perspective, he always enlivens his argument by references to the experiences of specific individuals; in two chapters on 'The respectable poor' and 'The dangerous poor', he puts on view the people who made up the two major groups for whom poor relief was formulated, and he tells us how they fared.

Longman's 'Themes in British Social History' series is aimed at the student market. Students reading this book are lucky, for they have been presented with a major historical work.

Andrew Wear, Wellcome Institute

PHILIP D. CURTIN, *Death by migration: Europe's encounter with the tropical world in the nineteenth century*, Cambridge University Press, 1990, 8vo, pp. xix, 251, £27.50/$39.50 £8.95/$11.95 (paperback).

In his classic history of tropical medicine, Harold Scott points out that throughout most of the nineteenth century, life in the tropics for Europeans was very hazardous: "Going in search of a living many succeeded in finding death". Philip Curtin's book is about the reduction of that hazard for European soldiers between 1815 and 1914. He chooses to focus on this subset of the colonizing population because of the quality of military mortality records, and he promises to examine the mortality experience of non-European troops in a later study. The mortality data is limited to the forces of Britain and France (with a little information on the Dutch in the East Indies) and to the West Indies, Madras, and Algeria. But there are enough common experiences, and differences, for the author to draw general conclusions confidently about the pattern of mortality change and its probable causes. Morbidity data are presented extensively for British forces but not for French troops, because of problems with French sources. He has a little to say also on the health of European women in India in the late part of his period.

As the author states at the outset, *Death by migration* is essentially a quantitative study of the "relocation costs" paid by European troops; that is, the excess mortality in the tropics compared with that in Europe. The quantitative data are summarized in a formidable array of 31 tables, 10 figures, and 5 maps scattered through the text, plus another 52 tables located in an appendix. Curtin is able to compare the mortality experience of troops at home and in the tropics in what is a natural experimental situation, with those at home constituting the control group. He finds that although this was the century of the "mortality revolution" in Europe, when death rates of the general population fell substantially, the mortality of overseas troops declined even more than that of troops in Europe. However, this study not only reveals some of the human costs of nineteenth-century empire, it also adds something to our understanding of the causes of the mortality revolution itself, and in particular questions the significance of nutrition, a causal factor ranked very high by the initiator of the contemporary debate, Thomas McKeown.

The book is divided into two parts. The first covers the decades of the 1860s when medical practice still reflected a mainly pre-industrial order, and the second relates to the period from the 1870s when, with the emergence of microbiology, medicine began to become a scientific, laboratory-based enterprise. Each part has an introductory chapter which discusses disease patterns and mortality change. Chapters 2 and 5 look at European thought about tropical medicine, the first at mid century when knowledge was still empirical, and the second late in the century when bacteriology was turning the discipline upside down. Chapters 3 and 6 examine the applications of knowledge in each era. There is a very brief concluding chapter.

Curtin draws attention to the striking differences in disease patterns early in his period. In Britain, lung diseases were the great killers, whereas in the West Indies it was fevers, and in Madras, bowel infections. He claims much for the role of military doctors in reducing significantly the death rates in the middle years of the century: for example, in Madras, mortality from malaria fell 60 per cent between the 1840s and the 1860s, and the regular use of quinine must have contributed a good deal to the decline in fever mortality. He very briefly mentions the role of new enlistment legislation of the late 1840s in reducing the average age of soldiers and so cutting down the number of older troops, who were known to contribute

heavily to the overall death rate. The impact of this change to the age structure of the military population might have been further explored as it might have been an important factor in the notable mortality decline around mid-century. The pattern over time is interesting. Whereas in the period from the 1830s to the 1860s, overseas death rates fell markedly, from the 1860s to the 1890s the decline overseas was not so impressive, and the real gains were made in Europe itself. From the 1890s to 1914, as the teachings of germ theory spread widely, a further great decline in overseas death rates was achieved.

What noteworthy conclusions emerge from this scholarly study of some important aspects of the epidemiology of nineteenth-century empire? First, there is the extent of the decline in overseas mortality: 85 to 95 per cent between the 1820s–30s and World War I; and second, the fact that much of this decline occurred before the advent of scientific medicine. As noted above, Curtin argues that this latter achievement resulted from the systematic application of effective empirical measures by military doctors. It is interesting that historians of life on Australia-bound convict ships like Charles Bateson have attributed the notable improvement in shipboard mortality from about 1814 to application of similar empirical principles by able surgeon superintendents. and this long before science was able to explain why such measures were effective. A third finding is that while overseas mortality fell dramatically, the comparative relocation costs remained stable for many diseases right up to 1914. The relocation benefits for tuberculosis and pneumonia weakened during the course of the century because mortality from these diseases declined considerably in Europe. A fourth finding has relevance for the debate about the causes of the mortality revolution. The sheer size of the mid-century decline in military death rates, and its association with particular causes of death, cast doubt on the role played by "less demonstrable causes of mortality change, like nutrition". Finally, as the author rightly observes, this study highlights some of the enormous human costs of nineteenth-century empire, and, at a more general level, points to the great importance of disease in human history.

Milton Lewis, University of Sydney

PAUL SLACK, *The impact of the plague in Tudor and Stuart England*, corrected paperback ed., Oxford, Clarendon Press, 1990, pp. xvi, 443, £14.95 (0–19–820213–X).

The past is another country in which our ancestors suffered from civil strife, malnutrition, famine, infectious diseases and epidemics, all the forces of destruction that we see at work daily on television, but seldom if ever experience ourselves.

One of the best guides to this country is the Oxford historian, Paul Slack, and so the appearance in paperback of his book on the impact of the plague is heartily to be welcomed.

Amongst all evils, plague was the worst. To quote Slack, plague was "the ultimate demonstration of the precariousness of life in pre-industrial England," and, to quote Slack quoting in turn a Jacobean preacher, plague was "more destructive than discord or hunger", because "comfort and company" were denied to the sick and "the comfort of nature, the expectation of love among those that are left alive is utterly dissolved." War and famine were comprehensible, but plague... "What is the cause of this but that it pleaseth the Lord in wisdom...?" The disease strained every available system of comprehension up to, but (surprisingly) not beyond, the breaking point. The volume, the speed, the apparent randomness of each epidemic tested the ability of clergymen and laymen alike to explain without transgressing the limits of Christian theology, and so concluding, to paraphrase Iago (Verdi's, not Shakespeare's), this is the evil work of an evil God.

If theologians could not cope, then the medical profession, with the possible exception of the Huguenot physician, De Mayerne, fared little better. Was it a miasma or a contagion? Should every infected house be quarantined, thus assuring the death of everyone who dwelled therein, or should the sick be removed to pesthouses, thus sentencing the dying to each other's company?