cowardliness as well as symptoms. But what Shephard hints at but does not fully bring out is the dilemma he faces along with his subjects. On the one hand, he calls for accurate knowledge of past experience and for more facts. He thus implies that, with the full facts, the real nature of combat or post-traumatic stress disorders would become clear. On the other hand, his history repeatedly emphasizes the in-built conflict of military and healing values, a conflict in which, as he explains, "tough" and "tender" schools of opinion constantly reappear. Public opinion, maybe, wants it both ways—a position currently addressed by the fantasy of an air war in which only the enemy suffers. During past wars, doctors learned to serve military goals, and they even sometimes acknowledged that how men manage may have little to do with what doctors, working specifically as doctors, offer. In the most dramatic case, psychiatrists reported a perception that sending a man back to the front, and to likely death, might be better for his "health" than to invalid him out with his symptoms, and loss of self-respect, into an uncertain future. But in peacetime, other values come back to haunt psychiatrists, public opinion and soldiers themselves. Thus, it may be, no amount of empirical knowledge, medical or historical, will solve for us the contradiction of seeking to be humane in war.

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Kenneth J Carpenter, *Beriberi, white rice, and vitamin B: a disease, a cause, and a cure*, Berkeley and London, University of California Press, 2000, pp. xiv, 282, illus., £27.95, US$40.00 (hardback 0-520-22053).

The value of Carpenter's work lies in the fact that it challenges the myth-making that often characterizes the historiography relating to the identification of the cause—and the prevention—of beriberi. Caused by a deficiency of thiamine (Vitamin B), the basis of beriberi had been the subject of much scientific speculation in the late nineteenth and early twentieth centuries. Indeed, many, including Christiaan Eijkman (the Dutch physician assigned to work with a team investigating beriberi in Java in the late 1880s), often wondered whether it was an infection transmitted by a specific germ. A series of experiments by Eijkman, carried out on laboratory animals and selected human subjects, ultimately proved that the condition of beriberi was the result of specific dietary patterns, rather than infectious micro-organisms.

Strikingly, ultimate success in identifying the cause of beriberi, according to Carpenter, is attributable to big doses of luck. A change in the choice of laboratory animals, which was forced by financial difficulties, provided the first major breakthrough. The shift from monkeys and rabbits to chickens proved decisive, as fowl tended to be more predisposed to showing the effects of thiamine deficiency after being kept on a diet of boiled white rice. However, these investigative successes proved extremely troublesome in a situation where experiments were often difficult to replicate, causing doubts amongst the scientific community about their results. Carpenter describes, for instance, how Eijkman struggled to copy his successful Javanese experiments with chickens in Amsterdam. This, in fact, caused him to toy with the infection theory of causation for a while, before he finally decided to plump for the dietary theory in 1912 on the back of the results of new experiments (Eijkman received the Nobel prize for his work in 1929).

In addition to providing a fine description of Eijkman's research in Java and the Netherlands, Carpenter's book also describes a series of valuable experiments on

the cause and the control of beriberi in other parts of the world. Much of this work was done by competing research groups operating in Japan, Britain, France and, last but not least, the United States. Importantly, Carpenter recognizes that the results of the investigations conducted by these groups contributed to Eijkman's success in solving the mystery of beriberi's aetiology. All this research work was also crucial to the discovery of the various means adopted to prevent—and treat—the disease. This included the use of vitamin supplements, as well as certain changes in cultural practices, most notably, adaptations in the methods of milling and preparation of rice. Carpenter's internationalist perspective is a major strength of his work, and one that is worth emulating in other detailed studies of specific diseases.

All in all, the book is interesting and easy to read, which makes it useful for both general and specialist readers. It is, to my mind, particularly appropriate for undergraduate study, as the work can be effectively used to describe the complexities of the research method to candidates hoping to go on to pursue doctoral work. However, if there is a weakness in this book, it lies in the conscious effort on the part of the author to avoid a detailed examination of the social responses to the beriberi trials and the medical innovations they engendered. Seen from this perspective, Carpenter's work represents a genre of history writing that concentrates on the nature and effects of laboratory and field trials, rather than studying the effects of the introduction of their results in general society. Medicine is, after all, an intensely social phenomenon, and it is, therefore, important to understand the complex social and political reactions to the introduction of new medical technologies. This, of course, allows one to prepare a more rounded picture of officially sponsored efforts to tackle the effects of damaging diseases. It is worth noting here that while new medical practices tend usually to be carefully designed in laboratories, they are implemented by a wide range of administrative staff, many of whom have little—or even lack—formal medical training. The introduction of medical innovations into society, therefore, usually tends to be a complicated affair, especially in colonial contexts (in this case, the Dutch East Indies). To be fair to Carpenter, this topic is a big one, and can be made the theme of another book.

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Robert I Rotberg (ed.), *Health and disease in human history: a Journal of Interdisciplinary History reader*, Cambridge, MA, and London, MIT Press, 2000, pp. viii, 345, £41.50 (hardback 0-262-18207-6), £16.95 (paperback 0-262-68122-6).

The *Journal of Interdisciplinary History* has long been involved in publishing interesting and challenging historical research on the impact of environmental and epidemiological factors in the past. This collection of articles demonstrates the breadth and variety of this work with studies of famine, nutrition, migration, sanitation, disease and—above all—mortality which range from London to Edo, and from the sixteenth to the twentieth century. Its contents include several pieces on aspects of mortality and morbidity in England from the sixteenth to the nineteenth century, together with work on fertility and disease in nineteenth-century Italy, urban sanitation in Japan, smallpox in central and southern America, nutritional deficiencies among Caribbean slaves, mortality in colonial Chesapeake and child mortality in Southwest United States. Even genetic isolates in Oregon get a look in.

Robert Rotberg's introduction to the collection suggests that the essays were

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