Marcello Malpighi and the Evolution of Embryology, by HOWARD B. ADELMANN, 5 vols. (pp. 2475) 4to, 16 plates (11 col.), map, Cornell University Press and Oxford University Press, 1966. £70.

Howard Adelmann made his first venture into the history of embryology in 1933 with his study of Volcher Coiter. Twenty-five years ago, in 1942, he followed this with *The Embryological Treatises of Hieronymus Fabricius ab Aquapendente*, a massive and scholarly volume in which the embryological knowledge of Fabricius was documented and presented in English with a wealth of annotation analysing and explaining the historical and scientific background of the texts. At that time few of us could have guessed that this work, far from being regarded as a crowning achievement, was but the model for something far greater, for what has been called a 'monument of scientific and historical scholarship' which would have been considered as remarkable if it had been the work of a whole team of devoted scholars. The modern currency of superlatives is too debased to employ in trying to convey to anybody who has not already seen and turned over the 2500 pages of Adelmann's work on Malpighi the impression that it makes. One is struck with awe by its comprehensive range and by the penetrating discussion of minutiae that even a well informed reader might reasonably have passed over without query. It opens up new perspectives in the history of embryology and general biology and, like all great works which deal with the history of ideas, generates enough new ideas of its own to serve as the themes of a score of theses.

How can one possibly do justice to a work of this magnitude in any review! Perhaps it is sufficient merely to describe what is contained in these five superbly designed and printed volumes—surely among the best that even the Oxford University Press has ever produced.

The twin gems which are placed in this magnificent setting are Malpighi's two Latin dissertations on the formation of the chick in the egg, first published with 11 engraved plates by the Royal Society in 1673. In Malpighi's time scientific knowledge was still part of the general cultural inheritance and had not yet been compartmentalized into a series of separate esoteric systems. Malpighi was urged on in his work by the Royal Society and he wrote for the generally educated reader as well as the still non-specialist *virtuosi*. He writes in the first person, taking us through his observations as intimately as if we were sitting beside him at his bench, appealing to our own 'discernment' and 'the harmony of nature' to help us to see what he is demonstrating through his own eyes. To take this even one stage farther there are 11 plates in colour reproducing Malpighi's original drawings which replace the engravings of the original edition, and it is the size of these which has been allowed to determine the format of the whole work. Accompanying the Latin texts are parallel English translations and a voluminous commentary in footnotes. To get some idea of what Adelmann has done for our understanding of Malpighi's work and indeed of the history of embryology these texts, which occupy only a very small part of the whole, should be read both before and after reading Adelmann. The range of his studies extends from the pre-Socratic philosophers, through Aristotle, Galen, and the Arabs, through Aldrovandi, Fabricius, Harvey and Gassendi, to Haller, Wolff, von Baer and His. Generous excerpts from the relevant texts are supplied in the original language and in English

translation, four of the most important as lengthy appendices. More than 1200 pages are occupied by 28 *Excursuses* which discuss the evolution of our knowledge of a particular organ or structure—the heart, the brain, the alimentary canal, and so on. The writings of precursors, contemporaries, and followers have been scrutinized for every possible relevant fact or idea. There are over 2000 printed references and many original manuscript sources, and the index alone runs to 137 pages.

It says much for the scientific worth of Malpighi's dissertations that their simple lustre is only the greater for being shown in this rich setting. And beyond all this scientific detail is the historical background, which includes a notable account of the great Studium at Bologna and of seventeenth-century Italy and what must be regarded as the definitive biography of Malpighi, occupying over 700 pages of the first volume. Professor Adelmann tells us in his introduction that he intends his work for the 'general reader' as well as the student, and this biography certainly justifies his intention, for it reads in parts like a film script based on one of Victor Hugo's novels, with sudden death, murder, and the splendour of the courts of Popes and Princes contrasting with the quiet friendship and encouragement of a Borelli. Adelmann suggests that Malpighi—a sensitive and diffident scholar—had recourse to his microscope to escape a sea of troubles, and he is probably right. What he saw through his lenses, we are wisely reminded, he saw 'with the mind of a seventeenth-century scholar and he could not possibly interpret his findings otherwise than in the intellectual context of his times'. We are shown that intellectual context in all its texture of complex simplicity (or simple complexity) and in this way we are helped to understand how and why Malpighi interpreted his observations as he did, an achievement which will always be beyond the reach of misguided 'historians' who seek to understand and evaluate such work in the light of twentieth-century knowledge.

Adelmann's work is undoubtedly one of the great landmarks—to set beside Sarton and Needham—in modern historical scholarship in the field of science and medicine.

F. N. L. POYNTER.

Carl von Linné, by HEINZ GOERKE (Grosse Naturforscher Series, No. 31), Stuttgart, Wissenschaftliche Verlagsgesellschaft, 1966, pp. 232, illus., DM. 23.50.

The Linnaean Society was founded by Dr. James Edward Smith in 1784, after purchasing Linnaeus' Herbarium and Library. In so doing this country was the first to keep alive the memory of Carl von Linné—a memory which has dimmed in recent years. The self-imposed task of reviving it has, however, been taken up by Professor Heinz Goerke of Berlin in this book.

It is a small hard-back with a table of contents, an index and list of personal and place names. There are also annotations and a list of references.

There are ten chapters devoted to his life and six to his work. There is an interesting introduction dealing with the historical background of Sweden and her relationship with her neighbours, which sets the scene for Linnaeus' life.