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Book review

Bridged Free Radicals; by L. Kaplan. Marcel Dekker, New York, 1972, 481 pages, $24.50.

Organic free radicals with substituents (Group IV elements, halogens, sulphur, cyano or vinyl groups) at β- or more remote positions from the radical centre form the subject matter of this book. The evidence in favour of bridging is carefully evaluated using three different criteria, namely the influence of the substituent on the radical centre in terms of structure, energy, or control of stereochemistry. Though only a relatively short section deals directly with organometallic-substituted radicals, discussions of radical reactions involving organometallic compounds (notably reduction of organic halides by organotin hydrides) occur at several other places in the book.

The section on free radicals with Group IV element substituents (silicon, germanium, tin) provides an up to date account with emphasis on ESR studies. In most cases, the evidence in favour of "bridging" in these radicals is judged to be inconclusive.

A major portion of the book (267 pages) is devoted to halogen-substituted radicals, on which the majority of work on bridging has been done. The author concludes that evidence in favour of bridging is much less conclusive than some of the researchers think. This section is followed by chapters on sulphur- and cyano-substituted radicals. In a final chapter on vinyl-substituted radicals a comparison is drawn between "normal" β-vinylalkyl radicals and the "bridged" isomers which are possible in this case, *i.e.* the corresponding cyclopropylcarbinyl radicals.

This book is a useful source for organometallic chemists interested in free radical chemistry, as well as to organic chemists. A detailed and critical approach to the experimental results quoted and the conclusions drawn has been made, for example the nature of control experiments carried out (if any), the means by which products were identified, etc. Extensive use of tables has been made: there are no less than 159 in a book of 481 pages.

The book appears to have been printed direct from a typescript and the layout and appearance is good, within the limits imposed by this method. Production has been fast: references in the main body of the text cover the literature up to 1971, with an addendum of references up to early 1972.

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