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Masks and Geopolitics in Richard Pearson Strong's photos of the Manchurian Plague Epidemic, 1910–1911

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Lantern Slides of the Manchurian Pneumonic Plague, 1910–1911

Richard P. Strong Papers, 1911–2004 (inclusive), 1911–1945 (bulk).

Francis A. Countway Library of Medicine. GA 82.

<http://id.lib.harvard.edu/alma/990006034200203941/catalog>

In the fall of 1910, the Chinese territory of Manchuria in the country's northeast was struck by an epidemic of pneumonic plague. By the time the epidemic ended in the spring of 1911, close to 60,000 people had fallen victim.[1] In late December 1910, Dr. Wu Lien-teh, a Malay-born, British-educated, ethnically-Chinese physician then based in Beijing, was recommended by China's imperial government to investigate the worsening epidemic. There, he diagnosed a new variation of plague, devised innovative methods for prevention and personal protection, and established the North Manchurian Plague Prevention Service, considered to be the first national public health administration in modern China. The Countway Library's collection of photographs collected by Dr. Richard Pearson Strong, an American physician, later Harvard Medical School faculty member, and Wu's colleague, detail the course of the plague control process and depict many of Dr. Wu's measures in action. These photos are significant not only for researchers of the history of medicine or infectious disease, but also of international relations and the geopolitics of global health in the early 20th century. They offer a perspective on how the development of medical and scientific knowledge was often contingent on the political context and choices made by the stakeholders during times of crisis.



Figure 1. "Inspection squad starting on rounds," Harvard University, Countway Library of Medicine, W370442_1.

After Wu arrived in Manchuria at the end of December, he trained local personnel to form "inspection" squads so that victims of the plague could quickly be identified and isolated. In the photo titled "Inspection squad starting on rounds" (fig. 1), we see two men carrying a stretcher, presumably taking their orders from a medical doctor (dressed in white) and a member of the police or military (dressed in black).[2] These inspection squads would go door-to-door in residential areas, check individuals with plague-like symptoms ("suspects") and contacts of confirmed cases ("contacts") and take them away on stretchers if necessary. In the photo titled "Plague suspected [sic] discovered on inspection tour" (fig. 2, below), a man walks out of the house in front of several men clothed in white robes, with face and head coverings. Just behind them, towards the right of the picture, are several local men, looking on as the plague "suspect" is escorted likely to an isolation hospital (fig. 3, below), where his blood and sputum would be tested.[3] If his samples were found to be positive for pneumonic plague, he would stay in isolation to await inevitable death.



Figure 2. "Plague suspected [sic] discovered on inspection tour," Harvard University, Countway Library of Medicine, W370452_1.



Figure 3. “Transports: (left to right) For [already?] sick, for suspects, for contacts, for dead,” Harvard University, Countway Library of Medicine, W370287_1.

Many photos in Strong’s collection depict individuals donning uniforms with a distinctive face mask, which looks to be some form of personal protective equipment. The uniforms worn by the plague control team were new inventions. Dr. Wu Lien-teh had only recently determined that the epidemic disease in Manchuria was pneumonic plague, a variation caused by the same *Yersinia pestis* bacillus that was the “causative micro-organism” for all plague.[4] Wu developed a controversial theory: this pneumonic plague was an airborne disease that could spread person-to-person and did not need a local infected rodent reservoir to survive, and thus more infectious than its bubonic counterpart. Medical doctors had been rapidly gaining more knowledge about diagnosing and containing cases of plague since the start of the Third Plague Pandemic in Hong Kong in 1894. But there was still no cure, and the pneumonic variant seemed even more dangerous than its bubonic counterpart—its fatality rate was close to 100%, according to early observations. If Wu’s theory was correct, and the disease could spread between people living in close quarters, the isolation of victims and suspects would be crucial plague control measures. The medical teams would also need to take extra care to protect themselves from potential transmission. Each member of the plague control team was required to wear clothing for their own protection. 60,000 such thick gauze masks with extra straps

and padding to “prevent it from slipping down the neck” were produced at the Harbin laboratory and became mandatory components of the plague control uniform for those who would be in “immediate contact with patients.”[5]



Figure 4. “Taotai He superintending second cremation, Changchun,” Harvard University, Countway Library of Medicine, W370887_1.

Wu’s staff was to wear “in addition to the mask, a head covering made of cloth with an extra piece of silk before the nose and mouth.”[6] The photos show us that inspection teams, stretcher carriers and other laborers, the disinfection squad sent into treat houses, and even local Qing officials who were overseeing mass cremation of victims’ corpses wore these masks, robes, gloves, and other personal protective equipment (fig. 4, above).[7]



Figure 5. "Examining a suspect," Harvard University, Countway Library of Medicine, W370458_1.

Photos such as "Examining a suspect" (fig. 5, above) give us an indication as to how the Manchurian medical teams understood the dangers of the airborne disease. The photo shows eight staff, all in full protective gear, tending to one patient sitting in the middle of an open courtyard to reduce the risk of any further disease spread.[8] Fresh air, distance, and physical barriers were critical to plague prevention. Dr. Strong himself later commented on the effectiveness of the "gowns, goggles, gloves, and special masks" which allowed his team to remain "entirely healthy" despite working with patients at close quarters.[9] Wu wrote later that his mask invention had been adopted almost universally even by the general public going about their everyday business.[10]

In addition to showing the innovations in medical knowledge and public health during the Manchurian campaign, the photos also allude to the global political nature of the plague control process. Both Japan and Russia had imperial designs on the Chinese

territory, as both countries had gained territorial rights over the past decade after China's losses in a series of military conflicts. By 1910, even leaders in the imperial court criticized the country's inability to modernize and defend itself from extraterritorial demands. As William Summers writes, it was only after official British, Russian, and Japanese personnel in Manchuria alerted their home authorities and proposed a series of anti-plague measures in the city of Harbin that Wu was dispatched to Manchuria in late December 1910.[11] The foreign proposals alarmed the local Chinese imperial superintendent as they seemed to impinge on Chinese sovereign rights. In response, as an act of "political balancing of the Russians and Japanese," the Chinese government appointed Wu to travel to Manchuria, and then called on "various nationalities" to send more experts as advisors and researchers. Dr. Richard Pearson Strong, the compiler of these photographs, led an American medical delegation with colleague Dr. Oscar Teague. The Strong-Teague delegation was given full access to all Chinese facilities, was paid substantial stipends from the Chinese government, and worked closely with Wu. As a result, the Americans were functionally a diplomatic mission, as they supported the Chinese plague prevention team against its Japanese and Russian rivals and lent Wu's work additional legitimacy.[12]

Wu's plague fighter uniform also contributed to this balancing act. Aside from protecting the wearer from contracting the plague—Wu was vindicated when a French doctor died of pneumonic plague after he had derided mask-wearing—masks and the rest of the uniform also fulfilled an important purpose in reaffirming the legitimacy of the Chinese government in this highly contested geographical territory. In full uniform, plague control personnel were virtually indistinguishable from one another in terms of race. Moreover, as an invention by a Chinese physician, the plague control teams' uniform became an emblem of Chinese innovation and contribution to global science. Wu steadfastly focused his efforts on identifying cases (from "suspects"), "devising plans for the proper detention of contacts, and teaching people to wear gauze masks properly," even as Dr. Kitasato Shibasaburo, the German-trained Japanese doctor responsible for identifying the plague bacterium in 1894, continued to lecture on the importance of exterminating rodents.[13] As there was no significant common urban rat population in Manchuria, Kitasato and others familiar with bubonic plague had deduced that the rodent responsible for spreading the plague was likely the frequently-hunted tarbagan marmot. In response, Wu and Strong set out to change the etiological paradigms of plague in the First Report produced by the North Manchurian Plague Prevention Service in 1913. Featuring Strong's extensive laboratory research with live tarbagans and additional epidemiological data, the report concluded that the tarbagan marmots' role in the spread of plague among humans was "negligible." Wu wrote biting, "it seems to me a pity that responsible

authorities and medical men should be so obsessed with the unestablished idea of the great infectivity of the Tarbagan.”[14] The Report confirmed all of Wu’s hypotheses about human-to-human transmission of pneumonic plague, and Strong’s involvement in its publication bolstered its credibility.

Furthermore, the photographs unified plague prevention teams’ medical professionals (Chinese or foreign, all wearing lab coats), trained policemen (dark uniforms), and coolies and cart drivers (overalls), all masked and working together despite their class differences. Wu still blamed the migrant labor “coolie” class for being plague supertransmitters around Manchuria, but he strategically incorporated their labor into his plague control infrastructure. Staging such photographs as “Disinfection squad, Fuchiatien” (fig. 6, below) provided a visual manifestation of the orderliness and decisiveness of Wu’s “vision of state-organized medical reason and hygienic modernity.”



“Disinfection squad, Fuchiatien,” Harvard University, Countway Library of Medicine, W370459_1.

By depicting the full range of plague control personnel, the photos reinforced Chinese medical and administrative competence in the face of a medical crisis.[15] Anyone wearing Wu’s “plague fighter uniform” signaled himself as a colleague of and key contributor to the international medical community. Through Wu’s plague prevention

service, the beleaguered Chinese imperial government could indicate that it had suitably arrived at medical modernity and had incorporated cutting-edge biomedical knowledge into its governing canon. Following Wu and other foreign doctors' suggestions, the government went as far as to issue an imperial edict ordering mass cremation, a process shown in photos like "Scattering kerosene on stack of coffins" (fig. 7, below).[16]



"Scattering kerosene on stack of coffins, preparatory to cremation, Changchun," Harvard University, Countway Library of Medicine, W370872_1.

As a documentary collection, Strong's Manchuria photos suggest the competence, efficiency, and know-how of Wu's team, but this was only part of the story. There is no indication in the collection that local communities actively resisted the team's intrusive, "brutal" anti-plague measures, nor that the doctors feared public reprisals through physical violence. Neither the photos nor their captions alert the viewer that mass cremations of corpses, though condoned by the government, horrified the Manchurian public as it defied local burial traditions. In his later memoir, Wu remembers the 1910–1911 plague epidemic as a turning point for China's modernization in medicine, but most Manchurian residents only experienced the

epidemic as an unadulterated tragedy. Wu and his colleagues could not cure the pneumonic plague; thus, they could not convincingly explain why a sick person taken into a hospital would never return, or why plague control measures were necessarily so inhumane.[17] These photos, taken from the perspective of a medical doctor, cannot help us understand the social and human toll of the epidemic, and, in fact, they obscure the deep rift between the success of modern plague prevention and the alienation of local communities. Even after the end of the pandemic, it would still be years before any Chinese government made concerted efforts to teach hygiene and infectious disease prevention measures to the general public. Researchers of the Manchurian epidemic should remember not to neglect the event's human and social dimensions.

What is clear, however, is the photos' value in helping historians understand early 20th century public health and how imperialism, politics, and global medicine intersect. In terms of medical innovation, Wu's inventions certainly had staying power, as masks and other personal protective equipment are still commonplace during epidemics today. In terms of geopolitics, the Chinese imperial government was able to assert its sovereignty in Manchuria and establish the North Manchurian Plague Prevention Service as China's inaugural national public health service. Strong, appointed to the faculty of Harvard Medical School in 1913, would publish much of his research on the Manchurian plague in the United States, highlighting the groundbreaking discoveries of Chinese doctors and scientists and paving the way for future global collaborations in medical research. Wu Lien-teh would continue his decorated career in China and become the first in a long line of Chinese doctors to be appointed to important positions in China and abroad.

Notes

[1] William C. Summers, *The Great Manchurian Plague of 1910–1911: The Geopolitics of an Epidemic Disease* (New Haven: Yale University Press, 2012), 1.

[2] "Inspection squad starting on rounds," Lantern Slides of the Manchurian Pneumonic Plague, 1910–1911. Richard P. Strong Papers, 1911–2004 (inclusive), 1911–1945 (bulk). Harvard University, Countway Library of Medicine, W370442_1. https://id.lib.harvard.edu/curiosity/contagion/36-W370442_urn-3:HMS.COUNT:1175881

[3] "Plague suspected [sic] discovered on inspection tour," Richard P. Strong Papers, W370452_1. https://curiosity.lib.harvard.edu/contagion/catalog/36-W370452_urn-

3:HMSCOUNT:1175882; “Transports: (left to right) For [already?] sick, for suspects, for contacts, for dead,” Richard P. Strong Papers, W370287_1. https://curiosity.lib.harvard.edu/contagion/catalog/36-W370287_urn-3:HMSCOUNT:1175871

[4] Sean Hsiang-Lin Lei, “Sovereignty and the Microscope: Constituting Notifiable Infectious Disease and Containing the Manchurian Plague (1910–1911),” in Angela Ki Che Leung and Charlotte Furth (eds.), *Health and Hygiene in Chinese East Asia: Policies and Publics in the Long Twentieth Century* (Durham: Duke University Press, 2010), 75.

[5] Yu-Lin Wu, *Memoirs of Dr. Wu Lien-teh, Plague Fighter* (Singapore: World Scientific Publishing Company, 1995), 74.

[6] Wu Lien-teh, “Practical Points in the Treatment of Plague,” *Medical Record: A Weekly Journal of Medicine and Surgery* 100, no. 1 (26 November 1921): 955.

[7] “Taotai He superintending second cremation, Changchun,” Richard P. Strong Papers, W370887_1. https://curiosity.lib.harvard.edu/contagion/catalog/36-W370887_urn-3:HMSCOUNT:1175946

[8] “Examining a suspect,” Richard P. Strong Papers, W370458_1. https://curiosity.lib.harvard.edu/contagion/catalog/36-W370458_urn-3:HMSCOUNT:1175886

[9] Eli Chernin, “Richard Pearson Strong and the Manchurian Epidemic of Pneumonic Plague, 1910–1911,” *Journal of the History of Medicine and Allied Sciences* 44, no. 3 (July 1989): 296–319, 305.

[10] Christos Lynteris, “Plague Masks: The Visual Emergence of Anti-Epidemic Personal Protection Equipment,” *Medical Anthropology* 37, no 6 (Nov. 2018): 442–457, 445.

[11] Summers, *The Great Manchurian Plague*, 57.

[12] Summers, *The Great Manchurian Plague*, 20–21.

[13] Lei, “Sovereignty and the Microscope,” 80–81.

[14] Wu Lien-teh, “First Report of the North Manchurian Plague Prevention Service,” *The Journal of Hygiene* 13, no. 3 (Oct. 1913): 237–290, 275.

[15] Lynteris “Plague Masks,” 446–447. “Disinfection squad, Fuchiatien,” Richard P.

Strong Papers, W370459_1.

https://curiosity.lib.harvard.edu/contagion/catalog/36-W370459_urn-3:HMSCOUNT:1175887

[16] “Scattering kerosene on stack of coffins, preparatory to cremation, Changchun,”

Richard P. Strong Papers,

W370872_1. https://curiosity.lib.harvard.edu/contagion/catalog/36-W370872_urn-3:HMSCOUNT:1175939

[17] Lei, “Sovereignty and the Microscope,” 84.