Book Reviews*

Annual Reports in Organic Synthesis—1973. By R. B. MILLER (University of California, Davis) and L. S. HEGEDUS (Colorado State University). Academic Press, New York, N.Y. 1974. xiv + 423 pp. $12.00.

The latest volume in this useful series is 50% larger than last year's, but the price is only $1.00 more. One of the original authors has dropped out, to be replaced by a new one, L. S. Hegedus. This work continues to provide a means of current awareness of "reactions and methods which are new, synthetically useful, and reasonably general," and which appeared in a group of 47 primary chemistry journals during 1973. The emphasis is on visual display, with almost no text, which makes for quick comprehension at the expense of depth. However, yields and conditions are generally given; brief phrases describing scope often appear and, of course, the references. The authors state that the chapter on heterocyclic syntheses has been greatly expanded. This work remains a valuable service to organic chemists, and the recommendations for personal purchase made in reviews of earlier volumes are still valid.

Dictionary of Scientific and Technical Terms. Edited by D. N. LAPEDES. McGraw-Hill Book Co., New York, N.Y. 1974. xv + 1634 + 26 pp. $39.50.

An undertaking of this magnitude, which includes almost 100,000 definitions, is not a casual matter, nor one that can be handled adequately by one man. Accordingly, the publishers have assembled a group of 27 consulting editors and seven contributing editors covering a wide range of fundamental and applied science and technology; three of these editors are identified with chemistry.

The definitions are very succinct, out of necessity, and thus not always as enlightening as one might have hoped, although they are generally adequate and useful. Unfortunately, some are unnecessarily ambiguous, such as the entry for "amido": "Indicating the NH_2 radical when it is present in a molecule with the CO radical." Some definitions are simply wrong, such as the entry for "amidation": ". . . ; for example, in the laboratory benzyl reacts with methylamine to form *N*-methylbenzamide." The choice of what is listed and what not is, of course, somewhat subjective and cannot reasonably be expected to please everyone. However, a disappointingly large number of important chemical terms do not appear, of which some examples are listed here: nucleophile; antarafacial; Dean-Stark trap; CIDNP; isosbestic point. In other instances, scope and cross-referencing fall short: "chirality" and "handedness" are separate entries without cross referencing; "gas chromatography" is listed, but not vapor phase chromatography; "differential thermal analysis" is defined, but there is no entry for differential scanning calorimetry, and "Hammett acidity function" is defined, but not the Hammett equation or linear free energy relationship.

It does not seem that chemistry is as well served by this dictionary as it should be, although the dictionary may nevertheless be valuable to chemists wishing to know about terms relating to other fields (it is to be hoped that they are more accurate and more complete in scope). The definitions are augmented by a large number of illustrations in the margins.

Rodd's Chemistry of Carbon Compounds. Supplements to Volume II; Parts A and B, Parts C, D, and E. Edited by M. F. ANSELL (University of London). Elsevier Scientific Publishing Co., Amsterdam. 1974. Parts A and B: xvi + 424 pp, Dfl. 135 (about $51.90 U.S.). Parts C, D, and E: xiv + 317 pp, Dfl. 110 (about $42.30 U.S.).

These two books are supplements to Volume II, Alicyclic Compounds, of the Second Edition, which appeared in several parts over the period 1967–1971. It is a testimony to the rapid growth of the chemistry of alicyclic compounds that supplements should be required after so short a time. The use of supplements instead of a completely new edition is a new procedure for this series, necessitated by economics.

Parts A and B cover monocyclic compounds, from cyclopropanes to macrocyclics. An introductory chapter deals with pericyclic reactions and the advances in understanding them in the light of the Woodward-Hoffmann rules, which are summarized. Parts C, D, and E cover policyclic compounds, and this volume is thus heavily concerned with natural products and their biogenesis.

Each of the volumes has its own index, a welcome feature, and the great detail included in the indexes is a reflection of the general high quality characteristic of this valuable reference series.

Microencapsulation—Processes and Applications. By JAN E. VANDEGAER. Plenum Publishing Corp., New York, N.Y. 1974. x + 180 pp. $17.50.

An overall view of this book could be described as an excellent reference book for those firms, institutions, or persons interested in the basic knowledge of microencapsulation. Moreover, there are no process secrets or proprietary information given throughout the text. Persons skilled in the art and other interested persons could determine, with enough forethought and investigation, if any other processes or applications mentioned could apply to their chosen interest.

This book is the first of its kind to be published. Most information on microencapsulation is either proprietary or published in patent literature. Visionary work by Vandegaer in editing these papers at the proceedings of the American Chemical Society Symposium in Chicago, Illinois, August 1973, and publishing the condensed form is a major step in developing an underdeveloped technology.

Applications in commercial product areas such as pharmaceuticals, foods, flavors and fragrances, industrial and agricultural chemicals, plastics and resins, advertising liquid crystals, and many other industrial areas can profitably take advantage of the technology. This book has described a few of the industry applications areas which can be profitably serviced by microencapsulation.

There are, however, many others not touched upon, such as the graphics art, paper printing, and so forth, all of which are logical candidates to use this unique micropackaging technique.

From this book, it can be readily seen that it has accumulated considerable knowledge in microencapsulation processes and the development of capsule properties to meet the various technical product requirements. Additional research and development programs should generate a better understanding of the basic physical-chemical principles. Thus it will allow further expansion for this versatile technology in many new and exciting application areas.

In conclusion, I think this book needs a follow-up in a few years, in order to update this beginning text. As I see it, this book should be a Chapter I with a subsequent Chapter II, and possibly a Chapter III following in an appropriate time frame.

Robert G. Bayless, *Capsulated Systems, Inc.*

* Unsigned book reviews are by the Book Review Editor.