

Preface

The Vaccinators is a book about connections. It analyzes the accelerated expansion of networks of knowledge across time and space by tracking the transmission of a new and revolutionary medical technology from its origins in rural England to the Japanese Islands in the first half of the nineteenth century. This new technology, “vaccination,” used a live virus taken from cows infected with cowpox to immunize children against smallpox; once it became known that vaccination actually worked, a demand for cowpox vaccine developed quickly. Meeting this sudden demand was no simple matter. The global distribution of cowpox was limited, and even in places where the disease could be found, it was not always prevalent. This meant that distributing live cowpox virus required transporting it from Europe to the rest of the world, and soon it became clear that the virus did not travel well. Hence, the global transmission of cowpox vaccine and vaccination would rely upon a human network that could distribute the vaccine while maintaining the vitality of the fragile virus.

Why vaccination? My original interest in smallpox and vaccination goes back half a century, to August 1953, when I found myself in the Amsterdam airport without the required documents to return home. At that time, smallpox was still a devastating disease in many parts of the world, and no one was permitted to enter the United States without a valid vaccination certificate. I had been vaccinated before leaving for Europe two months earlier; however, while traveling in Italy I had contracted polio, and I was returning home unexpectedly and without my vaccination papers. Large international airports had medical staff on hand to perform routine immunizations, and persons traveling without vaccination certificates were vaccinated on the spot. So, with a minimum of fuss, I was vaccinated in the Amsterdam airport during a short layover. I attribute my long-standing interest in disease transmission,

and the diffusion of medical knowledge to thwart that transmission, to that experience.

There are other reasons to examine the social history of vaccination. First and foremost, it provides an excellent example of how human ingenuity and international cooperation eradicated a universal disease that had been afflicting human societies for centuries. Such ingenuity and cooperation are still needed. National governments are presently considering the possibility that the known stores of smallpox virus, allegedly imprisoned in high-security freezers in the United States and Russia, might fall into the hands of terrorists who could unleash the virus into a global population whose immunity, acquired over two centuries of public health measures based on vaccination, has been lost. Today public health officials are trying to prepare for just such a catastrophe without alarming a public that has been spared the ravages of smallpox. Second, holding in check new diseases that now threaten the global community requires the same ingenuity and international cooperation.

The social history of vaccination and the eradication of smallpox is a transnational history that connects many national histories. My intent here is to analyze the impact of a new foreign medical technology on Japan during the last-half century of Tokugawa rule. In *Epidemics and Mortality in Early Modern Japan*, I argue that before the opening of Japan's ports in 1859, a *cordon sanitaire* protected Japan from some of the most important diseases of the early modern world. Using contemporaneous accounts of epidemics and demographic records, I was able to demonstrate the absence of diseases that were common elsewhere, and to conclude that certain diseases failed to reach pre-modern Japan. The reasons, I believe, were Japan's protected geographical position beyond the major world trade routes, and the xenophobic policies of Japan's Tokugawa rulers. My research for *The Vaccinators* reinforces this belief: for thirty years, deliberate efforts to export cowpox virus to Japan failed. The book examines the reasons for this failure, explores the consequences of Japan's self-imposed seclusion policies which contributed to this failure, and considers the role of Western medical knowledge in "opening" Japan to international influences before the arrival of Western gun boats in the 1850s.

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