

a vaccine was fierce. He begins with a somewhat superficial overview of the history of polio from Galen to Warm Springs, Georgia. This is a large swath of time, the later portion of which has already been covered in great detail by Naomi Rogers in *Dirt and disease: polio before FDR* (1992). The author hits his stride, however, a third of the way through the book, when he unpacks the complicated interrelationship between private fundraising campaigns (spearheaded, in the case of polio, by the National Foundation for Infantile Paralysis, or NFIP), the new post-war media machine, bi-partisan politics, and the science of virology. We learn why Jonas Salk became a household name in the United States, while Albert Sabin—a leading international figure in polio research—did not. Oshinsky takes us from the optimism of April 1955, when newspapers ran headlines proclaiming that “Polio is Conquered”, to the sudden wave of scepticism that hit the country later that same year after dozens of children who received vaccines from Cutter Laboratories of Berkeley, California, contracted the disease and were left paralysed. By ending his book with a discussion of the first bouts of Post-Polio Syndrome in the 1980s, Oshinsky indicates that the history of polio is not a simple story of medical triumph but one marked by numerous setbacks and complications.

There are many thematic threads to this book that will be of interest to medical historians. First, historians of medical ethics and human experimentation will find Oshinsky’s discussion of the moral quandary of using children (institutionalized and not) as research subjects in the early live-virus vaccine trials compelling and rich. And those who study the history of media and medicine will find Oshinsky’s story noteworthy, since he claims that the NFIP “created the concept of philanthropy as consumerism” (p. 5). For historians interested in women scientists, disability studies, or the patient perspective, Oshinsky has only a few brief sentences to offer. He leaves his reader wanting to know more about the women scientists who were essential to the development of the vaccine in the late 1940s and early 1950s,

such as Dorothy Horstmann—a Yale investigator who was the first to discover the “viremic phase” of polio, the very brief period of time when vaccination is effective—and Isabel Morgan—a Johns Hopkins researcher who, Oshinsky speculates, could “have beaten Salk to the polio vaccine” if she had been willing to use children as experimental subjects and avoided marriage at the age of thirty-eight (p. 132). Oshinsky rarely discusses polio victims themselves, except for a brief mention of teenager Bill Kirkpatrick, Salk’s “Subject No. 1”. In today’s literature, polio is a topic of both disease *and* disability history—one wonders why Oshinsky did not draw upon the work of Daniel J Wilson better to address the view of those on the ground who personally experienced what it meant to have polio.

Nevertheless, Oshinsky has written a highly readable history about the leaders behind America’s mid-century campaign to eradicate polio. Albert Sabin, Jonas Salk, Basil O’Connor (director of the NFIP) and FDR “represent[ed] the public face of polio—the courageous victim, the devoted foundation leader, [and] the brilliant researchers with their lifesaving vaccines” (p. 112). It is a top-heavy story, but one of extreme importance to understanding how laboratory science operates in a consumer-conscious, media-saturated, risk-adverse society.

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John Russell Silver, *History of the treatment of spinal injuries*, New York and Dordrecht, Kluwer Academic/Plenum Publishers, 2003, pp. xvii, 297, illus., £76.00, €110.00, \$121.00 (hardback 0-306-48032-8).

In an age of politically-correct disability consciousness, the Stoke Mandeville centre for spinal injuries is not just renowned, it’s iconic. Here, paraplegic sports replace basket-weaving and poetry as the pinnacles of human and medical achievement, and an endless succession of VIPs line up for photo-shots. The would-be normalizing of social intercourse with persons

not long ago regarded as basket-case cripples is inexpensive PR.

Like curb-cuts and wheelchair ramps, then, the history of Stoke Mandeville and the history of the treatment of spinal injuries in general, can never be entirely a self-sealed medical story. As John Silver reveals in this converted MD thesis, the political, the economic, and the cultural intrude at nearly every turn. Albeit, “the intrusions” here are mostly inadvertent; like other such practitioner histories, the dominant narrative of this one is positivist, heroic and progressive. The “dark ages” of dying paraplegics (mainly from bed-sores and dirty catheters) is seen inevitably to give way to happy, hopeful, scientific times. The “nothing-much-could-be done” days of worker-patients paralysed by falling bales on busy docks, or crushed by shunting locomotives and reckless transport wagons, progresses ultimately to inspired medical enthusiasts determined to turn a unremunerative backwater into something other.

It takes only two short chapters to get us there. We gallop through antiquity, Moslem, Hindu, and Chinese medicine, Paré, the usual stock of nineteenth-century surgeon grandes, on to Cushing, Sargent, Holmes, Riddoch and Head during the First World War, to arrive along the way at the setting up in 1916 of the world’s first specialist spinal outfit, the historically neglected Royal Star and Garter in Richmond. Short shrift is given to the interwar doldrums with their cut-backs, institutional dissolutions, and meagre signs of professional interest, to reach the Second World War and the setting up of Stoke Mandeville as a Ministry of Pensions naval hospital in 1944.

Whereas doom and gloom prevailed at the Star and Garter, with patients “totally dependent on the orderlies, regimented and addicted to morphine” (p. 53), at Stoke Mandeville the sun shone from the start. Primarily, this was due to Hitler. It was thanks to his 1933 expulsion of Jewish doctors from university appointments that Ludwig Guttmann was led to seek refuge in England in 1939, eventually to become (after five unhappy years at Oxford’s Nuffield Department of Neurosurgery) Stoke Mandeville’s first Medical Officer. Guttmann (1899–1980) had

worked under Otfried Foerster in Breslau, treating spinally-injured miners. He had done some research on peripheral nerve injury, was passionate about sweat therapy, and was an advocate of physical re-education. An ugly man—as keen to take all the credit for successes as to blame anyone else if things went wrong—Guttmann “bullied and humiliated” those around him (p. 90). But at the same time, apparently, he stimulated his staff, and was as respected for his neurological knowledge as for the rigorous regimes he instituted. Patients, too, were inspired by him—or perhaps just frightened into the kinds of behaviour that led medical visitors to describe them as imbued with restorative “spirit[s] of confidence and self-dependence” (p. 96).

Stoke Mandeville became every inch Guttmann’s fiefdom. He instituted research at all levels, insisted on meticulous note-taking for future studies, organized case presentations, tutorials and lectures on German lines, and conducted bedside teaching of doctors, physiologists, and nurses. Not least, he taught patients how to look after themselves. He was “cruel to be kind” wrote one of them reflecting on how her rehabilitation was as gruelling psychologically as it was physically. A micro-manager and authoritarian, Guttmann often turned up on “his wards” in the middle of the night to check if staff and patients were following his orders. He blasted the truant.

John Silver ought to know; intermittently he was a practitioner at Stoke Mandeville in the 1950s and 1960s, and collaborated with Guttmann on several research papers. His book combines personal recollections with sources from the National Archives. Oddly, however, he does not pursue the history of Stoke Mandeville through to the glory days when he was the neurological consultant there, from 1970 to his retirement in 1993. Instead, half-way through the book he waves goodbye to the place forever, offering thereafter a potted history of spinal injury treatment in the USA, Canada, the German-speaking world and France. After four chapters of organized historical disorder—with sub- and sub-sub sections on biography,

therapies, institutions and “summaries”—the volume concludes with a ‘Discussion’ on the principles of treatment and a review of the literature. As Sir Roger Bannister puts it in the book’s foreword, Dr Silver “achieves a unique balance of historical perspective and neurological expertise” (p. vii).

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John Henderson, *A life of Ernest Starling*,
People and Ideas series, Oxford, published for the
American Physiological Society by Oxford
University Press, 2005, pp. xvi, 227, £35.99,
\$59.50 (hardback 0-19-517780-0).

There have been two accounts of Starling’s life, by Carleton Chapman and Jens Henriksen, but this volume draws upon new material—a collection of family letters. And instead of the thematic approach of the earlier books, Henderson treats Starling chronologically. A prelude outlines the history of medical education and physiology, before proceeding to Starling’s childhood, education and early career at Guy’s Hospital. Initially demonstrator in physiology (1889), Starling developed a close relationship with William Bayliss of University College London (UCL), during their joint work on the heart’s electrical activity and nervous stimulation. Starling published the first edition of his textbook, *Elements of human physiology*, in 1892, and studied tissue fluid and lymph formation, in 1896 explaining movement between capillaries and tissues in terms of hydrostatic and osmotic pressure—the “Starling Forces”. Using Guy’s Hospital minutes, Henderson demonstrates Starling’s dissatisfaction with his job insecurity, remuneration, and teaching load. Guy’s surgeon, Cuthbert Golding-Bird, described as “vindictive”, was apparently responsible for the situation. Similarly, Starling’s move to the UCL Jodrell chair of physiology (1899) was opposed by the surgeon Rickman Godlee, creating a “gruesome slice of university politics”.

Henderson devotes a chapter to the discovery of secretin (1902), Starling’s role in the “Brown Dog” vivisection trial (1903), and the creation of the UCL Institute of Physiology (1909). We are also introduced to Starling as “politician and iconoclast”: his robust views on medical research, science and education, attacks on the “Harley Street cabal”, and admiration for Germany. A further chapter considers Starling’s “Law of the Heart” (1914). Henderson regards this as of less importance than the microcirculation and secretin work, but provides a detailed discussion in view of continuing debate about the circulatory system.

During the First World War, Starling became engaged in gas warfare research, and later gas defence training. According to Henderson, his criticisms of War Office policies led to his posting to Salonika in November 1916. Returning to Britain in July 1917 he served as chair of the Royal Society’s Food (War) Committee, and as a member of staff of the Ministry of Food. Three post-war chapters deal with the Starling’s final activities. As Pre-Clinical Dean, he was much engaged in teaching, and a Rockefeller Foundation gift for a new anatomy institute. He also advised on the establishment of an all-India Research Institute. From late 1919 he suffered from colon cancer but, after an operation, resumed research in 1921, his research time increasing on his appointment to the Foulerton Professorship in Physiology established by the Royal Society. Starling’s final research was on kidney function and blood pressure control. The former work, conducted with Basil Verney, used a heart-lung-kidney preparation and demonstrated the effect of pituitary extract upon the composition of urine, the starting point for the rest of Verney’s research. As for the blood pressure work, Starling’s involvement seems to have petered out between his health deteriorating in 1925 and his death in 1927. In the final chapter, Henderson surveys Starling’s life, continuing discussions of his attitudes towards Germany and medical science, the reasons for his failure to receive a Nobel prize or a knighthood, and his scientific contributions.