of most interest but the book should be available to any laboratory where organometallic chemistry is studied.

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Metal Sites in Proteins and Models: Phosphatases, Lewis Acids and Vanadium
H. A. O. Hill, P. J. Sadler and A. J. Thomson (eds)
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Given the diverse topics it discusses, this volume of the long-running *Structure and Bonding* series is best considered as one of a set of three volumes dedicated to modern aspects of bioinorganic chemistry. Volume 88 of the same series deals with iron biochemistry, and Volume 90 discusses other redox metallocentres in proteins. This book, Volume 89, contains six chapters divided equally between the three titular headings, each written by world leaders in their respective fields.

Chapter 1, by Kimura, Koike and Shionoya, describes some recent advances in synthetically modelling the chemistry of mononuclear zinc hydrolases. This a discussion of recent highlights in a widely studied area which emphasizes the authors' own work; unfortunately, to some extent this review duplicates other fairly recent discussions by them of this material. Chapter 2, by Auld, is dedicated to amide hydrolysis catalysis by proteases. It begins with a brief introduction to zinc protein chemistry, which is followed by a concise description of spectroscopic and structural data from protease enzymes pertaining to their catalytic mechanism. This would be an excellent introduction to the field for the biochemically literate reader.

Chapter 3, by Slebodnick, Hamstra and Pecoraro, gives an overview of vanadium biochemistry and biomimetic chemistry, ranging from vanadium-containing enzymes and their model compounds, via vanadium-containing insulin mimics, to vanadate-effected peptide photocleavage. The chapter draws these disparate subjects together very successfully, by giving an introduction to the relevant chemistry of vanadium and then stressing the chemistry underlying the biochemical phenomena. These authors also end with the provocative suggestion that the best-studied vanadium enzymes, the haloperoxidases, may act as metal-free phosphatases *in vivo*. Chapter 4, by Butler and Baldwin, reviews in more detail the vanadium haloperoxidases. Although there is inevitably some overlap with the previous chapter, this is an informed description of catalysis by these unusual and environmentally relevant enzymes.

The book ends with two chapters on phosphatases. Chapter 5, by Gani and Wilkie, is a review of enzymic phosphate monoester hydrolysis, concentrating on the role of metal ions in the several catalytic cycles employed by phosphatases, and on how recent crystallographic data on these enzymes have revealed new mechanistic features. Finally, Klabunde and Krebs present a short chapter on the purple acid phosphatases. This again complements a briefer discussion already given in Chapter 5. However, knowledge of these intriguing enzymes has recently been transformed by structural studies performed in these authors' laboratories, so this discussion of their own results is timely.

Aside from a statistical smattering of typographical errors the quality of reproduction of the text and figures in this book is very good. All of the chapters are clearly written and thoroughly referenced, covering the literature up to late 1996 or early 1997. To conclude, this is a research-level text which would be of interest to chemists or biochemists working in these areas. Although the three-volume set described above should together comprise a useful and up-to date reference on bioinorganic catalysis, this volume on its own is probably not an essential library purchase.

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