nothing new in this volume's framework and much is retold in the original, tired, often mythological, form that late nineteenth-century surgeons created: the discovery of anaesthesia, Lister's antisepsis, etc. The contents of this work—the great men, the famous operations—can easily be found in many places elsewhere. The virtues of this volume derive from Jones's personal experience—he is a retired paediatric surgeon—and he brings to the technical history of the operations he describes an informative clarity rarely encountered. Among other things the accounts of Lister's operations on carious joints (especially wrists), the corrections for the deformities of rickets in the lower limbs, the various interventions for an inflamed appendix, and Macewen's surgery for cerebral lesions are models of exposition of complex practical matters to which any interested reader could be directed.

These accounts demonstrate both Jones's first-hand knowledge of surgery and his careful return to primary sources. Of secondary sources, however, there is scarcely a trace except older hagiographic biographies. Inevitably all the familiar stories invented by surgeons and their pupils of the time are rehearsed. To take but one example in which I admit an interest: once again Lister is credited with saying that "if dust suspended in the air could cause sugar solutions to ferment" then "it was possible for dust carrying harmful germs to gain access to living tissues . . . and cause putrefaction" (p. 145). Before 1880, and probably much later, Lister never said any such thing and certainly not in 1867 nor for many years after this date when he first published on his antiseptic technique. Sugar solutions were not considered similar to living tissues by Lister or anyone else and he never made a leap from non-living organic matter to the healthy body. Living tissues, he repeatedly asserted, were perfectly resistant to "germs" *but* organic matter in wounds—congealed blood, dead tissue—like sugar solutions, he endlessly iterated, could form an ideal nidus for "germs" to cause putrefaction by fermentation. It was the absorption of toxins from this putrefaction, Lister said, that led to conditions such as hospital gangrene. To suggest otherwise is to be taken in by the myth later created by Lister and his followers that he used a modern germ theory of infection—basically a German construct of the 1880s—to guide his researches. Lister used antiseptic dressings to prevent "germs" settling on dead material and fermenting it. Oddly, Jones repeatedly uses Lister's own phrase "the germ theory of putrefaction" but seems not know the words of Lister's most famous disciple, recurrently referred to in this book. In 1882 William Watson Cheyne declared "the germ theory of infective disease . . . [has] no essential bearing on the *principles* of antiseptic surgery" which was "simply a struggle with the causes of putrefaction" (*Antiseptic surgery*, pp. 287–8).

At any rate the heroic picture of Lister champion of *the* germ theory, once again obscures the man—a most original, painstaking and much-admired (albeit remote and serious) surgeon who built up a cadre of devoted pupils brought up in the new science of the 1880s who created him as a prophet of modernity. Recently in their excellent study, *Medical lives in the age of surgical revolution* (2007), Anne Crowther and Marguerite Dupree have begun to show how this was done. This work may have appeared too late for Jones to have taken cognizance of it but, since the most recent works cited in his chapter 'The birth of the antiseptic principle' are from 1977, and then before that the appreciations of Lister by his pupils Rickman Godlee and Hector Cameron, it is hard to imagine its appearance would have made much difference had it been noticed.

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**Julie Anderson, Francis Neary** and **John V Pickstone,** in collaboration with **James Raftery,** *Surgeons, manufacturers and patients: a transatlantic history of total hip*



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*replacement*, Science, Technology and Medicine in Modern History, Basingstoke, Palgrave Macmillan, 2007, pp. xiv, 222, illus., £45.00 (hardback 978-0-230-55314-9).

The title of this book pretty much sums up what will be found here: the history of total hip replacement (THR) in Europe (mainly Britain) and North America and an account of the interests of surgeons, manufacturers and patients. The volume's association with the Centre for the History of Science, Technology and Medicine at the University of Manchester delivers its promise, as the reader might expect, of high quality research and sound historical writing. Manchester was the obvious place from which such a work might appear since the most successful hip prosthesis was developed by a local surgeon, John Charnley, at Wrightington Hospital near Wigan. Here Charnley had a clinical unit and a workshop, and a practical, apprentice-trained engineer, Harry Craven. Charnley and Craven's prosthetic hip was, at first, a classic "string and sealing wax" development. Even when their design was taken up and produced commercially their chosen collaborator was Charles Thackray, the owner of a comparatively small surgical instrument making company of that name in nearby Leeds.

The success of Charnley's hip lay in its material base (the dual components of a high density polyethylene cup and a stainless steel femoral head); Charnley and Craven's dogged testing; Charnley's development of an operation with a very low risk of infection; and Charnley's control over the access surgeons had to the details of the prosthesis and its implantation. This part of the tale is quite well known but the authors flesh it out with archival detail. As might be expected, the book reveals that Charnley's narrative was not one of single-handed heroism. THR had a prehistory in the 1930s, and in the post-war years many groups in Europe and across the Atlantic were experimenting to produce artificial hips that could be implanted with safety and restored function for a long time. This story occupies most of the first half of the book whereas much of the second part is devoted to industrial dynamics: competition, patenting, marketing, innovation, etc. As such, this is where the United States figures large in the narrative. The authors do well to tell a complicated story for, as they recognize, commercialism cannot be treated *in vacuo* without reference to ageing populations and the costs and means of delivering health care. Finally patients and their expectations are explored although not as an afterthought but as part of the complex dynamics of modern, expensive, health services in different nations. Enriched by the new historiography of technology, this is a well-written piece of modern medical history. Well-written of course does not mean this is an "unputdownable" Arthur Conan Doyle short story. It is demanding and may be more often turned to for the parts rather than the whole.

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**Wendy Moore,** *The knife man: the extraordinary life and times of John Hunter, father of modern surgery*, London, Bantam Press, 2005, pp. xiii, 482, illus., £18.99 (hardback 0-593-05209-9).

*The knife man* is Wendy Moore's exhaustive biography of John Hunter, the eighteenth-century Scot who is often found to be residing under the label of "founding father" of modern surgery. It charts the rise of Hunter from his poor childhood home in Lanarkshire, where he displayed early on a strong curiosity for the natural world around him, to his move to London to work as an assistant to his brother William, and on to the forging of his own career as London's best known surgeon and anatomist.

The book paints a vivid picture of Hunter's fascinating and often controversial work in anatomy and Moore readily casts him in the



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