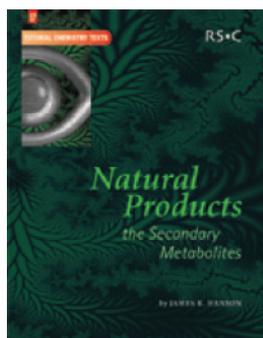


Naturally Productive

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Natural Products—the Secondary Metabolites

By James R. Hanson
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This new addition to the excellent series of 'Tutorial Chemistry Texts' produced by the Royal Society of Chemistry has as its stated subject the study of 'the structure and biosynthesis of secondary metabolites'. The author's major aim is to illustrate the chemical logic associated with various strategies that have been used for the determination of the structure of the title compounds. This is an ambitious undertaking in a book of this size (a modest 148 pages) but matters have turned out remarkably well, especially when one recognizes that this text is pitched at the second-year undergraduate who has completed courses on functional group chemistry, stereochemistry, and elementary spectroscopy. The five chapters cover the classes of natural product and their isolation, the characterization and determination of the carbon skeleton of a natural product, the location of functional groups and the molecular stereochemistry, some examples of structure elucidation, and, finally, the biosynthesis of secondary metabolites. At the beginning of each chapter is a list of aims. Worked problems appear throughout although some of these are rather trivial in nature. Each chapter concludes with a summary of key points and a series of problems, solutions for which appear at the end of the book as does a very useful list of references for further reading. The two and one-half page subject index is remarkably effective.

The book suffers from some weaknesses although these should not detract substantially from the utility of the text for the target audience. Perhaps the most conspicuous is the rather variable quality of the illustrated structures and the inconsistent representation of stereochemistry. Inconsistencies of emphasis are another concern. For example, in a summary of six key points associated with Chapter 3, the retro-aldol and retro-Claisen reactions as well as the decarboxylation of β -keto acids are identified, quite correctly, as important processes for revealing 1,3-relationships between certain functional groups. Yet within the body of this rather substantial chapter just three sentences are devoted to the matter. Furthermore, the lack of full stereochemical detail in many structures, especially steroidal systems, is unfortunate especially given the target audience and the stated aims of the book. Some mechanistic and other errors also appear. The absence of sample NMR spectra in Chapter 2 or 3 detracts a little from an otherwise surprisingly effective discussion of the spectroscopic techniques available for structure elucidation.

Overall, Hanson has provided a pithy and pleasingly comprehensive text on secondary metabolites. It provides an easy-to-read and effective point-of-entry into a fundamental aspect of organic chemistry. I am glad we have a copy on our bookshelves and sense undergraduates will be consulting it on a fairly regular basis. At about AU\$ 35.00 the book is rather good value for money so I strongly recommend that chemistry libraries add the text to their collections. Individual purchase should be considered by those interested in developing a well-balanced perspective on this vast topic.

**Martin Banwell research interest lies in the total synthesis of biologically active natural products. He is currently based at the Australian National University, Canberra, where he has been since 1995. He is currently the chair of the Editorial Advisory Committee of the Australian Journal of Chemistry.*