
NEW BOOK

Electronic Interpretations of Organic Chemistry. By E. A. REMICK. John Wiley and Sons Inc., 440 Fourth Avenue, New York, N. Y., 1943. 474 pp. Price, \$4.50.

Theories of organic chemistry occupy a border line field which is approached from many points of view. One extreme is represented by the physicist, who seeks in the organic field advanced applications of fundamental principles of atomic structure. The other extreme is that of the classical organic chemist who is interested in rules, however qualitative, to interpret structural effects and to guide synthesis. Between these extremes lie so many degrees and kinds of approach that it is no wonder that no two books on theoretical organic chemistry are alike. The present book leans toward the qualitative side, and can be read by any organic chemist with a minimal background in physical chemistry.

Professor Remick writes with the quiet enthusiasm of an organic chemist who has spent a number of years living with the theoretical problems of organic chemistry and keeping abreast of developments in the field. The style of the book is easy and readable. The current electronic theory of organic chemistry is presented in historical perspective, an instructive approach which has been neglected in much of the writing and teaching of this subject. The relatively sound position of contemporary organic chemical theory is often credited entirely to the important contributions made by physics and physical chemistry in the last fifteen years. The fact is that—at least following the fertilization of the field by G. N. Lewis—steady progress was made in the purely qualitative interpretation of organic chemistry in electronic terms, without benefit of physical tools. So substantial was this progress in the hands of the English school that the culmination of their theories, as presented by Robinson and Ingold, anticipated by some years important aspects of the application of resonance to organic chemistry. The key position of these theories is appropriately set forth in a 75-page chapter which follows the first four chapters of background material. After the discussion of the theory of the English school are two chapters devoted to contributions from the fields of chemical physics and of kinetics. The other chapters are concerned with electrochemical studies of organic oxidation-reduction reactions, electron-pairing (free radical) reactions, "the role of the solvent" (including acidity and basicity, theories of solution, reaction rate and equilibrium in solution), and electron-sharing displacement reactions.

One of the interesting and original features is an appendix of six sections, to which reference is made where appropriate throughout the book. The first four sections of the appendix contain simple accounts of matters in modern physics supplementary to the discussions in the text. Appendix V is a table of twenty-nine basic principles, all stated qualitatively, which are derived and used throughout the book to make the discussions specific. The first of these principles illustrates their direct and fundamental character: "P 1. Substances react as a result of their affinities for electrons (electrophilic) or atomic nuclei (nucleophilic). Bimolecular reactions are initiated by and at those parts of the molecules which are most strongly electrophilic and nucleophilic in such a way that nucleophilic and electrophilic centers are brought together." Appendix VI is a table of symbols.

In common with most books, "Electronic Interpretations of Organic Chemistry" is not free from points with which a reviewer might take issue. They are minor in comparison to the main objective which is skillfully accomplished. Making the acquaintance of the author has been a pleasant experience which is recommended to all organic chemists interested in the fundamentals of their science.

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BOOKS RECEIVED

November 10, 1944—December 10, 1944

ABRAHAM CANTAROW and MAX TRUMPER. "Lead Poisoning." The Williams and Wilkins Company, Baltimore 2, Md. 264 pp. \$3.00.

LOUIS F. FIESER and MARY FIESER. "Organic Chemistry." D. C. Heath and Company, Boston, Mass. 698 pp. \$4.00.

MELVILLE SAHYUN, Editor. "Outline of the Amino Acids and Proteins." Reinhold Publishing Corporation, 330 West 42nd Street, New York, N. Y. 251 pp. \$4.00.

GEORGE WILLARD WHELAND. "The Theory of Resonance and its Application to Organic Chemistry." John Wiley and Sons, Inc., 440 Fourth Avenue, New York, N. Y. 316 pp. \$4.50.