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BOOK REVIEW

The Alkaloids Volume 10: senior reporter M. F. GRUNDON, Specialist Periodical Reports, The Royal Society of Chemistry, London, 1981. 263 pp. Hardback £49.00.

The Royal Society of Chemistry publication on *The Alkaloids* is the central point of the alkaloid year. With such a proliferation of papers on this most worthy of topics, it is not difficult to miss some contributor and hence the latest volume is eagerly awaited, certainly in my laboratory, and I would suspect in many others. Volume 10 of the series reviews the literature published between July 1978 and June 1979. The style of the previous volumes is maintained and each chapter is written by an expert in that particular area of alkaloidal endeavour. The initial chapter on biosynthesis covers a general introduction which reviews the general area before dealing with specific groups of alkaloids. The emphasis of much of the research into alkaloid biosynthesis is currently at the level of enzyme involvement, as is well illustrated in the terpene–indole area which is "arguably the most important work in the past five years".

The following 14 chapters are arranged as in previous volumes into pyrrolidine/piperidine, tropane, pyrrolizidine, indolizidine, quinolizidine, quinoline, isoquinoline (including β-phenylethylamines), aporphine, Amaryllidaceae, indole, *Lycopodium*, diterpene and steroid type alkaloids. In sticking to this format, it is apparent that some chapters are very short (e.g. the indolizidines are covered in 2.5 pp.) and hence contrast with the larger chapters (e.g. indoles, 63 pp.; isoquinolines, 40 pp.). An alternative approach used in another excellent series on the alkaloids (formerly edited by R. H. F. Manske) does not aim to cover all groups within the confines of a single volume. I believe that the policy adopted by the 'Specialist Report' series is well worthwhile and helps the reader to assess all the literature from a given time-span.

The natural sources, structural determination, spectral data, synthesis, biosynthesis and biological activities of many alkaloids are reviewed and it is obvious that interest in alkaloid research continues unabated. Browsing for the 'merely interested' or the 'alkaloidal addict' is fascinating within the pages of this single volume as illustrated, for example, on page 39, where we can read that sesbanine is a novel cytotoxic alkaloid whereas good old (or is it bad old?) nicotine papers are on the increase with, for example, a series of tobacco-specific nitrosamines which may be the causative factors in tobacco-related cancers. The tropane area is very much alive with new alkaloids, synthesis, conformation, photochemistry, pharmacology and analytical aspects being taken as review themes. Cocaine and cinnamoylcocaine have been mapped in whole tissues of coca plants by MIKES which is a more sensitive analytical method for these compounds than any other described method. Within the isoquinoline chapter, the morphinane group provides special interest with a 'mini-review' on recent pharmacological studies. Separated and elevated to the status of their own chapter are the aporphinoids in which "the year under review has witnessed a particularly bountiful harvest of new aporphine alkaloids"—some 18 novel structures have been identified and some 22 known alkaloids have been re-isolated. For sheer volume, pride of place goes to the indoles, whether they be simple, isoprenoid, bis-indoles or related quinolines. Old favourites such as *Strychnos*, *Mitragyna*, *Rauwolfia* and *Catharanthus* continue to attract considerable interest and in the bis-indole area the application of the modified Polonovski reaction in the synthesis of potential new anti-tumour alkaloids makes interesting reading.

The final chapter on miscellaneous alkaloids not only covers known structural types such as peptide alkaloids but also unclassified structures such as the simple azetidine-2-carboxylic acid to the mind-boggling scabrosin. The reporters, and in particular the senior reporter, are to be complimented on their contributions. In this age of 'instant information' it is unfortunate that the work covered is now at least two years old. Nevertheless the high standard of this series is maintained and Volume 10 can now proudly sit with its sister volumes. It goes without saying that this series should be available to all scientists interested in natural products but unfortunately the mounting costs of production will ensure that for many of us it will sadly have to be on library shelves rather than in an individual's own collection.

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