oxygenation of ethylene to ethylene epoxide by oxygen. He continued with a summary of the work by Sharpless and the study of the stoichiometric oxidation of olefins by metallo-oxygen and seleno-oxygen compounds. He reported on stoichiometric oxygenation by the oxygen complexes of the platinum metals. The role such complexes might play as catalysts in the homogeneous phase was appraised. Throughout considerable emphasis was placed on the mechanisms by which these various oxidation reactions might occur.

These lectures will be published in full in a future volume of the *Journal of Catalysis*. Many of the supporting lectures, some briefly mentioned below, have been published in the same journal.

In a supporting lecture Dr. M. Bartholin, L.M.O., Villeurbanne, France, described the fixation and evolution of organometallic rhodium complexes supported on modified polyphenylsiloxane and silica. Oxidative-additions with C-H fission at triosmium clusters was reported by Dr. A. J. Deeming, of University College, London, and asymmetric synthesis via polymer attached optically active platinum catalysts by Dr. J. Stille, of Colorado State University. Dr. Z. M. Michalsha, Institute of Polymers Technical University, Lodz, Poland, presented a paper on the catalytic activity of supported rhodium (I) and platinum(0) complexes in hydrosilylation reactions, and A. Guyot a paper on the influence of the texture of phosphinated polystyrene resins on the stability and catalytic activity of supported rhodium complexes. Papers by G. Sbrana and Dr. R. H. Grubbs considered the catalytic activity of ruthenium (II) and rhodium (I) catalysts bound to polycarbonylate and poly-B-diketonate matrices, and hybrid catalyst-metathesis catalysts attached to polystyrene copolymer, respectively.

B. F. G. J.

Platinum Metal Co-ordination Compounds

SPECIALISED PRODUCTS FOR INDUSTRIAL OR DEVELOPMENT USE

Strictly speaking most compounds of the platinum group metals can be classified as co-ordination compounds although most of the commercially available materials comprise relatively simple species such as oxides and chlorides. In recent years other platinum group metal co-ordination compounds, particularly organometallic complexes, have begun to find increasing applications in various fields. To meet the existing demand and to stimulate the development of additional applications Johnson Matthey Chemicals have considerably extended the range of platinum group metal compounds commercially available. This expanded range is possible as a result of extensive research and development work in the Johnson Matthey laboratories, where all the compounds are produced and fully characterised. A new publication entitled "JMC Co-ordination Compounds of Platinum Group Metals", which is available from Johnson Matthey offices and associated companies, lists over one hundred of these compounds, many of which are organometallic in nature. Information on infra-red spectra, colour and form, solubility and stability are provided for each compound together with comments on the possible applications which have been reported to date.

The major types of compounds available are carbonyl, carbonyl halide, carbonyl phosphine, ammine (amine), β-diketone, phosphine and nitrosyl, although a variety of other individual species is included. Potential applications are likely to occur in the petrochemical, heavy organic, pharmaceutical, photographic, scent and cosmetic industries among many others.

Most of the applications researched on these compounds to date are concentrated on homogeneous catalysis and several large plants are now in operation using platinum metal co-ordination complexes as catalysts.

The aim of the new catalogue is to stimulate research into these and other applications of platinum group metal complexes and all the compounds listed can be supplied in development quantities. In addition enquiries for complexes not mentioned in the publication are welcomed.

M. J. C.