reflects the many facets of the life sciences, their medical and political ramifications.

With several trans-European as well as British and American contributors, the editors have assembled an impressive panel. Charles Webster searches for the most authentic portrait of Paracelsus and resolves its paradoxical depiction of a bare-headed, care-worn visage by exposing its polemical and rhetorical features. Bill Brock explores the receptivity of the Royal Institution and the Smithsonian Institution to a windfall benefaction from the millionaire Thomas George Hodgkins (1803–92), who died believing that the regeneration of pure air was an urgent priority to halt the degeneration of the human race. In Britain, James Dewar was the main beneficiary, but in what Brock describes as "a world of jealous, competing and bloody-minded scientists and inventors". A vision of physiology as a science liberated from medical constraint is shown by Hans-Jörg Rheinberger to have informed the thinking of Johannes Müller, who, on his revisionist reading, should not be regarded as philosopher first and physiologist second. For the period 1869–1914 in Germany, Katherina Rowold shows how the reading of homosexuality as a symptom of degeneration was displaced by theories ascribing it to developmental anomalies. Magnus Hirschfeld is discussed as one who supported the women's movement for education and suffrage but who also perpetuated the gendering of mental powers. In an illustrated examination of erotica, Julie Peakman takes us back to the eighteenth century when the gendering of plants by Linnaeus was parodied through the use of botanical metaphors for genitalia. Her essay exposes the fine line that existed between medical and obscene literature.

As an aperitif for his and G S Rousseau's book on gout, Roy Porter reminds us that disease could sometimes be desirable, protecting one from a worse affliction and serving as a "permanently conspicuous badge of superiority". His inimitable subtitle (Banks and the Mountebanks) refers to a case-study (the demise of Sir Joseph) and a thesis: "precisely because orthodoxy had chosen to formulate an elaborate theory of gout's special and beneficial incurability, irregulars were able to move in and clean up." The curability of beri-beri forms part of an equally absorbing story told by Harmke Kamminga, who, building on Teich's work, reveals an ironic twist to the history of vitamin deficiency disease. Whereas Frederick Hopkins recognized that accessory food factors were indispensable for a healthy diet, his fellow Nobel Laureate Christiaan Eijkman was rewarded for his discovery of the "antineuritic vitamin" preventive of beri-beri. But the irony is that Eijkman had a long-term resistance to a nutritional aetiology for beri-beri, convinced that it was of bacterial origin. How he later deleted this from the record makes fascinating reading. Plenty of food for thought, then, with the vitamin of controversy supplied by the geneticist Benno Müller-Hill, who contends that "wherever science begins to look like a social construct, one should be suspicious that something has gone dangerously wrong."

John Hedley Brooke,
Oxford University

Noble David Cook, *Born to die: disease and new world conquest, 1492–1650*, Cambridge University Press, 1998, pp. xv, 248, illus., £30.00, $54.95 (hardback 0-521-62208-5), £10.95, $15.95 (paperback 0-521-62730-3).

In a 1967 article—later reprinted in his book *The Columbian exchange* (1972)—Alfred W Crosby drew particular attention to the significance of disease in the conquest and colonization of the New World. His thesis was that the Spaniards

who followed Columbus to the Americas were successful in their subjugation of the indigenous populations because they had brought along an important ally: highly contagious diseases. Imported from the Old World by the Spanish conquistadors, these ailments triggered successive pandemics of smallpox, measles, and perhaps typhus among the natives, causing panic and terror, political and economic disorganization, famine, and massive die-off. Although these dreadful events had been recorded by many contemporary observers and since then discussed by historians and demographers, Crosby, and later William McNeill in his popular work *Plagues and peoples* (1976), explained them with the help of new scientific insights concerning the shifting ecology of human disease and the contours of individual and communal immunity.

During the past two decades, demographers, historians and physicians have thus continued to investigate the fascinating Columbian exchange of diseases. In fact, Noble's bibliography, appended to his book, contains over 300 articles and books written on this subject. Given the sometimes contradictory interpretation of the evidence, the author's stated purpose was to create a new synthesis and provide readers with a coherent, chronological narrative of this human catastrophe that easily eclipses the Black Death as the most dramatic and devastating event in human history. In doing so, Noble seems aware of the numerous pitfalls awaiting researchers: ambiguous and partisan Spanish chronicles, exaggerated and often politicized estimates of the Amerindian demographic collapse, controversies about the nature and cause of epidemic outbreaks, lack of substantive clinical accounts, and conflicting retrospective medical diagnoses based on incomplete symptomatology as perceived by colonial contemporaries.

The book begins with a description of health conditions among the natives of the Caribbean in the first decades following the arrival of Columbus and his crews. Their virtual extinction half a century later is depicted as the result of a complex process in which waves of imported epidemic disease—swine flu, intestinal infections, smallpox, and measles—afflicted a dense population of prosperous farmers who fell prey to their ecological isolation in the face of harsh treatment from the European colonizers. This is followed by accounts of the impact of smallpox on both the Aztec and Inca Empires, especially the demise of their leaders—Cuitlahuac and Huayna Capac—from this deadly pandemic. Here Noble recounts the dramatic events in 1520 leading to the reconquest of Tenochtitlan and the central Mexican plateau. By the early 1530s, a second pandemic wave of measles made its presence known throughout the Spanish colonies, further decimating an already shrinking population.

Subsequent chapters describe the appearance of additional epidemics during the sixteenth century, especially in the 1540s and again in the mid-1570s, characterized in New Spain under the Nahuatl term "cocoliztli" (pestilence) and variously diagnosed as haemorrhagic smallpox or typhus fever. Other more regional outbreaks are also described. A final section describes health conditions from 1600 to 1650. Based on the extant evidence, disease—presumably more smallpox, measles, and typhus—spread easily along maritime and commercial routes, afflicting both adults and children. A short section also deals with yellow fever, an African import, and its establishment in the Caribbean following the arrival of the preferred mosquito vector. These scourges continued to kill the surviving Amerindian populations throughout Spanish America, forcing the wholesale importation of African slave labour to support the specialized agriculture of tropical crops. In his conclusion, Noble again emphasizes the importance of disease in the conquest of America over other military factors, mostly technology (steel and gunpowder), horses, and aggressive

tactics, including the use of attack dogs. While pre-Columbian America was by no means a disease-free Shangri-La, the airborne and highly infectious European and African imports caused havoc among populations living in splendid immunological isolation. In contrast to some earlier works, Noble's book succeeds because of its scope and balance, and the author's effort to present the onslaught of disease as a gradual process in which mass infection is portrayed within a loop of panic, social disintegration, lack of caregivers and farm hands, famine, depopulation, political chaos, and religious scepticism, all of which created further susceptibilities to disease.

Guenter B Risse,
University of California, San Francisco

Robert Sigaléa, *La Médecine traditionnelle de l'Inde: doctrines prévédique, védique, âyurvédique, yogique et tantrique. Les empereurs moghols, leurs maladies et leurs médecins*, Geneva, Editions Olizane, 1995, pp. 558, illus., SFr 350.00, FFr 1450.00 (2-88086-179-9).

Holding this magnificent volume in one's hands, words like "opulence" and "luxury" spring inevitably and appropriately to mind. No expense has been spared in the production of the book, which is printed on art paper and is densely illustrated throughout with full-colour reproductions of drawings, photographs, miniature paintings, manuscripts, and other pictorial matter. A significant research effort has gone into identifying and acquiring the images so beautifully reproduced: they are sourced from the great Oriental collections of Boston, London, Paris, Madras, Calcutta, Benares, and elsewhere, as well as from eminent private collections such as that of Prince Sadruddin Aga Khan. Many photographs are from the collection of Jean-Louis Nou, as well as from the private collection of the author. This visual feast is tightly bound to the narrative of the text. For example, when discussing the contribution to our medical knowledge of seventeenth-century India made by such visitors as John Fryer (*c.* 1655–1733), François Bernier (1620–1688), and Nicolao Manucci (1639–1717), Sigaléa gives us splendid portraits of these authors from the National Portrait Gallery, London, and the Bibliothèque Nationale, Paris. Elsewhere too, imagination and originality have been applied to choosing appropriate and striking images to accompany the text. Amongst my favourites are the sensitive pencil sketch of the Emperor Akbar as an old man (fig. 35), which captures the heavy patience of a powerful man ending his life surrounded by sickness, intrigue and treachery; the vivid portrayal of a hemiplegic wanderer (fig. 12); *The agony*, a pathetic portrait of Jahangir's courtier Inayat Khan, alcoholic and opium addict, drawn at the Emperor's direct instruction; and the striking series of birthing scenes from very different representational traditions (fig. 7, plates I–II).

Indian medical manuscripts, to which one might naturally turn for illustrative material, are notorious for their complete lack of iconic representation. No Sanskrit medical manuscript known to the reviewer contains any image of the body, its parts, or even any herbal medicine or plant. Sigaléa's book succeeds admirably in presenting a fine catalogue of stimulating illustrations drawn from every imaginable alternative source, integrated with a narrative of the history of medicine in India.

The text of the book is divided into two major parts. The first covers the medical traditions which might loosely be called "indigenous", i.e., the classical Indian system of medicine (*āyurveda*), with its antecedents and successors ranging from Pre-Vedic medicine to yoga and tantra. The literature of this medicine is written principally in the Sanskrit language, in texts