

NEW BOOKS

Organic Analysis, Vol. 2.

JOHN MITCHELL, JR., I. M. KOLTHOFF, E. S. PROSKAUER, AND A. WEISSBERGER, editorial board. VIII + 372 pp. Interscience Publishers, Inc., 250 Fifth Ave., New York 1, N. Y. 1954. \$8.50. Reviewed by F. A. GUNTHER, University of California Citrus Experiment Station, Riverside, Calif.

As stated in the preface of Vol. 1, the *Organic Analysis* series has been designed to consolidate current knowledge of quantitative organic (non-elemental) analysis, to evaluate critically the many analytical procedures represented, and to provide the practicing chemist with a reliable survey of important methods. These objectives have in general been followed in Vol. 2.

The subjects covered in this second volume are:

1. "Microdetermination of Carboxyl Groups (Neutralization Equivalent)" by Al Steyermark (18 pp.).
2. "Determination of Esters" by R. T. Hall and W. E. Shaefer (51 pp.).
3. "Determination of Nitro, Nitroso, and Nitrate Groups" by W. W. Becker and W. E. Shaefer (52 pp.).
4. "Applications of Lithium Aluminum Hydride to Organic Analysis" by Takeru Higuchi (44 pp.).
5. "Coulometric Methods" by W. Donald Cooke (25 pp.).
6. "Application of Polarography to Organic Analysis" by Philip J. Elving (42 pp.).
7. "Methods Based on Reaction Rate" by T. S. Lee (16 pp.).
8. "Phase Solubility Analysis" by W. J. Mader (22 pp.).
9. "Countercurrent Distribution" by James R. Weisinger (50 pp.).
10. An excellent subject index for both volumes.

Some of the present chapters are not nearly so critically helpful as were those in the preceding volume, although most of the authors do attempt to be helpful in indicating advantages and limitations when choices of methods are presented. Especially useful in this regard are the chapters on esters, nitro and related groups, polarography, reaction rates, and phase solubility. Despite the fact that excellent reviews of the methodology of coulometry and polarography have recently appeared elsewhere, these two exceptionally well-designed chap-

ters should be required reading for interested persons. The chapter on lithium aluminum hydride is a welcome addition to any analytical library.

The book is attractively printed and easy to read, but a few typographical and other errors were noticed in passing: erlenmeyer for Erlenmeyer (page 11), *Sci. for Series* (page 15), no literature reference to Unterzaucher (page 167), the repetition of journal names in consecutive references (page 167), and pyrex (page 321). One wonders why there was no mention of the well-known N-1-naphthylethylenediamine method for reduced aromatic nitro groups (pages 85 ff.); one could also wonder at the analytical contribution afforded by section VII in chapter 9. In general, the published literature is well covered into 1953.

This book is a "must" for all aggressive analytical chemists, including those working with agricultural problems. Future volumes will be eagerly awaited.

Antiseptics, Disinfectants, Fungicides, and Chemical and Physical Sterilization

GEORGE F. REDDISH, Editor. 841 pages. Lea & Febiger, Philadelphia, Pa. 1954. \$15. Reviewed by H. M. POWELL, Eli Lilly & Co.

Man's combat against the bacteria by means of chemical and physical treatment of one sort or another has been a fascinating subject documented by countless publications over the past seventy-five years. The zest of the bacteriologist in the antiseptic field for killing the undesirable bacterium and doing this quickly is more than shared by the layman who likely would, if he could, eradicate all "germs" both undesirable and desirable. Dr. George F. Reddish, with the help of twenty-nine contributing authors, has brought together, correlated, and evaluated a mass of pertinent information in this new book on antiseptics, etc.

The scope of the book is indicated by its eight parts: introduction; methods, of testing; antiseptics; disinfectants, fungistats and fungicides, preservatives; chemical and physical sterilization; and pasteurization.

The section on antiseptics is subdivided on the bases of both chemical families (mercurials, alcohols, and so forth) and uses (surgical antiseptics, antiseptic powders, virucidal agents, and so forth). The important disinfectants are discussed in their respective classes, such as phenol-

ics, chlorine compounds, quaternaries, pine oil, and oxidizing compounds.

Fungicides and preservatives are likewise considered separately in their respective categories, as are sterilization and pasteurization.

It is notorious that the methods of assay of antimicrobial agents of the classes reviewed in this book are myriad in number. There is usually little doubt about the apparent results as recorded in any test. Just what any set of results "proves" is usually the nub of contention. Different experimenters are impressed by different showings, and an experimenter with a preconceived notion can usually find proof a-plenty in his experiments.

At the bottom of many "germicide" tests there is frequently a question that is difficult to answer with certainty, namely are the medicated microbes really dead or are they inhibited from growing, and may they be resurrected by special methods? "Killing" bacteria with antimicrobial agents is of course beset with some misgivings not connected with killing larger living organisms. Furthermore when "used as directed", how much good does the antimicrobial agent accomplish? Do the microbes indeed need to be killed in some instances to effect a good result?

Dr. Reddish has assembled a large amount of information on these and other pertinent questions in the early sections of his book.

Details of tests and methods as well as comprehensive treatment of terminology are included. Also the prevailing drugs and chemicals (with the exception of sulfa drugs and antibiotics) used over the years as antimicrobial agents are discussed in sequence by authors of experience who are quite familiar with individual substances.

The latter sections of the Reddish book deal with U.S.P. sterility tests of liquids and solids, the processing of canned foods, radiation sterilization, and pasteurization.

Much of the discourse, on radiation sterilization especially, relates to work reported almost entirely in the last five or six years, and this will be of interest to many readers as the newest method of accomplishing sterilization.

The Reddish book will prove a useful reference manual and a time saver to many people having diverse interests in the antimicrobial field. These would include physicians, bacteriologists, sanitarians, public health workers, and workers in pharmaceutical and food processing industries.