# *Book Reviews*

**Andrew Cliff, Peter Haggett** and **Matthew Smallman-Raynor,** *Deciphering global epidemics: analytical approaches to the disease records of world cities, 1888–1912*, Cambridge Studies in Social Geography 26, Cambridge University Press, 1998, pp. xxiii, 469, illus., £55.00, $74.95 (hardback, 0-521-47266-0), £18.95, $29.95 (paperback 0-521-47860-X).

Geographers and the geographical tradition have made an important contribution to the remarkable rate at which medical history has unravelled during the past twenty-five years. A comparative spatial perspective has now established itself as a standard historical method by which medicine and ill-health may be evaluated in their social and cultural contexts. Studies of public health and epidemiology in the past readily lend themselves to this approach. Drawing on a heavily quantitative geographical tradition which has its roots in the 1960s, *Deciphering epidemics* describes and explains global patterns of urban epidemic mortality at the turn of the century. The book fully engages with ongoing debates about the nature of the mortality decline that was experienced in many parts of the world during these years. Simultaneously, by suggesting how this historical/spatial viewpoint might contribute to the prevention of mortality from infectious diseases in the modern world, it connects with the preoccupations of contemporary epidemiologists.

Containing information relating to weekly totals of mortality from up to 11 causes of death in no fewer than 350 cities in the United States and world-wide, the quantitative material is derived from early editions of what eventually became the *Morbidity and Mortality Weekly Report*. This is now published in the United States by the Centers for Disease Control and Prevention. But in its many earlier incarnations—*Bulletins of the Public Health*, the *Weekly Abstract of Sanitary Reports* and the *Public Health Reports of the Surgeon General*—it was highly variable in its content. Nevertheless, the authors have been able to abstract and analyse mortality totals for six "marker" diseases in one hundred cities. These cities were carefully selected according to data completeness, population size and geographical coverage; while the choice of conditions—diphtheria, enteric fever, measles, scarlet fever, tuberculosis and whooping cough, and "all causes of death"—was dictated by their relatively uninterrupted presence in the *Weekly Abstract*.

Following a detailed chapter justifying the selection procedures outlined above, the analytic core of the book is divided into three main parts, each of which refines the spatial scale under scrutiny. The first section deals with global patterns of urban mortality. Here, world-wide epidemic trends are used to test hypotheses of mortality decline. Three measures for each disease—crude total of deaths, rate per 100,000 and individual cause of death as a percentage of all causes—failed to demonstrate statistically significant evidence of the mortality decline at the global scale for any condition other than diphtheria. This position is partially modified in the next chapter, in which the authors claim that, with the significant exception of respiratory tuberculosis, many of the marker diseases were falling in ten world regions. The next section, which analyses mortality change in the ten leading world cities reverses the original position. In the authors' words, "the long-term trend in death rates was roughly horizontal or falling for nearly all city/disease combinations" (p. 310). This may give the impression that Cliff, Haggett and Smallman-Raynor contradict themselves throughout, yet that is not the case. In a

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, Hlf. 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,