BOOK NOTICES AND REVIEWS.

Studies on Oxidation Reduction IX: A Potentiometric and Spectrophotometric Study of Meriquinones on the p-Phenylene Diamine and the Benzidine Series. By W. Mansfield Clark, Chief of the Division of Chemistry, Barnett Cohen, Chemist and H. D. Gibbs, Senior Chemist, Hygienic Laboratory, U. S. Public Health Service, Treasury Department. Being Supplement to Number 54 of the Public Health Reports.

A brief abstract by Dr. Mansfield Clark states:

This is the ninth of a series of papers dealing with the exchange of electrons between different forms, the so-called reduced and the so-called oxidized forms, of organic compounds. In the present study measurements were made with members of the para phenylene diamine and the benzidine series. Such compounds, when partially oxidized, give brilliant colored products (called meriquinones), resulting from an extraordinary type of union between the reduced and the oxidized forms.

These colored products are used in a variety of biochemical tests and the purpose of the paper was to define quantitatively the conditions under which biological solutions can force the electron exchange to the degree necessary to reveal the color. By means of electrometric measurements the required potential was determined in each instance. Also the strength of each compound, as a base, was determined. The results harmonized with a rationally developed equation. This equation was found to lead to certain consequences which were roughly confirmed by spectrophotometric measurements.

Two practical conclusions were reached. The first is, that the complicated nature of the color production has been quantitatively outlined for the first time and, by means of the methods described, it should be possible for the organic chemist to solve many of the difficulties encountered. The second is, that these systems, which hitherto have been repeatedly studied by empirical methods in an effort to improve the biochemical tests in which they are used, should be rejected as too complicated for practical use.

Lehrbuch der Physiologischen Chemie, unter Mitwirkung von Prof. S. G. Hedin in Upsala, Prof. J. E. Johansson in Stockholm und Prof. T. Thunberg in Lund, herausgegeben von Olof Hammarsten, ehemal. Professor der Medizinischen und Physiologischen Chemie an der Universität Upsala. 11 te völlig umgearbitete Auflage. Lex. 835 pp. MK. 29.40. Verlag von J. F. Bergmann, München.

Just off the press is the 11th edition of this masterwork. Olof Hammarsten is unquestionably the master of Physiological Chemistry and also the nestor of Biochemistry, being born in 1841. Truly no one but a descendant of the sturdy and hardy norsemen would undertake the revision of a book at the age of eighty-five. We all owe him a great debt of gratitude for his painstaking work for so many years.

Workers in Biochemistry are to be congratulated on the publication of the new—the eleventh—edition of Hammarsten. Among the 18 chapters I will mention the following: II, The Proteins; III, The Carbohydrates (Hedin); V, The Blood; VII, The Liver; IX, The Digestion (Hedin); XIII, The Organs of Generation (Hedin); XIV, The Milk; XV, The Urine; XVII, The Respiration and Oxidation (Thunberg); XVIII, The Metabolism (Johansson).

The last chapter has been completely rewritten by Prof. J. E. Johansson of the University of Stockholm, who presents entirely new views on Metabolism. The Chapter is subdivided into Foods, Malt Beverages, Wines and Spirits and Foods as carriers of Vitamins.

Chapter XV, on Urine, is an excellent treatise of 131 pages. It is subdivided into: Physical Properties, Organic Physiological Constituents (64 pages), Inorganic Constituents, Quantitative Analysis, Casual Urinary Constituents, Pathological Constituents, Sugar and Urinary Sediments and Calculi. This chapter alone is worth the price of the entire book.

A chapter of Additions, bringing the work up-to-date and a detailed Author's Index and Subject Index, conclude this masterwork. The study of "Hammarsten" is not only a necessity for the physiological and bio-chemist, but also to the scientific pharmacist who takes an interest in his profession.

May this book remain the "masterwork" and let us hope that Prof. Hammarsten will live to see the twelfth edition.—OTTO RAUBENHEIMER, Ph.M.

Die Praxis des Organischen Chemikers. Von Dr. L. Gattermann, 19, vollständig neu bearbeitete Auflage von Dr. Heinrich Wieland. Octavo, 379 pp. mit 52 Abbildungen in Text.

Cloth. Mk. 15, Walter de Gruyter & Co., Berlin W. 10, Genthiner Str. 38.

When Gattermann, at that time Professor of Chemistry, University of Heidelberg, the untiring worker in organic chemistry, for instance on alkylene phenol ethers, diazo compounds, sulphination and thio-anilides, published the first edition of this work in 1894, he never realized that the book would live for over 30 years. The Practical Methods of Organic Chemistry from the very beginning were a success. This laboratory manual of organic chemistry became a leading textbook not only in Germany but throughout the world.

The present, 19th edition by Dr. Heinrich Wieland of the University Freiburg in Breisgau is a further improvement over previous editions. The excellent book is divided into 3 Parts: A, General Rules; B, Organic Analytical Methods; C, Organic Preparations. Part A and B have been condensed to 73 pages and more space is devoted to Part C, which now consists of 12 subdivisions. The book is fully illustrated with 52 figures, 34 in Part A, 6 in Part B and 12 in Part C, which greatly helps to explain the text. The Index comprises 6 double-column pages. The excellent work is well printed and bound so as to stand usage and sometimes rough usage in the laboratory. We wish Gattermann-Wieland the continued success and hope that it will become better known in pharmaceutical-chemical laboratories and among graduate students in the United States.

Prof. Dr. H. Röttger's *Lehrbuch der Nahrungsmittelchemie.* Herqusgegeben von Prof. Dr. E. Spaeth, Director der staatl. Untersuchungsanstalt für Nahrungs- und Genussmittel in Erlangen und Dr. A. Grohmann, Prov. Oberchemiker, Stellv. d. Direktors am Chem. Untersuchungsamt für Rheinhessen in Mainz, 5 neubeurbestate Auflage. I. Band. Octavo. 1028 pp. MR. 42—Verlag von Johann Ambrosius Barth, Solomonstr. 18 B. Leipzig.

Prof. Dr. H. Röttger, director of the Food Laboratory in Würzburg published the first edition of his work in May 1894, followed by the second in October 1903 and the third in January 1907. The last is in the library of the referee and consists of a single volume of 901 pages. This work before us is the fifth edition in two volumes, the first one of which is just off the press and contains 1029 pages with 26 illustrations and colored plates of mushrooms and fungi, a supplement to a Bulletin from the Department of Health.

The subject matter of Vol. I is divided into Nourishment and Foods. The former is properly subdivided into Food-Stuffs as Proteins, Carbohydrates and Fats, Digestion, Absorption, Animal Heat and Metabolism. The second part of the book (Foods) is divided into I. Animal Foods: Meat, Eggs, Caviar, Milk, Dairy Products and Animal Fats. II. Plant Foods: Cereals, Leguminous Foods, Flour, Bread, Starch and Infant Foods, Vegetables, Fruits, Conserves, Fruit Syrups and Jellies, Sugar, Saccharin, Vegetable Oils and Fats.

As an example of the exact and adequate treatment of the different chapters, the referee begs to point out the one on Honey. This comprises 34 pages and contains Definition, Composition, Adulteration, Artificial Honey, Analysis of Bee Honey, Analysis of Artificial Honey, Standards for Bee Honey, Standards for Artificial Honey and Court Decisions. Most certainly the authors have made this chapter, as well as all the others, as complete as possible.

The book abounds in bibliographic references, both in the text as well as in the form of foot-notes. The "Court Decisions" at the end of the different chapters are quite an advantage in a work of this kind. "Röttger" is not only a textbook but also a practical handbook and a work of reference. The methods of analysis selected are the very best and can be thoroughly depended upon. As an example of the up-to-dateness of the book I might point out the Table of Vitamin Content of Fats, Oils, Meat, Eggs and Milk on pp. 1021 and 1022, showing A, B and C Vitamin Content.

Without question, this work should form an indispensable member of the libraries of chemists and pharmacists engaged in Food Analysis and also of College libraries. We wish the work all the success it deserves.

OTTO RAUBENHEIMER, Ph.M.

Sir James Colquohoun Irvine was awarded the Willard Gibbs medal for 1926 by the Chicago Section of the American Chemical Society on September 17th.

Sir James gave an address on "Progress in the Structure Study of Carbohydrates." He is Principal and Vice-Chancellor of the University of St. Andrews, Edinburg, Scotland. His recent work has been acknowledged as a classic in carbohydrate chemistry.