

### Book review

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*Organic Syntheses with Noble Metal Catalysts*, by Paul N. Rylander. Volume 28 in the Organic Chemistry Series. New York, Academic Press, 1973, ix + 331 pages, \$22.50.

This book describes selected applications of platinum group metals and their compounds in the catalytic syntheses of organic molecules. The book is designed as a practical guide to syntheses and should serve as a useful but not exhaustive reference source through 1972. The book includes chapters entitled Dehydrogenation; Homogeneous Hydrogenation; Oxidation; Osmium and Ruthenium Tetroxides as Oxidation Catalysts; Isomerization; Oligomerizations, Telomerizations and Condensations; Carbonylation and Hydroformylation; Decarbonylation and Desulfonylation; and Silicon Chemistry. A descriptive approach is used and the author has generally not attempted to include work which is primarily mechanistic in nature. This format allows the author to cover a wide range of synthetic topics in each chapter: A very large number of the syntheses which are described employ palladium- or rhodium-based catalysts, emphasizing the broad applicability of these metals in the catalyses of organic transformations.

The book is relatively free from typographical errors and is very well indexed. The periodic presentation of rather detailed descriptions of experimental conditions should help readers who wish to determine the feasibility of applying a synthetic approach to a particular problem. In most chapters, syntheses employing both heterogeneous and homogeneous catalysts are described.

The arbitrary restriction of the coverage to the "Noble" metals is unfortunate. The inclusion of syntheses based upon iron, cobalt, and nickel, where they extend the scope of catalyses in the topical areas covered, would have enhanced the value of the book. For instance, applications of these metals in areas such as hydrogenation, isomerization, carbonylation, oligomerization, telomerization and condensation are omitted.

Nevertheless, the book will be a valuable addition to the library of the synthetic organic chemist. The author has succeeded in introducing the reader to a large number of very useful and interesting synthetic applications employing transition metal catalysts.

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