

## Book reviews

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*Olefin metathesis and ring-opening polymerization of cyclo-olefins*; by V. Dragutan, A.T. Balaban and M. Dimonie, John Wiley and Sons, New York, 1985, 544 pages, £34.50.

This is the English translation of the second edition of a Rumanian work. This version is clearly considerably updated and expanded, since many of the references date from the period 1979–1982. Whilst mechanistic and theoretical aspects of metathesis are well discussed, the greatest value of the work probably lies in its extensive treatment of the applications of metathesis.

The first chapters give a systematic account of metathesis catalysts, appropriate reaction conditions and the various possible types of metathesis reactions. Chapter 4 details the ring opening polymerisation of cycloalkenes, an area which has seen many recent important developments. Thermodynamic and kinetic studies are considered, followed by a long section on the detailed mechanisms of various metathesis reactions. The treatment of the origins of stereoselectivity is somewhat more convincing for the ring opening polymerisation reactions than for metathesis of simple acyclic alkenes. The survey of applications of metathesis is very thorough, and both this and the comprehensive tables with which the book concludes, provide the reader with access to a large amount of otherwise somewhat recondite Eastern European and patent literature.

The emphasis provided by this work is somewhat different from that seen in most recent reviews of the area. Heterogeneous catalysts and practical applications are emphasised and metathesis based polymerisations well scrutinised. Literature coverage is complete up to the end of 1982, with a few papers from 1983. The quality of the diagrams was somewhat uneven, with some extremely unlikely looking bond angles, but the work is otherwise relatively error free. In my copy at least, some of the printing, particularly of the schemes, was rather faint. Whilst this book could not be recommended as an introduction to a newcomer to this field, it provides a wealth of information invaluable to any research worker in this important and developing area.

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*Gmelin handbook of inorganic chemistry*, 8th Edition, *Mn — Manganese, Part D4: Coordination Compounds 4*, Springer-Verlag, Berlin, Heidelberg, New York, Tokyo, 1985, xv + 395 pages, DM 1313. ISBN 3-540-93513-4.

This is the sixteenth volume which the Gmelin Institute has published concerning the chemistry of manganese (System No. 56), and the fourth of a con-

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.