

Book Reviews

relation to the development of neurology as a medical specialty and to knowledge of the brain. (This in part perhaps reflects the lack of archival material on Head's scientific work.) In particular, Head's career as a theorist draws on the work of John Hughlings Jackson, work which, so Head claimed, had been almost totally ignored. Had it? What reception did Head's theory of sensation have? The biography does not enable us to judge Head's originality. (For Jackson, one should turn, perhaps the message is, to Jacyna's earlier fine study, *Lost words: narratives of language and the brain*, 2000.) Head's functionalist way of thinking encouraged him to mix physiological and psychological languages and therapies. How special was this? Secondly, the book does look "outwards" from the archive, as opposed to using the archive to illuminate the man, in two regards. The first of these, naturally, is to use the individual career to illustrate contemporary medical practice. In addition, however, Jacyna proposes a large thesis, which gives the book its title, that Head's manner of life and work makes him an exemplary "modernist". That he was "modern" is well shown: he vehemently supported a scientific basis for medical education, he was a rationalist in ethics and an unbeliever in religion, and he responded with warmth to the innovations of modern literature—to Flaubert, Ibsen, and, influenced by Ruth Mayhew, to Henry James and, later, Virginia Woolf. He also had a deep appreciation of Shakespeare, Goethe, Wagner and so on. He certainly thought that it is the privilege of the individual and special mind to judge and to appreciate the arts. He was prone to believe that he had great personal insight into individual psychology and he thought about people in psychological terms. He had an anti-modernist's revulsion to urban life. Thus, I would have welcomed a more systematic discussion of the senses in which he could be described as "modernist". If, as Head's theories supposed, "the mind was an *artificer* that actively created the world with which it interacted" (p. 150), in what sense was this "modernist" in a way which the

arguments of Kant or Goethe, or indeed Alexander Bain, were not?

This "life" will give great pleasure and interest to many readers, perhaps most of all to those who, like Head himself, find both the sciences and the arts personally indispensable.

Roger Smith,
Moscow

Roy Church and E M Tansey, *Burroughs Wellcome & Co.: knowledge, trust, profit and the transformation of the British pharmaceutical industry, 1880–1940*, Lancaster, Crucible Books, 2007, pp. xxvii, 564, illus. £19.99, \$39.99 (paperback 97801-905472-07-9).

This work, based on detailed research of the firm's archives, aims to tell the history of Burroughs Wellcome, founded by Silas Burroughs and Henry Wellcome in 1880, which eventually became the largest British pharmaceutical manufacturer. The authors focus on how Burroughs Wellcome applied new methods to the marketing side of the business, paying attention to product development, branding, advertising, salesmanship and market research, and how the company invested in and promoted innovative medical research. It discusses the tension between the commercial and scientific side, the establishment of major laboratories, and the legal and regulatory challenges, such as obtaining permission to perform animal experiments.

The first part of the book, covering the years 1878–1914, starts by discussing the firm's founding and early days, the introduction of American business methods, management and organization, tensions in the partnership, the difficult relation with the retail trade, the creation of the major research laboratories from 1894 onwards, the production of vaccines and sera (important before antibiotics became available), and the transformation of Burroughs Wellcome into a

multinational company. The second part, covering 1914–1940, studies the war's impact, showing how the firm presented itself as a major supporter of the war effort through providing or developing medicines (such as Salvarsan substitute against syphilis or a serum against gas gangrene), the post-war organization of R&D, vaccine and sera production for humans and animals, competition in over-the-counter medicines, the American side of the business, and the relative decline in the interwar period. The book ends with an assessment of Wellcome's influence on pharmaceutical and medical research in Britain.

This is a meticulous work. It is at the cross-roads of business history and medical history. It is based on detailed research of the firm's (now part of GlaxoSmithKline) pre-1940 records, and on the personal papers of Silas Burroughs and Henry Wellcome at the Wellcome Trust and Library. Many other archival materials have been consulted, such as records from the Royal Pharmaceutical Society, the National Archives and the Medical Research Council. Lavishly illustrated with photographs, advertisements and reproduced sources, it is a joy to own and read. Especially useful are the many tables with sales, profits and other business information, performance of overseas subsidiaries and comparative data of British competitors such as Allen & Hanbury and May & Baker, which put Burroughs Wellcome's achievements in perspective. The tables sometimes serve to back up the qualitative sources—they lend support, for example, to the company's claim that in the early years of sera and vaccines production, it did not make money on it.

There is a special insight into how Burroughs Wellcome imported American sales practices, establishing a highly disciplined sales force that had very clear instructions on how to sell (they asked doctors for only three minutes of their time and promoted only one product per sales call). The sales organization also functioned as an information system to alert Burroughs Wellcome to the demand for

certain products (thus maximizing the marginal social benefits of its investments) and to effects and side-effects that could help in developing new medicines or improving quality. This suggests that marketing may not always have been so bad as some want us to believe nowadays. These methods were not only new in Britain for the pharmaceutical industry, but probably for many other industries as well.

A central concept that runs through the book is trust. Within the firm, management and scientists needed to trust each other, and the firm also needed to win the trust of doctors, pharmacists, government departments, professional associations, patients, and the general public. Many actions helped to gain this trust. The book notes, for example, that the tropical disease laboratory in Khartoum gave Burroughs Wellcome a good reputation in this area and in the colonies and may have helped to win large government contracts.

This is an essential addition to the existing histories of GlaxoSmithKline and its predecessors, such as those of Glaxo and Allen & Hanbury's. A minor quibble is that the book is rather long and detailed, at times tending to the encyclopaedic—but, on the other hand, it is so well-written and structured, and the lavish illustrations so clearly support specific points made in the text, that it will be hard to put aside for anyone interested in the pharmaceutical industry, even if there are some detours here and there.

This is an outstanding contribution to British economic and business history, to the history of the British pharmaceutical industry and to British medical history. In addition it provides fresh glimpses of the life of Sir Henry Wellcome. That the book is at the cross-roads of several fields makes it all the more interesting. This is a monumental achievement that deserves to be widely read.

Gerben Bakker,
London School of Economics