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BOOK REVIEW

The Alkaloids, Vol. 33: edited by A. Brossi, Academic Press, San Diego, 1988, pp. ix + 360, $95

Research workers have come to rely on this Series to provide detailed and up-to-date coverage on areas of alkaloid chemistry. The successful format of this series continues with authoritative reviews on five specific classes of alkaloids.

The first chapter by M. Lounasmaa (Finland) contains the sixth offering in this Series on tropane alkaloids. One hundred and fifty alkaloids are listed including 11 of the 'dimeric' type. The review concentrates on synthetic methods including the famous Robinson synthesis of *tropinone*. Spectroscopic data for tropane alkaloids are extensively tabulated. Biosynthetic studies receive only a brief treatment and pharmacological properties of tropane alkaloids are not covered

The *Gelsemium* alkaloids comprise about 20 complex polycyclic alkaloids apparently derived from the indole monoterpenoid pathway. They receive their third treatment in this Series from Z.-J. Liu and R.-R. Lu (China). The chapter is mainly concerned with structure determination, reactions, and approaches to the total syntheses of these alkaloids. Pharmacological studies and clinical applications of *Gelsemium* alkaloids receive their first treatment. The choice of authors is seen to be particularly appropriate, because these alkaloids are much used in Chinese traditional medicine, mainly as analgesics, although a number of the alkaloids are extremely toxic.

Protoberberine alkaloids can undergo cleavage at each of the three C–N bonds to produce many other quinoline alkaloids and analogues. The astonishing variety of these cleavages and transformations of protoberberines is thoroughly described by M. Hanaoka (Japan). These conversions are important because of the ready availability of protoberbernes in nature or by synthesis.

Secoisoquinoline alkaloids are discussed for the first time in this Series by M. D. Rozwadowska (Poland), although the first example in this category was isolated back in 1832 by Pelletier. These alkaloids contain 'open heterocyclic rings', although it is not known for certain if all the members of this group are formed in the plant by oxidative cleavage, or if they are produced as artefacts during isolation procedures

The final review is on Hasubanan alkaloids by M. Matsui (Japan). This sub-group of morphine alkaloids has now grown to include 41 representatives. Two previous reviews are available in this Series. The present version concentrates on structure determination by spectroscopic methods and synthesis.

All five chapters contain references up to 1986 and some (with addenda) also include work into 1987. The only weakness detectable in these contributions is perhaps lack of balance in the space devoted to biochemical aspects, i.e. biosynthesis and pharmacological studies. Nevertheless, the international panel of authors is to be congratulated for maintaining the high standards of this valuable Series This is an essential reference source in any major library for all workers in alkaloid or heterocyclic chemistry. There is also much to interest the browser in terms of modern methods of structure determination by spectroscopic methods, synthetic strategy, and reactions of complex heterocyclic systems.

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