

ternary ionic systems, such as $\text{AlCl}_3\text{-NaCl}$). In 1961, the Russian Academy of Sciences published a collation of data upon molten salts covering the period 1886–1955, and this was updated in 1979. The book under review is a translation (by B. Indyk) of these Russian originals (for which, eccentrically and unfortunately, the full citations are not given), but is restricted to include only halide systems. Although some format changes have been introduced by the editor and compiler (H.B. Bell) to reduce the overall length of the work, all the data and figures from the Russian original have been included. Thus, the book is clearly and copiously illustrated, containing 287 figures, 18 tables and 1628 references. Clearly, one of the strengths of this volume is that it acts as a source book for accessing data in the Soviet literature, and much of the original work on the phase equilibria of binary halide systems was published in Russian. Of particular current interest, over thirty-five binary systems with aluminium(III) chloride, seven with aluminium(III) bromide, and nine each with aluminium(III) iodide and aluminium(III) fluoride are described.

This work is an invaluable compilation of data upon molten salt systems, and it is not surprising to find it published by Plenum who, of all the major publishers, have shown the greatest commitment to molten salt chemistry. The detailed Table of Contents makes accessing the data a facile process (although it is advisable to search this list for both components), and the data are presented in a clear, concise and uniform style. Worthy of particular mention, the concentrations are all presented as mol% (rather than in the more common, but less useful, wt%). The editor and compiler has performed a valuable service to the molten salts community, and I would like to ensure him that his hard work is fully appreciated. The volume is reasonably priced and well produced, and should be in the reference section of all chemistry libraries (as well as on a number of private shelves). Although it is of little value to the organometallic chemist, it will be welcomed by coordination chemists.

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Asymmetric Synthesis; Construction of Chiral Molecules Using Amino Acids, G.M. Coppola and H.F. Schuster, Wiley-Interscience, 1987, xiii + 393 pages, £50, ISBN 0-471-82874-2

There can be little doubt that asymmetric synthesis has become one of the most important areas of synthetic organic chemistry. This book deals with chiral syntheses which make use of the "chiral carbon pool" of naturally occurring chiral molecules, focussing in particular on reactions which use amino acids as their source of chirality. Two types of synthesis are considered. In the first the chiral carbon or carbons of the amino acid is incorporated directly into the target molecule. The second uses the amino acid as a chiral adjunct, either as a temporary feature of the molecule or as an external auxiliary, to induce chirality.

After a brief, but extremely clear, introduction the book is divided into nine chapters, each considering the uses of a particular family of amino acids in chiral synthesis. The contents build from the simplest chiral amino acid, alanine, to the more complex ones. Whilst this method of organisation might have allowed the

authors to organise their work relatively easily, its use to the reader is less clear to me. Most of the readers of this book are likely to be synthetic organic chemists, interested in effecting a particular type of transformation, or in preparing a particular type of chiral molecule. They are unlikely to be greatly concerned as to whether the origin of the chirality is valine or alanine. The index is good, but this does not entirely obviate the problem.

The material in this book is well-presented and the diagrams are very clear and plentiful. Anyone reading this book with attention will learn a good deal about modern synthetic methodology. Whilst a considerable number of organometallic reagents are used in the syntheses described, they are seen almost entirely from the perspective of the organic chemist. The organometallic chemist may find the lack of mechanistic detail a little frustrating. The book is well-referenced with the main body of each chapter covering literature published up to mid 1984. Several chapters contain addenda detailing material which was published after the completion of the original manuscript, up to the end of 1985.

This book is well written and contains much valuable material. However, it does have the air of a catalogue, and is organised in an unhelpful manner. Moreover, this is a popular area, and there are many other books and review articles to which the interested reader can refer. Do we need another?

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Reactions of Coordinated Ligands, Volume 1; Edited by P.S. Braterman, Plenum Press, New York, 1986, xi + 1052 pages, U.S.\$135.00, ISBN 0-306-42201-8.

This book, dealing with compounds containing metal-carbon bonds, bears a publication date of 1986; it is said to be aimed at graduate students and research workers in all branches of chemistry. The main thrust is toward organo-transition metallic chemistry and its applications in synthesis or catalysis. The book is prepared by a direct photographic process, but the presentation is consistent throughout and is clear. Volume 2 is due to continue the study into *N*-, *P*-, *O*-, and *S*-centred metal complexes.

The editor has assembled a powerful group of contributors, and there is little doubt, therefore, that the work is written with great authority. The main drawback seems to be that most of their articles appear to have been completed in 1980. Some have addenda with newer literature, but reference to work beyond 1982 is, to say the least, patchy. This will, undoubtedly, detract from the value that the book might otherwise have had.

The volume comprises the following chapters: "One-Carbon, Two-Carbon, and Three-Carbon Ligands" by P.S. Braterman (153 pages, 773 refs.); "Reactions of One-Carbon Ligands in Complexes of Macrocycles", by M.D. Johnson (65 pages, 217 refs.); "Alkylidene Complexes of the Earlier Transition Metals", by R.R. Schrock (62 pages, 107 refs.); "Carbene Complexes of Groups VIA, VIIA, and VIII", by K.H. Dötz (85 pages, 387 refs.); "Mechanistic Aspects of the Olefin Metathesis Reaction", by M. Leconte, J.M. Basset, F. Quignard, and C. Larroche