

**Acknowledgment.**—The authors are greatly indebted to Col. S. S. Bhatnagar, St. Xavier's College, Bombay, for generously supplying us the material used in the present studies, and to Professor L. F. Fieser, Harvard University, for permitting us to publish the results obtained while one

of us (K. N.) was working in his laboratory on pristimerin.

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RECEIVED APRIL 26, 1955

## BOOK REVIEWS

**Bibliography of Ozone Technology. Volume 1. Analytical Procedures and Patent Index.** By CLARK E. THORP, Manager, Department of Chemistry and Chemical Engineering, Armour Research Foundation of Illinois Institute of Technology, Technology Center, Chicago 16, Illinois. Armour Research Foundation, 10 West 35th Street, Chicago 16, Illinois. 1954. 209 pp. 14.5 × 22.5 cm. Price, \$5.25.

This book is the first of a proposed series dealing with the chemistry of ozone. The stated object of the author is to make available to others the large bibliography in the rapidly expanding field of ozone chemistry which he and his associates have accumulated. The first part of the volume lists two hundred and sixty-six references dealing with analytical methods for gaseous ozone. Following most of these is a brief statement indicating the sort of information to be found in the reference. Factual information is sometimes given but generally no systematic attempt has been made to abstract the articles. Likewise no critical evaluations are included. The list goes back over one hundred years and the author has striven to include some reference to all published methods of ozone analysis regardless of its vintage.

Part two lists, without comment, nine hundred and eighty patents related to ozone. These are separated into fifty-two groups, such as Air Conditioning, Generators, Ozone-resistant Materials, and the like. The author believes that the list up to 1954 is at least 90% complete but warns the reader that other pertinent patents may exist under obscure classifications. The volume index is categorized according to Author, Subject, Patentee and Patent Number. This publication should prove to be highly useful to everyone who is concerned with research involving ozone.

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**Glutathione.** Proceedings of the Symposium Held at Ridgefield, Connecticut, November, 1953. By S. COLOWICK, A. LAZAROW, E. RACKER, D. R. SCHWARZ, E. STADTMAN and H. WAELSCH (Editors). Academic Press, Inc., Publishers, 125 East 23rd Street, New York 10, N. Y. 1954. x + 341 pp. 16 × 23.5 cm. Price, \$7.50.

This book is a collection of 29 papers which were presented at the symposium. As a very worthwhile feature, the book also includes transcripts of discussions of the papers at the symposium. All angles of the subject of Glutathione are covered: Properties and Organic Chemistry, The Methods for Detection and Assay of Glutathione and Sulfhydryl Compounds, Biochemical Mechanisms, and Physiological Action and Clinical Aspects. Approximately 1000 literature citations are included. With nearly 60 contributors, the quality and clarity of presentation of the material is not uniform, but the over-all impression is one of excellence.

The editors and publishers are to be commended for the inclusion of excellent indices and for the fine workmanship

which went into preparation of the book. Few typographical errors were noted, and with the exception of two transposed figures (p. 63 and 68) the errors cause no confusion.

This book will be invaluable for anyone interested in glutathione, whether he is actively working in the field or merely needs a bit of information for use in some other field.

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**Einführung in die Ultrarotspektroskopie.** By WERNER BRÜGEL, Physiker in der Badischen Anilin- und Soda-Fabrik AG., Ludwigshafen a. Rh. Dietrich Steinkopff Verlag, 16, Darmstadt, Holzhof-Allee 35, Germany. 1954. xii + 366 pp. 15.5 × 22 cm. Price, Brosch., DM 46.-, Geb. DM, 49.-.

Before 1940 infrared spectroscopy was a specialty practiced by a few devotees on instruments designed and constructed in their own laboratories. It has since expanded so enormously that there are probably in the neighborhood of 2000 infrared spectrometers in use today, and it has become an important adjunct to research in all branches of chemistry as well as a useful analytical tool for both the laboratory and the factory. Nevertheless, since the excellent early work by Schaeffer and Matossi, no adequate introduction to the theory and practice of the field which takes into account the newer developments has been published. Dr. Brügel has attempted to fill the need for such an introduction, primarily directed to the "practical" spectroscopist, and whereas this reviewer does not always agree with the author as regards the selection and balance of material his work is, by and large, successful.

The first quarter of the book is devoted to the theory of rotational spectra, rotation-vibration spectra, molecular vibrations and their symmetry properties. As the author acknowledges, this section follows Professor Herzberg's book very closely and has little relation to the remainder of this volume. A discussion of molecular vibrations in terms which might be applicable to the consideration of the spectra of larger molecules is not given at all while much space is devoted to the consideration of fine structure in gas spectra.

The next fifty pages cover light sources, prism monochromator design and calibration, infrared detectors, and general considerations regarding various types of infrared spectrometers and their use. It is curious that the diffraction grating is dismissed in a paragraph as important only for fine structure studies and not for "practical" spectroscopy. In a later section the author stresses the need for the development of techniques to make possible a quantitative "intensity" spectroscopy to parallel the well developed "frequency" spectroscopy; since one obstacle to achieving this goal is inadequate resolution it seems likely that the grating instrument will take its place in the analytical laboratory before long.

Another thirty-five pages are devoted to a description of most of the commercial instruments and accessories produced in Germany, Britain and America. This is followed