

Systemic poisoning was no ground for overthrowing the prevailing view that the market compensated for any harm to health.

Britain failed to grapple effectively with arsenic, Whorton believes. In some cases arsenical technologies were superseded, or the glacial pace of public concern (or the quicker one of changing fashion) forced manufacturers to abandon arsenical products, but arsenic scandals kept coming. Noting that continental governments, with stronger traditions of medical police, sometimes acted more energetically in regulating arsenical commerce, Whorton reflects on the sanctity of *caveat emptor* in Victorian culture. Yet in other areas of public health British governments did overcome any principled reluctance to act.

The Arsenic Century is a good read, reflecting Whorton's fine eye for evidence and broad sweep, yet vignettes and grisly tales sometimes get in the way of historical analysis: a book about a Victorian sensation (arsenic was one) does not fully escape the sensationalism of its sources. Like forensic science today, arsenic was a boon to Victorian publishers. Murders thrilled readers: poisoning was the most lurid sort of murder. Adulterated foods, stupid fashions, and industrial victimisation could also draw readers. Medical weeklies like the *Lancet* fed on that sensation at one remove. One may wonder if Victorian Britain's unwillingness to take arsenic more seriously stemmed from the public's ambivalence toward its journalism. Some pervasive threats to health do exercise us most fully as occasions for venting or hand-wringing; any effective action would be complicated and highly inconvenient.

My criticisms are equally suggestions for further work. First, a more systematic comparative treatment would clarify any British uniquenesses (Whorton occasionally alludes to European or American practice, but in no sense is this book a comparative treatment). Second, however helpful Whorton's topical ordering, it obscures change, yet he suggests that there was greater responsiveness by the end of the century.

Finally, we need to know more about who the poisoned were and how many. Arsenic mimicked common illnesses, including infectious diseases. If the sensationalists are right, a revision of a received view, in which poisoning is rare and infection common, would be warranted. Or perhaps this is mainly a story of the power of mass media to embellish environmental (and social) danger. With this fine introduction to an overlooked threat to health, Whorton has earned the right to address that question more fully.

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Christoph Gradmann and Jonathan Simon (eds), *Evaluating and Standardizing Therapeutic Agents, 1890–1950* (Basingstoke: Palgrave Macmillan, 2010), pp. xiv + 266, £55.00, hardback, ISBN: 978-0-230-2-281-8.

This collection of articles edited by Christoph Gradmann and Jonathan Simon, investigates an important, and timely topic: the history of the standardisation of therapeutic agents, or, to use the term chosen by the volume's editors, *Wertbestimmung*. This word does not correspond precisely to the English term 'standardisation', since it contains also a dimension of 'evaluation' and 'regulation'. The difficulty of defining what exactly standardisation/*Wertbestimmung* is, and how it unfolds in different sites, is at the very centre of this volume. The final essay by Alberto Cambrosio quotes Samuel Krislov's apt formulation: 'there is no standard way to define standards'. On the other hand, if *Evaluating and Standardizing Therapeutic Agents* does not provide a single definition of standardisation/*Wertbestimmung*, it conveys a good understanding of the importance of this topic and its central role in the development of twentieth-century medicine.

The first part of this collection is composed of seven papers (by Cay-Rüdiger Prüll, Axel Hüntelmann, Anne I. Hardy, Gabriel Gachelin,

Jonathan Simon and Marianna Kaba) which discuss the case of diphtheria serum, the first and exemplary standardisation of a biological drug. Three of the four papers of the second part investigate other biological therapies: Michael Worboys studies Wright's therapeutic vaccines, Jean-Paul Gaudillière, the manufacture of sex hormones, and Ulrike Linder, polio vaccine. A fourth paper, by Christian Bonah, examines the standardisation of Strophanthin, a drug derived from a plant. The two parts are linked through insightful papers on the Danish State Serum Institution, by Anne Hardy, and on the development of international co-operation in the inter-war era, by Pauline Mazumdar. The latter paper focuses on the politics of standardisation, rather than on the fate of standardised substances. Mazumdar's study also provides important insights on the development of international co-operation in the inter-war era.

The majority of the papers in this volume are carefully researched case studies that illuminate different aspects of standardisation/*Wertbestimmung* in context. They point to the role of local scientific cultures of leading institutions (the Pasteur Institute in Paris, the Serology Institute in Copenhagen, St Mary's Hospital in London), of charismatic individuals (Ehrlich, Roux, Madsen), relationships between researchers and clinicians, organisation of health care, state intervention, and international networks of collaboration and exchange. Papers by Hüntelmann (on the regulation of diphtheria serum in Germany), Gaudillière (on the production of hormones by Schering and Bayer) and Bonah (on standardisation of Strophanthin) dwell also on theoretical aspects of standardisation/*Wertbestimmung*. They discuss the contrasting roles of administrative and industrial cultures of standardisation; the differences between standardisation in a research laboratory and a production plant; the co-production of a given therapeutic agent, its clinical indications, and the criteria of its efficacy. The final, synthetic essay by Alberto Cambrosio, situates standardisation in a larger framework of regulatory practices in medicine,

and argues that the early regulation of therapeutic sera and vaccines set the pattern for the later regulation of all pharmacologically active preparations. Drawing on the pioneering work of Ludwik Fleck, Cambrosio stresses the importance of the slow, meandering initiatives which, crisscrossing between research laboratories, production plants and regulatory instances, gradually led to the stabilisation of new therapies.

A single volume cannot do full justice to a very rich and complex topic. Further studies will teach us more about the strategies of industrialists, the role of clinicians, and methods used to assess the efficacy and risks of therapeutic agents. In the meantime, the volume *Evaluating and Standardizing Therapeutic Agents* is an excellent introduction to the role of standardisation/*Wertbestimmung* as a boundary object which links heterogeneous networks and domains of study, and shapes the production of new medical knowledge and practices.

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Laura Salisbury and Andrew Shail (eds), *Neurology and Modernity: A Cultural History of Nervous Systems, 1800–1950* (Basingstoke: Palgrave Macmillan, 2010), pp. xiii + 298, £55.00, hardback, ISBN: 978-0-230-23313-3.

This collection of essays starts from the assumption that: 'to speak of neurology and modernity is to describe a relationship of mutual constitution' (p. 1). 'Neurology' – in the broad sense in which the word is deployed here – is thus the product of the modern world. But doctrines of the nerves have also served to constitute the experience of the modern. Indeed, the editors maintain that: 'modernity can be thought of as being singularly neurological, determinedly nervous' (p. 2). The modern self, Salisbury and Shail contend