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BOOK REVIEWS

Alkaloids: Chemical and Biological Perspectives, Vol. 3: edited by S. W. PELLETIER. John Wiley, New York, 1985. £88.60.

The third volume in this welcome new series on alkaloids is now available. There are seven chapters and, as with the previous two volumes, they do vary considerably in their length and in the areas covered. The major and initial chapter in volume 3 deals with the pyridine and piperidine alkaloids (90 pages, 431 references). This review, which links with the chapter on biosynthesis and metabolism of tobacco alkaloids published in volume 1, deals not only with chemistry, but lays particular emphasis on pharmacology. Well known alkaloids such as trigonelline, arecoline, ricinine, gentianine, nicotine, conine, pelletierine, lobeline and hosts of their relatives form the topics for this review.

In contrast to the first chapter, the second one covers a much smaller area and specifically reviews the indoloses-quiterpene alkaloids of the Annonaceae. To date, there are only 12 alkaloids with known structure and their structure elucidation forms the main theme together with speculation regarding their biosynthesis. It is too early for any pharmacological work to be reported. Since pandamine was isolated in 1966, there have been more than 100 other cyclopeptide alkaloids which have had their structures determined. The third chapter concentrates on recent developments in cyclopeptide alkaloid research and over half of the chapter is devoted to synthetic chemistry.

The fourth and shortest chapter is on *Cannabis*. Although more than 420 chemicals have been identified from *Cannabis*, only eight of them are alkaloids of the quaternary amine, amide or spermidine types. Brief mention is made also of amino acids and of amino sugars. The remaining three chapters are primarily synthetic chemistry. There are more than 400 varieties of club-mosses but only about 10% of them have had their alkaloid content determined. Little has been done of the pharmacology of *Lycopodium* alkaloids and the synthetic procedures described should lead to the production of sufficient alkaloids in order to determine any pharmacological effects. The syntheses of indolizidine and quinolizidine alkaloids of *Tylophora*, *Cryptocarya*, *Ipomoea*, *Elaeocarpus* and related species together with recent advances in the total synthesis of pentacyclic *Aspidosperma* alkaloids form the subjects of the final two chapters.

Each chapter is written by an expert(s) in that particular field and the clear presentation with adequate bibliography and indexing makes this volume part of an excellent series on excellent natural products—the alkaloids.

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The Alkaloids, Vol. 24: edited by ARNOLD ROSSI. Academic Press, New York, 1985. 359 pp. £85.

Alkaloid chemists are extremely fortunate in having no less than three review series at their command for keeping them aware of the current literature: the Royal Society of Chemistry specialist periodical reports (now available in the journal *Natural Product Reports*), the Pelletier *Alkaloids: Chemical and Biological Perspectives* volumes and the Manske–Rossi series. The latter is far the oldest, having begun publication in 1950 and the 24 volumes in total provide a very thorough and comprehensive coverage of 35 years of alkaloid endeavour. Arnold Rossi, who took over in 1982, has now edited four volumes and it is apparent that he has managed to maintain the very high standards of production and presentation set by the late R. H. F. Manske.

The present Rossi volume under review contains six chapters, which neatly divide into three pairs. Thus, there are two chapters on alkaloids of rare plant groups, the *Eupomatia* (Annonaceae) and *Aristotelia* (Elaeocarpaceae) alkaloids, which have not been covered in detail before. Both these plant genera are native, in part, to Australia and in recent years have yielded a number of novel alkaloids, the structures of which are appropriately discussed here by Australian workers. Hobartine and tasmanine, the names of two *Aristotelia peduncularis* alkaloids, emphasise again the antipodean connection. Then, there are two chapters on apoporphine and phthalide isoquinoline alkaloids which simply update the information given in earlier volumes in the series. Finally, there are a pair of chapters of more general interest, one on marine alkaloids by C. Christophersen and the other on the use of spectral methods for studying alkaloid structures by R. G. Highet and J. W. Wheeler.

The definition of a marine alkaloid is difficult because sea organisms contain such a wide variety of nitrogenous compounds, but the author here divides these alkaloids