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BOOK REVIEW

The Alkaloids, Chemistry and Biology, edited by G. A. CORDELL, Volume 50 in the series "The Alkaloids", Academic Press, 1998, 590 pp. ISBN 0-12-469550-7.

This series of review volumes on alkaloids was begun by R. H. F. Manske in 1950 and it is entirely appropriate that this milestone edition should be dedicated to him by the present editor, Dr. Geoffrey Cordell. Furthermore, the opening chapter by D. B. Maclean and V. Snieckus, is a historical account of Manske's life, from his early days as a Canadian chemist working for his Ph.D. under Robert Robinson at Manchester, up to his days of retirement as a naturalist, orchid grower, musician and cook. Certainly, he will long be remembered for founding the series as well as contributing so many excellent reviews over the years. Even more, he persuaded all the leading alkaloid scientists of recent decades to prepare articles for him.

The present volume is a particularly rewarding one with thirteen reviews covering almost every aspect of current alkaloid research. The opening chapter is a fairly standard offering on the chemistry and biology of steroidal alkaloids. More unusual and challenging is the second one by A. Brossi and X. F. Pei recording the biological activity of unnatural enantiomers of such well known alkaloids as morphine, colchicine and nicotine. An extensive chapter on amphibian alkaloids by an expert in this area, J. W. Daly, follows. Then D. Gröger and H. G. Floss consider the biochemistry of ergot alkaloids in terms of achievements and challenges.

The natural polyamines more usually figure in biochemistry tests, so it is particularly good to see a review of these relatively simple molecules from a more chemical point of view.

There are then several chapters on alkaloid laboratory synthesis, but attention should be drawn to Toni Kutchan's excellent account of the molecular genetics of plant alkaloid biosynthesis. A related article by R. Verpoorte and co-workers consider the prospects of alkaloid biotechnology via tissue culture and metabolic engineering. Finally, a word should be said about Peter Waterman's valuable consideration of alkaloid chemosystematics. He argues persuasively that we have not made much progress here, since the early reviews of Robert Hegnauer. Here is a challenge for the future. As we learn more and more about switching alkaloid synthesis on and off in plants at will, there may well be many systematic insights awaiting discovery.

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