Chemistry of Monoterpenes, An Encyclopedic Handbook, Volumes A and B; by William F. Erman, Marcel Dekker, New York 1985, Pp. 1709. $ 174 (for the set). ISBN 0-8247-1573-X (Pt A), 0-8247-7312-8 (Pt B).

Over the past few years there has been an increasing overlap between areas of organometallic chemistry and natural product chemistry and synthesis. This is well-exemplified by the monoterpenes. The compounds possess a number of features which lend themselves to organometallic reagents. They are chiral molecules and in some instances both enantiomers are available. They occur with a range of functionality whilst the chain branching characteristic of the isoprene unit, the number of tertiary centres and the variety of cyclic skeleta provide ample opportunity for interesting chemistry. Many monoterpenes can be easily separated by GLC and identified spectroscopically. Furthermore as perfumery and flavouring chemicals and as insect pheromones, there is a commercial interest in their synthesis.

This two volume work is entitled 'An Encyclopedic Handbook'. Its aim is to familiarize the reader with the common structural types of monoterpene, their chemistry and the mechanism of many of the reactions. It contains chapters on the biogenesis of the monoterpenes, their absolute configuration, the acyclic monoterpenes, monocyclic dimethylcyclohexane and cyclobutane substances, the *p*-menthanes, cyclopentanoids, thujane, carane, pinane, bornane, isocamphane and fenchane monoterpenes, the monoterpene phenols and the pyrethrins.

The book discusses the intervention of organometallic species in many reactions of the monoterpenes such as the Lewis acid catalysed cyclization of the acyclic monoterpenes. The reactivity of conjugated dienes with transition metal compounds such as palladium chloride and iron carbonyl, is another well-investigated area in which monoterpene examples such as myrcene and ocimene have been examined. The synthesis of the ionones from other monoterpenes has a commercial incentive and a number of organometallic procedures are reviewed in the text. The scope and mechanism of oxymercuration reactions have been examined in the *p*-menthane series and this is also well-covered. The variety of allylic centres and their potential for substitution have provided several applications of organometallic reagents. The well-known application of the pinanes in the formation of chiral boranes is also described as are their hydroformylation reactions. The recent commerical interest in the cyclopropanoid chrysanthemic acids in connection with pyrethrin insecticides stimulated a number of carbene and related syntheses in which organometallic methods have played a role. These are covered in the relevant chapter.

These two volumes provide a readable survey with a good set of references to the recent literature. They are well-indexed with both systematic and trivial names being given. They would make a useful potential starting point for an organometallic chemist wishing to consider exploiting these reagents in the context of monoterpene chemistry.

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