

tinuing series (D) describing its complexes. However, the split between Parts D3 and D4 appears rather arbitrary. Thus, Part D3 (1982) concluded with the complexes of manganese with *N*-heterocycles containing one nitrogen atom in the ring (Section 16.1), whereas Part D4 opens with the complexes of manganese with *N*-heterocycles containing more than one nitrogen atom in the ring (Section 16.2). This section includes complexes with, inter alia, nucleosides and nucleotides of pyrimidine and purine bases, nucleic acids, riboflavin, triazoles, tetrazoles, tetrazines, tetraazamacrocycles (and related macrocycles containing between three and eight nitrogen atoms in the ring), porphyrins, phthalocyanines, oxazoles, and macrocycles containing both nitrogen and oxygen atoms in the ring. The following sections describe the complexes of manganese with aminoalcohols, aminophenols, aminonaphthols, aminoethers, aminoquinones, amino acids, peptides and proteins. However, again in a rather singular split, complexes with amine-*N*-carboxylic acids and with Schiff bases have been scheduled for Part D5.

This volume is a definitive source book, and its contents make it of especial interest to both coordination chemists and bioinorganic chemists. The authors (L.J. Boucher, H. Demmer, K. Koeber, H. Köttelwesch and D. Schneider) have performed a Herculean task in producing this fascinating book and, although it may be invidious to spotlight individual contributions, Boucher's articles describing the porphyrin and phthalocyanine complexes of manganese reveal an insight and flair that is rarely encountered in this style of review. It is to be regretted that the high price, which is de rigueur for this series, will exclude these fine articles from private bookshelves. However, this volume should be an essential purchase for all libraries attached to academic and industrial institutions. The literature coverage is complete up to 1983, and a twenty-eight page ligand formula index greatly facilitates the use of the volume.

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Asymmetric Synthesis, Volume 4; The Chiral Carbon Pool and Chiral Sulphur, Nitrogen, Phosphorus and Silicon Centers; edited by J.D. Morrison and J.W. Scott, Academic Press, 1984, xii + 380 pages, US\$85.00.

This is the fourth volume of a treatise reviewing asymmetric synthesis since 1971. The first half of the work deals with available chiral carbon fragments, particularly amino acid derivatives and sugars, and their use in the total synthesis of natural products. Whilst a number of organometallic reagents appear incidentally in this section, discussion focusses mainly on the strategy of synthesis rather than the precise details of reactions.

Chapter 2 examines synthesis and reactions of compounds containing chiral sulphur centres and chapter 3 deals with the synthesis of chiral phosphines and related compounds. This latter is a valuable account, principally because of the importance of metal complexes of such phosphines in asymmetric catalysis (which is to be discussed in Volume 5 in this series). Both asymmetric synthesis and resolution methods are considered, and recent work using chiral ortho-metallated palladium complexes is lucidly explained. Compounds containing chiral nitrogen centres are considered in Chapter 4.

The chapter of most interest to the organometallic chemist is the final one, dealing with compounds with a chiral centre at silicon. The stereochemistry of reactions at silicon is briefly discussed and there is an excellent account of such few methods as are available for the resolution and asymmetric synthesis of chiral organosilicon compounds. The uses of such species have mainly been in establishing the mechanisms of reactions at silicon, and applications in synthesis are relatively limited.

The standard of production of this volume, like its predecessors, is excellent and literature coverage is complete up to the end of 1982, with some references from 1983 and 1984. Whilst several sections of the work provide useful reference material to the organometallic chemist, its major market will surely be the organic chemist engaged in synthesis.

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