

Book Reviews

Organic Reactions. Volume 53. Leo A. Paquette, Editor-in-Chief. John Wiley & Sons, Inc., New York, 1998. vii + 654 pp. 16 x 24 cm. ISBN 0-471-32609-7. \$95.00.

Volume 53 of *Organic Reactions* consists of two chapters: (1) The Oxidation of Alcohols by Modified Oxochromium(VI)-Amine Reagents by Frederick Luzzio and (2) The Retro-Diels–Alder Reaction. Part II. Dienophiles with One or More Heteroatoms by Bruce Rickborn.

The first author gives a succinct but thorough review of amine-based chromium(VI) reagents useful in the oxidation of alcohols. The chapter begins with an interesting (and informative) historical perspective on the evolutionary development of these agents. Consistent with the format of *Organic Reactions*, the author also includes a section summarizing proposed mechanisms of simple oxidations (as well as certain oxidative annulations, transpositions, and cyclizations), followed by the reagent's scope and limitations. A comparison between this reagent and other classical methods (i.e., manganese dioxide, Mofatt, Swern, and Dess–Martin) was found to be particularly useful in a practical sense. The Experimental Section, which also includes the preparation of 14 different chromium reagents, thoroughly describes the selective oxidation of various alcoholic substrates, as well as several technique modifications/improvements. The section Tabular Survey (173 pages total) includes numerous substrates, basic reaction conditions, their respective yields, and references (mostly from the 1980s).

The chapter by Dr. Rickborn is a continuation of his earlier chapter in this series (Volume 52, 1998), which covers retro-Diels–Alder (rDA) reactions in general but surveys rDA reactions in which both dienophile bonding centers are carbon atoms. The present chapter has been limited (due to the vast amount of literature in this area) to rDA reactions in which one or both of the dienophile reaction centers are heteroatoms. The Introduction, Mechanism, and Experimental Sections are small—for a general discussion of rDA reactions, as well as a more extensive discussion of rDA mechanisms, the author directs the reader to Part I. Part II does contain an extensive scope and limitations section that thoroughly reviews the various mono- and diheteroatom dienophiles and includes any mechanistic studies that pertain to a particular dienophile. Also included is an impressive Tabular Survey section (320 pages total) that has been arranged by expelled nucleophile (e.g., nitriles, imines, CO₂, N₂).

The volume also includes cumulative chapter titles by volume, author index, and chapter and topic indexes for Volumes 1–53. Overall, both chapters are well-written and thoroughly documented; this volume is recommended to all organic chemists.

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