

Chief told him that he had never tested glue and did not know anything about the subject. In reply the Boss said: "You know as much about testing glue as anyone in the Bureau." I further protested that glue was not a drug. He retorted: "Glue is certainly a drug around here and it is your job." He had shopped, without success, around the Bureau for someone to do the work and the Drug Chief was a newcomer and the logical victim. He took advantage of the definition, "A drug on the market," in this case meaning the Bureau. Some of my fellow chemists considered it a good joke. I tested the glue and did not find it such a difficult task—nothing compared with some of the knotty drug adulterations I had been called on to unravel in former years.

The glue testing represented collaboration with other branches of the Government, for which Dr. Wiley was an enthusiast. A few months later he again called me into his office, handed me a number of drug samples called "Vitality Pills," submitted by the Postmaster General for examination and report as to whether the claims made therefor were warranted. They were alleged, among other things, to contain animal extract derived from healthy bulls. Here was something novel and weird. We discussed it *pro* and *con* on numerous occasions. An examination, however, showed that these pills were of the same general composition as the commonly so-called listed aphrodisiac pills. We discussed the subject with several outstanding physicians and reached the conclusion that the claims were far-reaching and many wide of the truth and so reported to the Postmaster General. Here another thing happened. The Secretary of Agriculture did not want to sign this kind of a report. It then fell to Dr. Wiley's lot to sign and get the reports into the Solicitor's hands, which was done. The promoter was cited for a hearing, alleging the fraudulent use of the mails. After the hearing a fraud order was issued, debarring the promoter from the use of the mails, which was a signal for a royal legal battle, such as I had never seen before, but have been in many since. The case was vigorously contested, but the Government won, which meant that we would be

required to do more work for the Post Office Department, in the matter of the fraudulent use of the mails. Poisons in the mails came next into the picture.

In 1903 the Drug Chief was appointed a referee on "Medicinal Plants and Drugs," in the Association of Official Agricultural Chemists. Under this appointment the methods for estimating morphine in opium were taken up and reported on for several succeeding years.

Due to the untruthful advertising and adverse publicity given proprietary medicines, either directly or indirectly, as the result of the information brought out in connection with the hearings under the various food and drug bills and otherwise, the Council on Pharmacy and Chemistry, of the American Medical Association, was organized in 1905. Dr. Wiley and I were charter members, and took a part in the work for a number of years. The Drug Laboratory made quite a few analyses of a number of proprietaries published by the Council (12), among them the acetanilid mixtures.

BIBLIOGRAPHY

- (1) U. S. Stat. at L., 1 (1790), 180.
- (2) *Ibid.*, 1 (1791), 199.
- (3) *Ibid.*, 9 (1848), 237.
- (4) Edwards, T. O., Senate Exec. Doc. No. 16, 30 Cong. (1849); *Am. J. Pharm.* 21 (1849), 153. Guthrie, C. B., *N. Y. Jour. Pharm.*, Sept. (1852); *Am. J. Pharm.*, 24 (1852), 365. Gen. Reg. under Rev. and Collec. Laws, U. S. Treasury Dept. (1857), 155-164.
- (5) U. S. Stat. at L., 26 (1890), 414.
- (6) *Ibid.*, 30 (1899), 947.
- (7) *U. S. Dept. Agric. Yearbook* (1902), pages 79 and 662.
- (8) *Proc. A. Ph. A.*, 50 (1902), ix.
- (9) *Ibid.*, 50 (1902), 270.
- (10) *Ibid.*, 50 (1902), 276.
- (11) U. S. Cong., Senate Mfg. Commit. Food Adulteration on Bill No. 3109, January 20 (1903).
- (12) *J. Am. Med. Assoc.* 44 (1905), 719 and 1790.

Book Reviews

Organic Syntheses. An Annual Publication of Satisfactory Methods for the Preparation of Organic Chemicals. Volume XX. CHARLES F. H. ALLEN, Editor-in-Chief. v + 113 pages. John Wiley and Sons, Inc., 440 Fourth Ave., New York, N. Y., 1940. Price, \$1.75.

This, the twentieth volume of this series, is similar in arrangement of its contents to that of preceding volumes. It contains directions for the preparation of 39 compounds involving many types of reactions. In addition, there are included for each preparation equations indicating the chemical changes involved, a detailed statement of the procedure to be followed,

notes on points to which particular attention should be directed, a statement, with references, covering other methods of preparation, and illustrations of apparatus. The book is a useful reference work for anyone engaged in the preparation of organic compounds.—A. G. D.

Physical Constants of Hydrocarbons. Volume II. *Cyclanes, Cyclenes, Cyclynes, and Other Alicyclic Hydrocarbons*, by GUSTAV EGLOFF. 605 pages. Reinhold Publishing Corp., 330 West 42nd St., New York, N. Y., 1940. Price \$12.00.

This book is the second volume of a four-volume work giving values for the boiling point, melting point, density and refractive index of pure hydro-

carbons. Volume I covers the paraffins, olefins, acetylenes and other aliphatic hydrocarbons. Volume II covers the alicyclic hydrocarbons, including the cyclanes, cyclenes, cyclynes and olefin- and acetylene-substituted cyclanes and cyclenes.—A. G. D.

Inorganic Chemistry (FRITZ EPHRIAM), edited by P. C. L. THORNE, M.A. (Cantab.), M.Sc., Ph.D. (London), F.I.C., and A. M. WARD, Ph.D., D.Sc. (London), F.I.C. 911 pages including index and appendix. 83 figures and several tables. Nordeman Publishing Company, Inc., 215 Fourth Ave., New York, N. Y. 3d English edition, 1939. Price, \$8.00.

A great deal of information has been compiled in accordance with the general scheme used in prior editions of this book, namely, that of presenting the material in collective style rather than treating each element and related compound individually. It is stated in the introductory remarks that the collective scheme has proved to be most attractive. The whole text has been revised to modern concepts in chemistry, with portions of the book on radioactivity, isotopes and rare earths transferred from the appendix to more useful and logical places in the text.

The text is divided into six main sections which are: I. The Elements, 212 pages. II. Halogen Compounds, 174 pages. III. Oxides of Hydrogen and of the Metals, 126 pages. IV. The Compounds of Sulphur, Selenium and Tellurium, 56 pages. V. The Nitrogen, Phosphorus, Arsenic Group, 156 pages. VI. The Elements of the Fourth Group (and Boron), 110 pages. Under I, the elements, theories on the structure of matter, properties and preparation of the elements and radioactive elements and isotopes are considered. Hydrogen and oxygen compounds of the halides are treated under the Halogen Compounds with special regard to the halogen salts uni-, bi-, ter-, quadri-, quinque- and sexavalent metals. The Werner's coördination theory of halides and the ammines is treated with several illustrations for clarity. Oxides of hydrogen are treated separately, including deuterium oxide, and oxides of the metals are treated in groups under alkali, alkaline earth, rare earth, basic oxides of heavy metals and metallic oxides-acidic. Hydrogen, oxygen and halogen compounds of sulfur, selenium and tellurium are given major consideration. Under the nitrogen, phosphorus and arsenic group, the hydrides of elements of the fifth group are given considerable space. The oxygen compounds of nitrogen are given a separate chapter while those of phosphorus, arsenic, antimony and bismuth are dealt with collectively in another chapter. Sulfur and halogen compounds of the fifth group are treated in a separate chapter. Within the bounds of the sixth main section of this text, the hydrides, oxides and sulfides of the elements of the fourth group are considered along with intermetallic compounds such as carbides, silicides, borides and an introduction to alloys.—Emerson C. Beeler

Physico-Chemical Methods, by JOSEPH REILLY and WILLIAM NORMAN RAE. 3rd Edition. Volume I. Measurement and Manipulation, 686 pages. Volume II. Practical Measurements, 580 pages. D. Van Nostrand Co., 250 Fourth Ave., New York, N. Y., 1940. Price, \$17.50.

The third edition of this standard work now appears in two volumes and it is expected that there will be a third volume before another edition is published.

The first volume contains a new chapter on Measures and Units by Professor O'Rahilly of Cork. Chapter IV on Observations and Calculations now includes discussions of nomography and graphical methods, applications of which are given in Chapter V.

Volume II deals with practical measurements of gases and vapors, of distillation processes, filtration, crystallization and mechanical separations. The ten chapters which follow deal with practical methods of colloid chemistry, optical methods including spectroscopy in all wave-length regions, electrochemistry and indicators, application of thermionic vacuum tubes, dielectrics and radio-activity.—A. G. D.

The Chemist at Work, by ROY I. GRADY, JOHN W. CHITTUM and others. 422 pages, 51 illustrations. Journal of Chemical Education, Easton, Penna., 1940. Price, \$3.00.

This book is made up of 53 articles which have been published in the *Journal of Chemical Education*. Its purpose is to acquaint prospective students with the work of the chemist by having members of the profession discuss their jobs. Several chapters deal with the place of women in chemistry. Particular attention seems to have been given to work in experiment stations, teaching and medical laboratories, although the process industries have not been entirely overlooked. The book presents in an attractive way the varied and interesting work of chemists, and is recommended for reading by all prospective students in chemistry.—A. G. D.

Toxicity of Industrial Organic Solvents. Report No. 80 of the Medical Research Council, Industrial Health Research Board (England). Compiled by ETHEL BROWNING under the direction of the Committee on the Toxicity of Industrial Solvents. First American edition, cloth, iii + 388 pages, 5¹/₄ x 8¹/₂. Chemical Publishing Company, New York, N. Y., 1938. Price, \$3.50.

This book is a comprehensive summary of the available literature on the toxicity of the organic solvents used in the industries. It covers the entire field of organic solvents including hydrocarbons chloro compounds, alcohols, esters, ketones, cyclohexane derivatives, glycols and such other solvents as carbon bisulfide, pyridine and ethyl ether. The extent of the toxicological problems for each solvent is discussed and solutions for these problems are suggested. The book should serve as an aid to investigators working in this field.—A. G. D.