

Book Reviews

It has been estimated that between 1500 and 1700 some two million sailors died of scurvy, making it the foremost occupational disease in history. The birth of modern western societies, largely through maritime expansion, was indeed a painful one. The curious fact is that the cure and prevention of scurvy was documented from almost the beginning of that era, being hinted at by da Gama and spelled out even more clearly on Cabral's voyage to India. By the start of the seventeenth century, Lancaster was dosing his sailors with spoonfuls of lemon juice, and for a while this was continued on East India Company ships. On the face of it, the problem seemed to have been solved, yet the literature shows that again and again the lesson was lost, buried by every kind of obfuscation that medicine, prejudice, and perhaps parsimony could produce.

The major hindrance was undoubtedly theory. Scurvy, like any other ailment, was caused either by a "something", a positive cause, or by lack of a "something", a deficiency. Considerable emphasis went on positive agents, chiefly food (salty diet, hard biscuits) and the environment (sea air, foul air, dampness, cold), but deficiencies (especially fresh vegetables and fruits, but also fresh water) were also espoused. In large measure, the history of scurvy is the swing back and forth between positive and negative "causes", each determining the supposed cure within whatever medical or philosophical theory was available to explain the functions of the body. Humoral theory, notions of acid/hot versus alkaline/cold, insensible perspiration, fermentation versus putrefaction, pneumatic chemistry, potassium theory, contagion, ptomaine theory—each of these at one time or another guided the physicians who filled the medicine chest or advised on nutrition and living conditions.

There is a received notion that Lind hit on the solution by inspired clinical trials, while Cook first proved the efficacy of citrus fruits on long sea voyages. In fact, Lind did not see scurvy as a deficiency disease, but chiefly as the result of moist air (*Scorbutus locis aridis ignotus est*), while it was Cook's determined harvesting of wild vegetables that kept scurvy (almost) at bay. The pragmatic solution of the sixteenth and early seventeenth centuries, even with Lind's own clear demonstration of the value of citrus, simply could not withstand advancing medical theory. What Professor Carpenter shows with great skill is how theory continued to dog practice, so that by 1900 the understanding of the disease was actually more confused than it had been in 1800, which probably contributed to the deaths on Scott's return from the South Pole in 1912 and gave rise to the extraordinary manifestation of scurvy in middle-class children in the late-Victorian period. Only with the almost chance use of guinea-pigs as experimental animals was scurvy finally proved to be a deficiency disease, and with the isolation of vitamin C and its large-scale synthesis in the 1930s, the cycle was ready to start again: inadequate medical theory, a lethal disease, an enthusiastic protagonist for the new "cure"—this time, cancer.

Professor Carpenter has assembled an enormous amount of data (715 references), but has managed to present the story in such a readable way that non-medical historians will have no difficulty (and should emerge with a useful smattering of organic chemistry from someone who must be an excellent teacher). With a story of near five centuries, there are naturally omissions, and it remains for others to document more fully the early experiences of the Dutch, Spanish, Portuguese, and indeed those of the Arab traders, the Polynesian migrants, and the huge fleets of Cheng Ho during his seven voyages in the fifteenth century. However, this book will for many years to come, provide the essential framework for those who, as if painting by numbers, delight in filling in small areas of a very large canvas.

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ROGER FRENCH and FRANK GREENAWAY (editors), *Science in the early Roman Empire: Pliny the Elder, his sources and influence*, London, Croom Helm, 1986, 8vo, pp. [viii], 287, £19.95.

This book contains a welcome series of papers on Pliny's *Natural history*, delivered at a recent symposium held at the Royal Institution in London. The symposium was an ambitious one, aiming both to encourage the study of Roman science in general, and to examine some specific areas of scientific interest in the *Natural history*. The first paper, by Reynolds, locates Pliny in his historical and social context, while the last two (by Eastwood and French) examine the impact of

his astronomy and medicine in the Renaissance. The other contributions range from general assessments of the problems posed by the translation, composition and structure of the *Natural history* (Rottländer and the German “Pliny Translation Group”, Locher), to more specific questions raised by particular areas of research (pharmacy by Scarborough, botany by Morton, zoology by Bodson, mineralogy by Healy, “chemistry” by Greenaway, and astronomy by Pedersen). A paper by Nutton explores Pliny’s often negative attitudes towards doctors and medicine.

The contributions vary in quality, but on the whole the standard is high. Nutton’s piece on Pliny and the doctors is a good account of a difficult and important problem; his endnotes form a valuable bibliographical starting-point for further work. The papers on Pliny’s mineralogy, pharmacology, “chemistry”, zoology, and astronomy, too, are useful and well documented. Casting Pliny in the role of “mineralogist” or “chemist” brings with it certain problems, but put together in one volume, these papers do give a good idea of the tremendous breadth of vision and erudition behind the “twenty thousand facts” which make up the *Natural history*.

It was a little disappointing, given the symposium’s stated pro-Roman bias, that none of the contributors seemed specifically concerned with the problem of Pliny’s place in the Roman encyclopaedic tradition, and what this might have to tell us about the basic motivations behind the *Natural history*. (Several of the papers, notably that of Pedersen on astronomy, give clear but all too brief accounts of the background to the problem.) Pliny’s importance for our knowledge of much of ancient science is undoubted, yet as a source he is exceptionally difficult to use. There is still room for a thorough critical evaluation of his prejudices and practices in adapting the work of his predecessors.

An epigraph from the typographer likens his own job to Pliny’s; a job which involves the laborious, sometimes inaccurate reproduction of the fruits of another’s labour. It is conceivable that the typographer did a better job than Pliny. Certainly, the typographer, Pliny, and all the contributors have done a better job than Croom Helm: the book is poorly produced and overpriced.

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BILL LUCKIN, *Pollution and control: a social history of the Thames in the nineteenth century*, Bristol and Boston, Adam Hilger, 1986, 8vo, pp. x, 198, £22.50.

This is a gallant attempt by Bill Luckin at a new kind of history—the social history of the environment. His book deals with three related areas: the state of the nineteenth-century Thames, water analysis and the debates which surrounded it; the diseases transmitted by Thames water (cholera, diarrhoea, and typhoid); and the legislative and administrative muddles associated with efforts to improve the condition of the river. It is an interesting work. Here for the first time in book form we are taken through the maze of Victorian sanitary and scientific thinking on the subject of polluted water, its treatment, its remedial administration, and its relation to disease.

Pollution and control is a pioneering work, and perhaps as a result is not without flaws. The nineteenth-century material on water supply and pollution is vast, and much of it, including many of the scientific debates, is set about with political disagreements and personality clashes, and exceedingly indigestible. Luckin must be congratulated on the determination with which he has worked his way through this material, and reduced it to order. Most pioneering authors have their difficulties, however, and Bill Luckin has his share. Continual methodological reminders suggest methodological insecurity; and his politics also seem confused: he shares the traditional unfavourable view of the water companies and is sympathetic to municipalization, but is nevertheless anxious to avoid being thought Whiggish.

On one level, the book appears intended for an informed audience (the nature of the “traumatic crisis” of the Thames in 1858, for instance, is never explained), on another for the beginner: the biographical appendix includes such celebrities as William Budd and John Simon, but does not include a number of persons who appear regularly in the text but who are less well known to social historians—among them Shirley Murphy, the “eminent” James Dewar, Percy