

**Reginald Passmore**, *Fellows of Edinburgh's College of Physicians during the Scottish Enlightenment*, Edinburgh, Royal College of Physicians, 2001, pp. viii, 132, illus., £10.00 (paperback 0-85405-057-4). Orders to: Royal College of Physicians, 9 Queen Street, Edinburgh EH2 1JQ, Scotland.

The Scottish Enlightenment was a remarkable era, during which individuals such as the philosopher David Hume, the economist Adam Smith and others such as the geologist James Hutton and the moral philosopher Adam Ferguson made important and original contributions to the intellectual life of their time. It was also a period when the newly founded Medical School in Edinburgh inherited, after its foundation in 1726, the position of Leiden as the leading centre for medical education in Europe.

In this volume, the late Reginald Passmore has described the lives of sixteen Fellows of the College of Physicians in Edinburgh who made important contributions to the teaching and practice of medicine during that period. All have been accorded their place in the *Oxford Dictionary of National Biography*, so that one has to ask why the need for further biographies. The answer is that these biographical vignettes have a particularly Edinburgh flavour, which illustrate the importance of their specifically medical contribution to the Scottish Enlightenment. The first is John Rutherford (1695–1779), pioneering teacher of medicine at the Medical School, and the last James Gregory (1753–1821), remembered today for his famous powder. Nine of the sixteen were Presidents of the College. Most practised or taught in Edinburgh, some like William Cullen (1710–1790) and Joseph Black (1728–1799) after moving from Glasgow. Others, for example James Lind (1716–1794) and Sir John Pringle (1707–1782), made their major contributions whilst working in England. The piece on William Cullen is particularly perceptive, and those on Black and Daniel Rutherford (1749–1819) illustrate the importance of Edinburgh in the development of chemistry and the knowledge of the new gases. William Buchan (1729–1805)

merits an entry for his highly successful *Domestic medicine*.

The book, however, is not content with biography. There are also chapters on clinical teaching in the Royal Infirmary, the *Edinburgh pharmacopoeia*, new understanding of chemistry and the nervous system and nervous disorders. In addition, there is Enlightenment advice to teenage girls, as illustrated by the letters of John Gregory in his *Legacy to his daughters* and the letters of Alexander Monro *primus* to his daughter Margaret, previously published by the College in 1995 under the title *The professor's daughter: an essay on female conduct*. There is also a brief piece on nepotism, in view of the remarkable dynasty of Monros who taught anatomy at Edinburgh and the successive generations of Rutherfords and Gregorys.

The Edinburgh College continues to make important contributions to medical history. The volume is entertaining to read and a valuable addition to the literature of the Scottish Enlightenment. It should be recommended to all who are interested in that remarkable period of Edinburgh history.

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**Christopher Lawrence**, *Rockefeller money, the laboratory, and medicine in Edinburgh 1919–1930: new science in an old country*, University of Rochester Press, 2005, pp. ix, 373, £60.00, \$85.00 (hardback 1-58046-195-6).

Amongst Canadian historians, the “Laurentian thesis” (named for the St Lawrence river) is an argument for master narratives rooted in a purportedly national experience. Amongst medical historians, the writings of Christopher Lawrence add up to a “Lawrentian thesis” of their own, but one that debunks national and master narratives. Lawrence’s earlier, much-cited works identify a group of “patrician” London consultants who resisted scientific specialization in medicine. While Lawrence provided brilliant insight into these groups, he

did not tell us much about how modernity actually occurred. This new book carries the story a little further. It brings the debunking spirit of the “Edinburgh strong programme” of science studies to Edinburgh medicine.

*Rockefeller money, the laboratory, and medicine in Edinburgh 1919–1930* examines the impact that American philanthropic money earmarked for scientific research had upon a very old and distinguished Scottish university. The juxtaposition of “new science” and “old country” lets Lawrence explore the larger cultural confrontation between British, and more especially Scottish, ways and those of an expansionist America. Rockefeller men and their allies in Britain (usually from Cambridge) found extant British medical institutions primitive, like those of the United States three decades earlier, and exclaimed, “we can completely revolutionize the teaching of medicine and surgery at very little cost” (pp. 95, 119). They tried to lure British medical schools to hire scientists with good research credentials to work as full-time salaried scholars, rather than as honorary consultants with private incomes (the status quo). The results were mixed across Britain and especially mixed in Edinburgh, as Lawrence shows. The Rockefeller funded a research chair in therapeutic medicine because the Canadian in that position, J C Meakins, was a serious scientist working on oxygen intake. Meakins wrote co-authored papers, brought in keen young researchers himself, and founded a good research school. But he soon left for McGill, his alma mater, and the modernization project stuttered to a not-quite halt. His replacement, David Murray Lyon, was more interested in clinical than laboratory observations, and so the keen young men left. The reorganization of the rest of the medical departments was blocked by rivalries and by the obstacle of Murray Lyon himself, until he reverted to an honorary consultant position in 1929. In surgery, the chair was filled only because the incumbent was permitted a private practice, a concession made, according to the university president, by a “hard and fast plan” to “wise and progressive change” (p. 146).

The first half of the book describes, sometimes in excessive detail, administrative rivalries and cultural distrust. The second half describes the new laboratory practices. Lawrence can show how quickly or slowly some “modern” techniques were taken up. Under Meakins, investigations into blood gases and especially oxygen saturation and alkali reserves proliferated but they lapsed after his departure. Edwin Bramwell, a patrician consultant appointed in 1908, never ordered an alkali reserve or a Wassermann. Lawrence has good clinical records for Bramwell and shows that the consultant—or perhaps his junior staff—did order an increasing number and variety of laboratory tests for patients. Every one of his diabetic patients had at least one blood-sugar reading, though not the serial readings that some specialists demanded. There was movement, but no “complete revolution”.

Lawrence sometimes overplays the argument for the sake of narrative neatness and drama. This was as much a conversation amongst Britons as it was a confrontation between Britain and America. The Rockefeller’s mouthpiece, Richard Pearce, virtually disappears from the story as British modernizers become the key intermediaries. Other influences like German practices and practitioners, are neglected. Moreover, the spectre of American medicine remains a hollow spectre—there is almost no information about how modern the modernizers had managed to make it and one suspects that the British were not alone in their local resistances.

But Lawrence knows all this. He introduces enough backdrop to the local story to make his substantial point, which he does splendidly. Scientific development was not linear: it advanced and it regressed. Moreover, it is wrong to insist on polar oppositions between science and non-science. Departmental rivalries are part of the picture, not its antithesis. Bramwell too participated in the whole modernizing enterprise. Science was not a monolithic juggernaut. The review began with a Canadian geographical metaphor and will finish with a geological one. Lawrence’s Edinburgh resembles the Burgess Shale: it reveals the wonderful diversity around

the early development of modern scientific medicine.

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**Christoph Gradmann**, *Krankheit im Labor. Robert Koch und die medizinische Bakteriologie*, Wissenschaftsgeschichte, Göttingen, Wallstein, 2005, pp. 376, €38.00 (paperback 3-89244-922-8).

Robert Koch was awarded the Nobel Prize for medicine in 1905 thanks to his identification of the bacillus associated with tuberculosis. Christoph Gradmann's intellectual biography of Koch, is not, however, the typical celebratory work that one might expect to mark this centenary. Indeed, *Disease in the laboratory* is a paradoxical book, being a biography of Robert Koch without really being a biography at all. What it offers is a new look at the history of microbiology from the perspective of this trail-blazing figure in the field, using various episodes from Koch's life to illustrate different features of this sphere of scientific research. Thus, Gradmann sets out to place Koch's scientific work in its historical context, underlining two important points; first, the radical novelty of medical bacteriology as a field of research, and second, its rapid growth during this period. Indeed, by abandoning medical practice to dedicate himself to microbiological research, Koch was taking a considerable professional risk in the 1870s. Nevertheless, Gradmann hypothesizes that the field of medical microbiology had become so crowded a few decades later, that one of the likely motives for Koch's scientific expedition to East Africa in 1905–7 was to escape the overly competitive research atmosphere of Berlin (and particularly his least favourite disciple, and fellow Nobel laureate, Emil Behring) for the fresh colonial fields of exotic disease.

The book is constructed around Koch's work on tuberculosis (for which he received his Nobel Prize), and more specifically the development and use of tuberculin, the unsuccessful

treatment for the disease, launched by Koch in 1890. Here, Gradmann raises a number of interesting practical and ethical questions with respect to Koch's research and his publications. What Koch's contemporaries held against him was not so much his medical experiments on human subjects (on himself and his colleagues in the first instance), but rather his leading the scientific world to believe that tuberculin came out of his research into the curative use of antiseptics, while in reality it was an attenuated strain of the tuberculosis bacillus. Indeed, Koch held out for weeks before revealing the secret, exposing himself to numerous criticisms in the wake of the treatment's rejection by a growing portion of the medical profession. There are, of course, interesting parallels to be drawn with Pasteur's "private science" that Geison has described in his study of Koch's great rival (*The private science of Louis Pasteur*, 1995).

The treatment of Berthold Schmidt (supposedly infected with sleeping sickness by a laboratory rat in 1906) provides an interesting continuation of the theme of the ethics of human experimentation in the early days of medical microbiology. This unfortunate laboratory assistant received an experimental treatment with atoxyl (developed by Ehrlich and tested by Koch in Africa). This treatment and the subsequent doses of mercury medicine illustrate not only the faith in the potential of chemical medicines at this time but also the acceptance of what would come to be regarded as excessively toxic interventions by prestigious doctors such as Dönitz, Wasserman, Ehrlich, and Koch himself.

The closing section of the book deals with Koch's scientific voyages. It starts with Koch's expedition to Egypt and India in 1883 that produced another famous discovery—that of the cholera bacillus. This is followed by an account of Koch's trips to East Africa towards the end of his career to investigate sleeping sickness. While it is necessary to make organizational choices, Gradmann's decision to treat these voyages together despite the fact that they were separated by over twenty years might be a source of confusion to the unwary reader. Nevertheless, there are ample rewards for the careful reader in the form of stimulating reflections on the