

*Anal.* Calcd. for  $C_{15}H_{29}NO_{10} \cdot H_2O$ : C, 44.88; H, 7.78; N, 3.49. Found: C, 44.70; H, 7.71; N, 3.33.

N-Acetyltetrahydrostreptobiosamine, on oxidation with two moles of periodate and subsequent acid hydrolysis gave N-methyl-L-glucosamine, one mole of formaldehyde, one mole of acetaldehyde and L-glyceric acid. The acid was separated from the mixture by low-pressure distillation as the methyl ester and was identified as the crystalline calcium salt dihydrate, m. p. 134–135° (dec.),  $[\alpha]_D^{30} -12^\circ$  (*c* 2.60, water).

*Anal.* Calcd. for  $(C_3H_5O_4)_2Ca \cdot 2H_2O$ : Ca, 14.00. Found: Ca, 13.85. H. O. L. Fischer, *et al.*,<sup>2</sup> report  $[\alpha]_D +12.9^\circ$  (*c* 5.19, water) for calcium D-glycerate dihydrate.

Since it has been shown that C2 and C3 of streptose have the same configuration,<sup>3</sup> and that C4 has the L-configuration,<sup>4</sup> then streptose is 3-C-formyl-L-lyxomethylose, a result in confirmation of the findings of Kuehl, Bishop, Flynn and Folkers<sup>5</sup> whose work was based upon application

(2) E. Baer, J. M. Grosheintz and H. O. L. Fischer, *THIS JOURNAL*, **61**, 2607 (1939).

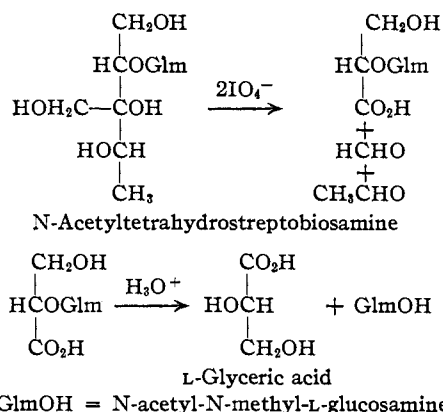
(3) N. G. Brink, F. A. Kuehl, Jr., E. H. Flynn and K. Folkers, *ibid.*, **68**, 2405 (1946); **70**, 2085 (1948).

(4) J. Fried, Doris E. Walz and O. Wintersteiner, *ibid.*, **68**, 2746 (1946).

(5) F. A. Kuehl, Jr., Mary Neale Bishop, E. H. Flynn and K. Folkers, *ibid.*, **70**, 2613 (1948).

of the hydrazide rule to polarimetric data. This evidence also represents an independent proof for the skeletal structure of streptose and the point of attachment of N-methyl-L-glucosamine thereon, since there is only one structure that would give the products obtained.

The reactions involved may be represented as



GlmOH = N-acetyl-N-methyl-L-glucosamine

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## NEW BOOKS

### Fatty Acids, Their Chemistry and Physical Properties.

By KLARE S. MARKLEY, Principal Chemist, Oil, Fat and Protein Division, Southern Regional Research Laboratory, U. S. Department of Agriculture, New Orleans, La. Interscience Publishers, Inc., 215 Fourth Ave., New York 3, N. Y., 1947. x + 668 pp. 81 figs. 15.5 × 23.5 cm. Price, \$10.00.

Throughout the vigorous development in most branches of organic chemistry, the field of fatty compounds did not attract much interest until the last two decades when the fatty acids and their derivatives have been subjected to an intensive study. Physico-chemical and physical techniques are now employed in this field perhaps more extensively than in many other branches of organic chemistry.

As a result of the ever-increasing development of appropriate tools and methods, a vast quantity of information has been produced by workers approaching the various problems from different angles. The literature, both old and new, is widely scattered and consequently there is an urgent need for a comprehensive, well-organized book which adequately presents these modern developments, and often unrelated data, in integrated form.

Klare S. Markley's book is the first and successful attempt to adequately cover the field. The material is grouped into six main chapters, dealing with the nature and history of fats and waxes, classification and structure of the fatty

acids, their physical properties, chemical reactions, synthesis, and the isolation and identification of fatty acids. The following topics, picked at random, may indicate the scope of the book: isomerism, X-ray diffraction, polymorphism, spectral properties, esterification, hydrogenation, oxidation, biological oxidation, nitrogen derivatives, *in vitro* synthesis, biosynthesis. The author, in his endeavor to give a comprehensive picture of the subject matter, broadened the scope so that, in addition to the presentation of the fatty acids, he also discussed derivatives whenever it seemed desirable. It is evident, from his presentation, that physico-chemical and physical means are to an appreciable extent responsible for the new development in the field of fatty acids.

The interest in fatty acids is rapidly broadening and the number of research men working in this field is increasing accordingly. Much of the existing information is being corrected or modified and a large quantity of new information is constantly being produced so that a revised edition of the present book may become necessary in the not too distant future. The subject matter may then have grown to such dimensions that the author may find it expedient to have individual chapters in his book written by specialists in the respective fields.

Markley's monograph will prove useful in the hands of every chemist, physicist, biochemist, medical man and technologist engaged in studies dealing with fatty acids and their derivatives. The author has succeeded in pre-

senting a well-written description and a valuable reference book on fatty acids.

WILLY LANGE

**Newer Methods of Preparative Organic Chemistry.** Translated and Revised from the German. Interscience Publishers, Inc., New York, N. Y., 1948. 670 pp. Price, \$8.50.

This substantial volume consists of a series of review articles which set forth the uses and limitations of a number of well-known organic procedures. A resemblance to *Chemical Reviews* articles or to the different chapters in *Organic Reactions* is apparent. As would be expected since a number of authors are involved, there is some variation in the style of presentation and it is not clear whether this variation is entirely due to the original authors or to the American translators who have in any case "revised" the text with the object of bringing it up-to-date. This has not always been thoroughly or authoritatively done.

As one reads the different chapters one is struck first by the fact that the title appears to refer to procedures which are at least twenty years old and second by the frequency with which American chemists' names appear in the references. The work of Nieuwland, Adkins, Simons and Fieser receives particular attention. Most of the articles read smoothly and contain adequate and helpful formulations. They have been compiled with typical German thoroughness and on the whole avoid a mere cataloging of facts, but are guilty of considerable overlapping. In most cases there are helpful examples of experimental procedures and suggestions of needed further research.

The volume will be a valuable reference book but by its very nature cannot be expected to present anything very startling or new. It is well presented and has been carefully proofread.

W. C. LOTHROP

## BOOKS RECEIVED

July 10, 1948–August 10, 1948

ROBERT H. COLE. "Underwater Explosions." The Princeton University Press, Princeton, N. J. 1948. 437 pp. \$7.50.

WILLIAM E. FORSYTHE AND ELLIOT Q. ADAMS. "Fluorescent and Other Gaseous Discharge Lamps." Murray Hill Books, Inc., 232 Madison Avenue, New York 16, N. Y. 1948. 292 pp. \$5.00.

CHESTER NORTH FRAZIER AND LI HUNG-CHIUNG. "Racial Variations in Immunity to Syphilis." The University of Chicago Press, 5750 Ellis Avenue, Chicago 37, Ill. 1948. 122 pp. \$2.50.

FELIX HAUROWITZ. "Fortschritte Der Biochemie." S. Karger Ltd., Holbeinstrasse 22, Basle, Switzerland. 1948. 364 pp. Swiss francs 40.

RAYMOND E. NEAL. "Chemistry in Nursing." McGraw-Hill Book Company, Inc., 330 West 42nd Street, New York 18, N. Y. 1948. 564 pp. \$4.00.

G. H. WHITEFORD AND R. G. COFFIN. "Essentials of College Chemistry." Third Edition. The C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, Mo. 632 pp. \$4.75.

CLARENCE M. ZENER. "Elasticity and Anelasticity of Metals." The University of Chicago Press, 5750 Ellis Avenue, Chicago 37, Ill. 1948. 170 pp. \$4.00.

O. T. ZIMMERMAN AND IRVIN LAVINE. "Scientific and Technical Abbreviations, Signs and Symbols." Industrial Research Service, 90 Washington Street, Dover, N. H. 1948. 476 pp. \$7.50.