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### Book reviews

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*Electrophilic Additions to Unsaturated Systems*. By P.B.D. De la Mare and R. Bolton, Elsevier Scientific Publ. Co., Amsterdam and New York, 2nd Edition, 1982, xiii + 377 pages, U.S. \$91.50, Dutch Fl. 215.00

The first edition of this book, which appeared in 1966, rapidly became the standard reference text in the field, and this new edition is greatly to be welcomed. The reactions dealt with are those which are initiated by attack of an electrophilic species on unsaturated compounds, proceed through intermediates having cationic character, and are completed by attachment for nucleophiles to give the addition products. The treatment is essentially mechanistic, and this enables the authors to unify much seemingly disparate material. Although there is much specific information, this is a creative synthesis, not, as is so common, simply a compilation of facts.

Most of the book is concerned, of course, with the most common additions, namely those to olefins, and a lesser extent acetylenes and allenes, of water and Brønsted acids, halogens, pseudohalogens, alkyl halides, acyl halides, sulphenyl halides, and nitrosating species, and also with epoxidation. Organometallic chemists will have direct interest in the sections on reactions initiated by electrophilic phosphorus, arsenic, antimony, bismuth, boron, aluminium, gallium, thallium, mercury, and palladium, but the treatment of some of these (e.g. hydroboration) is necessarily rather limited.

The book is reproduced directly from typescript.

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*Catalysis by Supported Complexes* (series: Studies in Surface Science and Catalysis, 8); by Yu.I. Yermakov, B.N. Kuznetsov, and V.A. Zakharov. Elsevier Scientific Publishing Company, Amsterdam, Oxford, New York, 1981, xx + 522 pages, \$89.25 or Dfl. 210.00.

This book covers an area in which organometallic chemists have normally been only peripherally involved, heterogeneous catalysis. The methods of study and the interpretation of the results of study of heterogeneous catalysis are generally considered within the realm of physical chemistry. This book attempts to build a bridge between the homogeneous and heterogeneous by discussing catalysts obtained by depositing metallic species (transition metal allyls are often used) upon supports such as metal oxides. The treatment of the material does not go into great depths of physical chemistry, and often uses a

graphic, unsophisticated approach. This is in no way a drawback. Mechanism is discussed at considerable length.

The material covered shows a distinct emphasis on Russian work, much of it the authors' own. In some areas it is difficult to detect very much difference of the supported catalysts from more conventional heterogeneous catalysts. However the reactions discussed are clearly of interest to organometallic chemists. The general contents are as follows: definition and characteristics of supported catalysts including industrial catalysts for oxidation and hydroformylation; metal oxides as supports; polymerisation of olefins; polymerisation of dienes; supported transition metal halides in olefin polymerisation; olefin metathesis (very empirical); hydrogenation of olefins; oxidations of organic compounds by complexes on oxide supports; monometallic and promoted metal catalysts on supports.

Finally and additionally, there is an extensive bibliography up to the end of 1980. There are more than 750 references, and it is comprehensive and wide-ranging. The literature coverage seems complete.

This book will be invaluable to those working in the area of supported catalysts, or those about to do so. It is not complete in all aspects of its treatment, but provides a sound basis for further study in a variety of related areas.

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