

However, this reviewer is of the opinion that many chemists may find the author's detailed discussions of a long succession of now-outdated mechanisms a trifle tedious. There will be a tendency to move rapidly through the first seven chapters of the book which deal primarily with the history of paraffin oxidation, and focus attention on Chapter VIII, which is an excellent evaluation of contemporary ideas on the mechanism for paraffinic systems.

In comparison to the paraffins, relatively little work has been done on the oxidation of olefinic hydrocarbons, and these studies are covered in Chapter IX. There follows a short chapter bringing together the small amount of data available on the oxidation of naphthenic and aromatic hydrocarbons. The final chapter is devoted to problems of controlling hydrocarbon oxidation reactions, a subject of vital interest to chemists in the petrochemical field.

This reviewer would like to commend Professor Shtern for a work of high scientific scholarship, presented in general in a very lucid manner. The treatise will be of great value to anyone interested in the general field of slow hydrocarbon oxidation.

The text is well printed and relatively free of significant errors.

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Methods of Quantitative Inorganic Analysis. An Encyclopedia of Gravimetric, Titrimetric and Colorimetric Methods. By KAZUNOBU KODAMA, Nagoya Municipal Industrial Research Institute, Nagoya, Japan. Interscience Publishers, John Wiley and Sons, Inc., 605 Third Ave., New York 16, N. Y. 1963. xiv + 507 pp. 19.5 × 25.5 cm. Price, \$22.00.

Faithful to its title this book is encyclopedic rather than critically selective. The author's aim has been to "collect all published methods in the field of inorganic gravimetric, titrimetric, and colorimetric analysis" up to about the end of 1957. The nearly six-year hiatus between the most recent literature citations and the publication date was, in the author's words "caused by the work of checking and correction."

The book, printed in large, double-column format, comprises three parts. Part I, "General Considerations" (44 pp.), contains brief discussions of general analytical technique, electrolytic deposition, the principles of titrimetry, and the preparation of standard titrant solutions, and one page on general references to optical methods. Part II is devoted wholly (about 100 pp.) to "Organic Reagents in Inorganic Analysis," and it also includes a brief discussion of ion-exchange resins. Part III on "Determination of Elements" is really the *raison d'être* of the book. A separate chapter is devoted to each element (or very similar group of elements), the arrangement for the metallic elements being according to the classical hydrogen sulfide separation scheme. In each case the treatment follows the pattern: attack of sample, separation, and determination. The imperative voice is used, in conjunction with liberal employment of easily understood abbreviations, to very succinctly describe procedures in detail. All of the stable elements are treated, with the exception of oxygen.

The conciseness of the treatment, and the comprehensive literature coverage (up to the end of 1957), are exemplified by the fact that the chapter on iron occupies only nine pages, and yet there are 96 references to the colorimetric determination of iron plus 85 additional references to other methods. As a rough estimate, the total number of literature references must be upwards of 10,000.

The treatment is restricted to the classical gravimetric and titrimetric methods, and, aside from spectrophotometry, nephelometry, and flame photometry, physical methods are not included. Only titrimetric methods based on visual end-point detection are described. One can appreciate that the author had to restrict the scope of the treatment in order to complete this tremendous task. Nonetheless, potentiometric end-point detection surely has become "classical," and because methods based on it are not considered, some of the best titrimetric procedures for determining the transition metals have been omitted.

However, this is only a minor flaw in a work which is truly remarkable for the vast amount of information it presents in so relatively few pages.

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BOOKS RECEIVED, November 1964

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- WOLFGANG PFLEIDERER and EDWARD C. TAYLOR. "Pteridine Chemistry. Proceedings of the Third International Symposium held at the Institut für Organische Chemie der Technischen Hochschule Stuttgart, September 1962." The Macmillan Co., 60 Fifth Ave., New York, N. Y. 1964. 535 pp. \$15.00.