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Book review

Cyclophanes. I, Topics in Current Chemistry, Vol. 113, Editor F. Vögtle;
Springer-Verlag, Berlin/Heidelberg/New York/Tokyo, 1983, 185 pages, DM 86.

The growing practical and theoretical importance of macrocyclic ring systems, combined with improved methods for their synthesis has meant that macrocycles in general, and cyclophanes in particular, are no longer esoteric academic novelties but are, in fact, of interest to a wide section of the chemical community. This volume (the first of a series) is a very welcome addition to the literature of cyclophanes filling, as it does, many of the gaps in B.H. Smith's classic, but dated, work upon the topic.

The first volume contains three detailed reviews, the first of which (L. Rossa and F. Vögtle, 86 pages, 336 refs.) describes the various types of ring closure reactions used in the formation of a wide range of mediocyclic and macrocyclic compounds. The technique of high dilution rightfully plays a dominant role in the authors' exposition but other synthetic strategies are discussed, where relevant. The second review (V. Boekelheide, 56 pages, 218 refs.) focusses, initially, upon the synthesis of $[2_n]$ cyclophanes (i.e. those phanes containing two benzene decks with between two and six bridges) and continues with a detailed discussion of their spectroscopic and chemical properties. Of special interest to organometallic chemists is the discussion of the known transition metal (Cr, Fe or Ru) complexes of $[2_n]$ cyclophanes and of their possible utility as monomer units for the formation of cyclophane polymers. The author boldly predicts that these compounds will serve for exploring and testing theoretical concepts in organometallic chemistry, as they did for organic chemistry. The third article (I. Tabushi and K. Yamamura, 37 pages, 80 refs.) is a review of the progress made (over the last ten years) in the field of water-soluble cyclophanes. The review concentrates upon the synthesis and structure of water-soluble cyclophanes, together with their catalytic properties: particular attention is paid to host-guest binding (with small organic species as the guest molecules). Workers in the field of host-guest chemistry should not therefore pass over this volume in their haste to read volumes 98, 101 and 121 of *Topics in Current Chemistry*!

The articles all contain references up to, and including, 1982. Their texts are generally well organised and the art work is clear. This volume is an essential source of information and critical comment for any serious research worker in the field and at DM 86 is excellent value.

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