

Book Reviews

Azides and Nitrenes. Reactivity and Utility. Edited by Eric F. V. Scriven. Academic Press, Orlando and London. 1984. 542 pp. 16 × 23.5 cm. ISBN 0-12-633480-3. \$99.50/£70.00.

This is a timely book to bring research workers up to date in azide and nitrene chemistry with each chapter written by an established expert. Unfortunately, the work lacks a written contribution (apart from the preface) from a past or present member of the group that Peter A. S. Smith refers to as the "Salford Syndicate". The editor, however, does atone by bringing together a fine collection of essays which provide us with a perspective of recent advances and also introduces topics such as photoaffinity labeling and industrial applications. The book has 12 chapters and after the preface there is the warning that azides are known to detonate and appropriately in the last chapter on Industrial Applications there is a section on explosives and propellants! The first five chapters deal with the chemistry of azides and nitrenes when attached to the following groups: (1) alkyl (by E. P. Kyba), (2) vinyl (by A. Hassner), (3) aryl and heteroaryl (by P. A. S. Smith), (4) acyl (by W. Lwowski), (5) elements other than carbon (by R. S. Atkinson). In each, synthetic aspects have been emphasized with preparations and reactions of the azides and nitrenes. It is clear that reactive intermediates are no longer chemical curiosities which only arouse academic interest but they have preparative value in providing compounds inaccessible by other routes. While there is some overlap in preparative methods, this is justified in allowing each chapter to be complete in itself. The influence of the vinyl group on the reactions of azides and nitrenes is especially well illustrated by A. Hassner, and P. A. S. Smith deals with aromatic substituents where ring expansion and attack on an adjacent group provide interesting possibilities for the nitrene.

In the chapter by R. S. Atkinson on "Azides and Nitrenes Attached to Elements Other than Carbon", we have a suggestion that this could be a new growth area for research since most elements in the periodic table form azides but only few studies have been carried out involving silyl, germyl, and stannyl azides. The chemistry of nitrenes attached to nitrogen oxygen, sulfur, and halogen is also briefly discussed.

Where appropriate, theoretical aspects including orbital considerations and triplet and singlet aspects of nitrene reactions have been included.

R. A. Abramovitch and R. Jeyaraman take us through the molecular acrobatics of alkyl- and arylnitrenium ions which are often generated from *N*-chloro precursors. The section on biological properties provides a warning that carcinogenic aromatic amines and amides are probably transformed *in vivo* to *N*-hydroxy derivatives and nitrenium ions capable of binding to amino acids and nucleotide bases.

The physical and spectroscopic methods for studying nitrenes and nitrenium ions have been reviewed by M. S. Peatz, while C. Wentrup deals with gas-phase and matrix studies of azides and nitrenes with brief sections on the phenyl nitrene radical cation and radical anion. Unfortunately, this scholastic work has been priced at \$99.50 or £70.00 which puts it beyond the price which research students (and their supervisors) can afford. It will, however, be a welcome addition to the library and will be eagerly consulted not only by those working in the field but also by those who wish to be brought up to date in this fascinating area of organic chemistry.

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Chemistry and Biotechnology of Biologically Active Natural Products. Edited by Cs. Szántay, Á. Gottsegen, and G. Kovács. Elsevier, New York. 1984. xvi + 378 pp. 17 × 25 cm. ISBN 0-444-99608-7. \$77.00.

This book is based on the Proceedings of the 2nd International Conference on this topic, held in Budapest, August 15–19, 1983, and edited by Elsevier, in conjunction with the Publishing House of the Hungarian Academy of Sciences in Budapest. It also represents Vol. 17 of the series "Studies in Organic Chemistry", published by Elsevier Science Publishers, Amsterdam, The Netherlands. A courageous opening address by W. Fritsche, stressing need for international communication and cooperation among scientists, hazards involved in dealing with chemicals, and potential toxicity of man-made compounds, is followed by 22 papers written by well-known scientists, often coauthored, extensively referenced, and covered with a subject index. Reviews of important research topics include prostanoids by W. Bartmann and I. Tömösközi and synthesis of lipogenase derived leukotrienes by J. Rokach. Antibiotics are discussed by S. D. Géro (aminocyclitols) and by F. Arcamone, and mold metabolites are covered by Ch. Tamm (trichothecenes) and L. Merlini (natural perylenequinones). Alkaloid synthesis and metabolism are discussed by E. Winterfeldt, H. Musso (betalains), and E. Wenkert (Lycopodium alkaloids). B. Lindberg discussed pneumococcal polysaccharides and I. Vincze, biologically activity steroids containing basic nitrogen functions. Asymmetric synthesis with enzymes is the theme of W. Schneider and stereochemical aspects of sesquiterpenes of the furoemophilanes group that of L. Novotny. The biotechnological part of the symposium is covered with presentations by R. Manfredini and L. Nyeste, both addressing optimization of yields in fermentation processes. Original findings are disclosed in papers by W. Kraus with "feeding deterrents from Miliaceae species", by D. G. Strauss with "pigments from *Methylosinus trichosporium*", by R. Vlahov with "new approaches to the synthesis of galanthamine", by L. Kisfaludy with "recent progress in peptide chemistry", by J. W. ApSimon with "saponins from marine invertebrates", and by N. L. Marekov with "chemistry of important cyclopentane monoterpenes from *Valeriana* plants".

Cover, print, and presentation of formulae and graphics are excellent. All in all, this is a good book to have, and the editors, particularly Cs. Szántay, who also planned the conference, should be congratulated for having done such a fine job in covering this interesting meeting held in Budapest in 1983. The editors should, however, not be disappointed if their expensive text, appearing in print after more than 1 year, does not become a bestseller. A cheaper paperback edition covering such events, which seem to mushroom as time goes by, would have done well and benefited a wider audience, particularly students.

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Books of Interest

Aspartame. Physiology and Biochemistry. Edited by Lewis D. Stegink and L. J. Filer, Jr. Marcel Dekker, Inc., New York. 1984. xiii + 670 pp. 16 × 23.5 cm. ISBN 0-8247-7206-7. \$79.75.