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Book review

"Fluorine Chemistry Reviews", Volume 8, P. Tarrant, editor, Marcel Dekker, Inc., New York and Basel, 1977, viii + 206 pages, \$29.50.

The latest volume of this review series brings four well written, up-to-date reviews. Three deal with topics from organofluorine chemistry. The fourth review, by Aubke and Desmarteau, has as its subject the halogen derivatives of Group VIA oxyacids. This chapter covers a real collection of hothouse exotica such as $\text{Br}(\text{OSO}_2\text{F})_3$, $\text{IF}_3(\text{OSO}_2\text{F})_3$, $\text{O}_2\text{ClOSO}_2\text{F}$, FOSeF_5 , BrOTeF_5 , $\text{FC}(\text{O})\text{OOSF}_5$, and others, compounds of whose existence most chemists are not aware.

The pentafluorophenyl group is discussed at length by Filler in the first chapter of this book. Of interest are its electronic effects (mostly -I) and how this affects the chemistry of adjacent organic functionality. Pentafluorophenyl-metal compounds, which have been the subject of many studies, are not covered. The aluminum halide-induced addition of halomethanes to fluoroolefins, a reaction of some preparative utility, is the subject of a well-organized review by Paleta. All aspects of the basic reaction-scope and mechanistic features, including orientation of addition, the effects of the structure of the halomethane and the fluoroolefin and of the nature of the solvent on the reaction, as well as preparative aspects, are covered.

The last chapter of the book presents an excellent review by Burton and Hahnfeld on the preparation and reactions of the fluoromethylenes, CClF , CBrF , CIF , CHF and CF_2 . This important aspect of organofluorine chemistry has received much attention in recent years, and the authors cover the subject most thoroughly. Of particular value is their critical evaluation of the procedures which have been applied to the generation of these reactive intermediates. Organometallic and organophosphorus derivatives of fluorinated halomethanes play an important role in this chemistry, with

PhHgCF_3 , Me_3SnCF_3 and $[\text{Ph}_3\text{PCF}_2\text{Br}]\text{Br}$ being effective reagents for generating difluorocarbene.

All in all, this is a fine addition to the organofluorine review literature. All four manuscripts appear as photoreproduced typescripts, but the production job is a uniformly good one. A subject index and an author index are provided. Also useful are the cumulative tables of contents of the previous seven volumes of this series.

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