

structures with profound but still poorly understood implications for our health care at the dawn of predictive medicine.

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John E Lesch, *The first miracle drugs: how the sulfa drugs transformed medicine*, Oxford University Press, 2007, pp. xi, 364, £35.99, \$59.50 (hardback 978-0-1951-8775-5).

The history of the sulfa drugs is one of those that have been overshadowed by other stories for quite some time. In the historiography of anti-infective therapies the sulfas have been dwelling in the shadow of fungal antibiotics and of the assumption that it was with the latter that the therapeutic revolution got started during the Second World War. In a more peculiar way the historiography of these medicines has also suffered from a somewhat hagiographic focus—thereby reducing the history of a whole class of drugs to the biography of Gerhard Domagk, a German medical researcher who in 1939 was awarded the Nobel Prize for his work on prontosil, the first of these medicines. As Lesch makes clear, however, this is a truly misleading picture. The sulfa drugs, derived from so-called azo-dyes, should better be understood as being part and parcel of a system of invention that had developed in the German pharmaceutical industry from the late nineteenth century. In the specific case of prontosil, Bayer (later part of I G Farben) had pursued a research and development strategy on anti-infective therapy from pre-First World War days. Heinrich Hörlein, a trained chemist, managed this research, bringing together medical people like Domagk with chemists like Joseph Klarer and Fritz Mietzsch. It was meant to be a long term involvement and that was indeed what was needed. What started as an industrial system of invention inspired by Paul Ehrlich's views on chemotherapy well before the Great War made very little headway in the 1920s. Thus, the molecule that finally was marketed as prontosil from 1935 onwards

encountered the widespread scepticism that had resulted from the futile search for Ehrlich's magic bullets. Eventually, the medicine turned out to be effective against such conditions as pneumonia, gonorrhoea and others. Lesch carefully reconstructs the reception in major national drug markets like France, Germany, Great Britain and the US in the late 1930s. For example, in France the introduction of sulfa drugs was slowed down because they were perceived as a threat to a major asset of the nation's pharmaceutical industry, therapeutic vaccines.

However, after some hesitation the sulfas got off the mark and with them, as Lesch argues, the therapeutic revolution of the mid-twentieth century. The Second World War cut off the German industry from its export markets while at the same time providing a powerful stimulus for the development of more such medicines in other countries. By the end of war there were literally thousands of known therapeutic molecules of this class and quite a few of these had been successfully marketed as medicines. Lesch singles out the example of sulfapyridine, popularly known as M&B 693, developed by the British company May & Baker, and follows in some detail the trajectory of this drug. That the sulfas sparked the therapeutic revolution is not only connected to the fact that they were actually the first of a series of "miracle drugs" that came to be invented between the 1930s and the 1960s, but also that other typical features of that historical phenomenon such as standardization of medical practice and a close link between medical and industrial technologies are shown to be present in their history.

Lesch's story essentially closes in the immediate aftermath of the Second World War. It is based on scrupulous and exhaustive archival research and an admirable command of scholarly sources. Although some passages are a demanding read for those with little or no knowledge of chemistry, it is certainly not a specialist account. Instead it is a true eye-opener on the role of sulfa drugs in mid-twentieth-century medicine, placing them firmly in the context of the larger histories of science, medicine and pharmacology. It looks likely to be

essential reading for years to come for anyone with a scholarly interest in its subject.

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Louise Hill Curth (ed.), *From physick to pharmacology: five hundred years of British drug retailing*, Aldershot, Ashgate, 2006, pp. xii, 174, £50.00 (hardback 978-0-7546-3597-0).

This well-constructed edited collection provides an overview of five centuries of British drug distribution through a series of chapters organized in chronological order, each written by a specialist in the field. By the same token, it allows the reader a glimpse of the evolution of the drugs themselves, and of drug consumption through the ages and across a number of regions, under the influence of urbanization, changes in welfare provision, the tightening of drug regulation, and the shift from a holistic to a biomedical model in medicine.

In the introduction, Louise Hill Curth distinguishes between five overlapping phases. Each of these is represented in the book by one or two chapters. The second and third chapters, by Patrick Wallis and Curth respectively, are on the first phase, referred to by Curth as that of the “kitchen physick”, when most remedies were still being prepared in the home from natural ingredients. Nevertheless, in the period covered by these two essays, i.e. the early modern period, commercially made and promoted proprietary medicines made their appearance. In the second phase, that is the eighteenth century, a veritable commercial revolution occurred. This was characterized by a growing sophistication in retailing techniques, and by the professionalization of groups involved in the construction of a “medical marketplace” (p. 6). However, in chapter 4, Steve King highlights the disparity between regions in terms of access to medicines, contrasting the more isolated communities of the west of England with Northamptonshire—both urban and rural—where drugs were not only more available, but their supply more reliable.

In a neat transition, King’s essay is followed by Hilary Marland’s (chapter 5), which describes the rise of the chemist and druggist in nineteenth-century manufacturing districts, that is to say the third stage in the evolution of British drug retailing. This was a period when the foundations of modern pharmacology were laid, coinciding with a spectacular increase in the number of shops selling both patent and prescription medicines, and with growing concerns over drug safety. But it was not until the last two phases, from the late-nineteenth to the late-twentieth century, which are covered by Stewart Anderson’s and Judy Slinn’s essays (chapters 6 and 7 respectively), that drug safety regulation began to shape the production and distribution of medicines. This occurred at a time when scientific research became integrated within the pharmaceutical industry, which acquired its multinational character in the period between the wars.

Thus, *From physick to pharmacology* largely succeeds in doing what its editor set out in the introduction, i.e. describe the evolution of British drug retailing from the sixteenth to the twentieth century. However, to make it easier for the reader to grasp the relationship between its successive phases and the different chapters in the book, as well as keep track of the chronology, a table would have been helpful. Illustrations, of drug advertisements for example, would also have been welcomed. *From physick to pharmacology* is neither an economic history of drug retailing, nor a scientific history of drug development, but rather—and in my view therein lies its originality—a history of the parallel, and to some extent convergent, evolution of medical ideas and drug distribution and consumption. Thus, for me a significant conclusion of the book is “the immense variety of the channels through which ‘patients’ have received and acquired ‘drugs’, and the equally complex strategies of diagnosis and treatment, with self-medication consistently being the most common variety” (p. 3). I therefore feel confident that readers of *Medical History* will find much of interest in this volume, which I heartily recommend.

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