BOOK REVIEWS

Organic Stereochemistry, H. KAGAN, Université de Paris-Sud. Halsted Press, 605 Third Avenue, New York, N.Y. 10016. 1979. vii+166 pp. 13.5 x 21.5 cm. $14.95.

This book is a translation by M. C. Whiting and U. H. Whiting, of Kagan's La Stéréochimie organique, published in 1975. It is divided into five chapters. The first, Molecular geometry and chemical bonding, devotes 30 pages to an elementary treatment of bonding, somewhat similar to that found in modern textbooks of general and organic chemistry. The second chapter, Molecular models, planar representation of molecules, contains a twelve-page discussion of molecular models and projection formulas. Conformational analysis is covered in Chapter 3. Most of the 31 pages in this chapter are devoted to conformational analysis in cyclic systems. Chapter 4, Stereoisomerism, devotes 52 pages to the following topics: Definitions, Symmetry, Experimental characterization of enantiomers, Racemates and optical purity, Occurrence of chiral molecular structures, R,S Nomenclature and prochirality, and Diastereoisomerism. Chapter 5, Dynamic stereochemistry, contains 31 pages. Topics include: Stereoselectivity and stereospecificity, Kinetic and thermodynamic control, Curtin-Hammett principle, Asymmetric induction and asymmetric synthesis, Cyclic systems and conformational effects, and stereochemistry of molecular rearrangments. Chemical systems which are discussed include: Addition reactions to olefins, Elimination reactions, Substitution reactions, and Pericyclic reactions. The Index contains 182 entries: the Index of names contains 105. In Chapters 3–5 there are 17 references to the original literature and 8 different bibliographic entries.

The book is intended to be a concise treatment of organic stereochemistry for undergraduate chemists. This Reviewer agrees that the treatment is indeed concise, for it goes only slightly beyond that found in good undergraduate texts in organic chemistry. It is doubtful that many instructors would recommend this as a supplemental text in the introductory organic course, for this course is already overloaded with subject matter. Neither is the book suited for use in an advanced undergraduate course in stereochemistry. The treatment is too concise; important topics such as resolution of racemates, asymmetric synthesis, and methods for determining relative and absolute configuration are hardly mentioned. Finally, the book is practically useless to researchers. The absence of the above-mentioned topics, and the paucity of literature citations make it a poor investment.

No fault is found with the translation, or the layout of the book. Figures and diagrams are clearly and carefully drawn, and very few errors are in evidence.

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Carbon-13 NMR Shift Assignments of Amines and Alkaloids, MAURICE SHAMMA and DAVID M. HINDENLANG, The Pennsylvania State University. Plenum Publishing Corporation, 227 West 17th Street, New York, NY 10011. 1979. xi+303 pp. 29 x 45 cm. $29.50.

This book constitutes a compilation of carbon chemical shifts of a large variety of alkaloids, alkaloid models and synthetic alkaloid precursors, presented in clear and lucid style and annotated with proper literature references. One to three large formulas appear on each page and the δ values are affixed to all carbon atoms. While limited to the field of alkaloids, the book is reminiscent of the 1972 effort of carbon shift compilation for organic compounds, in general, by L. F. Johnson and W. C. Jankowski ("Carbon-13 Spectra", published by Wiley-Interscience) and, as in the case of the latter publication, will find only limited circulation.

The Shamma-Hindenlang opus should prove most useful in the hands of experimental alkaloid chemists and act as a fine reference work in the laboratories of natural products chemistry students, yet inexperienced in the field of the ^{13}C nmr spectral method of structure analysis. It will have less interest for alkaloid chemists fully conversant with this relatively new, powerful tool of analysis and minimal usefulness for the nmr specialist. However, the reference and possibly pedagogic value of the book make it a good addition to personal and institutional libraries.

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