BOOK REVIEWS

Glossary of Organic Chemistry, Including Physical Organic Chemistry. By SAUL PATAI, The Hebrew University of Jerusalem. Interscience Division, John Wiley and Sons, Inc., 440 Park Avenue South, New York 16, N. Y. 1962. xiv + 227 pp. 16 × 23.5 cm. Price, $7.50.

This glossary was written especially for the non-specialists (or not yet specialists) in organic or physical organic chemistry in an attempt to provide a ready source of explanation of the technical jargon used by the specialists in these fields. In addition to numerous terms, *e.g.*, diastereoisomers, configuration, epimerization, axial and equatorial bonds, clathrates, rule of six, order of reaction, etc., there are also included in the book a large number of "Name Reactions" in organic chemistry as well as a select number of analytical and color tests. For references, there is a key list of review publications (Organic Reactions, Quarterly Reviews, etc.), general textbooks in organic and other fields of chemistry and various monographs.

The selection of terms for a glossary is obviously a difficult one unless one tries to be all-inclusive. The author states that the choice of material has been more or less a matter of personal preference and, in the case of the "Name Reaction," rather arbitrary. Terms such as enamine, desulfurization, hydroboration and ylid are missing. It is unfortunate that the explanation of the very first term, absolute configuration, is incorrect. There are other definitions which can be misleading or are not entirely correct.

A good deal of the language which is used to explain the various terms is the very same jargon which is the subject matter of a large part of the book. Many of these terms are not easily defined by a dictionary. A good up-to-date text book in organic or physical organic chemistry would be a better source of explanation for most of the expressions.

It is not clear from the author's statements just what governed his choice of "Name Reactions." It seems odd that for one who feels that the use of "Name Reactions" is very often confusing and generally deplorable, Dr. Patai would include such reactions as the Nencki and Freund reactions and omit the Wittig reaction and Birch reduction.

If the reader is encouraged to turn to other sources for adequate comprehension, then the book serves a useful purpose. The question of whether there is a need for a "middle man" is debatable.

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Nouveau Traité de Chimie Minérale. Tome V. Zinc-Cadmium-Mercure. Edited by PAUL PASCAL, Membre de l' Institut. Masson et Cie., 120, Boulevard Saint-Germain, Paris 6, France. 1962. xxxix + 966 pp. 17.5 × 25.5 cm. Price, broché, 170 NF.; cartonne toilé, 182 NF.

Nouveau Traité de Chimie Minérale. Tome VI. Bore-Aluminium-Gallium-Indium-Thallium. Edited by PAUL PASCAL, Membre de l' Institut. Masson et Cie., 120, Boulevard Saint-Germain, Paris 6, France. 1961. xxxix + 1039 pp. 17.5 × 25.5 cm. Price, broché, 160 NF.; cartonne toilé, 172 NF.

Reviewers of other volumes of this new edition of an interesting treatise[1] have adequately described the general virtues and defects of the series as a whole, along with occasional hints that the writing sometimes is more pleasant than profound. Actually, any generalization is difficult, for the individual authors vary widely in organizational skill, attention to details, and fundamental understanding. It seems unfortunate that only two authors of the present volumes have published research within the fields of their writing: J. Lamure on mercury oxyhalides and amidohalides, and Y. Trambouze (expert on Al–O catalysts) covering the whole chemistry of aluminum. The others evidently have depended solely upon what could be learned from the literature, often without benefit of the kind of reality which can be achieved by long and critical study; indeed one frequently encounters items which were not even accurately paraphrased from the original literature. Some large parts of each volume were written by the editor, heroically leaping into the breach with his eloquent and concise style, wherever more specialized authors were absent; and much of what he writes is surprisingly modern. However, such parts often show the largest concentration of errors of either understanding or detail: sometimes the text looks as though it were dictated but not read or rechecked in any other way, presumably for sheer lack of time.

Some of the many errors are amusing rather than damaging: thus on p. 1, Tome VI we find ionization potentials for Pb where Tl obviously is intended; on pp. 330–331 the confusion about the bond angles in B_5H_9 can be corrected by the reader; and on p. 656 the heading "FORMIATE D'ALUMININIUM" is not misleading. Various non-French names are repeatedly misspelled or gallicized: "Schoeffer" for Schaeffer, "Niedenzer et Davson" for Niedenzu et Dawson, "Muttertuis" for Muetterties, "Coats" for Coates, "Roschow" for Rochow, "Moeller et Therald" for Therald Moeller, and many others, often misspelled differently in the bibliography. Less happy are numerous malapropos literature references, such that the reader is led to something peripheral instead of the pertinent paper. For example, the erroneous reference to Stock and Blix (1901) as the discoverers of borazine ("borazole") is not only repeated from the earlier edition, but multiplied as one encounters the same compound in various other sections; the correct Stock and Pohland (1926) reference can be found, but only an expert would know that this was the real start of the subject. Or on p. 115 we find a glib misdirection concerning $(HNBCl)_3$, evidently inserted only for completeness in discussing B–Cl compounds; and then in a different section by another author, a fuller account is given.

There is indeed a pressing need for a convenient and comprehensive reference work on inorganic chemistry, such as probably could be written only by a very well organized army of specialized authors (under the direction of chemists who understand broad areas of the subject), and kept up to date by annual loose-leaf insertions and substitutions. The present work represents a noble effort to fill the need, in spite of the great difficulty of the task. It is not convenient as a reference-source because the indexes and tables of contents touch only main topics and because the reader must study much farther to be sure of getting the whole story in a dependable manner. What these volumes offer to French-reading chemists is a good place to begin reading about any specific inorganic topic, in order to develop the apperception needed for fuller understanding of reviews and original research papers. For such a study, indeed, even the many errors in the Traité have mnemonic value; by dramatic contrast, the truth may be more firmly remembered. The text also is useful to students who are learning to read chemical French, and for selections to be used in language examinations for Ph.D. candidates.

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(1) Earlier reviews in *J. Am. Chem. Soc.*, Tome I, D. Garvin, **79**, 506 (1957); **X**, N. F. Hall, **79**, 4570 (1957); **III**, R. Ward, **80**, 4438 (1958); **XIX**, R. V. Krumm, **81**, 758 (1959); **XI + XIV**, R. Ward, **82**, 4121 (1960); **XVI**, E. G. Rochow, **83**, 759 (1961); **XIII-2**, M. J. Sienko, **84**, 123 (1962); **XIII-1**, P. Giguère, **84**, 883 (1962).

Solid State Physics. Volume 13. Advances in Research and Applications. Edited by FREDERICK SEITZ, Department of Physics, University of Illinois, Urbana, Illinois, and DAVID TURNBULL, General Electric Research Laboratory, Schenectady, New York. Academic Press Inc., 111 Fifth Avenue, New York 3, N. Y. 1962. xv + 482 pp. 16 × 23.5 cm. Price, $14.50.

This series, appearing regularly since 1955, has become an essential part of the literature of the solid state. The careful editing, the generally high quality of the reviews and the excellence of the book production have made the "Seitzschrift" a model for similar "Advances."

The latest volume includes the following reports: "Vibration Spectra of Solids" (S. S. Mitra); "Behavior of Metals at High Temperatures and Pressures" (F. P. Bundy and H. M. Strong); "Dislocations in Lithium Fluoride Crystals" (J. J. Gilman and W. G. Johnston); "Electron Spin Resonance in Semiconductors" (G. W. Ludwig and H. H. Woodbury); "Formalisms of Band Theory" (E. I. Blount); "Chemical Bonding Inferred from Visible and Ultraviolet Absorption Spectra" (C. K. Jørgensen).

The article of Mitra is a fairly successful review of a difficult subject. He has chosen to present the most elementary notions in considerable detail (sometimes transcribing sections from elementary textbooks) but he has failed to give an adequate discussion of more difficult topics, such as the application of group theory to classification of crystal vibrations. For example, he promises to explain "finite space group analysis" but never really gets around to doing so. On the descriptive side, however, the review is extremely interesting, especially in its discussion of the controversy between Raman and Born on the interpretation of Raman spectra in crystals.