Medical Reports Compiled by Chinese Maritime Customs as a Platform for Intellectual Exchanges on the Infectious Diseases between Western and Local Medicines in Late Nineteenth-Century East Asia*

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Abstract

The *Medical Reports* by the Chinese Maritime Customs provide substantial information on public health conditions, including the prevalence of infectious diseases, at the treaty ports in China after the 1870s. As governmental data on the situation was limited, the *Medical Reports* played the role of official publication. Though various scholars have examined the *Medical Reports* from multiple viewpoints, few studies have paid attention to the authors of the reports.

Most of the authors, such as P. Manson, came from a medical background, which gave them the opportunity to move to China as medical officers. Besides their routine customs-related work, they paid much attention to infectious diseases, such as Asiatic cholera and human filariasis.

Some reports from outside China, such as from Yokohama and Seoul, are also included in the *Medical Reports*. American medical doctors S. Eldridge and D.B. Simmons wrote the reports on Yokohama for the Chinese Maritime Customs, and H. Allen did the same in the case of Seoul.

However, the foreign military forces were not the only sources of the *Medical Reports*. The missionary doctors connected closely with the native society were also important but less influential authors.

In the last half of the nineteenth century and the first half of the twentieth century, Western medical doctors had a chance to come to China as medical officers in the Chinese Maritime Customs. Fortified by the local knowledge of medicine, they studied new types of parasites and vectors. They also shared their knowledge with the medical doctors in Japan and Korea through the *Medical Reports*. Thus, the *Medical Reports* of the Chinese Maritime Customs played an important role as a platform for sharing and exchanging medical information and knowledge.

Keywords: medical officer, P. Manson, S. Eldridge, D.B. Simmons, H. Allen

Preface

In the late nineteenth century, a few infectious diseases, including those caused by parasites, were discovered based on field research conducted by Western medical doctors in East Asia. One of the most significant among

these was the research work on human filariasis by Patrick Manson (1844–1922). Renowned as the "father of tropical medicine," he founded the London School of Tropical Medicine. Human filariasis was prevalent in several regions in China, Taiwan, Korea, Ryukyu, and Japan. Despite its long history, it was still not clear that it was a parasitic disease at that time. Manson researched and confirmed the mechanism of infection of human filariasis, which involves the transfer of micro-filaria to the human body borne by mosquitoes. Notably, this research was carried out in a few coastal cities in south China under the aegis of the Chinese Maritime Customs.

When P. Manson was working in China, other scholars were investigating infectious and parasitic diseases in Japan. The most famous figure among them was Erwin von Bälz (1849–1913). He taught at Tokyo Igakko (Tokyo Medical School, the predecessor of Faculty of Medicine, the University of Tokyo) and found the widespread presence of human filariasis in some districts of Japan through his investigations. His research confirmed that human filariasis was also prevalent in Japan, and the type of parasite was the same as that in China.

Despite the contributions of such Western scholars in the field of parasitology, such as Manson and Bälz, in the late nineteenth century East Asia, few studies have paid attention to the intellectual exchanges by Western scholars in East Asia. The intellectual exchange was a characteristic dimension of the cross-culture between Western and local medicines in East Asia. In addition, the role of the Chinese Maritime Customs in this development has also been neglected. Several medical doctors from Western countries had the chance to research various infectious diseases as medical officers of the Chinese Maritime Customs.

The Chinese Maritime Customs of both Qing Dynasty and Republic of China was under the control of the Inspector General, a foreign official in the Chinese governments. The second Inspector General of the Chinese Maritime Customs, Robert Hart (1835–1911), asked the medical officers stationed at the treaty port maritime customs to collect basic information on health conditions, including climate and other environmental factors. The medical officers accumulated a significant amount of data, which were published in the *Medical Reports* by the Chinese Maritime Customs after the 1870s.

The *Medical Reports* provide information about the basic health conditions at the treaty ports. Until the mid-twentieth century, as limited data and statistics were available, these reports published by the Chinese Maritime Customs played the role of an alternative to official reports.

Though a few scholars have examined the *Medical Reports* from the

viewpoint of socio-economic history due to their abundance of data, the examination of the authors remains largely unexplored. In fact, the medical officers of the Chinese Maritime Customs had complex and unusual backgrounds.

The purpose of this study is to examine the role, activities, and characteristic aspects of the medical officers of the Chinese Maritime Customs, especially in the late nineteenth century, who provided the platform to share and exchange information and knowledge between Western medical doctors and local medical doctors in China, and between the Western medical doctors in China and medical doctors in other East Asian countries, such as Japan and Korea.

1. *Medical Reports* by the Chinese Maritime Customs

1-1. Maritime Quarantine and Maritime Customs in China

The Chinese Maritime Customs was established in 1853 during the Xiaodao-Hui 小刀會 uprising in Shanghai. The anti-local government uprising resulted in the foreign consuls and merchants in Shanghai establishing the maritime customs to manage customs duty-related affairs; a foreign official was appointed as its commissioner. The system of appointing foreigners as commissioners of maritime customs was adopted by other treaty ports. One of the main responsibilities of maritime customs was to collect import and export duties. They played an important role in collecting and managing revenue for the Chinese central governments of both the Qing Dynasty and the Republic of China.

Robert Hart, the second Inspector General of the Chinese Maritime Customs, was a British national who played a significant role in the Qing Dynasty government. It was very important that the Inspector General and the commissioners of the maritime customs at treaty ports were foreigners. Besides managing customs-related duties, they also had significant influence over politics, diplomacy, and culture in the latter half of the nineteenth century and the first decade of the twentieth century.[1)]

In 1873, the Chinese Maritime Customs started the maritime quarantine system in Shanghai and Amoy. This was an important measure to prevent the spread of Asiatic cholera coming in from India and Southeast Asia. The administration and management of the quarantine system, which included the investigation of foreign vessels in the maritime customs at the treaty ports in China, involved the intervention of the foreign consuls sanctioned by a

commercial treaty between China and the Western countries in the mid-nineteenth century. In the Treaty of Nanjing in 1842, after the Opium War, there were no regulations regarding maritime quarantine, but the intervention in the maritime quarantine of foreign vessels was controlled by the extraterritoriality right.

In the late nineteenth century, the most problematic disease was Asiatic cholera, originally an endemic disease in the Bengal region of contemporary India. After 1817, it gradually changed its character from endemic to pandemic and began to spread worldwide, including in East Asia, due to the commercial and military activities of Western countries. Notably, Asiatic cholera originated in India under British colonial rule and spread to Southeast and East Asia based on the military and economic presence of the British Empire. It was also based on the regional commercial network managed by the Indian and Chinese merchants.[2)]

The first outbreak of Asiatic cholera in China occurred in 1820 in Wenzhou and Ningbo, two coastal cities in the Zhejiang Province of Southern China. By 1822, it had become a pandemic affecting several other regions in China, and Korea, including the Ryukyu islands. By 1822, it was also prevalent in Japan. The transmission route of Asiatic cholera to Japan under the isolation policy of the Tokugawa period was a controversial issue. One possibility was Nagasaki, the open port to China and the Netherlands, and that it was transmitted from Java through the commercial relationship between the Netherlands East Indies and Japan. Another possibility was Bakan (Shimonoseki), based on the tributary trade with the Joseon Dynasty in Korea through the Tsushima islands.

1-2. Maritime Quarantine and Chinese Maritime Customs

In the nineteenth century, to prevent the spread of infectious diseases in the course of commercial exchanges and the immigration of laborers, maritime quarantine was one of the main duties of maritime customs worldwide. The institutionalization of maritime quarantine was advanced by the Western countries with the International Sanitary Conferences. From July 1851 to January 1852, the First International Sanitary Conference was held in Paris. Its main purpose was to control the spread of communicable diseases, especially Asiatic cholera, transmitted through Turkey to European countries.

In the discussions, the anti-cholera measures proposed by the United Kingdom (UK) and France were very different from each other. France emphasized the importance of maritime quarantine against Asiatic cholera

coming in from the Middle East. The UK disagreed with the measure because strict maritime quarantine would leave a negative influence on trade and commerce. Between this conflict, it was not easy to decide on the international maritime quarantine regulations. The Second International Sanitary Conference was also held in Paris (1859), the third in Constantinople (1866), the fourth in Vienna (1874), the fifth in Washington, D.C. (1881), and the sixth in Rome (1885). Though the discussions continued, there was no consensus on the international regulation for maritime quarantine. Finally, in 1892, the seventh conference was held in Vienna, and the maritime quarantine regulation to prevent the transmission of Asiatic cholera in Europe was agreed upon.[3)]

Government representatives of the Qing Dynasty had joined the fifth conference held in Washington, D.C. The official representative was Chen Lanbin 陳蘭彬 (1816–1895), the first Chinese ambassador to the United States (US), who was supported by some foreign medical officers from the Maritime Customs of Shanghai. *Wanqing guoji huiyi dang'an* 晚清國際会議檔案 [Collection of archives on the international conferences in the late Qing dynasty][4)] contains very interesting documents, which in the context of internationalization, reflects the international circumstances in the late nineteenth century when the Qing Dynasty was in power. Out of the 145 documents, 30 are related to medicine and hygiene. Other major areas covered by the documents are science and technology (16 documents), education (12 documents), commerce and industry (11 documents), and agriculture (11 documents). In those days, several international conferences on medicine, sanitation, science, and agriculture were being organized. This meant that the internationalization the Qing Dynasty government faced entailed standardization in the fields of medicine, sanitation, science, and agriculture.[5)]

In the late nineteenth century and the early decades of the twentieth century, the maritime quarantine system in East and Southeast Asia was complicated because, except for Thailand and Japan, many regions were under the control of Western countries. Thus, the system was implemented under high pressure from the Western countries, and the standards and regulations were discussed and decided by the Western countries through the International Sanitary Conferences. For example, in 1858, the maritime quarantine was implemented in British Malaya, which was a major destination of labor migration from India and China.

Interestingly, in the late nineteenth century, Japan was also under high pressure from the Western countries on the maritime quarantine system issue legitimized by the commercial treaties between them. The maritime

quarantine system in the treaty ports in Japan was also managed with the cooperation between the local governments and the foreign consuls based on the commercial treaties signed in 1858 with the US, the UK, France, Russia, and the Netherlands. Thus, the situation in Japan was similar to that in China. However, in the late nineteenth century, the Japanese government made a lot of efforts to revise the commercial treaties, and the maritime quarantine system was gradually changed under the control of the Japanese government. Simultaneously, the Japanese government also tried to intervene and control the maritime quarantine systems in Taiwan and Korea, which were under Japanese colonial rule at that time.

Correspondingly, the system of maritime quarantine in China was complicated because the treaty ports and the foreign settlements were under the control of foreign consuls. The Chinese administration of both the Qing Dynasty and the Republic government, which came into being in 1911, had limited powers over the maritime quarantine system. Under these circumstances, a significant amount of Chinese laborers immigrated to Southeast Asia, and the country, as well as its society, had a large presence in the commercial and labor network in Southeast and East Asia. Thus, the maritime quarantine system for infectious diseases was a critical issue in China.[6)]

1-3. R. Hart and A. Jamieson

The *Medical Reports* compiled by the Chinese Maritime Customs in the late nineteenth century give us a multitude of information on the health conditions at the treaty ports in China and East Asia. The most problematic issue was the localization and spread of Asiatic cholera. An investigation was carried out by the medical officers of the Chinese Maritime Customs at the treaty ports to prevent the spread of several contagious diseases.

At the end of 1870, Inspector General Robert Hart passed Circular No. 19, asking the medical officers of each maritime customs to collect the following information concerning the general health conditions: fatalities among foreigners and the classification of their cause, the prevalence of diseases, the general types of diseases, the relations between diseases and seasons, local health conditions, such as drainage, and climate conditions. A few epidemics causing diseases and leprosy were matters of grave concern.[7)]

In the circular to the commissioners of the maritime customs, Hart emphasizes the importance of the role of the medical officers and the responsibilities that come with it as follows:

> Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to, will serve to fix the general scope of the undertaking. I have committed to Dr. R. ALEX. JAMIESON, of Shanghai, the charge of arranging the reports for publication, so that they may be made available in a convenient form.
>
> Considering the number of places at which the Customs Inspectorate has established offices,—the thousands of miles north and south and east and west over which these offices are scattered,—the varieties of climate, —and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated . . . I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme.[8)]

Thus, Alexander Jamieson steered the project of collecting information on health conditions, which was published in the *Medical Reports*. He had been working in Shanghai as a medical officer for a long time. He also worked as the editor of the *North China Herald* from 1863 to 1866. Thereafter, he studied medicine at the Medical School of the University of Edinburgh, Scotland. After his return to Shanghai in 1869, he continued to work as a medical officer for the Chinese Maritime Customs. For the International Exposition held at Vienna in 1873, he selected the items to be exhibited, among which were several drugs from Chinese medicine.[9)] The close relationship between Hart and Jamieson in the administration of the Chinese Maritime Customs needs further investigation. In the publishing of the *Medical Reports*, Lee Hsin-Hsuan emphasized the role played by A. Jamieson from the *North China Herald*.[10)]

2. Authors of the Medical Reports

2-1. Medical Officers

Maintaining the appropriate conditions to promote the public health of each treaty port was the most important duty of the Chinese Maritime Customs. One of the main activities was to control the transmission of infectious diseases, such as Asiatic cholera and smallpox. To this end, a significant amount of basic information was collected by the medical officers and published in the *Medical Reports*. Several historians have pointed out the

value of the documents as a repository of information and described the basic situation of the public health condition from the viewpoint of the social history of medicine.[11] Further attempts have been made to examine it from the perspective of social and environmental history.[12] However, little attention has been paid to the authors of the medical reports. What kind of person became a medical officer in late nineteenth-century China? What kind of academic background did they have? Who was the main contributor to the *Medical Reports*?[13] Such questions remain unanswered.

Table 1 is a list of the authors of the medical reports from 1870 to 1882. Usually, the medical officer of each port wrote the medical reports based on their vast experience as medical doctors. However, there is not enough information regarding their activities.[14]

The late nineteenth century was "the golden age" of tropical medicine and parasitology in the world, especially in the colonies under the control of Western countries. Significant research was being conducted by Western scholars, which have been enlisted as follows: Patrick Manson on filariasis, Alphonse Laveran (1845–1922) and Ronald Ross (1857–1932) on malaria, Carlos Finlay (1833–1915) on yellow fever, and William Leishman (1865–1962) and Charles Donovan (1863–1951) on leishmaniasis (kala-azar), among others. The research on schistosomiasis in the tropical regions of Africa, South America, and India by Theodor Bilharz (1825–1862) and Robert Leiper (1881–1969) was particularly noteworthy. Interestingly, Japanese scholars Katsurada Fujiro 桂田富士郎 (1867–1946) and Miyairi Keinosuke 宮入慶之助 (1865–1946) also made great contributions to the study of schistosomiasis.[15] This also resulted in academic competition.

In the early decades of the twentieth century, Katsurada discovered *Schistosoma joponicum* in Japan, and Miyairi discovered oncomelania snail, the vector of the parasite to the human body. The discovery of parasites and vectors on schistosomiasis japonica were great contributions to the world of parasitology. It also meant that studies on parasitic diseases were being carried out locally in Japan. Based on the Dutch studies from the Tokugawa period and with the support of foreign advisors, such as Bälz, the Japanese academic circle, including students who had studied in Western countries, especially in Germany, succeeded in the localization of the studies on parasitic diseases. After the localization was brought about, the Japanese interest in parasitology also spread to Taiwan, Korea, and Manchuria, where it accumulated rich experience. It was important to monitor the local societies in the colonies to control the spread of parasitic diseases.[16]

2-2. Patrick Manson in Takow and Amoy

The medical officers of the Chinese Maritime Customs in the late nineteenth century eventually entered into an academic competition in the field of parasitology. They constantly tried to discover new diseases and new types of bacteria and parasites. Patrick Manson, a medical officer of the Chinese Maritime Customs, had the chance to research parasitology in Taiwan and China, where he started his career. He was Scottish and had graduated from the University of Aberdeen with degrees in Master of Surgery, Doctor of Medicine, and Doctor of Law. He made important discoveries in parasitology, including parasitic micro-filariasis, which is transmitted to the human body by mosquitoes. Later, he founded the London School of Tropical Medicine and came to be known as "the father of tropical medicine."[17)]

Patrick Manson was inspired by his older brother, David Manson, who also worked in Shanghai as a medical officer. In 1866, Patrick was appointed the medical officer of Takow in Taiwan. One of the reasons behind his choice to move to East Asia was economic. He hoped to return enough money to his father for his medical education in the UK after a few years. Moreover, he selected the post of medical officer in East Asia because his future possibilities in the medical society was limited as he was a Scottish.[18)]

Initially, his regular duties as a medical officer involved inspecting the ships docked at the port, checking the health conditions of crews, and keeping the meteorological record. He also attended to Chinese patients in a local missionary hospital, where he was exposed to a wide variety of tropical diseases. In 1871, he moved to Amoy. In Amoy, he led an active life and published several research works on human filariasis and other infectious diseases, such as malaria, later published in the *Medical Reports*.[19)] Human filariasis was an endemic disease prevalent in India, Southeast Asia, and East Asia. It was commonly called elephantiasis due to its symptoms. Cochin Leg was another name for it in Southeast Asia. Patrick's research and discovery of the way human filariasis is caused and spreads were influenced by his knowledge of Western medicine.

During his research work in Amoy in 1880, Patrick trained two Chinese assistants named Li Kha and Tiong Seng for additional support. They were born in the districts around Amoy and were about twenty years of age. According to Li Shang-Jen, the relationship between the Western medical doctor and the local Chinese practitioners was based on skill-related knowledge.[20)]

As a medical doctor educated in Western medicine, Patrick's interest in

the infectious diseases of East Asia was fueled by a sense of competition in the field of tropical medicine and parasitology. There were several similar infectious diseases rampant in India, French Indo-China, and the Netherlands East Indies. In addition, there was the impetus to research and discover new types of infectious diseases and parasites. To this end, they collected valuable information on infectious diseases. The Chinese Maritime Customs supported the research, and the *Medical Reports* were an opportunity to disseminate it among a wide circle of medical doctors.

2-3. John Dudgeon in Peking as a Missionary Doctor

John Dudgeon (1837–1901) was a Scottish physician who lived for nearly 40 years in China as a medical doctor, surgeon, and medical missionary. He studied at the University of Edinburgh and the University of Glasgow, from which he graduated with an M.D. in surgery in 1862. In 1863, he joined the Medical Mission of the London Missionary Society and worked at the hospital in Peking established by William Lockhart.

Dudgeon was a professor of Anatomy and Physiology at the Tongwen Guan 同文館 during the 1870s and 1880s. He contributed several papers to the *Chinese Medical Journal* (*Zhonghua yixue zazhi* 中華医学雑誌) and other medical journals, especially on topics connected with the medical practices and materia medica of China. He resigned from the London Missionary Society in 1884 and continued practicing privately in Peking until his death in February 1901.

3. Contributors to the *Medical Reports* in Japan and Korea

3-1. Eldridge and Simmons in Yokohama

Interestingly, the *Medical Reports* by the Chinese Maritime Customs also contained some reports on the health conditions in Japanese treaty ports. In the case of Yokohama, the authors were Stuart Eldridge (1843–1901) and Duane B. Simmons.

Eldridge was born in Philadelphia, in the US. He entered the United States Army at the age of seventeen. During the Civil War, he worked as a civil staff. Thereafter, he went on to become the second librarian-in-chief of the Agricultural Department. He studied at the School of Medicine at Georgetown University in Washington, D.C. and graduated to become a medical doctor in 1868. He later became a lecturer at this college and was appointed a member

of the scientific mission to Japan under General Horace Capron. His duties entailed secretarial and medical work as part of the mission for which he arrived at Yokohama in 1871.

The Japanese government appointed Eldridge as the Surgeon General of the Kaitakushi 開拓使 (Hokkaido Development Commission), and he was stationed at Hakodate in 1872. He taught anatomy, physiology, surgery, therapeutics, pharmacology, obstetrics, and gynecology to Japanese students.

Though he had hoped to continue to teach at Hokkaido, due to his poor financial status, he moved to Yokohama as a physician, where he lived until his death. Besides practicing medicine, he worked as the Director of the General Hospital of Yokohama (Juzen Byoin 十全病院), and became a member of the Central Board of Health (Chuo Eiseikai 中央衛生会) by the Japanese government in 1883 and an advisor of the Health Board of the Prefecture of Kanagawa (Kanagawa-ken Chiho Eiseikai 神奈川県地方衛生会).[21)]

Eldridge wrote a report on Yokohama titled "Notes on the Diseases Affecting European Residents in Japan, upon the Basis of All Available Statistics," which was published in the *Medical Reports*, No. 15, in 1878. Eldridge was introduced as "One of the Surgeons of the General Hospital of Yokohama, Secretary of the Board of Health of Yokohama." Regarding this report, Jamieson explained the following to Hart: "For this valuable paper I am indebted to Dr. Eldridge of Yokohama, and I have gladly inserted it as complementary to the series of Reports on disease in China."[22)] This confirms that the report on Yokohama by Eldridge was not an official report by the Chinese Maritime Customs.

Eldridge's report primarily contained the following:

1. The records of the General Hospital of Yokohama from March 1868 to December 1877—a period of about ten years;
2. The mortuary register of the foreign cemetery from January 1871 to December 1877—a period of about seven years;
3. The experiences and opinions of the resident physicians of the settlement, as recorded in the journals of the local medical society, which Eldridge personally communicated.[23)]

The main thrust of Eldridge's report was the health conditions of the foreign residents. He also described several infectious diseases very carefully, such as smallpox, measles, scarlet fever, typhus fever, diphtheria, Asiatic cholera, dysentery, and malarial diseases. The report was also concerned with

syphilis, leprosy, beriberi, various eye and skin diseases, and alcoholism. During that time, the cause of malaria was not clearly known, and Eldridge paid much attention to the environment and soil.

Based on the hospital records, he examined several cases of malaria in the foreign society in Yokohama. He noted the following:

> A marked increase in the number of cases of malarial affections has been noticed in private practice since the year 1871, when improvements of sewage, drainage, etc., with consequent excavation of the soil, began to be extensively carried on in Yokohama. It is probable that the drainage and levelling of the settlement, while it has much diminished the frequency of typhoid fever, has increased the number of cases of malarial troubles. It is not surprising that this should be so, for in temperate climates the disturbance of the soil is well recognized as a factor in the production of malarial disease even more powerful than are swamps and low-lying lands, when undisturbed. During the re-excavation of the canal, in the spring and summer of 1877, a marked increase in malarial disease was noticed in the neighbourhood of the works.[24)]

Simmons was another author of the Yokohama report. He was an American medical doctor who first came to Japan as a missionary for the Dutch Reformed Church in 1859. He had worked as a missionary, but his wife, as an extreme Unitarian, left his mission and worked as a medical doctor in the foreign settlement of Yokohama. Along with his medical work, he also taught Western medicine to Japanese students in the Daigaku Toko 大学東校 (later Faculty of Medicine, the University of Tokyo).

Two reports on cholera and beriberi by Simmons are available in the *Medical Reports*. His "Cholera Epidemics in Japan" is a monograph on the influence of the habit and customs of the race on the prevalence of cholera, published in the *Medical Reports*, No. 18 (April–September 1879). He examined the situation of Yokohama foreign society and also examined the situation of Japanese society in Yokohama from 1877 to 1879. He emphasized the localization of Asiatic cholera in Japan, which received opposition and criticism from a wide section of Japanese doctors and officials because the general perception was that Asiatic cholera was prevalent only in uncivilized states and societies. This misconception was a problematic issue in the history of Asiatic cholera in late nineteenth-century Japan.[25)]

As the "Eight years Director and Physician and Surgeon in Chief to Jieuzen-in (the Prefecture or Government Hospital), and Consulting Surgeon

to the Police and Prison Hospitals of Yokohama, late Sanitary Advisor and Member of the (Special) Health Board of the Prefecture of Kanagawa, and President of the Foreign Health Board of Yokohama,"[26] Simmons examined beriberi in Japan in the context of the world. He confirmed the prevalence of beriberi in Japan along with its symptoms and also introduced the treatment method. He discussed the cause of beriberi as specific soil exhalation with a comparison with malaria by a miasma in intellectual discourses. Like other Western medical doctors, he concurred that the disease was not diet related but rather the result of a miasma-like emanation from the ground. However, the medical research by Bälz indicated that he thought beriberi had a bacteriological origin.

Bälz and Heinrich Botho Scheube (1853–1923) were foreign professors at the medical schools in Japan. Bälz taught at Medical School of Tokyo (the predecessor of Faculty of Medicine, the University of Tokyo) and Scheube taught at the Kyoto Ryoyoin Hospital (the predecessor of Kyoto Prefectural University of Medicine). They were responsible for introducing the Germ theory in Japan in the late nineteenth century. Scheube treated Japanese patients and published his clinical work in German medical journals. Bälz also discussed the cause of beriberi to be the climate, dwellings, organic refuse, sudden shifts in hot and cold weather, fatigue, and diet. He believed that the cause of beriberi was infectious and refused to conceptualize as diet disease with the British and Dutch doctors in South Asia.[27]

The mainstream of Western medicine in Japan shifted from Dutch to German influence. Simmons retired from the Daigaku Toko and continued to work as a medical doctor in the Juzen Hospital (later School of Medicine, Yokohama City University). He worked diligently as a medical doctor for foreign and Japanese patients. His research also involved the examination of syphilis and infectious diseases, such as smallpox and Asiatic cholera. After a fulfilling career, he left the Juzen Hospital in 1880 and returned to the US.[28]

Fujimoto Hiroshi examined Simmons' activities and stated his activity leaned toward medicine in Japan. Though he retired from missionary work in 1860, he continued his medical work in Yokohama. In 1863, he studied virology in the laboratory of Rudolf Virchow and eye diseases in the laboratory of Albrecht von Graefe in Prussian. In 1869, he returned from Germany and continued his medical work in Yokohama by joining the governmental project against infectious diseases.[29]

3-2. H. Allen in Seoul, Korea

Two reports on the health conditions in Seoul, Korea, were also part of the *Medical Reports* by the Chinese Maritime Customs. The reports were Nos. 30 and 33, covering the periods between April and September 1885, October 1886, and March 1887. Their author was Horace N. Allen. Born in 1883 in Ohio, US. Allen went to China as a medical missionary for the Presbyterian church. However, his undertaking in China was not successful, and he moved to Korea in 1884. There he served as a medical advisor to foreign legations, such as those from the US, Britain, Japan, and China. He also played an important role as a medical advisor to the Korean royal family.[30)]

In some of his letters to his friend Ellinwood, Allen described the *Medical Reports* as follows:

> The Medical Reports of which I spoke sometimes since is being published in the Chinese Maritime Customs Report by order of Sir Robert Hart. It is also being translated into Japanese by the Minister here (p. 605).
>
> The British Government is reorganizing its medical sources throughout the whole east. In many places, men are getting 200–400lb (pounds) for doing nothing (p. 606).[31)]

The information on medicine and public health published in the *Medical Reports* by the Chinese Maritime Customs was useful to both the Japanese consular office and the British government. In his letter, Allen also mentioned that many informants were rewarded with money for exchanging medical information with the British government. He also mentioned that they sometimes got money without the research work.

In another letter, he wrote:

> I had from Customs $1,300.00 (Palace work included in this), $500. from Foreign Office for Hospitals beside extra, $750. (about owing to exchange) from English Legation, $500. from Japanese Legation (now stopped), $150. from Chinese Legation, $50. from American Legation, $50, each from foreigners, and at least $500. from outside practice for the year, in all $3,950.00.[32)]

Allen's report was based on the activities at the hospitals in Korea. His collection of information on medicine and public health earned him a fortune

as he offered it to the Chinese Maritime Customs and foreign consular offices, including the British, Chinese, Japanese, and American.

Though information on the remuneration of the medical officers of the Chinese Maritime Customs is very limited, Lee Hsin-Hsuan raised some light on the issue in the late nineteenth century. He introduced the payment for the medical officer after the reform around 1899. Interestingly, the medical officers' salary was not much. In Shanghai, it was 400 taels, which was greater than that of other maritime customs; for example, the remuneration in Newchang, Tianjin, and Swatow was 100 taels.[33)]

The main source of this information was the medical officers, missionary doctors, and medical doctors in the foreign settlements. Altogether, the *Medical Reports* offer rich information on the health conditions in the Chinese treaty ports in the late nineteenth century, including the state of prevalent infectious diseases. The addition of the reports on Japan and Korea is especially significant.

3-3. World of *Epitome*

Why did the Chinese Maritime Customs collect information on health conditions? One of the reasons is economic, as the outbreak of infectious diseases highly affected the trade between China and other foreign countries as well as inland trade.

The main topics and interests in the *Medical Reports* were the health conditions of the foreign residents and the prevalence of a couple of infectious diseases such as Asiatic cholera and bubonic plague in the Chinses treaty ports. Traditional Chinese medicine, medical culture, and Chinese activities and behavior were also of concern from the perspective of foreign medical doctors.

Based on the early *Medical Reports*, surgeon-general Charles Alexander Gordon compiled *An Epitome of the Reports of the Medical Officers to the Chinese Imperial Maritime Customs Service from 1871 to 1882*. It was published in London in 1884 and inscribed to Hart.

In the first chapter, Gordon summarizes the local health conditions. He also pays much attention to the habits of the Chinese as observed at the different ports. *Epitome*'s first chapter contains essential material on contemporary society, political economy, and medicine. Besides the examination of diseases, it includes ample information on a diverse range of topics, such as scavengers, beggars, filth, manure, drainage system, typhoid fever, topography, sanitation, water, food, the social condition of the people,

the climate, cultivation, prisons, and the physical condition of the Chinese among others.

The second chapter deals with medicine in China and certain epidemics and is a source of vital information. The third part of the volume is related to therapeutics and drugs and their effects. Additionally, the appendix contains a list of the epidemics that had ravaged the province of Chehkiang from the latter half of the nineteenth century, compiled from authentic official documents recorded by Dr. Macgowan and supplemented by a register of epidemics in China.[34)]

In *Epitome*, Gordon has been introduced as "the Surgeon-General and Honorary Physician to Her Majesty the Queen." He had valuable experience as a medical officer in the Indian Army and published several books, among which *The Principal Diseases of India, Briefly Described: With Hints on the Duties of Medical Officers in That Country*, was published in 1847. In it, he has been attributed as "the second-class staff surgeon." Besides describing diseases such as fever, dysentery, and cholera, he also focuses on malaria, which wreaked havoc in British India.

Army Hygiene was published in 1866 when Gordon was "the deputy inspector-general of hospitals, Army Medical Department." He was also a member of the Sanitary Commission for Bengal. In *Army Hygiene*, he describes the general circumstances of the British soldiers, barracks, clothing, water, and nutrition-related issues. *Experiences of an Army Surgeon in India* was published in 1872 when Gordon was the "Deputy Inspector-general of Hospitals." In this report, he again discusses diseases such as fever, dysentery, and cholera.[35)]

Before his posting in British India, Gordon had the opportunity to visit East Asia. Based on his experiences there, he wrote *China from a Medical Point of View in 1860 and 1861, to Which Is Added, a Chapter on Nagasaki as a Sanitarium* in the capacity of the "Deputy-Inspector-General of Hospitals, Army Medical Department." This work revolves around the basic health conditions in Hong Kong, Guangdong, and Tianjin from the viewpoint of an army surgeon. Especially regarding Tianjin, he collected extensive information on diseases and sanitary conditions based on the military investigation. One of his main interests was the difference in health conditions between the British and Indian troops in China. In addition to the conditions in China, he discusses the health condition of Nagasaki, which was a sanitarium during military operations around the late 1850s. Gordon's contribution to the *Medical Reports* and his *Epitome* is based on his valuable experience in British India and East Asia.

4. Endemic Diseases in the *Medical Reports*

4-1. Filariasis in China and Japan Investigated by the Western Doctors

Little attention has been paid to endemic diseases, including parasitic diseases, in the history of infectious diseases in terms of both the general and social history of medicine. However, this is a significant area of investigation as it has a close relationship with the everyday lives of ordinary people. The *Medical Reports* contains ample information on this issue.

Human filariasis was studied by P. Manson. The parasite causing human filariasis was discovered by Demarquay (1863), Wucherer (1866), and Bancroft (1876) in the world. Based on the extant literature, in 1878, Manson confirmed that micro-filaria was transferred to the human body by mosquitoes. In the *Medical Reports*, he described the symptoms of human filariasis after he had examined the detail of the transmission process. Thus, a new stage in the study of human filariasis began in China.

Human filariasis was also prevalent in many districts in Japan, especially in the southern coastal regions.[36] Prior to Manson's revelation, it was considered a hereditary disease. Based on the local knowledge in each region in Japan and traditional knowledge derived from Chinese medicine, it was called "*kusa*" or "*kusafurui*" because the infection was accompanied by fever and chills.[37]

The origin and exact timeline of the spread of human filariasis are still unclear. Supposedly, the spread of the disease was associated with the human migration resulting from rice production in East Asia, which is also true for the spread of malaria.

Bälz was an influential figure in the German-Japanese collaboration to study infectious diseases[38] who published his findings in *Wuchereria bancrofti* in 1876.[39] Eldridge discussed the sharing of information and knowledge on human filariasis in his reports as follows:

> That the number of diseases ascribed to internal animal parasites will soon be largely increased seems probable from the results of recent investigations, more especially in eastern countries. I have already under the subject of aneurism, alluded to the researches of Dr. MANSON of Amoy. The laborious inquiries of this gentleman, taken with those of others recently working in the same direction, seem to prove that elephantiasis proper *(E. Arabum)* should be relegated to the class of parasite diseases. Of this disease but one case occurs in the records upon

> which this paper is based, this being that of a Malay who brought the disease from his own country. Elephantiasis is certainly rare among the Japanese also, at least as concerns those of Yokohama and Tokio.[40)]

In his writing, Eldridge discussed elephantiasis and introduced the research work by Manson. In his investigation of beriberi, Manson referred to the research works of Simmons of Yokohama and Scheube and Bälz. He stated that they had accurately defined the modernized method and correctly apprehended its pathology. Scheube and Bälz were the first to distinctly show that beriberi is one of the natures of a specific alcohol, a view which was subsequently confirmed and adopted by many observations.[41)]

4-2. Sharing Information and Knowledge on Infectious Diseases between the East and West

In the nineteenth century, several infectious diseases were discovered and researched in East Asia. The Western medical doctors who came to China as medical officers for the Chinese Maritime Customs played an important role. Through the *Medical Reports*, they disseminated essential information, which was also utilized by Western medical doctors in Japan and Japanese medical doctors.

Kan'yo Byomei Taishoroku 漢洋病名対照録 [The list of the name of diseases in Chinese and Western languages] was published in 1883 by Ochiai Taizo 落合泰蔵 (1850–1937). He was born in Nagato (Yamaguchi Prefecture) and studied Chinese medicine in the medical school founded by the government of Choshu Domain and the private Kangaku (traditional China studies) school. Thereafter, he joined Nagasaki Igakko (Nagasaki Medical School) in 1869 and worked as a medical officer in the Japanese Army. In 1874, he joined the military operation in Taiwan and published *Meiji shichinen seiban ishi* 明治七年征蛮医誌 [The medical journal of the military activities in 1874] in 1887.[42)]

Based on his knowledge of both Chinese and Western medicine, he introduced malaria in three languages as follows:

> Chinese: *Nueji* 瘧疫
> Japanese: *Eyami* 衣夜美/*Warahayami* 和良波夜美/*Okori* おこり
> Latin: *Febris intermittens*
> Japanese (medical): *Kanketsunetsu* 間歇熱/*Okori* 瘧/*Gyakubyo* 瘧病/*Deishonetsu* 泥沼熱/ *Teijinetsu* 定時熱

The symptom of malaria was identified as intermittent fever, but its cause was yet to be determined. In the *Medical Reports*, several reports by medical officers discussed intermittent fever,[43] and "malarial diseases" were also specifically mentioned; for example, is seen in David Manson's report on Takow and Taiwan-fu during the first half of 1872, as follows:

> With a lower temperature and a smaller rainfall it is to be expected that in South Formosa, where the only diseases affecting foreigners are of the malarial type, the health of the community for the winter six months should compare favourably with that for the summer six months, and so it turns out, for, with the exception of two mild cases of ague, there were in the period under review no instances of climatic diseases to be noted.[44]

Interestingly, in *Kan'yo Byomei Taishoroku*, Ochiai briefly introduced malaria as only *Febris intermittens* (intermittent fever) without using the term malaria. Based on the language-based nomenclature, he described its basic symptom as high temperature for several hours before it drops back to normal.[45] *Kan'yo Byomei Taishoroku* is another important source that shows the academic exchanges on a lot of diseases including infectious diseases between Japanese medical doctors with rich experience in Western medicine and traditional Chinese medicine.

In the late nineteenth century Japan, a disease was usually identified, investigated, and confirmed by multiple sources of medical knowledge, including both Western medicine and traditional Chinese medicine. Ochiai published *Kan'yo Byomei Taishoroku* with the support of Asada Sohaku 浅田宗伯 (1815–1894), one of the key scholars of traditional Chinese medicine, and the scholars of Western medicine such as Imamura Ryo 今村亮 and Matsunaga Tokai 松永東海 in the University of Tokyo. Asada Sohaku was born in Shinano (Nagano Prefecture) and studied traditional Chinese medicine as the medical doctor of the Tokugawa family. In the Meiji era, he contributed to reconstructing traditional Chinese medicine in Japan.[46]

Conclusion: *Medical Reports* as a Platform for the Intellectual Exchange on Infectious Diseases in East Asia

Limited information leaves much of the activities of the medical officers in the Chinese Maritime Customs to speculation. Most of the authors had a medical background, studied Western medicine, and had the opportunity to come to China as medical officers. Missionary doctors who had close

connections with the native society were also significant contributors to the *Medical Reports*.

Interestingly, Eldridge and Simmons were US-born medical doctors who wrote the medical reports of Yokohama for the Chinese Maritime Customs. Allen was a missionary in Seoul who also shared valuable information with the Chinese Maritime Customs.

Based on the preliminary analyses, the following points can be confirmed. The main authors of the medical reports were the medical officers who had studied medicine in Western countries and had rich experiences as medical doctors. Along with the routine customs-related work, they examined infectious diseases, such as Asiatic cholera, and endemic diseases, such as human filariasis. They were also concerned with the tradition and culture of Chinese medicine.

The connections with the foreign military forces were not the only sources of information in the *Medical Reports*. *Epitome* was compiled by Gordon, a surgent of the Indian Army; however, it was not an official report of the Chinese Maritime Customs. Interestingly, there are no cases of the foreign army and navy doctors being authors in the *Medical Reports*. The military forces stationed in China had rich information on infectious diseases because it was important for military operations. It can be surmised that the medical officers had relationships with the military doctors through personal channels, but they did not offer the information and data for the *Medical Reports* directly.

Gordon was a military surgent of the British Indian Army. He edited the *Medical Reports* in the first half of the 1870s and published *Epitome* because information on the health conditions and infectious diseases prevalent in China was crucial for the Indian Army as well as those of the Middle East and Southeast Asia. If there was a pandemic or the outbreak of an endemic infectious disease, they needed to exchange basic information. Although this exchange took place from one military to another, the network between the Chinese Maritime Customs and the military network was parallel because the Chinese Maritime Customs was part of the Chinese government.

The contribution of the medical missionaries was less influential than that of the medical officers.[47] The development of medical knowledge was the main purpose of the intellectual network of *Medical Reports* under the Chinese Maritime Customs. Based upon this intellectual and medical network, reports from outside China, for example, Yokohama and Seoul, were also offered to the Chinese Maritime Customs.

In the last half of the nineteenth century and the first half of the twentieth century, several medical doctors and scholars who worked in China and East

Asia discovered various types of endemic diseases. The background of their activities was the colonization of Africa, India, and other tropical regions. As medical officers of the Chinese Maritime Customs, with the support of military and missionary doctors and under the influence of the local knowledge of medicine, discovered new types of parasites and vectors which spread infectious diseases.

Based on the research works of the medical officers and the intellectual exchanges between Western and local medicine, human filariasis and other endemic diseases, such as schistosomiasis, were discussed in *The Diseases of China, Including Formosa and Korea* by William Hamilton Jefferys and James L. Maxwell, which was published in London in 1910. In this book, the parasites causing the diseases, the symptoms, and the districts where the diseases were prevalent were discussed in detail, along with pictures of the patients.[48] These writings were based on the research works and the sharing of information and knowledge disseminated through the *Medical Reports* by the Chinese Maritime Customs.

Notes

* This paper is written based on two oral presentations and discussions in the following conferences: (1) Iijima Wataru 飯島渉, "Who Were the Authors of the Medical Reports: Medicine and Public Health Networks by the Chinese Maritime Customs in the Late Nineteenth Century East Asia" (The Fifth Biennial Conference of East Asian Environmental History, National Cheng Kung University, Tainan, Taiwan, October 26, 2019); (2) Iijima Wataru, "A Discovery of Parasitic Diseases in East Asia at the Late Nineteenth Century: Medical and Intellectual Networks under the Chinese Maritime Customs" (The Sixth Biennial Conference of East Asian Environmental History, Kyoto University, Kyoto, Japan, September 10, 2021, online).

1) Hamashita Takeshi 濱下武志, *Chugoku kindai keizaishi kenkyu: Shinmatsu kaikan zaisei to kaikojo shijoken* 中国近代経済史研究：清末海関財政と開港場市場圏 [Economic history of modern China: Maritime Customs finance and open port market zone in late Ch'ing China] (Tokyo: Kyuko shoin 汲古書院, 1989); Okamoto Takashi 岡本隆司, *Kindai Chugoku to kaikan* 近代中国と海関 [China and the Maritime Customs system in modern times] (Nagoya: Nagoya daigaku shuppankai 名古屋大学出版会, 1999).

2) In the history of infectious diseases including Asiatic cholera in China, the historiography is written in English and Chinese, see Marta Hanson, "Late Imperial Epidemiology, Part 2: New Material and Conceptual Methods, 1980s to 2010s," in *Routledge Handbook of Chinese Medicine*, ed. Vivienne Lo, Michael Stanley-Baker, and Dolly Yang (London and New York: Routledge, 2022), pp. 263–281, doi:10.4324/

9780203740262.

3) Norman Howard-Jones, *The Scientific Background of the International Sanitary Conferences, 1851–1938* (Geneva: World Health Organization, 1975).
4) Zhongguo diyi lishi dang'anguan 中國第一歷史檔案館, ed., *Wanqing guoji huiyi dang'an* (Yangzhou: Guangling shushe 廣陵書社, 2008).
5) Iijima Wataru, "Chugoku kaikan to "kokusai" no bunmyaku: Ken'eki no seidoka o megutte" 中国海関と「国際」の文脈：検疫の制度化をめぐって [Chinese Maritime Customs and the context of "internationalization": On the institutionalization of maritime quarantine], in *Higashi Ajia sekai no kindai: 19 seiki* 東アジア世界の近代：19世紀 [Modernity in East Asian world: The nineteenth century], ed. Wada Haruki 和田春樹 (Tokyo: Iwanami shoten 岩波書店, 2010), pp. 262–263.
6) Iijima, "Chugoku kaikan to "kokusai" no bunmyaku," pp. 261–262.
7) "Inspector General's Circular No. 19 of 1870," December 31, 1870, *The Customs' Gazette*, no. 10 (1871), p. 4.
8) Ibid.
9) Zhan Qinghua 詹庆华, "Zhongguo jindai haiguan yiyuan yu xiyi zaihua zhuanbo chutan (yi): Yi Zhongguo jiu haiguan chubanwu wei shijiao" 中国近代海关医员与西医在华传播初探（一）：以中国旧海关出版物为视角 [Medical officers in the Chinese Maritime Customs and the development of Western medicine in Modern China, part 1: From the perspective of the old Chinese Maritime Customs publications], *Shanghai haiguan xueyuan xuebao* 上海海关学院学报 [Journal of Shanghai Customs College], 2012, no. 2, p. 10.
10) Lee Hsin-Hsuan (Li Xinxuan) 李欣璇, "Wanqing haiguan jianyi zhidu de jianli yu shishi" 晚清海關檢疫制度的建立與實施 [Establishing quarantine system in late Qing China] (Master dissertation, the National Taiwan Normal University, 2015), p. 21.
11) Iijima Wataru, *Pesuto to kindai Chugoku: Eisei no "seidoka" to shakai hen'yo* ペストと近代中国：衛生の「制度化」と社会変容 [Plague and modern China: Institutionalization of public health and social change] (Tokyo: Kenbun shuppan 研文出版, 2000); Chinese translation: *Shuyi yu jindai Zhongguo: Weisheng de zhiduhua he shehui bianqian* 鼠疫与近代中国：卫生的制度化和社会变迁, trans. Piao Yan 朴彦, Yu Xinzhong 余新忠, and Jiang Bin 姜滨 (Beijing: Shehui kexue wenxian chubanshe 社会科学文献出版社, 2019).
12) Marta Hanson, "Visualizing the Geography of the Diseases of China: Western Disease Maps from Analytical Tools to Tools of Empire, Sovereignty, and Public Health Propaganda, 1878–1929," *Science in Context* 30, no. 3 (2017), pp. 219–280, doi:10.1017/S0269889717000205.
13) The Maritime Customs, *Documents Illustrative of the Origin, Development, and Activities of the Chinese Customs Service* (Shanghai: Statistical Department of the Inspectorate General of Customs, 1937–1940) was a very useful reference book for the activities of the Chinese Maritime Customs. However, it provides little information on the medical officers and their activities.
14) "China Families" is the academic platform for the research project on the Chinese Maritime Customs established by Prof. Robert Bickers, University of Bristol, UK. He paid much attention to the materials of the Chinese Maritime Customs and has developed a rich and useful academic platform (https://www.chinafamilies.net/about/,

accessed on July 26, 2022). However, little material is available on the medical officers except for some famous figures, such as Patrick Manson.

15) Gordon C. Cook, *Tropical Medicine: An Illustrated History of the Pioneers* (Paris: Elsevier, 2007).

16) Iijima Wataru, "The Establishment of Japanese Colonial Medicine: Infectious and Parasitic Disease Studies in Taiwan, Manchuria, and Korea under the Japanese Rule before WWII," *Aoyama Shigaku* 青山史学 [Aoyama Historical Review], no. 28 (2010), pp. 77–106.

17) D.M. Haynes, *Imperial Medicine: Patrick Manson and the Conquest of the Tropical Diseases* (Philadelphia: University of Pennsylvania Press, 2001).

18) Li Shang-Jen (Li Shangren) 李尚仁, *Diguo de yishi: Wanbade yu Yinguo redai yixue de chuangjian* 帝國的醫師：萬巴德與英國熱帶醫學的創建 [Imperial doctor: Patrick Manson and the establishment British tropical medicine] (Taipei: Yunchen wenhua 允晨文化, 2012), pp. 51–52.

19) Li Shang-Jen, *Diguo de yishi*, pp. 62–64.

20) Li Shang-Jen, "Visualisation in Parasitological Research: Patrick Manson and His Chinese Assistants," *Imagining Chinese Medicine*, ed. Vivienne Lo and Penelope Barrett (Leiden: Brill, 2018), pp. 457–466, doi:10.1163/9789004366183_034.

21) His great-grandson Henry Tegner has introduced some important material on the activities of S. Eldridge in Japan on the website (https://www.henrytegner.com/stu-eld.htm, accessed on July 14, 2022), and his journal from 1871 to 1872 has been published on Amazon KDP for the Kindle store. Henry Tegner, *The Journals of Doctor James Stuart Eldridge: An American Physician in Japan at the Time of the Meiji Restoration* (self-pub., Amazon Digital Services, 2012), Kindle edition.

22) *Medical Reports*, no. 15 (1878), p. v.

23) S. Eldridge, "Notes on the Diseases Affecting European Residents in Japan, upon the Basis of All Available Statistics," *Medical Reports*, no. 15 (1878), p. 48.

24) Ibid., p. 54.

25) Ichikawa Tomoo 市川智生, "Kindai Nihon no kaikojo ni okeru densenbyo ryuko to gaikokujin kyoryuchi: 1879 nen "Kanagawa-ken Chiho Eiseikai" ni yoru korera taisaku" 近代日本の開港場における伝染病流行と外国人居留地：一八七九年「神奈川県地方衛生会」によるコレラ対策 [Infectious diseases and foreign settlements in the Japanese treaty-ports: The 1879 Cholera Epidemic at Yokohama], *Shigaku Zasshi* 史学雑誌 [Journal of History] 117, no. 6 (2008), pp. 1059–1096.

26) D.B. Simmons, "Beriberi, or the "Kakké" of Japan," *Medical Reports*, no. 19 (Oct. 1879–Mar. 1880), p. 38.

27) Alexander R. Bay, *Beriberi in Modern Japan: The Making of a National Disease* (Rochester: University Rochester Press, 2012), pp. 22–23.

28) Arai Yasuo 荒井保男, "Beii D.B. Shimonzu: Toku ni Juzen Iin (Yokohama) ni okeru gyoseki narabi ni Fukuzawa Yukichi to no kankei ni tsuite" 米医D・B・シモンズ：とくに十全医院（横浜）に於ける業績並びに福沢諭吉との関係について [American doctor D.B. Simmons: Especially his achievements at Juzen Hospital (Yokohama) and his relation to Fukuzawa Yukichi), *Nihon Ishigaku Zasshi* 日本医史学雑誌 [Journal of the Japanese Society for the History of Medicine] 33, no. 2 (1987), pp. 121–171.

29) Fujimoto Hiroshi 藤本大士, *Igaku to Kirisuto kyo: Nihon ni okeru Amerika Purotesutanto no*

iryo senkyo 医学とキリスト教：日本におけるアメリカ・プロテスタントの医療宣教 [Medicine and Christianity: American Protestant missionaries and their medical work in Japan] (Tokyo: Hosei Daigaku shuppankyoku 法政大学出版局, 2021), pp. 29–30.

30) In-Sok Yeo and Do Heum Yoon, "Allen (Horace N. Allen, 安連, 1858–1932)," *Yonsei Medical Journal* 58, no. 4 (2017), pp. 685–688. The primary sources and documents, including his diaries (4 vols., 1883–1903), are now available at the Archives and Manuscripts Division, the New York Public Library. See the detail at https://archives.nypl.org/mss/49 (accessed on July 9, 2022). A part of the material has already been introduced and translated from English to Korean. Horace N. Allen, *Horace N. Allen, M.D.'s Missionary and Diplomatic Letters, 1884–1905*, trans. Kim In Soo (Seoul: Qumran Publishing, 2007).
31) Allen to Dr. F.F. Ellinwood, Dec. 2nd, 1885, *Allen's Missionary and Diplomatic Letters*, pp. 605–606.
32) Allen to Dr. F.F. Ellinwood, Oct. 17th, 1888, *Allen's Missionary and Diplomatic Letters*, pp. 788–789.
33) Lee Hsin-Hsuan, "Wanqing haiguan jianyi zhidu," p. 30.
34) *Epitome* was introduced and reviewed in the *British Medical Journal* 1, no. 1256 (Jan. 24, 1885), p. 183.
35) Mark Harrison discussed Gordon's report on the basic conditions of the army in British India. Mark Harrison, *Public Health in British India: Anglo-Indian Preventive Medicine 1859–1914* (Cambridge: Cambridge University Press, 1994), pp. 62–63.
36) Sasa Manabu 佐々学, *Nihon no Fudobyo: Byoma ni nayamu hekichi no jittai* 日本の風土病：病魔になやむ僻地の実態 [Endemic diseases in Japan: The true state of disease-infested remote rural areas] (Tokyo: Hosei Daigaku shuppankyoku, 1974), pp. 87–88; Sasa Manabu, *Human Filariasis: A Global Survey of Epidemiology and Control* (Tokyo: University of Tokyo Press, 1976).
37) Iijima Wataru, "Firaria no seiatsu to 20 seiki Nihon no nettai igaku: Fudobyo no seiatsu kara kokusai hoken e" フィラリアの制圧と20世紀日本の熱帯医学：風土病の制圧から国際保健へ [Elimination of human filariasis and the tropical medicine in 20th-century Japan: From endemic disease prevention to international health], in *Jinko to kenko no sekaishi* 人口と健康の世界史 [A world history of population and health], ed. Akita Shigeru 秋田茂 and Wakimura Kohei 脇村孝平 (Kyoto: Mineruva shobo ミネルヴァ書房, 2020), pp. 312–313.
38) Hoi-eun Kim, *Doctors of Empire: Medical and Cultural Encounters between Imperial Germany and Meiji Japan* (Toronto: University of Toronto Press, 2014), p. 48.
39) Morishita Kaoru 森下薫, "Nihon kiseichugaku no yoake to Berutsu hakase" 日本寄生虫学の夜明けとベルツ博士 [The development of parasitology in Japan and Dr. Bälz], in *Aru igakushi no shuhen: Fudobyo o ou hito to jiseki no hakkutsu* ある医学史の周辺：風土病を追う人と事蹟の発掘 [Research works on the scholars who studied the endemic disease] (Kyoto: Nihon shin'yaku 日本新薬, 1972), pp. 329–330.
40) S. Eldridge, "Notes on the Diseases Affecting European Residents in Japan," pp. 68–69.
41) Patrick Manson, *Tropical Diseases: A Manual of the Diseases of Warm Climates* (New York: William Wood, 1898), p. 221.
42) Tanaka Sukeichi 田中助一, "Gun'i Ochiai Taizo" 軍医落合泰蔵 [Medical officer

Ochiai Taizo], *Nihon Ishigaku Zasshi* 35, no. 2 (1989), pp. 130–132.

43) "Dr. Wong's Report on the Health of Canton for the Half-Year Ended 31st March 1872," *Customs Gazette*, no. 13 (1872), p. 19.

44) "Dr. David Manson's Report on the Health of Takow and Taiwan-fu for the Half-Year Ended 31st March 1872," *Customs Gazette*, no. 13 (1872), p. 34.

45) Ochiai Taizo, *Kan'yo byomei taishoroku* (self-pub., 1883), p. 47a.

46) Kawaguchi Yotoku 川口陽徳, "Kampo ido no keisho: Asada Sohaku no chishikikan to shitei kankei" 漢方医道の継承：浅田宗伯の知識観と師弟関係 [Imparting the knowledge of *Kampo*-medicine: Sohaku ASADA's view of knowledge and the relationship with his apprentices], *Tokyo Daigaku Daigakuin Kyoikugaku Kenkyuka Kiyo* 東京大学大学院教育学研究科紀要 [Bulletin of the Graduate School of Education, the University of Tokyo] 45 (2005), pp. 11–20.

47) Because this paper focuses on the activities of medical officers, it does not examine the role of the missionary doctors in detail. But some doctors who had a relation with the mission were also the authors of the medical reports. On the missionary doctors in modern China, to see Jo Jeongeun 曺貞恩, *Kindai Chugoku no Purotesutanto iryo dendo* 近代中国のプロテスタント医療伝道 [Activities of the medical mission in modern China] (Tokyo: Kenbun shuppan, 2020).

48) James Laidlaw Maxwell (1836–1921) was the first Presbyterian missionary to Formosa. He studied medicine at the University of Edinburgh, earned his degree in 1858, and moved to Taiwan in 1868.

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Table 1. Authors of the Medical Reports (1870–1882)

	No. 1	No. 2	No. 3	No. 4	No. 5
	1870/10/01–1871/3/31	1871/4/01–1871/9/30	1871/10/01–1872/3/31	1872/4/01–1872/9/30	1872/10/01–1873/3/31 (1872/4/01–1873/3/31)
Peking	Dr. John Dudgeon	Dr. John Dudgeon		Dr. John Dudgeon (part 2)	Dr. John Dudgeon
Newchwang	Dr. James Watson	Dr. James Watson	Dr. James Watson	Dr. James Watson	Dr. James Watson
Hankow	Dr. George Shearer	Dr. A.G. Reid	Dr. A.G. Reid	Dr. A.G. Reid	Dr. A.G. Reid
Shanghai	Dr. George Barton	Dr. Alexander Jamieson	Dr. Edward Henderson (memorandum); Dr. Alexander Jamieson	Dr. Alexander Jamieson	Dr. Alexander Jamieson
Ningpo	Dr. Robert Meadows				Dr. J.H. Mackenzie
Swatow		Dr. Scott	Dr. Scott	Dr. Scott	
Amoy		Drs. Müller and Manson	Drs. Müller and Manson	Drs. Müller and Manson	Dr. David Manson
Foochow (Pagoda Anchorage)		Dr. Somerville		Dr. J.R. Somerville	Dr. J.R. Somerville
Kiukiang		Dr. George Shearer (1 year)	Dr. George Shearer	Dr. George Shearer (1 year)	
Takow		Dr. David Manson	Dr. David Manson	Dr. David Manson	
Canton		Dr. F. Wang	Dr. F. Wang	Dr. F. Wang	
Chefoo			Dr. W.W. Myers		Dr. W.W. Myers
Tientsin					Dr. J. Frazer
Takow and Taiwan-foo					Dr. David Manson
Tamsui					
Chinkiang					
Tamsui and Kelung					
Wênchow					
Yokohama					
Ichang					
Wuhu					
Hoihow					

	No. 6	No. 7	No. 8	No. 9	No. 10
	1873/4/01–1873/9/30	1873/10/01–1874/3/31	(1873/4/01–1874/9/30) 1874/4/01–1874/9/30	(1874/6/01–1875/3/31) 1874/10/01–1875/3/31	1875/4/30–1875/9/30
Peking	Dr. John Dudgeon	Dr. John Dudgeon	Dr. John Dudgeon	Dr. John Dudgeon	Mons. E. Dugat
Newchwang			Dr. James Watson		
Hankow	Dr. A.G. Reid		Dr. A.G. Reid		Dr. A.G. Reid
Shanghai	Dr. Alexander Jamieson	Dr. Alexander Jamieson	Dr. Alexander Jamieson	Dr. Alexander Jamieson	R. Alex. Jamieson, M.D.; J.H. Blair, Esq.
Ningpo		Dr. J.H. Mackenzie			
Swatow			Dr. C.M. Scott		
Amoy	Dr. Manson	Dr. Manson	Drs. C.M. Jones and Manson		Patrick Manson, M.D.; Dr. Müller; David Manson, M.D.
Foochow (Pagoda Anchorage)		Dr. J.R. Somerville	Dr. J.R. Somerville	Dr. J.R. Somerville	Dr. J.R. Somerville
Kiukiang				Dr. J. Jardine	
Takow					
Canton	Dr. F. Wang [Wong?]				
Chefoo		Drs. Carmichael and Myers (1 year)	Drs. Carmichael and Myers (1 year)		
Tientsin	Dr. J. Frazer		Dr. J. Frazer		
Takow and Taiwan-foo	Dr. T. Rennie		Dr. Rennie		
Tamsui		Dr. Ringer			
Chinkiang					
Tamsui and Kelung					
Wênchow					
Yokohama					
Ichang					
Wuhu					
Hoihow					

	No. 11	No. 12	No. 13	No. 14	No. 15
	(1875/9/01–1876/3/31) 1875/10/01–1876/3/31	1876/4/01–1876/9/30	1876/10/01–1877/3/31	1877/4/01–1877/9/30	1877/10/01–1878/3/31
Peking					
Newchwang		Dr. James Watson			Dr. James Watson
Hankow		Dr. A.G. Reid		Dr. A.G. Reid	
Shanghai	Dr. Alexander Jamieson	Dr. Alexander Jamieson	Dr. Alexander Jamieson	Dr. Alexander Jamieson	Dr. Alexander Jamieson
Ningpo	Dr. J.H. Mackenzie		Dr. Mackenzie	Dr. Mackenzie	Dr. Mackenzie
Swatow	Dr. Scott	Dr. E.I. Scott	Dr. E.I. Scott	Dr. E.I. Scott	Dr. E.I. Scott
Amoy	Dr. Manson	Dr. Manson	Dr. Manson	Dr. Patrick Manson; Dr. David Manson	Dr. D. Manson
Foochow (Pagoda Anchorage)	Dr. J.R. Somerville			Dr. J.R. Somerville	
Kiukiang	Dr. J. Jardine		Dr. J. Jardine		
Takow					
Canton				Dr. F. Wong	Dr. F. Wong
Chefoo	Dr. J.R. Carmichael	Dr. J.R. Carmichael			Dr. J.G. Brereton
Tientsin	Dr. J. Frazer	Dr. J. Frazer		Dr. Frazer	
Takow and Taiwan-foo	Dr. T. Rennie		Dr. T. Rennie		Dr. T. Rennie
Tamsui					
Chinkiang	Dr. Platt	Dr. A.R. Platt		Dr. A.R. Platt	
Tamsui and Kelung	Dr. B.S. Ringer	Dr. B.S. Ringer	Dr. B.S. Ringer	Dr. B.S. Ringer	
Wênchow					Dr. W.W. Myers
Yokohama					Dr. S. Eldridge
Ichang					
Wuhu					
Hoihow					

	No. 16	No. 17	No. 18	No. 19
	1878/4/01–1878/9/30	1878/10/01–1879/3/31	1879/4/01–1879/9/30	1879/10/01–1880/3/31
Peking				
Newchwang		Dr. James Watson		Dr. James Watson
Hankow	Dr. A.G. Reid			
Shanghai	Dr. R.A. Jamieson	Dr. R.A. Jamieson	Dr. R.A. Jamieson	Dr. R.A. Jamieson
Ningpo		Dr. J.H. Mackenzie		
Swatow	Dr. E.I. Scott		Dr. E.I. Scott	Dr. E.I. Scott
Amoy	Dr. P. Manson		Dr. P. Manson	Dr. P. Manson
Foochow (Pagoda Anchorage)			Dr. J.A. Stewart	
Kiukiang		Dr. J. Jardine		Dr. J. Jardine
Takow				
Canton			Dr. Flemming Carrow	Dr. F. Carrow
Chefoo	Dr. Brereton	Dr. J.G. Brereton	Dr. J.G. Brereton	Dr. J.G. Brereton
Tientsin		Dr. A. Irwin		Dr. A. Irwin
Takow and Taiwan-foo				
Tamsui				
Chinkiang	Dr. A.R. Platt			Dr. R.G. White
Tamsui and Kelung	Dr. B.S. Ringer		Dr. B.S. Ringer	
Wênchow			Dr. W.W. Myers	
Yokohama			Dr. D.B. Simmons	Dr. D.B. Simmons
Ichang				
Wuhu				
Hoihow				

	No. 20	No. 21	No. 22	No. 23
	1880/4/01–1880/9/30	1880/10/01–1881/3/31	1881/4/01–1881/9/30	1881/10/01–1882/3/31
Peking				
Newchwang		Dr. James Watson		
Hankow		Dr. C. Begg		
Shanghai	Dr. R.A. Jamieson	Dr. R.A. Jamieson	Dr. R.A. Jamieson	Dr. R.A. Jamieson
Ningpo	Dr. W.A. Henderson		Dr. W.A. Henderson	
Swatow	Dr. E.I. Scott		Dr. J. Pollock	
Amoy	Dr. P. Manson	Dr. P. Manson	Dr. P. Manson	Dr. P. Manson
Foochow (Pagoda Anchorage)		Dr. T. Rennie		Dr. J.A. Stewart
Kiukiang		Dr. J. Jardine		Dr. G.R. Underwood
Takow		Dr. W.W. Myers		
Canton		Dr. F. Carrow		Dr. F. Carrow
Chefoo		Dr. J.G. Brereton	Dr. J.G. Brereton	
Tientsin				
Takow and Taiwan-foo				Dr. W.W. Myers
Tamsui				
Chinkiang		Dr. R.G. White		
Tamsui and Kelung	Dr. B.S. Ringer			
Wênchow			Dr. D.J. Macgowan	
Yokohama				
Ichang	Dr. E.P. McFarlane			
Wuhu	Dr. A.S. Deane			
Hoihow		Dr. E.A. Aldridge	Dr. E.A. Aldridge	Dr. E.A. Aldridge