

## Book review

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*Organometallic Reactions, Volume 3*; edited by E.I. Becker and M. Tsutsui, Wiley-Interscience, New York, 1972, ix + 434 pages, \$26.00.

The book under review is the third volume of *Organometallic Reactions*, whose stated purpose is "to provide complete chapters on selected categories of organometallic compounds, describing the methods by which they are synthesized and the reactions they undergo", with emphasis on preparative chemistry.

The present volume contains three chapters. The first, on "Olefin Oxidation and Related Reactions with Group VIII Noble Metal Compounds" by R. Jira and W. Freiesleben, is by far the most useful. Jira is one of the pioneers of the Wacker process, and these authors write with authority on a very timely topic which is of vital interest to both industrial and academic circles. The "related reactions" discussed include allylic oxidation, oxidative coupling, and catalysis of solvolysis, oligomerization and polymerization, and isomerization reactions. This 190 page chapter comprises almost one-half of the book.

The second chapter, "Cleavage Reactions of the Carbon-Silicon Bond", by V. Chvalovský, would have made a greater impact if the fine chapter dealing in large part with this subject by Bott and Eaborn had not appeared a bit earlier (1968) in Volume 1, Part 1 of MacDiarmid's multivolume series on "Organometallic Compounds of the Group IV Elements". Chvalovský, who has made many original contributions to the subject he treats, gives a thorough treatment, with 70 pages of tables that the organosilicon chemist will find useful. However, the subject matter might have been presented more clearly if the organization had been in terms of reagent or reaction type, rather than in terms of groups cleaved from silicon. The constant use by the author of "splitting-off" for "cleavage" and "to split" in all its forms for "to cleave" certainly should have received corrective action by the editors.

The third chapter by W. Kitching deals with the oxymetalation of unsaturated organic compounds. Included in the discussion are the oxymercuration, oxythallation, oxyplumbation and oxypalladation reactions, as well as the allylic oxidation of olefins by  $\text{Hg}^{\text{II}}$ ,  $\text{Pb}^{\text{IV}}$  and  $\text{Tl}^{\text{III}}$  and the chemical reactions of oxymetallated organic products. There is considerable overlap with the Jira-Freiesleben chapter in the areas of palladium chemistry discussed and this should have been caught by the editors.

In the preface of this volume the editors thank their publisher for the occasional "gentle prod" needed to "see these volumes to their completion." Either the publisher's prods were too gentle, or perhaps it was the publisher who needed some vigorous prods, for all three chapters are so out of date as to limit the usefulness of this book to the practising organometallic chemist. The first chapter has text references through 1968 and then an *J. Organometal. Chem.*, 42 (1972)

addendum bringing things "up-to-date" with only the titles (sometimes obscure) of relevant references for 1969 and 1970; a rather unsatisfactory procedure. Chvalovský's chapter has 520 references, but the coverage for all practical purposes stops with the 1967 literature. Kitching's chapter covers the literature only through mid-1968, and this leads one to wonder why that chapter ever was written at all, since the same author published a review on the oxymetalation reaction in "Organometallic Chemistry Reviews" in 1968. This volume should have appeared in 1969, or in 1970 at the latest, not in June 1972!

If this series is to continue, one would hope to see some vigorous efforts by the editors to coordinate the subject matter of the reviews they commission and, above all, to insure that the delay between completion of the review and its publication is minimized.

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