The Cognitive Evolution from “Plague” to “Infectious Disease”

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Abstract

According to the Grand Chinese Dictionary, plague is defined to be an acute infectious disease. The Chinese term “infectious disease” is not what it is commonly thought originated from Japanese. The medical nomenclature shift from the traditional “plague” to the modern “infectious disease” is completed by the medical missionaries, Chinese scholars, and the national authority, each utilising different strategies. It is a history of acceptance concerning the concept of “infectious disease” from academia to national level. The conscious use of infectious disease-related thought and terminology by Chinese officials and doctors when studying infectious disease is a scientific modernization towards the understanding of epidemics. In a sense, this evolution of medical knowledge embodies the modernization of infectious disease in China.

Keywords: Epidemics, infectious disease, modernity, sanitary regulations

The study of epidemics was originally the patent of epidemiology, public health, anthropology, and archaeology. The investigation of epidemic diseases in the history of traditional Chinese medicine (TCM) used to focus on the literature, academics, and schools, while the theory of Wen Bing (温病plague), which is directly related to epidemic diseases, mainly been investigated for the thoughts of doctors and its scholarly history. Influenced by Western historians in the 1980s, Japanese and Taiwanese scholars began to pay close attention to historical epidemics in the study of Chinese history [Note 1]. Among them, research of a Japanese scholar, Lijima (饭岛涉), which is based on the concept of infectious disease, has great influence on the domestic historiography circle. [1] The outbreak of SARS in 2003 triggered the concern of Chinese scholars about the history of disease and public health. Research on malignant infectious diseases such as plague, cholera, leprosy, and schistosomiasis has been carried out [Note 2]. The medical social history, disaster history, environmental history, and population history of China have also been rewritten in the name of “plague” [Note 3]. In the past 20 years, the disease history and medical history research results is fruitful and has become a long-lasting subject which cannot be underestimated by the academic circles. [3] Due to the coronavirus outbreak, epidemic history-related articles are spiking again.

There are many expressions of epidemic in the Chinese traditional literature and artefacts, including “Yi (疫 epidemic)”, “Li (疬plague)”, “Li Ji (疬疫plague)”, “Li Qi (疬气 pestilent qi)”, “Zhang Li (瘴疬miasma disease)”, “Wen Bing (温疫warm/plague disease)”, “Wen Yi (瘟疫epidemic)”, “Han Yi (寒疫cold epidemic)”, “Shi Yi (时疫seasonal epidemic)”, and “Tian Xing (天行climatic epidemic)”. [Note 4] Zhou Hou Fang (《肘后方》Handbook of Prescriptions) states that “Shang Han, seasonal epidemic and warm epidemic are from the same source which have little difference (伤寒，时疫，瘟疫，三名同一种耳，而源本小异)”. Chen Yanzhi (陈延之), a famous doctor in the Eastern Jin Dynasty, contended that there is no difference in the meaning of the various names given to the disease. It is just the difference of common name and scholarly term only. For instance, “Shang Han is a noble term, while TangXi and Wen Yi are folks’ terms, with different names but the same disease”. [4] Doctors in the Song Dynasty had noticed that the phenomenon of the same disease but different Chinese names might cause confusion. “When the ancient and modern disease names are different, search result is often hindered and suspicious irrespective of whether you are performing a slow or an urgent search. If they could not be distinguished, then how the public could differentiate”?[4]

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Lin Fu Shi (林富士), a Taiwanese scholar, believes that the understanding of plague in the Middle Ages is still very vague. The so-called Wen Bing and Yi Li in medical books are often the general terms of epidemic diseases.\[5\]

However, the explanation of Wen Yi in modern Chinese is very simple, i.e. it is a general term for acute epidemic infectious diseases (传染病). The term “Yi Bing” also has the same meaning.\[7\] The so-called “infectious diseases” is a term used to describe transmissible diseases caused by invasion of microorganism.\[9\] Coined by the experimental scientists in the late 19th century, the term is invented to describe a new set of diseases based on the germ theory. Literature review found that such understanding of infection also exist in TCM literature. The Zhu Bing Jie Fa (《诸病捷法》Diagnosis and Treatment of Various Diseases), which was published in the Ming dynasty, uses the word “infectious disease” specifically for leprosy. However, a search in all databases suggested that there is only one above example linking ‘Wen Yi’ to infectious disease. Thus, it cannot be used to confirm that such concept exists in traditional Chinese medicine. In TCM, the term “infectious disease” is not a conventional term. However, there is no shortage of references such as “transmissible symptoms” in the traditional medical literature. Some scholars have pointed out that the “Wen”, “Yi” and “Zhang” in the ancient literature are not necessarily explosive infectious diseases. They could also be nutritional deficiencies associated with great famine or endemic chronic diseases.\[10\] Some scholars believe that the “Wen Yi” defined by TCM does not based on a single criterion of being infectious only.\[11\] However, Contemporary historians have erroneously regarded the occurrence of “Wen Yi” in traditional literature directly equivalent to infectious diseases.\[12\] They would follow the modern biological characteristics of infectious diseases, search for clues of similar events happened throughout the history, and labelled some of the great epidemic outbreaks simply as plague, cholera, and other diseases. This kind of tacit modern scientific research thinking has come under criticism by scholars.\[13\]

Taking leprosy as an example, Angela Leung probed into the conceptual difference and mode of transmission of infectious disease between traditional Chinese culture and modern understanding.\[14\] Her research found that the word “infectious disease” started to replace “Wen Yi” as early as 1902.\[15\] Recently, some scholars have tried to distinguish between the Chinese medicine “Shanghan” and the Western medicine “infectious typhoid”, and they put forward the idea of “modern history of febrile diseases”.\[16\] These researches have corrected the previous research ideas of explaining traditional medicine directly with modern scientific terms.

The transformation from “plague” to “infectious disease” is not only a simple change of terminology but this change also involves the transformation of subject knowledge, the construction of national public health system and a series of related events [Note 5]. This paper attempts to discuss two questions: first, how did the traditional “Wen Yi” become equivalent to the modern infectious disease? Secondly, an Italian scholar Federico Masini once stated that the term “infectious diseases” was likely to be created by the Japanese.\[17\] This article refuted the Japanese origin theory. While combing the transformation process from the term “Wen Yi” to “infectious diseases,” factors and motivations that promoted such modernisation and recognition by the whole society would be identified.

**The Relevance between Wen Yi and Infectious Disease: “A Person Will Be Infected with the Disease”**

This standard medical terminology is derived from Latin language [Note 6]. Since the 19th century, English has been the main and commonly used language for cultural exchanges between China and foreign countries, and the Western people have mainly learned Chinese through English–Chinese or Chinese–English dictionaries. Therefore, the term “infectious diseases” discussed in this paper is mainly based on English references. Just as its counterparts in Chinese, “infectious disease” also has many expressions in English such as contagious disease infectious disease, pestilence, plague, and epidemic disease. It should be noted that the term “infectious diseases” in ancient English is also different from contemporary English. The transformation of Chinese terminology from tradition to modern times coincided with the development of European medicine from miasmatic theory to bacteriology.

The missionaries, doctors and merchants were the first to discuss the translation between the Chinese and English while the “Wen Yi” encountered with “infectious disease” in the early 19th century. R. Morrison (1782–1834), a Protestant missionary, worked in China mainly to compile a bilingual dictionary of English and Chinese. He was very interested in TCM knowledge, and bought a large number of TCM books to compile TCM-related vocabulary for his dictionary. In 1815, Morrison’s first Chinese–English dictionary was completed, which included words such as “Wen”, “Yi”, and “Zhangli”. He translated “Zhangli” as pestilential vapors, a term inherited from the Middle Ages, meaning “stench”. Morrison regarded “Zhangli” as “warm disease”. He translated the word “Yi” as “epidemic” and used “the grand canal was dried up (at a particular place) and a great epidemic in Peking” as an example [Note 7]. When the first worldwide cholera outbreak in Mumbai in 1817 triggered a global pandemic, the Western medical community had no idea of the cause of the disease. Morrison’s first wife died of the then unnamed cholera in Hong Kong. In 1823, Morrison described epidemic disease as the “disease that spreads amongst the people, which once infected followed by many deaths [Note 8]. The author wrote about the pain of losing his wife in the dictionary. Zhong Guo Yu Qi Meng (《中国语启蒙》The Beginner’s First Book in the Chinese Language) which was published in 1847 and compiled by American missionaries, T. T. Devan, was the first dictionary to include medical terms but no such word as “Wen Yi”.\[18\]
There are differences between Mandarin and dialects in the Chinese language, and the missionaries soon came to notice that Mandarin is used only among residents who have access to more up-to-date information. For the purpose of smooth communication with Chinese patients or peers, Western doctors tend to use dialect [Note 9]. Therefore, the initial translation between Chinese and English was not carried out in the context of introducing Western knowledge. This is evident in the English–Chinese or Chinese–English dictionaries compiled by early missionaries to help foreigners to learn Chinese. Morrison translated “contagion” as “Wen Bing”, indicating that “a person will be infected with the disease”. W. H. Medhurst (1796–1857), a missionary of the Society of London, in Ying Hua Zi Dian (《英华字典》 English–Chinese Dictionary), carried on Morrison’s saying that Wen Bing was “contagious”.

In 1864, W. Lobscheid (1822–1893), a German medical missionary, recorded in his Chinese grammar book that the common language used by the Chinese to describe the disease as “both these men were very sick, [and] both have died”. Joseph Edkins (1823–1905), a well-known sinologist who long worked as a translator in Shanghai, translated “infectious diseases” into the standard Shanghai dialect as “contagious”.

In addition, W. T. Morrison, a missionary in Ningbo, translated the verb “infectious” into Ningbo dialect. John Macgowan (1835–1922), a British missionary, translated it into Xiamen dialect as pestiferous.

J. Doolittle (1824–1880), an American missionary, translated it into English as “contagious” in his book Ying Hua Zhu Lin Yun fu (《英华荟林韵府》 illustrated catalogue of plants) [Note 12]. In the 1880s, Tetsujiro Inoue called infection disease as “contagious”.

Even at the beginning of the 20th century, the Hu Yu Ying Han Zi Dian (《沪语英汉字典》 Shanghai English–Chinese Dictionary) kept the translation of the word “contagious” as “contagious”, whereas the word “infections” is defined as “I live a pestilential life” [Note 11].

Such an oral translation that “Yi” is “transmissible” and “contagious” puts an emphasis on the practical function of language and the effect of seeking common ground while preserving differences in Eastern and Western medicine. Ensuring smooth communications between doctors and patients should be the effect pursued by the missionaries while translating the texts. They interpreted “infectious diseases” in the context of TCM and build a bridge for Western people to learn Chinese medical knowledge and understand folk medical customs. This is the beginning stage of converting and aligning the medical term “infectious disease” to “plague.” Western medicine practitioners in China thought that TCM does not have a specific theory of infectious disease, but there are some terms related to epidemics or infectious disease. Most Chinese associate “Wen Yi” with plague. When missionaries compiled English–Chinese dictionaries, they referred to Kangxi Dictionary in principle. For medical terms, they referred to Ben Cao Gang Mu (《本草纲目》 Compendium of Materia Medica), San Cai Tu Hui (《三才图会》 Collected Illustrations of the Three Realms) and Zhi Wu Shi Ming Tu Kao (《植物名实图考》 Illustrated Catalogue of Plants), etc. Missionaries discovered that “some of these [the TCM disease] names are very similar to those used in early British medicine”. [Note 10]

How are they similar? Using representative Chinese–English dictionaries that was published before 1902, the author attempted to compare the common words used to express “Yi” and “infectious diseases”.

From Table 1, we can summarize several features of the English–Chinese translation, as follows:

1. Based on current available known dictionaries, there is no translations of “infectious diseases” listed in those English–Chinese dictionaries up to 1902. This absence also exists in the dictionaries that are not included in Table 1 [Note 12].

2. The English-Chinese dictionaries basically collected all the Chinese vocabulary of epidemic diseases, including 瘟疫 (Wen Yi, plague), 瘟症 (Wen Zheng plague), 瘟病 (Wen Bing blast), 瘟疾 (Wen Ji, plague), 瘟伤 (Wen Yang, plague), 病 (Yi, epidemic), 大疫 (Da Yi, great epidemic), 病气 (Yi Qi, epidemic qi), 病症 (Yi Zheng, epidemic disease), 时症 (Shi Zheng, seasonal epidemic), 病疫 (Zhang Li, miasma), 沾染 (contamination), and so on.

3. “Pestilence” and “Plague” are the two most common words. These two words mainly mean “plague” in contemporary English. However, Chinese–English dictionaries at the end of the 19th century offers a “plague” interpretation, until Yersinia pestis was discovered in 1894. Thereafter, “pestilence” and “plague” had become synonymous with infection of Yersinia pestis added to the dictionary.

4. “Infected (Ran Bing)”, “contaminated (Zhan Bing)” or “contaminated with disease (Zhan Ran Bing)” and other similar terms are common in the dictionary. The term closely related to “plague” – the Yersinia infectious disease first appeared in the English–Chinese Dictionary Series compiled by the Chinese.

Before 1900, there were three bilingual dictionaries edited by the Chinese editors. They are Tang Tingshu (唐廷枢)’s Ying Yu Ji Quan (《英语集全》 English Anthology), Kuang Qizhao (邝其照)’s Zi Dian Ji Cheng (《字典集成》 Dictionary Integration), and Xie Honglai (谢鸿澜)’s Shang Wu Shu Guan Hua Ying Yun Zi Dian Ji Cheng (《商务书馆华英韵字集成》 Business Book Library Chinese–English Phonological Dictionary Integration). Tang Tingshu entered “plague” and “miasmatic contagion” into his book [Note 13]. Kuang Qizhao is remembered as the first person who compiled Chinese-English dictionary [Note 14]. His dictionary is a textbook for Chinese students to learn English [Note 15]. In 1899, he changed its name to be Hua Ying Zi Dian Ji Cheng (《华英字典集成》 Chinese–English Dictionary Integration). This edition of the dictionary contains a wide range of English and Chinese words [Table
| Time  | Name                  | Author                   | Contagion | Contagious | Epidemic | Infect | Infection | Infectious | Pestilence | Plague | Note |
|-------|-----------------------|--------------------------|-----------|------------|----------|--------|-----------|------------|------------|---------|------|
| 1823  | Dictionary            | R. Morrison              |更改        |改为        |更改       |更改    |更改       |更改        |更改       |更改     |更改   |
| 1832  | A Dictionary of the   | M. Medhurst              |更改        |更改        |更改       |更改    |更改       |更改        |更改       |更改     |更改   |
| 1844  | English and Chinese   | S. Williams              |更改        |更改        |更改       |更改    |更改       |更改        |更改       |更改     |更改   |
| 1847  | English and Chinese   | M. Medhurst              |更改        |更改        |更改       |更改    |更改       |更改        |更改       |更改     |更改   |
| 1856  | Tonic Dictionary      | S. Williams              |更改        |更改        |更改       |更改    |更改       |更改        |更改       |更改     |更改   |
| 1866  | English and Chinese   | W. Lobscheid              |更改        |更改        |更改       |更改    |更改       |更改        |更改       |更改     |更改   |
| 1872  | Vocabulary and Hand-  | J. Doolittle              |更改        |更改        |更改       |更改    |更改       |更改        |更改       |更改     |更改   |
| 1884  | An English            | 井上哲次朗               |更改        |更改        |更改       |更改    |更改       |更改        |更改       |更改     |更改   |
| 1899  | Dictionary of English  | Kwong Tsun Fuk           |更改        |更改        |更改       |更改    |更改       |更改        |更改       |更改     |更改   |
| 1902  | Commercial Press      | Xie Honglai              |更改        |更改        |更改       |更改    |更改       |更改        |更改       |更改     |更改   |

Table 1: “Wenyi” and “infectious disease” in English-Chinese and Chinese-English Dictionary

1. Xie Honglai’s Business Dictionary also adopts the term “infectious diseases.”

Before the 20th century, there were three groups of people who undertook the translation and interpretation of medical terms namely and respectively, sinologists, missionary doctors who knew TCM, and Chinese translators. Compared with the conservative adjustment strategy of missionaries actively moving closer to traditional culture, Chinese translators fully show their eagerness for the introduction of new knowledge, which accounts for their willingness to give up the new meaning of the old language which is more radical than that of the first two categories of people. The first appearance of the word “infectious disease” in the dictionary compiled by the Chinese is the clear evidence.

OLD LEARNING AND NEW KNOWLEDGE: DISCOVERY OF “(Yi)”

In this dialog with oriental medicine, there is a key problem that is often neglected by our modern researchers, which is the knowledge structure of knowledge communicators of Western medicine. Before the middle of the 19th century, the Western “infectious disease” theory was in the stage of fermentation (miasma) theory; the germ theory of dealing with
infectious diseases had not been established yet. Missionaries and doctors in China at that time had no absolute advantage over Chinese medicine in dealing with diseases, especially infectious diseases [Note 16]. Second, in the 19th century, there were several large-scale outbreaks of infectious diseases in Europe and Asia, and some of them became global pandemics. Cholera began to attack the world in 1817 and accelerated to be the most dangerous plague in the 19th century. The plague broke out at the end of the century. Western translators were living in a complex environment of cognitive changes in disease where new diseases, new methods, new discoveries, and new theories were emerging. Those missionaries who had not received professional medical training could not grasp the knowledge of Chinese traditional epidemic disease nor the progress of Western medicine. As the main communicator of Western infectious diseases, Western medicine doctors in China must deal with the dual transformation of medical knowledge: firstly, it is the problem of the same “epidemic” disease but using different word context, and how to connect the two different theories of East and West, and Chinese patients and doctors to complete the translation from English into Chinese? Second, how did they learn to cope with the cognitive change of Western disease and follow the progress of “infectious disease” theory, and undergo self-renewal of medical knowledge. Therefore, the limitations of Western translators in terms of professional knowledge structure and insight should not be ignored in the undergoing study about the spreading of Western medicine.

B. Hobson (1816–1873), a medical missionary of the London Mission Society, was the first doctor to translate Western medicine into Chinese in modern times. He created a way to bring Western medicine knowledge into the framework of TCM, explaining Western medicine concepts of disease in terms familiar to the Chinese people. The prescription and medicine of body disease syndrome all use the names of the Chinese medicine book, in order to understand it by Chinese; if there is no or no name in the Chinese medicine book, they have to use the name of a Western country, and still use Chinese to translate its meaning, or translate its sound, and read it in detail.[31] He translates “Fever” into “fei e” and explains that TCM divides heat syndrome into toxic syndrome and nontoxic syndrome. The patients can infect people. Spring means warmth and summer means plague. It is a time of discord. If one get infected, the people in that region may be infected.[32] In 1858, Hobson published Yi Xue Ying Hua Zi Shi (《医学英华字释》 A medical vocabulary in English and Chinese). [33] This is the first bilingual dictionary of medical science, and his translation accurately expresses the original meaning of the Western language:

- Contagion disease: 传染病证
- Epidemic disease: 传染病之病
- Pestilential disease: 僵疫病. [34]

In Xi Yi Lun Lun (《西医略论》 Briefly Theory on Western Medicine), Hobson even flagged “hot disease” for transmissible diseases, febrile jaundice, malaria, dysentery, and cholera. The modern meaning of infectious disease terms and disease names has been clearly translated and explained in Hobson’s famous medical book. His translation of Western medicine was once the only textbook in missionary hospitals and medical schools, and the glossary he listed was also an important reference for medical missionaries in translating medical books. Oddly enough, other Chinese-language medicines of that era did not have the term “infectious disease”, but the Chinese—language reports of missionary hospitals did exhibit records of “cholera” and “fever”. In 1875, when John Fryer (1839–1928) introduced “cold and heat syndrome” and “heat syndrome” in Ru Men Yi Xue (《儒门医学》Confucian Medicine), she mentioned the characteristics of disease “transmission”, saying that “cholera in Asia is the most serious plague”. [35] At this time, the Chinese newspapers of missionaries generally used the word “plague” to describe epidemics in Europe and China. Consider Wan Guo Gong Bao (《万国公报》 The Globe Magazine) as an example, every issue of the country has reported the epidemic situation, the commonly used title: “Egypt: Fun Fact about the Plague (1873), Great Russia: Plague in Europe” (1879), and so on.

Since the 1870’s, the term and knowledge system of “infectious diseases”, as a classification of diseases, began to appear in China, not in Chinese, but in Western languages. In 1871, a new classification system, a zymotic disease, and four sub-categories including “malaria”, “endemic”, “diet diseases”, and “parasitic diseases” appeared in Hai Quan Yi Bao (《海关医报》 The Custom’s Medical Report) published by Shanghai. [36] Zymosis is an acute infectious disease. The Custom’s Medical Report is an English publication published by the General Inspector of the Imperial Customs [Note 17]. R. Hart, (1835-1911) suggested that doctors should be scattered across the country to provide local epidemic disease counseling, special diseases – leprosy, seasonal epidemics, etiology, treatment, and mortality to the general administration on a regular basis to provide the general administration with information on local epidemic diseases, special diseases – leprosy, seasonal epidemics, etiology, treatment, and mortality. [17] Since then, infectious diseases and epidemic-oriented disease observation and treatment began to infiltrate the Chinese medical community. In 1881, Translation Department of Kiangnan Arsena translated and published Nei Ke Li Fa (《内科理法》 Internal Medicine Law) [Note 18]. The infectious characteristics of the disease became the focus of discussion; this book comprehensively elaborates air, heat, and environment on the impact of infectious diseases and introduces antiseptic drugs. [38] Western medical translators, however, have not been able to break away from the language habit of the disease. Instead, they have created various names of the disease according to the characteristics of infectious diseases, embedding new knowledge into traditional terms such as “pestilence”, “epidemic cessation”, and “fulminant epidemic”. [39] In the same year, the Xi Yi Nei Ke Quan Shu (《西医内科全书》 Encyclopedia of Western Medicine), compiled by the Canton Hospital translator Kong Qinggao and J. Kerr.
(1824–1901), was published. The idea of “inflammation” and “fever” was adopted to discuss infectious diseases, and the European “method to stop the spread of plague” was explained [Note 19]. The word “plague” is always the first choice for missionaries to explain infectious diseases. Plague and infection are discussed together, and the infectious characteristics of epidemic diseases are clarified.

At this time, the part of speech of “plague” has changed; it was gradually separated from “toxic” and “nontoxic”, “folk epidemic ghost”, and other diverse characteristics of TCM plague, shrinking to a disease–infectious disease synonym.

At the end of the 19th century, medical missionaries were fully aware of the importance of unifying and standardizing medical terms for the dissemination of new knowledge in Western medicine. In 1890, S. A. Hunter, a Presbyterian missionary, spoke at the Shanghai Congress of the Medical Missionary Association of China (MMAC) on the topic of “plague”: “The Wen Yi is only a generic term for a pandemic, and it is the only one that can be used to refer to an infectious febrile disease (a containment fever). If we accept the plague as a synonym for typhus and revise its meaning, we will have taken a big step forward in explaining the nature of the disease to the Chinese students.” [50]

In this paper, “Wen Yi” is defined as an infectious disease – “typhus Shang Han”. Hunter suggests the direction of the translation of “Wen Yi” from a comprehensive phrase that generally refers to all kinds of epidemic diseases to a special noun for a single disease. He holds that in order to make the Chinese name of the disease correspond to the scientific knowledge of Europe, “when Western doctors create new names, they must find the synonyms of the disease in Chinese, and define the meaning of the words with the help of the description and scope of the disease.” [50] In 1890, the medical missionary P. B. Cousland (1860–1930) was commissioned by MMAC to compile the English-Chinese Medical Dictionary. The disease vocabularies collected in the dictionary based on two resource, one is from the “disease terms” edited by J. Kerr in 1870’s, and the other is from the brand-new word created by the Japanese. [40]

In 1896, the Bo Yi Hui published the translation of the translation of the word “infection disease”: 疫 disease. [41]

The word from the Kang Xi Zi Dian (《康熙字典》Kang Xi Dictionary) means: “sick phase infection”. Cousland specifically explained reason of excluding the word “infection”.

The word is bacteriology. The word “染” has the double meaning of “dye” and “infection”. In Chinese, using the word “染” will cause confusion, this is why the best choice is 疫. [42]

The body of knowledge about medical diseases in the West was gradually systematized in the 1870s. After the 1880s, with the establishment of bacteriology, it became clear that an infectious disease was a theory produced by a bacterium. This idea was introduced into China at the same time, as Wang Guowei (王国维) said that the language is the representative of thought, so the input of new ideas would mean the input of the new language also. [43] Cousland needed to choose a new word to express a new concept. He found from the Kangxi character library a remote word that can not only express the new theory directly and clearly but also differ from the meaning of the word “dye”, which is usually familiar to people-疫. In a sense, the rare word is another form of “new”, suitable for expressing the latest medical achievements and emerging medical ideas. At the same time, Cousland holds that “瘟” and “疫” refer to two diseases. Typhus is “瘟”, while “疫” means plague. And yzomatic disease is regarded as hot syndrome, seasonal fever or infections. [41] In 1908, Gao Shi Yi Xue Ci Hui (《高氏医学辞汇》Ga’s Medical Dictionary) was approved and published by the Termonology Committee of the Chinese Medical Association, and became the standard translation of “infectious disease”. Typhus fever is translated as distemper [41] and malaria fever as “瘴症”. [45] After that, all translations and textbooks published by Fanbo Medical Association and Christian Medicine are based on dictionary terms [Note 20].

At the beginning of the 20th century, the members of the MMAC painstakingly crawled out the nouns they thought suitable from the Kang Xi Dictionary, and tried to shove the cutting-edge knowledge of Western science into the ancient Chinese ideological system. Because of the difficulty in recognizing the word or the compound character created by the word, the antiques crawled out of the pile of ancient characters completely deviated from the image of the new medicine in the Western dynasties. The inability to transfer new knowledge and concepts is not recognized by Chinese scholars, especially the growing Chinese medical students. Wang Guowei criticized that the new names of the West were always expressed in inappropriate archaisms. The ending of 疫 words would be abandoned. [46]

In 1908, the Commercial Press published Yan Huiqing (颜惠庆)'s Ying Hua Da Ci Dian (《英华大辞典》English-Chinese Dictionary), the medical term of which was taken from the words approved of by the Medical Association, but Yan Huiqing abandoned the word 疫, though he used the word “Infectious diseases.” Yan Huiqing said “Words are the coat of thought, so if we want to think seriously and express our thoughts accurately, we should have an exact understanding of words.” The Medical Terms Committee’s translation of the retro word eventually came to a dead end. However, Yan Huiqing was the first person to use the word “Infectious diseases?”

**OFFICIAL DEFINITION AND SANITARY REGULATIONS**

With the new Chinese characters created by missionaries, it is impossible to complete the construction of the system of scientific and technical terms. In the 1920s, most of the obscure or newly created characters in Gao Shi Yi Xue Ci Dian (《高
Gao: The cognitive evolution from “plague” to “infectious disease”

The realization official cutoff of infectious diseases and plague in the terminology is when the “infectious disease” is clear about their identity. This status is officially vested in the government, where the classification of which diseases belong to the family of infectious diseases, and the right to characterize diseases, was based on the local government or the state. Since the Ministry of Industry announced the Infectious Diseases Law in 1876, the Shanghai International Settlement has had “the death toll statistics of infectious diseases.” In 1901, the Shanghai Municipal Bureau of Industry expanded its own infectious diseases hospitals [Note 26]. In 1908, the Shanghai Municipal Bureau of Industry formulated the Law on Infectious Diseases [Note 24].

As the term for the particular disease, “infectious disease” appeared officially in official documents and was published in the media in 1874. In 1876, the Shanghai Municipal Bureau of Industry enacted the Law on Infectious Diseases [Note 24]. The Japanese counterpart of “infectious disease” appeared on June 7, 1871. During that year, the Siberian coastal areas was facing the spread of serious infectious diseases and later on it spread to Japan. An official who was on a business trip to Shanghai sent a copy of the article on “infectious diseases” to Japan. It was sent back to Japan on June 27 to enact the “Poultry Infectious Diseases Prevention Law” in Shanghai.

This is the first three-syllable “infectious disease” that appeared in Japanese, while the article is from Shanghai. There was a special chapter with “infectious disease “in the Nei Ke Zhai Yao (内科摘要) Internal Medicine Digest) translated by Kuwata Kohei (桑田卫平) [Note 25]. In 1875, Japan established the Health Bureau, and in the same year, they established the Reporting System for Infectious Diseases. The epidemic of rash was circulating in Xiamen in 1877. The port and Yokohama Port, Japan, had been engaged in maritime trade, while the Japanese authorities feared epidemic disease transfer from the port, so they announced the Leave Rules for Asylum Services [53]. They set up a medical bureau in Yokohama to inspect incoming ships. In 1879, Japan promulgated Prevention of Infection of Tiger Lay Disease Rules in Harbor. The Prevention of Infectious Diseases Rules was promulgated in 1880.

Obviously, “infectious diseases” and port quarantine laws started in China and Japan almost at the same time, but Japan’s laws and regulations refer to or are related to the regulations of the Central Administration of Customs and the Shanghai Municipal Bureau of Industry.

At the early 20th century, a mixture of plague and infectious disease was still visible in medical textbooks and the media. The realization official cutoff of infectious diseases and plague in the terminology is when the “infectious disease” is clear about their identity. This status is officially vested in the government, where the classification of which diseases belong to the family of infectious diseases, and the right to characterize diseases, was based on the local government or the state. Since the Ministry of Industry announced the Infectious Diseases Law in 1876, the Shanghai International Settlement has had “the death toll statistics of infectious diseases.” In 1901, the Shanghai Municipal Bureau of Industry expanded its own infectious diseases hospitals [Note 26]. In 1908, the Shanghai Municipal Bureau of Industry formulated the “Regulation of Infectious Diseases.” These certain infectious diseases are: “pox, cholera, typhoid fever, throat rot, phthisis,
plague, spleen fever, equine nose drop, and phagocytosis of mad dog.”[53] The name was still halfway between old and new, but the classification of infectious diseases had become clear.

The Qing government’s understanding of infectious diseases always had its own way. After the Westernization Movement, the Qing government sent officials abroad. These officials felt the same way about the preventive measures and rules of the Western countries. In November 1876, Guo Songtao (郭嵩焘) took the Ta Wan Kuan to Europe. On the way, the chef on board had pox. Zhang Deyi (张德彝) wrote “pox is the disease that foreign ships would like to avoid, pox being the worst. If there are patients on board, the ships would hang up yellow flags, forbidding people to come or go ashore, while the hospitals extend the duration of the sick persons. They must stay for twenty days until there is no more sign of infection. Only then people on the ships could come to the shore.”[58] Huang Zunxian (黄遵宪)’s Ri Ben Guo Zi (《日本国志》National Records of Japan) in 1895 introduced the country’s infectious disease prevention rules, emphasizing that infectious disease patients or ships with infectious disease patients would be punished and even imprisoned if they should violate The Prevention of Infectious Diseases Rules formulated by the government.[59] Such experiences added to the Qing’s knowledge of “infectious diseases”.

The outbreak of infectious diseases would directly affect the national movement and people’s livelihood, prompting the officials of the late Qing Dynasty to pay more attention to the public health policy of Western countries — “Yang Min Zhi Zheng”. In 1876, along with Guo Songtao, Liu Xihong, who were sent to England, recorded the data of the death of Chinese people according to their household survey of disease. He presented the data to the king on the New Year’s Eve. If there are many people who die, then they will be investigated. Therefore, the doctor was ordered to inspect his land, or to dredge his trenches to pass through the weather, or to dredge his ditches to pass through the ground, or to remove his roads from the disease. When Zhang Deli went abroad again in 1888, he said thus: “Germany tried to prevent the plague before it spread. Recently, the state set up a special office for its affairs, name the Imperial Disaster Department(御灾司)”. In charge of the affairs of the patrol to detect the disaster, Buban epidemic prevention and other related things came under leadership of Ministry of Education and management, and another office of Ministry of Education will discuss everything about the disease. Each province has a medical association to consult at any time that is helpful for the matter of local health, and each prefecture and each county will send a doctor to see the exemption. The treatment of the epidemic caused by poverty may be paid by the State. Anyone who is susceptible of infection must be reported to the patrol. The patrol shall clean the land according to the law, such as the sewers. Where there is a sick child in a household, the members are not allowed to go to school where they may spread the infection through the clothes.”[60] The two translated works which influenced the Chinese ideological circles deeply in the late Qing Dynasty, namely Hua Zhi’s Zi Xi Cu Dong (《自西徂东》From West to East) and Tai Xi Xin Shi Lan Yao 《泰西新史揽要》The New History of Tessy), both have the chapters of “Prevention of Disease”, which introduce the epidemic prevention departments and epidemic prevention laws of Germany and the UK.[61]

With the invasion of Europe and the active observation of the Qing officials outside the country, the responsibility of social treatment, disease resistance, and prevention after the epidemic should be borne by the government in order to ensure the safety and interests of the society. Information such as this was channeled through various channels, affecting people of insight and officials of the late Qing Dynasty. Since 1907, students studying in Japan had established various medical and health journals, such as Health World and Journal of Chinese Medicine, which spread the ideas of health management system and prevention in Japan and European countries. The Qing officials attached significant importance to the relationship between epidemic prevention and the new policy. The 33rd year of Guangxu (1907) witnessed Zhang Zhidong reporting the “new model prison detailed by the statute,” in accordance with Japan and Western countries, mentioning the “infectious disease isolation ward”. In The New Decree in the Guangxu Period of the Qing Dynasty there is a provision in Chapter VI Rules for Prisoners and Poor People and the Others in which there is an infectious disease cell in the prison, which is decided by the medical officer after examination.[61] In 1906, the Capital Normal School set up an infectious disease ward and stipulated that “In case there are diseases, medical officer will check the ward or the infectious disease room for the adjustment and treatment”. The national epidemic prevention and punishment system also put the moral shackles onto the “infectious diseases” patients. In 1911, the Qing government promulgated the Qing Criminal Law, which called those who violated the ban on the prevention of “infectious diseases” the “crime of obstructing health”, and they would be sentenced to fixed-term imprisonment or criminal detention or payment of a fine.[67]

On December 30, 1912, when the Republic of China was founded, Premier Xiong Xiling (熊希龄) and Army Chief Zhou Zizhai jointly promulgated the Army Infectious Disease Prevention Rules, which named ten infectious diseases and required the commander of the unit to declare promptly the occurrence of an infectious disease within the unit or the presence of an infectious disease in its vicinity [Note 27]. In April 1915, Yuan Shikai (袁世凯) set up an infectious disease hospital to prevent epidemic. He requested state subsidy to be included in the 4-year budget, and formulated 21 articles of association of the infectious disease hospital.[68] In 1916, the Secretary of State Lu Zhengxiang (陆征祥) of the Northern Warlord Government promulgated the “Regulations on the Prevention of Infectious Diseases”. The officials determined that infectious diseases include: (i) cholera, (ii) red dysentery, (iii) typhus, (iv) natural pox, (v) measles, (vi) scarlet fever, (vii) diphtheria, and (viii) plague, a total of eight types.
Conclusion: The Modernity of Epidemic Diseases

At the beginning of the 20th century, the harm of infectious diseases to civilized society gradually formed a certain cultural cognition in the public psychology and became a basic common sense. In 1903, in Shanghai’s urban novel Nie Hai Hua (《孽海花》A Torn Lily), there are even protagonists who are infected with “infectious diseases”. Around 1907, Ding Fubao (丁福保) called “infectious diseases” as new things, “new things are gradually observed, and the opinions of infection disease are gradually beyond the new matter”. Activists even had a sense of crisis about the relationship between the health of infectious diseases and ethnic survival. “If you want a strong nation, people must be strong. If people want to be strong, you must first study about health. If you want to study about health, you must first pay attention to the sanitation of infectious diseases”.

In the then China, medical science field was obscure and blind where sanitation of health was not on the focus. For thousands of years, human beings have been becoming weaker and unreasonable and these are the reasons. No wonder, Westerners say that our country is the sick man of the East”. In 1910, Ding Fubao wrote Lecture Notes on Acute Infectious Diseases, introducing the origin, representatives, and new knowledge of the subject. Under his influence, the new knowledge was quickly accepted by the field of TCM and incorporated into the knowledge system of TCM. In 1913, under the guidance of bacteriology theory, TCM historian Chen Bangxian (陈邦贤) came to see that “There are three kinds of infectious diseases in the old customs, namely, miasma, infection, and devil.” Now, it is attributed to bacteria, and he also listed forty bacterial infectious diseases”. In 1914, he incorporated the concept of modern science into the outline of the Zhong Guo Yi Xue Shi (《中国医学史》History of Chinese Medicine), creating a modern paradigm for the study of the history of Chinese disease with a Western medical system. This not only constructs the style of combining medicine and disease in the history of Chinese medicine but also modifies the academic discourse of diseases in TCM. The epidemic diseases in history are all discussed according to the classification of modern infectious diseases so that they can be in dialog with modern science [Note 28]. In 1943, Yu Yunxiu (余云岫) put on the academic hat of epidemic acute infectious disease in Gu Dai Ji Bing Ming Hou Shu Yi (《古代疾病名候疏义》Ancient Disease Syndrome), explaining that “microorganisms is the pathogen of epidemic acute infectious disease”.[71]

From then on, the transformation from the traditional “plague” to the modern “infectious disease” has been completed in terms of both terminology and theory.

American scholar C. Rosenberg pointed out in the study of modern disease history to the effect that: in some ways disease does not exist until we have agreed that it does, by perceiving, naming, and responding to it. He explained: “it is fair to say that in our culture a disease does not exist as a social phenomenon until we agree that is does, until it is named”. The emergence of “infectious diseases” terminology in China is a case in point. The traditional “plague” is similar with the modern “infectious disease”. The process was carried out by missionaries, Chinese scholars, and officials in China, each adopting a different strategy. When “plague” and “infectious diseases” meet, the whole world’s understanding of the disease is in the “miasma” era. Therefore, in the initial stage of knowledge exchange and terminological docking between the East and the West, the cultural adjustment strategy was adopted at the cultural level. The missionary finally embarked on the road of the word retro, leading to a failure of innovation. The term “infectious disease” officially appeared in China around the 1970s and was investigated in terms of time sequence. At this time, the Western medical profession accepted the bacterial theory of disease transmission at the theoretical level, changed from negative treatment to positive preventive medicine at the practical level, and the state was more deeply involved in medical and health affairs. Whether in China or in Japan, influenced by Western countries, the definition, naming, classification, and regulation of “infectious diseases” have a clear governmental background. Moreover, the national health management system and the local urban public health construction supplement each other, become an important part of the national modernization development framework, and put the degree of civilization of social indicators into test. The transformation of terms from “plague” to “infectious disease” occurred in modern China, the essence of which is a history of acceptance of the concept of “infectious disease” from the intellectual world to the national level. This is a process of scientific cognition of epidemic diseases. Chinese officials and Chinese doctors both consciously discussed epidemic diseases in the scientific context. They agreed with and accepted the idea as well as the vocabulary of “infectious diseases” to analyze epidemic diseases in history. In a sense, this evolution of knowledge is the embodiment of the modernity of epidemic diseases.

Notes

Note 1: During the period of studying Chinese history in China in the 1980s, Mr. Iijima turned to pay attention to the study of the history of infection in China because of the influence of McErney’s “plague and man.” Mr. Iijima involved in “discussion on the Chinese History of Infectious Diseases” and “Historical Research.” 2015(2), p. 4-8.

Note 2: Representative Books and Papers: Ran Qizhi: “Lepra: A Medical Social History of a Disease” (Commercial Press, 2013), “Facing Disease: Medical Concepts and Organizations in Traditional Chinese Society,” Renmin University Press, 2011; Cao Shuji and Li Yushang, “Plague: The State of the Environment and Social Change in War and Peace in China” (Shandong Painting and Calligraphy Publishing House, 2006); Shan Li, Classical Cholera Epidemic Research in Qing Dynasty (Doctoral Dissertation, 2011); Li Yushang, “the change of tidal area and schistosomiasis in Qingpu Lake area,” “Theory and Exploration of Environmental History Research in China,” 2013(2), p. 326-340.

Note 3: Since his doctoral thesis, Mr. Weng Xinzhong has focused on this field and made pioneering research on it.
Note 4: According to the literature review, there are three special features of “epidemic diseases.” Yunxiu: Fan Xingzhuang; “Ji Bing” Liu Zhao combed the historical “epidemic” situation from the unearthed literature oracle bone inscriptions, silk, and explanatory articles, and filled in the “epidemic situation in ancient characters.” The Paper, April 10, 2020.

Note 5: “Plague” has a variety of explanations; this article is limited to the scope of medicine.

Note 6: China’s first standard medical vocabulary in 1927, “Anthology of Anatomical Nouns,” was used in Latin, German, English, and Japanese to regulate medical terms.

Note 7: Rev. R. Morrison, Dictionary of the Chinese Language (“Dictionary”): the great canal was dried up and a great epidemic in Peking.” Macao: Printed at the Honorable East India Company’s Press, 1823(2), p. 66. There are many versions of Morrison’s dictionary. See Yuan Qing: “The rise and Development of Chinese-English and English-Chinese Bilingual Dictionary compilation and publication in the late Qing Dynasty,” “The study of Modern History,” 2013 (1): Shen Guowei, “A Modern English-Chinese Dictionary of Modern Times,” Beijing: Kansai University Press, 2011.

Note 8: Ibid., p.86.

Note 9: On the missionaries’ study and study of dialects, see: Lee Siu Lun, History and current trends of teaching Cantonese as a foreign Language, Ph.D thesis, University of Leicester, 2004.

Note 10: Lu Gongming: Yinghua Collection of Lin Yunfu, Foochow: Rozario, Marcal and Company, 1872, pg 95. The medical terms in Luk Kung Ming’s dictionary come from Hui Bao, Beijing, China National Library Press, 2013.

Note 11: Shanghai Christian Dialect Association, Chinese-English Dictionary of the Late Qing Dynasty, Shanghai: Translation Press, 2018. This is a reprint of the 1913 edition of the English-Chinese Dictionary of Shanghai Dialects, p. 203, 449.

Note 12: This table is based on a representative dictionary of each era in the 19th century, listed in Shen Guowei’s A Chinese-English Dictionary in Modern Times, before 1900, there were 50 dictionaries. Except for some dialect dictionaries, none of the large comprehensive dictionaries had the word “infectious disease.”

Note 13: Tang Tingshu is the forerunner of the modernization of China’s industry and commerce. Research on Tang Tingshu and his Tang Family, see Tang Kaijian: “Research on the Guan Cai of the Tang Tingshu Family in Macao” Research on Tang Tingshu, Vol. 1, p. 1-27.

Note 14: Mr Kwong was educated in Western Studies in Hong Kong and opened several pharmacists as pharmacists before going to Australia should engage in the medicinal materials business. For a study of Kwong Qizhao, see: Takata Shixiong, Sun Jianjun, translated by Sun Jianjun, English in the late Qing Dynasty: Kwong Qizhao and his works, Oriental Studies, No. 117 (2009), p. 1-19. Shen Guowei: Kuang Qizhao’s Dictionary Integration, Modern Yinghua English Dictionary solution, p. 117-135.

Note 15: “Zi Dian Ji Cheng” is available in 1868, 1875, and 1887 editions.

Note 16: Traditional Chinese medicine has the methods and means to deal with epidemic diseases systematically. The school of febrile diseases rose in Ming Dynasty and mainly treated acute infectious and noninfectious febrile diseases. The representative figures and works were Wu Youse’s “theory of warming epidemic,” Ye Gui’s “theory of warming heat,” Wang Shixiong’s “Huoang theory,” Liu Kui’s “Songfeng theory of epidemic,” etc.

Note 17: For a detailed introduction of Customs Medicine, see Gao Xi: Preface, Customs Medicine News, Beijing: China National Library Press, 2017.

Note 18: The Law of Internal Medicine, The English Tiger Writing, translated by Shu Gaodi, Written by Zhao Yuanyi origin from “Hooper’s physician’s vade mecum or “A manual of the principles and practice of physic,” London: Henry Renshaw; Whittaker and Co., 1809, by R. Hooper (1773–1835), a British physician who had several medical departments. Internal Medicine Act is a textbook of internal medicine in British medical colleges. It was first published in 1809 and extended in 1833, and has been reprinted many times since. The book also has an American edition, which has been reprinted several times.

Note 19: Kong Qing Gao translate, “Western Medicine Internal Medicine 16 Volume,” “Western Medicine Fever General Catalogue,” Guangxu 8 years Boji Medical Bureau engraved version.

Note 20: The Medical Terminology Committee of the Bo Yi Hui Medical Association stipulates that all medical terms translated by the members of the Bo Yi Hui Medical Association shall be examined and approved by the Committee on Medical Terms and may be published and distributed. Gao Xi: Preface, edited by China Bo Medical Association: Bo Yi Hui Bao, Beijing, China National Library Press, 2013.

Note 21: Masini based his argument on the 1886 edition of Hepburn’s Integration of English, English, and Chinese, but there is no word for “infectious disease,” “The Formation of Modern Chinese Vocabulary-A Study of Chinese Loanwords in the 19th Century,” p. 195.

Note 22: Infectious Diseases of Ships from Germany to Shanghai, U1-2-612, August 1872, Shanghai Archives.

Note 23: “Investigation of the Charter of Haikou of Infectious Disease Coming from Foreign Countries,” The World Journal, No. 312, 1874, p. 21-23. The translation of Shen Bao is Charter of Shanghai Port of Entry for Foreign Vessels from Countries
with Infectious Diseases, November 7, 1874, 2nd edition. At present, domestic research and customs history writing are based on the “Declaration” name.

Note 24: The Establishment of the Infectious Disease Law by the General Office of the Shanghai Municipal Department of Public Concessions, U1-2-757, December 1876, Shanghai Archives.

Note 25: The Seven Diseases of Cai Mo is divided into two categories: Eruptive Infectious Diseases and Noneruptive Infectious Diseases. Katsuya Shimamura, “The Internal Medicine Digest,” Meiji Renshen Year, Qian Qianzhai Zangzi.

Note 26: On the document of the General Office of Shanghai Public concession Industry Bureau on the expansion of Infectious Diseases Hospital, Shanghai Archives, June 1901, U1-2/236, 1901, Shanghai Archives, June 1901, Shanghai Archives.

Note 27: The 10 infectious diseases are cholera, red dysentery, intestinal smothering, natural acne, rash asphyxiation, yellow fever, scarlet fever, diphtheria, Benedict, and those specifically designated by the head of the Army. Official Gazette, No. 597 of December 31, 1913, Vol. 21, p. 506-517. Ding Rui’s paper “Beijing Police’s Control of Infectious Diseases during the Period of Beiyang Government” (Public Security Research, 2019 (2), No. 3, p. 108. In this paper, eight infectious diseases listed in “A Survey of Beijing Police Service” (1917) are compiled by the Jingshi Police Department: Cholera, dysentery, typhoid fever, varicella, scarlet fever, diphtheria, and bubonic plague. The authors say that the names were set in 1912.

Note 28: Chen Bangxian, History of Chinese Medicine, published by the Medical Book Company in 1919, is the first history of Chinese medicine. Wu Liande called it “an unprecedented masterpiece.” Wang Yunwu, History of Chinese Medicine, 1936. Commercial Press, 1956. These three editions of “History of Chinese Medicine” construct the narrative mode of Chinese medical history, which has influenced the present.

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Gao: The cognitive evolution from “plague” to “infectious disease”

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