Clevenger), Atomic plasma emission (Peter Uden), Atomic fluorescence (A. D'Ulivo), Interfaces between liquid chromatography and atomic absorption (Les Ebdon and Steve Hill), Tin and germanium (O. F. X. Donard and R. Pinel), Lead (M. Radojevic), Arsenic and antimony (S. C. Apte, A. G. Howard and A. T. Campbell), Mercury (S. Rapsomanikis), Selenium (A. G. Howard), Sulphur gases (M. T. Shabbeer and R. M. Harrison).

The names of these authors indicate the wide-ranging experience and authority behind the coverage in each chapter.

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Structure and bonding Vol. 70. Bioinorganic chemistry

M J Clarke, J B Goodenough, J A Ibers (eds)

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The first volume of *Structure and Bonding* appeared in 1966 with the stated aim of providing up-to-date authorative reviews from the different fields of inorganic chemistry, chemical-physics and biochemistry where the general subject concerns chemical bonding to metal atoms. This has been achieved with a high standard of the articles and their presentation; the present volume devoted to bioinorganic chemistry is no exception. The three reviews make both interesting and stimulating reading for all inorganic chemists—stimulating because they challenge our conceptions about inorganic systems and in doing so must broaden our thinking.

The first, and shorter, of the reviews is by K. Doi, B. C. Antanaitis and P. Aisen, entitled 'The binuclear iron centers of uteroferrin and the purple acid phosphatases'. Uteroferrin, from uterine secretions, is one of the more thoroughly studied enzymes of this group. As their name implies they catalyse the hydrolysis of phosphate groups, a function we would normally associate with zinc enzymes. The challenge to the inorganic chemist is to explain why this group uses an active binuclear iron centre, a centre more usually associated with redox activity. The review concentrates on the chemical and physical properties of these enzymes. Despite the use of an impressive array of spectroscopic techniques, the authors clearly show that there is still much that is not known, e.g. the nature of the iron ligands in the protein and the exact physiological role of the enzymes.

The other two reviews consider the research done on metal complexes as anticancer (antitumor) agents. The complexes considered comprise phosphine and cyclopentadienyl compounds! How many inorganic chemists would have considered using such ligands for chemotherapeutic use? Not many, including myself! S. J. Berners-Price and P. J. Sadler review 'Phospine and metal phosphine complexes: relationship of chemistry to anticancer and other biological activity'. The cover is extensive, with 230 references and details of the chemical and structural properties of phosphines and their metal complexes, and the relationship of these properties to the cytotoxicity and antitumour activity of the metal phosphine complexes. Much of the stimulus for the work in this area comes from the use of the triethyl phosphine gold(I) complex 'auranofin' as an antiarthritic drug. Not surprisingly it is the gold(I) complexes that predominate in this review. 'Transition and main-group cyclopentadienyl complexes: preclinical studies on a series of antitumour agents of different structural type' is the third and final review, by P. Kopf-Maier and H. Kopf. Following the success of *cis*-platinum as a wide-ranging antitumour agent, the search for other active metal complexes has been intense. Among those examined, surprisingly, were the organometallic π-cyclopentadienyl complexes. Antitumour activity of these compounds was reported in 1979 and 1984; the intense activity since these findings can be judged by the 1982 references cited in the review. The authors give an in-depth report on the structure–activity relationships and pharmacological properties of the many compounds studied. These mainly involve two types of compounds, the metallocene diacido complexes, Cp_2MX_2, (M = Ti mostly) and the metallicenium salts $Cp_2M^+X^-$ (M = Fe mainly). Antiviral, insecticidal and antiflammatory properties are also reviewed.

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