

30 ml. of ether with stirring (magnetic). After refluxing overnight the complex was decomposed with 40% KOH, and the salts were extracted with ether. The combined ether layers were dried over  $MgSO_4$ , and the ether was distilled on a water bath. The residue remaining was distilled and gave 4.28 Gm. (70.3%) of a colorless oil, b.p.  $86^\circ$  (0.33 mm.),  $n_D^{20}$  1.4763,  $\lambda_{max}^{CHCl_3}$  2.8–3.3  $\mu$  (OH).

*Anal.*—Calcd. for  $C_9H_{20}N_2O$ : C, 62.75; H, 11.70; N, 16.26. Found: C, 62.75; H, 11.73; N, 16.21.

A *p*-nitrophenylurethan derivative (19) was prepared and recrystallized from carbon tetrachloride, m.p.  $115.5$ – $116.5^\circ$ ,  $\lambda_{max}^{KBr}$  2.94  $\mu$  (NH), 5.76  $\mu$  (C=O).

*Anal.*—Calcd. for  $C_{16}H_{24}N_4O_4$ : C, 57.13; H, 7.19; N, 16.66. Found: C, 57.20; H, 7.00; N, 16.76.

**1,2 - Diethyl - 4 - (2 - hydroxyethyl)pyrazolidine (V) by Reduction of the Acid (IVa).**—The procedure for the reduction of the acid (IVa) was analogous to that used for reduction of the ester (IV). The alcohol (V), b.p.  $80^\circ$  (0.22 mm.),  $n_D^{20}$  1.4780, was obtained in 71.5% yield. It was converted to its *p*-nitrophenylurethan derivative and recrystallized from carbon tetrachloride, m.p.  $115.5$ – $116.5^\circ$ . The identity of this derivative was confirmed by a mixed melting point and comparison of infrared spectra.

**Methylation of 1,2-Diethyl-4-carboxymethyl-3-pyrazolidinone.**—To a solution of 7.90 Gm. (0.0395

mole) of IVa in 25 ml. of ether was added sufficient ethereal diazomethane to give a yellow color which persisted. The solution was dried with  $MgSO_4$  and the ether was evaporated on a steam bath. The remaining residue was distilled, b.p.  $90^\circ$  (0.1 mm.),  $n_D^{20}$  1.4728, to give 6.64 Gm. (78.5%) of the ester. A picrate was prepared and recrystallized from absolute ethanol, m.p.  $119$ – $120.5^\circ$ . The identity of this picrate was confirmed by a mixed melting point.

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## Books

#### REVIEWS

*Dictionary of Organic Compounds.* Fourth revised edition in five volumes, and *First Supplement, 1965.* Oxford University Press, New York, N. Y., 1965. xxx + 3282 pp. 20 × 26.5 cm. Price \$280.00.

The Fourth Edition of the "Dictionary of Organic Compounds" has undergone extensive revision from the preceding 3rd edition published in November 1953. The entries, which total 12,000 and represent 7,000 new compounds, are contained in five volumes instead of four.

A major change is the general policy of adopting chemical synonyms as principal entries with appropriate cross-references to popular or trivial names used predominantly in previous editions of the "Dictionary." A second important change is the inclusion of three double bonds for benzenoid rings in place of the simple hexagon to denote aromatic compounds. The implications of this revision are twofold. First, the aromatic compounds are more easily distinguished at first glance, and second a simplification of the structural formulas of saturated ring compounds has been made possible. The latter are now represented by a simple polygon and

the compact structure saves considerable space allotted to the structural formula.

Improvements in the "Dictionary" are noted by the inclusion of stereochemical relationships in molecules and substantially more supplemental information for many compounds (*i.e.*, recrystallizing solvents, specific reactions, derivatives with melting points). The numbering systems for structural formulas including rings have been made to conform to the internationally accepted rules laid down by the I.U.P.A.C. A supplement to the present edition exists and further supplements are to be added annually to cover revision of existing entries and inclusion of new entries from the chemical literature.

The "Dictionary" can be improved in two respects. First by adopting the arrangement of symbols in organic formulas in strict alphabetical order following carbon and hydrogen if also present. This system typified by *Chemical Abstracts* has gained wide acceptance and allows ready comparison of formulas from multiple sources. A second area of concern pertains to the melting points included for many principal entries and certain important derivatives which are used as drugs. These melting ranges carried over from each previous

edition do not coincide with current literature values. Admittedly, it would constitute a major undertaking to research and revise the melting points of the principal entries, but such effort would be cognizant of the high quality of standards associated with this "Dictionary."

*The Uniqueness of Biological Materials.* By A. E. NEEDHAM. Pergamon Press, Inc., 122 East 55th Street, New York, N. Y. 10022, 1965. xi + 593 pp. 16 × 23 cm. Price \$15.00.

"Is the uniqueness of life inherent in the material of living organisms?" By posing this question the author states one of the reasons for writing the book. The other reason is a practical one. It was prompted by the need to persuade students that the study of the properties of biological materials such as lipids, carbohydrates, proteins, nucleic acids, and other cell components is not only essential but also very interesting.

The evidence as surveyed in the various chapters of the book seems to show rather consistently that the compounds used by living organisms are outstanding if not absolutely unique among the materials available on earth. It is further pointed out that these substances are unique in respects which make them ideal for some particular biological function.

All of the relevant elements and compounds are surveyed systematically. The author concentrates on the significance and interpretation of the properties studied rather than on the properties themselves. Biological rather than any other applications of the properties are stressed. Illustrations by use of figures, tables, and formulas are numerous.

The coverage of the subject matter is comprehensive; the bibliography, while not too extensive, is up-to-date and ample.

The concluding chapter entitled, "The Origin and Evolution of Biological Uniqueness," is very stimulating.

The book is very valuable to not only students of biochemistry, biology, and zoology, but also to students of chemistry. Students of pharmacy will find the text very informative and interesting.

*Reviewed by* Ernst R. Kirch  
*College of Pharmacy*  
*University of Illinois*  
*Chicago*

*The Structure of Lipids by Spectroscopic and X-Ray Techniques.* By D. CHAPMAN. John Wiley & Sons, Inc., New York, N. Y., 1965. xii + 323 pp. 16 × 24 cm. Price \$10.50.

In the past ten to fifteen years there has been a considerable increase in research in the field of lipids. This intensified interest in this class of compounds has stemmed largely from the growing interest in the causes of lipid diseases such as atherosclerosis.

In this book the author has described a number of modern physicochemical experimental methods that have been used extensively in recent years to study lipid molecules in the solid and liquid states. In each instance a great deal of data are presented

and their relationships to intra- and intermolecular structure and interactions are discussed. More than one-half of the book is devoted to X-ray diffraction and infrared spectroscopic studies with particular emphasis on crystal polymorphism. Separation techniques, ultraviolet, nuclear magnetic resonance, electron spin resonance, and mass spectroscopy and their application to lipids are discussed in the remainder of the book. It is shown that the combined applications of these techniques, particularly X-ray, infrared, and NMR, have unraveled a number of difficult problems such as the existence of the multiple melting points of triglycerides and their relationship to X-ray data.

The author has chosen to organize the subject matter from the standpoint of experimental techniques rather than from that of lipid chemistry. As a result, the book is somewhat difficult to read; but, on the other hand, this arrangement has permitted the presentation of a large amount of data.

It is the reviewer's opinion that the book is an outstanding contribution to the field and very useful for researchers in the field.

*Reviewed by* William I. Higuchi  
*College of Pharmacy*  
*University of Michigan*  
*Ann Arbor*

## NOTICES

*La Relation Medecin-Malade Au Cours Des Chimiotherapies Psychiatriques.* Preface du PROFESSEUR J. DECHAUME. Textes Publies par P. A. LAMBERT. Masson et Cie, Editeurs, Libraires De L'Academie De Medecine, 120 Boulevard Saint-Germain, Paris VIe, France, 1965. 222 pp. 16 × 24 cm. Paperbound.

*Antibiotika-Fibel: Antibiotika und Chemotherapie.* 2nd rev. ed. By A. M. WALTER and L. HEILMEYER. Georg Thieme Verlag, Postfach 732, Herdweg 63, 7000 Stuttgart 1, Germany, 1965. U. S. and Canadian agent: Intercontinental Medical Book Corp., New York 16, N. Y. 897 pp. 14.8 × 21 cm. Price DM 88.

*Plantas Medicinales De Puerto Rico.* By E. NÚÑEZ MELÉNDEZ. Universidad de Puerto Rico, Estacion Experimental Agricola, Río Piedras, Puerto Rico, 1964. 245 pp. 15 × 23 cm. Paperbound.

*Functions of the Corpus Callosum.* Ciba Foundation Study Group. Edited by E. G. ETLINGER. Little, Brown and Co., Boston, Mass., 1965. xii + 156 pp. 12.5 × 19 cm. Price \$3.75.

*Advanced Practical Inorganic Chemistry.* By D. M. ADAMS and J. B. RAYNOR. John Wiley & Sons, Inc., 605 Third Ave., New York 16, N. Y., 1965. xiv + 182 pp. 15 × 23.5 cm. Price \$6.00.

*Hashish: Its Chemistry and Pharmacology.* Ciba Foundation Study Group. Edited by G. E. W. WOLSTENHOLME, F. I. BIOL, and J. KNIGHT. Little, Brown and Co., Boston, Mass., 1965. 96 pp. 12.5 × 19 cm. Price \$2.95.