

# The Activity of Medical Officers in the Chinese Maritime Customs Service in the Areas of the “Miasma Epidemic”\*

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## Abstract

The *Medical Reports* (*Haiguan yibao* 海關醫報) contain medical information compiled by the medical officers who served in the Chinese Maritime Customs (*Haiguan zongshuiwusi shu* 海關總稅務司署). They document the medical officers' activities, medical or sanitary concerns at their posts, and their relationship with natives including Qing's local officials and elites. The medical officers were required to build an indispensable “relationship” with the natives, which was essential for them to work in China.

Introducing modern Western medicine to East Asia and allowing physicians of modern medicine into the region, including the medical officers mentioned, emphasized the conflicts between conventional medicine and the physicians. However, can it be claimed that modern Western medicine inflamed the conflicts in East Asia? To clarify the reality of modern medicine in East Asia, it is necessary to consider the views and interests of people in the region.

This article discusses the kind of relationship that developed between the medical officers and Chinese society through the officers' activities as documented in the *Medical Reports*, and elucidates the aforementioned theme. It covers the period from 1873 to 1886, during which many infectious diseases were spread, such as the cholera pandemic. The regions investigated are Guangdong 廣東, Fujian 福建, and Taiwan 台灣—known areas of the miasma epidemic (*zhangli zhi di* 瘴癘之地).

**Keywords:** *Medical Reports*, medical officers, sanitary conditions, infectious diseases, areas of the miasma epidemic

## Introduction

In this article, we discuss the kind of relationship that developed between the medical officers and Chinese society through the officers' activities as documented in the *Medical Reports* (*Haiguan yibao* 海關醫報). The *Medical Reports* contain the medical information compiled by the medical officers<sup>1)</sup> who served in the Chinese Maritime Customs (*Haiguan zongshuiwusi shu* 海關總稅務司署). The reports documented the medical officers' activities and medical or sanitary concerns at their posts, such as information regarding infectious diseases, as well as environmental and natural disasters.<sup>2)</sup> Dr. C.A.

Gordon (1820–1899),<sup>3)</sup> a surgeon general, highlighted the function of the *Medical Reports*:

Some items of information given by medical officers regarding Chinese theories of medicine are interesting; many others are curious. The remarkable divergence between some of those theories and those which, are current among Western nations is no less striking than the approach which in other instances, is manifest between them.<sup>4)</sup>

The *Medical Reports* was an important medium that played a part in the propagation of medical information, including the difference between Chinese and Western medical treatment. The reports covered a wide range of activities that the medical officers engaged in. One such activity was building an indispensable “relationship” with the natives, which was essential for their work in China. However, the medical officers’ standing in the local community was questioned “as foreigners.” To verify the theme of the article, we consider the following questions:

- (1) In reality, how was Western medicine introduced into and accepted in East Asia?
- (2) How was an intellectual network formed through medical knowledge?

This article covers the period from 1873 to 1886. This was a period when many natural disasters occurred, such as the great famine called the Dingwu Disaster (*Dingwu qihuang* 丁戊奇荒),<sup>5)</sup> and many infectious diseases were spread, such as the cholera pandemic in China. Medical assistance was desperately required during this decade, which serves as a good example for validating the activities of medical officers. The regions investigated are Guangdong 廣東, Fujian 福建, and Taiwan 台灣—known areas of the miasma epidemic (*zhangli zhi di* 瘴癘之地). In each region, the areas the medical officers were active in were:

- (1) Guangdong: Canton 廣州, Swatow 汕頭, Hoihow 海口, Pakhoi 北海
- (2) Fujian: Foochow 福州, Amoy 廈門
- (3) Taiwan: Tamsui 淡水, Jiron 鷓籠, Taiwan-fu/Anping 台灣府/安平, Takow 打狗.

In the first section, we verify the relationships between the medical officers and influential people at their posts, especially Qing’s local officials. In

the second section, we verify medical officers' activities at their posts.

### 1. Establishment of Hospitals and Support of Local Officials

The medical officers, engaged in medical assistance, reported diseases (see Tables 1 and 2) and operated hospitals. One of the leading hospitals was the David Manson Memorial Hospital in Takow.<sup>6)</sup> This hospital was the successor of the Takow Chinese Hospital, established by Dr. Maxwell of the England Presbyterian Church. Medical officers later took it over as operations managers. In describing the activities of medical officers, it is necessary to verify and include their relationship with the hospital.<sup>7)</sup>

Medical officers' activities, including hospital operations, were found to be largely in contact with Qing's local officials, especially the circuit intendants (*taotai* or *taot'ai* 道台), who controlled the establishment area of maritime customs. We consider the role of medical officers through their relationship with Qing's local officials in local society.

In early 1881, the David Manson Memorial Hospital was unveiled in Takow. The hospital had the following facilities:

The hospital consists of two buildings. The lower two-storied house accommodates about 12 foreign patients upstairs, and below is the dispensary, operating-room, waiting-hall and dispenser's quarters. The upper building consists of two large wards for native patients, while in rear of this are two rooms for private Chinese patients or for women, besides which is accommodation for cookery, washing, etc. The whole contains room for about 30 beds, although doubtless on an emergency arising, more could be made up.<sup>8)</sup>

Dr. David Manson, who died suddenly in Foochow in 1878, was one of the medical officers engaged in the operation of Takow Chinese Hospital, the predecessor institution. To honor his life achievements, Takow Chinese Hospital was reorganized as the David Manson Memorial Hospital, which was supported by local foreigners and the Chinese. The names of supporters and the amount of their donations were reported as follows:

His Excellency Hu Taotai was to have presided at the opening ceremony, but the unexpected arrival of the Futai at Taiwan-fu caused him to hurry back before carrying out his intention. In lieu of this, however, he set forth proclamations declaring the object of the institution and his

sympathy with it, which notices he caused to be posted throughout the country, at the same time giving substantial proof of his interest by putting his name down as an annual subscriber for *Ts* 100. His example was followed by the Chêntai, to the same amount, and several other officials and natives have become annual donors of sums varying from \$10 to \$25.<sup>9)</sup>

Hu Taotai, namely the circuit intendant at Taiwan-fu prefecture Liu Ao 劉璈 (?–1889),<sup>10)</sup> had to return to Taiwan-fu to visit the grand coordinator (*futai* 撫台 or *xunfu* 巡撫).<sup>11)</sup> Although Liu Ao was hurrying back, he promised to donate 100 taels to the hospital annually. Following the circuit intendant's donation, other local officials and local Chinese people also donated.

There were similar examples at other local hospitals. One of these which the Presbyterian Church established in this article's verification region—Swatow Mission Hospital—was relocated in 1877.

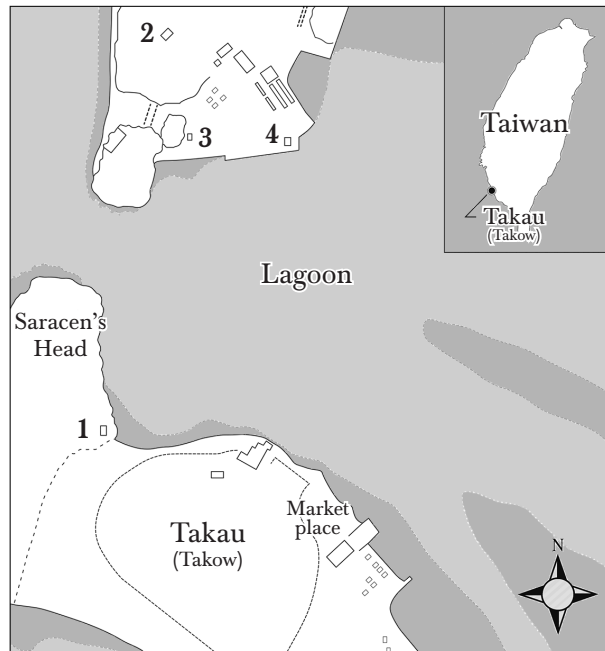
The funds for building were obtained by the sale of the old hospital; by liberal contributions from the Swatow foreign community and from the Chinese, including a donation of 100 taels from the Taotai; by a contribution of £100 (\$495) from the foreign mission Committee of the Presbyterian Church of England, and one of £50 (\$250) collected in New Zealand by the Rev: George Smith.<sup>12)</sup>

The hospital relocation was funded with the support of the Presbyterian Church, including donations from local foreigners, the Chinese, and the circuit intendants.

Additionally, support from local officials was not only financial, but including the building site of the hospital. The following excerpt relates to the site of the David Manson Memorial Hospital:

The hospital is situated at the base of Saracen's Head, facing the lagoon or inner harbour, and is on perhaps one of the most salubrious sites in the whole settlement. I must not omit to mention that this ground was presented by the Chinese Government.<sup>13)</sup>

Dr. Myers recognized that it was founded at the foot of "Saracen's Head" (*Salasen tou shan* 薩拉森頭山) and was well connected to the sea traffic (see Map 1). He also mentioned that the Chinese government had presented this location. This situation was similar to that at Swatow Mission Hospital.



**Map 1. Port Takau (Takow)**

1. David Manson Memorial Hospital, 2. British Consulate, 3. British Consulate Office, 4. Custom House.

Source: The author’s elaboration based on the Admiralty Chart of Port Ta Kau (Takow Harbour) in 1885 cited in David Charles Oakley (Gongli Mengzhe 龔李夢哲), *Taiwan di yi lingshiguan: Yangren, Dagou, Yingguo lingshiguan* 台湾第一領事館：洋人、打狗、英國領事館 [The story of the British Consulate at Takow, Formosa], translated by Gaoxing shi zhengfu wenhua ju 高雄市政府文化局 (Kaohsiung: Gaoxiong shi zhengfu wenhua ju, 2013), pp. 178–179.

“Through the kindness of the *Taotai*, a very suitable site for the *General Hospital* was obtained on the sea beach, immediately adjoining the mission compound on the West.”<sup>14</sup> The hospital was also supported by the circuit intendant, and was built at the seaside, near the west church.

After hospitals were built, Qing’s local officials supported them regularly. For example, the David Manson Memorial Hospital had 30 beds for hospitalizing native Chinese people. However once or twice a year, “aborigines” from the Ami Tribe (*Amei zu* 阿美族) came for treatment from Pilam (*Beinan* 卑南) in the eastern part of Taiwan—resulting in a shortage of space. Therefore, Mr. Warren from the British Consulate in Takow, negotiated with Taiwan-fu as follows:

On Mr. Consul WARREN kindly representing these facts to the Taotai last

year, this official, with wonted generosity, was good enough to present \$100 extra, as a nucleus for a building fund. I need scarcely say how sincerely it is hoped that the example set will be speedily followed.<sup>15)</sup>

With this, the David Manson Memorial Hospital succeeded in being provided with \$100 by the circuit intendant.

Dr. Myers, the medical officer in Takow, said: “Even the uncivilized aborigines are not above seeking aid, and only the other day we had quite a crowd of these “savages,” who had obtained passports for the purpose of testing the powers of Western medical skill,”<sup>16)</sup> which shows how the David Manson Memorial Hospital was positioned. Consideration of how maritime customs supported the hospital is required. Investigating the Beijing inspector general of customs’ inquiry, in which the number of donations that the open port hospital required was written, is the starting point. Table 3 is based on 1887 inquiries.

Why did Qing’s local officials support the hospitals and the medical officers? Were medical officers expected to act in return for the support? Next, we verify these questions through medical officers’ activities.

## 2. Activities of Medical Officers

### (1) Climate, illness, and infectious diseases

The duties of medical officers included medical assistance and climatic reports (see Tables 4 and 5). They also created their own meteorological observation systems themselves and worked closely with Qing’s medical officers.<sup>17)</sup> How did they build a system to collect climate data? Next, we explore the aspects that the medical officers’ climate observation focused on and the interest it inspired in the local officials.

Dr. David Manson often discussed the relationship between climate and disease. For instance, concerning wind, he said that “fine sand” carried by the “North-east Monsoon” caused eye problems in Taiwan-fu.<sup>18)</sup> The relationships between wind and disease or infectious disease were also mentioned in other places. For example, in the autumn of 1882, malaria was prevalent in Hoihow. According to the report of Dr. Aldridge, the medical officer:

Malaria is usually expressed by the natives as the wind of the Lis (黎風), from the belief that it has its origin in the districts inhabited by the Li aborigines. In Hoihow there is a temple dedicated to CHIANG CH‘I-LUNG

(江起龍), a General who did good service for the Chinese against the Lis. In the hand of a figure representing one of the General's lictors is a long chain; this chain was last autumn nearly every day borrowed from the temple, and good results were said to accrue from placing it round the necks of sufferers from ague.<sup>19)</sup>

Native Chinese people believed malaria was carried by the wind, which was called the "wind of Lis" (*Li feng* 黎風) and was blown from the residence of Li aborigines (*Li zu* 黎族).

Other than the wind, medical officers paid attention to the relationship between rain and infectious diseases. In the summer of 1883, cholera was prevalent in Foochow. According to the number of coffins, which was counted by a Likin official, "it is calculated that from the 14th of August to the end of September at least 15,000 natives must have died of cholera."<sup>20)</sup> Dr. Rennie, who was a medical officer in Foochow, expressed his views on the prevalence of cholera:

The city and densely populated suburbs are in a fit state to foster any epidemic where filth is an essential. For more than 12 months there has not been at one time a fall of rain (the only scavenger) sufficient to flush the streets with their drains and to cleanse generally the surroundings of native habitations.<sup>21)</sup>

In 1877, cholera that occurred in Amoy infected many people and expanded to other regions in neighboring countries, such as Japan. This report from early July explained the situation in Amoy: "The Chinese reported the mortality at from 10 to 100 daily; but there were no reliable sources from which to obtain an accurate return."<sup>22)</sup> Many deaths were recorded. In Kulangsu Island (*Gulangyu* 鼓浪嶼), the opposite shore of Amoy where many foreigners lived, the Chinese and foreigners, including children, were infected by cholera.<sup>23)</sup> "The Chinese population of the island is rapidly increasing and a new danger is staring us in the face from this source."<sup>24)</sup> The foreigners and Chinese population on the island had increased, consequently, it was called the "village," where many Chinese houses were crowded and many Chinese died.<sup>25)</sup> Cholera also expanded in the areas around Amoy. At Chinchew (Quanzhou 泉州), "the probable mortality at the height of the epidemic was 75 per diem—possibly 100. The total mortality among the Chinese was about 1,600, in a population of 80,000."<sup>26)</sup>

Medical officers recorded concerns about the sanitary conditions in

densely populated Chinese areas, such as Amoy. For instance, 400 people were killed in Hoihow in July 1881 by cholera, which entered from Bangkok by a steamer.<sup>27)</sup> One of the reasons the infection spread was:

This condition of the streets was greatly aggravated at the time of the Yü Lan (All Souls) festival by an increase in the number of fruit and vegetable sellers lining the streets, who, owing to a great influx of strangers into Hoihow, seemed to do a good business; but instead of their taking the trouble to remove the fruit and vegetables as soon as they became unfit to eat, and hence unsaleable, they threw them into the gutters and let them rot there.<sup>28)</sup>

The cholera invasion overlapped the “Yü Lan festival” (*Yulanpen hui* 盂蘭盆會), during which many people flocked into the area, and the streets were in the worst sanitary conditions. Therefore, the prevalence of cholera expanded further.

The officers believed that rain was essential to improve sanitation in this area. For example, Dr. Scott stated that in Swatow in 1880, infectious diseases did not prevail, and both foreigners and Chinese were in good health. He presumed that the amount of rain that fell helped to produce this satisfactory state of affairs, by flushing and cleaning out the drains, carrying away much, if not all, the decomposing vegetables and other matters that accumulate in such quantities.<sup>29)</sup> In his opinion, the heavy rain drained the street, consequently, infectious diseases were not prevalent. In Hoihow in 1882, there was a typhoon that flooded the riverbed and caused extensive damage to the grains. Meanwhile, “The heavy rain that then falls has a very beneficial effect, for the drains are well flushed and some of the street refuse is washed away, while the temperature falls for a short time a few degrees.”<sup>30)</sup> The *Medical Reports* described that the dirty streets washed out and became clean.

The medical officers, who were convinced that illness, infectious disease, and climate were intricately connected, constructed a system to observe meteorology and communicate with the other posts. The attempt also affected transportation and the economy among the medical officers. As an example, the activity at the David Manson Memorial Hospital should be explored.

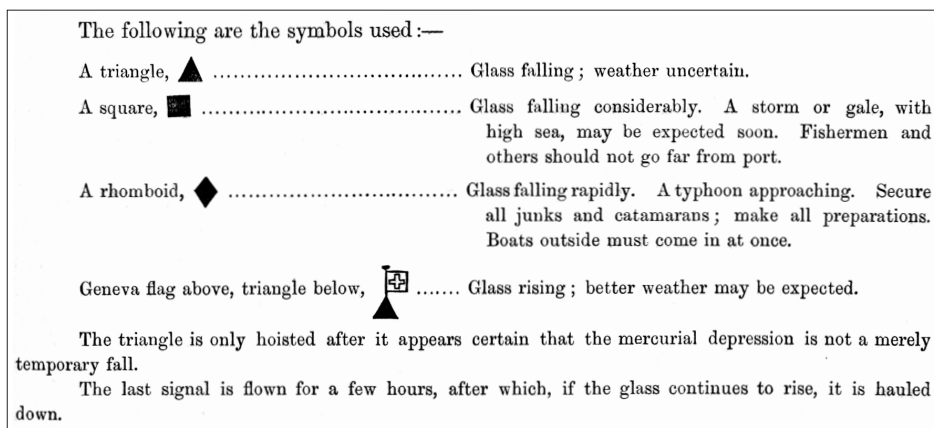
Monsoons and typhoons often took human lives in Takow and Taiwan-fu. The Southwest Monsoon in 1883 was one of the worst; “We were led to attempt, by a simple system of signaling, to modify in some degree the prevailing ignorance”;<sup>31)</sup> thus, the David Manson Memorial Hospital developed a system to transmit disaster information. The signals were



displayed from the hospital flagstaff, and there can be no doubt that this was viewed by the people as an important addition to the benefits already obtained through that institution, from foreigners and their ways.<sup>32)</sup> According to the report, the flagstaff installed at the side of the hospital was used to warn of weather disasters. In the case of the Northeast Monsoon, the hospital used the barometer to collect information:

In the north-east monsoon, as the barometer generally stands high, varying little or nothing during the whole season, it may be said to be practically unreliable as a weather glass; but fortunately, however hard it blows or high the sea may be from the northward, the wind being more or less off shore keeps most of the bars smooth and navigable. No signals, therefore, are, as a rule, shown during the months of January, February and March.<sup>33)</sup>

Dr. Myers of the David Manson Memorial Hospital expressed that “this year the benefits derived have attracted official notice,” and he also added that “the “Board for Foreign Trade and Intercourse” at Taiwan-fu, with the circuit intendant’s approval, desired to start a similar system at Anping, in telegraphic communication with that in use at the David Manson Memorial Hospital.”<sup>34)</sup> The commercial and circuit intendant in Taiwan-fu were interested in this system, and were willing to introduce a similar system to the hospital. The signals corresponding to the flagstaff signs (see Figure 1) were raised in “the



**Figure 1. Meteorological flagstaff signs used at the David Manson Memorial Hospital**

Source: “Dr. W.W. Myers’s Report on the Health of Takow for Two Years Ended 31st March 1884,” *Medical Reports for the Half Year Ended 30th September 1884, No. 28*, p. 47, stored at Toyo Bunko (Call mark: 貴重書 XVIII-F-10).

town in conspicuous places,” “shops and other places where the seafaring population are wont to congregate.”<sup>35)</sup> Therefore, it helped to notify many people of weather disasters.

## (2) War and medical help

In the years after the Taiping Rebellion, there had been many uprisings in the late 19th century by Anti-Qing armed groups and ethnic minorities called “savage” or “aborigine” at that time. To deal with these battles, many armies were massed at the headquarters or barracks, which often caused infectious diseases.<sup>36)</sup> Under these conditions, the Sino-French War (1884–1885) broke out over the sovereignty of Vietnam. The barracks were established in Taiwan, and Pescadores (*Penghu zhudao* 澎湖諸島) became a battlefield, while Takow was blockaded by French forces. Taiwan was pulled into the war.

The medical officers were also involved in the war to prevent the spread of infectious diseases through war damage. In the following, their activities focusing on Taiwan-fu and Takow, are introduced. In 1884, thousands of soldiers were massed in Taiwan-fu for the fight against the French army and the barracks were packed with soldiers.

At Taiwan-fu several thousand troops are massed together, with all imaginable disregard of sanitary requirements as to space or general hygienic regulation. The spring diarrhoea set in as usual, and of course the soldiers suffered at once. . . . It quickly spread to the southern districts, and everywhere the death rate rose to an appalling figure.<sup>37)</sup>

The diarrheal disease broke out in the poor sanitary environment and spread into the neighboring areas. Many of the fearful native Chinese set off firecrackers to pray to God to end the fury of the epidemic.

The French fleet continued to seal off Takow and Taiwan-fu for a half-year. The David Manson Memorial Hospital assisted in treating soldiers under the blockade. From 1884 to 1885, about three-quarters of the more than 4,000 patients that passed through the hospital were soldiers.<sup>38)</sup> Dr. Myers observed that the barracks needed to be kept clean.

Besides the large amount of aid given to the soldiers attending the hospital, a good deal of camp visiting was accomplished, and advice was given as to the laying out of latrines, and other sanitary precautions for the good of the encampment.<sup>39)</sup>

Dr. Myers suggested several improvements, especially the installation of temporary toilets, to improve the sanitary situation at the barracks. As the David Manson Memorial Hospital expected the spread of war, in which "splints, bandages and other appliances were ready, and stations out of fire selected for first assistance to the wounded, as well as preparations made for establishing a more permanent hospital in the rear,"<sup>40)</sup> they prepared sanitary supplies and treatment facilities in the rearguard.

Although some people were injured under the French fleet blockade, such as "one of an unfortunate cargo-boatman, wounded by a fragment of a shell. There was much comminution of bone, and injury to the nerves,"<sup>41)</sup> there was no direct fire damage in Takow. However, in Taiwan-fu, they were engaged in treatment for the troops of Liu Ao, who had withdrawn from Pescadores.<sup>42)</sup>

After the end of the French blockade:

His Excellency the Taot'ai, besides giving an extra donation of \$100 to each hospital, sent a lot of medicines and surgical appliances, which seemed to have been hoarded in his yamên.<sup>43)</sup>

Liu Ao also promised that he would give them \$100, and donate medical supplies stored in the office (*yamen* 衙門). Related to this blockade, the medical officers referred to the activities of Chinese charities called "public dispensaries" (*shantang* 善堂) and Chinese physicians as follows:

In all this the dispenser and other Chinese professed themselves most willing to take part, and I believe that they would not have been found wanting. Happily, however, we scarcely heard a hostile gun fired; and but for our isolation from the outer world we might have been anywhere but on the scene of military operations.<sup>44)</sup>

It can be seen that the medical officers had doubted the *shantang*'s efficacy. This suspicion has been shared by other foreign physicians. For example, the Swatow Mission Hospital reported a negative opinion and rivalry about a *shantang* called *Tongji yiju* 同濟醫局 established by "General Fang," namely Fang Yao 方耀 (1834–1891) in 1882.

In autumn a public dispensary was opened in Swatow by General Fang, and placed under the care of two native doctors from the Tung Wah

Hospital [or Tung'hwa Hospital, *Donghua yiyuan* 東華医院] in Hongkong. We understand that the native merchants have undertaken the support of the institution, and it is reported that a hospital for the accommodation of in-patients will by and by be built. So far as we can learn, only native drugs and appliances are used; and it is interesting to know that the moral well-being of the patients has not been lost sight of. The "Sacred Edict," it is said, is read daily to the patients while they are being attended to by the physician and surgeon in charge. This feature looks rather like a set off to the preaching of the Gospel in the establishment under our care. The presence of this dispensary, however, has tended to increase rather than decrease the number of our patients; at all events the work during the last two months of the year was heavier than in former years at the same time. This is not the first attempt of the kind that has been made, for in former years public dispensaries were opened in two of the large cities in this region though only for a short time. We are quite prepared to welcome any effort put forth by the Chinese themselves to alleviate the vast amount of disease and suffering for which so little is done.<sup>45)</sup>

According to this report, *shantang* was supported by the local society to manage the institution. The management structures were common to *shantang* and foreign hospitals. Recognizing *shantang* as a "rival," the foreign hospitals expressed critical opinions against it.

Qing's local officials, such as the circuit intendant, expected medical officers and their hospitals to medically support and provide information to maintain or develop cities. The important point of the former was the prevention of illness and infectious diseases such as cholera or other prevalent diseases in barracks. The latter was to forecast illness, infectious diseases, and maintain traffic on commercial roads. The background of prevalent infectious diseases was the rapid growth of the population in areas of customs installations. For example, at Kulangsu Island in Amoy, there was concern about the rapidly growing Chinese population. The population increase led to the development of the city. Conversely, urban development could not keep up with the speed. Consequently, the worsening sanitary conditions created fertile grounds for the prevalence of infectious diseases in Foochow or Hoihow. With the activities of the medical officers, Qing's local officials were able to keep developing and maintaining the cities. In return, it can be assumed that the medical officers received significant support from the local government officials for their activities, including the operation of hospitals.

## Conclusion

The medical officers who served in the Chinese Maritime Customs as well as the foreign physicians of the Presbyterian Church, ran their hospitals as self-operational and provided Chinese and aboriginal people with the benefits of Western medicine as a symbol of Western civilization. However, they required the support of Qing’s local officials and the native Chinese for hospital operations. At the same time, the local officials also required their organization and techniques for the development and maintenance of cities where there was a noticeable increase in population. In other words, if the medical officers and foreign physicians ignored the wishes of the local officials, it would have been difficult to provide the benefits of Western medicine to the Chinese and aboriginal people.<sup>46)</sup>

The medical officers and foreign physicians criticized Chinese physicians who they described as being in the same profession. Their evaluation of *shantang* illustrates the activities of the Chinese public dispensaries and, at the same time, implies their concerns about the native competitors. Again, it was important for the activities of the medical officers and the operation of the hospital to secure donations from the local officials and native Chinese.

How, then, did the local officials recognize the hospital? In the 1903 famine of Guangxi provinces, Cen Chunxuan 岑春煊 (1861–1933), who was the governor-general of the Liang Kuang provinces (*Liangguang zongdu* 兩廣總督), recounted the efforts of the church and *shantang*.<sup>47)</sup> Therefore, the local officials recognized both foreign hospitals and *shantang* as similar organizations. Additionally, according to reports from the Swatow Mission Hospital, foreign physicians assumed the similarity of both organizations, the church hospitals, and *shantang*.

The medical officers were important for maintaining and developing cities in local society in China. The medical officers also required local support and competed with Chinese physicians and *shantang*. Because of such cooperation and competition, it was conceivable to accelerate the introduction of Western medicine into East Asia.

Although I did not focus on the issue in this article, was there collaboration or competition between the Customs Services, the Church, Qing’s local officials, and local society (including *shantang*)? For example, in 1876, smallpox prevailed, and many died in Hoihow. Thereafter, local society was vaccinated by the vaccinator of *Donghua yiyuan* in Hong Kong against the prevalent infection. At the same time, vaccinators were sent to each place in Guangdong by the governor-general of Liang Kuang, Zhang Shusheng 張樹

声 (1824–1884). Consequently, competition occurred.<sup>48)</sup> I think organizing the infections into a chronological table would help clarify this issue. When creating the chronological table, it will be necessary to pay attention to the viewpoints and tendencies between the foreign officials (such as the Customs Services and the Church) and the Chinese (such as Qing officials and local society). The *Medical Reports*, the records of church hospitals, and management choreography in China (*difang zhi* 地方志) must be used to support the chronological table.

### Notes

- \* This paper is based on my two presentations: “A Study of Disease Control by Chinese Maritime Customs in Fujian Province” at the Fifth Biennial Conference of East Asian Environmental History (National Cheng Kung University, Tainan, Taiwan, October 26, 2019); “Activity of Medical Officers to the Chinese Maritime Customs Service in East Asia with a Focus on *Medical Reports*” at the Sixth Biennial Conference of East Asian Environmental History (Kyoto University, Kyoto, Japan, September 10, 2021, online).
- 1) The references below refer to the medical officers. Wang Peng 王鵬 and Yang Xiangyin 楊祥銀, “Haiguan yiguan yu xiyi dong jian: Yi Yichang *Haiguan yibao* (1880–1928) wei zhongxin” 海關醫官與西醫東漸：以宜昌《海關醫報》(1880–1928) 為中心 [Medical officers and Western medicines spreading eastward: Focusing on *Medical Reports* of Yichang in 1880–1928], *Jiangnan luntan* 江漢論壇 [Jiangnan Tribune], 2018, no. 2, pp. 123–126; Zhan Qinghua 詹慶華, “Zhongguo jindai haiguan yiyuan yu xiyi zaihua chuanbo chutan: Yi Zhongguo jiu haiguan chubanwu wei shijiao” 中國近代海關醫員與西醫在華傳播初探：以中國舊海關出版物為視角 [Exploratory research of medical officers and Western medicine spreading in modern China: From the perspective of Chinese Maritime Customs publications], *Shanghai haiguan xueyuan xuebao* 上海海關學院學報 [Journal of Customs and Trade], 2012, no. 2, pp. 9–14, 18 and no. 3, pp. 1–6.
  - 2) The references below refer to the research of disasters using *Medical Reports*. Kerrie L. Macpherson, *A Wilderness of Marshes: The Origins of Public Health in Shanghai, 1843–1893* (Hong Kong: Oxford University Press, 1987); Dai Wenfeng 戴文鋒, “*Haiguan yibao* yu Qingmo Taiwan kaigang diqu de jibing” 《海關醫報》與清末台灣開港地區的疾病 [The *Medical Reports* and the disease in the treaty port areas in Taiwan in late Qing], *Si yu yan* 思與言 [Thought and Words: Journal of the Humanities and Social Science], vol. 33, no. 2 (1995), pp. 157–213; Wang Shaoyang 王少陽 and Yang Xiangyin, “Wanqing Zhejiang tongshang kouan de jibing tongji yu fenxi: Yi *Haiguan yibao* wei li” 晚清浙江通商口岸的疾病統計與分析：以《海關醫報》為例 [Statistics and analysis of diseases in trade ports of Zhejiang in late Qing period: Focusing on the *Medical Reports*], *Zhejiang dang'an* 浙江檔案 [Zhejiang Archives], 2012, no. 8, pp. 48–51; Yang Xiangyin and Wang Shaoyang, “*Haiguan yibao* yu jindai Wenzhou de jibing” 《海關醫報》與近代溫州的疾病 [Medical Reports and the diseases in modern Wenzhou], *Zhejiang xuekan* 浙江學刊 [Zhejiang Academic Journal], 2012, no. 4, pp. 67–72.

- 3) The reference below refers to the research of C.A. Gordon. Gao Xi 高晞, “Zhanshi Zhongguo shehui guancha de yige xin shijiao: Ping Gedeng de *Yige Yingguo junyi de Zhongguo guancha shilu*” 戰時中国社会觀察的一個新視角：評戈登的《一個英國軍醫的中国觀察實錄》 [A new perspective on wartime Chinese society: Review of *China from a Medical Point of View in 1860 to 1861, to Which Is Added a Charter of Nagasaki as a Sanitarium* by Charles Alexander Gordon], *Guoji hanxue* 國際漢學 [International Sinology], 2020, no. 1, pp. 166–173.
- 4) C.A. Gordon, ed., *An Epitome of the Reports of the Medical Officers to the Chinese Imperial Maritime Customs Service, from 1871 to 1882* (London: Ballière, Tindall, and Cox, 1884), p. xv.
- 5) Takahashi Kōsuke 高橋孝助, *Kikin to kyūsai no shakaishi* 飢饉と救済の社会史 [Social history of famine and relief in 19th century China: The great famine in 1877–78] (Tokyo: Aoki shoten 青木書店, 2006); Hao Ping 郝平, *Dingwu qihuang: Guangxu chunian Shanxi zaihuang yu jiuji yanjiu* 丁戊奇荒：光緒初年山西災荒与救済研究 [The incredible famine of 1877–78: Research on the early Guangxu-period Shanxi famine and famine relief] (Beijing: Beijing daxue chubanshe 北京大學出版社, 2012).
- 6) Douglas M. Haynes, *Imperial Medicine: Patrick Manson and the Conquest of Tropical Disease* (Philadelphia: University of Pennsylvania Press, 2001); Li Shangren 李尚仁, *Diguo de yishi: Wanbade yu Yingguo redai yixue de chuangjian* 帝国的醫師：万巴德与英国熱帶医学的創建 [A physician to empire: Patrick Manson and the founding of British tropical medicine] (Taipei: Yunchen wenhua 允晨文化, 2012); Gao Xi, “Dang Meiweiling yudao Li Hongzhang: Xiyi jiang xing yu Zhongguo? You wanqing sanchang yixue kaoshi yinfa de taolun yu sikao” 当梅威令遇到李鴻章：西醫將行於中国？—由晚清三場医学考試引發的討論与思考 [When Myers met Li Hung Chang, Western medicine would prevail in China? Three medical examinations in the late-Qing dynasty], *Yiliao shehuishi yanjiu* 医療社会史研究 [Journal of the Social History of Medicine and Health], vol. 4, no. 2 (2019), pp. 13–56, 301–302.
- 7) The references below refer to the research on the connection between the medical officers and the church hospitals. Li Wenwei 李文巍, “Wanqing Min haiguan yiyuan yu Fuzhou jiaohui yiyuan” 晚清閩海關醫員与福州教会医院 [Medical officers of Fuzhou custom house and Fuzhou church hospital in the late Qing dynasty], *Heilongjiang shi zhi* 黑龍江史志 [Historical records of Heilongjiang], 2013, no. 21, pp. 324–325; Su Fangyu 蘇芳玉, “Qingji Taiwan diqu jibing de zhiliao yu guancha: Waiguo haiguan yiyuan de guandian” 清季台湾地区疾病的治療与觀察：外国海關醫員的觀點 [Treatment and observations of diseases in Taiwan in Qing dynasty: From the viewpoint of medical staffs of the customs], *Zhongyang daxue renwen xuebao* 中央大学人文學報 [National Central University Journal of Humanities], vol. 40 (2009), pp. 1–54.
- 8) “Dr. W.W. Myers’s Report on the Health of Takow for the Two Years Ended 31st March 1881,” *Medical Reports for the Half-Year Ended 31st March 1881. No. 21*, p. 60.
- 9) *Ibid.*, pp. 59–60.
- 10) Lian Heng 連橫, *Taiwan tongshi* 台湾通史 [General history of Taiwan], juan 卷 33 “Liezhuàn 列傳 [Biographies], part 5” (Taipei: Taiwan tongshi she 台湾通史社, 1921), pp. 1017–1031.
- 11) Cen Yuying 岑毓英 (1829–1889), the grand coordinator of Fujian, inspected Taiwan in 1881 and planned to build the bridge across the Dajia River (*Dajiayi* 大甲溪), which

- should be the key of transportation between the north and south of Taiwan. See Lian, *Taiwan tongshi*, juan 19 “Youchuan zhi 郵伝志” [Record of post and communications], pp. 592–593.
- 12) “Reports of the Medical Missionary Hospital at Swatow, in Connection with the Church of England, Index the Care of William Gauld, A.M., M.D. for 1877” in *Shantou fuyin yiyuan niandu baogao bianyi (1866–1948)* 汕頭福音醫院年度報告編訊 (1866–1948) [Annual reports of the Medical Missionary Hospital at Swatow, 1866–1948: Facsimiles and translated texts], edited by Zhu Wenping 朱文平, vol. 1 (Guangzhou: Jinan daxue chubanshe 暨南大学出版社, 2016), p. 27.
  - 13) “Dr. W.W. Myers’s Report, Takow 1881,” p. 60.
  - 14) “Reports of the Medical Missionary Hospital at Swatow 1877,” p. 26.
  - 15) “Dr. W.W. Myers’s Report on the Health of Takow for Two Years Ended 31st March 1884,” *Medical Reports for the Half-Year Ended 30th September 1884. No. 28*, p. 31.
  - 16) “Dr. W.W. Myers’s Report, Takow 1881,” p. 60.
  - 17) The study on climatic change using the *Medical Reports* is described below: He Xideng 何溪澄 and Feng Yingzhu 馮穎竹, “Haiguan yibao yu 1877–1894 nian Guangzhou qixiang guance jilu” 《海關醫報》与1877–1894年廣州氣象觀測記錄 [Medical Reports and records of meteorological observation in Guangzhou from 1877 to 1894], *Qixiang keji jinzhan* 氣象科技進展 [Advances in Meteorological Science and Technology], vol. 7, no. 3 (2017), pp. 71–73, 80; Jia Hongwei 佳宏偉, “Shijiu shiji houqi Xiamen gangbu de jibing yu yiliao shehui: Ji yu Haiguan yibao de fenxi” 十九世紀后期廈門港埠的疾病与醫療社会：基於《海關醫報》的分析 [Diseases and medical society in the late 19th century in Xiamen: Based on analysis of the Customs *Medical Reports*], *Zhongguo shehui lishi lunping* 中国社会歷史論評 [Chinese Social History Review], vol. 14 (2013), pp. 103–131; Jia Hongwei, “Qingmo Yunnan shangbu de qihou huanjing, jibing yu yiliao weisheng: Ji yu Haiguan yibao de fenxi” 清末雲南商埠的氣候環境、疾病与醫療衛生：基於《海關醫報》的分析 [Climatic environment, diseases, and medical hygiene in the late Qing dynasty in Yunnan: Based on the analysis of the Customs *Medical Reports*], *Jinan xuebao (zhexue shehui kexue ban)* 暨南學報 (哲學社会科学版) [Jinan Journal (Philosophy and Social Sciences)], 2015, no. 6, pp. 117–128.
  - 18) “Dr. David Manson’s Report on the Health of Takow and Taiwan-foo for the Half-Year Ended 30th September 1871,” *Medical Reports for the Half-Year Ended 30th September 1871. No. 2*, p. 68.
  - 19) “Dr. E.A. Aldridge’s Report on the Health of Hoihow for the Year Ended 31st March 1883,” *Medical Reports for the Half-Year Ended 31st March 1883. No. 25*, p. 13.
  - 20) “Dr. T. Rennie’s Report on the Health of Foochow for the Half-Year Ended 30th September 1883,” *Medical Reports for the Half-Year Ended 30th September 1883. No. 26*, p. 41.
  - 21) *Ibid.*, p. 40.
  - 22) “Dr. David Manson’s Report on the Health of Amoy for the Half-Year Ended 30th September 1877,” *Medical Reports for the Half-Year Ended 30th September 1877. No. 14*, p. 28.
  - 23) *Ibid.*, p. 29.
  - 24) *Ibid.*, p. 33.
  - 25) *Ibid.*, p. 32.



- 26) Ibid., p. 29.
- 27) “Dr. E.A. Aldridge’s Report on the Health of Hoihow for the Half-Year Ended 30th September 1881,” *Medical Reports for the Half-Year Ended 30th September 1881. No. 22*, p. 8.
- 28) Ibid., p. 7.
- 29) “Dr. E.I. Scott’s Report on the Health of Swatow for the Half-Year Ended 30th September 1880,” *Medical Reports for the Half-Year Ended 30th September 1880. No. 20*, p. 24.
- 30) “Dr. E.A. Aldridge’s Report, Hoihow 1883,” p. 11.
- 31) “Dr. W.W. Myers’s Report, Takow 1884,” p. 47.
- 32) Ibid.
- 33) Ibid.
- 34) Ibid.
- 35) Ibid.
- 36) “Dr. E.A. Aldridge’s Report, Hoihow 1883,” p. 13.
- 37) “Dr. W.W. Myers’s Report, Takow 1884,” p. 28.
- 38) “Dr. W.W. Myers’s Report on the Health of Takow and Taiwan-fu for the Two and a Half-Year Ended 30th September 1886,” *Medical Reports for the Half-Year Ended 30th September 1886. No. 32*, p. 44.
- 39) Ibid.
- 40) Ibid., p. 45.
- 41) Ibid., p. 44.
- 42) Ibid., p. 45.
- 43) Ibid.
- 44) Ibid.
- 45) “Reports of the Medical Missionary Hospital at Swatow, in Connection with the Church of England, Index the Care of Alexander Lyall, M.B., C.M. for 1882” in *Shantou fuyin yiyuan niandu baogao bianyi*, vol. 1, p. 73.
- 46) “Reports of the Medical Missionary Hospital at Swatow, in Connection with the Church of England, Index the Care of Alexander Lyall, M.B., C.M. for 1892 and 1893,” in *Shantou fuyin yiyuan niandu baogao bianyi*, vol. 1, p. 209.
- 47) Cen Chunxuan, *Cen Chunxuan ji* 岑春煊集 [Collected works of Cen Chunxuan], vol. 3 (Guangzhou: Guangdong renmin chubanshe 廣東人民出版社, 2019), pp. 146–147. Cen Chunxuan is the son of Cen Yuying (see note 11).
- 48) “Dr. E.A. Aldridge’s Report on the Health of Hoihow for the Half-Year Ended 31st March 1882,” *Medical Reports for the Half-Year Ended 31st March 1882. No. 23*, p. 31.

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**Table 1. List of cases of disease occurring among the floating population from 1st April to 30th September in 1873, Amoy**

Disease	Case	Number of cases
Miasmatic diseases	Intermittent fever	15
	Smallpox	2
Ethetic diseases	Gonorrhoea	35
	Primary venereal sore	13
	Constitutional syphilis	26
	Bubo	6
Diseases of the digestive organs	Diarrhoea	46
	Dysentery	2
	Dyspepsia	11
	Piles	6
	Lumbricus	3
	Tapeworm	4
	Hepatitis	2
Diseases of circulatory and respiratory organs	Phthisis	2
	Bronchitis	3
	Angina pectoris	1
Diathetic diseases	Rheumatism	10
	Acute rheumatism	1
	Gout	1
Diseases of the generative organs	Stricture of the urethra	3
	Spermatorrhoea	1
Diseases of the integuments	Boil	10
	Ulcer of leg	1
	Itch	2
	Ringworm	2
	Abscess	3
	Whitlow	3
Diseases of the eye	Conjunctivitis	2
	Pterygium	2
Accidents	Incised wound	3
	Sprain	3
	Compound fracture of tibia	1
	Fracture of the skull	1
	Fracture of the spine	1
	Foreign body in the bladder	1
Other diseases	Alcoholism	2
	Synovitis	1
	Cystitis	1
	Neuralgia	2
	Otitis	2
	Epilepsy	1

Source: "The Drs. Manson's Report on the Health of Amoy for the Half Year Ended 30th September 1873," *Medical Reports for the Half-Year Ended 30th September 1873. No. 6*, pp. 20–21.

**Table 2. List of the diseases of natives treated during the past six months from April to September in 1873, Takow**

Disease	Case		Number of cases						
			Apr.	May	June	July	Aug.	Sep.	Total
A. General diseases	Intermittent fever	Quotidian	10	11	35	40	20	15	131
		Tertian	8	12	10	9	6	5	50
		Quartan	12	10	6	13	23	12	76
		Irregular		1	1	1			3
	Remittent fever	2	2		2	1		7	
	Erysipelas								2
B. Constitutional diseases	Acute rheumatism								9
	Gonorrhoeal rheumatism								6
	Chronic rheumatism								39
	Muscular rheumatism								3
	Syphilis	a. Primary							23
		b. Secondary							55
		c. Hereditary							6
	Cancer								2
	Lupus								3
	True leprosy								3
	Scrofula								3
	Diabetes mellitus								1
Anaemia								68	
General dropsy								3	
C. Local diseases	Diseases of nervous system	Paralysis: Hemiplegia							4
		Paralysis: Paraplegia							2
		Paralysis: Locomotor ataxia							1
		Facial paralysis							1
		Hysteria							5
		Neuralgia							3
		Mania							1
	Diseases of the eye	Ophthalmia							27
		Purulent ophthalmia							7
		Gonorrhoeal ophthalmia							8
		Chronic ophthalmia							18
		Pterygium							9
		Keratitis							3
		Onyx							6
		Ulcer of cornea							20
		Opacity of cornea							28
		Staphyloma							6
		Iritis							7
		Amaurosis							3

	Impaired vision	7
	Cataract	11
	Glaucoma	2
	Inflammation of lachrymal sac	3
	Entropium	14
	Trichiasis	17
Diseases of the ear	Otorrhoea	4
Diseases of the nose	Polypus	3
Diseases of the circulatory system	Dropsy	5
	Valve diseases	6
	Varicose veins	5
Diseases of the respiratory system	Laryngitis, acute	2
	Bronchitis, acute	8
	Bronchitis, chronic	16
	Phthisis, chronic	20
Diseases of the digestive system	Canorum oris	1
	Cariou teeth	21
	Gum boil	4
	Dyspepsia	27
	Dysentery	8
	Melaena	8
	Hernia	4
	Parasitic disease	10
	Constipation	3
	Fistula in ano	4
	Haemorrhoids	8
	Stricture of rectum	1
	Ague cake	41
	Ascites	4
Tabes mesenterica	6	
Diseases of the urinary system	Bright's disease	5
	Haematuria	3
	Gonorrhoea	8
	Phimosis	2
	Stricture of the urethra	4
	Urinary fistula	3
Diseases of the generative organs:- Male	Spermatorrheae	2
	Sloughing of the scrotum	1

Diseases of the generative organs:- Female	Leucorrhoea	4
	Prolapsus uteri	2
	Amenorrhoea	4
Diseases of the organs of locomotion	Periostitis	3
	Caries	2
	Necrosis	4
	Chronic synovitis	3
	Muscular abscesses	4
Diseases of the cutaneous system	Erythema	4
	Psoriasis	4
	Pemphigus	2
	Eczema	4
	Acne	3
	Leucoderma	2
	Ulcer	48
	Boil	6
	Whitlow	7
	Fatty tumour	3
	Condyloma	4
	Cheloid	3
Parasitic diseases of the skin	Tinea tonsurans	25
	Tinea favosa	4
	Scabies	44
Poisons	Opium	3
Injuries	Burns	5
	Concussion of the brain	2
	Concussion of the chest	17
	Gunshot injury of eye	1
	Contused hand	1
	Incised wounds	9
	Injuries of vessels	6

Source: "The Dr. Rennie's Report on the Health of Takow and Taiwan-fu for the Half Year Ended 30th September 1873," *Medical Reports for the Half-Year Ended 30th September 1873*. No. 6, pp. 39-40.

**Table 3. Tabular précis of port replies to Inspector General's inquiries concerning hospitals**

Port	Name of hospital recommended for subscription	Amount of annual subscription recommended	Reason for recommending subscription
Newchwang			
Tientsin	Dr. Mackenzie's Hospital ( <i>Shiyi yuan</i> 施医院)	<i>Hk. Tls</i> 100	Indispensable to the Tientsin community.
	The Hôpital Général ( <i>Yangbing yuan</i> 養病院)	<i>Hk. Tls</i> 200	
Chefoo	Chefoo Native Hospital	\$360	The Hospital was established by Superintendent FANG to meet a want. It is gratuitously attended by the Customs Medical Officer, has been adopted by the community, is a most useful institution, and a liberal subscription from the Customs is necessary to give it permanency and encourage its supporters.
Ichang			
Hankow	The Catholic Mission Hospital	<i>Hk. Tls</i> 200	When any Customs employé requires treatment, it is to this Hospital he goes. There is a ward for Foreigners, and there is more work done here and it is better done than elsewhere.
	The London Mission Hospital	<i>Hk. Tls</i> 100	The work done by this Hospital is not so highly appreciated.
	A New Hospital attached to the Wesleyan Mission	<i>Hk. Tls</i> 100	Work done by this Hospital will be done conscientiously and well.
Kiukiang	Roman Catholic Hospital ( <i>Tianzhu tang</i> 天主堂)	<i>Hk. Tls</i> 100	Excellent work is being done by the institution, of which large numbers of Chinese daily avail themselves.
Wuhu			
Chinkiang			
Shanghai	Chinese Hospital, 5, Shantung Road	<i>S'hai Tls</i> 20	Both Hospitals are conveniently situated should immediate medical aid be required.
	English Church Missionary Society's Hospital	<i>S'hai Tls</i> 20 (Note:- It is not stated whether monthly or annually.)	
Ningpo	Hôpital St. Joseph	<i>Hk. Tls</i> 100	Both Hospitals are charitable institutions and deserve every possible additional support. Customs subscription would enable them to supply better accommodation for patients.
	English Church Missionary Society's Hospital	<i>Hk. Tls</i> 100	

Wenchow			
Foochow	The Foochow Native Hospital	\$200	It is much appreciated by Native officials, who contribute liberally, and up to 1875, \$200 per annum was subscribed by the Customs.
	The Seamen's Hospital, at Pagoda Anchorage	\$100	There have been occasions when the Pagoda staff have availed themselves of its accommodation, and they might occur again.
Tamsui	Mackay Mission Hospital	<i>Hk.Tls</i> 25	It is only place available for medical treatment.
Takow	David Manson Memorial Hospital	\$50	It is useful to members of the Customs Staff, and is entirely dependent, it is supposed, on local support. \$50 a year has been paid from public funds since 1871.
Amoy	Amoy Chinese Hospital	<i>Hk.Tls</i> 100	It is secular institution and is exclusively in the medical charge of Drs. Ringer and Mcdougall, who are the doctors of the port and the Customs Medical Officers. <i>Hk.Tls</i> 100 is the sum annually contributed to it by cash of the larger Foreign firms.
Swatow	Scotch Presbyterian Mission Hospital	\$250	It is a great charity, especially in behalf of the Chinese Staff, and the doctor in charge constantly renders services to the European Staff, who have every faith in his skill.
Canton	Dr. Kerr's Hospital	<i>Hk.Tls</i> 75	It is the only Hospital in Canton, and if the Customs subscribed to it, any of the Chinese Staff who needed special medical treatment could then be sent there.
Kowloon			
Kiungchow			
Pakhoi	The Chinese Hospital ( <i>Puren yiyuan</i> 普仁医院)	<i>Hk.Tls</i> 100	It is an understanding eminently calculated to do good and promote friendly feelings between Europeans and Chinese.

Source: Zhonghua renmin gongheguo haiguan zongshu bangongting 中華人民共和國海關總署辦公庁 and Zhongguo haiguan xuehui 中國海關學會, eds., *Haiguan zongshu dang'anguan cang weikan Zhongguo jiuhaiguan chubanshe (1860–1949)* 海關總署檔案館藏未刊中國舊海關出版物 (1860–1949) [Unpublished Chinese Maritime Customs historical materials (1860–1949) in the Archives of General Administration of Customs of China], vol. 28, *Guanshu xilie* 官署系列 [Office series] (Beijing: Zhongguo haiguan chubanshe 中國海關出版社, 2018), pp. 307–337.

**Table 4. Abstract of meteorological observations taken by the Customs, Takow, for the twelve months ended 31st March 1882**

Date	Barometer		Thermometers				Self-registering thermometers		Rain in 24 hrs.	Wind force as per naval scale		Number of days in each month on which no rain or snow fell
			Dry Bulb		Wet Bulb		Max in Air	Min in Air		9:30 A.M.	3:30 P.M.	
	9:30 A.M.	3:30 P.M.	9:30 A.M.	3:30 P.M.	9:30 A.M.	3:30 P.M.	9:30 A.M.	3:30 P.M.				
	Inch	Inch	°F	°F	°F	°F	°F	°F	Inch			
1881												
April												
Max	30.19	30.12	86	89	80	81	87	78	0.41	5	7	
Mean	30.10	30.02	78	81	74	75	82	73	0.017	2.34	3.43	26
Min	30.02	29.92	72	72	65	66	72	65		1	1	
May												
Max	30.24	30.14	88	87	87	83	88	79	1.10	5	7	
Mean	30.04	29.97	84	84	80	80	85	76.5	0.54	2.9	5	26
Min	29.91	29.84	78	73	74	70	80	68		2	2	
June												
Max	30.06	30.95	92	92	87	84	92	82	3	7	7	
Mean	30.01	29.95	86	85	82	81	87	78	0.27	3	4.6	21
Min	29.86	29.80	77	77	74	75	80	74				
July												
Max	30.03	30.01	92	90	85	89	93	83	3.08	10	8	
Mean	29.89	29.85	81	80	77	82	84	77	0.7	4	4	13
Min	29.74	29.58	77	74	76	76	82	75		2	3	
August												
Max	30.02	29.94	85	86	84	83	89	82	10	10	10	
Mean	29.84	29.80	82	79	78	76	80	79	1.84	4	5	11
Min	29.60	29.03	76	77	73	75	79	73		2	3	
September												
Max	30.02	29.95	84	86	83	85	90	90	6	9	8	
Mean	29.90	29.84	83	83	77	79	87	77	1.5	3	4	23
Min	29.25	29.10	79	79	77	76	81	72		1	2	
October												
Max	30.15	30.07	85	84	80	80	89	79	0.34	6	7	
Mean	29.94	29.89	80	84	73	76	84	74	0.13	2.9	4.3	22
Min	29.68	29.64	73	74	69	69	75	68		2	2	
November												
Max	30.23	30.15	80	81	75	76	85	77	3	Observations		
Mean	30.13	30.02	73	78	72	73	79	74	0.9	no longer		31
Min	30.02	29.96	72	73	68	71	74	70		taken.		



December											
Max	30.32	30.26	78	80	76	77	80	75	1.10	Observations no longer taken.	30
Mean	30.14	30.08	73	74	73	75	76	68	1.10		
Min	30.07	30.00	68	69	65	67	70	62	1.10		
1882											
January											
Max	30.33	30.25	75	77	73	74	79	75	0.08	Observations no longer taken.	29
Mean	30.22	30.19	71	72	68	69	72.8	67.4	0.08		
Min	30.08	30.04	64	64	61	62	65	60			
February											
Max	30.32	30.24	75	74	72	73	79	70	0.35	Observations no longer taken.	29
Mean	30.18	30.10	68.2	69.1	66.2	66.6	71.93	61.6	0.09		
Min	29.93	29.85	61	62	59	59	60	48			
March											
Max	30.30	30.15	76	78	74	75	83	73	0.65	Observa- tions no longer taken.	29
Mean	30.15	30.07	69.4	70.6	67.1	68.3	72.64	61.02	0.19		
Min	30.02	29.97	66	67	63	64	65	50			

Source: "Dr. W.W. Myers's Report on the Health of Takow and Taiwan-fu (Anping) for the Years Ended 31st March 1882," *Medical Reports for the Half-Year Ended 31st March 1882. No. 23*, p. 29.

**Table 5. Abstract of Takow Customs meteorological register,  
from 1st April 1882 to 31st March 1884**

Date	Barometer		Thermometers				Self-registering thermometers		Rain in 24 hrs.	Wind force as per naval scale		Number of days in each month on which no rain or snow fell
			Wet bulb		Dry bulb		Max in Air	Min in Air		9:30 A.M.	3:30 P.M.	
	9:30 A.M.	3:30 P.M.	9:30 A.M.	3:30 P.M.	9:30 A.M.	3:30 P.M.	9:30 A.M.	3:30 P.M.				
	Inch	Inch	°F	°F	°F	°F	°F	°F	Inch			
1882												
April												
Max	30.24	30.15	79	80	80	81	85	77	1.10	No force of wind taken.		24
Mean	30.05	29.94	75	76	77	77	80	70	0.35			
Min	29.95	29.90	71	72	74	74	73	61	0.03			
May												
Max	30.09	30.04	82	83	83	85	89	77	1.60	No force of wind taken.		12
Mean	29.96	29.91	79	80	80	81	84	74	0.56			
Min	29.82	29.79	75	76	76	77	74	67	0.02			
June												
Max	30.06	30.02	83	84	85	86	89	80	2.15	No force of wind taken.		19
Mean	29.94	29.89	81	82	83	84	86	78	0.66			
Min	29.83	29.80	79	80	81	82	83	75	0.05			
July												
Max	30.07	30.03	85	85	87	87	89	82	1.25	No force of wind taken.		21
Mean	29.90	29.86	83	84	85	85	87	79	0.35			
Min	29.51	29.49	82	82	83	83	85	77	0.03			
August												
Max	30.08	30.03	82	82	83	84	86	80	9.00	No force of wind taken.		12
Mean	29.85	29.83	79	80	81	81	83	76	2.11			
Min	29.48	29.50	77	78	79	79	76	72	0.02			
September												
Max	30.08	30.03	87	83	86	86	88	80	0.65	7	8	
Mean	29.96	29.93	81	81	83	84	86	78	0.17	2.1	3	15
Min	29.58	29.48	79	79	81	82	84	76	0.03	1	1	
October												
Max	30.19	30.11	82	82	84	84	86	76	1.25	4	7	
Mean	30.06	29.99	78	78	82	82	84	75	0.78	2	3	28
Min	29.81	29.72	75	76	80	81	82	74	0.16	1	1	
November												
Max	30.30	30.25	77	79	82	83	84	74		4	7	
Mean	30.18	30.13	72	73	76	77	82	69		2.8	4.4	30
Min	30.04	30.05	61	62	65	67	70	56		2		

December												
Max	30.42	30.30	71	73	75	77	79	69		6	7	
Mean	30.19	30.14	65	68	69	71	73	62		3.2	4.5	30
Min	30.00	30.00	53	57	56	61	62	50		2	2	
1883												
January												
Max	30.31	30.30	74	76	76	78	81	70	0.80	5	6	
Mean	30.20	30.18	63	66	66	69	70	60	0.80	2.7	4.2	30
Min	30.08	30.00	54	58	58	60	60	50	0.80	2	2	
February												
Max	30.30	30.29	72	73	74	75	78	70		4	6	
Mean	30.19	30.16	64	66	67	69	71	60		2.5	3.9	28
Min	30.10	30.08	56	58	58	60	61	51		2	3	
March												
Max	30.18	30.14	71	74	74	77	80	68	4.31	4	6	
Mean	30.10	30.07	66	67	68	70	73	63	0.89	2.3	3.6	20
Min	29.92	29.89	53	56	66	61	65	56	0.10	1	1	
April												
Max	30.17	30.16	80	82	83	85	87	79	0.60	5	11	
Mean	30.04	30.03	74.5	76.5	77	80	81	72.5	0.30	2.2	3.1	27
Min	29.82	29.52	68	70	70	74	75	67	0.10	1	1	
May												
Max	30.10	30.09	82	83	85	89	88	80	2.80	4	4	
Mean	30.01	29.99	79	79.5	82	84	84.5	77.5	1.98	1.3	2.1	28
Min	29.82	29.86	74	75	75	78	78	75	1.50	1	1	
June												
Max	30.08	30.03	82	83	85	88	88	80	4.46	8	6	
Mean	29.94	29.92	79	80	81.5	83.5	84.3	77.3	1.28	2.1	3.5	18
Min	29.80	29.82	75	76	77	78	79	74	0.14		2	
July												
Max	30.09	30.06	81	86	85	88	88	80	9.40	6	6	
Mean	29.91	29.87	80	81	83	85.5	85.5	79	1.16	2	3.3	15
Min	29.71	29.70	77	77	78	78	79	75	0.05		1	
August												
Max	30.06	30.02	82	85	84	88	87	82	4.13	5	7	
Mean	29.84	29.82	80	81	82	84	85	79	1.12	2	2.9	15
Min	29.74	29.72	77	78	77	78	80	76	0.90		1	
September												
Max	30.15	30.09	82	83	85	87	87	79	1.46	4	4	
Mean	30.01	29.97	79.3	79.7	82	84.4	85.3	77.5	0.34	1.3	2.7	18
Min	29.82	29.84	77	78	79	80	82	74	0.02		1	

October												
Max	30.24	30.24	80	80	83	85	86	77		3	4	
Mean	30.14	30.09	76	77	79.7	81.6	82	74		1.2	1.8	31
Min	29.96	29.90	72	75	77	80	79	71		1	1	
November												
Max	30.28	30.20	78	79	79	80	81	74	0.08	5	7	
Mean	30.14	30.13	73	74.6	76	77.8	79	70	0.08	2.2	3.3	29
Min	30.09	30.06	67	70	72	73	75	66	0.08	1	1	
December												
Max	30.40	30.38	71	72	74	77	78	68		8	9	
Mean	30.27	30.21	62.3	64.6	66.3	69.7	72.6	62.8		3.5	5	31
Min	30.12	30.10	53	56	58	61	65	51		2	3	
1884												
January												
Max	30.40	30.38	67	70	71	75	76	67		9	8	
Mean	30.28	30.25	62.6	65.5	66.2	70	71.4	61		3	6.3	31
Min	30.14	30.09	55	59	59	63	64	52		1	3	
February												
Max	30.34	30.34	66	73	69	75	75	67	0.90	9	9	
Mean	30.20	30.18	61	64	63.7	67.5	69	59	0.45	4.2	6	26
Min	30.10	29.97	51	54	54	58	65	51	0.16	1	2	
March												
Max	30.27	30.24	73	76	77	79	80	73	0.62	5	7	
Mean	30.13	30.08	67.4	70	70.8	47[sic]	75	61.6	0.22	2.8	4	27
Min	30.04	29.96	63	65	62	65	71	58	0.05	1	2	

Source: "Dr. W.W. Myers's Report on the Health of Takow for Two Years Ended 31st March 1884,"  
*Medical Reports for the Half-Year Ended 30th September 1884. No. 28*, pp. 48–49.