

Bioinorganic Chemistry, Structure and Bonding, Vol. 70, contributions by P. Aisen, B.C. Antanaitis, S.J. Berners-Price, K. Doi, H. Köpf, P. Köpf-Maier and P.J. Sadler. Springer-Verlag, 1988, 194 pages, DM 148, ISBN 3-540-50130-4.

The first section of this volume, by Doi, Antanaitis and Aisen, reviews the binuclear iron centres of uteroferrin and the purple acid phosphatases. These phosphatases are a group of proteins distinguished by their enzymic activity, and by the presence of a spin coupled binuclear iron centre. The physical properties of these species are particularly well discussed. Their biological role merits less space, mainly because rather less is known about it.

The second and much longer review, by Berners-Price and Sadler, considers phosphines and metal phosphine complexes with reference to their biological activity and uses as anti-cancer agents. After an introduction with a somewhat random selection of metal phosphine chemistry, the review deals in detail with the biological activity of gold complexes of monodentate phosphines, well-known for their antiarthritic activity. The phosphines themselves, and many of their complexes which have been tested, have little anti-cancer activity, though the authors consider that some of the tests were not carried out under optimal conditions. The chemistry of gold complexes of chelating biphosphines is then discussed, with specific attention to their anti-tumour effects. Silver and copper complexes merit shorter treatment, but still appear to have some potential. Reactions of phosphines which may be relevant to biology are briefly considered. A final section deals with technetium phosphine complexes used for myocardial imaging, and new data added at the proof stage indicated that numerous complexes of other metals (Pd, Ni, Ir, Rh and Fe) with chelating biphosphines may have cytotoxic effects. This review will provide a useful basis of information for anyone wishing to work in this field. A few of the references run into 1987, but most of the coverage concludes in 1986.

The final section is the one which deals with classical organometallic chemistry. Köpf-Maier and Köpf consider anti-tumour agents containing transition and main group metal complexes of cyclopentadiene. There are numerous biological data for the complexes of the type Cp_2MX_2 ($M = Ti$ or V) but the salts $[Cp_2M]X$ (M is a transition metal such as iron) and the substituted metallocenes $[(R_5C_5)_2M]$ ($M = Sn$ or Ge) are also of considerable interest. The focus of the review is strongly biological. References run well into 1987, and the authors, who are authorities in the field, include many unpublished data from their own work. Again this will prove an invaluable review for any worker in this area.

As always with this series, the production of the volume is excellent, with clear diagrams and few typographic errors. There is an author index for volumes 1-70, but no subject index. All serious chemistry libraries should continue to take the series, and workers in this area should consider buying it themselves.