

alphabetical order, by product number and in product groups (e.g. fruits, cereals, meat and poultry, vegetables, etc.). The product numbers do not appear to follow any particular system, and probably relate to the order in which they were first abstracted. These indexes appear at the front of each of the three volumes. The last volume contains the indexes of chemical compounds, arranged in alphabetical order, giving the product number(s) from which the compound has been isolated. The inclusion of CAS numbers in the index of chemicals is a particularly welcome addition to this edition. Nomenclature adheres to the IUPAC system, but the index also contains cross referencing of a significant number of trivial names, which makes it easy to use and reduces the risk of missing a particular compound. One minor criticism is that the volumes are only bound in soft covers which does not seem adequate for a reference volume that is likely to be subjected to much use. It is an expensive publication and therefore hard covers could be expected. A database containing all the data from the books is available for use on an IBM compatible PC, but at a cost of Dfl. 7000, including the books, it is only likely to find its way into a limited number of establishments.

This new edition of *Volatile Compounds in Food* will be welcomed in its new format by flavour chemists and will be an essential source of reference in all flavour research laboratories. However, its interest should extend beyond the research laboratory to any areas of the food and beverage industry requiring information about aroma compounds contributing to the flavour characteristics of foods and beverages.

D. S. Mottram

Studies in Natural Products Chemistry. Volume 6: Stereoselective Synthesis, Part D. Edited by Atta-ur-Rahman. Elsevier, Amsterdam, 1990. x + 606 pp. ISBN 0-444-885668. Price: US\$189.75, Dfl. 370.00.

This is the fourth volume in the series to concentrate on synthesis and, as in the previous volumes, much of what appears has either not been reviewed before, or at least not for a considerable time. There are thirteen chapters and some very well known authors. The book commences with a massive review by J. D. Martin on the total synthesis of polycarbocyclic marine terpenoids. The period covered is the last decade, and although the reviewer uses 104 pages of text, many of the figures take up only one third of a page, yet describe syntheses of 20 steps or more. This makes for rather a cramped appearance in what is otherwise a very informative chapter.

The second chapter, by T. Nakano, on partial syntheses of sponge diterpenes and sesterterpenes, is followed by a timely review of allenic and

acetylene carotenoids by S. Liaaen-Jensen. This covers occurrence, structure elucidation, biosynthesis, biological function, and some synthesis over the last decade.

L. N. Mander then provides an excellent account of his group's recent work on gibberellins and antheridiogens, and this chapter is probably the best in terms of clarity of text and figures. The much-reviewed trichothecanes are reviewed again by J. W. Apsimon *et al.*, whilst O. S. Chizov describes the synthetic endeavours of nine separate research groups in their quest of amphotericin B.

A review of the general synthetic utility of dithioacetal S-oxides and S,S-dioxides is provided by K. Ogura, and this is followed by an account (by H. Yamamoto and T. Hanaya) of the formation of sugar analogues with carbon-phosphorus bonds. This is a very unusual topic, and it is somewhat disappointing that no biological data are provided for any of the analogues described.

D. Keglevic provides a lucid and useful account of the synthesis of muramic acid and related structures found in bacterial cell wall peptidoglycan, and the book concludes with two chapters on semiochemicals and two on alkaloid chemistry. A review of the synthesis of simple alkaloids that are used for defence by ants (J. C. Braekman and D. Daloz) complements the review (by T. Kitahara) on the chiral synthesis of terpenoids employed as semiochemicals and bioregulators. The two alkaloid chapters are rather specialised and deal with some isoquinoline chemistry (J. B. Bremner) and the structure and chemistry of the alkaloids from *Strychnos dinklagei*.

As usual in this series, there are some really good, authoritative and timely reviews, and Atta-ur-Rahman must be congratulated for his continuing efforts as editor. Having said that, it is still hard to understand why a camera-ready text is so expensive to produce, and only well-endowed institutions or individuals will be able to afford the purchase price.

J. Mann