

complex, detailed and sometimes repetitive exposition of the quantitative geographer's art, three different spatial scales are used to investigate a set of hypotheses relating to mortality level and mortality decline—the crisis hypothesis, the “big-city high potential model” and environmentally-driven explanations. By adopting these approaches, the study emphasizes that many existing interpretations are too heavily reliant on models which apply only to specific places over specific periods of time. An additional attraction of this triple-tiered approach is that suitable statistical modes of analysis can be brought to bear at each spatial scale. Thus, linear trend and time-series decomposition models are adopted in the section on global mortality trends; regional contrasts in seasonality are examined with the aid of principal component and biproportionate analyses; and the spatial diffusion of epidemics in North America and the British Isles is evaluated by means of autocorrelation and the calculation of time-lag to infection. Although understanding is greatly facilitated by an extensive number of stylish plates, tables and figures (183 in total over 469 pages of text), the dense reworking of these techniques, or what the authors term epidemiological “decipherment”, will not readily appeal to non-specialists.

Two additional problems should be noted. First, because the six infectious diseases under consideration were subject to patchy reporting, they accounted for no more than 11 per cent of the total mortality in the 100 cities between 1887 and 1912 (calculated from Table 5.2). Secondly, twenty-five years is a relatively short period over which to search for consistent trends. In an attempt to confront this issue, Cliff, Haggett and Smallman-Raynor examine epidemiological change between 1901 and 1975 in twelve countries—the United States, ten European countries and Japan. They conclude by outlining a number of ways in which the spread of infection may be modelled and controlled. Attention is drawn

to five possible trends in the future: the decreasing importance of spatial barriers; the crucial role of rapid surveillance; the need for sampling as disease panoramas change and diversify; the indispensability of mathematical spatial models; and the ever-closer link between socioeconomic development and disease control. While these speculations are undoubtedly broadly relevant, this concluding chapter appears to be somewhat out of place: it provides no more than a weak link with the exhaustive analysis of the data for 1888–1912 which forms the main body of the text. By returning the reader to the developed western world, it fails to capitalize on the global and regional approaches that have been carefully constructed in the earlier part of the book.

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**Kurt Bayertz and Roy Porter (eds),** *From physico-theology to bio-technology: essays in the social and cultural history of biosciences: a Festschrift for Mikuláš Teich*, The Wellcome Institute Series in the History of Medicine, Amsterdam and Atlanta, Rodopi, 1998, pp. vi, 287, illus., £45.00, Hfl. 135.00 (hardback 90-420-0501-7), £12.50, Hfl. 40.00, (paperback 90-420-0491-6).

For fifty years Mikuláš Teich has written on the historical relations between science, technology and society, achieving distinction for his work on the origins and development of biochemistry. From a brief biographical sketch, which precedes the fourteen essays in this pleasing *Festschrift*, we learn that his great wish was to become a medical doctor and that his first teaching post in Prague was in medical chemistry. It is therefore fitting that he should be honoured with a collection which, however uneven in quality and disparate in focus,

reflects the many facets of the life sciences, their medical and political ramifications.

With several trans-European as well as British and American contributors, the editors have assembled an impressive panel. Charles Webster searches for the most authentic portrait of Paracelsus and resolves its paradoxical depiction of a bare-headed, care-worn visage by exposing its polemical and rhetorical features. Bill Brock explores the receptivity of the Royal Institution and the Smithsonian Institution to a windfall benefaction from the millionaire Thomas George Hodgkins (1803–92), who died believing that the regeneration of pure air was an urgent priority to halt the degeneration of the human race. In Britain, James Dewar was the main beneficiary, but in what Brock describes as “a world of jealous, competing and bloody-minded scientists and inventors”. A vision of physiology as a science liberated from medical constraint is shown by Hans-Jörg Rheinberger to have informed the thinking of Johannes Müller, who, on his revisionist reading, should not be regarded as philosopher first and physiologist second. For the period 1869–1914 in Germany, Katherina Rowold shows how the reading of homosexuality as a symptom of degeneration was displaced by theories ascribing it to developmental anomalies. Magnus Hirschfeld is discussed as one who supported the women’s movement for education and suffrage but who also perpetuated the gendering of mental powers. In an illustrated examination of erotica, Julie Peakman takes us back to the eighteenth century when the gendering of plants by Linnaeus was parodied through the use of botanical metaphors for genitalia. Her essay exposes the fine line that existed between medical and obscene literature.

As an aperitif for his and G S Rousseau’s book on gout, Roy Porter reminds us that disease could sometimes be desirable, protecting one from a worse affliction and serving as a “permanently conspicuous badge of superiority”. His

inimitable subtitle (Banks and the Mountebanks) refers to a case-study (the demise of Sir Joseph) and a thesis: “precisely because orthodoxy had chosen to formulate an elaborate theory of gout’s special and beneficial incurability, irregulars were able to move in and clean up.” The curability of beri-beri forms part of an equally absorbing story told by Harmke Kamminga, who, building on Teich’s work, reveals an ironic twist to the history of vitamin deficiency disease. Whereas Frederick Hopkins recognized that accessory food factors were indispensable for a healthy diet, his fellow Nobel Laureate Christiaan Eijkman was rewarded for his discovery of the “antineuritic vitamin” preventive of beri-beri. But the irony is that Eijkman had a long-term resistance to a nutritional aetiology for beri-beri, convinced that it was of bacterial origin. How he later deleted this from the record makes fascinating reading. Plenty of food for thought, then, with the vitamin of controversy supplied by the geneticist Benno Müller-Hill, who contends that “wherever science begins to look like a social construct, one should be suspicious that something has gone dangerously wrong.”

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**Noble David Cook, *Born to die: disease and new world conquest, 1492–1650*, Cambridge University Press, 1998, pp. xv, 248, illus., £30.00, \$54.95 (hardback 0-521-62208-5), £10.95, \$15.95 (paperback 0-521-62730-3).**

In a 1967 article—later reprinted in his book *The Columbian exchange* (1972)—Alfred W Crosby drew particular attention to the significance of disease in the conquest and colonization of the New World. His thesis was that the Spaniards