



Title	Colonialism versus Nationalism: The Plague of Hong Kong in 1894
Author(s)	Lee, PT
Citation	The Journal of Northeast Asian History, 2013, v. 10 n. 1, p. 97-128
Issued Date	2013
URL	http://hdl.handle.net/10722/185180
Rights	This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.; Copyright © 2013 by the Northeast Asian History Foundation. All Rights Reserved. No portion of the contents may be reproduced in any form without written permission of the Northeast Asian History Foundation.

Colonialism versus Nationalism: The Plague of Hong Kong in 1894

Pui-Tak Lee

Centre of Asian Studies, University of Hong Kong

The Journal of Northeast Asian History

Volume 10 Number 1 (Summer 2013), 97-128

Copyright © 2013 by the Northeast Asian History Foundation. All Rights Reserved.

No portion of the contents may be reproduced in any form without
written permission of the Northeast Asian History Foundation.

Colonialism versus Nationalism: The Plague of Hong Kong in 1894

Drawing upon different source materials, this paper examines the significance of the plague of Hong Kong in 1894 in two ways. Firstly, it shows the process by which the colonial power successfully implemented the public health policy in Hong Kong by collaborating with the local Chinese communities. Secondly, it demonstrates how the Chinese in Hong Kong responded to the colonial mandatory measures by resisting them or partially accepting them. This paper highlights the reactions of the Chinese towards the prevention measures implemented by the British, and the controversy about the effectiveness of Chinese and western medicine in safeguarding public health.

Keywords: Hong Kong plague, colonialism, Aoyama-Kitasato-Yersin controversy, Tung Wah Hospital, Chinese and Western medicine

Colonialism versus Nationalism: The Plague of Hong Kong in 1894

Pui-Tak Lee

Centre of Asian Studies, University of Hong Kong

I. Colonialism, Medicine, Public Health, and the Modern State

The plague of Hong Kong in 1894 was not only significant in the history of Hong Kong but also in the history of Asia. Firstly, the plague bacillus that was identified had been mysterious for centuries. The plague in Hong Kong was instrumental in discovering the bacillus and hence laying the foundation for finding an effective cure. Secondly, after the plague started in the Guangxi and Yunnan province of China, infection reached in 1894 Hong Kong, Macau in 1895, Taiwan in 1896, India in 1896-98, San Francisco in 1899, and Australia in 1900-03. As a consequence, a total of 22 million people died by this single disease. Since Asia was ruled during that time by different colonial powers including Britain, France, Japan, and the Netherlands, the plague in Hong Kong was never treated as an isolated case. Instead, it was closely monitored by the British government in London to show how its colonial power implemented a public health policy in the European model and how the indigenous Chinese responded to the mandatory measures.

The history of public health is not a new subject, but among Chinese scholars it is still an unexplored area. In Hong Kong, the research of medical history in general and public health history in particular, are both undeveloped. Current publications on public health focus on personal biographies of the medical profession, and the history of hospitals as medical organizations.¹ With respect to the studies of plague, since 1975 E. J. Proyor, Molly Sutphen, Carney Fisher, and Robert Peckham have published books and articles that examine the origins of plague, its diffusion, its social and political consequences of amelioration, and its impact on public health in Hong Kong.² Recently, two doctoral theses dealt with the position of the Tung Wah Hospital during and after the plague.³ Yet, compared with English language

An early version of this paper was presented at the International Conference on "Ideas, Organization, and Practice of Hygiene in Han Society from the Traditional to the Modern Periods," held at the Research Center for Humanities and Social Sciences, Academia Sinica, Taiwan, in 2004. The author wishes to thank Charlotte Furth and Hon Tze-li for their comments, and Iijima Wataru, Li Shang-Jen, Li Yushang and Ng Kwok-leung for their assistance in collecting materials.

¹ Current available publications have focused on individuals and organizations, such as biographies or memoirs of James Cantlie (1939, 1983), Ho Kai (1980, 2000), Li Shu-fan (1964), Li Shu-pui (1996), and Li Song (1987), Harry Fang (2002); the hospital anniversary book of Tung Wah Hospitals (1961, 1970, 1998, 2000, 2010), Drs. Anderson and Partners (1984), Alice Ho Miu Ling Nethersole Hospital (1957, 1967, 1987), Maltilda (1988), Tsan Yuk (1992), Prince of Wales Hospital (1995), Kowloon Hospital (1995), Queen Mary Hospital (1997), Kowloon Hospital (1997), Sanatorium (1997); Hong Kong College of Medicine, Hong Kong University and Medicine Faculty (1987), Hong Kong Tuberculosis, Chest & Heart Diseases Association (1994), Hong Kong College of Radiologists (1995), Chinese University of Hong Kong Medicine Faculty (1995), Hong Kong Neurosurgical Society (1999), Red Cross (2000). For details, see Lee Pui-tak, *An Annotated Bibliography of Hong Kong History* (Hong Kong: Joint Publishing, 2001), 105-108.

² See Molly Sutphen, *Cookie-cutter Epidemics? The Colonial Office and the Plague Epidemics in Cape Town and Hong Kong, 1901-1902* (London: Institute of Commonwealth Studies, University of London, 1992); Carney Fisher, "Plague in Hong Kong 1894" (paper presented at the International Conference on Hong Kong and Modern China, University of Hong Kong, December 3-5, 1997); Robert John Collins, "The black death: Hong Kong 1894" (lecture, Hong Kong Museum of Medical Sciences, April 24, 1999); Robert Peckham, "Infective economies: empire, panic and the business of disease," *Journal of Imperial and Commonwealth History* 41, no. 2 (2013), 211-237.

³ Hong Zhou, "The Origins of Government Social Protection Policy in Hong Kong, 1842-1941" (PhD thesis, Brandeis University, 1992); Yang Xiangyin, "Colonial Power and Medical Space:

publications, writings on Hong Kong medical history are relatively small in quantity, and they are mainly empirical reports of facts. Most of these writings are personal recollections, which mainly provide empirical data.

In contrast, more attention has been paid to public health among Western scholars. Comparable research on China and India by Kerrie MacPherson, Carol Benedict, Iijima Wataru, David Arnold, I. J. Catanach, and Rajnarayan Chandavarkar show how the British colonial public health policies formed before and after the plague and how the indigenous Chinese and Indians reacted from resistance to partial acceptance to these policies.⁴

This article examines the plague of Hong Kong in 1894 from political and social perspectives. Drawing upon different sources materials, it discusses the cause and discovery of the bacillus, the reactions of the Chinese towards the preventive measures implemented by the British, and the debates between Chinese and western doctors about the plague. This paper will also touch upon the different conceptions of health, disease, hygiene, and living environment in the British colony. In the final section, it will address how colonialism conflicted with nationalism in the debate about public health.

The Transformation of Chinese and Western Medical Services in the Tung Wah Group of Hospitals, 1894-1941” (PhD thesis, Chinese University of Hong Kong, 2007).

⁴ See Kerrie L. MacPherson, *A Wilderness of Marshes: The Origins of Public Health in Shanghai, 1843-1893* (Hong Kong: Oxford University Press, 1987); I. J. Catanach, “Plague and the Tensions of Empire: India 1896-1919,” in *Imperial Medicine and Indigenous Societies*, ed., David Arnold (Manchester: Manchester University Press, 1988), 149-171; David Arnold, *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-century India* (Berkeley: University of California Press, 1993); Carol Benedict, *Bubonic Plague in Nineteenth-Century China* (Stanford: Stanford University Press, 1996); Rajnarayan Chandavarkar, *Imperial Power and Popular Politics: Class, Resistance and the State in India, c.1850-1950* (Cambridge & New York: Cambridge University Press, 1998); David Arnold, *Science, Technology, and Medicine in Colonial India* (Cambridge & New York: Cambridge University Press, 2000); Iijima Wataru, *Pesuto to kindai Chūgoku: eisei no seidoka to shakai henyō* [Plague and modern China: The institutionalization of public health and social change] (Tokyo: Kenbun shuppan, 2000).

II. The Spread of Plague from China to Hong Kong

Hong Kong became a free port in the 1840s. In the following decades, with the improvement of harbor facilities and the growth of ship building industry, Hong Kong was transformed from a desolate island into one of the most important trading ports on China's coast. Furthermore, Hong Kong's proximity to China gave her an advantage in access to the hinterland. As has been noted in a recent study of Hong Kong economic history,

Hong Kong was entrepôt port for South China and Southeast Asia, and substantial amounts of its trade were made up of foodstuffs (rice, wheat flour), raw material (cotton, sugar) and fuel (kerosene and coal). ... The commodities of greatest predominance in weight are rice, coal and raw sugar imported from French Indo-China, Siam, Japan, Korea and Formosa (Taiwan) and Netherland East Indies (Indonesia); except for raw sugar which is refined in Hong Kong and exported principally to North China, of the other two commodities, rice is almost wholly exported to South China and coal partly to South China but delivered mostly to steamers. It should be clear that from this description that Hong Kong's trade was tied very closely to economic development in South China.⁵

From Table 1 may be seen that the transport between Hong Kong and neighboring Chinese ports were frequent and rapid. Chinese passengers or traders carried provisions from China such as fresh vegetables, fruits, poultry, eggs, and other daily consumables for which Hong Kong was dependent on China. Nevertheless, the import and export of Chinese

⁵ David Faure and Lee Pui-tak, eds., *A Documentary History of Hong Kong: Economy* (Hong Kong: Hong Kong University Press, 2004), 2.

Table 1. Chinese Ports Linked to Hong Kong by Junk in 1866

Name of Chinese port	Number of junks engaged	Number of trips each per month	Duration of stay in Hong Kong
Canton	28	3	From 6 to 24 hours
Macao	17	8	From 6 to 24 hours
Kong-moon	9	3	From 6 to 24 hours
Chun Chun	8	3	From 6 to 24 hours
Toong-koon	7	4	From 6 to 24 hours
Sheak-loong	6	3	From 6 to 24 hours
Tai-ping	5	6	From 6 to 24 hours
Namtao	5	10	From 2 to 12 hours
Heong-shan	5	3	From 6 to 24 hours
Sun-chun	5	10	From 2 to 12 hours
Kowloong City	4	Daily	Immediate departure
Sei-heong	5	10	From 2 to 12 hours
Tsung Sheang	2	3	From 6 to 24 hours
Wong-kong	1	15	From 5 to 12 hours
Koo Soo	3	15	From 5 to 12 hours
Chaong-sha	2	3	Uncertain
Tik-hoi	2	3	Uncertain
Tseen-wan	2	Daily	Immediate departure
Tai-pang City	2	10	From 2 to 12 hours
Sha-yu-Chong	2	Daily	Immediate departure
Chaong Chow	3	15	From 5 to 12 hours
Peng-chow	2	Daily	Immediate departure
Tai O	2	Daily	Immediate departure
Mow-chow	2	10	From 2 to 12 hours
Kew-tow	1	10	From 2 to 12 hours
Eem-teen	2	6	From 2 to 12 hours
Tam-shui	2	6	From 2 to 12 hours

Source: "Petition from Chinese merchants, traders and lessees of land, residing in the Colony," *Hong Kong Government Gazette*, 17 November 1866, cited in David Faure and Lee Pui-tak, eds., *A Documentary History of Hong Kong: Economy* (Hong Kong: Hong Kong University Press, 2004), 11.

products was the major component of Hong Kong's entrepôt trade. In 1868, the guild of import and export firms called "North-South guild" (南

北行),⁶ was established in Bonham Strand. The guild was not only a business association, but also a mainstay of the first Chinese public organization known as the Tung Wah Hospital (東華醫院).

It is worth to ask where the plague of Hong Kong came from. Due to proximity and constant trade, Hong Kong imported plague from Guangdong province, the so-called economic hinterland of Hong Kong. More significantly, the plague came by sea rather than over land. Frequent contacts in the border area had not been happened than in the sea transportation. When the plague started in 1894, Hong Kong's border with China was in Kowloon. It was not until 1898, the Kowloon Peninsula was annexed with Hong Kong. In 1871, Beihai was infected, and then followed by Lianzhou, Qingzhou, Leizhou Peninsula, and Hainan Island. It has been pointed out that plague spread to towns and cities more easily than to villages, and to coastal areas more easily than to interior areas. From 1890 onwards, as China lost the control of ship quarantine, the plague spread quickly through the opened ports of Guangdong, starting from Beihai to Guangzhou, Shantou, Hong Kong, and nineteen more other cities in Guangdong Province.⁷ The frequent trading activities among these different cities had been provided as a major channel for the circulation of the disease.

Management of maritime customs constituted an important factor causing the outbreak of plague in China. According to Lin Xinhao, quarantine in Chinese port cities started in Shanghai and Xiamen as early as 1873.⁸ But the Chinese authority introduced quarantine measures to other Chinese ports slowly. Gradually, after Shanghai and Xiamen,

⁶ As the name denotes, these firms dealt in the business of transporting products between south and north China.

⁷ *Zhongguo shuyi liuxingshi* [The history of the spread of plague in China] (Beijing: Chinese Academy of Medical Sciences, 1982), 1459-1460.

⁸ Lin Xinhao, "Jindai haigang jianyi yu Dongnanya huajiao yimin" [Harbor quarantine and migration of overseas Chinese in Southeast Asia], *Haijiaoshi yanjiu*, no. 2 (1998).

quarantine measures were introduced to other Chinese cities: Beihai in 1877, Shantou in 1883, Ningbo in 1894, Tianjin in 1895, Liuzhuan in 1899, Fuzhou in 1900, Hankou in 1902, Guangzhou in 1911, and Yantai in 1912. And in 1930 the National Office of Harbor Quarantine (全國海港檢疫處) was established in Shanghai, and subsequently the quarantine service finally became systematized throughout the country.⁹ As Robert John Collins points out,

This third and last great plague pandemic spread to Hong Kong from an endemic focus in Yunnan province of south China in 1893. Transported along caravan and river routes it reached Canton and Hong Kong in 1894 and Singapore and Bombay by 1896. The spread of epidemic was closely related to land-, river- and sea-borne trade and it is possible to trace its movement from South Asia via the major trading routes to India, the Malay Peninsula, the Philippines and from there, further afield.¹⁰

Because Hong Kong had close economic ties with China, she was quickly affected by the plague. On May 10, 1894, Governor William Robinson declared Hong Kong as an infected port and started quarantining infected visitors. As a result, the trade between China and Hong Kong was decimated. As plague came through the trading routes, the increase in the speed of transport heightened the threat of the epidemic. Ironically, the movement of goods and people that colonialism fostered helped to spread the deadly plague.¹¹

⁹ Yang Shangci, “120 nianlai Zhongguo weisheng jianyi” [Health quarantine in China of the last 120 years], *Zhonghua yishi zhazhi* 25, no. 2 (1995), 78.

¹⁰ Robert John Collins, “The black death: Hong Kong 1894” (lecture, Hong Kong Museum of Medical Sciences, April 24, 1999).

¹¹ See Myron Echenberg, *Plague Ports: The Global Urban Impact of Bubonic Plague, 1894-1901* (New York: New York University Press, 2007).

III. The Aoyama-Kitasato-Yersin Controversy

1. Why did Japan Have to Study the Hong Kong Plague?

From 1868, Japan restructured its political and social orders. As part of the country's modernization, Japan was active in promoting Asian participation in international medical associations. For instance, the country vied with France in public health issues, indicating its determination to compete with European counterparts in international affairs.

When Hong Kong reported 130 cases of plague on May 15, 1894, the Foreign Office in London urged the Hong Kong government to take immediate action to investigate the matter and to ask for international assistance to solve the problem. At that time, plague was a mysterious disease to both Western and Chinese medicine, which offered generally ineffective treatments. During the 1880s and 1890s, with rapid progress in microbiology in Europe, scientists were refining molecular techniques to uncover the cause of plague. Louis Pasteur in France and Robert Koch in Germany, for example, were the two famous specialists in the field.¹² Because of the 1894 plague, Hong Kong quickly became the global site for conducting research on the disease's outbreak.¹³ Two groups of scientists, one from Japan headed by Aoyama Tanemichi (青山胤通, 1859-1917) and Kitasato Shibasaburō (北里柴三郎, 1852-1931), and the other from France headed by Alexandre Yersin (1863-1943), who came from French Indo-China, arrived in Hong Kong at the request of the

¹² That period is called the golden age of microbiology as the germ theory tells many diseases are caused by specific bacteria. Say for example, gonorrhea, typhoid, tuberculosis, and pneumonia are caused by different bacteria. See the pamphlet wrote by Tom Solomon, "The Hong Kong plague of 1894 and the discovery of the cause of plague," Hong Kong Museum of Medical Sciences.

¹³ Collins, "The black death: Hong Kong 1894."

Hong Kong government.

Of the two international teams, the Japanese attracted special attention because their country was going to have war with China over Korea in August 1894. Several reasons may explain the Japanese government's decision to take such an unusual action. First, due to location Japan had concern about the spread of plague in East Asia.¹⁴ Second, the Japanese scientists were invited by the Hong Kong government after the Foreign Office in London advised Hong Kong to do so soon after the outbreak. And third, the international competition of medical science forced the Japanese to be proactive in reaching the site of the plague as fast as possible.¹⁵

2. The Rivalry between Aoyama Tanemichi and Kitasato Shibasaburō

The controversy among the three international scientists was complicated. The controversy began with Aoyama and Kitasato. The two Japanese experts were both graduated from the Tokyo Medical University (which later merged with the Medical School of Tokyo University). After that they went to Berlin University for further study supervised by Dr. Robert Koch. After they came back to Japan in the late

¹⁴ It was known that the Japanese consul in Hong Kong Nakagawa Kōjirō reported to the Foreign Ministry the plague attack in Hong Kong on May 12, 1894. See Okuda Otojirō, *Meiji shonen ni okeru Honkon Nihonjin* [The Japanese in Hong Kong during the early years of the Meiji period] (Taihoku: Taiwan sōtukufu nettai sangyō chōsakai, 1937), 322.

¹⁵ Otani Tadashi gave a detailed account of the international communications including steamship navigation, cable telegraph, and postal service of Japan during the late nineteenth century, were placed under the control of Great Britain, see his *Kindai Nihon no taigai senden* [The foreign propaganda of modern Japan] (Tokyo: Kenbun shuppan, 1994), 14-22. It is logical for Japan to send the research team to Hong Kong to cultivate friendship with Britain. Regarding the diplomatic relations of Japan with Britain, in particular, the Anglo-Japan Alliance in 1902, there is a large literature on the topic. Besides, the Governor of Hong Kong Sir William Robinson was on a visit in Japan, and he returned immediately to Hong Kong on May 15, 1894, after the outbreak of plague.

1880s, they had different career paths. Aoyama was soon placed as a professor in Tokyo University (Tōdai 東大) while Kitasato was excluded, which made him critical of the Tōdai clique. The situation became worse when Kitasato criticized another renowned Tokyo University microbiologist, Ogata Masanori (緒方正規), on the discovery of the beriberi bacillus, dealing a blow to the Tōdai clique.¹⁶ In 1892, with the support of senior politician Fukuzawa Yukichi (福澤諭吉), Kitasato established the Institute of Infectious Diseases (傳染病研究所) and later in 1917 the Medical School of Keio University. Thus, before the two men set sail from Yokohama to Hong Kong they were already rivals.

Table 2. Comparison among Kitasao, Aoyama, and Yersin

	Kitasato Shibasaburō (1852-1931)	Aoyama Tanemichi (1859-1917)	Alexandre Yersin (1863-1943)
Birth place	Kumamoto	Tokyo	Aubonne, Switzerland
Home country education	Furushiro Medical School, 1871; Tokyo University, 1875-1883	Tokyo University, 1877-1882	Bachelor of Arts, 1882
Overseas education (supervision)	Berlin University, 1886-1892 (Robert Koch)	Berlin University, 1883 (Robert Koch); Paris University, 1887	Hôtel-dieu Hospital Paris 1882-1887 (Louis Pasteur); École Normal Supérieur (Emil Roux); Berlin University (Robert Koch, Richard Petri, Carl Fränkel), 1888
Specialty	Microbiology	Anatomy, internal medicine	Pathology, infectious diseases
Stay in Hong Kong	June 12-July 19, 1894	June 12-August 21, 1894	June 15-July 31, 1894

¹⁶ Sakai Shitsu, “Kaisetsu,” in Uzaki Kumakichi, *Aoyama Tanemichi* (Tokyo: Ōzorasha, 1930, 1998 reprint), 2.

Career	Sanitary Bureau of Interior Department, 1883; founded the Institute of Infectious Disease, 1892; founded Kitasato Institute, 1914; founded the Medical School of Keio University, 1917; President of Japan Physicians, 1923	Professor, Medical School of Tokyo University,* 1887; President, 1901; Director of University Hospital, 1892; Adjunct Director of the Institute of Infectious Disease, 1915	Ship physicians in Indo-China; Colonial Health Corps; Pasteur Institute in Saigon, 1891; founded Pasteur Institute in Nhatrang, 1895; founded Hanoi's Medical School
Honors	Member of the House of Peers, 1917; Baron, 1924	4th class medal, 1894; 3rd class medal, 1900; Gakushin Fellow, 1906; Baron, 1917	Nominated for Honorary Director of Pasteur Institute and a member of its Board of Administration in 1934. A private university founded in Da Lat (Vietnam) in 2004 was named as Yersin University
Political patron	Fukuzawa Yukichi	Ōkuma Shigenobu 大隈重信	Nil

*Tokyo University was formed in 1877 with the merger of the Tokyo Medical School and Tokyo Kaisei School.

Sources: Uzaki Kumakichi, *Aoyama Tanemichi* (Tokyo: Ōzorasha, 1998); Nagaki Daizō, *Kitasato Shibasaburō to sono ichmon* (Tokyo: Keiō gijuku daigaku shuppankai, 2001); David J. Bibel and T.H. Chen. "Diagnosis of Plague: An Analysis of the Yersin-Kitasato Controversy," *Bacteriological Review* 40, no. 3 (September 1976), 633-51.

Kitasato and Aoyama arrived in Hong Kong on June 12 and they started working on June 14. However, two weeks later Aoyama became infected after he dissected victims' bodies. Therefore, he was not able to compete with Kitasato. Sakai Shitsu, the writer of Aoyama's biography, argued that his contribution to the study of the Hong Kong plague has been overlooked for two reasons: first, Aoyama had an unexpected infection that prevented him from completing his research; second, the rivalry between Tōdai and the Institute of Infectious Disease led to unfair

treatment of Aoyama.¹⁷

How did Aoyama view his rival Kitasato? In the investigation report that Aoyama wrote and submitted to Japan's Ministry of Internal Affairs in Tokyo in November 1894, he rarely mentioned Kitasato or any other parties who had cooperated with him, but he did state in the report that a microbiological survey would be submitted separately by Kitasato. He also noted in the report that communication with the patients was extremely difficult because he could not speak either Cantonese or English.¹⁸ However, in another report, "Über die Pestepidemie in Hongkong in Jahre 1894" which was written in German in 1895, Aoyama criticized Kitasato, who had mistakenly identified the round shaped bacillus.¹⁹

Despite the controversy, it is clear that Aoyama did several autopsies on the victims of different races, while Kitasato found numerous bacilli in the blood from the heart and in organs of victims. On July 10, 1894, Kitasato made a presentation at the Government Civil Hospital in Hong Kong. The result of his investigation was reported by a local newspaper, the *Daily Press*, on July 12. On August 25, 1894, his article "The bacillus of bubonic plague" was published in the authoritative medical journal *The Lancet*. Because of the publicity, Kitasato made the claim that he was the first person to discover the plague bacillus.

¹⁷ Sakai Shitsu, "Kaisetsu," 2-3.

¹⁸ See Aoyama Tanemichi, "Honkon hyakushito ryakuhō" [Report on miscellaneous of Hong Kong], dated November 12, 1894, 4, 42; and Uzaki, *Aoyama Tanemichi*, 68.

¹⁹ Tsunesekei Keiichi, "Densenbyō kenkyūjo ikan jiken: Kitasato Shibasaburō" [The transfer of the Institute of Infectious Diseases: Kitasato Shibasaburō], in *Sukyandaru kagakushi* [Scandals in scientific history], ed. Kagaku Asahi (Tokyo: Asahi shinbunsha, 1989), 112. It is worth noting that the controversy between Aoyama and Kitasato extended to the plague discovered in Taiwan in 1897; see Nagaki Daizō, *Kitasato Shibasaburō to sono ichimon* (Tokyo: Keiō gijuku daigaku shuppankai, 2001), 28-29.

3. The Rivalry between Kitasato and Yersin

With the help of British authorities, Kitasato was able to set up a laboratory in the Kennedy Town Hospital, where the victims were treated. He had all the necessary facilities for the autopsy provided by the Acting Superintendent of the Government Civil Hospital, James A. Lowson. By contrast, Yersin arrived in Hong Kong on June 15, 1894, three days after Kitasato. He was not given any support and had to build a straw hut near the Alice Hospital to conduct research. To make matters worse, he was refused access to the bodies of plague victims. However, with the help of an Italian missionary who was acting as his interpreter, he bribed English sailors who were carrying away the dead. With their help, he was able to examine the buboes for the bacillus. Following his complaint to the local authority, he was later allowed access to victims' bodies. After careful autopsy, he found a bacillus similar to Kitasato's from the dead victims.²⁰ It is interesting to ask why Yersin did not receive a warm welcome from the local government as Kitasato and Aoyama did. It can be assumed that the British in Hong Kong did not feel comfortable towards the French expansion in Asia, for they were suspicious to extend their influences in the region. On the other hand, Yersin was depressed by his research project in Indo-China, which had been turned down by the governor. It would seem psychologically logical for Yersin to regain his confidence and prove that he was a competent scientist.²¹

As can be seen from tables two and three, Kitasato received his training from Koch in Germany while Yersin did his study at the Pasteur Institute in Paris, indicating that they came from different academic backgrounds. As quoted from Tom Solomon, Yersin's careful identification of the plague bacillus had been recognized.

²⁰ Collins, "The black death: Hong Kong 1894."

²¹ David J. Bibbel and T.H. Chen, "Diagnosis of Plague: An Analysis of the Yersin-Kitasato Controversy," *Bacteriological Review* 40, no. 3 (September 1976), 636.

... Over the years there has been much debate as to who deserves the credit for identifying the plague bacillus. Although Kitasato's discovery was a few days before Yersin's and was published first in the medical literature, his description lacked his usual precision. Yersin's accurate description and culture of the plague bacillus has been acknowledged in the taxonomic naming of the bacillus – *Yersinia pestis*.²²

Why did Kitasato commit such an error in the description of the bacterium? David J. Bibel and T.H. Chen suggest that several reasons be taken into account. First, language may have significantly contributed to the personal rivalry as Kitasato's report was probably translated from either German or Japanese. If it was originally written in Japanese, the imprecise language in the report may have been a result of bad translation. Second, after his report released in August 1894 was severely criticized, Kitasato may have lost confidence for not knowing which characteristic was due to the pneumococcus, yet to deny the data would mean to discontinue the investigation. What do we learn from these Aoyama-Kitasato and Kitasato-Yersin rivalries? Bibel and Chen conclude that the plague studies conducted by Kitasato and Yersin were as controversial as the nature of the plague bacillus itself. They find that Kitasato's description of the bacterium in 1894 was basically correct. They write, "It is only because of the similarity of the plague bacillus to the pneumococcus under specific but common conditions that Kitasato was led to subsequent error and doubt."²³

As put by a local scholar of Hong Kong society, "It was Kitasato who laid first claim to having identified the plague bacterium, but the

²² Tom Solomon, "The Hong Kong plague of 1894 and the discovery of the cause of plague."

²³ Bibel and Chen, "Diagnosis of Plague: An Analysis of the Yersin-Kitasato Controversy," 636-638; 647-648. Bibel and Chen offer a splendid explanation as to why the controversy happened by comparing the findings of Kitasato and Yersin, which gives a technical perspective. For details, please see their article.

final honours went to Yersin and for whom the bacterium is named.”²⁴ In nineteenth-century Hong Kong, as with other places, science was part of international and local politics. Yersin was mistreated by the British colonial government. But surprisingly to many of the colonists, it was he who earned the reputation of discovering the plague bacillus. Obviously, Kitasato had been slighted due to his race though he was the first to announce the result of his plague investigation.

IV. The Conflicts between Western and Chinese Medicine in Hong Kong

1. Resistance and Confrontation

On May 22, 1894, 393 cases of plague were recorded and 320 people had died in Hong Kong. By the end of 1894 the plague had claimed over 2,500 victims, and about 80,000 Chinese had left the colony. Vessels from Hong Kong were quarantined by most countries, resulting in the loss of trade. On the whole, Hong Kong suffered greatly from the plague. When the dust settled, the general opinion of the time was that the plague was mainly caused by the poor living conditions of Chinese. According to Table 3, the mortality rate of Chinese was 70-90 percent, the second highest as compared with the Indians, Portuguese, Eurasians, and British.

²⁴ Veronica Pearson, “A plague upon our houses: The consequences of underfunding on the health sector,” in *A Sense of Place: Hong Kong West of Pottinger Street*, eds. Veronica Pearson and Ko Tim-keung (Hong Kong: Joint Publishing Co., 2008), 259.

Table 3. Death Rate of Plague in Hong Kong in 1894

Race	British	Eurasian	Japanese	Indian	Portuguese and Malay	Chinese who stayed in Kennedy Town Hospital	Chinese who stayed in Tung Wah Hospital
Death rate	1.66%	100.0%	54.5%	66.6%	60.0%	70%	80-90%

Source: Aoyama Tanemichi, *Honkon hyakushito ryakuhō* 香港百志土略報 [Report on the miscellaneous of Hong Kong] (Tokyo, November 12, 1894), 44.

Due to the fact that plague was particularly prevalent in the Chinese residential areas, measures of immediate quarantine were taken. As a result, conflicts between the Chinese communities and the colonial government occurred. Firstly, the victims being treated in the Tung Wah Hospital were not willing to be moved to the *Hygeia* hospital ship. Secondly, a house-to-house search of victims was implemented by the military. Consequently, the searches met with strong resistance from local residents. Thirdly, there was deep Chinese prejudice against western medicine, and Chinese returned to Canton to look for chances of healing.²⁵ Chinese left Hong Kong because they had learned of rumors of the ill-treatment of dead bodies. As for why many Hong Kong Chinese left the city, this was mainly due to rumors. There was speculation that once the victims' bodies were sent to the government hospital or the *Hygeia*, they would be shipped off to Europe for making medicine for royal families. Speculation even circulated that eyebrows and livers would be taken from Chinese children for use in the treatment of plague.²⁶

²⁵ J. Dyer-Ball, "A Chinese view of the plague," *Hong Kong Government Gazette* (1895), 423-425. See also Elizabeth Sinn, *Power and Charity: The Early History of the Tung Wah Hospital, Hong Kong* (Hong Kong: Oxford University Press, 1989), 159-183, who provides a full account of the early development of the plague.

²⁶ Correspondence from Robinson to Lord Ripon, dated 23 May 1894, CO 129/263/122. See Hong

On May 23, 1894, 300 volunteers of the Shropshire Light Infantry began the task of inspecting and disinfecting the houses in the Tai Ping Shan (太平山).²⁷ However, unrest occurred because of the uninvited entry into the local inhabitants' houses as well as the forcible removal of patients. This led the government to position the gunboat Tweed off the coast of Tai Ping Shan with its guns pointed at the area of the shore. With up to 100 people dying each day, a mass exodus of Chinese to China continued as they felt that if they were to die they would like to be buried in their home village. Panic later spread among the Westerners when one of the officers of the Shropshire Light Infantry, Captain Vesey, contracted plague and died. On May 31, the Sanitary Board drew up more by-laws which allowed for the eviction of occupants and the closure of buildings judged unfit for habitation.²⁸ Chinese houses built in Kau Yu Fong (九如坊), Sin Hing Lee (善慶里), Nga Choi Hong (芽菜巷), Mei Lun Lee (美倫里) were demolished and a brick wall was built to surround these areas. The Colonial Office in London urged the Hong Kong government to close down the Tung Wah Hospital.²⁹ In 1896, the Sanitary Board received criticism for being ineffective in managing the plague. Worse still, people in the Legislative Council suggested it be abolished.

2. The Tearing Down of Tai Ping Shan Quarters

The sanitary conditions of Chinese in Hong Kong had been a great concern within the government.³⁰ The Chadwick Report of 1882, was

Zhou, *The Origins of Government Social Protection Policy in Hong Kong, 1842-1941*, 137.

²⁷ Jerome J. Platt, Maurice E. Jones, and Arleen Kay Platt, eds., *The White Wash Brigade* (London: Dix Noonan Webb, 1998).

²⁸ Collins, "The black death: Hong Kong 1894."

²⁹ G. B. Endacott, *A History of Hong Kong* (Hong Kong: Oxford University Press, 1987), 220.

³⁰ Y. W. Lau, *A History of the Municipal Councils of Hong Kong, 1883-1999* (Hong Kong: Leisure and Cultural Services Department, 2002), 37-39.

fully illustrative about the living conditions of the Chinese in the British colony. They were accused of sanitary nuisances. This report was regarded as significant in early Hong Kong's public health history for it described subjects such as house construction and drainage, the formation of streets, public sewers or drains, water supply, scavenging, and the removal of night soil. Osbert Chadwick had been appointed by the Colonial Office as a possible solution to a long-standing dispute between Governor of Hong Kong Sir John Pope Hennessy (Governor, 1877-1882) and his civil servants, notably the Colonial Surgeon and the Surveyor General. The issues that the Chadwick Report addressed were sores in the dispute, and they arose from precisely the questions of ventilation for congested houses, drains, sewage, and the disposal of human waste, and the appropriateness of water closets for the Hong Kong environment figuring prominently.³¹ In the following paragraphs, I quote from David Faure on the interpretation of the Chadwick Report.

The houses were not congested by the standards Hong Kong became used to. In four houses Chadwick went into in Taipingshan Street, he counted about 10 to 11 people in each basement that was occupied, and between 14 and 20 people on the second floor. Where the ground floor was not used as a shop, it housed up to 30 people. Chadwick calculated how much space each person occupied in cubic measures, and he found that in these four houses, each person might have been given 300 to 400 cu. feet. If we assume that the ceiling was 10 feet, and a substantial amount of space must be subtracted from the overall average to make up the corridors and the kitchens, the bedrooms occupied by these inhabitants would have conformed to his description. "In the house in

³¹ See "Mr Chadwick's Report on the Sanitary Condition of Hong Kong" (November 1882), Colonial Office, Eastern No. 38, CO 882/4, Public Record Office, London. An extract of this report may be found in David Faure, ed., *A Documentary History of Hong Kong: Society* (Hong Kong: Hong Kong University Press, 1997), 29-48.

Kai-ming Lane, like the great majority of dwelling-houses, the upper floor is divided off by board partitions into cabins about 9 feet long and 10 feet wide. Each of these forms the dwelling of an individual family.

Chadwick notes that the population of 106,000 of urban Hong Kong (including non-Chinese people) in 1881 occupied 6,402 houses, averaging 16.6 persons per house. It would seem that the Tai Ping Shan houses represented the extreme of congestion rather than the norm. ... Chadwick went into the state of the sewers and the drains in great detail. He insisted on standards and supervision. He commented on the state of the latrines, his precise descriptions bringing home with stark realism the bare necessities of life: As a general rule throughout Hong Kong, in accordance with time-honoured Chinese practice, human excreta are removed by hand, on what may be called the "pail" system. Neither deodorisation or disinfection of any kind is attempted. ... In many European houses waterclosets are used in connexion with the town drains, but they are for the use of Europeans only; the method just mentioned being used for the native servants. ... As in the Chinese cities of the mainland, the men of the working classes resort to public latrines. ... There are 25 public latrines in the city of Victoria, having in all 565 seats, the number in each varying from 2 to 51. These latrines are built and owned by private persons as a business speculation. Their construction and management is supervised by Government, who levy a tax of \$0.60 per seat per annum. The latrine owner derives his profit (said to be very large) from the sale of the manure collected, and from fees of 1 or 2 cash paid by those using them, according as paper and cigarette are furnished or not.

Chadwick noted that manure was removed daily from the latrines, as it was from private houses. He also went into the question of cost of nightsoil removal. Nevertheless, he settled in favor of the construction of house drains, arguing that the dry earth system solved only partly

the problem of waste disposal. On the question of hygiene in Chinese houses, a report had been made in 1874 by the Colonial Surgeon. It outlined a sorry state of affairs that had to do with pigs, ventilation, drainage, and the lack of toilets. The Colonial Surgeon discovered ‘that pigs were kept in houses all over the town, by hundreds, and that pigsties were to be found under the beds and in the kitchens of first, second, and third floors. ... Ventilation was poor. Houses were either constructed back to back with no ventilation except from the front, or were separated only by a narrow and often clogged gully in between two houses. ... The average size of the main rooms is 26 feet by 14 feet by 10 feet high, containing eight partitions, averaging 7 feet by 6 feet by 7 feet high, over which a sort of loft is often built to increase the accommodation, and in a room of this description, from 16 to 25 people live. The houses were also dirty, for the brick walls were not whitewashed, wide interstices appeared between wooden planks that made up the upper floors, and the ground floor was made of mud. This construction made washing the floor impossible. These long, dark, poorly ventilated and dirty houses had no toilets. The men went to public toilets and the women and children used chamber pots kept under their beds.’³²

3. Reform of the Tung Wah Hospital

As compared with the other hospitals including The Medical Missionary Hospital (1843-53), Seamen’s Hospital (1843-73), Government Civil Hospital (1849-1937), and Lock Hospital (1858-94), Tung Wah Hospital was the first Chinese hospital for the cure and treatment of the indigent sick to be supported by voluntary contributions.³³ The idea of setting up a

³² David Faure, “The common people in Hong Kong history: their livelihood and aspirations until the 1930s,” in *Colonial Hong Kong and Modern China: Interaction and Reintegration*, ed. Lee Pui-Tak (Hong Kong: Hong Kong University Press, 2005), 10-19.

³³ Chinese Hospital Ordinance No. 3 of 1870. See Lau Yun-woo, “Managed by Chinese, for

Chinese hospital was supported by the governor Sir Richard MacDonnell in 1869. The idea originated from the upgrading of the Kwong Fook I-Tsz (廣福義祠), a dilapidated receiving house for the dead. The hospital was opened on February 14, 1872. It had 80-100 beds, and was located very close to the I-Tsz.

Current studies on Tung Wah Hospital mostly praise this first Chinese voluntary organization which provided medical and charitable services to the Chinese community and emphasized the specified role played by the local Chinese elites in managing this organization. One may hold reservations on this observation, though. First, the establishment of Tung Wah Hospital proved that Hong Kong's society was hierarchically divided into two different sectors, one for Europeans and one for Chinese. Europeans lived within their own separate area, and the area was clearly demarcated from that of the local Chinese community. Second, as Chinese strongly resisted western medicine and sanitary standards, they preferred to live in a closed community, embodied by the Tung Wah Committee, that was supposed to care for all the needs of the community members. By doing so they would be able to resist intervention from the government.³⁴

After the outbreak of the plague, Tung Wah had been criticized for its incompetence in dealing with the crisis. The Chinese patients, whom Tung Wah received, had to be transferred to the Government Civil Hospital.³⁵ According to the review report conducted by the government, Tung Wah was blamed for: 1) being overcrowded, filthy, insanitary, and dangerous not only to the health of the inmates but to the public of Hong

Chinese: the founding of Tung Wah Hospital," in *A Sense of Place: Hong Kong West of Pottinger Street*, eds. Veronica Pearson and Ko Tim-keung, 239.

³⁴ Hong Zhou, *The Origins of Government Social Protection Policy in Hong Kong, 1842-1941*, 134-135.

³⁵ *A History of Medicine in Hong Kong* (Hong Kong: Hong Kong Academy of Medicine Press, 2011), 27-28.

Kong; 2) being a not well conducted hospital for the relief and the cure of sick and destitute Chinese; and 3) being without effective administration to provide medical treatment to the sick.³⁶ The Acting Superintendent of the Government Civil Hospital, Dr. James Lowson commented on Tung Wah:

The question of dealing with the Tung Wa Hospital must now be seriously considered. I cannot denounce this hot-bed of medical and sanitary vice in sufficiently strong terms. I venture to say that if the question of allowing this to remain was to be submitted to the Public Health Authorities at home they would order its immediate abolition. ...³⁷

As a consequence, a special commission was appointed by the Governor to conduct an investigation of Tung Wah Hospital. The commission called references from India and Singapore of the management of Chinese hospitals in these two other British colonies. They found out that even the Brahmins in India accepted more western medicine than the Chinese in Hong Kong. And in Singapore, there was no Chinese hospital. The Tan Tock Seng's Hospital was in the European model, indicating all Chinese in Singapore were treated under western medicine.³⁸ As shown in Table 4, the listed Chinese doctors were all blamed for incompetence in curing their Chinese patients.

³⁶ Report on Tung Wa Hospital by T. H. Whitehead, in *Hong Kong Legislative Council Sessional Papers 1896*, xxi.

³⁷ Report on Tung Wa Hospital by T. H. Whitehead, in *Hong Kong Legislative Council Sessional Papers 1896*, xxiii.

³⁸ Correspondence from Colonial Secretary of Singapore J. A. Swettenham to the Colonial Secretary of Hong Kong J. H. Stewart Lockhart, dated September 17, 1895. Report on Tung Wa Hospital by T. H. Whitehead, in *Hong Kong Legislative Council Sessional Papers 1896*, lxvii.

Table 4. Chinese Practitioners of Medicine at Tung Wah Hospital

Names	Position	Date of entry	Monthly salary
Lam Hok-nin	Doctor (Internal complaints)	July 26, 1886	20 taels*
Lam Tsz-ching	Doctor (External complaints)	March 2, 1889	20 taels
Lam Fuk-bim	Doctor (Injuries)	September 3, 1891	20 taels
Tong Sui-ting	Doctor (Internal complaints)	November 8, 1893	20 taels
Wong Siu-ki	Doctor (Internal complaints)	February 16, 1895	20 taels
Wai Sz-chi	Doctor (Internal complaints)	April 24, 1896	20 taels
Yeung Tsui-ngai	Doctor (Internal complaints)	May 13, 1896	20 taels
Wan Leung-kung	Doctor (Internal complaints)	May 20, 1896	20 taels

*1 tael = 1.39 dollars

Source: Report on Tung Wa Hospital by T.H. Whitehead, in *Hong Kong Legislative Council Sessional Papers 1896*, lxxiv.

It was not until December 1896 that the first Chinese practitioner of western medicine, Chung Boon-chor (鍾本初) was appointed. Chung was graduated from the Government Central School and then received western medical education in Tientsin Medical College. He returned to Hong Kong and joined the Nethersole Hospital as an honorary surgeon.³⁹

The Tung Wah Hospital had once been put under threat of being abolished but it cannot be said that the government met with no opposition. Actually, the Hospital tried to stop the government intervention. On November 6, 1895, the hospital's committee asked a solicitor, Victor H. Deacon, to send a warning letter to the Acting

³⁹ *Healing with the Scalpel: From the First Colonial Surgeon to the College of Surgeons of Hong Kong* (Hong Kong: Hong Kong Academy of Medicine Press, 2010), 23-24.

Colonial Surgeon J. M. Atkinson. That letter reads,

I am instructed by the Directors of the Tung Wa Hospital to request you to take no steps towards the removal of Chan Kam Shing from the Hospital on the ground that the patient is unwilling to go and elects to remain in the Tung Wa Hospital. ...The Directors inform me that you have called to-day at the Hospital in order to remove him; but under the Hospital Ordinance I would remind you that the only power given to the Colonial Surgeon is to inspect the Hospital – clause 14 – and that the Board of Directors has full power to manage and direct Hospital matters – clause 8. If therefore any compulsory removal is contemplated it will be illegal.⁴⁰

The confrontation was not eased until the Tung Wah Hospital took several measures. First, a year later, the Chinese surgeon of Western medicine, Chung Boon-chor, was appointed, as mentioned above. Second, new wards were built so as to separate the contagious patients and the ordinary patients. As a result, more Chinese patients opted for western medical treatment than ever before. By then, Tung Wah was transformed into both a Chinese and a Western hospital.

V. Conclusion

In many aspects, the Hong Kong plague of 1894 can be viewed in a global context. First, while Hong Kong had the merit of being close to mainland China and enjoyed a good economic relationship with the hinterlands, its proximity and close ties to mainland China made it vulnerable to diseases and plague. Second, comparatively, Indians

⁴⁰ Correspondence from Victor H. Deacon to the Colonial Surgeon J.M. Atkinson, dated November 6, 1895. Report on Tung Wa Hospital by T. H. Whitehead, in *Hong Kong Legislative Council Sessional Papers 1896*, lii.

believed more in Western medicine than did the Chinese, and Chinese in Singapore did not ask for a Chinese hospital whereas Hong Kong had to struggle for one. Third, in its outposts in Asia including Shanghai, Hong Kong, Singapore, and India, Great Britain had been successfully implementing public health policies.

As Hong Kong had close economic ties with mainland China as well as trade relationships with its counterpart cities in Asia, flows of capital, people, merchandises, and information in the Asian Pacific region were easily coming into existence. Basically, the framework of the British Empire in Asia was designed for extending networks so as to promote trade among China, Hong Kong, Singapore, and India. Nevertheless, this also facilitated the spread of epidemic diseases such as plague and malaria.

It is not easy to define the term “colonialism” or “nationalism,” but it is quite obvious that the rivalry among Aoyama Tanemichi, Kitasato Shibasaburō, and Alexandre Yersin was mainly due to the fact that they belonged to different races, classes, and academic cliques. Colonial bureaucracy also accelerated the competition in public health. These medical practitioners did not receive equal treatment from the Hong Kong colonial government when they first came to Hong Kong to conduct investigations. Aoyama, Kitasato, and Yersin received similar educations from Robert Koch, but they never cooperated with each other. Instead, individuals stood in rivalry against other individuals and institutions, and this resulted in hindering the growth of scientific development.⁴¹ Certainly, both Kitasato and Yersin had identified the plague bacillus, but several years later when India suffered from the

⁴¹ The Japanese scholar Kani Hiroaki argued that the contribution made by Kitasato can hardly be retrieved from the Hong Kong history writings because of 1894-95; and second, main reasons: first, the feeling of hatred toward Japan after the Sino-Japanese War of 1894-95; and second, the general dislike of Western medicine. See his “Kitasato Shibasaburō no Honkon” [Kitasato Shibasaburō’s Hong Kong], *Mita hyōron*, no. 739 (1973:6), 89-90.

epidemic from 1906 to 1908, the Indian Plague Investigation Committee discovered that the flea functioned as an intermediary between a dead rat and a human. Hence, the Indian case shows that scientific invention should be above race or nationality.

During the late nineteenth century, Chinese were regarded by Europeans as a sanitary nuisance. Thus, there was a gap between the concepts of sanitarieness and medicine. In order to protect Chinese, they themselves fought for the Tung Wah Hospital, which was the first Chinese hospital in Hong Kong. However, about twenty years after it opened, the colonial government threatened to close it, and a confrontation arose between the government officials and the Chinese elites. In this sense, modern medicine was implemented through political force. Together with house-to-house disinfection, containment in the *Hygeia*, and the demolition of the Tai Ping Shan area, this aroused great protest from the local Chinese community. It is worth noting here that from the case of Tung Wah Hospital, it looked impossible, but actually Chinese had learned how to retreat from resistance and move forward to acceptance of western medicine. The appointment of Chung Boon-chor was regarded as a compromise between the colonial government and the Chinese elites. Chung had successfully removed all suspicion from both the British colonists and the general Chinese populace. He had showed how western medicine can be mixed with Chinese medicine and cured many of the Chinese patients. There were ways to find a common ground between “nationalism” and “colonialism” when confronting a bubonic plague crisis.

BIBLIOGRAPHY

- Aoyama, Tanemichi. *Honkon hyakushito ryakuhō* [Report on miscellaneous of Hong Kong]. Tokyo, 1894.
- Arnold, David. *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-century India*. Berkeley: University of California Press, 1993.
- Arnold, David. *Science, Technology, and Medicine in Colonial India*. Cambridge: Cambridge University Press, 2000.
- Bashford, Alison. *Imperial Hygiene: A Critical History of Colonialism, Nationalism, and Public Health*. New York: Palgrave Macmillan, 2004.
- Benedict, Carol. *Bubonic Plague in Nineteenth-Century China*. Stanford, CA: Stanford University Press, 1996.
- Bibel, David J., and T. H. Chen. "Diagnosis of Plague: An Analysis of the Yersin-Kitasato Controversy," *Bacteriological Review* 40, no. 3 (1976): 633-651.
- Cantanach, I. J. "Plague and the Tensions of Empire: India 1896-1919." In *Imperial Medicine and Indigenous Societies*, edited by David Arnold, 149-171. Manchester: Manchester University Press, 1988.
- Chandavarkar, Rajnarayan. *Imperial Power and Popular Politics: Class, Resistance and the State in India, c.1850-1950*. Cambridge: Cambridge University Press, 1998.
- Chinese Academy of Medical Sciences. *Zhongguo shuyi liuxingshi* [The history of the spread of plague in China]. Beijing: Chinese Academy of Medical Sciences, 1982.
- Collins, Robert John. "The black death: Hong Kong 1894." Paper presented at the lecture at Hong Kong Museum of Medical Sciences, April 24, 1999.
- Dyer-Ball, J. "A Chinese view of the plague." *Hong Kong Government Gazette* (1895): 423-425.
- Echenberg, Myron. *Plague Ports: The Global Urban Impact of Bubonic Plague, 1894-1901*. New York: New York University Press, 2007.
- Endacott, G. B. *A History of Hong Kong*. Hong Kong: Oxford University Press, 1987.
- Faure, David, ed. *A Documentary History of Hong Kong: Society*. Hong Kong:

- Hong Kong University Press, 1997.
- Faure, David, and Lee Pui-tak, eds. *A Documentary History of Hong Kong: Economy*. Hong Kong: Hong Kong University Press, 2004.
- Faure, David. "The common people in Hong Kong history: their livelihood and aspirations until the 1930s." In *Colonial Hong Kong and Modern China: Interaction and Reintegration*, edited by Lee Pui-tak, 9-38. Hong Kong: Hong Kong University Press, 2005.
- Fisher, Carney. "Plague in Hong Kong 1894." Paper presented at the International Conference on Hong Kong and Modern China, University of Hong Kong, December 3-5, 1997.
- Hong Kong Academy of Medicine Press. *Healing with the Scalpel: From the First Colonial Surgeon to the College of Surgeons of Hong Kong*. Hong Kong: Hong Kong Academy of Medicine Press, 2010.
- . *Sapientia et Humanitas: A History of Medicine in Hong Kong*. Hong Kong: Hong Kong Academy of Medicine Press, 2011.
- Iijima, Wataru. *Pesuto to kindai Chūgoku: Eisei no seidoka to shakai henyō* [Plague and modern China: The institutionalization of public health and social change]. Tokyo: Kenbun shuppan, 2000.
- Kani, Hiroaki. "Kitasato Shibasaburō no Honkon" [Kitasato Shibasaburō's Hong Kong]. *Mita hyōron*, no. 739 (1973): 89-90.
- Lau, Y. W., comp. *A History of the Municipal Councils of Hong Kong, 1883-1999*. Hong Kong: Leisure and Cultural Services Department, 2002.
- Lau, Yun-woo. "Managed by Chinese, for Chinese: the founding of Tung Wah Hospital." In *A Sense of Place: Hong Kong West of Pottinger Street*, edited by Veronica Pearson and Ko Tim-keung, 230-241. Hong Kong: Joint Publishing Co., 2008.
- Lee, Pui-tak. "Chinese Merchants in Hong Kong colonial context, 1850-1910," in *Hong Kong Economy and Society: Challenges in the New Era*, edited by Wong Siu-lun and Toyojiro Maruya, 61-86. Hong Kong and Tokyo: Centre of Asian Studies, University of Hong Kong; The Institute of Developing Economies, 1998.
- Lee, Pui-tak. *An Annotated Bibliography of Hong Kong History*. Hong Kong: Joint Publishing, 2001.

- Lian, Xinhao. “Jindai haigang jianyi yu Dongnanya huajiao yimin” [Harbor quarantine and migration of overseas Chinese in Southeast Asia]. *Haijiaoshi yanjiu*, no. 2 (1998): 104-116.
- MacPherson, Kerrie L. *A Wilderness of Marshes: The Origins of Public Health in Shanghai, 1843-1893*. Hong Kong: Oxford University Press, 1987.
- Nagaki, Daizō. *Kitasato Shibasaburō to sono ichimon* [Biography of Kitasato Shibasaburō]. Tokyo: Keiō gijiku daigaku shuppankai, 2001.
- Okuda, Otojirō. *Meiji shonen ni okeru Honkon Nihonjin* [The Japanese in Hong Kong during the early years of the Meiji period]. Taihoku: Taiwan sōtokufu nettai sangyō chōsakai, 1937.
- Ōtani, Tadashi. *Kindai Nihon no taigai senden* [The foreign propaganda of modern Japan]. Tokyo: Kenbun shuppan, 1994.
- Pearson, Veronica. “A plague upon our houses: The consequences of underfunding on the health sector.” In *A Sense of Place: Hong Kong West of Pottinger Street*, edited by Veronica Pearson and Ko Tim-keung, 242-261. Hong Kong: Joint Publishing Co., 2008.
- Peckham, Robert. “Infective economies: empire, panic and the business of disease.” *Journal of Imperial and Commonwealth History* 41, no. 2 (2013): 211-237.
- Platt, Jerome J., Maurice E. Jones, and Arleen Kay Platt, eds. *The White Wash Brigade*. London: Dix Noonan Webb, 1998.
- Sinn, Elizabeth. *Power and Charity: The Early History of the Tung Wah Hospital, Hong Kong*. Hong Kong: Oxford University Press, 1989.
- Sutphen, Molly. *Cookie-cutter Epidemics? The Colonial Office and the Plague Epidemics in Cape Town and Hong Kong, 1901-1902*. London: Institute of Commonwealth Studies, University of London, 1992.
- Tsuneseki, Keiichi. “Densenbyō kenkyūjo ikan jiken: Kitasato Shibasaburō” [The transference incident of the Institute of Infectious Diseases: Kitasato Shibasaburō]. In *Sukyandaru kagakushi* [Scandals in scientific history], edited by Kagaku Asahi, 106-115. Tokyo: Asahi shinbunsha, 1989.
- Uzaki, Kumakichi. *Aoyama Tanemichi* [Biography of Aoyama Tanemichi]. Tokyo: Ōzorasha, 1998.
- Yang, Shangchi. “120 nianlai Zhongguo weisheng jianyi” [Health quarantine in

China of the last 120 years]. *Zhonghua yishi zhazhi* 25, no. 2 (1995): 77-82.

Yang, Xiangyin. "Colonial Power and Medical Space: The Transformation of Chinese and Western Medical Services in the Tung Wah Group of Hospitals, 1894-1941." PhD thesis, Chinese University of Hong Kong, 2007.

Zhou, Hong. "The Origins of Government Social Protection Policy in Hong Kong, 1842-1941." PhD thesis, Brandeis University, 1992.