

with 12,900 for ergosterol. Too little of this product, which appears to be approximately 56% pure, was available for further purification.

The fractions which were less strongly adsorbed yielded, on systematic chromatographic analysis, a sterol acetate which appears to be homogeneous by this technique. The free sterol gave a strong Liebermann reaction and a precipitate with digitonin. The Rosenheim test was negative and no insoluble bromide could be obtained either with the free sterol or its acetate. Its composition is $C_{29}H_{50}O$ as determined from its various derivatives: sterol, m. p. 136.5–137°, $[\alpha]_D -41.8^\circ$; acetate, m. p. 137°, $[\alpha]_D -47.6^\circ$ (calcd. for $C_{31}H_{52}O_2$: C, 81.5; H, 11.5. Found: C, 81.4; H, 11.6); benzoate, m. p. 137.5°, $[\alpha]_D -17.1^\circ$ (calcd. for $C_{36}H_{54}O_2$: C, 83.2; H, 10.5. Found: C, 83.0; H, 10.3); and *m*-dinitrobenzoate, m. p. 200°, $[\alpha]_D -18.3^\circ$ (calcd. for $C_{36}H_{52}O_6N_2$: C, 71.0; H, 8.6. Found: C, 71.2; H, 8.7).

The sterol acetate was hydrogenated in the presence of platinum oxide in glacial acetic acid. An uptake of hydrogen equivalent to one double bond was observed. The hydrogenated sterol proved to be identical with stigmastanol. Derivatives of the saturated sterol and of stigmastanol were prepared together: stanol, m. p. 134–135°, $[\alpha]_D +23.3^\circ$; acetate, m. p. 129°, $[\alpha]_D +11.5^\circ$ (calcd. for $C_{31}H_{54}O_2$: C, 81.2; H, 11.9. Found:

(3) All rotations were carried out in chloroform.

C, 81.1; H, 11.7); *m*-dinitrobenzoate, m. p. 210°, $[\alpha]_D +13.9^\circ$ (calcd. for $C_{36}H_{54}O_6N_2$: C, 70.8; H, 8.9. Found: C, 70.7; H, 8.9); stanone, m. p. 155°, $[\alpha]_D +38.9^\circ$; and the stanone oxime, m. p. 210° (calcd. for $C_{29}H_{51}ON$: C, 81.0; H, 12.0. Found: C, 80.8; H, 12.1). All mixed melting points with the corresponding derivatives of stigmastanol showed no depression.

The sterol is unlike any reported in sponges. The saturated sterol spongosterol⁴ and the mono-unsaturated clionasterol⁵ and microclionasterol,⁶ contain 27 carbon atoms and are not well characterized.

The sterol skeleton structure is identical with that of stigmasterol. The position of the double bond is not at C_{5-6} since a comparison with 22,23-dihydrostigmasterol, synthesized by Fernholz and Ruigh,⁷ revealed unmistakable differences.

The presence in a sponge of a sterol having the stigmasterol nucleus is of interest to comparative biochemistry. The position of the double bond in this sterol is now being studied.

(4) Henze, *Z. physiol. Chem.*, **41**, 109 (1904).

(5) Dorée, *Biochem. J.*, **4**, 72 (1909).

(6) Bergmann and Johnson, *Z. physiol. Chem.*, **222**, 220 (1933).

(7) Fernholz and Ruigh, *THIS JOURNAL*, **62**, 3346 (1940). The author is grateful to Dr. Ruigh for samples of the free sterol and its acetate.

DEPARTMENT OF BIOCHEMISTRY ABRAHAM MAZUR
COLLEGE OF PHYSICIANS AND SURGEONS
COLUMBIA UNIVERSITY
NEW YORK, N. Y.

RECEIVED FEBRUARY 19, 1941

NEW BOOKS

Fundamentals of Semimicro Qualitative Analysis. By ERWIN B. KELSEY and HAROLD G. DIETRICH, Assistant Professors in Chemistry, Yale University. The Macmillan Co., Inc., 60 Fifth Avenue, New York, N. Y., 1940. x + 350 pp. 12 figs. 15 × 22 cm. Price, \$2.75.

Semimicro methods in teaching chemistry have been given a wide welcome in the last few years and it is safe to conclude that they are here to stay. The time is therefore ripe for some new texts based on these methods and in the field of qualitative analysis this present book should fill the need very satisfactorily.

There are two sections of approximately equal length, entitled, respectively, "Fundamental Theory" and "Analytical Procedure." In the first we have a clear and concise discussion of the nature of solutions; salts, acids, and bases; homogeneous and heterogeneous equilibrium; complex ions; and the principles of oxidation and reduction. Both the old and newer views of ionic solutions

are presented, and considerable space is devoted to a discussion of the Brönsted-Lowry concept of acids and bases. The related concept of hydrated ions, such as $Al(H_2O)_6^{+++}$, as acids is discussed briefly, but the authors do not use this concept to any noticeable extent in the interpretation of experiments.

On the whole there is a fine balance between the necessarily elementary presentation and the precision and rigor of logic that ought to be the foundation of every introductory book which is to play a part in the training of scientists. Each fundamental principle is stated in words and symbols, illustrated graphically if possible, made concrete with well chosen specific examples, and clarified by the addition of actual computations with all figures included. There are practice exercises and recommendations for collateral reading.

The second section opens with a ten-page description of the special technique of semimicro analysis. The systematic procedure is then presented, in form following

very closely the standard systems in general use. In each group there is a statement of the general reactions of the ions, certain special reactions, the systematic analysis and identification methods, closing with a graphical outline summary, notes and exercises. The principal departure from customary teaching procedure lies in the omission of "preliminary experiments." The authors explain that they believe that these are usually a waste of time and that it is better to have actual analysis right from the start. This may be true if the primary object is to teach qualitative analysis but in illustrating chemical principles such exercises may be very useful. For example, the authors explain hydrolysis in a superbly clear way in the first section and it is a pity that the second section does not include some exercises more specifically designed to bring the points home in the laboratory.

In the appendix there is a section on the use of exponents and logarithms, a table of logarithms, a list of reagents and solutions with directions for preparation, a list of apparatus, suggestions for practice solutions and a chart of solubilities and solubility products.

This book definitely smooths the way for the teacher who wants to adopt the semimicro method without benefit of much experience.

DONALD H. ANDREWS

Gewinnung der höheren Fettsäuren durch Oxydation der Kohlenwasserstoffe. (Production of Higher Fatty Acids by Oxidation of Hydrocarbons.) By Dr. F. WITTKA, Berlin and Mailand. Heft 2. Moderne fettochemische Technologie. Johann Ambrosius Barth Verlag, Salomonstrasse 18 B, Leipzig C 1, Germany, 1940. vi + 167 pp. 15.5 × 23.5 cm. Price, RM. 13.80.

This book covers in a rather thorough manner the literature and patents to convert paraffins such as wax, particularly to higher fatty acids useful for soap and edible fat uses by oxidation. In general, the author covers the chemical properties of preparing synthetic fatty acids with its domestic economy essentially in Germany and the necessary raw materials as paraffin wax derived from petroleum, coal, and from synthesis of carbon monoxide and hydrogen via the Fischer-Tropsch catalytic process. A theoretical discussion of what probably takes place in the oxidation of paraffin wax is given.

The volume is devoted mainly to a discussion of technical operations largely derived from patent specifications which is rather shaky grounds on which to describe commercial operations. A chapter is devoted to the possibilities of utilizing the oxidation products from hydrocarbons. The information relating to the production of edible fats from the oxidation of paraffin wax is quite scanty.

An important part of the book is the seven pages relating to the many patents that have been taken out in Germany, U. S. A., Great Britain, France, Holland, Russia, and Switzerland on the subject matter of the book.

This is a worthwhile book and should be valuable to those interested in oxidation of hydrocarbons in addition to the book by Marek and Hahn on "Catalytic Oxidation of Organic Compounds in Vapor Phase."

GUSTAV EGLOFF

Thorpe's Dictionary of Applied Chemistry. Volume IV. By J. F. THORPE and M. A. WHITELEY. Fourth edition, Longmans, Green and Company, 55 Fifth Avenue, New York, N. Y., 1940. 605 pp. Price, \$25.00.

The first three volumes of the Fourth Edition have already been reviewed in THIS JOURNAL (59, 2477; 61, 222; 62, 237) so that little more needs to be said except that the plan and quality have been maintained in spite of difficulties due to war. The 603 pages of this fourth volume of the Fourth Edition cover a part of the alphabet which required 320 pages in the previous edition. Accumulatively the first four volumes of the Fourth Edition contain 2625 pages and cover as much of the alphabet as required 1595 pages in the earlier edition. It is appropriate to the times that the longest of the encyclopedic articles in the volume should deal with "Explosives" (99 pages) supplemented by "Explosions—Gaseous" (36 pages) and "Explosions—Coal Mine" (10 pages), and "Dynamite" (6 pages). There is some lack of uniformity in the editorial treatment. There is a long and detailed article on "Dyestuffs—Azo" but other classes of dyestuffs are apparently deferred to later volumes. The article on "Distillation" discusses the theory of distillation from the point of view of the Phase Rule and laboratory technique but industrial apparatus is deferred to be discussed under "Stills." On the other hand, the article on "Evaporation" discusses industrial apparatus and is written from the point of view of the chemical engineer. However, these inconsistencies doubtless reflect the difficulties encountered by an Editor in getting the various articles which he desires written on schedule time. These comments are therefore intended to be descriptive rather than critical. Indeed the Editor merits congratulations that he succeeded in publishing such a fine work in spite of the obstacles which must have been created by the distractions of war. It is to be hoped that no aerial bomb will penetrate into the Editorial office where the Fifth Volume is doubtless being prepared.

GRINNELL JONES

Forensic Chemistry. By HENRY T. F. RHODES, Dip. Inst. C. (Lyon). Correspondent of the International Academy of Criminology, Honorary Research Assistant in the "Conan Doyle" Laboratory of Chemical Research, Department of Technical Police, Prefecture of the Rhone, France. The Chemical Publishing Co., Inc., 148 Lafayette St., New York, N. Y., 1940. viii + 214 pp. 14.5 × 22 cm. Price, \$5.00.

This is a distinct and much needed contribution to the literature dealing with scientific methods of criminal identification. Heretofore Lucas' "Forensic Chemistry and Scientific Criminal Investigation" has been the only outstanding book dealing with forensic chemistry. Lucas is, as the title indicates, very much broader in its scope as it contains much valuable material which is not chemical. Rhodes' book is much narrower in scope as it is limited to matters chemical. However, it is very thorough and specific in that more limited field, and in many ways it is much more valuable as a laboratory manual.

Chapter I deals with chemical methods of developing fingerprints and nearly all of the chemical methods known

are described quite fully; chapter II deals with indirect methods of identification of the person, particularly the identification of dusts. The micro and spot tests given seem to be excellent. The general theory of blood grouping is also described, but detailed instructions are not given; chapter III deals with the identification of stains of all kinds; chapter IV is devoted to the chemical tests which are useful in the examination of fired weapons and exploded bombs; chapter V contains a good general description of modern inks, a description of specific tests used to determine the character of ink, tests on the paper used, tests for evidence of forgery, tests for secret inks, examination of adhesives, etc.; chapter VI is devoted to the chemical testing of counterfeit money; and chapter VII contains forty pages dealing with the identification of toxic substances. This chapter is naturally sketchy and of course does not constitute anything like a comprehensive guide for toxicological examinations.

All through the text there are frequent references to original articles and at the end there are 146 additional references, and a very complete index. This is unquestionably a book which should be in every laboratory where scientific criminal examinations are to be made.

J. H. MATHEWS

The Chemical Constitution of Natural Fats. By T. P. HILDITCH, D.Sc. (Lond.), F.I.C., Campbell Brown Professor of Industrial Chemistry in the University of Liverpool. John Wiley and Sons, Inc., 440 Fourth Avenue, New York, N. Y., 1940. xi + 438 pp. 112 tables. 15.5 × 25 cm. Price, \$6.50.

This volume will prove most valuable to every investigator concerned with natural fats. The nine chapters of the book contain such a wealth of material, treated in a highly critical way, that all will gain from its study. The author is one of the greatest authorities in the field of fat chemistry and a considerable part of our present knowledge of the composition of glycerides has been obtained by the use of his methods. By turning the leaves of the present monograph one is amazed at the large number of fats that have been characterized in the author's own laboratory.

The purpose of this book is to present the chemical constitution of the natural triglycerides, *i. e.*, the chemical characterization of the fatty acid components and the order in which they are bound to glycerol. Little attempt has been made to collect again all the available data on the general characteristics of fats, such as melting points, iodine numbers and saponification numbers, which are available in most standard works. The fats are considered rather as mixtures of chemical individuals, and are treated in a way similar to that by which the modern chemist describes proteins, which are characterized not only by their chemical and physical properties but also by their detailed composition.

An introductory chapter gives a short review of the field covered and facilitates the use of the whole monograph. Those who have only a general interest in fat chemistry will find much inspiration in the author's point of view. Three chapters give analyses of the component acids of fats. The author treats the fats of the aquatic flora and fauna

together, as they have many properties in common. While our knowledge of the component acids is extensive, that of the component glycerides, treated in the three succeeding chapters, is somewhat scanty by reason of lack of reliable methods available for the isolation of pure triglycerides. Chapter VIII, presenting some aspects of the biochemistry of fats, does not attempt to give a complete review of the present knowledge. It is devoted mainly to the assimilation of food fats, the synthesis of fats in animals and plants, and to the mechanisms of the conversion of carbohydrates into fats. A thorough review of the chemical constitution of natural fatty acids (Chapter IX) is especially welcome, as this field is treated only superficially in most other monographs. Chapter X presents a review on synthetic glycerides and a description of the naturally occurring higher aliphatic alcohols and ethers. The last chapter is of special interest to those active in fat research, as it presents the laboratory methods for the fractionation and purification of fatty acids and glycerides.

It is hoped that in subsequent editions a more detailed index will be supplied. The arrangement of the present index is far from convenient. For example, the first item in the section for fatty acids, arachidic acid, has 60 page references without any subdivision. It requires, therefore, much effort to locate the appropriate page for the detailed discussion of specific features of any of the more important fatty acids.

R. SCHOENHEIMER

The Ring Index. A List of Ring Systems Used in Organic Chemistry. By AUSTIN M. PATTERSON, Professor of Chemistry, Antioch College, and LEONARD T. CAPELL, Associate Editor of *Chemical Abstracts*. American Chemical Society Monograph Series. Reinhold Publishing Corporation, 330 West 42nd St., New York, N. Y., 1940. 661 pp. 15.5 × 23.5 cm. Price, \$8.00.

The Ring Index, as noted in the introduction "is a collection of known parent ring systems, arranged in order from the simplest to the most complex." The number of rings present determines the main division, and their sizes determine the first subdivisions; within these the order for the ring formulas follows the Hill system¹ in which the atoms are arranged in alphabetic order except that C always comes first if it is present. The entries for each ring include the outline formula, properly oriented and numbered; other numberings and orientations (if any) which appear in the literature; the systematic name; other widely accepted names (if any); a serial number; at least one reference to the original literature; and one to the fourth edition of Beilstein if the original article appeared before January 1, 1920. The Ring Index, however, covers the literature to January 1, 1939, although there are many citations later than this.

There is a name index, so that if one knows the name for any particular system it can be found quickly from the alphabetic index at the back of the book. As time goes on, the Ring Index numbers, however, will doubtless be cited more and more until each ring will be identified by number in the same manner as for many dyestuffs.

In the introductory pages the scope and general plan

(1) Hill, *THIS JOURNAL*, **22**, 478-494 (1900).

of the book are defined² and the rules for orientation, naming and numbering are given,³ and at the end of the ring catalog the International Rules for Numbering Ring Systems are reprinted.²

The book is lithoprinted, on excellent paper, and is a fine example of the printers' art in handling material that comprises nearly four thousand structural formulas, most of them very complicated.

In reviewing a work of this sort it is impossible to criticize. Such books are not written quickly and they are not the product of any one man's labors; one might even guess that all those who are competent have at one time or another been associated with, or consulted by, the Committee and have had their criticisms incorporated into the book. The Committee has worked long and hard, and the thanks of chemists everywhere must go to Drs. Patterson and Capell and the other members of the Committee, which included at one time or another, M. T. Bogert, C. D. Hurd, W. A. Noyes, J. W. Kinsman, J. F. Norris and R. R. Renshaw, with H. Gilman, R. A. Gortner, E. E. Reid, R. E. Swain and F. C. Whitmore as consultants.

The American Chemical Society is to be congratulated on this, its Monograph No. 84.

(2) Patterson, *THIS JOURNAL*, **47**, 543-561 (1925).

(3) Patterson, *ibid.*, **50**, 3074-3087 (1928).

(4) Patterson, *ibid.*, **55**, 3905-3925 (1933).

LEE IRVIN SMITH

Outlines of Methods of Chemical Analysis. By G. E. F. LUNDELL, Ph.D., Chief Chemist, National Bureau of Standards, and JAMES IRVIN HOFFMAN, Ph.D., Chemist, National Bureau of Standards, Washington, D. C. John Wiley and Sons, Inc., 440 Fourth Avenue, New York, N. Y., 1938. xi + 250 pp., 115 tables. 15 × 23.5 cm. Price, \$3.00.

One of the first questions the analyst asks about an analytical process is, "What elements interfere?" This question is usually only partly answered by a description of the method, leaving the reader somewhat in the dark as to its suitability for a particular use. This book fills a long-felt want by giving this and other information in a series of 115 tables. The most useful analytical processes are thus covered, together with sufficient descriptive matter. References to the literature are seldom given. After a discussion of the composition of materials, methods of sampling and preparation of the solution for analysis, considerable space is devoted to the various qualitative separations and their use in quantitative work. These include many of the less common operations, such as electrolysis with a mercury cathode, extraction with ether and precipitation by means of zinc oxide. The next few pages describe gravimetric methods based on the use of inorganic reagents, then those based on the use of organic reagents. Volumetric, electrolytic, colorimetric and spectrochemical methods are next discussed. Considerable space is devoted to diagrammatic outlines of methods of analysis of rocks and metals.

In preparing the tables the authors have chosen a periodic arrangement of the elements, enclosing in heavy blocks those elements that may be precipitated practically completely, in light blocks those that may cause difficulties

and in broken blocks those that interfere seriously. Thus the utility of any method is seen at a glance.

This book is crammed full of information which the analyst needs and which he cannot quickly find elsewhere. The authors are to be congratulated on making readily available this collection of important information. It is a book which every analyst will want to keep handy.

HOBART H. WILLARD

Applied X-Rays. By GEORGE L. CLARK, Ph.D., D.Sc., Professor of Chemistry, University of Illinois. Third edition. McGraw-Hill Book Co., Inc., 330 West 42nd St., New York, N. Y., 1940. xvii + 674 pp. 341 figs. 16 × 23.5 cm. Price, \$6.00.

The title of this book, of which the present edition represents an expansion by about fifty per cent. over the edition of 1932 to include progress made in the past eight years, well fits the contents. It should prove primarily useful to those who have to apply X-rays in practical work, whether in physics, or in medicine, or in the examination of the structure of the materials of industry, and whether as beginners or as experts. The profusion of half-tone reproductions of radiographs and diffraction patterns, which come out well on the glossy paper stock, adds much to the presentation. The value of the book is marred by too numerous inexact statements, but most of these are of a petty nature and many seem to be thrown in quite gratuitously. With reference to p. 304, the reviewer believes that credit should have been given to de Jong and Bouman (1938) for the first description of a camera for photographing reciprocal lattice nets of crystals.

C. D. WEST

Principles of Inorganic and Analytical Chemistry. By ERNEST J. BALDWIN, Ph.D., Professor of Chemistry, University of Idaho, Southern Branch. Part 1, Properties of Atoms and Molecules; Part 2, Theory of Reactions. D. Van Nostrand Co., Inc., 250 Fourth Avenue, New York, N. Y., 1940. viii + 506 pp. 113 figs. 14.5 × 22.5 cm. Price, \$3.25.

This is an elementary textbook intended to be used by second year students in chemistry. It is divided into two parts, the first of which, 201 pages, is devoted mainly to a descriptive discussion of a rather wide range of topics varying from the gas laws, molecular and atomic weights, properties of solutions and the periodic system to matter and radiation, atomic structure, the electron theory of valence and nuclear chemistry. The second part deals, for the most part, with those aspects of aqueous solutions which are of importance to qualitative and quantitative analysis. The subjects covered are the ionic theory and ionic equilibria, solution and precipitation, neutralization, and oxidation and reduction, the treatment being more thorough and quantitative than is the case in part I. Most of the chapters are followed by sets of from three to fifteen problems. As the title indicates the book is concerned with principles and not with the descriptive matter of inorganic chemistry. Indeed it would be classed by many as a textbook of elementary physical chemistry rather than one dealing primarily with inorganic chemistry.

One cannot help but look sympathetically on an elementary text which presents some of the main developments of modern science. As is well known both freshmen and sophomores will literally hound their teachers to desperation for accurate information on alpha particles, cyclotrons, liquid helium and artificial radioactivity, and this book will, to some extent, fill a need in this respect. It is unfortunate, however, that in part I the author did not go a step or two further in the direction of a more complete treatment. For example, a further discussion of radioactive decay with problems on half lives would be helpful. The fundamental equations for charged particles in a cyclotron are simple and if given would clear up points left unfinished in the present treatment. In discussing imperfect gases the commonly used virial coefficients are not mentioned, the emphasis being placed on the disused van der Waals equation.

The subject matter of part II is conventional but, except for the chapters on oxidation-reduction, is adequately treated, often by means of problems worked out in detail in the text. But many statements made in the treatment of oxidation-reduction are certainly wrong or confusing. Thus the discussion of electrode potentials on pages 425 to 428 is incomprehensible and even the brightest students will despair of ever understanding galvanic cells or the so-called Nernst equation. On page 476 the discussion of the Zimmerman-Reinhardt method for the determination of iron with permanganate in terms of oxidation potentials leaves out of account the effects of rate and side reactions. The definition on page 446 of what is presumably the Helmholtz free energy is wrong, and on page 447 this quantity is confused with the Gibbs-Lewis free energy. The presentation illustrates the danger of a non-mathematical approach to even elementary thermodynamics, it being much easier for the student to get on the right track when the more precise language of mathematics is used to formulate an exact field of science than it is when he is confronted by an incorrect qualitative exposition.

Both students and teachers using this book of principles will be pleased by its breadth of view, by the style in which it is written, and by the illustrative problems worked out in detail in the more important sections, but they will regret that the treatment is not more extensive in some cases and they will be downright confused or upset by those sections that are incorrect or not clear.

DON M. YOST

BOOKS RECEIVED

January 10, 1941-February 10, 1941

- HAROLD FRANCIS BLUM. "Photodynamic Action and Diseases Caused by Light." American Chemical Society Monograph Series. Reinhold Publishing Corporation, 330 West 42nd St., New York, N. Y. 309 pp. \$6.00.
- CARL L. CANNON, Editor. "Guide to Library Facilities for National Defense." Preliminary edition. American Library Association, 520 North Michigan Avenue, Chicago, Illinois. 235 pp. \$1.25.
- JOHN THEODORE FOTOS and JOHN L. BRAY. "Introductory Readings in Chemical and Technical German." John Wiley and Sons, Inc., 440 Fourth Avenue, New York, N. Y. 303 pp. \$2.50.
- LOUIS GOODMAN and ALFRED GILMAN. "The Pharmacological Basis of Therapeutics." The Macmillan Co., 60 Fifth Avenue, New York, N. Y. 1383 pp. \$12.50.
- EGON HIEDEMANN. "Grundlagen und Ergebnisse der Ultraschallforschung." Walter de Gruyter and Co., Woyrschstrasse 13, Berlin W 35, Germany. 287 pp.
- JOSE GIRAL PEREIRA. "Fermentos." La Casa de España en Mexico. Printed by Fondo de Cultura Económica, Av. Madero, 32, Mexico City, Mexico. 239 pp.
- J. H. REEDY. "Elementary Qualitative Analysis for College Students." Third edition. McGraw-Hill Book Co., Inc., 330 West 42nd St., New York, N. Y. 156 pp. \$1.50.
- T. B. SMITH. "Analytical Processes. A Physico-chemical Interpretation." Second edition. Longmans, Green and Co., 55 Fifth Avenue, New York, N. Y. 470 pp. \$5.00.
- HOSMER W. STONE, MAX S. DUNN and JAMES D. McCULLOUGH. "Experiments in General Chemistry." Third edition. McGraw-Hill Book Co., Inc., 330 West 42nd St., New York, N. Y. 275 pp.
- ROBERT L. WEBER. "Temperature Measurement." Edwards Brothers, Inc., Ann Arbor, Michigan. 175 pp. Price, \$2.50.
- J. ENRIQUE ZANETTI. "Fire from the Air. The ABC of Incendiaries." Columbia University Press, New York, N. Y. 51 pp. \$0.50.
- WILHELM ZIEGELMAYER. "Unsere Lebensmittel und Ihre Veränderungen." Second edition. Verlagsbuchhandlung Theodor Steinkopff, Residenzstrasse 32, Dresden-BI., Germany. 401 pp. RM. 9, bound RM. 10.13.
- "High Temperature Furnaces with Platinum Resistors as Heating Units." Baker and Co., Inc., 113 Astor St., Newark, New Jersey. 11 pp.
- "Kinetics in Solution." Victor K. LaMer, Chairman. Volume XXXIX, Art. 5 of the "Annals of The New York Academy of Sciences." The New York Academy of Sciences, care of The American Museum of Natural History, New York, N. Y. 108 pp. \$1.25.
- "Electrophoresis." Duncan A. MacInnes, Chairman. Volume XXXIX, Art. 3 of the "Annals of The New York Academy of Sciences." The New York Academy of Sciences, care of The American Museum of Natural History, New York, N. Y. 106 pp. \$1.25.
- "Free Radicals as Intermediate Steps in the Oxidation of Organic Compounds." L. Michaelis, Chairman. Vol. XL, Art. 2, "Annals of The New York Academy of Sciences." The New York Academy of Sciences, care of The American Museum of Natural History, New York, N. Y. 95 pp. \$1.25.
- "Dielectrics." C. P. Smyth, Chairman. Vol. XL, Art. 5, "Annals of The New York Academy of Sciences." The New York Academy of Sciences, care of The American Museum of Natural History, New York, N. Y. 191 pp. \$2.25.