

## BOOK REVIEW

**Specialist Periodical Report—Biosynthesis, Volume 6:** edited by J. D. BU'LOCK. Royal Society of Chemistry, London, 1980. £40.

This volume contains six chapters covering the literature during 1977 and 1978, and as usual, an expert who is actively involved in the area under discussion has written each chapter. Polyketides are reviewed by T. J. Simpson who commences with fatty acid metabolism, then proceeds from pentaketides through to decaketides with a new and useful section on meroterpenoids (hemiterpenoids). He concludes with a short section on macrolides. The emphasis is on  $^{13}\text{C}$ -studies with some mention of the use of new techniques involving  $^2\text{H}$ NMR, and this reflects research trends in the area, where micro-organisms produce most of the secondary metabolites under investigation. J. B. Harborne covers phenolic compounds derived from shikimate, with the emphasis on enzymology of biosynthesis. He comments on the lack of major advances in the period under review, and it seems that chemists have deserted this field in favour of polyketides, terpenoids and alkaloids, leaving the biochemists to study the enzymes involved. Few tracer experiments are reported in the chapter, which is in stark contrast to the plethora of such studies recorded in chapter one—evidently a reflection on the state of research in the two areas.

The smaller terpenoids ( $\text{C}_5$  to  $\text{C}_{20}$ ) are discussed in chapter three, and J. R. Hanson highlights the role that  $^{13}\text{C}$ -NMR and  $^{13}\text{C}$ -labelled compounds have begun to play in this area. As usual, the coverage is comprehensive but concise, and the sections on sesquiterpenes and gibberellins are particularly good, reflecting, no doubt,

the interests of the author. Chapter four by L. J. Mulheirn, contains a useful summary of work carried out with model substrates to elucidate the mechanism of squalene biosynthesis and cyclisation. In addition, there are the usual lengthy sections on triterpenoids and steroids in higher plants, algae, and fungi, as well as extensive sections on triterpenoids and steroids in invertebrates, and on carotenoids.

The *in vivo* reactions of non-protein amino acids, cyanogenic principles and glucosinolates are reported in chapter five by A. Kjaer and P. Oleson Larsen, and this publication is probably the only place wherein one can find recent information on these types of compounds. The final chapter on alkaloids by E. Leete contains the usual tabular survey of tracer studies—this year there are 78 pages in this section! In addition, there are timely reports on the dramatic advances in our understanding of the biosynthesis of monoterpene indole alkaloids, and of pyridine alkaloid and thiamine biosynthesis, amongst other topics. Finally, a number of enzyme studies are mentioned.

Within this volume there are thousands of chemical structures, and these are usually close to the points at which they are mentioned in the text. There are 933 references to the research literature or to books and reviews, and at £40 (\$111.25) the book is good value for money. However, there has been an increase in price of one-third since volume 5 (£29.50), and if this trend continues only libraries (under protest) and members of the RSC (who can buy the book at a reduced rate) will be able to afford the next volume!

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