

applications closes this monograph, which is heartily recommended to anyone interested in the subject. Print and appearance of the book and the reproductions of the various figures are excellent, which, however, hardly justify the extraordinary high price of \$5.00 for a text of 175 pages.

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Colloid Chemistry. By ARTHUR W. THOMAS, Professor of Chemistry, Columbia University. McGraw-Hill Book Company, Inc., 330 West 42d Street, New York City, 1934. viii + 512 pp. 143 figs. 14 × 21 cm. Price, \$4.00.

Out of many years devoted to teaching and study of colloidal phenomena there comes this textbook by Professor Thomas. Its thoughtfulness and originality of presentation must command recognition alongside the best of the other existing texts. It is rightly entitled *Colloid Chemistry* because chemical aspects are stressed, particular reference being given to those parts of molecules which may be regarded as soluble and as largely determining the stability and properties of colloidal particles. It will therefore exert a distinct influence toward counteracting a tendency to consider materials in the colloidal state from an unduly simplified physical point of view.

A list of the chapter headings and their order may give an idea of the subject matter selected and of the author's mode of approach. Each chapter is followed by the references upon which it has been based. Index numbers in the text show the specific information which has been taken from each of these numbered references, about 1200 in all. As an example, the detailed description of sorption from solutions by various materials is one of the best summaries that has yet been made of this topic.

The chapters comprise Introduction, Clouds and Smokes, Optics—Brownian Movement, Liquid Dispersed Systems, Dialysis and Ultrafiltration, Preparation of Colloidal Solutions, Nature of Micelles, Precipitation by Electrolytes—Hydrophobic and Intermediate Dispersions, Electrokinetics, Surface Phenomena—Gas-Liquid and Liquid-Liquid Interfaces—Wetting, Sorption, Proteins, Carbohydrate Colloids, Soap Solutions, Foams, Emulsions, Mutual Reactions, Gels and Jellies.

JAMES W. MCBAIN

Dictionary of Organic Compounds. The Constitution and Physical and Chemical Properties of the Principal Carbon Compounds and Their Derivatives, Together with the Relevant Literature References. Volume I. Abietic Acid—Dypnone. Editor-in-Chief, I. M. Heilbron, D.S.O., D.Sc., Ph.D., F.I.C., F.R.S., Professor of Organic Chemistry, the University of Manchester. Oxford University Press, 114 Fifth Avenue, New York, 1934. xix + 706 pp. 19 × 26.5 cm. Price, \$25.

The first volume of Heilbron's *Dictionary of Organic Compounds* appeared in October of this year, to be followed by Volume II a year hence and Volume III in the fall of 1936.

The prospectus issued by the Oxford Press describes the general arrangement as follows: "In the descriptive matter the same order has been followed in all cases, *viz.*,

sources, where of interest; physical properties (melting point, boiling point, solubility, density, refractive index, heat of combustion, optical rotation, etc.); chemical properties (typical reactions, analytical tests, etc.). The data for derivatives then follow under separate sub-headings." Only a few literature references are cited under each substance, the aim being to acquaint the reader with the best method of preparation, contributions on molecular structure and available bibliographies.

Not all known organic compounds are listed; as a matter of fact dyestuffs, in the main, as well as fats, oils and waxes are excluded. Volume I contains some 20,000 individual compounds and from this it may be concluded that 60,000 will be embraced in the three volumes. Since an international system of nomenclature has not been adopted, "no special preference has been given to any one system to the exclusion of all others." Where isomers are concerned, the empirical formula, molecular weight, and structural formula are given, as a rule, for the first member only. Functional derivatives, such as esters, amides, chlorides, nitriles and anhydrides of acids, are given under the parent compound. In orientation, numbers are used rather than Greek letters, except in the case of aralkyl compounds where confusion is obviated by numbering the carbons in the ring nucleus and designating, where necessary, the carbons in side chains with Greek letters. CHO, CN and COOH are treated as substituents, their carbons being unnumbered. Cross references are furnished for parent compounds.

An alphabetical classification requires no index, assures ready reference and, as a distinctive feature, enables a quick survey of various types of compounds in their entirety; *e. g.*, the azides are listed in sequence, next are grouped all azo compounds and following the latter come the azoxy compounds. At a glance both aliphatic and aromatic representatives are revealed among azides and azo compounds but aliphatic azoxy compounds have not been discovered. From the other lexicons of organic chemistry such information can be obtained only through laborious search.

The 18 volumes of Beilstein, including supplements, issued to date have cost our department \$953.27; with the series estimated at two-thirds published, the remaining volumes may be expected to total around \$750.00. This price must be regarded as prohibitive, in so far as colleges and universities with modest endowments are concerned. The main volumes of the new Beilstein are abreast of the literature through 1910, with the supplements covering the period between 1910–1919.

Every scientist appreciates the indispensable role which Beilstein and Richter have played in the development of organic chemistry; as a matter of fact, without these contributions of the German Chemical Society, which have brought order and system in classification, both scientific and industrial progress in the many fields touched by organic chemistry would have been greatly retarded. These standard reference works, in the future as in the past, will continue to be invaluable to the productive scholar where an exhaustive review of the literature is desired.

The three volumes of the *Dictionary* are priced at \$75.00. This comparatively moderate cost makes Heilbron available, as a time-saving desk reference work for

chemists in general, as well as, at times, for investigators in the allied sciences. It is the only lexicon of organic chemistry within the reach of high schools and junior colleges and, with the added advantages of the simplest of all classifications and no foreign language requirement, it will find favor with all students seriously interested in chemistry. To the industrial chemists in need of a compendium, with unessential details eliminated, it will supply a long-felt want, regardless of available library facilities.

The advance proof of Volume II was sent to a number of eminent chemists in Great Britain and America, including leading university professors and industrial chemists. The strong endorsements accorded the Dictionary are quoted in the prospectus distributed by the Oxford Press.

It is certain Professor Heilbron and the Oxford Press will be gratified with the reception accorded the Dictionary, and it is hoped the success of this monumental undertaking is a guarantee that supplements will appear at frequent intervals; in any event, if, as at the start, the Dictionary is kept up-to-date, and the initial investment represents the main cost, the preëminence of this reference work is assured. It may not be an exaggerated forecast to claim that it will enjoy in time the largest sale of any treatise of chemistry ever published.

J. R. BAILEY

BOOKS RECEIVED

November 15, 1934–December 15, 1934

- R. ABEGG, FR. AUERBACH and I. KOPPEL, Editors. "Handbuch der anorganischen Chemie." Vierter Band, dritte Abteilung, zweiter Teil B, Lieferung 3. Iron. Verlag von S. Hirzel, Königstrasse 2, Leipzig, Germany. 201 pp. RM. 28.
- E. F. ARMSTRONG and K. F. ARMSTRONG. "The Carbohydrates." Longmans, Green and Co., 114 Fifth Ave., New York. 252 pp. \$6.50.
- J. EGGERT and E. SCHIEBOLD. "Anwendungen der Röntgen- und Elektronenstrahlen mit besonderen Berücksichtigung organisch-chemischer Probleme (Röntgentagung in Bonn, 1934)." Akademische Verlagsgesellschaft m. b. H., Markgrafenstrasse 6, Leipzig C 1, Germany. 190 pp. RM. 18; bound, RM. 19.50.
- FRITZ FEIGL. "Qualitative Analyse mit Hilfe von Tüpfelreaktionen. Theoretische Grundlagen, praktische Ausführung und Anwendung." Second edition. Akademische Verlagsgesellschaft m. b. H., Markgrafenstrasse 6, Leipzig C 1, Germany. 513 pp. RM. 26.40; bound, RM. 28.00.
- ALEXANDER FINDLAY. "The Spirit of Chemistry. An Introduction to Chemistry for Students of the Liberal Arts." Longmans, Green and Company, 114 Fifth Ave., New York. 510 pp. \$4.00.
- VIKTOR GAERTNER. "Elektrochemie. Ein Lehr- und Hilfsbuch für Studierende, Techniker und Fabrikanten." Deutscher Verlag für Jugend und Volk, Gesellschaft m. b. H., Abteilung für Wissenschaft und Technik, Burgring 9, Wien I, Austria. 408 pp. M. 20.
- COURTNEY ROBERT HALL. "A Scientist in the Early Republic. Samuel Latham Mitchill, 1764–1831." Columbia University Press, 2960 Broadway, New York. 162 pp. \$2.50.
- DAVID INGERSOLL HITCHCOCK. "Physical Chemistry for Students of Biology and Medicine." Second edition (with laboratory directions). Charles C. Thomas, Publisher, 220 East Monroe St., Springfield, Ill. 214 pp. \$2.75.
- HANS REIHLEN, Editor. "Remsens Einleitung in das Studium der Chemie." Ninth edition, revised. Verlag von Theodor Steinkopff, Residenzstrasse 32, Dresden-Blasewitz, Germany. 317 pp. RM. 10.
- C. A. ROJAHN. "Autenrieth-Rojahn Qualitative Analyse nebst Abriss der Grundlagen der allgemeinen Chemie, zum Gebrauch in chemischen und pharmazeutischen Laboratorien." Third edition. Verlag von Theodor Steinkopff, Residenzstrasse 32, Dresden-Blasewitz, Germany. 233 pp. RM. 10.
- ARNOLD SOMMERFELD. "Atomic Structure and Spectral Lines." Vol. I. Translated from the Fifth German edition by Henry L. Brose. E. P. Dutton & Co., Inc., 286–302 Fourth Ave., New York. 675 pp. \$10.80.
- "Boletin de Informaciones Petroleras." (2ª epoca.) Organo Oficial de la Direccion General de Y. P. F. Direccion y Administracion, Paseo Colon 922, U. T. 33–6031, Buenos Aires, Argentina. Por año, \$15.
- "La Densitométrie des Images Photographiques sans Intervention de l'Oeil." Édition de la Revue d'Optique Théorique et Instrumentale, 3–5 Boulevard Pasteur, Paris XV^e, France. 39 pp. Fr. 9.
- "L'Emploi des Liquides dans la Construction des Spectrographes." Éditions de la Revue d'Optique Théorique et Instrumentale, 3–5 Boulevard Pasteur, Paris XV^e, France. 20 pp. Fr. 5.
- "Minerals Yearbook, 1934." Bureau of Mines, U. S. Department of the Interior. Superintendent of Documents, Government Printing Office, Washington, D. C. 1154 pp. \$1.75.
- "La Polarimétrie en Lumière Ultra-violette." Editions de la Revue d'Optique Théorique et Instrumentale, 3–5 Boulevard Pasteur, Paris XV^e, France. 36 pp. Fr. 7.
- "Transactions of the Central Scientific Research Institute." Issue I (XIII). (In Russian.) State Printing Office, Division of Wood Technology, Moscow, U. S. S. R. 271 pp.