The Great Buddha at Tōdaiji temple in Nara was erected to propitiate the gods after a smallpox epidemic in 737.

Hand of Sarah Holmes (1798) by William Skloton (1755-1849). This coloured plate appears in the first edition of Edward Jenner’s An Inquiry into the Causes and Effects of Variola Vaccina and describes the cowpox pustule on the hand of dairymaid Sarah Holmes. Cowpox matter from these pustules was used to vaccinate the boy James Phipps in 1796.

In Japan, one barely needs to scratch the surface of its history and literature to find the scourge of smallpox. For instance, the Great Buddha at Tōdaiji temple in Nara was erected to propitiate the gods after a 737 smallpox epidemic had killed four grandchildren of Fujiwara no Kamatari. Biographies about one of Japan’s greatest writers of the Edo period, Ueda Akinari, inevitably refer to his childhood case of smallpox, which left him partially paralysed in his hands, eventually blind, and with a major chip on his shoulder accounting for the misanthropic nature of his writing. One of the favourite baku-mus (yōkai legends), features the protagonist Sawachii, blinded by smallpox and disfigured by its scars.

A vaccine against smallpox was still mandatory in 1795 for visitors to Japan.

Thus it is not surprising to find considerable scholarship on this topic. Ann Jannetta, Professor of History Emerita at the University of Pittsburgh and author of

	

(Princeton University Press, 1997), has made a major contribution with This Vaccine: Smallpox, Medical Knowledge, and the ‘Opening’ of Japan. It is a

	

inspiring celebration of ‘human ingenuity and international cooperation’ (page xix), and not without contemporary relevance in this post-9/11 era when bio-terrorism threats (including the re-introduction of smallpox) abound, and we are constantly reminded of the imminent of pandemics such as avian flu or influenza.

The Vaccinators provides a meticulously documented and compelling account of the invention and spread of smallpox vaccination and vicissitudes of its introduction into Japan in the early 19th century. The work’s main theme is the crucial role played by human networks. Other strands of inquiry include the extent to which Japan had in effect already ‘opened’, at least in the area of medicine, well before 1856, and the reasons why so many of the new Meiji bureaucracy were recruited from the

	

(MM) (Dutch medicine) community. Though Meiji practitioners had been persecuted and purged some decades earlier by the xenophobic

	

(Japan’s military government), the role special expertise (in this case pro-

	

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mad Sarah Holmes. Cowpox matter from these pustules was used to vaccinate the boy James Phipps in 1796.

And so the focus moves to Japan and its tenuous points of contact with the rest of the world. The pivotal setting is the Dutch Factory in Naga-

	

(Japan’s military government), the role special expertise (in this case pro-

	

Vaccinators in Japan and became major figures in the new Meiji bureaucracy. These details ensure that The Vaccinators will become a vital reference for researchers.

In the book’s first chapters contextualise Jannetta’s study. She sketches the history of smallpox in the world and in Japan (where it had become endemic and a killer of children from at least the 12th century), and then describes, in fascinating detail (though perhaps not recommended for the squeamish), early attempts to combat smallpox by fine-tuning the technique of ‘variolation’ (creating immunity by deliberately infecting a patient with a mild case of smallpox). Variolation was the main defence against smallpox before the invention of vaccination and was practiced with considerable success in China, Turkey and Britain but never really caught on in Japan. This anomaly allows Jannetta to engage in one of her major arguments: the extent to which the propagation and life-saving effects of new therapies are dependent on the infrastructure of a medical establishment that publishes journals and creates associations that spur their discussion and dissemination. Although such networks existed in Western Europe and America, they did not exist in Japan when vaccination techniques were first introduced, and thwarted their adoption. The same situation applied when the first news of the vaccination technique reached Japan, but this was no longer the case when at last the vaccine safely arrived approximately 50 years later.

From cows to humans to Japan: a cause célèbre

Jannetta proceeds to document the process by which Edward Jenner invented his method of vaccination against smallpox through inoculation with cowpox virus in Britain in 1798. She provides a minute but absorbing account of how vaccination techniques and the highly fragile, heat- and humidity-sensitive cowpox virus reached far-flung corners of the globe, including the Philippines, Macao and Canton. The pre-requisite for such a foray into the unknown was the existence of human networks, be they political, religious, commercial or personal; indeed, human contact was crucial to the vaccination process, as ‘arm-to-arm’ inoculation (the transference of cowpox lymph directly from a pock on the arm of the donor to a scratch on the recipient’s arm) was the only reliable method of transmission of Jenner’s technique. Jannetta reaches the inevitable conclusion that ‘Places and people that were

	

and at times persecuted ranp-doctors ended up in key positions at the very centre of the new Meiji government, formulat-

	

and medical education policy. Expressed a different way, Jannetta shows how expertise in medicine, especially ranp, attracted social opportunity and power, thus many of these individuals came from peasant or low-ranking samurai backgrounds.

Details, details... but in a good way

An impressive and formidable piece of scholarship, one of the book’s great strengths is its extensive use of primary and contemporary sources written in several languages: Japanese, French, Dutch, German and Russian. It is meticulously footnoted and documented; Chinese characters in appendices are provided for all Japanese personal names and glossary terms (but not, inexplicably, for tennōtsu, “smallpox”). These details ensure that the Vaccinators will become a vital reference for researchers.

In my view it is an easy read: although exceedingly well written, the enormous amount of detail and proliferation of names at times is overwhelming. However, Jannetta has spun an intricate web of detail from an exceptionally strong structure, progressing ineluctably from peripheral to central, deftly steering and propelling the reader. Her details are rarely gratuitous: for example, the biographies of seven ranp physicians who played a key role in introducing vaccination serve as cogent case studies of the expanding ranp-network in the early 19th century so crucial to the vac-

	

principal position was in fact opposed to vaccination. By 1858, the

	

by domainal lords but not the bakufu, the Meiji government, the central theme of the crucial role that institutions, networks and authority played in effective public health operations. And yet her central plot is utterly simple: the discovery of vaccination and its introduction to Japan.

This is a work of immense value to scholars and students of late Edo

	

Japan: science and medicine in the 19th century. Jannetta’s insights support her central theme of the crucial role that institutions, networks and authority play in effective public health operations. And yet her central plot is utterly simple: the discovery of vaccination and its introduction to Japan. Dr Penelope Shino is Lecturer in the East Asian Studies Programme, School of Language, Literature and Culture, University of Auckland, New Zealand. a.p.shino@massey.ac.nz