to the completeness with which it covers the literature. For the new edition of the thorium volume, coverage is stated to be complete to the end of 1949, and to cover the important literature to 1954. Caution must therefore be used in depending on the volume past 1949, and it should be kept in mind that the material released at the time of the Geneva Conference on the Peaceful Uses of Atomic Energy, August, 1955, was not available for this volume. It must also be pointed out, that material appearing in the volume is often based on abstracts, not the full original publication, and therefore introduces other limitations. This is true, for example, of a considerable portion of the work cited from U. S. Atomic Energy Commission sources. If only because of these considerations, the occasional critical judgment on conflicting data or interpretations which creeps into the work should be disregarded, without influencing the value of the volume for its main purpose, that of providing leads to relevant literature.

Like the other volumes of the series, System No. 44 will occupy a valued place on the shelves of every general chemical library, and an especially treasured one in many special-purpose laboratories. The price would seem to place it out of the reach of the ordinary chemist.

CHEMISTRY DIVISION
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Review of Photosynthesis and Related Processes. Volume II, Part 2. **Kinetics of Photosynthesis** (continued), Addenda to Vol. I and Vol. II, Part 1. By EUGENE I. RABINOWITCH, Research Professor, University of Illinois, Formerly Research Associate, Solar Energy Research Project, Massachusetts Institute of Technology. Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1956. xvi + pp. 1211–2088. 16.5 × 23.5 cm. Price, $18.50.

One always experiences a little regret in finishing the reading of any good book, whether it be fiction or a well written scientific monograph. After coming to the end of two thousand fascinating pages which have appeared over a ten year period, it comes as something of a shock to realize that Rabinowitch is not currently preparing another volume of Photosynthesis. Let us hope that he can be persuaded to bring us up to date in a few years with a general addendum to the present work.

About the first third of the present book consists of a critical discussion of induction phenomena and of the effects of temperature, intermittent illumination and the pigment factor upon the kinetics of photosynthesis *in vivo*. The remaining five hundred pages are devoted to material which has appeared since the publication of the first two volumes. The principal topics considered are, as follows: the Hill reaction and the photochemistry of chlorophyll *in vitro*—142 pages, the "path of carbon"—83 pages, and the structure of chloroplasts, the chemistry and spectroscopy of the plant pigments and the kinetics of photosynthesis—totaling 264 pages. The text concludes with an Epilogue in which the author admirably sums up the present status of our knowledge of photosynthesis: indicating, alike, major achievements and points of weakness. No reader of this book should omit the preface.

In orderliness of presentation, style of writing, editorial details and printing, the present volume is comparable to its two excellent predecessors. While the price of this book is regrettably high, no student of photosynthesis can afford to be without it.

DEPARTMENT OF CHEMISTRY
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Synthetic Methods of Organic Chemistry. An Annual Survey. Volume 10. By W. THEILHEIMER. Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1956. xvi + 746 pp. 17 × 23.5 cm. Price, $25.25.

The tenth annual survey by Theilheimer includes abstracts of procedures selected from papers published from 1953 through 1955. The abstracts concern new methods and improvements in known methods for synthesis of organic compounds. They contain enough information for an appraisal of the applicability of a type of synthesis or sequence of reactions: conditions, reagents and yields. The author's purpose is to furnish selected references as a guide to the literature, but although he specifically disclaims such intent, his descriptions are usually sufficiently detailed to enable a skilled experimenter to proceed with laboratory work. The book, like its predecessors, is very useful in suggesting methods to the practical organic chemist.

The alphabetical index is cumulative, covering volumes VI through X. Cross references in the body of the work are plentiful, and like the index include not only the present volume but also four preceeding it.

For more extensive reviews of recent volumes in the series, see This JOURNAL, **76**, 317(1954); **77**, 3425, 5453 (1955).

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Experimental Thermochemistry. Measurement of Heats of Reaction. Prepared under the International Union of Pure and Applied Chemistry by the Subcommission on Experimental Thermochemistry. Edited by FREDERICK D. ROSSINI, Carnegie Institute of Technology, Pittsburgh, Pennsylvania. Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, N. Y. 1956. xv + 326 pp. 16 × 23.5 cm. Price, $7.80.

This book was undertaken in order to place before the scientific and technical world the best knowledge relative to experimental thermochemistry and the measurements of heats of chemical reactions. In the reviewer's opinion the objective has now been achieved remarkably well under the capable editorship of Dr. Frederick D. Rossini.

The book contains fourteen chapters. Four of these, written by Dr. Rossini himself, discuss: General Principles of Modern Thermochemistry, Units of Energy and Fundamental Constants, Calibration of Calorimeters for Reactions in a Flame at Constant Pressure, and Assignment of Uncertainties to Thermochemical Data. The remaining ten chapters represent the work of twelve other outstanding thermochemists, five Americans and seven Europeans. Eight of these chapters deal in careful detail with: Calibration of Calorimeters for Reactions in a Bomb at Constant Volume, Standard States and Corrections for Combustions in a Bomb at Constant Volume, Physicochemical Standards in Thermochemistry, and the specific problems involved in burning various compounds containing carbon, hydrogen, oxygen, nitrogen, sulfur, chlorine, bromine and iodine. There are also two chapters which discuss Thermochemistry of Reactions Other than Combustion and The Microcalorimetry of Slow Phenomena.

These contributions from thirteen authorities have been coördinated extremely well, and the treatments of the various topics are excellent. Consequently the book should become essential reading for all serious workers in the field of calorimetry. Its influence will greatly improve the quality of future experimental studies and thereby should facilitate the development of a large body of consistent, accurate thermochemical data, which is at present the most urgent need of chemical thermodynamics.

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Electromagnetically Enriched Isotopes and Mass Spectroetry. Proceedings of the Conference held in the Cockcroft Hall, Harwell, 13–16 September, 1955. Sponsored by the Atomic Energy Research Establishment, Harwell. Edited by M. L. SMITH. Academic Press, Inc., Publishers, 125 East 23rd Street, New York 10, New York. xvi + 272 pp. 14.5 × 22 cm. Price, $8.00.

As indicated in its complete title, the volume under review consists of the papers, thirty in number, presented at a conference on the separation and utilization of isotopes. Participants at the conference represented the following countries: Belgium, Canada, Denmark, Egypt, France, Germany, Holland, Sweden, U. S. A., Yugoslavia and the United Kingdom. The specific subjects with which the papers are concerned are: Ion Sources (5 papers), Collector Problems (3 papers), Chemical Aspects and Target Prepara-