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scientists in Cambridge and elsewhere, it played a significant role in the progress of science, and in the development of industrial measurement and medical instrumentation. It is a story worth telling and of some historical significance.

The book is the product not of a professional historian but of two former employees who clearly share the affection for the company that seems to have been characteristic of its staff. Wolfe became Company Secretary and Cattermole Technical Manager, so they are well qualified to write about both business and technical matters. The title gives a good indication of the emphasis of the book. It is mainly about Darwin and the company, and the instruments it made at Cambridge during his tenure. The other major figure in the company's history, R. S. Whipple, does not feature so strongly. Nor is there much about the London end of the company, acquired in 1919 when it combined with R. W. Paul's business to become the Cambridge and Paul Instrument Company and later the Cambridge Instrument Company. In part, this reflects the bias of the surviving records now held in Cambridge University Library. The forty years from Darwin's death in 1928 to the end of the company's independent existence are covered in a single chapter. There is another story to be told, of the later years in detail and of the subsequent mergers, but this would need another volume.

The book is in two parts, the first and longer part giving the history of the company, and the second, by Cattermole alone, containing short accounts of ten important instruments made by the company, beginning with Darwin's famous rocking microtome. These accounts are a little disappointing, giving too much general historical information instead of concentrating on the development of the instruments by the company. The longest, and one of the most satisfactory, is about the electrocardiograph, the company's major contribution to medical instrumentation.

Inevitably, the book will not meet all the needs of the serious student, but it does provide pointers to further information. The price, though reasonable by current standards, will deter casual purchasers, which is a pity because it is a book worth reading.

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LINDSAY GRANSHAW, *St Mark's Hospital, London. A social history of a specialist hospital*, London, Oxford University Press for King Edward's Hospital Fund for London, 1985, 8vo, pp. xvi, 526, illus., £35.00.

The history of hospitals has, until comparatively recent times, been represented by histories of buildings and the men (the word is used advisedly) who administered, supported, and—most prominently—practised in them. More recently, general historians have turned their attention to these healing institutions, as they have to schools, prisons, factories, and corporations. The hospital is thus a comparatively new sub-field for professional historians, but one which shows signs of rapid growth; Granshaw's study of a 150-year-old London institution is an exemplary contribution to this increasingly sophisticated genre.

Like most nineteenth-century Anglo-American speciality hospitals, St Mark's was the creation of an upwardly mobile "outsider", in this case the surgeon Frederick Salmon. Despite the disdain or opposition of London's medical establishment, Salmon found support among merchants and bankers in the City. His fledgling dispensary opened in 1835 and was well established by mid-century. Granshaw deftly traces its history from these small beginnings through its sometimes difficult nineteenth-century history and into the National Health Service era. Most importantly, she demonstrates the policy and fund-raising decisions that allowed this institution to adapt and survive when so many of its peers died or were ingested by larger predators. In the course of this history, she demonstrates how the hospital related to changing specialist career and educational patterns, and how evolving clinical and research interests (in cancer, for example) provided adaptive mechanisms. But this is much more than a policy history. Its protagonists include nurses, patients, and domestic help—although the relevant data are sometimes skimpy. Ideas are protagonists as well. Granshaw has sought to integrate the technical with the professional and institutional—providing surveys of the changing clinical

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repertoire of the hospital's surgical staff, beginning with Salmon as "pile doctor" and extending into the era of an increasingly elaborate and invasive surgery. This is, in short, an extremely well-balanced and generously detailed study that constitutes a significant contribution to social and institutional history as well as to the history of medicine construed more narrowly. Her concluding chapter is titled 'A Study in Specialism', but this careful and unpretentious book is more than that. It would be unfortunate if a seemingly technical and circumscribed subject matter should obscure its more general relevance.

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SAUL BENISON, A. CLIFFORD BARGER, and ELIN L. WOLFE, *Walter B. Cannon. The life and times of a young scientist*. Cambridge, Mass., Belknap Press of Harvard University Press, 1987, 8vo, pp. xiv, 520, illus., £23.95.

Anyone beginning to read, or particularly to write, a scientist's biography must now do so with Sir Peter Medawar's warning reverberating in their ears: "The lives of academics, considered as Lives almost always make dull reading". Fortunately, the authors of this enthralling biography of the American physiologist, Walter B. Cannon, prove that an academic "Life" need not be the barren literary exercise that Medawar so feared, and this is in spite of following the precise schedule that he castigated, of "promise later to be fulfilled . . . a manly grappling with administration . . . and grateful letters from high places". The result is an attractive, well-researched account of the scientific and personal development of one of the most influential physiologists of this century, with a laudable absence of "dullness".

Cannon was born in Wisconsin in 1871, at a time when American medicine, as in Britain, was beginning to settle slowly into professional structures and opportunities. These would provide Cannon with purpose and possibilities throughout his career, which was to encompass a wide range of first-class research, distinguished service to the Harvard Medical School, and considerable efforts on behalf of the larger community of science at both national and international levels. These three major strands, with several minor ornaments, are detailed with impressive and highly readable authority by the three authors. Their individual expertises, as Medical Historian, as Professor of Physiology, and as Archivist to the Cannon papers, bring important complementary skills to bear on what must have been an absorbing project. It would be fascinating to know more of the mechanics of producing a work of this nature: how did the collaborators divide up the monumental amount of research required for the study? How did they collate their findings and assessments? And how did they co-operate in the writing, for there is a pleasing continuity in style and in content that is frequently lacking in other co-authored efforts. In analysing Cannon's work and influence, the authors have the benefit of not only his original research papers but also the several books he wrote, re-synthesizing and re-presenting his earlier experimental work. Additionally, they have his own account of his scientific beliefs (*The way of an investigator, 1945*), and several published assessments and reminiscences by his colleagues and pupils. Such works can, of course, be a mixed blessing to the later historian and Benison, Barger, and Wolfe have meticulously verified, with extensive archival detail, their sources.

Walter Bradford Cannon was born on the site of the original Fort Crawford, where forty years earlier, William Beaumont had made his important observations of the stomach of the unfortunate Alexis St Martin, who suffered from a gastric fistula. Cannon himself was always pleased to tell of this coincidence, because of the close links it provided with his own work in gastro-intestinal physiology, which, in turn, was associated with the European traditions of Bernard and Ludwig through Cannon's first Professor at Harvard, Henry Bowditch. It was Bowditch who suggested to Cannon and Moser, both young medical students at the beginning of their studies, that the newly-discovered Roentgen rays might be a useful technique for the investigation of deglutition. From that initial idea developed much of Cannon's future research, on gastro-intestinal motility, autonomic reflexes, the role of emotions in visceral function,