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PHYSICAL METHODS IN ORGANIC CHEMISTRY

The individual chapters have been written by experts who have had experience in presenting the methods to university students and particular care has been devoted to the choice of illustrations; many of the spectra used as examples have been recorded specifically for this purpose. The topics discussed are infrared spectroscopy, ultraviolet and visible spectroscopy, magnetic resonance spectroscopy, optical rotation and rotatory dispersion, diffraction methods, molecular weight determination, mass spectrometry, and dipole moments. The introductory chapter by the editor includes a useful tabular survey comparing the essential features of the various methods.

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Intended for research chemists and advanced students of organic and physical chemistry, this monograph presents a general survey of the recent work in molecular complexes of the donor-acceptor type, with emphasis on those phases in which organic chemists are most likely to be interested. Topics such as complex geometry and complexes in relation to reaction mechanism are treated in detail. Background material concerning topics such as spectra of complexes, bonding in complexes and the thermodynamics of complex formation is presented, but not in a mathematically rigorous fashion. There are abundant key references to current literature in the field.

Both authors are Professors of Chemistry at the University of California at Davis, where Professor Keefer is Chairman of the Chemistry Department and Professor Andrews is Dean of the College of Letters and Science. Both received the B.S. in Chemistry from the University of California, Berkeley, where Professor Keefer received the Ph.D. Professor Andrews received the Ph.D. from the University of California at Los Angeles. Both have written numerous papers concerning organic reaction mechanisms, complex formation and related topics.

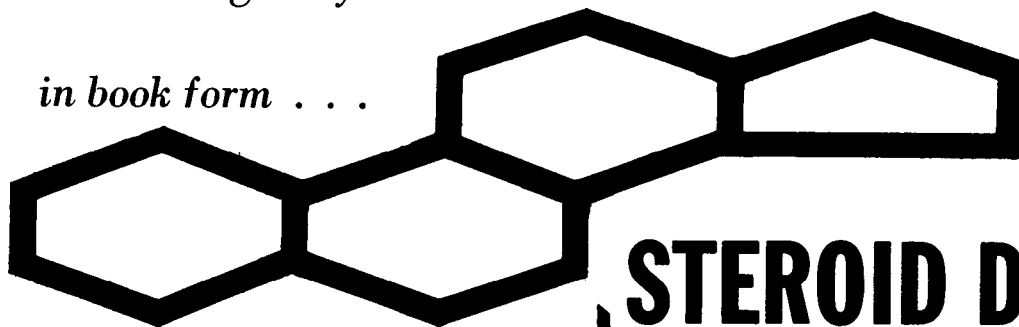
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ILLUSTRATIONS FROM THE FIELD

BY NORMAN BHACCA, *Varian Associates, Palo Alto, California*

DUDLEY A. WILLIAMS, *Churchill College, Cambridge, England*

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BY KOJI NAKANISHI, *Tohoku University*

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INTERPRETATION OF MASS SPECTRA OF ORGANIC COMPOUNDS

BY HERBERT BUDZIKIEWICZ, *Research Associate, Stanford University*

CARL DJERASSI, *Professor of Chemistry, Stanford University*

DUDLEY H. WILLIAMS, *Churchill College, Cambridge, England*

'...This book is directed primarily at "the organic chemist working with a given class of organic compound - [who] wishes to know how mass spectrometry can help him, and where he can find the relevant guideposts". There is no better source than the present book for help in the interpretation of mass spectra. It will be on the desk of every organic chemist who has access to a mass spectrometer...' ROBERT M. SILVERSTEIN, *Journal of Chemical Education*.

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BY MASS SPECTROMETRY:

VOLUME I, ALKALOIDS

BY HERBERT BUDZIKIEWICZ; CARL DJERASSI; DUDLEY H. WILLIAMS

Since its publication only a short time ago, this book which demonstrates the colossal impact of the mass spectrometric method in studying polycyclic organic compounds has been enthusiastically received. It illustrates the dramatic progress which has recently been made in the rational use of mass spectrometry for the structure elucidation of complex natural products. The chapters are as follows: INTRODUCTION; DEUTERIUM LABELING; SIMPLE INDOLE ALKALOIDS; IBOGA AND VOACANGA ALKALOIDS; TETRAHYDRO- β -CARBOLINE ALKALOIDS; EBURNAMINE AND RELATED INDOLE ALKALOIDS; ASPIDOSPERMINE AND RELATED ALKALOIDS; AKUAMMICINE AND RELATED ALKALOIDS; OX-INDOLE AND PSEUDOINDOXYL ALKALOIDS; PHYSOSTIGMINE AND RELATED ALKALOIDS; ISOQUINOLINE ALKALOIDS; EMETINE AND RELATED ALKALOIDS; COLCHICINE AND RELATED ALKALOIDS; LYCOPodium ALKALOIDS; QUINAZOLONES AND PURINE ALKALOIDS; MISCELLANEOUS CLASSES OF ALKALOIDS. \$10.50

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This book presents an up-to-date coverage of the important classes of natural products that have been exposed to mass spectral scrutiny, with the exception of alkaloids, which were covered in Vol. I. Attention is paid particularly to the steroids, terpenoids, amino acids, carbohydrates and oxygen heterocyclics. As in a previous book, *Interpretation of Mass Spectra of Organic Compounds*, which should be considered an introduction to the present two volumes, emphasis is placed upon the localization of the positive charge in a molecular ion containing a suitable heteroatom or aromatic system. This approach leads to a self-consistent rationale for the interpretation of mass spectra of natural products. Of interest to all organic chemists - students or research investigators in the laboratory - who are using or plan to use mass spectrometric information as an aid to the solution of their problems. The chapters are as follows: STEROIDAL ALKALOIDS; ETHYLENE KETAL AND DIMETHYLAMINE DERIVATIVES OF STEROIDS AND TRITERPENES; ESTROGENS; STEROIDAL KETONES; MISCELLANEOUS STEROIDS; STEROIDAL SAPOGENINS; PENTACYCLIC TRITERPENES; LOWER TERPENES; LONG-CHAIN COMPOUNDS; AMINO ACIDS AND PEPTIDES; CARBOHYDRATES; POLYCYCLIC MICROBIAL METABOLITES; OXYGEN HETEROCYCLICS. \$10.50

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