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Book reviews

Organometallic Chemistry, U.O. Spessard and U.L. Miessler, Prentice-Hall, New Jersey, 1996, 561 pp., £24.95, ISBN 0-13-640178-3

I picked up this book in the hope that it would be a cheaper, student-friendly version of Collman, Hegedus, Norton and Finke's wonderfully inaccessible (and a bit dated) *Principles and Applications of Organotransition Metal Chemistry*, since I think that there is certainly a need for a text of that type. Unfortunately this book covers much the same material as other books in the area, like Elschenbroich and Salzer's *Organometallics* and Crabtree's *The Organometallic Chemistry of the Transition Elements*, if arranged somewhat differently. The presentation is, however, clear and unpretentious, and there are some good sections which, given the relatively low price for the hardback, could make this book a useful undergraduate purchase.

After wandering off into MO theory for far too long, the authors launch into a familiar description of organometallic chemistry of the transition metals arranged by ligand type. Following this comes the best part, that on reactions at the metal and ligands and applications to catalysis and synthesis. Although I think it a bit odd to have Ziegler–Natta chemistry in the carbene/carbyne section, the treatment here is lucid and imaginative and the problems useful. If you buy this book it will be for these chapters. The section on the isolobal analogy is also particularly clear and fresh, but that on cluster compounds is treated better in other popular inorganic texts. The book ends with a throw-away chapter lumping together short treatments of all those subjects that you wish you knew more about, like bio-organometallics, organolanthanides and surface chemistry. There is also the compulsory section on fullerene complexes, without which nothing can get past editors these days.

There are a few minor points worth making. Firstly, there is no main-group organometallic chemistry mentioned, except in passing, making the rather unoriginal title of the book also somewhat misleading. Secondly, despite the enormous plug in the Acknowledgements, the CAChe drawings are not all that clear in the final imprint. Also, there are some imperfect molecular line-drawings. Thirdly, the cycloheptatrienyl ligand is described as "tropyllium," or $C_7H_7^+$; a look at the last few years' literature on this subject should have revealed that this is no longer an adequate description.

If this book comes out as a paperback, the world's undergraduates might be inclined to use it instead of the more expensive hardbacks mentioned earlier, particularly when looking for something with a simple informative treatment of applications of transition metal organometallics to organic transformations.

Peter Scott
School of Chemistry, Physics and Environmental Science
University of Sussex,
Falmer, Brighton, BN1 9QJ
UK

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Metal–Ligand Interactions, Structure and Reactivity, N. Russo and D.R. Salahub (eds.), NATO ASI Series C: Mathematical and Physical Sciences, Vol. 474, Kluwer Academic Publishers, Dordrecht, Netherlands, 1996, pp. 552 + xiv, DM380, US$266, UK£169, ISBN 0-7923-3833-2

This volume is based upon the invited lectures given at a NATO Advanced Studies Institute held in Italy in September, 1994. The casual observer would be forgiven for being misled by the title of this book. One might expect to read about metal ions, ligands and ligand fields, magnetism and spectra, reactions of ligands, and all the related phenomena. In fact the contents turn out to be rather broader and rather different.

The first contribution discusses DET calculations on metal–ligand interactions and the mechanism of the enzyme activity of carboxypeptidase, very specific and rather sophisticated. The next describes guided-ion beam studies of ionic clusters and complexes, but little of this refers to normal, stable complexes. Then comes a review of the influence of silyl ligands on the reactivity of heterobimetallic complexes. This is certainly more the kind of material of interest to organometallic chemists, but is it really what the book title might lead one to expect?