

Book reviews

Organometallic Compounds: Synthesis, Structure, and Theory; edited by Bernard L. Shapiro, Texas A&M University Press, 1983, xxvii + 481 pages, \$35.00.

This book is stated to be the first in an annual series of Proceedings of the Research Symposia sponsored by the Industry-University Cooperative Chemistry Program of the Department of Chemistry of Texas A&M University. The present volume provides accounts of the principal lectures of the first Symposium held in April 1983. The speed with which publication has been achieved is therefore to be commended.

The text is prepared by direct photo-reproduction from variable type-scripts. Although this is now not an uncommon practice, it is noted that the amount of material per page is very small: at a maximum 24 lines per page, with an average of 8–10 words per line.

From the list of compounds and principal authors which follows, it is clear that the articles are written with authority. They range from reviews, usually of work associated with the laboratory of the authors, to rather detailed papers, and occasionally to rather personalised accounts which probably are less appropriate to the printed page than to a lecture. (As an illustration of this verdict, I cite at random from a particular paper where, on page 227, we find the sentence "Well, it so happened that toluene was the acetylene that we had started out with, and while in some ways I would rather have done what he did and gotten his nice reaction, because it is obviously a very useful one, the behavior of toluene does not lack interest.")

The details are as follows. New Approaches to the Synthesis of Organometallic Compounds relevant to Catalysis, by F.G.A. Stone; Chemistry of Novel Transition Metal-Diene Complexes and their Application to Organic Synthesis, by A. Nakamura, H. Yasuda, K. Tatsumi, I. Noda, K. Mashima, M. Akita, and K. Nagasuna; Kinetics and Mechanism of reversible Insertion of Olefins and Acetylenes into early Transition Metal Hydride Bonds, by N.D. McGrady, C. McDade, and J.E. Bercaw; Synthesis and Reactions of a cationic bridging Methylidyne-Iron Complex, by C.P. Casey, P.J. Fagan, W.H. Miles, and S.R. Marder; Selective C₁ Chemistry using Ruthenium Carbonyl Melt Catalysis, by J.F. Knifton; Roles of Metal Hydrides in homogeneous Ruthenium-Catalyzed Hydrogenation of Carbon Monoxide, by B.D. Dombek; Metal Induced Transformations of Carbon Dioxide, by D.J. Darensbourg, R.A. Kudoroski, C. Ovalles and M. Pala; Some Organometallic Chemistry of the early Transition Metals, by F.A. Cotton; Preparation and Catalytic Activities of *cis*-Dicarbonyl(*N*-[2-(2-pyridyl)ethyl]arylamine)rhodium(I) tetraphenylborate(III), by Y. Guoqing and C. Rongyao; The Synthesis, Structure, and Reactions of Dinuclear Compounds containing early and late Transition Metals, by R.T. Edidin, B. Longato, B.D.

Martin, S.A. Matchett, and J.R. Norton; Syntheses and Interconversions of Nitrosyl, Nitrido, and Isocyanato Carbonyl Clusters, by W.L. Gladfelter; The Interpretation of Carbon-13 NMR Chemical Shifts and their Correlation with the Reaction Chemistry of Organometallic Carbenes, Carbynes, and related Species, by R.F. Fenske; Electronic Structure of Nonacarbonyl (μ -alkylidyne)-trimetal Clusters, by M.B. Hall; Electron Transfer Reactions of Tungstenocene Dialkyls, by J.C. Hayes and N.J. Cooper; Small Hydrocarbons as bridging Ligands in Transition Metal Chemistry: Synthesis, Structures, and Reactivity, by W.A. Herrmann; Formyl, Hydroxymethyl, and Carbene Complexes of Iridium, by D.L. Thorn; Oxidative Addition of soluble Iridium and Rhodium Complexes to Carbon-Hydrogen Bonds in Alkanes, by A.H. Janowicz, C.A. Kovac, R.A. Periana-Pillai, J.M. Buchanan, T.M. Gilbert, and R.G. Bergman; Iridium Compounds in Catalysis, by R.H. Crabtree.

While there is much of interest in this book, it is difficult to conclude that the series will provide material of lasting value, since the authors will find more general outlets for their publications.

The volume is dedicated to the late Professor Minoru Tsutsui.

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MICHAEL F. LAPPERT

Current Trends in Organic Synthesis; edited by H. Nozaki, Pergamon Press, 1983, xii + 430 pages, £45.00.

This book is a collection of contributions to the Fourth International Conference on Organic Synthesis, held at Tokyo in August 1982. Unlike many such compilations it does give the reader a good general idea of its subject.

Synthesis was once undertaken as the ultimate proof of structure. Nowadays a chemist may have, or give, many reasons for indulging in this art. The goal of his synthesis may be a natural product that is needed in larger amounts than nature will readily yield, as we see here in E.J. Corey's work on the leukotrienes and C.B. Reese's refinements of nucleotide coupling; he may be interested in developing new synthetic methods; he is now very often interested in gaining stereochemical control over organic syntheses, as attested by a dozen contributions to this symposium. There is just one contribution having the original goal of structural proof: Y. Kishi's synthesis of degradation products from palytoxin, the incredibly complex poison from soft corals.

The full impact of organometallic chemistry on organic synthesis is yet to be felt, but there are contributions from H.C. Brown on new hydroborating agents, from three groups on organosilicon chemistry in synthesis, and from J.F. Normant and A. Alexakis on organocopper and organocuprate reagents. Palladium compounds as catalysts are mentioned in several connections, but apart from these there is little use of the new chemistry arising from transition metals and olefins. None the less, the book which is excellently produced can be recommended to all chemists interested in organic synthesis or in what it can do.

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