

**A Plague of Vampires:  
Problems in the Legacy of Japanese Colonial Medicine and Science**

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This paper is an attempt to think through several obstacles I have encountered in my research on the history of the biological sciences in Manchuria. I began with the naïve hope that I could quickly sketch out an overview of the activities of Japanese scientists in this region during the first half of the twentieth century. Instead I encountered a bewildering research terrain. Many documents from this period no longer exist. Many essential archival documents do exist, but are kept inaccessible to researchers. And in China, any discussion about Japanese science is conducted within a matrix of memory, history, and rumor about the nefarious crimes of Japanese scientists. Within this cultural matrix, the Japanese scientist (or physician) is a personification of evil who experimented on humans, murdered Chinese resistance heroes, and created plagues that resulted in the deaths of hundreds of thousands of civilians. Such is the power of these memories that no activity in the biological sciences during Japan's formal fifty-year presence in Manchuria (1895-1945) is left untainted by association with the legacy of germ warfare atrocities perpetrated by the Japanese scientists of Unit 731 during the 1930s and 40s. My work on chronicling the history of biological research institutions in Manchuria has been sidelined while I contemplate the difficulties of interpreting the plague-drenched legacy of Japanese colonial science.

The challenge of interpreting stories of evil associated with agents of colonial science and medicine has recently engrossed historians of Africa. Luise White, in her

path-breaking book, *Speaking with Vampires: Rumor and History in Colonial Africa*, writes a history of how Africans expressed their understanding of colonial exploitation through the genre of fantastical stories about men who stole blood, the *bazimamoto*. *Bazimamoto* were associated with a variety of professions connected to the colonial state: firemen, policemen, game wardens, and doctors, all of whom drained the blood of Africans so that whites could make medicine from the blood. In presenting these vampire stories, White does not seek to expose how Africans misunderstood Western medicine. Instead, she insists that she takes the stories "at face value," as descriptions of "the aggressive carelessness of colonial extractions."<sup>1</sup> White demonstrates how the repetition of formulaic elements in stories turned the stories into truth for the African speaker and listener alike. It is important to note, however, that in writing her history, White does not have to believe that agents of the colonial state actually sucked blood. What is important for the historian is that the subjects she studies think the stories are true: as White summarizes, "vampires are a story, but belief in vampires is a fact."<sup>2</sup>

Nancy Rose Hunt, when dealing with similar stories of bloodsucking doctors in *A Colonial Lexicon*, reminds us that truly blood-curdling things did take place under colonial rule in Africa. Foremost among the horrors was the dismemberment inflicted on many during King Leopold's *Heart of Darkness* reign in the Belgian Congo. Against this backdrop, Western doctors dug up human bones (to procure skeletons for research and teaching), extracted lymph through painful lumbar punctures (a test for sleeping sickness), and performed thousands of autopsies on adults and infants alike. On this last point, Hunt's interpretation is quite stark: in Africa, she suggests, "a key incentive for

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<sup>1</sup> Luise White, *Speaking with Vampires: Rumor and History in Colonial Africa* (Berkeley: University of California Press, 2000), 5.

<sup>2</sup> *Ibid.*, 308.

colonial medical research...was implicitly the ready availability of a dead and dissectible subject population."<sup>3</sup> Dismemberment and violence were part and parcel of colonial rule. It is not surprising, then, that the Africans in Hunt's book believed that white doctors drank the blood of Africans or chopped up their bodies to make tinned meat.

However, no matter how seriously these Africanists say they are taking the stories of their informants, in all these examples, rumor is nevertheless still perceived of as working on the level of metaphor. The researcher is quite certain that white doctors, no matter how racist they might have been, in fact did not drink African blood, nor did they make Africans into Spam. In spite of insistence on "taking stories at face value," in these works there still exists two separate worlds of belief, one mistaken or at the very least metaphorical (colonial doctors committed inhuman atrocities), and one true, grounded in fact (colonial doctors were part of a inhumane system, but they did not commit inhuman atrocities).<sup>4</sup>

But what happens when *some* of the stories about "vampires" are true? The evil of Unit 731's doctors has been well documented.<sup>5</sup> From 1932 until the end of the war in 1945, scientists with the Japanese military, apparently in conjunction with civilian

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<sup>3</sup> Nancy Rose Hunt, *A Colonial Lexicon: Of Birth Ritual, Medicalization, and Mobility in the Congo* (Durham: Duke University Press, 1999), 191.

<sup>4</sup> Although European researchers certainly conducted racist and unethical biomedical investigations in Africa. See, for example, Wolfgang Eckart, "Colony as Laboratory: German Sleeping Sickness Campaigns in German East Africa and in Togo, 1900-1914," *History and Philosophy of the Life Sciences*, 24.1 (2002): 69-89.

<sup>5</sup> Works on Unit 731 in English include Sheldon Harris, *Factories of Death: Japanese Biological Warfare, 1932-1945, and the American Cover-Up* (London: Routledge, 1994); Peter Williams and David Wallace, *Unit 731: Japan's Secret Biological Warfare in World War II* (New York: Free Press, 1989); Tanaka Yuki, *Hidden Horrors: Japanese War Crimes in World War II* (Boulder, Colo.: Westview Press, 1996); Hal Gold, *Unit 731 Testimony* (Tokyo: Yenbooks, 1996); and most recently, Daniel Barenblatt, *A Plague Upon Humanity: The Secret Genocide of Axis Japan's Germ Warfare Operation* (New York, HarperCollins, 2004). Many more works on Unit 731, published in the 1980s and 90s, are available in Japanese and Chinese.

scientists, experimented on humans, conducted vivisections, and used germ warfare against military and civilian targets. What has not been well documented — and what can perhaps never be accurately determined — is the specific extent of the Japanese military's biological warfare attacks, the geographical scope and frequency of the intentional spreading of infectious disease outside of the germ warfare laboratories. This gives one pause when one encounters, from a variety of sources, suggestions that Japanese scientific personnel engaged in heinous acts throughout China from the very beginnings of the twentieth century. I suspect that not all major outbreaks of disease that occurred in wartime China were intentionally caused by the Japanese military. I also have a hunch that many research publications on infectious disease in China are not evidence of human experimentation, and that in most cases, vaccines distributed to Chinese by Japanese did not contain invisible agents of genocide. Convictions to the contrary, however, permeate Chinese discussions of the legacy of Japanese science in Manchuria on many levels, affecting not just the realm of popular culture, but also the worlds of Chinese politics, law, and history.

In my work I would like to be able to document the activities of Japanese scientists. A byproduct of this work (although not an explicit goal) might be that one could determine which Japanese scientists ultimately functioned as “vampires,” and which did not. Various accounts of evil Japanese scientist lore could then be suspended in a realm apart, studied as a part of popular culture but separated from a more verifiable set of historical actions and atrocities (some of which could still be adjudicated in various legal forums). However, the scholar working on twentieth-century China, in contrast to the scholar of twentieth-century Africa, is not at liberty to profess a post-modern embrace

of representation as “fact” while simultaneously maintaining a modern belief in what is true and what is not. A foreign scholar who voices skepticism about certain Chinese tales of Japanese “vampires,” or attempts to deal with such stories as metaphor, runs the risk of being accused of sympathies with right-wing Japanese challenges to the credibility of Chinese war memory. One becomes, in effect, something akin to a holocaust denier. It is this research conundrum that this paper seeks to explore.

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A consistent narrative genre about the evil Japanese scientist-physician exists in many Chinese media. Perhaps the best-known manifestation of the evil Japanese physician story lurks at the heart of Bruce Lee’s film, *The Chinese Connection* (aka *Fist of Fury*). Set in early twentieth-century Shanghai, *The Chinese Connection* narrates how Chen Zhen (Bruce Lee) and other members of the Jingwu school of martial arts avenge the death of the school’s founder, Huo Yuanjia. The film is actually based on real occurrences in China’s treaty-port history. The famed Chinese pugilist Huo Yuanjia died in Shanghai in 1913, not long after he won a public match against a Japanese judo expert. Histories of the Jingwu school from as early as 1925 claim that Huo died from injections administered to him by Japanese physicians who wished to kill him as revenge for beating the Japanese martial arts master. The story of how Huo's disciples avenge his death became the basis for what has become a “Fist of Fury” trope in Chinese popular culture, reenacted by every major martial arts star from Jet Lee to Jackie Chan.

Another manifestation of the evil Japanese scientist can be found in the museum-home of the last emperor, Puyi, located in the city of Changchun. The home is a major domestic tourist site, celebrated in popular magazines, TV series, and films that depict the

tale of Puyi and the Japanese puppet-state of Manchukuo (indeed, Bertolucci's *The Last Emperor* is only one of many films that have used the Changchun home as a backdrop for depictions of the sad pageantry of Manchukuo). The home allegedly is kept as if the royal family is still in residence. On the second floor of the mansion, in between the bathroom and the meeting room, lies the room where Puyi received his morning grooming. A barber's chair, looking more like a slightly sadistic dentist's chair, is positioned in front of a large mirror where Puyi would get his shave and trim each day. Next to the chair stands a table with what appears to be an open doctor's kit on top. Within the doctor's kit, various ampoules and hypodermic needles are prominently displayed. An explanatory sign for the room stated that Puyi's Japanese doctors injected him with hormone treatments as part of his daily grooming ritual. The sinister setting suggest that Puyi's physicians did not have Puyi's best health in mind when they administered these injections. Downstairs in the formal reception rooms of Puyi's mansion, other exhibits describe the sad fate of one of Puyi's consorts, who was allegedly killed as a result of mysterious injections administered by Japanese physicians.

Visions of nefarious Japanese science abound in Chinese memories from the second Sino-Japanese War. In Tianjin I encountered the belief among the medical and lay populace alike that Japanese military doctors had purposely caused the cholera epidemics that rocked the city in 1937, 1938, and 1943. Multiple memories from WWII describe entire villages that fell ill and died after being "vaccinated" by Japanese physicians. In mainland Chinese scholarship on the Japanese scientific presence in Manchuria, the overwhelming emphasis is on exposing the evil intent of Japanese scientists, including those affiliated with Japanese colonial public health infrastructures. Japanese medical

reports on contagious disease are read as signs of intentional infliction of disease on human victims. The discovery of a spirit plaque to honor the souls of departed experimental animals in the basement of the former Southern Manchuria Railway Company Institute of Hygiene becomes proof that Japanese scientists in Dalian experimented on humans as well as mice and rats.<sup>6</sup> The numerous stories that trace outbreaks of epidemic disease in north and northeast China in the 1930s and 40s to the machinations of Japanese doctors wielding hypodermic needles go unexamined or are literally "taken at face value."

In the present research climate, it is unacceptable to suggest that at least some of the stories of Japanese scientists spreading disease through vaccination and other measures may be examined as a formulaic rumor. The trope of Japanese medicine and science as inherently evil dominates official public discourse. These rumors — if they are rumors — can not be seen as products of subaltern sensibilities, but are the very stuff of national identity, groomed and perpetuated (though also slightly contained) by elites through official government institutions: textbooks, research institutions, films, museums.<sup>7</sup> The image of evil Japanese science forms a central element in both official and unofficial expressions of Chinese nationalism.

Of course, all of these reportings, particularly the ones that originated after the 1931 Mukden Incident, must be read against the backdrop of Japanese development of germ warfare capabilities in northeast China, a phenomenon that has received considerable attention from Japanese, Chinese, and American researchers. The colonial

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<sup>6</sup> Interview with historians at the Liaoning Provincial Academy of Social Sciences, Shenyang, 18 May 2001.

<sup>7</sup> As witnessed by the graphic displays of Japanese doctors conducting experiments on Japanese prisoners at the Unit 731 museum outside Harbin and the Jiu-yi-ba Museum in Shenyang.

archive tells us that Japanese physicians administered examinations, quarantines, and vaccinations on a mass scale in order to control epidemics in Manchuria. Yet the far less accessible evidence from Unit 731 demonstrates that Japanese scientists also perpetrated singular atrocities in Manchuria using the tools of modern science. China presents the difficulty of analyzing biomedicine-centered rumor and memory in a situation where science had an actual role in the perpetration of wartime atrocities.

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Beginning in the first years of the twentieth century, Japanese scientists and physicians sought to establish world-class institutions of biological sciences in Manchuria. By the 1930s, multiple parts of the administrative structures of the Southern Manchuria Railway Company (SMRC), the Manchukuo government, and the Kanto government were involved in cataloguing and controlling nature. Various branches of the famed SMRC Research Department (*chôsabû*) published multiple studies of Manchurian flora, and fauna. SMRC and the Manchukuo government variously also maintained several Agricultural Experimental Stations, a Central Laboratory, the Mainland Institute of Science, two Cattle Disease Prevention Institutes, two Hygiene Institutes, and a network of thirty hospitals.

Several scholars, most notably Iijima Wataru in Japan and Robert Perrins in Canada, have made important contributions to our understanding of the structures and activities of biological laboratories and biomedical administration managed by the Southern Manchurian Railway Company and the Kantô government, particularly in relation to their epidemic control functions.<sup>8</sup> At times, Chinese elites joined with

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<sup>8</sup> Iijima Wataru, *Pesuto to kindai Chûkoku* (Tokyo: Kenbun Shuppan, 2000); Robert Perrins, "Combatting Illness and Constructing Public Health: Disease and Hospitals in Japanese-

Japanese in joint public health administration in cities such as Dalian, and studied medicine under Japanese mentors in institutions such as the Manchuria Medical University (Manshû ika daigaku). As Ming-cheng Lo has shown in her work on Taiwanese physicians under Japanese colonialism, elites within the Japanese empire sometimes negotiated their identities as "colonial moderns" through participation in science, medicine, and public health.<sup>9</sup> However, on mainland China, Chinese were far more likely to be the subject of scientific study and intervention at the hands of Japanese. This was particularly apparent during outbreaks of epidemics, when hundreds of thousands of Chinese would be subjected to travel restrictions, quarantine, inspection of bodies, examination of excreta, and forced vaccination.

The Japanese biological sciences – with a particularly strong emphasis on epidemic prevention and bacteriology -- had been established in Manchuria since the late nineteenth century. However, beginning in 1932, a new manifestation of the biological sciences arrived in Manchuria. An eccentric but powerful Japanese military bacteriologist named Ishii Shirô established bacteriological and chemical warfare experiment facilities in the area around Harbin. The primary laboratory complex was known as Unit 731. A massive undertaking that employed thousands, Unit 731 maintained its own airfield, schools, apartment complexes, gardens, and transport systems, along with large facilities for the manufacturing of massive amounts of pathogenic bacteria and disease-bearing vectors such as rodents and fleas. Unit 731's most notorious facilities, however, were the jail cells and laboratories designed to test

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Controlled Southern Manchuria," paper presented at the Association for Asian Studies Annual Meeting, Washington DC 2002.

<sup>9</sup> Ming-cheng Lo, *Doctors Within Borders: Profession, Ethnicity, and Modernity in Colonial Taiwan* (Berkeley: University of California Press, 2002).

biological weapons on human subjects. In preparation for total war against communism (China, the Soviet Union) and then eventually the West, Japanese scientists at Unit 731 perpetrated inhuman crimes against an estimated 3,000 victims.

Personnel from Unit 731 and affiliated units also employed biological weapons in the field, but the extent of these attacks is difficult to verify. The best-documented germ warfare attacks took place in 1940 in Ningbo (Jiangsu province) and Changde (Hunan province), and later in 1942 in several towns in Zhejiang province. Documentation for these events is quite thorough, and includes the post-war testimony (from the 1949 Khabarovsk war-crime trials) of Japanese officers who had knowledge of the attacks, recently discovered documents written by Japanese officers involved in the attacks, numerous accounts from observers who witnessed the dispersal of BW vectors from Japanese airplanes, and the observations of numerous Nationalist government public health workers who attempted to manage the bizarre, isolated outbreaks of bubonic plague or cholera. In Ningbo, 100 people succumbed to plague. Death tolls are less well-documented in the Hunan and Zhejiang attacks.<sup>10</sup>

Since the mid-1990s, however, new accusations of even larger, more lethal Unit 731 attacks have emerged from mainland China. One report holds that over 200,000 civilians in Yunnan died in a 1942 cholera epidemic allegedly generated by Unit 731. “Hundreds of thousands” of Chinese died in a cholera epidemic in Shandong in 1943, allegedly also caused by Unit 731. With these new investigations, based on ‘survivor’ testimony, Chinese-American and mainland Chinese researchers estimate that well over

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<sup>10</sup> Details on the BW attacks can be found in all the English-language sources on Unit 731. See note 5.

half a million Chinese died at the hands of Japanese germ warfare during World War II.<sup>11</sup> Chinese websites casually mention germ warfare death-tolls in the thousands for various locations throughout China. War-time outbreaks of disease that were devastating enough to be remembered today, are today frequently attributed to the workings of Unit 731 (it is unclear if such attributions were made at the times of the original outbreaks).

Occasionally, Chinese with a particularly intense interest in the legacy of Japanese germ warfare might even attribute outbreaks of disease in the contemporary world to the nefarious activities of Japanese science 60 years ago. At a recent conference at Princeton, a Chinese-American activist informed me that SARS was created when Japanese WWII chemical and biological warfare materials, buried underground in Guangdong province and long forgotten, leached out and caused mutations in the province's microbial life-forms. Remarkably, this individual was at the same time lobbying to garner support for a very admirable goal: achieving compensation from the Japanese government for the elderly survivors of Unit 731's 1942 Zhejiang campaigns.

Herein lies the central difficulty in interpreting the legacy of Japanese colonial science: barely believable tales of Japanese scientific atrocity are intertwined along with evidence that is admissible in the courts of human rights and wartime compensation. When we examine the legacy of Japanese colonial science, it is difficult to sidestep the complex questions of representation and truth, history and justice. But one must try. In spite of (or perhaps because of) the recent efforts of Chinese-American activists to equate

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<sup>11</sup> These alleged attacks have been investigated by a "Japanese Biological Warfare Crimes Investigation Committee," led by a Chinese-American activist, James Yin. The committee investigates attacks through interviews with elderly people from the various regions. The only English-language source airing these findings as fact is Goldblatt's *A Plague Upon Humanity*, 163-175.

the Japanese occupation of China with the Shoah,<sup>12</sup> historians should not accept 'limits of representation' on China's war-time history.<sup>13</sup>

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One fruitful approach to the multiplicity of tales about the evil Japanese scientist is to focus on the material culture of science: the "entangled objects" at the intersection of contact between Japanese researchers and a Chinese public.<sup>14</sup> Rumor and legend were ways of generating meaning about specific items of medical material culture, particularly the hypodermic needle. What emerges from a focus on the needle is not a story of exchange, circulation, and colonial "encounters." It is instead a story about an object that is an epitome of power and ambiguity: a tool that is wielded by the colonial specialists, a tool that has the ability to penetrate the skin of the colonized in order to cure, or perhaps in order to kill.

Unlike African *bazimamoto* stories, in Chinese "evil needle" stories, Japanese doctors do not use the syringe to extract blood. Instead they use the needle to inject pathogens into Chinese bodies without the victim's knowledge. The Chinese victims are sometimes willingly under the medical care of Japanese physicians (as in the legends of Huo Yuanjia's death, where he sought out Japanese treatment for tuberculosis). However, the more interesting situation is the suspicion that seemed to arise from Japanese mass vaccination projects, a central aspect of Japanese colonial public health administration. Stories about the nefarious uses of injections stem from two possible sources: the

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<sup>12</sup> Cf. Iris Chang, *The Rape of Nanking: The Forgotten Holocaust of World War II* (New York: Basic Books, 1997).

<sup>13</sup> Saul Fridlander, ed., *Probing the Limits of Representation: Nazism and the "Final Solution"* (Harvard University Press, 1992).

<sup>14</sup> Nicholas Thomas, *Entangled Objects: Exchange, Material Culture, and Colonialism in the Pacific* (Cambridge: Harvard University Press, 1991).

ubiquitous identification of both western medicine with the hypodermic needle, and the increased use of mass vaccination campaigns by Japanese public health authorities to control numerous types of contagious disease outbreaks in northeast China. To understand the rise of rumors about the intent of Japanese scientific activities, it is necessary to first shed light on the material culture of biomedicine as practiced in Manchuria by Japanese physicians, researchers, and public health workers, and to highlight the role of the syringe within this material culture.

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In the summer of 1924, students and staff at the Manchuria Medical School embarked on a new adventure. Under the sponsorship of the Southern Manchurian Railway Company's Public Health Office, twelve physicians, medical students, and technicians of the First Eastern Mongolia Mobile Medical Team traveled for one month in the Kerqin grasslands, providing medical services and investigating the public health situation among the 'natives.' The goals of the expedition were numerous and grand. By offering medical care, the mobile medical teams were to bring the light of civilization to a remote place. The expedition was conceptualized within an overall framework of nurturing benevolence and mutual understanding between the peoples of Manchuria. Organizers pointed out that Christian missionaries had sacrificed their lives to bring modern medicine to the Chinese, but anti-foreign feelings had led to the destruction of hospitals and religious institutions. In the contemporary situation of competition between various foreign concerns in China, it was important for Japanese medicine to demonstrate benevolence in order to win over the hearts and minds of the natives. For this reason, they would risk their lives to bring medical relief to the miserable sufferers of eastern

Mongolia. At the same time, their investigations in the eastern-most parts of the railway network would help protect the health of southern Manchuria and its growing Japanese population<sup>15</sup>

Eastern Mongolia, or the western parts of what was to become Manchukuo, was a site of perpetual interest for Japanese scientists. This was the border where the fertile Manchurian plain turned into the shifting grasslands and deserts of the Mongols. From the perspective of public health, this area was a dangerous site, for it was home to endemic pockets of bubonic plague. Plague outbreaks took place in this area in 1928, 1935, and 1936, just as SMRC railway lines were expanding into the region. To a Japanese administration that lived through the great Manchurian plague of 1910-1911, the hygienically "backward" Kerqin grasslands loomed as a perpetual threat to the Japanese presence in Manchuria. Beginning in 1924 and then continuing every year for the next twelve years, faculty and students from the Manchuria Medical School spent their summer vacation bringing biomedicine to this dangerous area in order to bring benevolence to the natives, and in order to protect the endeavors of the Japanese empire.

The scientific work of the mobile medical teams was methodologically diverse. They took photographs of local suffering, generating the usual colonial archive of horrific images: victims of tertiary yaws with noses and lips half eaten away, monstrous births, missing appendages, deformed bone structures. At the same time they took photos of wild landscapes, and had a particular fondness for photographing camels and piles of cow manure. The teams tested water, commented on local foods and customs, and made notes on the flora and fauna of the region, with particular emphasis on the relationship between

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<sup>15</sup> \_\_\_\_\_, \_\_\_\_\_ (\_\_\_\_: \_\_\_\_\_, 1924), \_\_\_\_.

man, insects, and domesticated animals. But their primary business was to cure the bodily ills of the local inhabitants.

The extensive records of each expedition allows us a glimpse into the physical constituents of biomedicine as experienced by the region's people. It is immediately obvious that many of the objects used by the mobile medical teams were designed to pierce or probe inside the skin. They included needles for sewing wounds, needles for administering smallpox vaccinations, a tool for puncturing the chest cavity, speculums (for vagina and anus), blood-drawing needle, and finally a wide assortment of hypodermic needles and ampoules for giving injections.<sup>16</sup> Most of the drugs used by the mobile medical teams were delivered through the hypodermic needle. Indeed, needles provided the primary interface of communication between Japanese and non-Japanese in this culturally and linguistically diverse part of Manchuria.

Needles were also central to Japanese scientific investigation of Manchuria's biology. Overall the work of the teams, like the research of other scientists in the field in Manchuria, displayed the emergence of a "medical ecology" approach to the natural environment of northeast China. On each trip, mobile medical teams surveyed the natural environment of the grasslands and the place of native people within it. The central goal for the biological sciences was to control the Manchurian environment in order to render it predictable, extractable, and above all, healthful for Japanese settlement. To do this required a knowledge of the ways diseases spread among animals, insects, and humans. A central task of the biological sciences was to unravel the relationships between vectors and man, or rather, to see man as part of a intertwined disease-producing environment.

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<sup>16</sup> Ibid., 4.

Testing, examining, and observing man was part and parcel of testing, examining, and observing nature.<sup>17</sup>

The hypodermic needle was an integral part of this Japanese investigation of Manchuria's "nature." Scientists drew blood from man and animal alike to understand "flora and fauna" on a microscopic level. Mobile medical teams were not the only investigators to do this. SMRC surveys of agriculture and land use (information frequently used by American scholars to understand village society) also included information on the diseases of livestock, tested by drawing blood from cattle and sheep.<sup>18</sup> These investigations overlapped with medical/anthropological investigations of the blood of different ethnic groups conducted in the name of public health/public health during the Manchukuo regime.<sup>19</sup>

The needle was a part of studying the nature of Manchuria, but it was also a central tool in the prevention of disease. The needle gained increasing prominence during the Manchukuo regime as Japanese epidemic control activities penetrated even the most in remote areas of Manchukuo. One pertinent example is the Japanese management of a localized outbreak of bubonic plague in the Kerqin grasslands in 1935. After the Mukden

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<sup>17</sup> On ecology, medical ecology, and empire, see Helen Tilley, "Africa as a 'living laboratory': the African Research Survey and the British colonial empire: consolidating environmental, medical and anthropological debates, 1920-40," (Oxford D.Phil. 2001); Peder Anker, *Imperial Ecology: Environmental Order in the British Empire 1895-1945*, (Harvard University Press, 2002); and J. Andrews Mendelsohn, "From Eradication to Equilibrium: How Epidemics Became Complex after World War I," in Christopher Lawrence and George Weisz, ed., *Greater Than the Parts: Holism in Biomedicine, 1920-1950*, (London: Oxford University Press, 1998), 303-331. For my own preliminary thoughts on the role of "medical ecology" in Japanese imperial science, see "Birdwatchers in Plagueland: Contagious Disease, Medical Ecology, and the Study of Nature in Manchukuo," paper delivered at the 2002 Association for Asian Studies Annual Meeting.

<sup>18</sup> On livestock health, see various Mantetsu chosabu reports from the 1930s:

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<sup>19</sup> On investigations into blood-types, see \_\_\_\_\_, " \_\_\_\_\_," \_\_\_\_\_, \_\_\_\_ (\_\_\_\_, \_\_\_\_6).

Incident and under the Manchukuo regime, Japanese administrators were able to marshal far more resources into the area than what had been represented by the mobile medical teams of the previous decade. Over one thousand police, military, and health personnel conducted door to door (or yurt to yurt) inspections of hundreds of thousands of people. With the plague inspection came vaccinations: in one month in 1935 alone, Japanese public health personnel injected almost two hundred thousand people in the region with a plague vaccine.<sup>20</sup> From this example we can see that Japanese public health/epidemic control efforts not only touched cities, but spread to the furthest edges of the empire. Mongol nomads living in yurts, Russian pioneers in logging camps, and Buddhist monks cloistered in lamaseries on the edges of the grasslands experienced the Japanese medical presence, usually in the guise of the public health worker wielding a needle, in the company of a military escort wielding a bayonet.

The exact shape of the hypodermic terrain in Manchuria has yet to be investigated. More thorough research from the northern Chinese city of Tianjin offers an instructive point of comparison. During the 50 year presence of Japanese biomedicine in the city, few Chinese patronized Japanese hospitals or Japanese physicians. In Tianjin's Japanese concession, authorities offered routine childhood vaccinations for smallpox, diphtheria, and scarlet fever almost exclusively to Japanese residents. The tens of thousands of Chinese living in the concession were "immune" to Japanese public health intervention, with the exception of annual door-to-door residential hygiene inspections

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<sup>20</sup> \_\_\_\_\_ ( \_\_\_\_\_ 3 ).

conducted by local authorities (which may have included Chinese elites). Encounters with Japanese needles were few.<sup>21</sup>

The situation in Tianjin changed radically after the Japanese military occupied the city in 1937. The threat of contagious disease under conditions of war led Japanese authorities to administer preventative vaccinations frequently and on a very large scale. As the war dragged on, Japanese (and Chinese) medical personnel in Tianjin generated a never-ending cycle of examinations, inspections, and vaccinations of the native populace. Hypodermic needles were joined by rifles and bayonets as Japanese authorities went door to door to conduct health inspections and administer vaccinations. In 1939, the combined forces of the Japanese military, the Japanese concession health department, and the collaborationist government health department conducted 213,000 cholera vaccinations, 217,000 smallpox vaccinations, and 9,000 typhoid fever vaccinations. Laboratories in the Japanese concession examined thousands of samples of feces, blood, spinal fluid, and sputum in an attempt to pinpoint cases of intestinal parasites, scarlet fever, cholera, meningitis, and tuberculosis. Hundreds of thousands of individuals throughout the city were located, named, recorded, and injected by a network of Japanese soldiers and doctors.<sup>22</sup>

It is still unclear the extent to which vaccinations and inspections were employed by Japanese authorities in Manchurian cities, and to what extent the nature of these interventions may have changed during the war. But preliminary investigations reveals

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<sup>21</sup> This and other information on Tianjin drawn from my book, *Hygienic Modernity: Meanings of Health and Disease in Treaty-Port China* (Berkeley: University of California Press, 2004). Primary sources on Japanese management of disease in Tianjin before the occupation can be found in Tianjin's Japanese concession \_\_\_\_\_ reports. From 1937-1945, I draw my information from archives of the occupation period's Public Health Bureau (\_\_\_\_) held by the Tianjin Municipal Archives.

<sup>22</sup> see chapter nine of Rogaski, *Hygienic Modernity*.

several important insights. First, hypodermic needles were not only an integral part Japanese public health activities in Manchuria, but were also an important tool in the general scientific investigation of Manchuria's natural environment by Japanese scientists. Second, Japanese medical and scientific personnel ranged far and wide across Manchuria, and the needle went with them where ever they went. Finally, the use of the hypodermic needle in Japanese public health activities increased after 1932 and particularly after 1937, as war brought more soldiers, more doctors, and more disease to Manchuria.

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How then are we to make sense of Chinese tales of Japanese scientists who used the needle to inflict disease, and not health? Carlo Ginzburg, in his work on tales of witchcraft and werewolves in Europe, suggested that rumors should be read as reflections of beliefs stretching back to an ancient past. Details in stories provide glimpses into a shared mentalité of a peasant world, of old traditions and old tales.<sup>23</sup> Certainly tales of armies secretly poisoning their enemies in war — by poisoning wells, or by intentionally spreading "pollution" — are frequently encountered in the Chinese historical record. That Japanese armies would be accused of wide-scale "poisoning" of Chinese could be seen simply as an expected continuum of a tradition: only in this instance, the vehicle through which the poisoning was accomplished had changed from poisonous insects slipped into a well to injections.

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<sup>23</sup> Carlo Ginzburg, "Clues: Roots of an Evidential Paradigm," in Ginzburg, *Clues, Myths, and the Historical Method*, trans. John and Anne Tedeschi (Baltimore: Johns Hopkins University Press, 1988), 96-125.

Yet tales of evil needles should also be placed in the context of popular beliefs that accompanied the evolution of biomedicine, both in Europe and in colonial settings. Historians of medicine usually pay far more attention to colonial "misunderstandings" of public health interventions, forgetting that in England, riots broke out in reaction to government cholera control activities in the 1830s and 40s. British working-class city-dwellers were convinced that they were sent to hospitals so that medical students could cut up their bodies and suspected that the government had a hand in spreading disease among the poor. In Meiji Japan, stories that doctors of biomedicine cut up the bodies of cholera victims and extracted their eyes or livers circulated widely.<sup>24</sup> The belief that foreigners cut out various body parts of Chinese and used them to make medicine resonated not only with traditional Chinese beliefs that men could actually seek human organs for use as medicines, but was also part of a world-wide reaction to an emerging biomedicine, one that cut bodies both living (surgery) and dead (autopsies).<sup>25</sup>

However, stories that equated Japanese injections with poisoning and germ warfare emerged in a specific environment of Japanese imperialism. Liu Shih-yong has noted that beginning in the 1920s, Japanese public health in Taiwan relied increasingly on vaccination (rather than environmental interventions) to prevent epidemic disease.<sup>26</sup> I trust that similar trend can be discerned in Manchuria. However, the increased reliance on vaccination to control cholera, typhoid, and plague coincided with the increased presence of soldiers and violence in northeast China. Japanese science obviously followed one

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<sup>24</sup> Yamamoto Shun'ichi, *Nihon korera shi* (Tokyo, 1982), 31-40.

<sup>25</sup> On these beliefs, see Paul Cohen, *China and Christianity, China and Christianity; the Missionary Movement and the Growth of Chinese Antiforeignism, 1860-1870* (Cambridge, Mass.: Harvard University Press, 1963).

<sup>26</sup> Liu Shih-yong, "Cong 'qingjie' dao 'weisheng': zhiminzhengfu dui Taiwan shehui zai qingjie guannian shang de gaizao"

particular European 'style' of public health which thus led to an increased reliance on needles. However, in Manchuria, this increased reliance on needles occurred simultaneously with military invasion and a subsequent increase in the incidence of disease.

A focus on the material culture of science casts stories of evil Japanese needles as a reaction to Japan's remarkable power and ability to penetrate China seemingly at will. Luise White has interpreted stories that link biomedicine to vampires as tales of unfair victimization: "*Bazimamoto* stories are those in which Europeans get the upper hand. They [Europeans] were not necessarily smarter than Africans, but they had better tools, more power, and most especially, better drugs."<sup>27</sup> The legend of the death of Huo Yuanjia — the kung-fu master whom the Japanese could only defeat through the surreptitious use of hypodermic needles — closely fits this sort of interpretation. In these stories, Japanese science explains Chinese defeat. The co-incidence of military invasion and mass vaccination helped to generate rumors beyond the occasional encounter with Japanese medicine within a Japanese hospital setting. As we have seen, Japanese medical personnel brought the syringe into the far reaches of Manchuria. Mass exposure to the needle on a wide scale helped to create a unified genre of rumor across a broad geographical area.

Japanese scientists did not only use needles to inject into or draw from humans: the blood of animals was also scrutinized through the same method. Indeed, humans and animals in Manchuria existed on a ecological continuum for many Japanese researchers. That man was a 'natural object' for Japanese experts in biology and public health is

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<sup>27</sup> White, 115.

perhaps most graphically demonstrated in photographs from plague prevention work in Manchuria. The official Japanese history of the great Manchurian plague of 1910-11 contains, in sequence, photographs of Japanese scientists performing autopsies on the frozen corpses of donkeys, followed immediately by photographs of Japanese scientists performing autopsies on the frozen corpses of (Chinese) humans. Bodies of both animal and man are splayed in similar positions and displayed in similar settings, the scientists are garbed in similar white coats and masks. The overall effect of this sort of continuity (also evident in plague prevention reports from the 1930s) is to position both man and animal as objects of scientific penetrating, probing, and disemboweling. In this light, tales of evil injections can be read as resistance to the objectifying intent of science, a response to being callously examined and injected by Japanese scientists along with the rest of nature. Medical ecology may have been an "advanced" approach to the study of disease, but in the colonial setting, and under conditions that saw the erosion of medical ethics, medical ecology represented an opportunity for the emergence of medical atrocities.

Ideally, research into rumors of evil needles should specify *who* may have authored such beliefs and uncover *when* such beliefs became widespread. Rana Mitter, in his recent monograph *The Manchurian Myth*, has demonstrated how tales of spontaneous Chinese resistance against the Japanese in Manchuria were primarily the product of Chinese nationalists organized south of the Great Wall. The actual response within Manchuria to Japanese expansion was diverse, ambiguous, and could not entirely be encompassed by a narrative of heroic resistance.<sup>28</sup> Tales of evil injections may have been more closely aligned with Chinese nationalism, and they may have become more commonplace after 1937 with the emergence of an organized resistance, or even after

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<sup>28</sup> Rana Mitter, *The Manchurian Myth* (Berkeley: University of California Press, 2000)

1949 with the establishment of the People's Republic. Such rumors have merged with mainland Chinese constructions of war memory, and war memory forms a major basis for contemporary nationalism, including the official kind nurtured by the present government.

Ultimately, however, no consideration of needle rumors can separate itself from the legacy of Unit 731. To suggest that only a few of the stories of Japanese doctors inflicting disease are true is ultimately futile, since it is impossible to adequately document the truth in order to give it a separate existence from fiction or rumor. The very nature of germ warfare works against the application of Ginzburg's "just one witness" rule to China's wartime experience.<sup>29</sup> In times of war, it is extremely difficult to separate natural from intentional outbreaks of disease. Unlike the survivor of a massacre, the survivor of an epidemic would not have an immediate and complete understanding of the source of his suffering. Without the memory of a perpetrator, the memory of a victim (of disease) may not suffice.<sup>30</sup> Hence the necessity of both China and Japan to open their war-time archives to the reasoned investigations of scholars.

Still, the blurring of truth and rumor in the legacy of Japanese science perhaps contains an instructive truth about modern science/biomedicine, particularly under conditions of military occupation. Dipesh Chakrabarty has challenged scholars to "write into the history of modernity the ambivalences, the contradictions, the use of force, and the tragedies and ironies that attend it." He has suggests that the ironies of modernity are

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<sup>29</sup> Carlo Ginzburg, "Just One Witness," in Friedlander, ed., *Probing the Limits of Representation: Nazism and the "Final Solution,"* 82-96.

<sup>30</sup> Indeed, this is the argument that is used to counter PRC allegations that the United States used germ warfare against China in the Korean War. See Rogaski, "Nature, Annihilation, and Modernity: China's Korean War Germ Warfare Experience Reconsidered," *Journal of Asian Studies*, 61.2 (2002):381-416.

nowhere more evident than in the history of modern medicine and the biological sciences. Chakrabarty points out that the triumph of an ultimately beneficial and benevolent modern health "has always been dependent on the mobilization, on its behalf, of effective means of physical coercion."<sup>31</sup> There is perhaps no clearer example of this than the Japanese application of the biological sciences in Manchuria during the first part of the twentieth century. Tales of the Japanese physician dispensing disease through the hypodermic needle embody the frustrations, suspicions, and genuine atrocities caused by occupation, inscribed upon one of the most common objects that lay at the literal point of Japanese-Chinese contact. The impossibility in the present PRC political climate of recognizing the dual nature of science under the Japanese — at once brutal *and* modern — lies at the base of mainland Chinese constructions of national identity. This paradox might also serve as a cautionary tale to any power that seeks to deliver the modern "magic" of biomedical science through the vehicle of military occupation.

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<sup>31</sup> Dipesh Chakrabarty, "Postcoloniality and the Artifice of History: Who Speaks for "Indian" Pasts?" in *A Subaltern Studies Reader 1986-1995*, ed. Ranajit Guha (Minneapolis: University of Minnesota Press, 1997), 263-293 (288).