Organometallics in Synthesis: A Manual
M. Schlosser (ed.), Wiley, Chichester, 1994, ix + 603 pages £60.00
ISBN 0-471-93637-5

This excellent book, rightly described as a manual, originated in a series of three postgraduate workshops organized by the editor, M. Schlosser. It is thus said to be intended primarily for the use of research workers unfamiliar with concepts and techniques of organometallic chemistry, but in my view it will also be of much value for those already specializing in the field. It is a gold mine of practical information, not only revealing the range of useful reactions but also giving well-chosen illustrative accounts of experimental procedures and many valuable hints.

The title is somewhat misleading in that the range of metals considered is limited, but for those metals included the choice of authors is most impressive, all of them being leading authorities in their fields. The various metals dealt with, and the authors are as follows: (i) alkali metals generally (M. Schlosser, 166 pages, ca. 720 references); lithium in its industrial applications (F. Trotter and P. Rittmeyer, 28 pages, 55 references); (ii) titanium (M.T. Reetz, 89 pages, 328 references); (iii) copper (B.H. Lipshutz, 100 pages, 172 references); (iv) palladium (L.S. Hegedus, 77 pages, 168 references); (v) boron (K. Smith, 48 pages, 103 references); aluminium (H. Yamamoto, 25 pages, 52 references); (vi) tin (H. Nozaki, 44 pages, 183 references). The quality is consistently high, and it would be invidious to try to select any for specific praise.

The book is well produced and pleasant to read. My one criticism, and that a very minor one, is of the use throughout in formulae of the clumsy forms H_3C, CH_3CH_2, $(H_3C)_2CH$, $(H_3C)_3C$ and H_5C_6, when the IUPAC-approved forms Me, Et, ^{i}Pr, ^{t}Bu and Ph look so much neater and aid immediate recognition of formulae. (At some points two styles are used in the same formula, e.g. $CH_3Ti(O^{i}Pr)_3$.)

I recommend this book without reservation. It is excellent value for its size and quality; it should be available in all laboratories involved in organic and organometallic synthesis, and also in many personal libraries. I very much hope Professor Schlosser will bring out a companion volume, or a more comprehensive second edition, dealing with the important metals not considered in this one.

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Catalytic Asymmetric Synthesis
I. Ojima (ed.), VCH, Weinheim, 1994, 476 pages
DM186.00 £76.00
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Any book with such an appealing title as *Catalytic Asymmetric Synthesis* is likely to entice most organic chemists to peruse its content. This timely volume contains nine chapters, written by experts, covering recent advances made in the preparation of enantiomerically enriched materials.

Chapter 1: Asymmetric Hydrogenation by H. Takaya, T. Ohta and R. Noyori, begins with a brief introduction to ligands and catalysts and then describes recent advances in homogeneous transition metal-catalysed hydrogenation of alkenes, ketones and imines. Chapter 2: Asymmetric Isomerisation of Allylamines by S. Akutagawa and K. Tani provides a good coverage of the scope and limitations of this process and nicely illustrates the way in which a useful asymmetric transformation can be made industrially viable through process development. Chapter 3: Asymmetric Cyclopropanation by M.P. Doyle is focused on copper, cobalt and rhodium based catalytic systems. Chapter 4: Asymmetric Oxidation comprises four sections Catalytic Asymmetric Expoxidation of Allylic Alcohols (R.A. Johnson and K.B. Sharpless) Asymmetric Catalytic Epoxidation of Unfunctionalized Olefins (E.N. Jacobsen) Asymmetric Oxidation of Sulphides (H.B. Kagan) and Asymmetric Dihydroxylation (R.A. Johnson and K.B. Sharpless). This section comprises over 35% of the book; the chapters on epoxidation are both excellent, and illustrate the state of the art and highlight important areas requiring further development. The final chapter is also informative, but given the lively debate surrounding the mechanistic detail and the constant reports of improvements in ligand design, further updates are inevitable. Chapter 5: Asymmetric Carbonylation by C. Consiglio described asymmetric hydroformylation and hydrocarbalkoxylation and this is a brief, well referenced and informative treatise on a field ripe for development. Chapter 6: Asymmetric Hydrosilylation by H. Brunner, H. Nishiyama and K. Itoh highlights the utility of, in the main, rhodium catalysed hydrosilylation of alkenes, imines and ketones. A brief section on preparation of chiral silicon compounds is a nice reminder of some of the other challenges that exist for chemists involved in asymmetric synthesis. Chapter 7: Asymmetric Carbon–Carbon Bond Forming Reactions comprises two sections, Asymmetric Allylic Substitution and Grignard Cross Coupling by T. Hayashi and Asymmetric Aldol Reactions by M. Sawamura and Y. Ito. The first of these two chapters is outstanding, providing the reader with a wealth of information about a range of synthetically appealing reactions. This coverage is mainly concerned with palladium and nickel