

Book reviews

Organic Phosphorus Compounds; edited by G.M. Kosolapoff and L. Maier, Wiley-Interscience, New York, N.Y., 1972. *Vol. 1*, xiii + 545 pages; *Vol. 2*, 508 pages; *Vol. 3*, 500 pages; *Vol. 4*, 531 pages; each volume \$29.95.

In 1950 G.M. Kosolapoff wrote a 376 page book called "Organophosphorus Compounds" which summarized very nicely our knowledge of this important area of chemistry. During the course of the next 20 years the field of organophosphorus chemistry underwent rapid growth and vast expansion, and the second edition of "Organic Phosphorus Compounds" has undergone an expansion of similar magnitude in order to bring us up to date. The present four volumes contain 13 of 21 planned chapters, a total of 2084 pages thus far. Over 10000 references are cited. Of necessity, this second edition has had to be a multiauthor effort. The authors, and especially the editors, are to be congratulated on a job very well done. The chemistry in each chapter is discussed concisely but exhaustively and with liberal use of many formulas and equations. Physical, spectroscopic and structural aspects are given thorough coverage. Of particular value are the tables at the end of each chapter which list individual compounds, physical and spectroscopic data and pertinent references, which in the case of some chapters occupy more pages than the textual material.

Volume 1 covers primary, secondary and tertiary phosphines (L. Maier), organophosphorus–metal compounds and di- and polyphosphines and their derivatives (L. Maier) and phosphine complexes with metals (G. Booth). Vol. 2 follows with chapters on phosphite, phosphonite and aminophosphine complexes (J.G. Verkade and K.J. Coskran) and quaternary phosphonium compounds (P. Beck). In Volume 3 are found discussions of phosphinealkylenes and other phosphorus ylides (H.J. Bestmann and R. Zimmermann), penta- and hexaorganophosphorus compounds (D. Hellwinkel) and tertiary phosphine oxides (H.R. Hays and D.J. Peterson). The subjects of tertiary phosphine sulfides, selenides and tellurides (L. Maier), halo- and pseudohalophosphines (M. Fild and R. Schmutzler), phosphonyl halides and pseudohalides and their sulfur and selenium analogs (M. Fild and R. Schmutzler), phosphonous acids and their derivatives (W.A. Frank) and phosphinous acids and their derivatives (L.A. Hamilton and P.S. Landis) are covered in Volume 4.

The received dates of the individual chapters range from July 1970 to October 1971. Allowing for the thorough editing effort which served to make these chapter uniform in style and organization, one may consider these volumes to be as up to date as possible.

The excellent, well-organized and thorough volumes, when complete, will give a broad and definitive treatment of organophosphorus chemistry and are a most welcome

addition to the monograph literature of organo-element chemistry. They will be of interest and of use not only to the organophosphorus specialist, but also to organometallic, organic and inorganic chemists.

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Advances in Organometallic Chemistry, Vol. 11; edited by F.G.A. Stone and R. West, Academic Press, New York – London, 1973, xi + 510 pages, \$27.00

Volume 11, like its predecessors in this excellent series, consists of invited or specially commissioned chapters covering a variety of topics in organometallic chemistry authored by acknowledged experts in the respective areas. Two articles deserve mention at the outset of this review due to their special nature. "Boranes in Organic Chemistry"; by H.C. Brown (18 pages, 67 references) is a concise overview of this important area of research and provides personal insight into factors which shaped and continue to move the author's career. The "scientific autobiography" of major figures in organometallic chemistry has become a fixture with this series and is in the reviewer's opinion one of its strongest points. "The Literature of Organo-Transition Metal Chemistry: 1971" by M.I. Bruce is an update of a similar article covering the period 1950–1970 which appeared in Volume 10 of the series. Textbooks, review articles, primary and abstracting journals and abstracts of conferences are included, along with an Appendix in which review articles are divided by topic. The Appendix has its own author index which is quite useful. In conjunction with its companion chapter in Volume 10 this article should be an invaluable aid in beginning a systematic literature search.

The other chapters included in this Volume are "Transition Metal–Isocyanide Complexes" by P.M. Treichel, "Insertion Reactions of Transition Metal–Carbon σ -Bonded Compounds I: Carbon Monoxide Insertion", by A. Wojcicki, (Part II, "Sulfur Dioxide Insertion" will appear in Volume 12), "Recent Advances in Organothallium Chemistry", by A. McKillop and E.C. Taylor, "The Radiochemistry of Organometallic Compounds" by D.R. Wiles, "Organometallic Complexes with Silicon–Transition Metal or Silicon–Carbon–Transition Metal Bonds", by C.S. Cundy, B.M. Kingston and M.F. Lappert, and "Preparation and Reactions of Organocobalt(III) Complexes," by J.M. Pratt and P.J. Craig. The articles are current, being liberally sprinkled with 1971 and 1972 references. Both the editors and the individual authors are to be commended for their diligence on this point. Tables and Figures are used well and the entire volume is quite readable. Cumulative lists of authors and titles for Volumes 1–11 are included and should be of moderate utility.