

John Goodsir, and developed an early love of the microscope and of botany. With an MD after his name, Sanderson did what any earnest, ambitious young doctor would do: he went to Paris. He studied organic chemistry and visited the hospitals. He sat at Claude Bernard's feet, experimented under his direction, and found him "the most profound scientific thinker, and the most remarkable experimental physiologist" (p. 26). Sanderson slowly shed his Evangelicism for the religion of science. In 1852 he moved to London. Here he married Ghetal Herschell who was to prove an exemplary Victorian wife, virtually living for her husband's work (they had no children). In 1855 Sanderson landed the post of Medical Officer of Health for Paddington. After this he developed a friendship with John Simon, not a man lightly to tolerate fools or those with maggots in their heads. Under Simon's patronage, Sanderson received some plum commissions, notably the report on the cattle plague of 1865–66. In his spare time he did research, principally, says Romano, on "the mechanical and chemical processes of respiration" (p. 49). Sanderson was also developing at this time his obsession with experimental instruments (clearly he was not made in the Bernard mould). In the mid-1860s he discovered the newly invented sphygmograph and spent hours "sphygmographing" (p. 81). Always a man to advance on many fronts, Sanderson also worked on the nature of contagion, inflammation and on the Venus's-flytrap. In 1870 he was appointed professor of practical physiology and histology at University College London, and in 1882 he was elected first Waynflete Professor of Physiology at Oxford. Compared with the illustrious Cambridge school of physiology, the Oxford school (if such there was), Romano admits, was frankly a failure. Opposition from the anti-vivisectionists and lack of support for a science-based curriculum were the root faults. Maggots in the head surely had something to do with it though.

Romano's argument in this book is both historical and historiographical and Sanderson is a good figure to help her make it. There has been a great deal of literature on experimental

physiology in recent years, to the point that it raises the question of whether that literature misrepresents physiology as being seen by Victorian doctors as the premier science of medicine. Romano's argument, if Sanderson is anything to go by, is that it does. There was not one science for medicine, she argues, but many. Sanderson turned to comparative anatomy, pathology, chemistry, clinical observation and physics, just as much as he did to physiology, to solve medical problems. And that last point is where the maggots come in. In modern terms Sanderson was much more like a clinical scientist than a "pure" physiologist. He took difficult clinical problems and tried to solve them using a variety of methods including laboratory experiments. Foster's physiology was "easy" by comparison.

There is a lot of research in this most welcome volume. Occasionally it is a bit idealistic. With a number of judgements I would not concur. Simon, for example, is said to have views of science based on "descriptive, cataloguing methods" (p. 161). But this is completely to ignore his commitment to transcendentalism. None the less, the book contributes to our growing sense of the hugely diverse texture of the meanings of science in Victorian Britain.

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**Andrew Berry** (ed.), *Infinite tropics: an Alfred Russel Wallace anthology*, London and New York, Verso, 2002, pp. xvii, 430, £19.00, US\$27.00 (hardback 1-85984-652-1).

Andrew Berry's fine selection from the Alfred Russel Wallace corpus is to be highly recommended. Berry includes excerpts from each of Wallace's most significant and original scientific contributions. But he also provides an appropriately panoramic view of the intellectual output of one of the nineteenth-century's most opinionated men. Thus Wallace's ideas on evolution and anthropology receive plenty of attention, but not

## Book Reviews

disproportionately so. His enthusiasms for mesmerism, spiritualism and, to a lesser degree, phrenology are quoted respectfully and at length. Nearly a quarter of the book is rightly devoted to the evolution of Wallace's socialism and to the varied anti-élite causes, most notably land reform, to which he lent his passionate support.

The difficulty of preparing an anthology such as this is that compartmentalizing Wallace's writings inevitably damages the internal coherence of his scientific and socio-political worldviews. Berry's commentary, however, allows the reader to keep in mind the strong conceptual sutures linking Wallace's socialism, evolutionism and spiritualism. Indeed, Berry's editorial commentary is sensible and historiographically sensitive throughout this collection. His is also an extremely sympathetic portrait. Berry's selections emphasize how little Wallace resented Darwin's decision to present their papers jointly at the Linnean Society in 1858 without his first being consulted. Throughout his life, Wallace expressed a deference towards Darwin that was quite fitting, given the twenty years in which Darwin had already laboured on the theory of natural selection, but only to be expected from the most exceptionally considerate of individuals.

Wallace's generosity towards Darwin, as well as his fascination for fringe science and his overt support for utterly unrealistic political agendas have helped generate an image of him as a kind of wise fool. Yet, as Berry shows, if Wallace was one of history's least venal and most gracious underdogs, he was also an absolutely first-rate naturalist who combined a capacity for meticulous collection with a highly creative mind. Nor, several excerpts indicate, should Wallace's devotion to spiritualism be seen as a scientific apostate's flight from reason. After all, if his essays on the subject do betray a certain naivety, they also bristle with genuinely cogent reasoning. Furthermore, this collection demonstrates that Wallace was never quite the retiring personality some have assumed. On the contrary, he aired his profoundly heterodox views on religion, the role of the state, the malign effects of

capitalism, land ownership, and the rights and wrongs of vaccination without apology, without fear of censure and, in many instances, without even basic tact. Alfred Russel Wallace was a well-meaning dogmatist.

Accordingly, Berry has little truck with the view that Wallace was robbed of the posthumous status he deserved because of his humble social roots or an overly pliant nature. He argues convincingly that Wallace forfeited a position among the very front rank of scientific heroes largely because he backed too many causes that were widely deemed thoroughly impracticable or that were later revealed to be specious, if not downright fraudulent. In addition, Berry is surely correct in attributing Wallace's inability to remain at the heart of Victorian science to a combination of social awkwardness and his "zealotry" in expressing opinions. Moreover, although Berry does not pursue this theme, it also seems that at a subconscious level Wallace did much to alienate *himself* from the inner circle of Victorian life science. Avowedly awkward in company, having neither the quick wit of Thomas Huxley nor the urbanity of Joseph D Hooker, one suspects that he had a temperamental preference for the more forgiving social climes afforded by the fringes of politics and science.

Over all, a three-dimensional Wallace comes into view from Berry's anthology and commentary. We see a man of considerable ability and charm who deserves greater recognition and fuller study. But for all the consistency of his scientific and political worldviews, one also discerns a complex character with a very human share of contradictions: a man of the people who could hardly tolerate the company of "commonplace people", an anti-capitalist who repeatedly speculated (albeit unsuccessfully) on the stock exchange, and a man unafraid to take on powerful foes yet who seems to have felt undeserving of a position among the scientific élite. It would probably be wrong to seek a complete resolution of these and other paradoxes, and one of the merits of Berry's collection is that the complexity of Wallace's outlook is not effaced by the attempt to force it into a coherent narrative. In

## Book Reviews

fact, such is the quality of Wallace's writing and the intrinsic interest of the passages reproduced in this book, that it is almost as compulsively readable as a biography.

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**Eric Gruber von Arni**, *Justice to the maimed soldier: nursing, medical care and welfare for sick and wounded soldiers and their families during the English civil wars and Interregnum, 1642–1660*, *The History of Medicine in Context*, Aldershot, Ashgate, 2001, pp. xv, 283, £40.00 (hardback 0-7546-0476-4).

Eric Gruber von Arni, a career army nursing officer and previous Director of Studies for Queen Alexandra's Royal Army Nursing Corps, has deftly used his professional background to shape his historical pursuits in hitherto untapped areas of his profession's heritage. In particular, von Arni has succeeded in righting the incorrect stereotypic view that medical nursing did not exist before the contributions of Florence Nightingale. Indeed, we find that significant medical nursing efforts were used in caring for the numerous sick and wounded soldiers between the outbreak of England's civil war in 1642 and the restoration of the monarchy in 1660. This war is of special medical significance for several reasons. It was the first period of fighting following Henry VIII's dissolution of the monasteries and their affiliated hospital-based health care. Thus, the care of the sick and wounded had been relegated to secularized sections of society. Additionally, the English civil wars ultimately created what the author claims to be a "more pronounced and significant" (p. 1) impact upon the nation than any other conflict in British history, either before or since. Regarding health care, people from all classes came to appreciate "the task of caring for the needy as a patriotic duty" (p. 197).

In a work whose title, *Justice to the maimed soldier*, is taken from the inscription on the seal of the Parliament's Committee for Sick and Maimed Soldiers, von Arni divides his theme

into chapters devoted to descriptions of both the King's and Parliament's armies, their respective administration of casualty care, comparisons between the care and treatments delivered at permanent military hospitals and the temporary establishments in civil war campaigns in the Celtic nations, the Caribbean and West Indies, and in Flanders. One chapter is also devoted to a comparative biographical sketch between three civil war nurses, the surgeon's widow, Margaret Blague, the Parliamentary informer, Elizabeth Alkin, and the Royalist noblewoman, Anne Murray.

Von Arni's historical contribution is remarkable for several reasons. Above all, he provides convincing documentation that medical nursing efforts were firmly established centuries before the standard historical accounts. This task was particularly difficult as, unlike many medical history pursuits, the author had no ready repository from which he could shape his narrative. Nursing efforts, somewhat like those delivered at the hands of that other traditional female field of health care, midwifery, were hardly ever recorded in the ways that physicians and surgeons had long recorded their successes (or otherwise) in case histories. Thus, to secure documentation about this under-researched level of health care, the author has meticulously culled data from a number of scattered county, national, military, and medical sources. From these efforts, we have a much clearer view of the concerns that were foremost in the minds of the nursing staff. Among these concerns were the safe transportation of the wounded both to and within hospitals, the warehousing and re-supply of the most commonly used medical supplies, the control of air within the wards of permanent military hospitals, as well as the inability of port cities to accommodate, feed, and keep clean and warm the many incoming casualty patients who had been wounded in naval conflicts.

Although slightly biased due to the relative greater abundance of records about Parliamentary forces, von Arni's research has aimed to build parallel views of each side. From this we learn that despite the Parliamentarians' initial advantage over the Royalists—due to