

## Towns: 'immense hotbeds of disease'

'It is to no purpose to send out the schoolmaster, it is to no purpose to employ the missionary, it is to no purpose to preach from the pulpit, it is to little or no purpose to visit from house to house and carry with you the precepts and the lessons of the Gospel, so long as you leave the people in this squalid, obscene, filthy, disgusting, and overcrowded state.'

Lord Shaftesbury, *The Labourer's friend*, July 1853, p.100, quoted in *Endangered lives: public health in Victorian Britain*.<sup>1</sup>

**P**ROBLEMS of the 'inner cities' and inequalities in health are matters of current concern, but not new ones. The nineteenth century shared such concerns although the problems, centred on the infectious diseases, were different in nature and extent and a consequence of the explosion in population associated with industrialization. The population of England and Wales increased (in round numbers) from five million in 1700 to nine million in 1800 and to 32 million in 1900. Associated with this increase were two major changes: a shift in the areas of greatest population density from the south of England to the Midlands and the north of England, and a transition from a mainly rural population to a mainly urban one — a process which reached the half-way mark midway through the nineteenth century. It was not so much the size of the towns as the rapidity of expansion which created conditions that led William Farr to describe them as 'immense hotbeds of disease'. Urban expansion was accompanied by high mortality rates, especially among infants and young children.

For the country as a whole, there were no reliable statistics of the causes of death until the Registrar General's Office was established in 1837 and a compiler of abstracts was appointed. The latter could so easily have been a dull, dry statistician. Fortunately, William Farr, LSA (1807–1883) was appointed. Farr was previously, if briefly, a general practitioner and before that a pupil in Paris of Louis, the founder of medical — as opposed to vital — statistics. From the time of his appointment in 1838, Farr produced a series of reports unequalled for their synthesis of detailed statistical analysis, vivid description and brilliant speculation. One of the first reports dealt with 'deaths in towns and the open country'.<sup>2</sup> Farr showed beyond doubt that death rates in towns, especially in the towns of the north of England, were far greater than in country areas. The excess was greatest for deaths from phthisis (pulmonary tuberculosis), the 'zymotic and contagious' (infective) diseases, especially smallpox, measles, scarlet fever (diphtheria was subsumed under scarlet fever in this period), whooping cough, typhus and typhoid (then subsumed under 'typhus') and the diarrhoeal diseases. Infant mortality rates were appalling.

Consider Bradford, for instance, in the mid-nineteenth century. Surrounded by high ground, the trouble with Bradford, as an exasperated railway engineer put it, was that 'it's in a hole'. While the rich lived on the hills, the labouring poor lived with their pigs in back-to-back houses (preferred as being 'less draughty') down in the hole among the iron works, coal mines and textile mills and the stink of 20 000 overflowing privies. Food was often adulterated and insufficient; even the water supply was inadequate and milk was sold in shops from uncovered bowls which also served as the bath (or worse) for the shopkeeper's baby.

Two recently published books describe the diseases of towns in the nineteenth century. The first, by Anthony Wohl, is vivid social and medical history.<sup>1</sup> The second, based on a much more statistical approach, is mainly concerned with the reasons for the decline in the mortality rate which occurred steadily through the second half of the nineteenth century, a period in which medical therapy and immunization, except perhaps smallpox

vaccination, contributed nothing.<sup>3</sup> If the sanitary revolution (water supply and drains) reduced deaths from typhoid and other bowel-to-mouth infections, it accounted, at most, for 30% of the decline. Typhus may have declined because of a reduction of immigrant labourers from Ireland. The largest part of the decline in mortality, especially from phthisis the greatest killer of all, is usually attributed to a rising standard of living in the second half of the nineteenth century. This is an exceptionally confused historical area. Economic historians, unable to agree, are divided into the optimists and the pessimists in the well-known and lengthy standard-of-living debate. Most believe that standards of living, or at least real wages, did increase, and the medical consequences are based on certain assumptions: that a rise in real wages led to more and better nutrition and thus to better health and increased resistance to disease and hence to a reduction in the mortality rate. There is little direct evidence for such a change in the nutrition of the poor in the nineteenth century; but there is no reason to doubt the link between nutritional states and health, although the interplay of such factors for different social and occupational groups at different periods is clearly very complex.

Historians are therefore applying increasingly refined statistical techniques with the assistance of computers to burrow deeper than ever before into Victorian statistics. Are they likely to succeed? Mortality statistics, however impressive *en masse*, are, in the end, only as good as the people who certified the causes of death. In studies of historical disease it is the quality of the original data that is the limiting factor, rather than the methods of analysis. Often it is forgotten that death certification was voluntary from 1837 to 1874. For example, in 1858 17% of deaths were uncertified as to cause while up to 30% in the 1840s were recorded under vague headings such as teething, convulsions, paralysis, atrophy, debility, inflammation and old age. No one can tell what these categories concealed.

In view of such flaws, new understanding of disease in nineteenth-century Britain may result not so much from refinement of statistical techniques as from a combination of historical evidence and recent knowledge from clinicians, epidemiologists and nutritionists dealing with the health problems of the Third World. An example of just such an approach is provided by a paper on the changing patterns of infectious disease.<sup>4</sup> It offers an explanation for declining mortality based on a 'neo-Lamarckian' theory of the inheritance of acquired immunity and explains the possible mechanism. The author suggests that a new disease in a community is, at first, relatively virulent and affects the young. As it 'ages' in that community it affects increasingly older groups, gradually declines in severity, and may eventually die out. Examples are provided from observations in Papua New Guinea and of smallpox in Ethiopia, measles in Nigerian children, tuberculosis in nineteenth-century Britain and myxomatosis in Australian rabbits. Historians concerned with patterns of mortality in the past will be intrigued by the important implications of this paper.

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### References

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