

Book review

CATALYTIC HYDROGENATION IN ORGANIC SYNTHESSES; by Paul N. Rylander, New York, San Francisco, London, Academic Press, 1979, x and 325 pages, \$34.00.

Rylander's new "Catalytic Hydrogenation..." presents a comprehensive and critical overview of the field. The book is much more than just a re-packaging of the authors earlier "Catalytic Hydrogenation Over Platinum Metals" (1967). A major aim of the new work is "to give the reader easy access to catalytic history, to show what can be done, and how to do it." This aim is nicely achieved.

The organization of the book is good. An introductory chapter discusses general considerations such as choice of catalyst and solvent, reaction conditions and variables, types of reactors and the preparation of catalysts. The bulk of the text is organized around functional groups. Separate chapters discuss the catalytic reduction of acetylenes, olefins, aldehydes, ketones, nitro compounds, nitriles, oximes, carbocyclic aromatics and heterocyclic compounds. The hydrogenations of acids, esters, lactones and anhydrides are treated each in a section of a single chapter. Additional chapters discuss reductive alkylation, catalytic dehydrohalogenation, hydrogenolysis of small rings and miscellaneous hydrogenolyses, e.g., deprotection by hydrogenolysis. This organizational scheme is easy to use--for any application the synthetic chemist can gain access to a variety of working generalities or guides to selecting catalytic metal, catalyst support, concentration of metal and catalyst, solvent and reaction conditions.

"Catalytic Hydrogenation..." will serve as a valuable primary reference text in the field. Literature references are organized at the end of each chapter; nearly two thousand appear throughout the work. Many important early references are cited but the bulk of the text is derived from material

published since the completion of Rylander's "Catalytic Hydrogenation Over Platinum Metals" (1967). For example Chapter 3, Hydrogenation of Olefins, cites over two hundred literature references of which over half are from the period since 1967.

"Catalytic Hydrogenation in Organic Syntheses" is an up-to-date and welcome addition to this reviewer's library. Many will find that Rylander's treatise, indeed, de-mystifies the area of catalytic hydrogenation.

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