

Attempted Asymmetric Syntheses Employing Choleic Acids

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In view of the fact that molecular complexes have been found useful in accomplishing the resolution² of racemic mixtures, it appeared of interest to investigate the possibility of accomplishing asymmetric syntheses employing molecular compounds. Because of the reported stability of the choleic acids³ (complexes with desoxycholic acid), preliminary experiments were performed with several of these substances, with negative results. Circumstances have necessitated an indefinite postponement of a more thorough investigation of the problem.

Crotonic acid-choleic acid (neutralization

(1) Abstracted from a part of the dissertation submitted by Colin C. Reid to Yale University in partial fulfillment of the requirements for the Ph.D. degree, June, 1941.

(2) Windaus, Klänhardt and Weinhold, *Z. physiol. Chem.*, **126**, 299 (1923); Sobotka and Goldberg, *Biochem. J.*, **26**, 906 (1932); Weiss and Abeles, *Monatsh.*, **59**, 238 (1932); Eisenlohr and Meier, *Ber.*, **71B**, 1005 (1938).

(3) "The Chemistry of the Sterids," by H. Sobotka, The Williams and Wilkins Company, Baltimore, Md., 1938.

equivalent: 292 after drying for two hours at 80° and 20 mm., 319 after prolonged drying at 80° and 20 mm.; calculated for coordination numbers 1, 2, 3: 239, 290, 316, respectively) was brominated in aqueous suspension under various conditions. No optically active product was obtained.

Acetophenone-choleic acid (m. p. 167-8° (cor.): neutralization equivalent, 431; calculated for coordination numbers 2, 3, 4: 452, 432, 422, respectively) was prepared. Attempts at catalytic reduction were unsuccessful, as was also reduction by aluminum isopropylate in benzene suspension. Catalytic reduction of an emulsion of acetophenone in aqueous sodium desoxycholate gave inactive methylphenylcarbinol. We were unable to obtain methylphenylcarbinol by the action of methylmagnesium bromide on benzaldehyde-choleic acid (m. p. 164-165°; neutralization equivalent, 441; calculated for coordination numbers 1, 2, 3: 498, 445, 428, respectively).

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NEW BOOKS

Organic Chemistry. By REYNOLD C. FUSON, Professor of Organic Chemistry in the University of Illinois, and H. R. SNYDER, Assistant Professor of Chemistry in the University of Illinois. John Wiley and Sons, Inc., 440 Fourth Avenue, New York, N. Y., 1942. viii + 506 pp. 15.5 × 23.5 cm. Price, \$3.50.

In this book the first year's work in organic chemistry is divided into a first part in which the student familiarizes himself rapidly with the important classes of organic compounds, and a second part in which a more advanced treatment is given to a selected group of topics. The selection and arrangement of material in the two parts are the following: Part I—Introduction, The Structure of Molecules, Saturated Hydrocarbons, Unsaturated Hydrocarbons, Petroleum, Aromatic Hydrocarbons, Alcohols, Aldehydes and Ketones, Carboxylic Acids, Amines, Polyfunctional Acids, Phenols, Optical Isomerism, Amino Acids and Proteins, Carbohydrates, Valence, Isomerism, Industrial Alcohols; Part II—Organic Halogen Compounds, Organometallic Compounds, The Synthesis of Carbonyl Compounds, Reactions of the Carbonyl Group, Substitution and Condensation Reactions of Carbonyl Compounds, Unsaturated Carbonyl Compounds, Compounds which Contain Two or More Carbonyl Groups, Ring Formation, Polymerization and Polymers, Nitro Compounds, The Preparation and Properties of Amines, Organic Sulfur Compounds, Aromatic Compounds, Polynuclear Aromatic Hydrocarbons, Aromatic Heterocyclic

Compounds, Synthetic Dyes from Coal Tar, Appendix A—Notes on Nomenclature and Pronunciation, Appendix B—Problems and Questions for Review.

The arrangement of the work of the first year in organic chemistry as given in this text is not new; it is an arrangement which has been used successfully for many years. The text by Fuson and Snyder is, however, the first one written specifically for such a course, and it does exceedingly well the task it sets for itself. The presentation is clear and completely modern. The chapters on dyes, polymers, and fats and oils are especially good. The book is attractively printed and has been carefully edited.

With the appearance of this text, the instructor who has been considering the desirability of the survey and review type of first year course in organic chemistry now has available an excellent text for such a course.

A. H. BLATT

Archives of Biochemistry. Volume I, Number 1, October, 1942. Editors: M. L. CROSSLEY, F. C. KOCH, C. M. MCCAY, F. F. NORD, F. W. WENT AND C. H. WERKMAN. Academic Press, Inc., Publishers, 125 E. 23rd Street, New York, N. Y. 163 pp. 15 × 23 cm. The Publishers plan to issue two volumes yearly at \$5.50 per volume.

This latest addition to the periodical literature of biochemistry signalizes the great increase in research activity in this field. The publishers state that they plan to publish two volumes annually, at a cost of \$5.50 per

volume, and that they "...intend to cover the field of chemical structure and reactions of living organisms. This will include: proteins, hormones, vitamins, viruses, enzymology, biochemical and biophysical research in chromosomes, metabolism, nutrition, photosynthesis, plant chemistry, organic chemistry as related to living organisms, colloid science in its biological applications and chemotherapy."

The Editorial Board comprises M. L. Crossley, F. C. Koch, C. M. McCay, F. F. Nord, F. W. Went and C. H. Werkman.

The articles, with their authors, published in this first issue, are as follows: "Synthetic Peroxidases," by Erland C. Gjessing and James B. Sumner; "A Method for Measurement of Yeast Growth in Bios and Vitamin Investigations," by L. Atkin, A. S. Schultz and C. N. Frey; "The Carotenoid Pigments of the Fruit of *Celastrus scandens* L.," by A. L. LeRosen and L. Zechmeister; "Heat Capacity and Bound Water in Starch Suspensions," by Monroe E. Freeman; "The Metabolism of Crotonic Acid," by Fritz Lipmann and Gertrude E. Perlmann; "The Inverse Ratio between Fluoride in Food and Drink and Dental Caries," by J. F. McClendon, Wm. C. Foster and G. C. Supplee; "Carbon Monoxide Inhibition of Nitrogen Fixation by *Azotobacter*," by C. J. Lind and P. W. Wilson; "Environmental Temperatures and B-Vitamin Requirements," by C. A. Mills; "Viscosimetric Studies on the Tobacco Mosaic Virus Protein. II," by Vernon L. Frampton; "Some Sulfanilamide Antagonists as Growth Factors for Lactic Acid Bacteria," by Esmond E. Snell and Herschel K. Mitchell; "The Activation of Papain," by E. M. Scott and W. M. Sandstrom; "Interference between Bacterial Viruses. I. Interference between Two Bacterial Viruses Acting upon the Same Host, and the Mechanism of Virus Growth," by M. Delbrück and S. E. Luria; "Essential Steps in the Enzymatic Breakdown of Hexoses and Pentoses. Interaction between Dehydrogenation and Fermentation," by John C. Wirth and F. F. Nord.

A perusal of this number demonstrates that a wide variety and high quality of subject matter have indeed been attained. The excellence of this first issue, the competent Board of Editors that has been assembled, and the fecundity of the field, bode well for the future of the journal. Its advent will certainly be welcomed by all who are interested in biochemistry.

ARTHUR B. LAMB

Chemistry of Insecticides and Fungicides. By DONALD E. H. FREAR, Ph.D., Assistant Professor of Agricultural and Biological Chemistry, The Pennsylvania State College. D. Van Nostrand Company, Inc., 250 Fourth Avenue, New York, N. Y., 1942. viii + 300 pp. 31 figs. 15.5 × 23.5 cm. Price, \$4.00.

This book is the outgrowth of lectures given by Doctor Frear in a graduate course for chemists, economic entomologists, and plant pathologists. Its value is enhanced by the inclusion of the more important references to the literature at the end of each chapter, an author index, and a subject index. Many of the references are to recent bibliographies, which if consulted will give the reader a complete account of the subject.

A number of errors have been noted. Paris green is

manufactured commercially from copper sulfate, not verdigris (p. 9); London purple contains more arsenate than arsenite, not the reverse (p. 10); the use of calcium arsenate in this country is not declining (p. 12) but rather is rapidly growing, although the consumption has varied greatly from year to year and the 1937 consumption, for example, was about half that for 1936; there is no evidence to support the statement (p. 88) that quassin, neoquassin, and picrasmin are possibly related to rotenone; organic thiocyanates were not first suggested as insecticides by Murphy and Peet in 1932, (p. 90), but were tested nearly ten years previously by Neifert, *et al.* (U. S. Dept. Agr. Dept. Bull. 1313); the classification of rotenone as a contact poison seems questionable, inasmuch as it is both a stomach and a contact poison; toxicarol has never been found in cube (p. 86); the inclusion in the same chapter of fluorine compounds and miscellaneous synthetic organic compounds seems illogical; and the reviewer cannot agree with the statement (p. 257) that the bromate method for the determination of arsenic is empirical.

In spite of these blemishes the book presents an up-to-date account of the chemistry of insecticides and fungicides. It will be useful as a reference as well as a textbook, and the reviewer recommends it as required reading for all entomologists seeking to control insects with chemicals.

R. C. ROARK

BOOKS RECEIVED

November 10, 1942–December 10, 1942

PAUL ARTHUR and OTTO M. SMITH. "Semimicro Qualitative Analysis." Second edition. McGraw-Hill Book Company, Inc., 330 West 42nd Street, New York, N. Y. 322 pp. \$2.75.

S. BHAGAVANTAM. "Scattering of Light and the Raman Effect." Chemical Publishing Company, Inc., 234 King Street, New York, N. Y. 333 pp. \$4.75.

M. L. CROSSLEY, F. C. KOCH, C. M. MCCAY, F. F. NORD, F. W. WENT and C. H. WERKMAN, Editors. "Archives of Biochemistry." Vol. I, No. 1, October, 1942. Academic Press, Inc., 125 E. 23rd Street, New York, N. Y. 163 pp. The publishers plan to issue two volumes yearly at \$5.50 per volume.

ARTHUR DONALD HERRICK. "Drug Products: Labeling, Packaging, Regulation." Revere Publishing Company, 69 New Street, New York, N. Y. 466 pp. \$7.50.

ARMAND LOWINGER. "The Methodology of Pierre Duham." Columbia University Press, Morningside Heights, New York, N. Y. 184 pp. \$2.25.

RALPH H. MÜLLER, R. L. GARMAN and M. E. DROZ. "Experimental Electrons." Prentice-Hall, Inc., 70 Fifth Avenue, New York, N. Y. 330 pp. \$4.65. Special to colleges only, \$3.50.

PAUL E. SPOERRI, HAROLD WEINBERGER and ROBERT GINELL. "Principles and Practice of Qualitative Analysis, with Semimicro Laboratory Technique." McGraw-Hill Book Company, Inc., 330 West 42nd Street, New York, N. Y. 282 pp. \$2.75.

ENRIQUE V. ZAPPI. "Tratado de Química Organica." Vol. II, Parts II and III. El Ateneo, Buenos Aires, Argentina. 531 + 519 pp. \$25.00 each.