

Houben—Weyl - Methoden der Organischen Chemie, 4th Edition, Volume 13, Part 2b, *Metallorganische Verbindungen*. Hg, E. Müller, editor-in-chief, 1974, xxv + 438 pages, Georg Thieme Verlag, Stuttgart, DM 290

Part 2a of the Houben—Weyl Volume 13, which deals with the organic compounds of the Group IIa metals, as well as those of zinc and cadmium, was reviewed recently in this journal [1]. Now we have Part 2b which completes the discussion of the organic compounds of the Group II metals with a very thorough and detailed coverage of organomercury compounds. This book, a result of the labors of H. Straub, K.-P. Zeller and H. Leditschke, continues the fine Houben—Weyl tradition. For anyone active in the organomercury field or contemplating research involving the preparation and use of organomercurials this book will be invaluable.

All preparative routes to compounds containing a carbon—mercury bond are discussed in some detail in the first 269 pages of this book. In addition to the thorough and critical general discussion, specific preparative directions for some compounds are given. The material is well organized as follows: mercurating substitution reactions; organometallic routes to organomercurials; reactions of functional organic compounds with mercury and its compounds; mercury compound additions to unsaturated compounds, syntheses of organomercurials using organomercury starting materials (including preparation of $RHgR'$ types by all available methods), electrochemical procedures. Much useful information concerning preparative reactions and their scope is provided in many tables. Discussion of mechanistic aspects is minimal.

The rest of the book is devoted to the reactions of organomercurials, including longer sections on their use as alkylating and arylating agents, on halo-methylmercury compounds as divalent carbon transfer agents and on the reduction of organomercurials, including the solvomercuration—demercuration sequence. A short section on the spectroscopy of organomercury compounds concludes the book.

The Houben—Weyl series is devoted to a presentation of the chemistry of compound classes, not of the properties of individual compounds, and so we must hope for a Gmelin volume on organomercury compounds to complement the book under discussion here. This book admirably fulfills the intent of the Houben—Weyl series, giving an excellent exposition of organomercurial preparation and reactivity. Its literature coverage is not exhaustive (nor does it need to be), but it is up-to-date, with many 1973 references being included. The coverage of the more recent developments of organomercury chemistry, which in the last ten years has seen a resurgence of research activity, is particularly good.

This book can be highly recommended and the active organomercury chemist will find it worth the price.

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