Book Reviews

Reminiscences and Reflections

HANS KREBS (in collaboration with ANNE MARTIN)

As Reminiscences and Reflections was completed in December 1980 and published during Sir Hans' short, final illness it covers, unlike most autobiographies, the whole period of his life. Written in the clear, concise style that characterized his scientific publications and richly supplemented with references, notes, the list of his published work and brief details of the 415 people mentioned in the text, it succeeds, as he hoped in being a scholarly yet readable record of his public life. Family life, apart from childhood, and personal friendships receive no more than passing reference 'since they had no direct bearing on my scientific career, I felt they would be of little interest to readers'. One cannot help but wonder what effect his scientific career had on his private life; there are hints that it demanded some heavy sacrifices in the early years.

The major contributions to science are explained clearly and put into historical context in chapters which can be by-passed by non-biochemists without losing the continuity of the general narrative, which moves along with an invigorating momentum.

The book will of course, be of immense interest to all those who knew his author personally or are familiar with his outstanding contributions to biochemistry, and it will afford them much pleasure. What can it offer the general reader? It helps to demolish the myth of the two cultures and of the boorish scientist. Krebs grew up with a living sense of the past, a delight in the natural world and derived pleasure from music, the theatre and literature. Schooling at a Humanistisches Gymnasium concentrated on Latin, Greek, History and German, and his decision to study medicine arose from seeing the gratitude of his father's patients and from a comment of Homer that "a doctor is not one life but the life of many". His subsequent interest and eventual career in biochemistry grew from the recognition that the practice of medicine required a sound scientific base. It was particularly fitting, therefore, that his 'retirement' years were spent in a laboratory in the Radcliffe Infirmary at Oxford, where he could become involved in clinical problems.

For the aspiring scientist Krebs sets out the path to be followed if one is to emerge as a creative leader rather than one of the army of foot soldiers. Intelligence, hard work and a commitment without too much regard for future security are clearly required, but of paramount importance is to serve a prolonged apprenticeship with an outstanding teacher. Sir Hans leaves us in no doubt as to his debt to Warburg. He also extols the benefits to be gained from working in large, communal laboratories where there is the maximum opportunity to acquire new methods and ideas from colleagues by daily contact, and he emphasizes the need for supervisors to set the right priorities for their juniors by their regular presence at the bench and abstinence from excesses of travel and committee work. As a director of research at a departmental level, he believed in appointing able people and encouraging them to develop their own areas of interest. At the personal level he established a small group of loyal and dedicated co-workers, whose record of continuous service is a remarkable tribute to his personal qualities of leadership and which provided an invaluable pool of technical experience.

A recurrent theme throughout the book is the need for the highest standard of integrity in public life. This is brought out most vividly in the unbridged gulf between the cold brutality of his letter of dismissal from Eitel, the Nazi Administrator of Freiburg University Hospital and father of one of his collaborators, and the humane concern expressed in the letters from F. G. Hopkins, who knew Krebs only from his papers but offered sanctuary in a crowded Cambridge laboratory. One beautiful old house in Krebs' childhood home of Hildesheim, now destroyed by war, bore the inscription 'Unsere Vorfahren waren auch keine Narren!' This book shows that some of them by embracing false idols were indeed fools and worse, but that others, in Germany as well as England, were motivated by those high ideals and standards that are the true founts of human and scientific progress.

PETER BANKS

Preparation and Analysis of Protein Crystals

ALEXANDER MCPHERSON
John Wiley/Interscience, Chichester, 1982, pp. 371, £39.00

This book is a brave attempt at the difficult task of encouraging biochemists to use crystallographic techniques, and crystallographers to isolate and purify proteins. In protein structure determination, their meeting point is frequently in attempts to grow large crystals, and the author makes this the focus of his book. It is in this chapter, which brings up to date his review in Methods of Biochemical Analysis (vol. 23, 1976), that he best achieves his aim of writing a valuable guide to workers at the laboratory bench.

In the larger task the book is less successful. The style is anecdotal, an approach well suited to the art of crystal growing but less useful for purification or X-ray analysis. The chapters describing isolation and determination of purity indicate usefully the range of techniques available and provide references to the wider literature. The detail is, however, variable and usually insufficient for the book to be used as a guide.

Similarly, the chapters on the nature of crystals and on diffraction, while serving to acquaint the reader with data-collection equipment and with the stages of a crystallographic analysis, would not be a helpful guide to one embarking on an analysis for the first time. The depth of treatment is uneven and a digression outlining a conventional small-molecule structure determination is out of place. The section on the theory of diffraction is not well integrated with the longer discussion of the stages of a protein structure analysis.

Despite these shortcomings, this outline of the stages in a protein X-ray structure determination may be useful to the biochemist wishing to take an intelligent interest in an analysis. The author expresses the hope that the biochemist will do X-ray experiments himself, particularly initial space-group determination and difference Fourier's. The aim is an admirable one, but those with this aim in view would be well advised to consult some more detailed texts. It is a pity that one of the most useful—Blundell & Johnson, Protein Crystallography (Academic Press, 1976), is the subject of a consistent typographical error!

MARGARET ADAMS