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### Book review

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*Solvomercuration / Demercuration Reactions in Organic Synthesis*, by R.C. Larock, Springer Verlag, 1986, xiii + 607 pages, DM 485, ISBN 3-540-15094-3.

This volume is a companion to the earlier Springer Verlag monograph by the same author on organomercury compounds in organic synthesis. The reactions of alkenes and alkynes with electrophilic mercury salts in the presence of a nucleophile yields compounds in which the mercury and the nucleophile have added across the multiple bond. The mercury moiety may then be replaced by hydrogen or another substituent. The use that synthetic organic chemists have made of this reaction is reflected both in the length of this work and more particularly in the large number of references cited (over 1500).

The order of the chapters in the book largely recognises the relative importance of the reactions with which they deal. Chapter 2 considers hydroxymercuration of alkenes, dienes, polyenes and alkynes, and their functionalised analogues, and this pattern is followed in the subsequent sections. Many of the data are presented in easy to follow tables, and the problems of relative reactivities and selectivities are given due prominence. Chapter 3 details the closely related alkoxymercuration reaction. Next comes peroxymercuration, which has a less lengthy history, being first reported in 1969. Acyloxymercuration provides the interesting possibility of intramolecular reactions involving alkenoic acids. Aminomercuration, amidomercuration, azidomercuration and nitromercuration in chapters 6 to 9 offer a formidable range of reaction which produce nitrogen functionalised compounds. Carbomercuration, discussed in chapter 10, is a much less common reaction than those reported earlier, with the only organomercurial to be extensively investigated in respect of its reaction with simple alkenes being  $\text{Hg}[\text{C}(\text{NO}_3)_2]$ . Reactions of dienes or polyenes with mercury salts may, however, result in the formation of cyclic organomercury compounds via intramolecular carbomercuration. The final chapter deals with some rather interesting reactions which cannot be neatly classified elsewhere.

With this work taken together with the earlier volume on organomercury compounds in organic synthesis Larock has achieved a lucid and comprehensive account of the state of the art in this area. This book refers the reader frequently to the earlier work for more detailed accounts of the mechanistic chemistry involved in the reactions described and they are ideally used together. The perspective this time is very much more that of a synthetic chemist, seeking to achieve a specific transformation. Again the work is well produced and well illustrated, with references to mid 1983 and a helpful index. It may be recommended unreservedly to anyone with an interest in this area, and together, these volumes will become a standard work of reference.

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