

3. No isomeric 3,3'- or 2,2'-dinitro-4,4'-diaminodiphenylmethanes could be obtained.

4. Various dicarboxylic acids of diphenylmethane could not be resolved.

URBANA, ILLINOIS

NOTE

The Chemistry of Jaffe's Reaction for Creatinine. III. 2,6-Dinitrophenol.—The writer has previously shown¹ that Jaffe's reaction for creatinine cannot be obtained if any one of a number of substances, including 2,4-dinitrophenol, is substituted for the picric acid. At that time, 2,6-dinitrophenol was not available to him. Recently he has obtained some from Kahlbaum. This also fails to give a red color with creatinine and sodium hydroxide. The writer's hypothesis¹ that all three nitro groups of the picric acid undergo a change in the formation of the red tautomer of creatinine picrate is, therefore, made the more probable.

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NEW BOOKS

Ukrainskii Khemichnii Zhurnal. (Ukrainian Chemical Journal.) Editor, Professor K. A. KRASUSKII. Volume 1, No. 1. Published by the All-Ukrainian Council of the Society of Friends of Chemical Defense and Industry of the Ukrainian Soc. Sov., Kharkov, 1925. 182 pp. 15 × 23 cm. Price, 5 rubles a year.

An editorial announcement states that this new Journal is published in the interests of Ukrainian culture and has been rendered possible by the munificence of the Ukrainian Soc. Sov.

It is to contain two sections, one devoted to matters of purely scientific interest, the other to applied chemistry. Of the nineteen articles one is in Ukrainian, another in German, and the remainder are in Russian. The table of contents is in French and there is an occasional summary in German. The equations and tables are printed chiefly in Latin characters. It is, of course, gratifying to see this evidence of renewed scientific activity. The articles, judging solely by the French index, appear to be interesting.

An outsider cannot, however, but regret the multiplicity of tongues and in this instance the added difficulty of a strange alphabet.

ARTHUR B. LAMB

¹ Greenwald and Gross, *J. Biol. Chem.*, **59**, 601 (1924). Greenwald, **THIS JOURNAL**, **47**, 1443 (1925).

Gesammelte Abhandlungen von Dr. F. Kehrman (Professor at the University, Lausanne). Vol. III. Part 1, **Untersuchungen über Oxoniumverbindungen**. Part 2, **Untersuchungen über Thionium- und Sulfoniumverbindungen**. Part 3, **Untersuchungen über Akridin- und Karbazinfarbstoffe**. (Collected Works of Dr. F. Kehrman. *Researches on Oxonium Compounds. Researches on Thionium and Sulfonium Compounds. Researches on Acridine and Carbazine Dyes.*) Georg Thieme, Leipzig, 1925. vii + 495 pp. 17 × 25 cm. Price, M. 27.

The third volume of Kehrman's collected publications contains reprints of some eighty papers dealing largely with oxygen and sulfur bases. Its organization is similar to that of the two preceding volumes.

E. P. KOHLER

Die Methoden der Organischen Chemie. (The Methods of Organic Chemistry.) By Professor Dr. J. HOUBEN, Professor at the University, Berlin. Third revised and enlarged edition. Georg Thieme, Leipzig, 1925. xxvii + 1340 pp. 851 figs. 17.5 × 26 cm.

It is scarcely four years since the appearance of the first volume and less than four months since the completion of the last volume of the second edition of the Houben-Weyl, and here is the first volume of the third edition, "thoroughly revised and enlarged." When a text meets with such favor one would hardly expect a revision that would seriously affect its general plan and scope, and when edition follows edition with such rapidity even a thorough-going reviser might be expected to find it unnecessary to change much of the text. A comparison of the two editions shows that in this first volume the principal difference is the addition of three new chapters entitled: "Interferometry," "The Determination of Hydrogen-ion Concentration" and "The Determination of Molecular Compounds by Thermal Analysis."

The rest of the text is, for the most part, that of the second edition, but descriptions of new methods and new apparatus have been added. In order to be able to include these without materially altering the text or unduly increasing the size of the volume a number of cuts have been redrawn on a smaller scale or regrouped; many of them might have been omitted altogether. It is difficult to see, for example, why a book like this should show line drawings of the simplest type of suction flask, three types of straight calcium chloride tubes, a perfectly plain U-tube, and many other forms of simple apparatus that if not in universal use are to be found in any catalog. It also seems questionable whether a volume like this should be allowed to become so unwieldy by including reproductions of so highly specialized and seldom used apparatus as is shown in the half page cut on p. 650.

The mechanical production of the new edition is excellent and the author and subject indexes are all that can be desired.

E. P. KOHLER

An Introduction to the Practice of Organic Chemistry in the Laboratory. By HOMER ADKINS, Associate Professor of Chemistry, University of Wisconsin, and S. M. McELVAIN, Assistant Professor of Chemistry, University of Wisconsin. International Chemical Series, H. P. TALBOT, Ph.D., Sc.D., Consulting Editor. McGraw-Hill Book Company, Inc., 370 Seventh Avenue, New York; 6 and 8 Bouverie St., E. C. 4, London, 1925. ix + 288 pp. 10 figs. 21 × 14 cm. Price \$2.25.

While numerous laboratory manuals of organic chemistry are available, this new one justifies itself. "The aim in the compilation of this book has been to help the student grasp the broader conception which a particular preparation illustrates, and at the same time acquaint him with current practice in laboratory operations." In the accomplishment of their self-assigned tasks the authors have been unusually successful. The directions for the 115 preparations and the theoretical subject matter, which is considerable, are grouped in 16 chapters. Helpful questions, requiring of the student an appreciation of the subject, are appended to the laboratory directions. A unique section in a book of this size and character presents a good survey of organic chemical literature. Where the authors have not verified the directions they wisely avoid dogmatic statements as to the obtainable yields. The paper, printing and binding are of the usual good quality provided by these publishers. The outline drawings are clearly executed. While, in general, it is evident that the proof reading has been carefully done, misspelled words appear on pp. 15, 45, 55 and 155. It is regrettable that three of the words are proper nouns, for the evil consequences of errors of this nature in books for student use are unusually far-reaching. The introduction of the word "solubilizing," on p. 189, is objectionable, as the word is not generally used. At the bottom of p. 190 a period appears in a rather remarkable location. Sufficient care has not been taken, notably on pp. 216 and 239, to observe the conventional designations of the nuclear halogen substitution products. The inclusion of blank pages for laboratory notes, always a procedure of doubtful value, generally causes a suspicion that padding is being resorted to. This book does not require blank pages for this purpose, at any rate, and it is to be hoped that this feature will be omitted in later editions.

As a rule the experiments are admirably chosen. It would, however, seem to be better practice to use methanol, which can be completely separated from water by fractional distillation, in the experiment illustrating this method of purification. Sand-baths are gradually being relegated to the limbo of archaic apparatus and other baths substituted, but this fact has not been adequately stressed. No mention is made of the use of fuller's earth, in preference to forms of carbon, for the clarification of solutions in organic solvents; not infrequently impurities from the carbon are definitely harmful, for example, in preventing subsequent crystallization of the solute. The customary use of a long-neck flask for steam distillations

is not mentioned, nor indicated in the illustrations. "Success in carrying on a course in elementary organic chemistry involves performing a number of simple operations in exactly the way that experience has shown to be best." This book will be a great aid to instructors of organic chemistry in demonstrating the validity of the foregoing statement.

G. ALBERT HILL

An Advanced Laboratory Manual of Organic Chemistry. By MICHAEL HEIDELBERGER, Ph.D., Associate in Chemistry, Rockefeller Institute for Medical Research. The Chemical Catalog Company, Inc., 19 East 24th Street, New York, U. S. A., 1923. 103 pp. 19.5 × 13 cm. Price \$2.00 net.

The author's object in presenting this little book has been to provide "a brief advanced course in manipulative organic chemistry embodying experiments scattered as widely as possible over important types of substances and reactions," and his aim has been "to select experiments of greater difficulty than those ordinarily included in elementary manuals."

About half of the preparations described are of biological or pharmaceutical interest. These include the preparation of β -glucose and its pentaacetate, crystalline egg albumin, arsphenamine, mercury compounds, veronal and the preparation and separation of *dl*-alanine.

It is difficult to pass judgment on laboratory directions without having carried them out, but it is safe to say, on account of the wide experience of the author in synthetic work, that they are good. The book should be a valuable addition to the organic chemist's library.

R. R. RENSHAW

Zuckerchemie. (Sugar Chemistry.) By Dr. HANS PRINGSHEIM, Professor at the University of Berlin, assisted by Dr. JESAJA LEIBOWITZ. Akademische Verlagsgesellschaft m. b. H., Leipzig, 1925. xii + 322 pp. 23.5 × 16 cm. Price, \$4.00.

The theoretical chemistry of the sugars has reached in recent years a stage of development sufficiently well rounded to warrant the presentation in book form of the guiding principles (mainly derived from stereochemistry), the methods for determining structure, and the syntheses, that have been employed in obtaining the data and generalizations of this branch of organic and physical chemistry. From the knowledge of the stereochemical configurations of the sugars, there have come many important correlations with their physical, chemical and biological properties. Professor Pringsheim's book presents these subjects in logical order with critically selected literature references at each step. After being accustomed to reading the old-time discursive works on sugar chemistry of von Lippmann, Tollens and Maquenne, one is pleased to find in these 322 pages a clear and adequate description of the essential points that are of real intellectual interest. Looking backward, one sees that the empirical facts have grown into an exact science through the dis-

covery of the laws which correlate them. This book and E. F. Armstrong's "The Simple Carbohydrates and Glucosides," now in its fourth edition, are the only works from which one can obtain a present day knowledge of the theoretical chemistry of the sugars.

C. S. HUDSON

Theoretical and Applied Electrochemistry. By MAURICE DE KAY THOMPSON, Associate Professor of Electrochemistry in the Massachusetts Institute of Technology. The Macmillan Company, Fifth Avenue, New York, 1925. xviii + 551 pp. 218 figs. 21.5 × 14 cm.

This book is intended primarily for a textbook in electrochemistry and electrometallurgy for use in the elementary classes in colleges and universities. While nominally a second edition of an earlier work (1911), the present volume has been so extensively revised and increased that it is practically a new book.

The book is divided into three sections. In the first, the author deals with the theories of electrochemistry as applied to aqueous solutions. In the second, the commercial applications of the theory of aqueous solutions are considered and in the third, the various types of electric furnaces are given with a description of their products. There are other books that deal more extensively with each phase of the subject, but there is, to our knowledge, no single volume which is so well adapted to the needs of the college professor in presenting a broad survey of the applications of electricity to chemistry.

The first two sections on aqueous solutions are excellent in their conciseness and lucidity. References to original papers in the footnotes and to books at the conclusion of each chapter increase the value of the book to the more serious student. These sections cannot do otherwise than meet with high commendation.

The third section, which deals with "Electric Furnaces and Their Products" is not, however, of the same degree of excellence. Some of us have a personal preference in the matter of treating the applications of direct current to the electrolysis of fused salts as entirely distinct from the applications of alternating current for the production of heat alone. We should prefer, also, to see more attention given in this section to the Heroult and Greaves-Etchell furnaces in steel refining and to the Detroit rocking furnace in brass melting and less space given to other furnaces which the hard usage of commercial experience has consigned to the limbo of forgotten things. The author does, however, succeed in bringing to the attention of the student within a small compass, the information which the literature affords on past and present practice. Our only criticism, therefore, is the relative absence of comparative evaluation.

M. A. HUNTER