BOOK REVIEWS

Methods of Quantitative Micro-Analysis. Second Edition. Collected and Edited by R. F. MILTON, Ph.D., B.Sc., F.R.I.C. and W. A. WATERS, M.S., Sc.D., Ph.D., F.R.I.C., F.R.S. St. Martin's Press, Inc., Publishers, 103 Park Avenue, New York 17, N.Y. 1955. xi + 742 pp. 15.5 × 23.5 cm. Price, $15.00.

The progress in the field of microchemical techniques during the last few years, caused by the increased need for such procedures in nuclear reaction problems, is so rapid that the analytical chemists await any new text with great interest. The demand for text books on microanalysis in Europe must be exceptionally great in order to explain a second edition of "Methods of Quantitative Microanalysis" after the short period of six years.

This edition covers in 8 chapters the following topics: gravimetric apparatus and general microchemical techniques; microanalysis of organic compounds; volumetric analysis; colorimetric analysis; electrochemical methods; gasometric methods; chromatographic analysis and biological methods of microanalysis.

The last two chapters can be easily recognized as additions because only here working techniques developed after 1948 are considered and described more in detail. It is unfortunate that the other chapters have not been brought up to date. Only the tables with the summaries of procedures show a few literature references which appeared later than 1950.

The primary purpose of a book of this type is to create some interest in the field. The very broad selection of chapters, however, does not permit in the small space more than just to mention a few examples. This is not a handbook on microchemical techniques and, therefore, the teaching profession should benefit mostly by the carefully written book. Print and general appearance are of highest quality; special credit must be given to the uniformity and clarity of the illustrations, which are rarely found in similar books.

6 WINDSOR CIRCLE
SPRINGFIELD, DEL. CO. HERBERT K. ALBER
PENNSYLVANIA

The Roger Adams Symposium. Papers Presented at a Symposium in Honor of Roger Adams at the University of Illinois, September 3 and 4, 1954. Contributors: WALLACE R. BRODE, JOHN R. JOHNSON, SAMUEL M. MCELVAIN, RALPH L. SHRINER, WENDELL M. STANLEY and ERNEST H. VOLWILER. John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N.Y. 1955. ix + 140 pp. 15 × 23.5 cm. Price, $3.75.

This book consists of scientific papers presented at the Symposium honoring Professor Roger Adams, who retired as chairman of the Department of Chemistry at the University of Illinois, September 1, 1954, after service in that department since 1916. The presentation of scientific papers seems a fitting tribute to a man whose long career has been so characterized by devotion to chemical research.

In the introductory comments by Ernest H. Volwiler, President, Abbott Laboratories, the scope of Professor Adams' research interests and the originality of his thinking are emphasized. It seems appropriate to mention that the range of subjects covered by the papers in this book, presented by former students of Professor Adams, is a convincing testimonial to these characteristics of the man. Other comments of Dr. Volwiler are certain to evoke nostalgia in the host of former Illinois students; for example, the famous query, "Well, what's new?".

The first paper, "Steric Effects in Dyes," is by Wallace R. Brode, Associate Director, National Bureau of Standards. There is discussed the experimental evidence of steric inhibition of resonance in a wide variety of dyes, including *ortho*-substituted benzenes, various types of azo compounds, and several types of alkenes. There are also described compounds which change from one geometric isomer to the other as a result of irradiation, dyes which transmit the energy of light to the material dyed, and studies on the theory of dyeing.

The second paper, "The Structure of Gliotoxin," is by John R. Johnson, Todd Professor of Chemistry, Cornell University. There is described the work carried out during 15 years by Professor Johnson and some 15 collaborators on this antibiotic from the wood fungus, *Gliocladium fimbriatum*, whose formula is $C_{13}H_{14}N_2O_4S_2$. Although there remain a few uncertain structural features a most probable formula containing five rings is presented.

In the third paper, "The Structure of Nepetalic Acid," by Samuel M. McElvain, Professor of Chemistry, University of Wisconsin, there are described the investigations of the structure of the active principle in catnip oil, which is so attractive to members of the cat family. In addition to the degradations leading to the establishment of the bicyclic lactol formula, there are also described recent investigations of the stereochemistry of this molecule.

The fourth paper, by Ralph L. Shriner, Head of the Department of Chemistry, State University of Iowa, is devoted to the "Chemistry of Flavylium Salts." There are discussed the physical structure as well as the chemical reactions of these compounds. The reactions are shown to be "consistent with the concept of a highly reactive cation, a resonance hybrid, combining with an electron donor reagent."

The final paper, by Nobel Laureate Wendell M. Stanley, Professor of Biochemistry and Director of the Virus Laboratory, University of California, Berkeley, is entitled "Some Chemical Studies on Viruses." Professor Stanley outlines the fascinating development of the thinking of biochemists which eventually led to the concept that a virus is not some special odd sort of bacteria, but is rather a discrete chemical molecule which "can carry within its own structure all that is necessary to predetermine reproduction." This places the virus in the position of representing "so gradual a transition from the living to the non-living world that the boundary line between the two is doubtful and perhaps nonexistent." These characteristics have placed viruses largely in the area of investigation of the biochemist, and many of these investigations are outlined by Professor Stanley.

As indicated by the above comments, this book contains papers which represent surveys in areas of interest to large numbers of chemists. It is highly recommended for their attention.

DEPARTMENT OF CHEMISTRY AND
CHEMICAL ENGINEERING JAMES CASON
UNIVERSITY OF CALIFORNIA
BERKELEY 4, CALIFORNIA

Annual Review of Biochemistry. Volume 24. By J. MURRAY LUCK, Editor, Stanford University, HUBERT S. LORING, Associate Editor, Stanford University, and GORDON MACKINNEY, Associate Editor, University of California. Annual Reviews, Inc., Stanford, California. 1955. xvi + 805 pp. 17 × 23 cm. Price, $7.00.

It has been customary to greet each volume of the Annual Review of Biochemistry with expressions of approval, and surely the 24th volume, which now makes its appearance, must be welcomed with no less. The phenomenal development of biochemistry is well portrayed in the successive issues of this series, and should furnish to some future historian of science a panoramic view of one of the great intellectual achievements of the twentieth century. The difficulty of the task which the contributing authors to this monumental series must face in describing on a relatively limited canvas the accomplishments of the preceding year can be best appreciated only by those who have essayed it. The gratitude of the scientific public is due them.

Yet it must be stated that this series, despite its many virtues, possesses some defects inherent perhaps in the original intent. It may be accepted that no scientific summary possesses coherence without perspective and development, and when coherence is lacking so too is grace of expression. The nearly unavoidable restriction to little