

transit of Venus in that year. This was an important contribution to international collaboration in science in those early days when America was little known for its contributions to scientific achievement, apart from Franklin's important studies of electricity. The observatory found a further niche in American history when it was the scene of "a great concourse of people" on 8 July 1776. From the stage of the observatory, Colonel John Nixon publicly read the Declaration of Independence to the crowd, who responded with three huzzas. It was John Adams who declared that the Declaration had been proclaimed "from that Awfull Stage". Bedini's account of the search for the long-lost observatory and for the instruments it housed is one of the most illuminating of these essays.

Benjamin Henry Latrobe, America's first professional architect and engineer, is described in a revealing sketch by Edward C. Carter, and there is then a compelling analysis by Marvin E. Wolfgang of attitudes to imprisonment in Pennsylvania between 1787 and 1829. 'Cotton textiles and industrialism', by Thomas C. Cochrane, introduces the Industrial Revolution in America to the reader, and this topic is continued by Brooke Hindle in an outstanding analysis under the title 'The American Industrial Revolution through its survivals'. Beautifully illustrated, it provides fascinating insights into the development of technology in nineteenth-century America. Joseph Ewen then describes the books belonging to Benjamin Smith Barton, the largest natural history collection in America before 1815. The essays continue with an account of the foreign members who were Biological Scientists belonging to the American Philosophical Society during the eighteenth and nineteenth centuries by Bentley Glass, and concludes with a biographical sketch of Louis Agassiz as an early embryologist in America by Jane M. Oppenheimer. Born in Switzerland, Agassiz emigrated to America in 1846, and he therefore belonged to a different century from that which he has so engaged Whit Bell's attention.

To anyone who enjoys the variety offered by a book of essays, this is an outstanding collection. For those unfamiliar with American history, it gives rare insights into the affairs of early America. There is naturally a particular orientation to the intellectual, scientific, and technological achievements of Philadelphia, to which so much of Whit Bell's work has been directed. It will give great pleasure not only to Dr Bell's friends but to all who are interested in the history of medicine and science in the United States. The title is appropriate and the illustrations well chosen. One of the best features of the book is the frontispiece, a delightful portrait of Dr Bell that illustrates so well his generous character. It also gives a glimpse of him as "that rare combination of outgoing enthusiastic teacher with a warm interest in people and a quiet painstaking scholar", which was how the American Philosophical Society described him upon his election to membership in 1964.

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ROBERT WOODS and JOHN WOODWARD (editors), *Urban disease and mortality in nineteenth-century England*, London, Batsford, 1984, 8vo, pp. 255, £19.95.

Population history, perhaps more than most of the "new social history" that has been developed over the last twenty years, has been overtly dependent on one main source. Thanks to back projection, the historical demography of England between the sixteenth and early-nineteenth centuries no longer suffers from the constraints imposed by individual parish-based reconstitution studies. The demography of the post-parish register era (1837 to the present day), however, remains tied to the Annual Reports of the Registrar General with their decennial supplements and is likely to remain so until the Registrar General decides to end the permanent ban on public access to the Civil Registers which contain the basic demographic data.

The present collection of essays on urban disease and mortality shows the strengths as well as the weaknesses of a near-exclusive reliance on what successive Registrar Generals thought fit to publish on the demography of nineteenth-century England. For example, it requires no great ingenuity to chart the process of demographic change at national level or the higher mortality of the cities compared with the country. It is considerably more difficult to decide on the relative significance of each of the various hypotheses; improved diet, medical initiatives, environmental

improvements, and a change in the character of specific diseases put forward to account for the fall in mortality during the course of the nineteenth century or even to assess the relative contribution of each to the mortality level of a particular city.

On the latter issue, Robert Woods' own study of the sanitary condition of Birmingham marks a significant advance in that he is able to provide a fine area breakdown of the distribution of wells and water-closets to compare with the spatial incidence of disease. Even Woods, however, is not able to exclude the possibility that it was not the locality of residence but the standard of living of individuals that critically shortened or lengthened their expectation of life. Other contributors fare less well. Barbara Thompson, for instance, discusses the factors behind the high level of infant mortality in Bradford, but her analysis is disappointingly inconclusive. The turn-of-the-century survey of infant welfare by the Westminster Children's Health Society, recently summarized by F. B. Smith in *The people's health 1830–1910*, (Croom Helm, 1979, pp. 125–126) established that whether and for how long the infant was breast-fed was a much more potent influence on its chances of survival than either the quality or type of housing or whether the mother was employed outside the home. If this was the situation of the inhabitants of a poor quarter of the metropolis, why should it be different for the infants of Bradford? This, at least, is the proposition that ought to have been confronted in any further account of the high rate of nineteenth-century infant mortality, particularly if the historian feels, like Barbara Thompson, that the blame lay with environmental hazards and poverty rather than elsewhere.

A more general weakness with the collection of essays is the absence of any detailed treatment of mortality in rural areas. This may seem a somewhat churlish criticism to level at a book specifically devoted to the study of urban disease and mortality, but it is difficult to deal adequately with the various hypotheses competing to account for the general decline in mortality unless it can be explained why life expectancy at birth in rural areas could exceed fifty years while in a number of the larger towns it failed to reach thirty-five. At one point (p. 24), Woods and Woodward allege that the early-nineteenth century witnessed a substantial advance in life expectancy in rural areas, but they offer no direct evidence. Otherwise, there is only Gillian Cronjé, who shows that one of the major killers, tuberculosis, although more prevalent in urban than in rural areas, was as early as the 1850s already in a more marked decline in the former. Nevertheless, it must be a tribute to the success of Woods, Woodward, and their colleagues that one wishes for a companion volume on what the industrial and urban revolutions had left of rural England.

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J. R. SMITH, *The speckled monster. Smallpox in England, 1670–1970, with special reference to Essex*, Chelmsford, Essex Record Office, 1987, 8vo, pp. 217, illus., £14.95.

The history of smallpox, and its conquest by inoculation, vaccination, and the strong arm of public medicine, must form one of the crucial test cases in any interpretation of the relationships between disease, medicine, and society in modern Britain. It could lend powerful support to the historical case for the efficacy of scientific medicine. Alternatively, the continuation of serious epidemics long after inoculation and vaccination became available might suggest that the social and institutional factors surrounding sickness and its treatment need to be confronted. Above all, the furores created by the host of anti-vaccination movements throughout the post-Jenner period seem ripe cases for the subtle examination of medical politics. It is quite peculiar, then, that relatively little recent scholarship has appeared examining the wider trajectory of smallpox and its treatment in England.

We possess, of course, much valuable specialized research: Miller's admirable though ageing account of the reception of inoculation, Razzell's querying of the Jenner myth, Baxby's careful investigation of Jenner's techniques, and, for the nineteenth century, MacLeod's pioneering article on anti-compulsory vaccination movements and Fraser's analysis of the Leicester experience. But we do not, as yet, have for England what Pierre Darmon's *La longue traque de la variole* (1986) attempted (not totally successfully) to achieve for France: an integrated overview of the interaction of disease, medicine, and society over the course of several centuries.