Book review

Small Ring Compounds in Organic Synthesis III; Topics in Current Chemistry, Volume 44, contributions from J.R.Y. Salaün, H.-U. Reissig and M.S. Baird, Springer-Verlag, 1988, 217 pages, DM156, ISBN 3-540-18368-X

This is the third volume in the Topics in Current Chemistry Series to deal with the uses in organic synthesis of small ring compounds. The first chapter has the rather daunting title "Synthesis and Synthetic Applications of 1-Donor Substituted Cyclopropanes with Ethynyl, Vinyl and Carbonyl Groups". In fact such compounds have considerable synthetic potential, particularly as a result of their ready ability to undergo ring expansion to give four-membered rings. Organometallic chemists will take a particular interest in the trialkylsilyl and alkylseleno substituted compounds which are discussed. Lithiations feature strongly in the discussions of ring expansion methodology. A number of specific syntheses are discussed in detail.

The second chapter deals with donor-acceptor substituted cyclopropanes, their syntheses and their uses in synthesis. The trimethylsiloxy group has proved particularly popular as a donor in this context. Again a range of specific syntheses are discussed. The final chapter considers functionalised cyclopropenes as synthetic intermediates. This is less well explored territory, since many workers have considered these intermediates to be somewhat too unstable and reactive to be of great use. However, recent developments in synthetic methodology have made these interesting compounds much more accessible and have allowed considerable advances to be made. Reactions in the presence of metal complexes are not covered in detail since they were the subject of a review in an earlier volume in this series, by Binger and Buch.

As with all Springer-Verlag publications this volume is well produced, and the detailed chapter summaries more than compensate for the lack of a subject index. An author index for volumes 101–144 of the series is provided. All the chapters are well referenced into 1986. Whilst there is only a little of specifically organometallic interest in this volume, the organometallic chemistry of small ring compounds is of considerable importance, and those in the field will find many useful synthetic insights. The value of this series lies in its timely attention to areas of current significance and it should be available in all serious chemistry libraries.

School of Chemistry and Molecular Sciences, University of Sussex, Falmer, Brighton (Great Britain) Penny A. Chaloner