

# BOOK REVIEWS

## Renaissance Science

*Science, Medicine and Society in the Renaissance: Essays to honour Walter Pagel.* Edited by Allen G. Debus. Volume 1. Pp. 275. Volume 2. Pp. 326. (Heinemann: London, May 1973.) £12 the set.

DR WALTER PAGEL is, without doubt, the most outstanding historian of medicine in Britain today. In order to honour him on his seventy-fifth birthday, friends and colleagues have gathered together a *Festschrift* under the editorship of one of his pupils, Dr Allen G. Debus, who is Professor of the History of Science in the University of Chicago. That a historian of science should take on this task is altogether appropriate, because Dr Pagel's work is as important for the field of the history of science as it is for the history of medicine.

Dr Pagel's father was the renowned German historian of medicine, Professor Julius Pagel of the University of Berlin, from whom he inherited his brilliance and love of history. After the rigorous German *humanistische Gymnasium* education he studied medicine and graduated in 1922. Hereafter, his life was divided between Germany and England, for he and his family came to this country in 1933, and between pathology and the history of medicine. It is remarkable that one man should achieve such distinction in two fields of medicine, for Dr Pagel's writings on pulmonary tuberculosis are as important as those on the history of medicine. In fact, he is often mistaken for two individuals, pathologist and historian!

The approach adopted by Dr Pagel to medical history has always been that of the scrupulous, dedicated scholar who wishes "... to interpret the facts of medical and scientific history 'as the outward expression of their time' ..."

(Volume 1, page 7). Although his training and background have been in the Germanic tradition of pure history of medicine with few links with history or history of science, his published work, which comprises some four hundred and fifty items, together with his methodology, have influenced historians of science and of the Renaissance. His main interests have been in the sixteenth and seventeenth centuries, involving some of the most complex individuals and developments in the whole field of medical history. Thus his evaluations of Paracelsus (1493-1541) and Jean

Baptiste van Helmont (1577-1644), men who are as important to the history of science as to the history of medicine, have been classic and, fortunately for us, they are still appearing. The remarkable series of papers on William Harvey (1578-1657) and the recent book on his biological ideas testify to Pagel's astonishingly deep understanding of sixteenth and seventeenth century science, medicine, religion, philosophy, mysticism, education and many other aspects of culture in general. Nor have his interests been restricted to this period, for he has written on eighteenth and nineteenth century medicine too.

It is therefore fitting that the contents of these commemorative volumes should reflect all these facts, Dr Pagel's historical approach, scholarly methodology, and his chief interests. There are no less than thirty-eight papers from six countries and apparently these numbers could have been larger and the spectrum of topics wider, although still within his sphere of interest, had it proved possible to include papers from all who wished to contribute. Each essay is brief, scholarly, well written, and documented impeccably; the writers have made sure that the style and content of their compositions mirror Dr Pagel's rigorous standards. They cover a variety of subjects in both the history of medicine and science but they can mostly be grouped into those dealing with special aspects of the Renaissance and of the 17th century, with Paracelsus, the Paracelsians, or chemical medicine, and with Harvey or the circulation of the blood. The volumes, therefore, cover a wider period of time than the title would suggest. There is a biographical introduction by Professor Debus, a bibliography of Dr Pagel's writings, a brief account of each contributor, but no index. Naturally enough this book will be of wide appeal, for historians of science, of the Renaissance, of the 17th century, as well as of the history of medicine will find in it several items of value to their own studies.

On the whole, the *Festschrift* tends to be very uneven in content and style, and although important papers are to be found in them, often there are many of small importance. This example, however, is an exception, and the editor together with his contributors are to be congratulated on their inspired efforts expended in producing not only a lasting record of their regard and affection for Dr Pagel but a monument of scholarship

dedicated to "... a very kind and gentle man and to a magnificent scholar", as Dr Debus appropriately styles him (Volume 1, page 8).

EDWIN CLARKE

## Inorganic Biology

*The Inorganic Chemistry of Biological Processes.* By M. N. Hughes. Pp. 304. (Wiley: New York and London, December 1972.) £4.50.

THE recognition that metal ions play a very important role in biological systems has been a great stimulus to inorganic chemists. It has provided scope for speculation generally safe from too rigorous testing against real systems, and for the preparation of model systems based upon whatever aspects of a given biological system seem (subjectively) important to the researcher. It has also spawned a variety of interdisciplinary activities, some of which achieve identity through being named, and "biological inorganic chemistry" is one such.

This book aims to be an introduction to biological inorganic chemistry for teachers and advanced students. In about 300 pages of text it attempts to give a background to modern transition metal complex chemistry, to review the techniques of studying metalloproteins, and to describe the main enzymic functions in which inorganic ions appear important: hydrolytic metallo- and metal-activated enzymes, redox systems, nitrogen fixation and oxygen carriers. The book closes with two shorter chapters on alkali and alkaline earth ions in biological systems, and the use of metal ions and chelating agents in medicine.

The author has set himself an immense task. The amount of condensation and compression needed to achieve it requires writing of a very high standard, and it cannot be claimed that he has consistently reached it. Indeed, the almost inevitable result is a degree of compression and generalization which makes many of his statements of little value to students and comprehensible only to those already familiar with the material. Thus (page 17) "the presence of calcium ions results in the activation of certain enzymes and hence muscle