently written are the reviews on growth patterns in callus cultures (Yeoman and Aitchison) and growth patterns in cell cultures (King and Street).

A biochemist reading this book must regret that very important features of the application of cell cultures to metabolism, and to the production of secondary plant products are mentioned only occasionally and the literature cited for this is fairly old and results are quoted without critical appraisal. However, a full coverage of biochemical aspects would go beyond the scope of the present volume.

The book is written for advanced undergraduates, graduate students and research workers and any individual who wants to become familiar with plant and cell culture techniques will find the book very useful. Even those research workers who are themselves actively involved in tissue and cell culture work will find much of interest to them.

The book is beautifully illustrated and can be highly recommended.

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An Introduction to Spectroscopic Methods for the Identification of Organic Compounds, Vol. 2, F. SCHEINMANN (ed.). Pergamon Press, Oxford, 1974, 354 pp. \$12.00 (hardback); \$7.00 (flexicover).

Volume 1 of this two-volume set appeared in 1970 and dealt with the practical use of IR and NMR spectrometry for organic structure identification at the level of advanced undergraduates and beginning graduate students. The present volume completes the assignment with discussions of organic structure identification using mass spectrometry, ultraviolet and ESR spectrometry. There is also a chapter which discusses new developments in NMR spectrometry such as use of lanthanide shift reagents and applications of the nuclear Overhauser effect; the regrettably brief treatment given to CMR spectrometry in this chapter will not be very useful to many, but more complete treatments of this rapidly-developing field are, of course, available.

Of particular value to students and to scientists in other areas who need to familiarize themselves with modern methods of organic structure determination are three chapters on problem-solving using mass spectrometry, ultraviolet and ESR spectrometry, and two chapters which outline the approach to solution of problems by a combination of spectral methods. Thorough perusal of this section should give the reader a practical introduction to procedures which are the *sine qua non* of modern structural organic chemistry.

A chapter on documentation of molecular spectra will be helpful to non-chemists who seek