frequently throughout the text two or three lines (and occasionally more) are printed in bold type; I spent much time trying to decide whether this was a device to draw attention to especially important statements, and in the end decided, possibly wrongly, that the apparent emphasis is, in fact, random.

Because it is wholly historical this volume will be much less consulted than most of those in the series, and given its very high price, it will presumably be purchased only by institutions which automatically take all the Gmelin volumes and by a few specialist libraries of the history of chemistry.

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*Activation of Saturated Hydrocarbons by Transition Metal Complexes*, by A.E. Shilov, D. Reidel, Dordrecht, The Netherlands, 1984, ISBN 90-277-1628-5, pp. 203 + x, Dfl. 105, US$ 39.

The activation of saturated hydrocarbons has usurped nitrogen fixation as the most popular goal of organometallic chemists. Like nitrogen fixation, methane activation can be achieved with some facility by bacteria, like nitrogen fixation it is really activation under mild conditions which is aimed at, and like nitrogen fixation one of the foremost contributors to the recent chemistry is A.E. Shilov. Consequently, it is wholly appropriate that Shilov should have produced one of the first books on the subject.

This is an excellent and useful book. Its coverage is reasonably complete and discusses the literature up to 1982. A short Introduction lead into Chapter 1 on reactions of metal complexes with compounds containing "activated" C—H bonds, which covers silylation and mercuration as well as metallations. Chapter 2 deals with alkane reactions with "superacids", atoms, and various radicals. Chapter 3 then introduces reactions with metal atoms and ions, and more especially with oxide surfaces. The organometallic meat of the book commences with Chapter 4, on homogeneous oxidation of alkanes. This really represents one of the two major areas of study, and is heavily mechanistic in its methods. It also includes biological oxidations and hydroxylations, and the related work on porphyrin complexes. This is a valuable discussion. The final Chapter deals with the other major area of study, direct reaction of transition metal compounds with alkanes, an area in which the author has made major contributions. It concentrates heavily on platinum(II), but does not ignore other systems.

In summary, this is a timely book, in which the author's training as a gas kineticist is revealed in his penchant for discussing mechanisms. It will prove valuable to a variety of reasearchers, and to organometallic chemists in particular, though perhaps not to nitrogen fixers, despite the cover note. However, it confirms Professor Shilov's eminence both as a nitrogen fixer and an alkane activator.

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