

Preface

When one ponders on the question 'why did you decide to write this book?', there are at least two options. Firstly, that you felt that there was a need for a book of this type, and that, however pretentious it might sound, you were the right person to write it. Alternatively, you might argue that, having taught undergraduate and postgraduate courses on the subject, you could share your teaching with others who might appreciate the fruits of your experience in the area.

While there is an element of both of these in my decision to put 'pen to paper' (which really means word processor/cut and paste), I have had a third, and finally more powerful motivation, to write this introduction to biological inorganic chemistry. I have, since the beginning of my scientific career, been involved with metalloproteins. I cut my teeth on the haem-binding peptide of cytochrome *c*, which could be generated by Ag or Hb cleavage from the native protein (and which subsequently became famous/notorious as a 'miniperoxidase'). I then graduated to insect haemoglobins in the laboratory of Gerhard Braunitzer, at the Max-Planck-Institut für Biochemie in Munich, and upon my return to Glasgow, certainly influenced by the pioneering work of Hamish Munro on the regulation of the biosynthesis of the iron storage protein ferritin, to the field of iron metabolism. I have remained faithful to my favourite metal since then, as underlined by my organization of the Second International Meeting on Iron Metabolism in 1975. To quote my colleague Phil Aisen:

'The first conference (in July 1973 at University College Hospital Medical School, London) was sufficiently successful to provoke Bob Crichton to follow up with a second meeting two years later at Louvain-la-Neuve, where Bob was newly appointed as head of biochemistry. That meeting established the pattern for all its successors: meetings held on a biannual basis, organizers elected by conferees, partial funding sought and secured from outside agencies, a formal conference programme with informal discussions after each presentation, a conference banquet and suitable diversion to lighten the event'.

Over the years I have sought to continue the creation of relaxed atmospheres to facilitate scientific exchange. Examples are the seventeen advanced courses which Cees Veeger and I organized over the last twenty years, training more than 750 doctoral and postdoctoral students on the multidisciplinary approaches required to study metals in biology, and the recent COST¹ Chemistry Action D34 'Molecular Targeting and Drug Design in Neurological and Bacterial Diseases', of which I am chairman.

But enough of these reminiscences of the past. I owe an enormous debt of gratitude to my three collaborators without whom this book could not have been completed. Ioanna Psalti has not only rewritten my chapter on coordination chemistry, but also carried out two

¹ COST is one of the longest-running instruments supporting co-operation among scientists and researchers in 35 member countries across Europe and enables scientists to collaborate in a wide spectrum of activities in research and technology.

monumental tasks in proofreading the text for chemical incoherencies and in compiling the index, not to forget the absolutely brilliant cover which she has designed. Bobbie Ward has given me enormous help in the chapter on iron in brain as well as dealing with the problems of getting permission to reproduce the figures. Frédéric Lallemant has been there to sort out all of my computer crises (and there have been quite a lot), as well as drawing a lot of figures for the early chapters.

I also would like to thank a large number of colleagues, including Ernesto Carafoli, Bernard Mahieu, Brian Hoffmann, Peter Kroneck, Istvan Marko, Bill Rutherford and many others for their guidance in the scientific content of the text.

However, I remain responsible for errors or mistakes which have been perpetrated in what I hope will be the first of many editions of a book which is written with the clear and unequivocal objective to incite students coming from either a biology or chemistry background, not to forget those coming from medical or environmental formations, to develop their interest in the extremely important role that metals play in biology, in medicine, and in the environment.

Finally, I would like to dedicate this book to Antonio Xavier, not only in memory of his outstanding contributions to metals in biology, and to establishing the Society and the *Journal of Biological Inorganic Chemistry*, but for the outstanding personal qualities that made him a friend that one will not quickly forget.

Louvain-la-Neuve, 3rd October, 2007

Robert R. Crichton, FRSC