THE BUSINESS OF VACCINATION IN NINETEENTH-CENTURY CANTON

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Introduction

Lu Xun (1881-1936) wrote a vivid account in 1933 of his first vaccination when he was two or three years old in his home town, Shaoxing. He was vaccinated at home, instead of in a vaccination bureau, “meaning that it was probably a grand occasion.” He could still remember the vaccinator as a man “with a plump, round, and reddish face, wearing a big pair of tinted glasses.” What struck him most was that the vaccinator spoke a language that was totally incomprehensible to him, like the one “spoken by mandarins,” and his appearance “was similar to that of a mandarin.”¹ Lu Xun’s memoir also tells us other interesting details about vaccination during the late nineteenth and early twentieth centuries: vaccination bureaus were common but only seasonal in major towns; vaccination was far from universal while traditional variolation was still a choice. Lu Xun was typically sensitive to local traditions, but here he misses a central point in the story of vaccination in China. Praising Shanghai as “probably the most civilized place in China” because vaccination there was popular and convenient, he ignored the fact that, as far as vaccination was concerned, Canton should have been the city of reference since the technique was first introduced into that city in the early years of the nineteenth century and the practice became widely accepted there first.

The story of the introduction of Jennerian vaccination in China via Macao and Canton is a story told many times, especially by Chinese historians, sometimes in great detail.² One of the first English accounts can be found in

¹ Lu Xun, “Wo de zhongdou” (My vaccination).
² The most important works included: Chen Yuan “Niandou mu Zhongguo kaochu” (Study of the introduction of vaccination in China); Peng Zeyi, “Xiyu yu Zhongguo fa chu chuan Zhongguo xian” (Study of the introduction of Western vaccination in China); Fan Xingzhan, “Zhongguo yufang yanjiu xueshu” (History on the conceptualization of preventive medicine in China); Liang Qizai (Angela K.C. Leung), “Ming-Qing yufang tiantai cuoshi zhi yanbian” (Development of preventive measures against smallpox in the Ming-Qing period); Liao Yuxian, Qihuang yida (Chinese medicine). A more complete list of Chinese works on the subject is provided by Chuang Chia-feng, “Shijiu shiji chu niandou di zaihuan” (The indigenization of vaccination in the early nineteenth century).

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H.B. Morse’s *Chronicles of the East India Company Trading to China*, first published in 1926. The story was told again in greater detail in *History of Chinese Medicine*, co-authored by K.C. Wong and Wu Lien-teh in 1936. In this book, the authors described how Alexander Pearson, surgeon to the East India Company in China, practiced vaccination in Macao, around 1802, a few years before the arrival of the Spanish Balmis expedition with a new supply of lymph, and wrote a pamphlet on the technique that was to be translated into Chinese by George Staunton in 1805 with the support of a Cantonese hong merchant. The establishment between 1805 and 1810 of a charitable vaccination dispensary by hong merchants in their Public Hall in Canton, employing one of the first Chinese vaccinators, Qiu Xi, who published his own book in 1817, was also mentioned with details. Wong and Wu, as well as historians writing the story in Chinese, considered the spread of the technique in Canton to have been smooth during the nineteenth century.

In this paper, we step aside from the grand narrative of the heroic introduction of vaccination in China, and try to answer questions that interested Lu Xun: Who were the vaccinators? Who were the other actors in the story? What kind of institutions were the vaccination bureaus? How did society perceive this curious, foreign technique? We shall also look more closely at Canton, where vaccination was first publicly practiced. In other words, we shall examine the social fabric allowing the smooth dissemination of a new technology into a nineteenth-century Chinese urban society. We shall also look at an emerging medical culture in a metropolis that, unlike Shanghai and Beijing, was far from the political and cultural centers of late imperial China, and yet was a city where business and commerce occupied a central place in people’s daily life.

The vaccinators

Who, then, were the vaccinators? Sources show that indigenous Cantonese became the main vaccinators soon after the initial introduction of the practice in Macao. According to Pearson, before the arrival of the Balmis expedition from Manila, “[vaccination] had been quite extensively conducted by the Portuguese practitioners at Macao, as well as by myself among the inhabitants there and the Chinese... I had instructed several Chinese in the details of [vaccination], after the best manner I could, and they practiced it extensively as well as at a distance from as under my inspection.” How then did he choose his trainees? “The class of Chinese, who are now the vaccinators, are generally taken from those who are or have been employed about the British Factory.” These first Chinese vaccinators conducted vaccination “extensively throughout the city of Canton and country around.”

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4 Wu Lien-teh wrote in the *Chinese Repository*, August 1856, 474, that “Alexander Pearson imported the new virus from Bombay for use in Canton in 1802 against smallpox.”
5 W.C. Milne provided the date of 1805 as the establishment of “a vaccine establishment at Canton”; see his notices written for *Chinese Repository*, January 1847, 27, and again in his *Life in China*, 56.
6 K.C. Wong and L.T. Wu, *History of Chinese Medicine*, 277-8. The 1835 Gazetteer of Nanhai County dated the establishment to 1818; see 1835 *Nanhai xianzhi*, 1869 reprint, 44-30b. Milne’s dating (1805) is probably closer to the truth, as Qiu Xi’s preface to his 1817 book on vaccination claimed that by then the dispensary had been functioning for more than ten years. See below.
7 Some historians emphasized the obstacles faced by vaccination, especially the resistance of inoculators and religious leaders. Such resistance was also seen in Europe in the initial stage of the introduction of vaccination (see Hopkins, *Princes and Peasants*, 83, Skold, *The Two Faces of Smallpox*, 287). Such resistance did not prevent the wide spread of vaccination in Canton.
8 Pearson, “Report to the Board of the National Vaccination Establishment” (1816), 36-41.
of Robert Morrison (1782–1834) of the London Missionary Society, also confirmed that native practitioners attended Pearson’s regular classes, and were later in charge of the vaccination dispensary in Canton.9 Chinese employed or associated with the East India Company were involved in the introduction of vaccination in other ways as well. The translation of Pearson’s vaccination pamphlet, for example, was achieved “with the assistance of a Chinese who follows the medical profession.”10

We learn more about these first vaccinators in Chinese sources. The 1835 gazetteer of Nanhai County mentioned the same account given by Pearson and later by Morse, and provided the names of the first vaccinators who practiced in the charitable dispensary established by hong merchants: Liang Hui, Qiu Xi, Zhang Yao, and Tan Guo. From a later gazetteer, we know that they came from three counties—Panyu, Xiangshan, and Nanhai11—that had jurisdiction over Whampoa, Macao, and the city of Canton respectively. It is well known that Western merchants trading with China were confined to these three places before 1842.12 The four vaccinators were thus very likely to have been employees or associates of the British Factory as mentioned by Pearson. Among the four, we know more about Liang and Qiu. Liang was described in the gazetteer of Panyu, his hometown, as a wealthy and charitable merchant. “He heard about vaccination brought by Westerners, and spent a huge sum of money to learn it. The lymph was transmitted from the Western ocean and very expensive. [He] spared no money and every year he practiced and did not ask for a cent [in return].” We also know that he later left the Canton dispensary and returned to Whampoa, his hometown, probably to continue vaccinating.13

Qiu Xi, known as A-Hoqua or Dr. Longhead to Westerners,14 was the most famous Chinese vaccinator since he was the author of the first and most influential Chinese book on vaccination, published in 1817, after Pearson’s translated pamphlet. His book, Yindou lue (A brief account of inducing pox) was to be re-published many times throughout the nineteenth and the early twentieth centuries, often with other vaccination books.15 A Canton native, he was 32 and working as purveyor to the British company in Macao when he heard about the new technique. As he had never had smallpox before, “the foreign doctor” vaccinated him. He then “experimented with it on my family and friends and found it effective. The charitable gentlemen of the Co-hong entrusted me with the task [of administering vaccination] in their Public Hall. For more than ten years, those who came [to be vaccinated] were in the hundreds, if not thousands….”16 Qiu exerted his authority as the master vaccinator not only through the publication of his book, but also, as we shall see later, by servicing the political elite, and by training not only local and out-of-province disciples, but his own sons, nephews, and disciples to be his successors’ in what would become the Qiu “family business” that had influence on a national scale.

After the formation of the first group of Cantonese vaccinators, vaccination quickly spread in the Canton area and more local practitioners joined the activity. The British surgeon seemed to have a strategy at the beginning that proved to be successful: “It is no way unfavorable, either to the chances of disseminating or of preservation of the practice, that it has become a source, both of reputation and emolument to the Chinese, who have engaged in it, and who conduct it extensively throughout the city of Canton and country around, as well at the station specified.”17 Half a century later, the American Presbyterian medical missionary practising in Canton, John Kerr (1824–1901), observed that “there are now so many persons devoted exclusively to the business, and interested in the preservation of the virus, that there is no danger of its ever being lost. Several persons have made fortunes from the practice, and those first engaged in it have obtained an enviable fame among their countrymen as great benefactors of the race.”18 The first vaccinators quickly seized the introduction of the European technique as an opportunity for acquiring wealth and fame, with the acquiescence of the British medical personnel, who simply wanted to attract more indigenous practitioners to maintain the art and the lymph, especially when their own activities were confined to Macao and Canton city.

More vaccinators were trained in Canton by Protestant medical missionaries from the 1860s onward. John Kerr wrote in 1866 that “the pupils of the [Canton] hospital are also encouraged to practice vaccination.” In the 1868 report, he told the reader that two local vaccinators who came to the hospital for fresh lymph “were taught in the dispensary.”19 It is difficult to estimate the

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10 Morse, The Chronicles of the East India Company Trading to China, v. 3, 16.
11 1835 Nanhai xianzhi, 1869 reprint, 44–60; 1879 Guangzhou fuzhi (Gazetteer of Guangzhou Prefecture) 163–40a–b.
13 1871 Panyu xianzhi (Gazetteer of Panyu County) 47:10a; 1879 Guangzhou fuzhi 163–40a.
15 According to Quanguo zongyi tushu banke mula (Union catalogue of medical books in China), 517–8, at least 62 different editions of this text were published in China, not including reprints of the book with other texts on vaccination, see 518 et seq.
16 Qiu Xi, preface to Yindou lue (A brief account of inducing pox), 5a–6b; main text, 4a.
19 RMMS 1865, 12; RMMS 1867, 18.
number of vaccinators in Canton at any time in the nineteenth century, though a medical report of the Maritime Customs Service stated that in 1870, “there are some fifty or sixty professional vaccinators in Canton and about half of the children in the city are now vaccinated.”

The next point that interests us is the reason that so many were interested in taking up vaccination. One obvious answer is that it was a lucrative business. We have seen how Pearson and Kerr observed that early vaccinators in the Canton area gained fame and wealth. On the price of vaccination, we have an interesting clue from the famous Dr. Benjamin Hobson (1808–71) of the London Missionary Society, who talked to a native doctor in 1850: “He thought that [in Canton] nearly all children were vaccinated; he knew several native doctors who practiced vaccination, charging from 50 cash to $1 for each patient.”

Huang Kuan (Wong Foon, 1829–78), a Cantonese doctor, the first Chinese to obtain a medical degree in Britain, and medical officer of the Maritime Customs Service, also recorded in 1878 that “when a doctor is called to a family to perform vaccination he takes a child with him to furnish the vaccine, for which he generally gets 50 cents or $1 as a fee, and the child 25 cents for the lymph. Poor people may be vaccinated for 10 or 25 cents.” Considering $20 as the monthly salary of a senior native medical assistant in the Canton hospital, $1.50 as the cost of a silver catheter or the burial cost of a patient in a missionary hospital in the mid-nineteenth century; vaccination at home, such as the one experienced by Lu Xun, was definitely expensive, and even the fee paid by “poor people” was quite high. Though fees were charged only for private vaccination, and not in charitable vaccination institutions, it still indicates that vaccinators with good reputation could make a comfortable living. Moreover, the gratuitous or “remunerated” vaccination of poor children in Canton, as revealed in the above reports, was in fact a necessary procedure for preserving fresh lymph. In other words, “free” or “remunerated” vaccination actually constituted part of the high cost of private operation.

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20 Garden, *An Epitome of the Reports of the Medical Officers to the Chinese Imperial Maritime Customs Service from 1871 to 1882*, 81. John Dudgeon repeated this observation in 1877; see his *Diseases of China*, 44.
23 “Minutes of three annual meetings of the Medical Missionary Society in China for the years 1854, 1855, and 1856 with Dr. Kerr’s report for 1855–56.” 23–4 on salaries of personnel, the assistant (Kwan) Ato received $20 each month; the price of the silver catheter in 1849 was given in the account of the “Sixteenth report of the Ophthalmic Hospital at Canton, for the years 1850 and 1851,” 36. The price of the burial was provided in Hobson, “General report of the Hospital at Kew-lo-fu,” 49.
25 RMMS 1865, 41.
26 There is little information on such clinics. Chen Yuan described in 1909 these clinics as “family businesses” (“sjayel”) often employing unqualified practitioners. See his *Yishang, shanpo, doushi zhuce* (Licensing of doctors, midwives and vaccinators).
27 RMMS 1861, 6–7.

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The Business of Vaccination in Nineteenth-Century Canton

We know that cowpox was rare even in Western Europe and it was not easy to have access to a cow with lesions at the right stage for the direct vaccination of humans. Therefore, arm-to-arm vaccination, in which the lymph is transferred directly by contact from the pox of a recently vaccinated person to fresh lesions on the arm of a new patient, continued to be practiced even in Europe until the end of the nineteenth century. Arm-to-arm transmission raised the risk of a loss of vaccine potency, and of transmitting infectious diseases. One should bear in mind that vaccine production was conducted in Europe without any official control throughout the nineteenth century and the regulation of the quality of vaccine was established only in 1925. The supply of good, safe lymph remained the main problem for the implementation of vaccination in China, especially in Canton, where the warm climate was unfavorable for vaccine preservation. Thus vaccinators or establishments had to obtain fresh lymph by vaccinating children continuously, arm-to-arm, throughout the year. That was one main reason for wealthy Cantonese of the nineteenth century to set up vaccine stations and employ reputed vaccinators to administer the operation. John Kerr reported in 1865 that “a vaccine establishment has been opened in the Eastern suburbs under the patronage of a wealthy native, and one of the pupils of the [Canton missionary] Hospital has been employed to operate. A young man, formerly a pupil has been employed to vaccinate in Taileung (Daijiang), the district city of Shun-tak (Shunde) District. He is supported by an association of wealthy men.”

These wealthy men in Canton were obviously not all innocent philanthropists. They sponsored private clinics called “zhongdong guan” (vaccination clinics) that were often family businesses continuing to function in the early twentieth century. One such clinic in the early 1860s was maintained by none other than the son of the legendary first native vaccinator Qiu Xi, Qiu Chang. In 1860 John Kerr visited Qiu Chang’s office where he was shown the advertisement of his vaccination business that Kerr translated into English. In this advertisement, Qiu Chang reassured his potential clients that “the virus which I use is derived directly from that brought by the hong merchants, and before it is used, a man skilled in detecting leprosy examines the child, and thus all danger is avoided. Those who wish to request me to vaccinate will please come to my house in the West end of 12th Street.” According to Huang
in Canton but all over China. A common trend all over nineteenth-century China, including Taiwan, was that quacks appeared when vaccination became popular and profitable. The situation had become so bad in Canton by the turn of the century that the famous Cantonese historian Chen Yuan (1880–1971) called for regulations to license vaccinators.

How then did Chinese native vaccinators promote their business? I would say that the key to their success lay in new strategies rooted in tradition. Their strategies consisted of two parts: the elaboration of a new, hybrid technique and language partly based on traditional medicine, and the enhancement of social prestige of vaccination as a trade. Printed books on vaccination here played a key role.

Qiu Xi’s influential Yin du lue was a model of the indigenization of vaccination in that it injected the language and concepts of Chinese medicine into the new technique, a topic that has recently been discussed in great detail by Chang Chia-feng. Pearson taught Qiu the basic techniques as understood in the early nineteenth century, including the ways to hold the lancet, to cut the arm before inserting the lymph, to observe the pustules, and to transmit the lymph. Based on such knowledge, Qiu “indigenized” the operation by applying the language of acupuncture, naming meridian points on the arm where incisions were to be made, explaining the manifestation of pustules by evoking the traditional notion of laidu (foetal toxin) being liberated, and providing traditional recipes on post-operation care. Graced with engraved drawings of children with meridian points indicated on their arms, the traditional language disguised impossibly two important breaks from mainstream traditional medical practice: application of an intrusive method involving making bloody incisions, and non-oral introduction of an animal element into the body. Moreover, writing in Canton, where leprosy was endemic, Qiu added a passage to caution against inoculating leprous children for fear of transmis-

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28 Maritime Customs Medical Report, no. 15, 1878, 15.
29 Graves, “Dispensary at Shia Hing,” 17.
30 Maritime Customs Medical Report, no. 15, 1878, 15.
31 Shemao, December 29, 1874, 1.
32 Gordon, An Epitome of the Reports of the Medical Officers to the Chinese Imperial Maritime Customs Service from 1871 to 1882, 74.
33 RMMS 1861, 7.
34 RMMS 1862, 17; RMMS 1863, 7.
35 One typical recollection is found in the 1888 text written by a vaccinator from Anhui: “There are people who aimed only at profit and used human pox as lymph as cow-pox is difficult to obtain. This will greatly ruin our affairs...” Tianfeng midou zhi an (A new book on the method of cowpox vaccination), preface. 2a. Mianhao also warned people against those quacks who ruined the reputation of vaccination. Shen Bao, April 29, 1873, 1. John Shepherd mentions the problem of quacks in late-nineteenth-century Taiwan when vaccination was becoming popular; see his “Smallpox and the pattern of mortality in late nineteenth century Taiwan,” 260-1.
37 Chang Chia-feng, “Dispersing the foetal toxin of the body”; see note 2.
38 The use of the traditional language to describe vaccination has been described by Angela K.C. Leung “Vaccination et vaccination dans la Chine prémoderne (1850–1911)”; and Chang Chia-feng, “Dispersing the foetal toxin of the body.”
sion.\textsuperscript{39} Vaccination, which Pearson and his translator intended to introduce as an exotic or marvelous foreign art,\textsuperscript{40} was thus nicely cloaked in a familiar language within the native context.

On making incisions, Qiu Xi created his own method early on. Not only did he apply the idea of meridian points, but also imposed the practice of making two incisions on both arms. Girls should be inoculated first on the right arm and boys on the left.\textsuperscript{41} This diverged from Pearson's teaching where only one incision was necessary, on either arm.\textsuperscript{42} Later vaccinators followed Qiu's idea and recommended four to six incisions. Some even suggested eight or ten incisions for older children for a "more exhaustive" dispersal of foetal toxin.\textsuperscript{43}

On the basis of Qiu's text, other vaccinator-authors continued to elaborate on the art with a mixture of traditional medical concepts and new ideas. On vaccine production and preservation, such elaboration was necessary given the technical difficulties in the early nineteenth century. The anarchical state of vaccine production and preservation even in Europe provided a large margin for innovation for Chinese vaccinators. The problems of spurious lymph, the use of vaccine, and the inoculation method were more or less monitored by Pearson during the first stage,\textsuperscript{44} a period when lymph supply was ensured by the "charitable vaccination dispensary" sponsored by hong merchants, where poor children, compensated with small gifts and premiums, were vaccinated and had their lymph extracted throughout the year.\textsuperscript{45} After Pearson's departure from China in 1832, followed by a financial crisis of the dispensary around 1842,\textsuperscript{46} and before or even after John Kerr opened a vaccination department in the Canton Hospital in 1859\textsuperscript{47} providing safer imported lymph, native vaccinators developed their own methods of producing and preserving lymph.

While neither Pearson nor Qiu Xi suggested ways of producing vaccine other than arm-to-arm transmission, as the vaccine dispansary ensured a continuous supply of fresh lymph, later vaccinators who did not have access to this lymph sometimes improvised their own production. A vaccinator claimed in the early 1860s to have discovered a new method: young buffaloes inoculated through the nostril with powdered human smallpox scab would develop pustules near their breasts that would be extracted for vaccination.\textsuperscript{48} We do not know if the method was valid, inspired by the principle of "retrovaccination" already developing in Europe, or simply a fantasy,\textsuperscript{49} but this is a good example of how

\begin{itemize}
\item \textsuperscript{39} We now know that the bacillus of leprosy cannot be developed outside the human body, and the transmission of the disease by inoculation is impossible. But this danger greatly concerned Cantonese and British leprologists working in southern China in the nineteenth century. I discuss the question in my forthcoming book on leprosy in China.
\item \textsuperscript{40} See note 41.
\item \textsuperscript{41} Qiu Xi, \\N\textit{Yiu lou ho}, 7a-b.
\item \textsuperscript{42} Pearson, \\N\textit{Yingjil-gwo xinshu zhongdou qishu}, 4b.
\item \textsuperscript{43} This popular concern was described in a \\textit{Shenhua} article on January 2, 1875, 1. Vaccination texts of the later nineteenth century commonly followed Qiu's way making 4 to 6 incisions. See (Changi) \\textit{Qiu-Zhao niudou xinshu} (New book on vaccination by Qiu Xi and Zhao Kainai), "Fungyi Yingjil yyi zhong niudou shuo". Some would recommend a maximum of 10 incisions, see \\textit{Niudou xinshu jishu} (A new book on vaccination to save the world), Wang Chianfu ed., based on Qiu Xi's text, 1865 Nanjing edition, 7a where the author recommended a maximum of 8 incisions for children older than four, and 10 for those older than ten.
\item \textsuperscript{44} Pearson, "Report to the Board of the National Vaccine Establishment" (1821), 39-40.
\item \textsuperscript{45} Qiu Xi, \\N\textit{Niudou ho}, 4b-5a; Pearson, "Report to the Board of the National Vaccine Establishment" (1816), 38.
\item \textsuperscript{46} 1879 \\textit{Guangzhou faishu} 163-40a-b.
\item \textsuperscript{47} RMMS 1860, 2.
\item \textsuperscript{48} \\textit{Tsinhong niudou xinshu}, 24a-b.
\item \textsuperscript{49} We know that the Italian Negri practiced retrovaccination, meaning humanized lymph being passed from man back to the cow, a method for increasing lymph potency, with the use of glycerol in the 1840s; see Forman et al., \\textit{Smallpox and Its Eradication}, 264, 267. In Indochina, Calmette of the Pasteur Institute also used buffaloes to maintain the supply and potency of vaccine. He successfully retrovaccinated local buffaloes by using humanized vaccine and not variola virus towards the end of the nineteenth century. See Annick Guénaud, "Lutz contre la variole en Indochine: variolisation contre vaccination?" 66-69.
\end{itemize}
vaccinator-authors developed their own technical specialties by combining traditional technique with the new art. Similarly some vaccination establishments bought lymph taken from local cows or buffalos in the later nineteenth century, implying local success in using bovines to make cowpox.50

On lymph preservation, Pearson and Qiu mentioned the basic technique known in the early nineteenth century: putting dried lymph on an ivory pick kept in a goose feather tube sealed with honey and wax. According to Pearson, the potency of the lymph could thus be maintained for two months. Qiu further recommended the mixing of the dried lymph with human milk before use.51 In the latter half of the nineteenth century, thanks to the efforts of the likes of John Kerr, the technical knowledge of vaccine preservation in glycerol and in glass tubes seemed to have reached native vaccinators, who sometimes further refined or even created their own methods. Some buried the glass tubes underground to keep the lymph fresh; others sealed the lymph between two glass tablets, or recommended the use of bamboo or porcelain tubes; still others wrapped the vaccine with dried longan pulp stored inside a silver, bronze, or corn box, or used an airtight crystal box sealed by wax.52 Some of the techniques clearly came from the old tradition of variolation.53 There were practically as many methods of preservation and vaccine traits as there were vaccinator-authors, a situation not too different from Europe.54

On the question of disease transmission, Qiu Xi and other Cantonese vaccinators were particularly concerned with leprosy.55 One famous Cantonese vaccinator having a "large practice" in the 1870s was said to have acquired his reputation from his skillful diagnosis of leprosy.56 Practitioners in other provinces later came to be anxious about syphilis transmission instead, considering leprosy mostly a Cantonese problem.57 Some simply suggested that sickly children should not be vaccinated for fear of transmitting their illnesses to others.58 The increasing fear of syphilis transmission through arm-to-arm

50 The purchase of cowpox lymph was mentioned by the Anhui vaccinator mentioned above, in Yinchow nindou xinshu, 17b.

51 Pearson, Hung-ting xinshu zhongdong gishu, 6a-b; Qiu Xi, Yindou lue, 9a-b.

52 Shenbao, December 29, 1874, 1; Chen Dongqing, Zhongdong gishu, 26-3a; Zhao Kaitai, Zhao shi yaniao (The three essential methods of Mr Zhao), 8b; Zhu Daohun, ed., Yindou jiyao (A collection of essentials of vaccination), 19a-20a.

53 On the refinement of human lymph preservation in variolation, see Qiu Zhonglin, "Ming-Qing de roudou f—diyu liub, zhihui chuansuo yi yimin shengchun" (Ming-Qing variolation: regional spread, transmission of knowledge, and vaccine production).

54 In Europe until the end of the nineteenth century, "individual physicians maintained their own stocks of "humanized" vaccine by arm-to-arm inoculations;" and Great Britain was "flooded with cheap stuff 'made in Germany' and elsewhere, of unknown nature or origin. It is cheap and therefore sells." Fenner et al., eds., Smallpox and its Eradication, 267. It was observed that children vaccinated with problematic lymph would not be immune. The warning against problematic lymph was frequent in Chinese press, e.g., the Christian magazine Wangfei guangbao (The Globe Magazine and a Review of the Times) XI:524 (February 1, 1879), 328b-3259.

55 Qiu Xi, in his Yindou lue (5a), highlighted the danger of transmitting leprosy and recommended inspection of children by a leprologist to make sure that leprose children were not operated on. Benjamin Holson also noticed this practice in Canton; see his report of 1841-42, in Chinese Repository 1842, 664: "The government orders two police men from the lazar house to examine all the children who present themselves for vaccination to Heequa. . . ."

56 The vaccinator was called Tan Yihong; see Huang Kuang's report in Maritime Customs Medical Report, no. 15, 1879, 35.

57 Zhao Kaitai, a vaccinator from Zhongjiang who edited Qiu's text in 1870 noted that while leprosy was a Guangdong problem, one should be alert to syphilis transmission. See (Chongkan) Qiu-Zhao nindou shu, text of Yindou lue, 4a.

58 Yinchow nindou xinshu, 14b; (Chongkan) Qiu-Zhao nindou shu, 4a.
vaccination was shared by Europeans in the early nineteenth century. We do not know if the idea was brought to China by Westerners, or if it naturally occurred to native practitioners, as syphilis was generically close to leprosy in late imperial medical etiology. The various technical designs and theoretical concerns of Chinese vaccinators revealed at the same time the presence of strong native traditions, and the intriguing possibilities of circulation of Western medical knowledge and technology of the time.

Western medical missionaries had already noticed some of the particularities of the Chinese styles of vaccination in the 1860s, and described them with appreciation. John Kerr wrote in 1861 on the method practiced by Qiu Xi’s son: “His mode of operating is to make four or five transverse incisions in the arm, the lymph is transferred directly from one arm to the other. The vesicles following this mode of operating are not round and even, but oblong and irregular, but there is every evidence that the vaccination is genuine and effectual.” John Dudgeon also showed his admiration for the Chinese method in the 1870s: “The mortality from smallpox was very inconsiderable among the vaccinated. The Chinese have taken wonderfully to vaccination, and it is productive of the best results. They have made its practice coincide with their own theories, and although there is thus an air of mystery thrown around it, the success of the operation is not invalidated. They are most particular in regard to the lymph, the condition of the child, the season of the year, etc., and their great care is rewarded with great success. The whole subject is full of interest, and useful lessons might even here be learned by us.”

The seriousness with which native vaccinators developed their own techniques was matched by their efforts in building up social prestige of the vaccination on the local and national level. There were several strategies they employed to achieve this end: One was to claim an orthodoxy that was, first, European and second, “Eastern Guangdong”. Another strategy was acquiring sponsorship or endorsement by bureaucrats or local celebrities that traditionally was reserved only for elite doctors. Finally, vaccination was sometimes practiced as a family business, under the aura of a famous master or forebear, often the author of a published book on the art. In brief, traditional strategies of enhancing the status of elite doctors were deployed, despite the fact that, in the past, hands-on “technicians” did not enjoy such prestige. In a way, the European origin of the art contributed significantly to its glamour in the particular political and cultural context of Canton in the nineteenth century.

Qiu Xi’s account of the history of vaccination in Europe firmly established the Western origin and orthodoxy of the art. The authorship of the influential Yindou lue in which he claimed to be “the first [in China] to know this method” also made Qiu the ultimate authority on vaccination throughout the 19th century. Qiu Xi and his son Chang meticulously nurtured the cult of Pearson that helped enhance the authority of the Qiu family. Kerr visited Qiu Chang’s home and office in 1860, ten years after Qiu Xi’s death, and reported that “Mr. Yau (Qiu Chang) has in his office a portrait of Dr. Pearson, engraved from the original painting by Chimer, and by the side of it is an account in Chinese of the introduction of vaccination by Dr. P. Mr. Yau also keeps for distribution a paper giving a concise history of vaccination, and it is gratifying to notice that the foreign source of the art is fully acknowledged.” In later vaccination books published outside of Guangdong Province, not only the European, but also the Eastern Guangdong origin was stressed as proof of excellence. By the 1840s, other Cantonese vaccinators besides the Qiu family began to make their national reputation. One of them, venerated as Liu the miraculous doctor (“Liu shenyi”), had apparently trained a number of disciples outside of Guangdong Province and obtained a great reputation. One disciple from Hunan wrote a book based on his teaching, and called vaccination the “method of Eastern Guangdong.” Another Cantonese vaccinator called Huang Peiru was the mentor of an Anhui practitioner who wrote a text published in 1886. Yet another Cantonese celebrity, the scholar-official Zeng Wangyan (Zhuoru), a vaccinator himself, made his national fame by establishing a vaccination bureau in the Nanhai Guild Hall in Beijing in 1828.

Endorsement by important bureaucrats and literati was also a key element in the promotion of vaccination as a prestigious medical operation. The most famous example was a poem by Ruan Yuan (1764–1849), governor-general of Guangdong and Guangxi (1817–26). He was one of the first major officials to have the children of his family vaccinated. Upon the request of Qiu Xi, he wrote a short poem to praise the beneficial effect of vaccination, which John Kerr translated into English: “The poison of opium has been brought to China, and although the most stringent measures are used to prevent it, they do not succeed. But this foreign art of vaccination may be carried into all the prov-

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59 The danger of vaccinal syphilis was recognized in Italy in 1814, see Frank et al., Smallpox and Its Eradication, 254–5.
60 R. H. Graves, vaccinating in the early 1860s in Canton, complained that Chinese doctors sometimes hired poor "syphilitic or even leprous" children to vaccinate from. See his "Dispensary at Shing Hang," 17.
61 See my "Zhongguo mafeng bing guanjian yanbian de lishi" (The historical nosology of lili in China).
62 RMMS 1860, 6.
63 John Dudgeon, Diseases of China, 43–4.
64 Qiu Xi, Yindou lue, preface, 7a.
65 RMMS 1860, 6–7.
66 Chen Dongling, Zhongdou qian, includes a main text entitled “The book of vaccination by Mr Liu, the miraculous doctor”; (Chonglun) Qiu Zhaoshu niudou shu, 6a-b, Zhongdong niudou xuebu, in the 1865 preface by the Anhui vaccinator Dai Changzhu.
The Business of Vaccination in Nineteenth-Century Canton

parts of China, however, remained active in seeking bureaucratic support and were often successful in obtaining invitations to inoculate children of elites. Prefaces signed by high and mid-ranked officials in vaccination texts in the latter half of the nineteenth century clearly showed this trend.72

The confirmed legitimacy of vaccination, and the endorsement of celebrities, made the practice a respectable trade. Unlike traditional practitioners of variolation, normally anonymous, many vaccinators were well known local, regional, or even national figures. Not only were the first Cantonese vaccinators recognized in gazetteers, poems, and medical texts, but later, practitioners from the other provinces also made their names locally, or even nationally, especially if they had connections with Guangdong vaccinators. A most telling account was given by Wang Chunfu in 1865: "When I was touring Eastern Guangdong as a young man, I read about vaccination and a book on it in the gazetteer edited by His Excellency Ruan (Yuan), and found this intriguing. Then I met Mr. Qiu Xi and read the manuscript of his Yindou lue. I was full of admiration..."

In the spring of 1827, while serving a magistrate in Hunan, I heard of the great art of Mr. Yang Xusheng of Changsha, and [decided to learn from him]. Those who were studying with him then were Cheng Maoyuan of Xunin (Anhui), Fu Dazun of Hanyang (Hubei), Wang Zhengyuan of Shexian (Anhui), and thirteen local people from Hunan..."7 Similarly, a certain Tan Fusi from Chaling of Hunan Province was said to have traveled widely in Eastern Guangdong in 1822 and learned everything about vaccination. He then taught three students, Yang Xu (probably the same person as Yang Xusheng), Wang Yuechuan, and Deng Fuhong, with whom he introduced the technique back home.74 By the mid-1860s, Qiu Xi was hailed as the first master of the Lingnan region, Tan Fusi and his student Yang Xu as masters of Hunan and Jiangxi, Zeng Wangyan and Zha Jiren as masters in Beijing and the Jiangnan region, and Huang Chunfu, probably the same person as the above-mentioned Wang Chunfu, claimed leadership in Shanghai.75

67 Ruan’s calligraphy was reproduced in Yindou xinfa yuan shu (A complete book on the new method of inoculation), 1a-5b; the calligraphy of Kang Shaoyang, Governor of Guangdong Province (in office 1819–1821), and that of Zeng Ao (1760–1831), Salt Distribution Commissioner, and that of Fu Tang, Education Commissioner of Guangdong in 1816.70 Qiu Xi’s connection with hong merchants and bureaucrats was retained by his son Chang. In 1847, the Cantonese merchant Pwentingqua (Pan Shicheng 1803–73, jinshi 1832), serving in the Ministry of Punishments at the time, summoned Qiu Xi to practice vaccination in Beijing at the bureaucrat’s cost. Xi sent his son Chang to carry out the mission and Chang spent more than ten months in the capital to vaccinate and teach the art.71 It is unclear if Cantonese vaccinators could maintain the same privileged relations with high officials after 1842 when hong merchants lost their trade advantages. Native vaccinators in other

68 In the 1868 edition of (Changkun) Qiu-Zhuo nidou shu for example, the important scholar-official, modernizer Xue Fucheng (1838–94), wrote the general preface as Provincial Administration Commissioner of Zhejiang, with three other military and civil officials of Ningbo, Shaoxing, and Tainzhou Counties of the province; similarly, the 1888 edition of Yindou nidou xinshu recorded two prefaces in an earlier edition signed by two mid-ranked officials of Jiangsu Province; the 1908 edition of Nidou zhencun (True transmission of vaccination) contained a 1904 preface by a magistrate in western Hunan.

71 Yindou xinshu, preface by Wang Chunfu dated 1865.

72 Yangsun xinshu (New compilation of effective prescriptions), 472, preface by Yang Fuxin dated 1833; 1888. Hongting yuying xianshu (A modest account of the founding home of Hongiang town) 2:4a-9a.

73 This genealogy was established by Zha Jiren, editor of Nidou xinshu jishu, 15a. Huang Chunfu was frequently mentioned in Shao Bao as the most famous vaccinator in Shanghai in the 1870s, see December 29, 1874, 2, and January 29, 1875. K.C. Wong and L.T. Wu (History of Chinese Medicine, 391-2) said that Huang (Huang Chen-fou) was originally house-surgeon of the Shanghai mission hospital and later changed his name to Wang Chunfu, author of the 1888 text in note 72.
Vaccinators of reputation were often invited out to practice in other regions than their own. We have quoted the examples of Qiu Chang who vaccinated in Beijing in the 1840s. The vaccination bureau of Ningbo also invited a famous vaccinator, Chen Jitong, from Jinxian, in the 1870s. The founding home at Hongjiang town in western Hunan invited a reputable vaccinator from Wuling, a northern city of the province, to vaccinate local children in the 1880s. Examples of famous vaccinators traveling around China to practice in private or in bureaus were abundant throughout the nineteenth century. It was thus not surprising that Lu Xun did not understand the language spoken by his vaccinator, as the man was probably someone with a regional or even national reputation from a different region. In other words, by the second half of the nineteenth century regional or even national markets of vaccination were developing through the inter- and intra-provincial networking of practitioners.

Established vaccinators sometimes created a family business. Zhang Chongshu from Sichuan, the brother of a magistrate in Guangdong and Qiu Xi's disciple, wrote a sequel to his master's work that was edited by his son, cousin, and disciples. He then introduced the art to Sichuan and made it his family trade. The most noteworthy of such family businesses was none other than that of Qiu Xi. Xi was the sole author of the first edition of his 1817 book. But when it was re-edited and published in 1847, his sons, grandsons, and great-grandson all signed as editors. By this time vaccination had become the Qiu family business and had, moreover, received "marks of recognition from the Government in the shape of some official title." Medical missionaries in Canton in 1876 reported that the "business is still continued by his (Xi's) son at the old family residence in the 12th ward." Many vaccination publications in the latter half of the nineteenth century show that the practice was kept up by a good number of family or master-disciple enterprises.

Native vaccinators were clearly the key to the successful popularization of the technique in Canton in the nineteenth century. Pearson considered the charitable vaccination dispensary financed by the Cantonese merchants as essential for lymph preservation, whereas the most crucial factor in the success of vaccination was "the agency of the Chinese vaccinators, the principal of whom, A-he-qua, . . . is a man remarkably qualified for the business by his cast of judgment, method, and perseverance." One crucial strategy Qiu Xi and the first vaccinators successfully deployed, pre-emptying the obstruction of traditional variolators and drugstores, was the effective acquisition of public recognition by high-profile local bureaucrats, merchants, and literati. The widely advertised appreciation of these celebrities was a powerful public signal that sealed all possible opposition to the practice.

Merchants, missionaries, and bureaucrats

Even though native vaccinators were the main agents in the spread of vaccination, the initial breakthrough in Canton happened under very special circumstances. It was contingent upon the shared commercial and political interests of British traders and Cantonese hong merchants in the first decades of the century, with bureaucratic acquiescence. Medical missionaries, especially American Protestant ones who had also taken advantage of this situation to establish an early presence in Canton, played an important role from the second half of the century onward. These actors played decisive roles at certain key points of the story of vaccination in Canton.

At the initial stage, foreign and Chinese merchants cleared legal and material obstacles to allow for a smooth introduction of vaccination. The publication of Pearson's translated pamphlet was the result of close collaboration between officials of the East India Company and hong merchants. Morse explained most fully the legal problem involved here. The pamphlet was "godfathered by Gnewqua" (Zheng Chongqian of Hui-long company), "who happens to be at present at Macao and who has promised to assist in the translation and to lend the name of his Hong, without which, perhaps, it might not obtain circulation, it being indispensable that books printed in China should appear the production of or be sanctioned by some native holding a public situation." The legal concern was real, and to avoid political complication, this translated pamphlet was signed in Chinese by James Drummond, head of the British settlement in Canton, Pearson the author, Staunton the translator, and most importantly Zheng Chongqian the hong merchant, who was the key in legalizing the technique in Canton by endorsing the printed text.

The initial training of native vaccinators was, as mentioned above, done by Pearson, and the actual public implementation of the technique was sponsored by hong merchants. The 1835 gazetteer of Nanhai County provided
the names of the hong merchants who created the vaccination fund: Wu Dun-yuan (Howqua II), Pan Youdu (Puanhequa II), and Lu Guanheng (Mowqua I), who were leading figures of the Canton trade of the time. They were said to have donated several thousand taels of silver to implement vaccination under the charge of Qiu Xi and Tan Guo in the common meeting hall of the hongs. In the eyes of foreign merchants, this meeting hall, called “Consoo” (Gongsuo), “the property of the Hong merchants collectively,” was a place of authority: “The entrance to it was by a flight of broad granite steps, through large heavy folding doors of a highly polished and valuable wood. Being a handsome specimen of this style of Chinese architecture, foreign visitors to Canton were taken to see it as one of the sights.” That vaccination took place in this grandiose place further legitimized the practice in a ritual sense and enhanced its prestige.

Why then did hong merchants invest so much in the promotion of vaccination in Canton? Although definite answers are impossible, it is likely that their attitudes were determined by their relations with British traders that were, and had to be, cordial for the purpose of sustaining mutually profitable trade. For Morse the relations between the two could not be more “honorable,” “with never a written contract, with many an occasion of help in time of difficulty, and with much sympathy and friendliness from the one to the other.” British traders paid no direct charges to hong merchants, “except their contributions to the ‘Consoo’ guarantee fund.” On the other hand the Co-hong, with support from the Chinese government was “now the inevitable buffer in all matters of dispute.” Chinese merchants, sometimes also assuming bureaucratic responsibilities for the municipality, were willing to cooperate with their foreign counterparts so long as no trouble would be created with the imperial authorities. The support of vaccination was very probably considered as a gesture confirming partnership and confidence toward the British traders, who, after all, were contributors to the Consoo fund. As the Co-hong was a quasi-governmental body, the merchants were also expected to carry out public good works. The establishment of the vaccination dispensary in the meeting hall was a good illustration of the unique social make-up of Canton city in the early nineteenth century, where merchants, foreign and Chinese, were key engineers in civic affairs.

Cantonese merchants would continue to assume such a role, but without the partnership of their European counterparts, in the later nineteenth and early twentieth centuries. They sponsored numerous charitable halls in the province to provide various forms of relief to the urban populace, especially medical services including free vaccination. The first of such institutions, the Aiyu Charitable Hall, was set up in 1871 at the very site of the old Consoo hall, with an initial fund of $60,000, causing much suspicion from Westerners this time. Missionaries considered the enterprise as an attempt “to show to their own people, and to the world that they can maintain benevolent institutions of their own, on a scale that will throw into the shade anything done by foreigners,” and that the wealthy businessmen managing the hall were “too shrewd . . . to continue the supply of large amount of money, unless some object, which they approve, is attained thereby.” It was simply natural for big businessmen to continue exerting their influence in civic affairs in a deteriorating environment with a declining government and growing distrust between natives and foreigners. Vaccination remained a major function of these charitable halls, which employed practitioners to inoculate in remote parts of Guangdong, or even Guangxi Province.

The importance of British merchants in the promotion of vaccination, on the other hand, decreased after the abolition of the East India Company’s China monopoly in 1834, and especially after the opening of Canton in the 1840s. The vaccination dispensary was shut down during this period, and was re-established only in 1852 “by the favor of the old hong merchants, Howqua, Pwantingqua, and others,” as reported by Qiu Chang, now given the task of operating this institution. The establishment, however, did not survive the fire of 1856 that razed all the hong buildings. From the 1860s onwards, medical

83 There are many examples in gazetteers and in monographs of individual charitable halls. One remarkable example is the volume edited by Deng Yuheng, Quan Yuesheh tsihi chu bian (First compilation of social records of the entire Guangdong Province), which recorded at least six charitable halls that provided free vaccination. See also Michael Tain, Nation, Governance, and Modernity in China, 24-29; E. Rihodes, “Merchant associations in Canton, 1895-1911,” especially 104-105.
84 RMMS 1872, 8-9.
85 B.A. Aldridge reported from Haikou, Hainan in 1881 and 1883 that a vaccinator from Hong Kong Tung Wah Hospital, a charitable institution financed by Cantonese merchants, paid regular visits to Hainan Island, performing about 4,000 and 6,500 vaccinations respectively in those two years. See Maritime Cata
des Medical Report, no. 21, 1881, 75, and no.25, 1883, 14. Organizers of the Guangzhou charitable hall in Canton city (1890) also claimed that they paid vaccinators to practice in remote parts of Guangdong and Guangxi Provinces before the charitable hall was established. See Deng Yuheng, Quan Yue sheh tsihi chu bian, “Liang-yue Guangzhou shanzheng,” 2b.
86 RMMS 1881, 7; Qiu Chang, Hui wu yindou xinfa quanshu, preface.
87 The old Canton Ophthalmic Hospital established by Peter Parker in an old factory building was also burnt to the ground in the same fire; see Kerr 1857, 18-19.
missionaries and increasingly those from America were more active in the promotion of vaccination. John Kerr opened a vaccination department in the Canton Hospital in 1859 where children were vaccinated every Thursday. Other than vaccinating the poor, "the Hospital will be a source from which to supply virus at all times to all parts of the south of China." Kerr had also prepared a tract that he distributed in Canton on the preservation of the scab in a warm climate. He was probably introducing virus preservation in glycerol and in glass tube, a method being developed in Europe in the mid-century.

At the same time new missionary dispensaries were opened in Foshan (1860) and Zhaoqing (1861), and Wuzhou in Guangxi (1866). R. H. Graves, in charge of the Zhaoqing dispensary, listed vaccination as his major task. Kerr’s hospital performed vaccinations from 1859 onwards and in 1863, 1,494 children were reported to be vaccinated. By this time, keen competition arose between native vaccinators and medical missionaries. While claiming success in vaccinating a growing number of children, missionaries criticized native vaccinators for using bad lymph and for their ignorance in lymph preservation. The Canton Hospital itself would remain for some years a main supplier of fresh lymph to local vaccinators who had connections with the missionaries. Kerr wrote proudly in 1867 that "this hospital is the only institution in China where a supply of lymph is kept on hand." We thus have good reasons to believe that it was at least partly based on such services that native vaccinators created their own modes of lymph preservation in the latter part of the century.

However, one should note that despite such contributions, medical missionaries never considered vaccination as their major task. Missionary hospital reports throughout the nineteenth century were largely filled with descriptions of spectacular surgery that were to impress not only the Chinese, but also readers in the West. Vaccination was only mentioned and practiced on the side and its importance was on the decrease. In 1874, fifteen years after Kerr established the vaccination department in his Canton Hospital, he prided himself on 1,084 surgical operations, but only 250 vaccinations. It is interesting to note that even Pearson did not like practice vaccination. In his 1816 report he stated that "I am now released from the laborious, and here, peculiarly irksome task of personally conducting the vaccination—my care being limited to inspection of the punctures." The lack of glamour in the task probably discouraged most missionaries from practicing personally, and from promoting it energetically. Before the maturing of germ theory leading to the development of laboratory medicine at the end of the century, vaccination as a technique grown out of folk experience did not inspire much intellectual excitement. Like Pearson, medical missionaries preferred leaving the job to natives.

The absence of bureaucrats in the vaccination story in Canton was perhaps more surprising. Throughout the nineteenth century, there was no significant bureaucratic involvement in the popularization of vaccination in Canton, other than the passive act of endorsing the technique by poetry and calligraphy reproduced in vaccination books. This differs from the active participation of local officials who organized or inaugurated vaccination bureaus that were growing rapidly in other provinces from the mid-century onward. There were examples of Guangdong bureaucrats attempting to be more interventionist in the later nineteenth century but without success. Governor-General Zhang Shusheng (1824–84, native of Anhui) set up a new vaccination station in Canton in 1880–81 in which he had some 40 petty expectant officials trained as vaccinators and sent to practice in the 72 districts of the province. This official attempt was a failure as the populace refused their service. The aborted attempt contrasts interestingly with the success of the above mentioned Cantonese scholar-official Zeng Wangyan in setting up one of the first vaccination bureaus in Beijing in 1828 inside the Nanhai huiguan. The bureau, run by the guild’s managers, became a model and its regulations were often copied by other bureaus. The merchant-official Pwantinggu in 1847 repeated

99 Chinese Repository 1833, 36.
100 The vaccination bureau in Nanjing was inaugurated in 1834–35 by the governor-general Tao Zhu (1779–1839) in an Anhui ritual hall (indicating the involvement of Anhui vaccinators), and re-established in 1871 again by officials. See 1871 Jiangning fei chong jian Puyu tang zhi (Record on the re-establishment of the charitable institutions in Jiangning Prefecture) 5:13a. Post-Taiping vaccination in Jiangsu Province was officially sanctioned; see Jiangsu shengli (Regulations of Jiangsu Province), 1, 1876, 9a. The 1883 vaccine bureau attached to the foundling home of Hongheng was also set up by local officials authorizing the employment of an outside vaccinator. See 1888 Honghuang yuan chongzheng. 32a–33a.
101 On the rapid development of such institutions, see my paper, "Variolation et vaccination dans la Chine prémoderne (1580–1911)." 64–70. The bureaucrats' role is clearly revealed in an 1869 proposal drafted by a Fujian scholar urging bureaucratic leadership in the promotion of vaccination, see Jin Dong, "Tiao-chien fang jian tongxing nian sheng jiangzheng" (Guidelines for the propagation of vaccination) and "De meio lian fang jian tongxing nian sheng" (In response to official X on the promotion of vaccination). In the second text, the author noted that he was writing in 1870. Jin Dong considered local gentry arrogant, corrupt, and incompetent. He also recommended the total banning of variolation.
102 According to E.A. Aldridge writing in Haiqu, "the people would have nothing to do with [these vaccinations]." Maritime Customs Medical Report, no. 25, 1883, 14.
the enterprise, summoning Qiu Xi’s son to the capital. The early and efficient involvement of merchants and native practitioners in vaccination enterprises in Guangdong left no space for later bureaucrats to exercise their influence.

Reception in Canton

The combined efforts of merchants, missionaries, and especially native vaccinators rendered the reception of vaccination in the Canton area rapid and smooth in the early nineteenth century. According to Pearson, “by the time the British Factory removed from Macao to Canton in that season [of 1805], a degree of confidence had been established in its favor; and in the course of the winter and spring months of 1805–6, and during the raging of the smallpox [February–June 1806], the numbers brought for inoculation were great.” Moreover, to him, there was a definite pattern of reception: “It certainly has spread greatly here from among the lower classes of society, so as to have become general among the middling rank, and to be frequently resorted to by those of the higher conditions.” The progress was so smooth that Pearson had to concede that it was “with fewer obstacles from prejudice than could be anticipated, especially in a Chinese community,” and, consequently, “epidemics were milder than before.” This progress was without interruption throughout the nineteenth century, despite all the wars and unrest in southern China. Writing in the 1850s, Hong Kong Governor John Davis quoted Pearson to state that “the practice of vaccination has acquired great stability among the Chinese of Canton Province, of every condition. ... It appears that [vaccination], if it fails occasionally, though very infrequently ... invariably mitigates the severity of small-pox.” By the early 1860s, John Kerr of the Canton hospital observed that the virtues of vaccination “are fully known and appreciated in Canton and its vicinity, and perhaps throughout this Province.” Huang Kuan reported from Canton in 1878 that there were professional vaccinators even in villages, practicing on their own account or hired by the gentry, and “at least 95% of the children of the city receive the benefits of vaccination.” The Cantonese themselves were also aware of their unique openness to the new technique, as commented by an author of the 1879 Gazetteer of Guangzhou Prefecture.

“Now all inhabitants here know the virtues of vaccination, but such appreciation is not yet shared by those outside the province.” Canton was indeed an exceptional case of early acceptance of vaccination. For more than half a century, the art was not fully appreciated in other major metropolises such as Shanghai, Ningbo, Hangzhou, Fuzhou (Fujian Province), and even Hong Kong. The main obstacle seemed to be, as in Europe, traditional inoculators. In 1850, it was reported that despite the great efforts made by Dr. Lockhart of the London Missionary Society to bring vaccination to Shanghai, “multitudes seem not to care whether it be secured by them and their children or not.” Generally, “the people appear on the whole to prefer their own plan of inoculation, which is practiced on almost every child,” as observed by another foreign resident of the city. After the suppression of the Taiping rebellion, Chinese bureaucrats and philanthropists joined missionaries in Shanghai to multiply their efforts in promoting vaccination, but again ended up complaining about stubborn resistance. In the major newspaper Shen Bao, a number of articles described the frustration of activists in the 1870s: the interruption of lymph supply, the distrust of the Chinese population, the sabotage of traditional variolators, pediatricians, and drug sellers. As late as 1881, the medical officer in Shanghai, Janiescon, complained that vaccination was not as intensive as in a place like Haikou on Guangdong’s Hainan island.

In Ningbo in 1851, Dr. Macgowan reported that “The Chinese have been slow in availing themselves of the blessings of vaccination, although it has been largely practiced at Canton for many years.” Similarly, in Fujian, just north of Guangdong, as late as the 1870s, an activist complained that while traditional variolation still dominated, vaccination texts did not circulate and the majority of the rural population refused to be vaccinated. Even the reception in Hong Kong, a British colony since 1842, seemed slow. Benjamin Hobson wrote in 1844 that the efforts to extend vaccination in the colony had been unsuccessful, especially when traditional variolation “has been extensively performed

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105 1879 Guangzhou fashi 1879, 163-40b.
106 Qiu Zhenglin, “Ming-Qing di renrou fa,” provides the most up-to-date account on variolation.
107 Chinese Repository, July 1850, 390; March 1851, 158.
108 Shandong, June 5, 1873, 1; December 29, 1874, 1; and January 29, 1875, 1. Janiescon, the Maritime Customs Medical Officer in Shanghai in 1875, observed that vaccination became popular after the death of the Emperor of smallpox, see Maritime Customs Medical Report, no. 25, 7; K.C. Wong and L.T. Wu, History of Chinese Medicine, 291–2.
109 Maritime Customs Medical Report, no. 21, 1881, 83.
110 Chinese Repository, August 1851, 534; Macgowan reported that “When at Hangzhou, I met with an advertisement of a physician who devoted himself to this art, and a few months since, an itinerant doctor visited this city, but met with no better success than foreign physicians in attempting to introduce the practice”.
111 Jin Dong, “Tiaochen da fou tongxing niudou zhengcheng” and “Da zuo lian fanghun tongxing niudou shu.”
Angela Ki Che Leung

The Business of Vaccination in Nineteenth-Century Canton

Conclusion

The study of vaccination in early nineteenth-century Canton demonstrates how the introduction of this new, foreign medical technology helped to carve out a new space for public health in traditional society. Native vaccinators here played the key role, with the support of Chinese and foreign merchants, as well as medical missionaries, without significant bureaucratic involvement. Vaccination was thus institutionalized in Canton before the emergence of the awareness of the necessity of a strong, modern state to organize public health.

The entrepreneurial activities of the early vaccinators were crucial to this success. Their propaganda efforts and their prestigious social connections smoothed the way for popular acceptance of vaccination. This created sufficient demand to make vaccination a profitable business. These opportunities attracted new recruits who provided vaccination to ever larger segments of the population, segments that had no contact with missionary or hong sponsored institutions.

There were unique elements in early nineteenth-century Cantonese society that contributed to such a development: a dynamic commercial tradition, and the familiar and appreciated presence of Western culture, conditions that later made Shanghai "the most civilized" city in China as observed by Lu Xun in the early twentieth century. Shanghai, whose cosmopolitanism was enhanced in the later nineteenth century by the presence of strong and direct foreign administration, overshadowed Canton in many ways. However, these elements continued to shape Cantonese society in the later periods. In the matter of public health, for instance, charitable halls and hospitals managed by native merchant associations proliferated throughout Guangdong Province, combining commercial and medical interests, Western and Chinese medical practices. These institutions, with their typically pragmatic concerns, providing hands-on medical services, continued to be the public arena in which local medical practitioners, of both Chinese and Western training, exerted their influence. The first charitable vaccination dispensary sponsored by hong merchants and the activism of the first native vaccinators clearly prefigured such a development.

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115 Hobson, "Report of the Medical Missionary Society's Hospital at Hong Kong under the care of Benjamin Hobson", Chinese Repository, July 1844, 380.
116 K.C. Wong and L.T. Wu, History of Chinese Medicine, 289; on the Tung Wah Hospital, see Sinn, Power and Charity.
117 Shepherd, "Smallpox and the pattern of mortality in late nineteenth century Taiwan," 279.
118 Miyajima, "The History of Vaccination in Japan," 23. It is likely that Peter Parker was responsible for the introduction of the text to Japan. He lent the text to a Japanese man in 1858 on a trip from Singapore to Japan during which he also vaccinated a Japanese man. See "Journal of an expedition from Singapore to Japan, with a visit to Loo-choo by Peter Parker, 1836," Chinese Recorder 7/6, 1876, 392–3.
119 Amapati, "The History of Vaccination in Japan, especially 71–79.
120 Hopkins, Princes and Peasants, 89–96.
121 Pratt, "The Free Economic Society and the battle against smallpox."
### Glossary

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