

## Book review

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*The Chemistry of the Metal—Carbon Bond. Volume 2, The Nature and Cleavage of Carbon—Metal Bonds*; edited by F.R. Hartley and S. Patai, Wiley, Chichester etc., 1985, xiii + 904 pages, £155. ISBN 0 471 90282 9.

This book is part of the highly regarded series on The Chemistry of Functional Groups, and it maintains the high standard of that series. The topics covered are: (1) Electrochemical cleavage of metal—carbon bonds (C.J. Pickett; 24 pages, 99 refs.); Heterolytic cleavage of main group metal—carbon bonds (M.H. Abraham and P.L. Grellier; 125 pages, 591 refs.); Homolytic cleavage of metal—carbon bonds; Groups I to V (P.J. Barker and J.N. Winter, 68 pages, 276 refs.); Insertions into main group metal—carbon bonds (J.E. Wardell and E.S. Paterson; 120 pages, 556 refs.); Insertions into transition metal—carbon bonds (J.J. Alexander; 62 pages, 280 refs.); Nucleophilic attack on transition metal organometallic compounds (L.G. Hegedus; 112 pages, 464 refs.); Electrophilic attack on transition metal  $\eta^1$ -organometallic compounds (M.D. Johnson; 46 pages, 210 refs.); Transition metal—carbon bond cleavage through  $\beta$ -hydrogen elimination (R.J. Cross; 65 pages, 206 refs.); oxidative addition and reductive elimination (J.K. Stille; 163 pages; 829 refs.); Structure and bonding of main group organometallic compounds (J.P. Oliver; 37 pages, 272 refs.). There are comprehensive author and subject indexes.

The editors are to be congratulated on the high quality of the team of authors they were able to assemble. Unusually for such a multi-author volume, there is not, to my mind, a single weak contribution. My one criticism is that for a book appearing in 1985 there are very few references later than 1981, and in some cases rather few later than 1980.

The chapter on which I am best qualified to comment, that by M.H. Abraham and P.L. Grellier, is clear, accurate, and as comprehensive as it could be in the space allowed. The excellent chapter by C.J. Pickett is especially timely, and will be much welcomed by the many organometallic chemists who are just becoming aware of the potential of electrochemistry. The chapter by J.K. Stille is impressively authoritative, and makes a creative contribution to the chemistry it surveys; it could, possibly with a little enlargement, appropriately have appeared as a separate monograph. The chapter by J.P. Oliver from the others in that it is concerned with structure not reactivity; it is a most interesting account, and I wish more space could have been allocated to it.

The book is very well produced, and reasonably priced on present day standards. I recommend it strongly.