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Book review

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"Organic Reactions", Volume 24, W. G. Dauben, editor-in-chief, John Wiley & Sons, New York/London/Sydney/Toronto, 1976, ix + 431 pages, \$ 26.50.

This new volume of "Organic Reactions" brings four reviews. Two are up-dates of subjects which were covered in earlier volumes: "Arylation of Unsaturated Compounds by Diazonium Salts (The Meerwein Arylation Reaction)", by G. S. Rondestvedt, Jr., which was reviewed in Volume 11 (1960) by the same author, and "Selenium Dioxide Oxidations", a subject included in Volume 5 (1949), with Norman Rabjohn writing both the present and the previous reviews. Also included in this volume are two new subjects: "Homogeneous Hydrogenation Catalysts in Organic Synthesis", by A. J. Birch and D. H. Williamson, and "Ester Cleavage via S<sub>N</sub>2-Type Dealkylation", by J. E. McMurry.

Organometallic complexes and intermediates play a major role in the first chapter on homogeneous hydrogenation, whose length (186 pages) reflects the intense activity in this field during the last fifteen or so years. Included among the catalysts which are discussed are (Ph<sub>3</sub>P)<sub>3</sub>RhCl, IrCl(CO)(PPh<sub>3</sub>)<sub>2</sub>, H<sub>2</sub>PtCl<sub>6</sub>/SrCl<sub>2</sub>, K<sub>3</sub>Co(CN)<sub>5</sub>, Co<sub>2</sub>(CO)<sub>8</sub>, (Ph<sub>3</sub>P)<sub>2</sub>RuCl<sub>2</sub> and soluble Ziegler catalysts. The literature coverage appears to be up-to-date through 1974.

The chapter on ester cleavage is a short one, as is the one devoted to the Meerwein arylation reaction. This reaction of aryldiazonium salts with olefins and acetylenes is a redox process which is induced by a copper(II) salt, and its mechanism is discussed in terms of fugitive organocopper intermediates. The last chapter, again a long one of 155 pages, brings us up-to-date on the oxidation of organic compounds by selenium dioxide, reactions which appear to proceed by way of organoselenium intermediates.

The format of all chapters follows the tried-and-true "Organic Reactions" formula: first discussions relating to scope and limitations, mechanism and experimental conditions, then selected experimental procedures as gleaned from the literature, and finally, tables of examples.

An author index and a chapter and topics index covering all 24 "Organic Reactions" volumes conclude the book. This book will be welcomed by the organic and organometallic communities as the newest addition to a series of long-established utility.

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