THE INHERITED EPIDEMIC:
A HISTORY OF TUBERCULOSIS IN OCCUPIED JAPAN

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THESIS

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ABSTRACT

Scholarship on Japan's Occupation Period (1945-1952) has focused on the ways in which Japan was transformed from an imperial power to a democratic nation. While such work provides valuable information about how the Supreme Commanders for the Allied Powers (SCAP) affected Japan's political climate following the end of the Asia-Pacific War, they gloss over other ways in which the SCAP government came in contact with the Japanese people. The topic of health is one that has seldom been explored within the context of the Allied Occupation of Japan, despite the fact that the task of restoring and maintaining health brought SCAP personnel and policies into daily contact with both the Japanese government and people. By focusing on the disease tuberculosis, which boasted the highest mortality rate not only during the Occupation Period, but also for most of the first-half of the twentieth century, this paper hopes to illuminate the ways in which health brought the Allied Powers and Japanese into constant contact.

The managing of tuberculosis in the Occupation Period represented a major success for SCAP's Public Health and Welfare (PH&W) section. The new medical findings, medicines, and management and education systems that the PH&W incorporated into the Japanese health systems played a large role in the PH&W's success in controlling tuberculosis within Japan. The PH&W's expertise in dealing with tuberculosis reconnected Japan with the international medical community it had forfeited during the Asia-Pacific War. In doing so the PH&W also helped dispel the social stigma that surrounded tuberculosis and hindered earlier attempts to halt the disease's spread.

The management of tuberculosis was a major success for the Japanese government as well. While the PH&W section was quick to point out that their

introduction of modern science into Japan lead to the defeat of tuberculosis, many of the methods used to combat the disease were familiar to the Japanese government and medical community. While SCAP may have provided new drugs like streptomycin, Japanese medical professionals were already well versed in the production and distribution of vaccines. Japanese citizens had also previously been exposed to many of the practices, such as regular tuberculosis screenings that the PH&W section mandated. The Japanese governments ample supply of manpower was also a crucial, though often overlooked, component of tuberculosis control in the Occupation period.

Tuberculosis control was achieved during the Occupation Period through the cooperation of both SCAP and the Japanese government and medical community. After explaining why tuberculosis remained a problem in the early twentieth century, despite Japanese medical communities efforts to dispel the social stigma surrounding tuberculosis and to manage the disease, this paper examines why tuberculosis rates grew at their fastest pace ever following the end of the Asia-Pacific War. The early years of the Occupation brought both immediate changes instituted by the PH&W section and practices that had prewar precedents within Japan. Finally, this paper turns to the PH&W's push to control tuberculosis. Building on the changes instituted in the early Occupation Period, the PH&W section introduced new findings concerning tuberculosis and strictly reinstated familiar practices including mandatory vaccine drives, in order to finally overcome tuberculosis.

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CHAPTER 1
INTRODUCTION

Miyazaki Hayao's final film, *The Wind Also Rises,* tells the story of Horikoshi Jiro, the designer of the Mitsubishi A6M Zero. While the film focuses on Jiro's successes and failures as an aircraft engineer, it also tells the story of Jiro's love, Naoko. She suffers from tuberculosis and spends much of the film separated from Jiro. Although he returns to her frequently, their time together is short. She passes away at near the end of the film, leaving Jiro to reconcile his dream of creating beautiful aircraft with the reality of their destructive use in the Asia-Pacific War.

Naoko's struggle with tuberculosis represents a small, yet important, depiction of life in Japan before the Asia-Pacific War. Her death represents just one of the millions that occurred during the war. Moreover, her death is one that seems only tenuously related to the war. Her struggle with tuberculosis was, however, a struggle that hundreds of thousands of Japanese faced in the first half of the twentieth century. The spread of tuberculosis throughout Japan in fact had as much to do with the emergence of the Japanese Empire as it did with the disease's own ability to infect populations quickly and efficiently. Yet, the story of tuberculosis's rise has been almost entirely lost within accounts of the Japan's imperial decades.

Today it is perhaps easy to overlook the significance that diseases like tuberculosis held only half century ago. While tuberculosis claimed more Japanese lives from the late nineteenth century through the beginning of the Occupation period than any other disease, it is not a disease that is readily associated with modern Japan. Rather, tuberculosis is a disease that fraternizes with developing

countries. It is a disease that seeks out countries in the early stages of industrialization, and makes itself a home within their populations. As Japan's political and business leaders drew on the collective labor of their workers in order to generate growth and wealth, tuberculosis drew upon the labor of those same workers to breed itself.

Japan began the process of industrializing during the nineteenth century. At the same time, Japan also engaged in empire building. Japan's quest for growth transported bodies from the countryside to the city, and from the homeland to new territories. It also taxed these bodies heavily with the work needed for production and protection. A rise in diseases, tuberculosis key amongst them, occurred concurrent to both of these transformations. In 1945, when Japan's empire and industries crumbled in defeat, the tuberculosis epidemic remained as strong as ever.

Historians interested in Japan often use 1945 to talk about endings and beginnings. They talk about the end of Japan's aggressive push for control in East Asia, the end of its empire, and the end of Japan's ability to wage war abroad and at home. They talk about the beginning of the Allied Occupation, the beginning of Japan's reconstruction, and, perhaps most often, the beginning of the United State's highly influential political relationship with Japan. Continuities, more often than not, are forgotten in this discussion of beginnings and endings. Contagious diseases like typhus, dysentery, and tuberculosis were unaffected by the signing of the Potsdam Declaration. These diseases thrived just as well in Japan's deteriorating wartime cities as they did in the ruins of its postwar urban centers. A through examination of diseases like tuberculosis, makes it possible to see how 1945 was both a time of

dramatic beginnings and endings, and a time in which pre-war conditions continued to affect postwar circumstances in dramatic ways.

Most historians writing about the Occupation of Japan overlook the significance of disease as a hindrance to both Japan's war-making capacity and reconstruction efforts. John Dower, whose book *Embracing Defeat* remains one of the cornerstones of scholarship on the occupation period, for the most part eschews the discussion of social conditions like disease in favor of outlining the new and vibrant political climate that developed in the occupation period.[1] While he devotes several chapters to living conditions in occupied Japan, descriptions of disease are lost in a tumult of social issues that includes housing and food shortages, crippling inflation, and the psychological exhaustion that accompanied Japan's surrender.

Although the majority historians working on issues in twentieth century Japan have only discussed issues of health and disease in a cursory nature, two recent monographs have directly addressed these subjects. The first of the two, William Johnston's *The Modern Epidemic*, follows the development of the tuberculosis epidemic in the late nineteenth and early twentieth centuries. He argues that there is a hole in modern Japanese history where the topics of disease and public health are concerned. Through writing a history of tuberculosis, Johnston calls attention to a previously overlooked story, and also illuminates the ways in which the Japanese public experienced disease, scientific change, and the hand of

[1] John Dower, *Embracing Defeat: Japan in the Wake of World War II* (New York: W.W. Norton and Company, 1999).

the government in their daily lives.[2]While Johnston's work vividly depicts the battle between tuberculosis and Japanese health authorities, his narrative all but ends with the beginning of the occupation period - the time in which tuberculosis cases both reached their all-time high and also were first brought under control. Johnston has little to say about the interplay between the Supreme Commander for the Allied Powers (SCAP) and their partners in the Japanese government's Ministry of Health and Welfare (MHW).[3] In choosing to focus most heavily on the history of tuberculosis in Japan during the years 1890-1945, Johnston has provided many important and fascinating glimpses into the daily lives of Japanese citizens during this time period, but he has also left many questions about tuberculosis in the Occupation Period unanswered.

Reforming Public Health in Occupied Japan, on the other hand, examines the attempts made to control disease and changes brought to the Japanese health system during the Occupation Period. The co-authors, historians Christopher Aldous and Akihito Suzuki, analyze the accounts of the work done by SCAP's Public Health and Welfare Division (PH&W) and the department's leader, General Crawford F. Sams, in the name of rehabilitating Japan's medical community. Their book remains one of the only studies in the English-language scholarship to devote itself wholly to examining the issue of public health in postwar Japan. Aldous and Suzuki point out that generally the work done by the PH&W division was successful if and when it

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[2] William Johnston, *The Modern Epidemic: A History of Tuberculosis in Japan* (Cambridge: Harvard University Asia Center, 1995), 4 and 6.

[3] The Ministry of Health and Welfare was known as the *Kōsei-shō* in Japanese, but I will refer to it using the acronym MHW in this paper. The *Kōsei-shō* no longer exists under this name. Instead it merged with the Ministry of Labour (*Rōdō-shō*) to become today's Ministry of Health, Labour, and Welfare (*Kōsei-rōdō-shō*.)

mirrored pre-war policies that were already familiar to the Japanese. Furthermore, they believe Sams remained blind to this fact, and that he considered Japan to be an unhygienic country with little understanding of how disease spread or the workings of sanitation engineering. To Aldous and Suzuki, Sams did not, as the general himself believed, bring modern medical science to Japan. Rather, the orders given by his PH&W department, and largely carried out by the Japanese MHW, allowed for the rehabilitation of health and sanitation practices known to the Japanese, but were disrupted by the war.[4]

Aldous and Suzuki's argue that policies that were continuous with those of the prewar and wartime periods were the ones that produced results in occupied Japan. Their argument, however, does not entirely explain how both the PH&W division of SCAP and its Japanese counterpart, the MHW, dealt with the tuberculosis epidemic.[5] As Johnston's work discusses in depth, for the Japanese the contraction of tuberculosis was accompanied with a severe social stigma. A simple return to prewar practices aimed at controlling the spread of tuberculosis would have been insufficient in dispelling the social stigma that the disease carried, and therein could not truly eradicate the disease. While there is merit in Aldous and Suzuki's criticism of the PH&W division and Sams's actions during the occupation period, especially where practices of sanitation are concerned, the task of controlling tuberculosis was one that also benefited from the influx of new medical knowledge, health practices, and data organization techniques from the United States.

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[4] Christopher Aldous and Akihito Suzuki, *Reforming Public Health in Occupied Japan* (Abingdon, Routledge, 2012), 3.
[5] Aldous and Suzuki, *Reforming Public Health*, 6.

For this very reason, tuberculosis is as much a part of the story of postwar reconstruction as it is a story of disease. Unlike other diseases, such as dysentery, cholera, and typhus, that plagued the Japanese people during the occupation period, the task of controlling tuberculosis required the cooperation of both occupier and occupied to be accomplished. A careful mixture of both change and continuity provided the Japanese and SCAP with the highest chance for success in combatting diseases that had been endemic within Japan before the war and ran rampant in the postwar period. This mixture of familiar practices and cutting edge knowledge was especially crucial in the case of tuberculosis control not only because tuberculosis had been, for more than half a century, the disease that took the most Japanese lives, but also a disease to which the Japanese people assigned a severe stigma.

This paper is an attempt to pick up where Johnston's *The Modern Epidemic* leaves off, and to investigate the joint effort undertaken by Japanese government and SCAP in order to control and halt the spread of tuberculosis. Tuberculosis's history appears throughout both the documents of the SCAP PH&W division and the Japanese MHW. Tuberculosis and the various social factors that made the disease's continued postwar growth possible also appear in the memoirs of Japanese and American doctors, social workers, and citizens. Drawing on both the Japanese government and SCAP's commentaries on tuberculosis in the occupation period provides the best means of understanding how both institutions came to work together with the shared goal of controlling tuberculosis.

While Sams and the PH&W were not as single-handedly successful at combatting disease and restoring public health in Japan as their records suggest, the

story of tuberculosis control in occupied Japan is one which highlights some of their greatest successes. The PH&W's restructured Japan's hospital and medical education systems, introduced new medical technologies, and the aided in changing the social views surrounding tuberculosis. The PH&W's treatment of the disease inspired ensured that tuberculosis morbidity rates declined much faster than they would have had the Japanese government been left to deal with the epidemic single-handedly. However, it is important to note that despite what Sams and others in the PH&W department claimed, in the pre-Occupation Period Japan was not without its own means for combatting tuberculosis. Many practices, such as vaccination drives and mandatory disease reporting were practiced in the interwar and war years. Without drawing upon both these familiar practices and the often discounted, yet crucial manpower mobilized by the MHW, the PH&W's campaigns against tuberculosis would have been fruitless. Only with the coupling of these, to borrow a phrase from Dower, previously "embraced" techniques and new medical findings could the PH&W division and their partners in Japan's MHW bring tuberculosis under control.

CHAPTER 2
TUBERCULOSIS IN THE PRE-OCCUPATION PERIOD: 1890-1945

In order to understand why controlling tuberculosis posed such a challenge during the occupation period, and why such a challenge could not be met by the Japanese Ministry of Health and Welfare (MHW) alone, it is important to understand Japan's tuberculosis epidemic before the occupation as well. Japan's struggles with tuberculosis control in the late nineteenth and first half of the twentieth centuries set the stage for its postwar problems as well. It is due to broad factors that affected the whole of society that occurred during the years leading up to the Asia-Pacific War and, eventually, the occupation, that tuberculosis became an epidemic. These factors included both Japan's rise to an industrial nation and its empire building projects. It is also during these years that health professionals in Japan initiated their first policies to curb tuberculosis. Through understanding why these early attempts to control tuberculosis ultimately failed, it is possible also to understand why the joint efforts of both the Japanese MHW and the Supreme Commander for the Allied Powers's (SCAP) Public health and Welfare (PH&W) were necessary for the success that came in the Occupation Period.

Most forms of tuberculosis, a bacterial disease caused by the *tubercle bacillus*, infect the lungs of those who have caught the disease.[6] Tuberculosis causes its sufferers to exhibit many symptoms including weight loss, fatigue and fever.

[6] According to the Centers for Disease Control, tuberculosis is caused by a bacterium formally called *Mycobacterium Tuberculosis.* The phrase *tubercule bacillus* refers not to the formal disease nomenclature for tuberculosis, but instead to the actual tuberculosis bacterium itself. *Bacillus* refers specifically to the shape of the bacteria. Tuberculosis bacteria are rod-shaped, and thus are classified as *bacilli*. I have chosen to use the term *tubercule bacillus* over to *Mycobacterium Tuberculosis* when referring to the tuberculosis bacteria itself in order to maintain continuity with other authors', including Johnston, terms.

Tuberculosis is most identifiable, however, as a disease that causes chronic coughing, which is at times accompanied by the expulsion of blood. Tuberculosis's mode of transmission makes it a particularly dangerous disease, especially in densely populated areas. Tuberculosis is classified as an airborne disease, which means that not only does it spread through the air, but also that tuberculosis droplets linger within the air for an extended period of time.[7] Tuberculosis's ability to survive within air for an extended period of time, coupled with the tuberculosis sufferer's propensity to cough strenuously, allows tuberculosis to spread from person to person with alarming efficiency.

The history of tuberculosis, which is know as *kekkaku* (結核) in Japan is one that stretches back thousands of years. Archaeological studies have shown that tuberculosis first appeared in Japan during the third century B.C.E.. Tubercular lesions on bones found in excavated graves from the sixth century C.E. onward have shown that by this time tuberculosis was a fairly common disease.[8] It was not until the 1870s, however, that tuberculosis outbreaks occurred on a large scale. In this initial epidemic, which heralded the later Japan-wide tuberculosis epidemic, mortality rates for Ainu sufferers reached 9250 per 100,000, the highest ever recorded amongst a population.[9]

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[7] "Basic TB Facts," Centers for Disease Control and Prevention, http://www.cdc.gov/tb/ publications/ faqs/qa_introduction.htm#Intro3.
[8] Johnston, *Modern Epidemic*, 40.
[9] Johnston, *Modern Epidemic*, 68. For example, in 1909, nearly thirty years after tuberculosis had first broken out amongst the Ainu people, 555 Ainu died of tuberculosis. That same year only 179 Japanese died of the disease.

While the earliest serious outbreaks occurred amongst the Ainu peoples in Hokkaido in the 1870s, the disease soon spread southward.[10] By the mid-1880s, tuberculosis had become so prevalent that the Meiji government could no longer ignore the disease as they had done when it broke out within Ainu communities. In 1886, the government took its first official steps towards tuberculosis control. The Meiji Government mandated reporting of tuberculosis by physicians, and also published morbidity statistics for the disease. [11] These same measures, which constituted the only action the government took against tuberculosis until the 1930s, would be only haphazardly enforced throughout the early twentieth century.

Surprisingly, the international medical community was aware of the existence of the *tubercle bacillus,* for more than twenty years before the Meiji government addressed tuberculosis control.[12] However the turmoil brought by the final years of the Tokugawa Shogunate (1600-1868) ensured that attention given to the world outside Japan took a back seat to internal concerns. During the 1850s and 1860s, turmoil created by the conflict between those loyal to the shogun and those who wished to reinstate the emperor was, however, conducive to the spread of tuberculosis. Events like the Tenpo Famine, which lasted from 1833-1837, lead to increased public uprisings, and were compounded by threats from abroad. As the Tokugawa Shogunate increasingly lost influence over the Japanese populace, people

[10] Johnston, *Modern Epidemic*, 67
[11] Johnston, *Modern Epidemic*, 163.
[12] The scientific community was, in the 1860s, aware of the existence of the bacterium that caused tuberculosis and of the fact that this new bacterium caused the symptoms we understand to be indicative of tuberculosis today. They were not aware that this bacterium was the singular cause of tuberculosis, and as such this newly discovered bacterium was not assigned the name *tubercule bacillus* initially. The disease caused by this bacterium, *Mycobacterium tuberculosis*, would not be formally discovered and defined until after the Meiji Restoration. Johnston, 163.

found themselves with an increased freedom of movement. The breakdown of Tokugawa control meant that villagers were no longer confined to their villages. This increased freedom of movement accelerated the trend of urbanization that began in the seventeenth century. The movement of people from their ancestral villages to Japan's large cities in turn expedited the growth of squalid, slum-like neighborhoods.[13] Within these newly formed communities, tuberculosis spread quickly from body to body and household to household.

Why, then, did the Meiji Government wait nearly forty years to investigate the effects of tuberculosis within Japan? Johnston argues that the Meiji government became interested in tuberculosis in 1886 only because at this time the tuberculosis epidemic finally became dire enough to pose a threat to the government itself. In a time when the government's resources were used not only to quell civil unrest but also to manage other outbreaks such as the cholera epidemic, tuberculosis garnered little attention. Earlier tuberculosis epidemics in Hokkaido occurred far from the Meiji seat of power, and were thus easily ignored. Additionally, until 1886, other factors including financial restraints, the presence of other more pressing diseases, and a lack of tangible repercussions from the spread of tuberculosis kept the Meiji government from instituting controls aimed at managing tuberculosis.[14] Financially, the Meiji government involved itself with growing Japan's industrial strength, and with the funding of early military campaigns like the First Sino-Japanese War. Authoritative Meiji medical institutions, such as the Sanitary Bureau (*Eisei-kyoku)* in the newly established Home Ministry (*Naimu-shō*), concerned themselves with

[13] Johnston, *Modern Epidemic*, 59- 64.
[14] Johnston, *Modern Epidemic*, 163.

controlling the spread of smallpox, cholera, and dysentery, all of which earned the status of a controlled disease long before tuberculosis became one itself.[15] Only after the effects of tuberculosis on the strength of the nation were perceived by the country's leaders did tuberculosis merit the Meiji government's attention.

From City to Factory to Farm

In 1900, tuberculosis officially passed dysentery as the disease with the highest mortality rate.[16] As Japan's push for industrialization continued, so did the spread of tuberculosis. In the early twentieth century factories, supplemented urban areas as principal sites through which tuberculosis spread, allowing tuberculosis to establish itself as an industrial disease. Because tuberculosis spread through air, in the late nineteenth century it spread quickly within dense urban areas, where housing for most city dwellers was cramped and required the use of common wells, waste bins, and toilets, and access to fresh produce was often in short supply. Conversely, in the countryside, people lived in less congested communities, and had increased access to fresh air and any produce they could grow. On average however, families living in the countryside were poorer than their urban

[15] Johnston, *Modern Epidemic*, 164. Controlled diseases, a category that included diseases like smallpox, cholera, and eventually tuberculosis, were diseases for which the Japanese government required mandatory reporting by physicians. This list of controlled diseases was comprised of the diseases that were deemed to pose the most serious threat to Japan as a country. These diseases were targeted with legislation aimed at monitoring and controlling their spread. Many of these diseases remained problematic, and thus in need of control, throughout the war years, and were the focus of SCAP eradication programs as well.

[16] PH&W charts which compare tuberculosis mortality rates alongside the mortality rates of disease like cancer and dysentery often show the rates of these diseases to be higher than tuberculosis. When reading the PH&W charts, it is important to remember that cancer and dysentery are not grouped as singular diseases. Instead, dysentery is grouped with a variety of other similar disease. Likewise, the PH&W grouped all cancers together under a single heading.

counterparts. In many cases, daughters from such families were sent to work in Japan's growing textile industry. Their wages were, in turn, sent home to their families.

By the turn of the century 479,000 women went to work in Japan's growing textile industry. These women made up over 90% of the industry's workforce. The age of women factory workers ranged from the late teens to early twenties, but often factories employed girls as young as thirteen.[17] The living conditions that textile factory workers endured were, if anything, worse than those of urban areas. Though many factories were located in rural areas, the women sent to work in these factories had little access to anything resembling a healthy environment. Instead, they lived in large dormitories, which housed on average fifty workers, and were given little more than a futon to use as bedding. Meals consisted mainly of rice, most often with no meat or vegetables added as nutritional supplements. Women factory workers typical worked for upwards of fifteen hours with few breaks in rooms filled with floating fabric filaments or steamy machinery. Tuberculosis and other disease spread swiftly through the large dormitories and workrooms, taking advantage of the factories workers exhausted and deprived bodies.

While the Meiji government had taken note of the threat tuberculosis posed to the general public, and thus themselves, in the late nineteenth century, the plight of textile workers remained largely overlooked until 1913 when Ishihara Osamu, a graduate of hygiene studies at Tokyo University, produced a study of tuberculosis morbidity within the cotton factory worker population. In 1903, the government

[17] Johnston, *Modern Epidemic*, 73-75.

published a report titled "The Condition of Factory Workers" (*Shokkō jijō*) that concluded up to 25% of women working in the textile industry had contracted tuberculosis at the workplace. When Ishihara began his survey by contacting both current factory workers and the families of women who had been sent home with the disease factory conditions had changed little.[18]

Ishihara's "Women Factory Workers and Tuberculosis" (*Jokō to kekkaku*) further illuminated the findings of the 1903 report. While Ishihara also concluded that roughly 25% of all cotton workers contracted tuberculosis, he also found that tuberculosis accounted for 50% of diseases caught by workers. Of those who contracted tuberculosis, 48% were sent home. The remainder were allowed to return to work. Ishihara also found that of those dismissed from factories with tuberculosis, an alarming 72% died of the disease. They had died after returning home to families that not only lacked the means to care for them, and had also lost a large portion of their yearly income. Ishihara's report concluded with the startling statistic that women factory workers with tuberculosis exhibited nearly five times the mortality rate as any other group with the disease.[19]

"Women Factory Workers and Tuberculosis" also failed to inspire improvements in living conditions for female workers. Improvements did not come until 1930, when, spurred by increasingly negative reports and articles concerning factory conditions, many factories began to shorten work shifts, and provide better lodging, and provide access to health care.[20] These newly instituted changes did

[18] As quoted in Johnston, *Modern Epidemic,* 80.
[19] Johnston, *The Modern Epidemic,* 83-86.
[20] Johnston, *The Modern Epidemic,* 89.

cause the rate of tuberculosis morbidity amongst female factory workers to slowly drop. However, by this time men increasingly made up a larger number of the factory workers required to feed Japan's imperial ambitions. Tuberculosis became a problem within the factories they worked as well, and would remain a severe handicap to Japan's industrial output and a threat to the lives of its workers well into the Occupation period.

The presence of tuberculosis in Japan's factories ultimately threatened more lives than those of the factory workers alone. The bodies of dismissed factory workers became the vectors through which tuberculosis also reached the rural villages in the early twentieth century. In the nineteenth century, physical distance had isolated and protected rural communities from the tuberculosis epidemic that was already endemic in Japan's urban centers. Returning factory workers carried tuberculosis from city to village, thereby ending these communities isolation from tuberculosis. Thus, by the early twentieth century, the tuberculosis epidemic had infiltrated Japan as a whole, threatening the lives of urban and rural citizens alike.

Defining a Sickness

Tuberculosis's ability to spread quickly from body to body represents only one part of the story of its rise to epidemic proportions in twentieth-century Japan. While at this time no cure for tuberculosis existed, Japanese medical professionals recognized that rudimentary tuberculosis treatment methods, such as isolating the tuberculosis sufferer, could be effective in halting the spread of the disease. Instead

a rift in understanding aided the spread of tuberculosis with Japanese medical professionals, who sought to understand the cause of the disease, and the majority of the Japanese public, who believed tuberculosis to be both a contagious disease and a hereditary defect. The friction caused by these opposing views prevented both government programs aimed at curbing the spread of tuberculosis and the expertise of medical professionals from effectively protecting the Japanese populace from tuberculosis.

Although the Meiji government had inadequately responded to tuberculosis in the late nineteenth century, in the early twentieth century Japanese medical professionals displayed ample interest in both studying and treating tuberculosis. Tuberculosis spread through Japan with particular virulence because Japan was, as General Sams conjectured during the occupation, a country with backwards attitudes towards modern medicine. In the early twentieth century, Japanese medical professionals were as versed in recent tuberculosis research as their European and American peers were.

During the late nineteenth and early twentieth centuries Europe and the United States, amongst other nations, also faced tuberculosis epidemics. Consequently, a significant amount of medical research within these countries dealt with disease like tuberculosis. The first breakthrough in understanding the spread of disease, and by extension tuberculosis, came with the widespread acceptance within the medical community of germ theory in the nineteenth century.[21] With the

[21]Germ theory, which postulates that diseases are caused by microorganisms too small for the human eye to see rather than by miasmas or other harmful environmental vapors (miasma theory), was proposed in the sixteenth century by Girolamo Fracastoro. While originally unpopular, germ theory

knowledge that tuberculosis was caused by microorganisms medical researchers had narrowed their search for a cure. With this goal in mind, Robert Koch began his research on the then unknown *tubercule bacillus*.

Koch began his investigations regarding tuberculosis in the 1880s. He refuted the idea, popular both in Japan and worldwide, that tuberculosis was a heritable disease. Koch believed, instead, that tuberculosis was caused by disease particles, and it was these particles that he hoped to isolate and define. Koch's search for the cause of tuberculosis was ultimately successful. In 1882 he published his paper "The Etiology of Tuberculosis", in which he stated tuberculosis was caused by *Mycobacterium tuberculosis*.[22] This discovery would win Koch the 1905 Nobel Prize in Physiology and Medicine. It would also be widely ignored throughout Japan.[23]

After identifying the bacterium that caused tuberculosis, Koch turned his attention to formulating a cure. Assisting him in this process was bacteriologist Kitazato Shibasaburō, who had been sent by Japan's Home Ministry in 1885 to study with Koch. By 1890, the year Kitazato was to be recalled to Japan, he had already made several successful discoveries within Koch's laboratory. Knowing the Koch

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gained increasing popularity in the seventeenth through nineteenth century as the advent of new inventions, such as the microscope, and the work of scientists like Agostino Bassi, John Snow, and Louis Pasteur brought increasing credibility to the theory by proving the existence of such microorganisms. By the late nineteenth century, germ theory was posed to overtake miasma theory as the theory of choice to explain the spread of disease. It is important to note that although the medical community was ready to accept germ theory, the general public accepted germ theory more slowly. For more information on germ theory see *Germ Theory: Medical Pioneers in Infectious Disease* (2011; Washington D.C.: American Society for Microbiology) by Dr. Robert Gaines. Additionally, a discussion of the systems of knowledge involved in the transition between miasma theory and germ theory can be found in *Inescapable Ecologies: A History of Environment, Disease, and Knowledge* (2007; Berkeley: University of California Press) by Linda Nash.

[22] Robert Koch, *The Atiology of Tuberculosis* (New York: William R. Jenkins, 1890), 7. For an explanation of the term *Mycobacterium tuberculosis* please see footnote 6.

[23] Johnston, *Modern Epidemic,* 189.

was finally ready to embark upon tests of a tuberculosis vaccine that he and Kitazato had been working on, Kitazato wrote to the Home Ministry, asking that his stay in Koch's laboratory be prolonged. While the acting Home Minister, Yamagata Aritomo, was pleased to hear that Koch and Kitazato had made significant progress towards producing a cure for tuberculosis, which was, unlike the discovery of the *Mycobacterium tuberculosis*, a subject in which the Japanese government and media took interest, he refused to extend Kitazato's stay.[24] Within Japan, Kitazato found supporters who were willing to fight to keep him in Koch's laboratory. Nagayo Sensai, a leading official in the Sanitary Bureau, claimed that to refuse to extend Kitazato's stay would be "an academic embarrassment, a great misfortune to the Japanese people, and a loss of face to the Japanese state."[25] Ultimately, the Japanese government found that saving face was worth granting Kitasato an additional year in Koch's laboratory.

In 1890 Koch produced tuberculin, the first vaccine cure for tuberculosis. While the news was well received around the world, hopes for tuberculin ran particularly high in Japan. Throughout 1890, Japanese newspapers extolled tuberculin as the answer to Japan's tuberculosis epidemic. By 1891, when the Home Ministry received its first shipments of tuberculin for testing, news that tuberculin may be too good to be true had reached Japan. Hoping that such reports were false, the Japanese government tested its tuberculin not only on tuberculosis patients, but on leprosy sufferers and two syphilis patients as well.[26] In the end, tuberculin

[24] Johnston, *Modern Epidemic*, 189.
[25] As quoted in Johnston, *Modern Epidemic*, 200.
[26] Johnston, *Modern Epidemic*, 204.

testing both within Japan and Europe seemed to suggest that while tuberculin may have been effective at alleviating some of tuberculosis symptoms, nothing had shown that tuberculin affected the tubercule bacilli themselves. Still, in June1891 the Japanese Home Ministry approved tuberculin for use in several dozen hospitals. By that fall the majority of those hospitals had produced negative results, and by the spring of 1892 tuberculin had been declared by Japan's leading doctors to be "ineffectual at best, and harmful at worst."[27]

Finding the tuberculin had failed to be a miracle cure, the Japanese medical community turned to prevention as a means to manage the spread of tuberculosis. Tuberculin may not have proved a cure for tuberculosis, but other findings of bacteriological studies with the tubercule bacillis suggested that preventative techniques could go far in managing the disease. A German scientist named George Cornet, who like Kitasato had studied under Koch, released a theory concerning tuberculosis prevention in 1891 that purported that tubercule bacilli sank quickly in air, but could come to rest in water or on dusty surfaces. According to Cornet, it was possible in many cases to prevent tuberculosis through environmental control measures undertaken by the state and the individual. While Cornet's ideas about how tubercule bacilli spread were ultimately incorrect, they caught the attention of scientists and doctors both inside and outside Japan.

T. Mitchell Prudden, an American doctor, drew on Cornet's ideas in order to prescribe tuberculosis prevention measures. In a 1894 issue of *Harper's Monthly* he suggested that preventative measures against tuberculosis be carried out in both

[27] Johnston, *Modern Epidemic*, 207.

public and private environments, and that these measures, which included the elimination of excess dust and participating in tuberculosis education programs. In Prudden's eyes, catching tuberculosis was less the fault of the individual than the government, which was tasked with both educating the public about tuberculosis, preventing its transmission and providing aid. [28]

Ogata Masanori, a professor of bacteriology at Tokyo University, also engaged with Cornet's work, though the conclusions he drew differed greatly from those of Prudden. To Ogata, it did not make sense to lay the responsibility of an individual's health at the feet of the government. Ogata wrote, instead, as a doctor interested in combatting tuberculosis. He instead considered the maintenance of health, which he believed to be the natural result of proper lifestyle, to be one of the individual's duties to the government.[29] Ogata saw Cornet's work as a solution to the Japan's tuberculosis problem, rather than as a method of prevention as Prudden and Cornet did. In his 1892 article for the *Journal of the Orientalist Society* (*Tōyō gakkai zasshi*), Ogata outlined four ways in which Japan could rid itself of tuberculosis through preventative measures. Three of Ogata's measures, "increased personal resistance" through means such as exercise and improved diet, reduction of tubercule bacilli's through the use of disinfectants, and taking personal measures to avoid spreading the disease correlated with Prudden and Cornet's suggestions regarding tuberculosis prevention. Ogata's final suggestion, however, hinted at the role of tuberculosis as a stigma in Japanese society in that it prohibited any contact with the tuberculosis sufferer, or their personal effects. The personal measures

[28] Johnston, *Modern Epidemic*, 211.
[29] Johnston, *Modern Epidemic*, 210, 212

taken to avoid spreading disease were taken by many of Ogata's readers to suggest that the ostracization of tuberculosis patients was both socially acceptable, and medically sound.

The ideas of Ogata and other physicians interested in tuberculosis prevention formed the basis of tuberculosis control in the early twentieth century. With tuberculin proven to be ineffective, the Japanese government and medical community turned away from pharmaceutical cures and embraced preventative measures as their primary response. While from the 1910s prevention campaigns were carried out through the dissemination of pamphlets instructing the individual on how they were to play a part in stemming the spread of tuberculosis, tuberculosis prevention was also institutionalized in the form of the sanatorium in the year 1913. Tuberculosis prevention techniques were formalized in law by the Japanese government in the early twentieth century, some felt that these measures were not enough. Citing Europe's success in lowering tuberculosis morbidity rates, figures like Yamane Seiji, head of the Medical Bureau of the Metropolitan Police, spoke before Imperial Diet asking for more stringent tuberculosis prevention measures.[30] Like Yamane, many Japanese physicians felt that efforts at tuberculosis prevention were still lacking. They increasingly pushed for the building of public sanatoria. Following these physicians lead, newspapers also began running stories about various American and European sanatoria.

[30] Johnston, *Modern Epidemic*, 239.

Bowing to pressure, in June 1913 the Japanese government drafted a bill that required cities with over 300,000 inhabitants to open public sanatoria.[31] Each of these public sanatoria was expected to provide beds for the majority of these cities' impoverished tuberculosis suffers. For example, drawing on a formula first proposed by Cornet, Japan's Sanitary Bureau calculated that in 1913 Tokyo should have had around 680 tuberculosis sufferers who could not afford care. Therefore, the Tokyo sanatorium should be able to house around 500 patients at any time.[32] The bill passed in 1914 making it mandatory for cities, such as Tokyo, Nagoya, Kyoto, Kobe, Yokohama, and Osaka, to provide public sanatoria. In most cases, however, construction did not begin for several years, leaving poor tuberculosis sufferers without any government aid. By 1922 Nagoya, the last of the six, had opened the doors of its sanatorium, providing even the poorest of Japanese citizens with access to tuberculosis care.

Maintaining a Stigma

Japanese medical authorities worked to curb the spread of tuberculosis within Japan. However, they faced strong opposition in the form of contemporary social opinions. Despite Koch and Kitazato's research proving otherwise, the Japanese public still viewed tuberculosis as a hereditary disease. When the news that tuberculosis was caused by a bacterium spread throughout Japan, the public

[31] Johnston, *Modern Epidemic*, 242.
[32] Johnston, *Modern Epidemic*, 243.

largely ignored it.[33] If anything, the idea that tuberculosis could be caused by a germ supplemented the idea that tuberculosis was a hereditary condition. For the Japanese public, common sense held that tuberculosis was both a hereditary disease exhibited by the physically inferior, and also that it was a disease that could be passed from such people through bacterium.[34] Most often, those known to have tuberculosis would be ostracized within their villages. Young men and women with the disease typically saw their marriage prospects vanish. The inflicted were judged to be somehow immoral; their past sins made visible by their symptoms. [35] To be sent to one of Japan's newly established public sanatorium was understood to be the same as being sent to one's death. The public sanatoria were often so crowded that only the most terminal of patients were admitted so that they could await death without further transmitting the disease. If by some chance one did manage to survive the sanatorium, the stigma of their tuberculosis followed them home.[36]

Unfair and unpleasant for those afflicted with the disease, the social stigma surrounding tuberculosis also, though ultimately both unfair and unpleasant, may not have hindered efforts to control tuberculosis. While Japan's most talented medical professionals sought to change public ideas about tuberculosis in order to treat the disease, many of their less reputable peers acted in ways that maintained the status quo. Since the advent of *Rangaku* in the seventeenth century, Japanese medicine had become an amalgamation of both traditional Chinese medicine and Western medical science. The doctors themselves were subject to no formal

[33] Johnston, *Modern Epidemic*, 185.
[34] Johnston, *Modern Epidemic*, 107.
[35] Johnston, *Modern Epidemic*, 107, 116-117.
[36] Johnston, *Modern Epidemic*, 243.

regulatory boards, nor were they the graduates of established medical schools.[37] Instead, most doctors learned their profession from the instruction of their predecessors or, if they were lucky, from the chance to look at a copy of a Western medical text.[38]

From the Tokugawa period onward, patients who visited doctors expected to receive not only a diagnosis of their illness, but also a prescription that could be filled by a village pharmacist. The reception of a prescription was deemed to be the most crucial part of the experience. In fact, doctors were not paid for their diagnostics services, as it was believed that they should provide these services out of sense of moral obligation to the community. Instead, doctors profited solely through the writing of prescriptions they wrote. Doctors that wrote prescriptions that appeared to work attracted patients and profits.[39]

By the end of the nineteenth century, several medical schools had been established in Japan. While the physicians that these schools produced still were not required to pass standardized medical board exams, they did benefit from better training than those who came before them. In the countryside, physicians were less likely to receive formal training. The stigma surrounding tuberculosis, coupled with these physicians' preoccupation with attracting high numbers of patients, rather

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[37] While one established medical school, the Seigō Insitution (now part of Tokyo University), existed in the late Tokugawa period, the majority of Tokugawa period physicians were trained informally. Those who were able to gain apprenticeships with established physicians in cities like Osaka, Nagasaki, and Edo benefitted from relatively rigorous training. Most country physicians were self-trained. Y. Fujikawa, *Clio Medic: Japanese Medicine,* trans. John Ruhräh (New York: Paul B. Bober, 1934), 60.

[38] For a more thorough discussion of medical training in the late Tokugawa/Meiji Restoration period see Fukuzawa Yukichi, *The Autobiography of Fukuzawa Yukichi* (New York: Columbia University Press, 2007) pages 21-93.

[39] Ellen Nakamura *Practical Pursuits: Takano Choei, Takahashi Keisaku, and Western Medicine in Nineteenth-Century Japan* (Cambridge, Harvard University Press, 2005) 79.

than providing accurate diagnoses, meant that tuberculosis was often purposefully misdiagnosed. Instead, these country doctors would hide their diagnosis with a catch-all name like "pulmonary consumption."[40] While these alternative names were easily recognizable euphemisms for tuberculosis, they allowed a patient to deny, at least in name, that they had contracted tuberculosis. The use of catch-all names also allowed doctors to maintain their clientele, who would surely disappear if it became known that the doctor diagnosed tuberculosis. Despite the fact that the Meiji Government made tuberculosis reporting mandatory in 1886, many doctors continued to list tuberculosis under a multitude of names. This practice made tuberculosis both hard to track and hard to treat. It also perpetuated the stigma surrounding tuberculosis, diminishing any small victories that the government and medical authorities within in Japan had won against tuberculosis.

The stigma surrounding tuberculosis was most vividly depicted in literary works from this period. While tuberculosis garnered the attention of writers around the world, in Japan tuberculosis was featured almost exclusive to negative effect. Western writers in the nineteenth and twentieth centuries wrote often of the effects of "consumption", depicting sympathetic youths whose vigor faded, leaving only their brilliant minds and unfinished works. These figures often took on an angelic beauty, and preternatural intelligence. Their deaths recalled candles, which shone most brilliantly before going out.[41]

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[40] Johnston, *Modern Epidemic,* 70.

[41] For a discussion of disease in society see Susan Sontag's *Illness as Metaphor*, which discusses metaphors that Western culture constructed like tuberculosis and, more recently, cancer.

By comparison, the Japanese counterpart of youth lost to consumption was a much darker figure. While many Japanese writers wrote on tuberculosis, few were as intimate with the diseases itself as Dazai Osamu was. Dazai, who lived from 1909 to 1948, was one of Japan's most prolific early twentieth-century writers. During the war years, Dazai was excused from draft due to his chronic battle with tuberculosis. Drawing upon his experiences with the disease, Dazai wrote several novels which featured characters with tuberculosis. Dazai's 1945 novel entitled *Pandora's Box* (*Pandora no hako*) was written in the form of letters sent from a tuberculosis patient living in a sanatorium to his loved ones at home.[42] It is his postwar 1948 novel *No Longer Human* (*Ningen shikkaku*), however, that focuses on tuberculosis and its social stigma.[43]

No Longer Human recounts the story of Ōba Yōzō , a young man living in Tokyo in the 1930s. Throughout the novel, Ōba's life falls apart as first his morals and then his health declines. Ōba's moral decline, prompted by a night of debauchery and promiscuity, lead to the destruction of both Ōba's mental and physical health. In suggesting that Ōba's immoral actions were the root cause of his infirmities, Dazai reflected on the social values of the time. After establishing that Ōba has acted immorally, and thus had forfeited his right to health, Dazai uses his novel to explore the link between stigma and sickness. In doing so, he identified two forms of illness that had the power to separate the individual from society. The first

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[42] Dazai Osamu, *Pandora no hako* (Pandora's Box) in *Dazai Osamu Sakuhinshu 3*, (Pegasus, 2006).
[43] Dazai Osamu, *Ningen shikakku* (No Longer Human) (Tokyo: Shinchosha, 2006).

of these, mental illness alienated Ōba from society, and eventually from those who cared about him. Ōba's mental illness eventually proves to be his downfall, and at the novel's close he is sent to a mental institution.

It is Ōba's physical illness, however, that must be hidden from society for fear of inciting stigma and isolation. Although it is never directly stated in the novel, Ōba's illness can be identified as tuberculosis. Dazai never allows Ōba to formally recognize the disease that causes him to cough blood and take to his bed for days.[44] In doing so he both reflects on the tendency to deny tuberculosis, and highlights that tuberculosis is Ōba's affliction. Dazai thus captures tuberculosis's paradoxical nature as a disease that is both painstakingly overlooked, and a disease that was identified by the very efforts made to overlook it. Ōba's eventual admittance to a mental institution at the end of the novel despite his friend's knowledge of his deteriorating physical condition only reaffirms the lengths that people were willing to go in denying the presence of tuberculosis. Ōba could, and did, return from the mental institution to live a relatively normal, if much quieter, life.[45] Had his friends admitted him to a sanatorium his return to society would likely have been more difficult.

No Longer Human also highlights the ambivalent role of the medical community in treating tuberculosis. Dazai managed to depict the rift within the medical community caused by tuberculosis through his depiction of a pharmacy owner's wife, Yoshiko, who functions as a stand-in for the medical community. She represented both the physician who disseminated information about tuberculosis

[44] Dazai, *Ningen Shikkaku*, 90-93 and 157.
[45] Dazai, *Ningen Shikkaku,* 168-170.

and treated the disease with modern medicine and the country doctor who faced tuberculosis with ambivalence, and was willing to prescribes cure-alls instead of explaining the truth. When Ōba visits Yoshiko initially she was quick to identify his illness as tuberculosis, and to suggest that Ōba quite drinking alcohol, eat nutritiously, and rest.[46] In this sense, Yoshiko prescribed the treatments that Japan's urban, authoritative medical professionals supported. She refused to leave Ōba's disease unnamed, and deals with it as a medical, not a social, issue. As Ōba's visit progresses, however, Yoshiko was transformed into the type of doctor that prescribes but does not diagnose. She hands Ōba "half a dozen medicines" including hormones to build his strength, calcium to settle his stomach, and morphine to dull the pain.[47] In doing so, she allowed Ōba to ignore the reality of his situation, which he himself was more than happy to do. In the end, Ōba traded his tuberculosis diagnoses for a more palatable morphine addiction. In this way, Yoshiko transitioned from being a figure that discussed Ōba's disease with frankness to one who profits from him by selling him palliatives.

The stigma and ambivalence surrounding tuberculosis as depicted in Dazai's novel ultimately made any forceful regulation of the disease untenable. Several times in the years between 1900 and 1945, the Japanese government issued laws making it mandatory for doctors to report patients exhibiting symptoms of tuberculosis. In 1918 the Japanese government moved to centralize public health under the newly created Department of Public Health in the effort to control epidemic diseases including tuberculosis. The Department of Public Health quickly

[46] Dazai, *Ningen Shikkaku*, 160.
[47] Dazai, *Ningen Shikkaku,* 160-161.

issued a series of what should have been strong regulatory acts against tuberculosis. The Tuberculosis Prevention Law of 1919 renewed mandatory reporting of tuberculosis, established a disposal system for the personal effects of tuberculosis sufferers, and set up quarantines for those found to have active tuberculosis. The act also required all communities of over 50,000 members to build and maintain their own sanatoria, thus increasing the number of beds available to tuberculosis sufferers.[48] The act failed, however, to provide any form of poverty relief to tuberculosis sufferers. Conditions that contributed to the high rates of tuberculosis amongst Japan's poor such as cramped living spaces and unsanitary environments were not addressed. Furthermore, the Tuberculosis Prevention Law any public education about tuberculosis. As Johnston points out, the Department of Public Health had exhausted its ability to legislate tuberculosis and at the same time it had ignored the stigma surrounding tuberculosis. The result was that there had been little change in public opinion about the disease.[49]

While the years from 1919 to 1930 saw a small drop in tuberculosis morbidity rates, the Department of Public Health's failure to treat tuberculosis on both medical and social terms prevented its actions from having pronounced effects. Tuberculosis's spot as the number one disease in Japan remained uninterrupted at the time when the Department of Public Health was replaced with the Welfare Ministry in 1938. Unlike its predecessor, the Welfare Ministry, which would remain in charge of both public health and education concerning health issues in Japan until it was replaced during the Occupation, recognized the importance of treating

[48] Johnston, *Modern Epidemic*, 242.
[49] Johnston, *Modern Epidemic*, 249.

tuberculosis as both a medical and social issue. The new ministry joined forces with quasi-official groups like the Anti-Tuberculosis League to establish an estimated 650 health centers throughout the country.[50] These health centers were intended to supplement sanatoria as places that provided information about tuberculosis.

Despite the increased promotion of information concerning tuberculosis, the disease remained, in the eyes of the general public, a death sentence. Both the new health centers and sanatoria had difficulty attracting tuberculosis sufferers who, like *No Longer Human's* protagonist Ōba, resisted being associated with the disease in any way. A piece of 1937 legislation that required doctors to not only report the names of patients with tuberculosis, but also the names of people believed to be in close contact with tuberculosis sufferers further encouraged the public to avoid health centers. This expanded list not only identified patients who had tuberculosis, but also any potential carriers as well.[51] Sanatoria continued to enjoy the reputation of glorified prisons where tuberculosis sufferers were brought but could not leave.[52]

The Welfare Ministry's education programs also failed. While the government was increasingly willing to view tuberculosis as a social issue, it was unwilling to deal with the entirety of what the tuberculosis stigma entailed. The Welfare Ministry sponsored frequent pamphlet printings and events in urban areas, but they failed to deal with ideas about tuberculosis that were entrenched in rural

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[50]Johnston, *Modern Epidemic*, 266. These groups were quasi-official in that their membership was mainly comprised of medical professionals, but could also include laymen interested in dealing with the tuberculosis epidemic. These groups were also quasi-official in the sense that they were called upon by the various groups within the government like the Welfare Ministry to serve as consultants, but were not governmental groups themselves. For more information on the Anti-tuberculosis League and other similar groups see Johnston, *Modern Epidemic*, 265-266, and 277-280

[51] Johnston, *Modern Epidemic*, 274-275.

[52] Johnston, *Modern Epidemic*, 269.

areas. Tuberculosis crusaders in the 1930s and 1940s refused to address the idea that tuberculosis was hereditary, and wrote such ideas off as rural superstition. While they may have been little more than the material of folk beliefs, the Welfare Ministry's failure to engage with the idea of tuberculosis as a hereditary disease all but ensured that their explanations of the newest tuberculosis research fell on deaf ears.[53] Therefore, in the countryside, the Welfare Ministry's attempts to spread information about tuberculosis failed, and tuberculosis morbidity remained high.

In the 1940s, as Japan's threw itself full-force into the Asia-Pacific war, tuberculosis rates continued to grow. So, too, did the government's involvement with disease control. While in the1930s the government came to see tuberculosis as a serious social issue, in the 1940s the Asia-Pacific War transformed tuberculosis into a disease with serious political implications. In the early 1940s, Japan required a constant influx of resources in order to maintain its colonies throughout Asia, and to allow its armies to fight on multiple fronts.

The drive for resources affected Japan's tuberculosis epidemic in several ways. First, because of the war's enormous cost, Japanese subjects had less access to resources themselves. The government requisitioned many staples including food, cloth, and building materials in the name of the war effort. At the same time, the bodies of Japanese men, women, and even children contributed to the war in the form of physical labor within Japan's factories. Together these two factors created a situation in which Japanese subjects were both physically exhausted and unable to

[53] Johnston, *Modern Epidemic*, 269-270.

replenish the energy they had expended. As Japan's people became increasingly overworked and malnourished, diseases spread quickly.

Beneath the surface, the Asia-Pacific War affected tuberculosis by transforming it from a social issue to a patriotic issue. Japanese bodies were needed to fight the war. Therefore, the physical health of Japan's people became a direct concern of the government. It became the duty of Japanese subjects to maintain healthy bodies so that those bodies could be used in the service of the Japanese Empire.[54]

The government's interest in regulating the bodies of its subjects prompted the first vaccine drives against tuberculosis. In 1939 the government undertook widespread tuberculosis screening, and went so far as to bring back tuberculin for use as a vaccine. These practices were formalized in the National Physical Fitness Law of 1940, which mandated tuberculosis screenings for all males aged fifteen to nineteen and strongly encouraged screenings for all other demographics. Unlike earlier laws concerning tuberculosis control, the Japanese government made serious efforts to test all young men who feel into this age group.[55] 1942 ushered in a new set of strict guidelines for those who tested positive for tuberculosis. Finally, in 1943, the Japanese government attempted widespread inoculations of the Japanese public with a new tuberculosis vaccine, BCG (Bacillus Calmette–Guérin).[56]

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[54] Johnston, *Modern Epidemic*, 272.
[55] Johnston, *Modern Epidemic,* 282.
[56] Bacillus Calmette–Guérin, commonly called BCG, is a tuberculosis vaccine derived from *Mycobacterium bovis* (Bovine tubercule bacillus). BCG was first developed by bacteriologist Albert Calmette and veterinarian Camille Guérin in 1908. During the 1910s, Calmette and Guérin tested BCG on animals, and found that it was effective in preventing tuberculosis. In1919, they transferred their project to the Pasteur Institute, and in 1921 BCG was first tested on humans. Although BCG was not

By the 1940s tuberculosis mortality rates within Japan reached 210 deaths per 100,000 people.[57] As the war entered its later stages in the mid-1940s, the government's attempts at tuberculosis control fell apart. For both the Japanese people at home and its troops aboard, medical supplies and equipment became increasingly scarce. Programs aimed at controlling disease eventually fell to the wayside, replaced by other wartime concerns such as factory production and the cultivation of food supplies. By 1944, the situation within Japan had deteriorated so badly that not even basic tuberculosis statistics were collected. An examination of tuberculosis statistics from the first years of the Occupation makes it clear that tuberculosis rates rose during these years. Nonetheless the exact pace of this rise is lost to history. Tuberculosis testing and inoculation, if it continued at all, was haphazard and piecemeal. By the time Japan accepted its defeat at the hands of the Allied Forces in the August of 1945, both inside and outside Japan tuberculosis rates had climbed to the highest ever, an estimated 280 tuberculosis deaths per 100,000 Japanese citizens. In the chaotic aftermath of the war they would only continue to rise.

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widely used before the end of World War II, it was available for use in the late 1920s. For information on how BCG works as a vaccine against tuberculosis, see pages 73-78.

[57] GHQ. *Public Health and Welfare in Japan: Annual Summary 1948*, 39. For comparison, tuberculosis mortality rates in the United States had steadily declined throughout the twentieth century, and in 1940 tuberculosis represented only about 45 deaths per 100,000. Tuberculosis mortality rates in Germany also fell throughout the twentieth century, but rose slightly with the commencement of World War II. From 1940 to 1945, Germany's tuberculosis mortality rate rose by five deaths per 100,000 each year (from fifty per 100,000 in 1940 to fifty-five per 100,000). During the same time period tuberculosis mortality rose by seventy deaths per 100,000 each year (from 210 per 100,000 to 280 per 100,000).

CHAPTER 3
THE FOUNDATIONS OF CONTROL:
RESTORING JAPAN'S MEDICAL AND SANITATION SYSTEMS

General Crawford F. Sams, the person selected by General MacArthur to head the Public Health and Welfare (PH&W) section of the Supreme Commander of the Allied Powers (SCAP), arrived in Japan with little information concerning the condition in which years of war had left the country. What he understood, however, was that the work of the PH&W was crucial to the furthering of democracy in Japan. He believed that through the healing of bodies the PH&W could reinforce the "worth of the individual" to the Japanese public. By focusing on the importance of the individual, the PH&W section would in Sams' words demonstrate "the essence of democracy."[58] The benefits of democracy would be embodied by individual Japanese citizens through healthcare. While General MacArthur saw himself as the man who would bestow democracy on the Japanese, Sams envisioned his department to be "the handmaiden of democracy."[59] In this way, under the mission statement of "preventing widespread disease and unrest," the PH&W section of SCAP began its work in Japan on October 2, 1945.

When Sams entered Japan as director of PH&W, many problems awaited him. Japan's destroyed cities and sewage systems created unhealthy environments through which a host of diseases spread quickly, and in which tuberculosis continued to thrive. Most of Japan's citizens were malnourished, making their

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[58] Sams, *Medic: The Mission of an American Military Doctor in Occupied Japan and Wartorn Korea* (New York: East Gate, 1998), xv.

[59] Sams, *Medic,* xiv.

bodies easy targets for disease, and hospitals stood crumbling without doctors and medical supplies to fill them. Faced with these immediate demands, Sams and the PH&W Section gave tuberculosis little attention. Instead, the first work that PH&W section undertook was the rehabilitation of Japan's medical and public health systems. Through the restructuring of both of these systems, the PH&W hoped to restore health by providing Japan with well-trained professionals in the fields of medicine and sanitation. As the occupation progressed, Japan's newly trained professionals would work alongside the PH&W section to combat disease and malnutrition and raise living conditions. While most of the early PH&W programs seemed unrelated to the control of tuberculosis, the early work of the PH&W proved instrumental in creating an environment in which the PH&W section could work alongside Japan's Ministry of Health and Welfare (MHW) to finally bring the tuberculosis epidemic under control.

Starting with Statistics:

Defining the Relationship between the PH&W Section and the Home Ministry

The PH&W section's first order of business was to inform itself about the health and environmental conditions within Japan. Sams immediately wrested all authority from the Japanese Home Ministry, and set about assessing the damage to Japan's health systems. To aid in this process, he employed former employees of the Home Ministry in carrying out surveys and gathering data. During the first few

months of the Occupation, the PH&W section poured over newly gathered statistics for disease morbidities, food supplies, and homelessness amongst others topics.

The PH&W section's interaction with the once powerful Home Ministry in the early days of the Occupation set the tone for how the two groups of bureaucrats would work together over the next few years. A reading of PH&W memos reveals that PH&W quickly assumed a position of authority in relation the Home Ministry. The PH&W section would issue a directive, which the Home Ministry was left to carryout to the best of its ability. For example, in an early directive dated October 6, 1945, the PH&W section ordered that the appropriate branch of the "imperial government must report on all epidemics deemed potentially harmful."[60] the PH&W requested that these reports be gathered within a week and thereafter be delivered weekly until the PH&W section deemed them no longer necessary. The same memo also charged the imperial government with the task of furnishing all hospitals, including those for Occupation personnel, and with providing quick and unrestricted access to any further documents that the PH&W ministry might wish to see.[61] Throughout the following months, the Home Ministry continued to receive countless similar directives from the PH&W.

Memos like the one above serve as a model for how the PH&W viewed its relationship with the Home Ministry until the latter's dissolution in 1947 and the establishment of the Ministry of Health and Welfare (MHW). The PH&W section saw its role in the reconstruction of Japan's health systems as one of orchestrator and

[60] Supreme Commander for the Allied Powers (SCAP), *Directives of the Supreme Commander for the Allied Powers,* (Tokyo: Nippon Times Ltd., 1947), 16.
[61] SCAP, *Directives of the Supreme Commander for the Allied Powers,* 16.

advisor. The American officers in charge of The PH&W section believed they would bring what Sams called "modern medical science" to Japan and would train Japanese personnel in the newest and most effective medical techniques.[62] What the PH&W section would not do was carry out the ground-level work necessary for the restoration of public health. Nor would they provide the materials needed by the Japanese healthcare system on a long-term basis. The enactment of the various immunization and sanitation campaigns and the production of medical equipment, medicines, and vaccines were to be turned over to the Japanese government as quickly as possible. The PH&W section saw itself in the role of planning and training the Japanese officials and personnel who would follow their directions and provide manpower.

A Medical Makeover:

Restoring Hospitals and Reorganizing Medical Education

Once the PH&W section had defined its relationship with the Home Ministry and gathered the necessary information about the state of the Japanese public's health, work on restoring Japan's healthcare systems began in earnest. One of the first issues addressed was the state of Japan's hospitals. From the statistics provided by the Home Ministry, the PH&W section knew that roughly one-third of all Japanese hospitals had been destroyed by wartime firebombing. The PH&W calculated that this corresponded to a loss of over 53,000 inpatients beds. Drawing upon existing statistics, they also concluded that most of Japan's still functioning

[62] Sams, *Medic*, 70.

hospitals were private, which generally meant that they were small, underequipped, and largely unregulated.[63] Still, the need for facilities in which to treat Japanese citizens was dire, and an immediate solution to the hospital problem needed to be found.

The PH&W began its search for useable hospital facilities by drawing up a list of potential hospitals from the statistics they had gathered. Potential hospitals needed to be visited and inspected by PH&W personnel. Sams himself participated in these inspections by undertaking an extensive tour of Yokohama and Tokyo's hospitals. Accompanied by an interpreter, and aided by a map, Sams slowly made his way through rubble-strewn cities in search of functioning or salvageable facilities.

The picture Sams draws of Japan's hospitals immediately after the end of the war is bleak. The first hospital he visited was a small police hospital in what had been a busy part of Yokohama. Upon approaching the hospital, Sams noticed that the windows had been painted over with black paint. This, his interpreter told him was done in the hopes that the hospital would be overlooked in future fire-bombing raids.[64]

Sams wrote that the inside of the hospital was filthy. Broken equipment was strewn throughout the laboratories and operating rooms. Single-use bandages sat in drawers, stained and thin from multiple applications and washings. The hospital's beds had been confiscated long ago, and the tatami mats where sick and injured patients were lain covered the floors. In this same hospital, he came upon an X-ray

[63] Sams, *Medic*, 28.
[64] Sams, *Medic*, 15.

machine manufactured in Germany, which his interpreter informed him had not been usable for more than three years. X-ray film had run out quickly during the war years, forcing physicians to use photographic paper, which provided only fuzzy images. When lower grade film ran out, the X-ray machines were simply abandoned or scrapped for their parts and metal.[65]

Sams toured many hospitals in the early months of the occupation, and found that the conditions he observed in the police hospital typified the conditions that Japan's civilian hospitals were in at the end of the war. Conditions in Japanese tuberculosis sanatoria were much the same. Most sanatoria were situated in relatively isolated areas, and therefore avoided the heavy structural damage received by many of Japan's hospitals. This did not mean, however, that sanatoria were better equipped to deal with their patients. Unlike civilian hospitals, where doctors did not regulate the diets of their patients and food was typically provided by a patient's family members, sanatoria generally provided meals for their patients. These meals were provided in effort to better quarantine tuberculosis patients and because most Japanese did not visit their family members after committing them to the sanatoria. Doctors also understood the important role nutrition played in their patients' recovery from tuberculosis. When Japan's sanatoria ran out of food and medicine during the final months of the war, most patients saw no reason to remain sequestered within their isolating walls.[66] For the patients and their family members it was preferable to die at home than to starve in a sanatorium.

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[65] Sams, *Medic*, 15.
[66] GHQ, *Mission and Accomplishments of the Public Health and Welfare Section, 1948,* 7-8.

When the PH&W section surveyed Japan's sanatoria in late 1945 and 1946, it found that only 25% of the beds in the country's sanatoria were occupied. This occurred despite the fact that the total number of beds available to tuberculosis patients was grossly inadequate considering the size of the tuberculosis epidemic. While some of the sanatoria's empty beds could be accounted for by the scarcity of food and supplies, many were simply never occupied in the first place. Japanese not only avoided visiting their relatives in sanatoria, but also avoided sending loved ones to sanatoria in the first place. During the war years, little had changed to dispel the stigma surrounding tuberculosis, and sanatoria were still considered places where tuberculosis sufferers went to die, not to be treated.[67] Until the later years of the occupation, the PH&W focused on both increasing the number of beds within sanatoria and on filling existing beds.

The PH&W section found the initial answer to the Japan's hospital shortage in country's military hospitals. The military hospitals, which numbered 320 at the end of the war, were in remarkably better condition than Japan's civilian hospitals and sanatoria. During the war, the military hospitals frequently allowed to confiscate supplies and equipment from civilian institutions. Many of the military hospital Sams visited still had hospital beds and other necessary equipment. While the equipment in military hospitals was often old or outdated, it was in good enough condition to be used to treat patients. If medicine were to be found within Japan at the end of the war, it was often within these military hospitals.[68]

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[67] GHQ, *Mission and Accomplishments of the Public Health and Welfare Section, 1948,* 7-8.
[68] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948,* 86.

The PH&W section's hospital surveys found Japan's military hospitals full of medicine, equipment, and veterans. Conversely, it found the civilian hospitals devoid of supplies, and, consequently, of patients, who simply stopped seeking medical help that was unavailable. To solve this problem, the PH&W section declared all military hospitals open to civilian patients. Sams chose Tokyo's First Imperial Japanese Army Hospital in Tokyo, which he renamed the First National Hospital, to serve as a new model hospital for Japan.[69]

At the same time that it confiscated all military hospitals for public use, the PH&W section stripped any war veterans currently being treated within these hospitals of their special health care privileges. This meant that war veterans no longer had first priority when it came to care, medicine, and hospital beds. The PH&W did not, as MacArthur had done with the upper echelons of Japanese government, immediately purge these hospitals of staff associated with the military. As Sams points out in his memoirs, if they had done so, no doctors would be available to tend to patients.[70] By 1948, however, all hospital staff members who had been career officers were purged and replaced by civilian doctors who had been trained during the Occupation .[71]

Thus, by the end of 1948, the transformation of Japan's military hospitals into national hospitals that tended to the needs of civilians was largely achieved. While these early national hospitals lacked the beds and supplies needed to treat all of Japan's sick and injured, conditions within hospitals slowly improved throughout

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[69] Sams, *Medic*, 30,
[70] Sams, *Medic*, 28.
[71] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948*, 87.

the occupation period. Unable to immediately build new hospitals and fully supply existing institutions, the PH&W section turned its attention to reforming hospital regulations. Such efforts were made in order to insure that the Japanese citizens who were treated in hospitals received proper care. Reforming Japan's hospital systems involved two major interrelated projects: the closing of Japan's problematic private hospitals, and the overhaul of the Japanese medical education system. Both of these goals were largely achieved in the first three years of the Occupation.

Once the PH&W section had opened all hospitals that it could make immediately available to the public, it began the processing of closing private hospitals, many of which the section believed should not have been treating patients in the first place. The existence of these hospitals arose as a result of the training discrepancies between doctors that began in the mid-nineteenth century, but continued to exist up to the Occupation. These training discrepancies created a stratification within Japan's civilian hospital system, which by the beginning of the occupation included large public hospitals and small un-regulated private hospitals. [72]

While the twentieth century ushered in an era of modern medical schools in Japan, it did not bring about standardized medical training. By the beginning of the Occupation, Japan had eighteen officially designated university-level medical schools. At the time, there was no medical examination board that standardized curriculum in these universities, but the individual medical schools did hold their students to rigorous standards. Students who were accepted into these schools, for

[72] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948,* 86.

instance, were expected to have completed three years of university level science courses before matriculation. Their medical education comprised an additional four years of study, with two of those years dedicated to basic sciences and two to clinical medicine.[73] Graduates of these schools were considered to be first-rate. As such, these doctors were able to seek employment in Japan's larger hospitals, which were located in major urban areas. As such, these first-rate physicians also had access to the most up-to-date medical equipment and research.

The less trained doctors were, on the other hand, typically gradates of Japan's medical technical schools. Called *senmon gakkō*, the popularity of these less medical technical schools skyrocketed in the late 1930s due both to the selectiveness of the university medical schools and the growing need for doctors at home and abroad during the Asia-Pacific war. While only ten medical technical schools existed prior to the year 1938, by 1945 over fifty-one were in operation. Graduates of Japan's medical technical schools were not required to take any university level courses prior to entrance into the technical school's four year long medical programs. Of these fifty-one schools, nineteen of the medical technical schools were associated with Japan's medical universities and thus held their students to higher standards. Most technical schools operated without such affiliations. Unaffiliated schools were particularly problematic because successful graduates of these technical schools were automatically issued medical licenses upon graduation, just like the graduates the country's medical universities.[74]

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[73] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948*, 79. Sams, *Medic*, 120-121.
[74] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948*, 79-80

As the need for physicians grew during the war years, many poorly trained medical students were hastily awarded medical licenses and sent to practice medicine within Japan. While large public hospitals would not employ graduates of the medical technical schools, these physicians could go into private practice. Physicians who lived in large urban areas could work for smaller clinics that took only outpatients. They were also allowed to establish private hospitals, provided that the hospitals have less than ten beds.[75]

The existence of private hospitals became a problem for several reasons. First of all, the physicians that ran these hospitals were prohibited from referring their patients, should the patient's infirmity turn serious, to first-rate, i.e. public, hospitals. Thus, first-rate and second-rate physicians remained segregated not only during the school years, but for the entirety of their careers. In general first-rate doctors and hospitals catered to the urban elite, while their second-rate counterparts served the less fiscally fortunate and rural Japan.[76]

The segregation upheld between first-rate and second-rate doctors ensured that quality of care remained poor in private hospitals and clinics. The inability of second-rates physicians to refer patients to first-rate physicians meant that little exchange occurred between the two groups. Thus, after medical school second-rates physicians were provided with no opportunities to improve their skills[77]. Sams believed that even had these physicians been in contact with their first-rate peers, they would have had little incentive to improve their skills. Unlike first-rate

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[75] Sams, *Medic,* 122.
[76] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948*, 86.
[77] Sams, *Medic*, 122.

physicians, who enjoyed a spot on the hospitals payroll, physicians involved in private practice relied on quick patient turnover to make a living. As in earlier times, the end of each patient appointment a private physician would provide their patient with a small supply of medicine. In return, they were paid a small sum of money. It was in the best interest of such physicians to see as many patients as possible, not to provide the best care possible.[78] Within this system, patient care at private clinics was unlikely to improve.

Conditions within private hospitals were also problematic. Such hospitals had never been subject to any form of regulation, and therefore varied widely in terms of quality of care and level of sanitation. Richard Berlin, a naval physician who aided in hospital rehabilitation near Nagasaki in 1945, wrote about conditions in private hospitals in an article for the journal *Scientific Monthly*. Although Nagasaki's main public hospital lay outside the blast radius of the atomic bomb dropped on Nagasaki in August 1945, the hospital was deemed unfit by Berlin's team upon their arrival. During the search for a location that could serve as a temporary facility, Berlin toured many of Nagasaki's private hospitals. He described conditions within these hospitals as being "dark, filthy, and fetid." Straw mats were used in place of bedding, and patients were often packed three to a "bed". [79]

While Berlin's recollections reflect some of the worst conditions in private hospitals, Sams and others in the PH&W section considered all private hospitals a problem. Because private hospitals numbered in the thousands, ensuring

[78] Sams, *Medic*, 122-123.
[79] Richard B. Berlin, "Impressions of Japanese Medicine at the End of World War II" *Scientific Monthly* (1947), *42*.

that each hospital met a minimum standard of operation would require more manpower than the PH&W and Ministry of the Home could spare. Furthermore, the PH&W felt confident that existing public hospitals could meet their needs unlike the Japan's second-rate doctors, whom Sams hoped could quickly benefit from additional training and be allowed to practice again, Japan's second-rate hospitals were unsalvageable. [80]

The occupation period therefore became a time when the hospitals both opened and closed within Japan. Public hospitals opened their doors to both civilians, and to physicians. For the first time, physicians who were not on a particular hospital's payroll could refer their own patients to the hospital. At the same time national hospital were opening their doors within Japan, private hospitals were closing their own. By 1948, all private hospitals were required to have shut down, or to have become clinics, and the number of national hospitals had reached 116.[81] For the remainder of the Occupation Period, the PH&W section and the MHW focused on stocking and improving the newly established public hospitals.

While the creation of national hospitals and the closing of private hospitals helped close the gap in inpatient care inherent in Japan's pre-occupation medical system, the PH&W was also faced with the task of restructuring Japan's bifurcated medical education system. To accomplish this task, the PH&W section first approached the Japanese Medical Association in order to draw on the institutions expertise in working with Japan's medical system. Their request for aid in accessing the quality of Japan's medical education programs was, however, met with

[80] Sams, *Medic*, 145.
[81] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948*, 79.

disinterest. The PH&W section decided instead to form a new council composed of Japanese physicians to aid in this task. After meeting several times throughout 1946 to discuss potential council members, the PH&W formalized the Japanese Council on Medical Education. [82]

In 1947 the Japanese Council on Medical Education undertook a thorough investigation of Japan's existing medical schools, reclassifying them into either class A or class B schools. Class A schools were those that were in possession of both medical training equipment and a sufficiently educated faculty. These schools were eligible for consideration as university level medical schools. Class B schools, on the other hand, failed to meet the required standards to become medical universities. Perhaps unsurprisingly, all of Japan's eighteen official medical university were designated as class A medical schools. They were joined by forty-five technical schools, twenty-seven of which were quickly designated temporary universities and would become full universities at a later date. The PH&W section and the Japanese Council on Medical Education agreed to allow the remaining eighteen class A technical schools to stay open until 1952, provided that the these schools operated in conjunction with an established medical school.[83]

The Japanese Council on Medical Education also formulated a new curriculum to be used in all medical schools. Upon first examining the Japanese medical school curriculum, the PH&W system determined that it was largely modeled on a pre-war German model. As such, Japanese medical courses were largely didactic and theory laden. Laboratory training and clinical experience was

[82] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948*, 80.
[83] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948*, 80-81.

lacking amongst Japanese physicians and medical students. [84] Together, the PH&W section and the Japanese Council on Medical Education developed a curriculum for Japanese medical schools that incorporated not only didactic training, but practical skill work. In this new curriculum, clinical training comprised 53% of the students' total training. All students were required to attend autopsy labs, preform dissections, and aid in experiments preformed in the medical school laboratories.[85]

The final change to Japan's medical curriculum was the addition of a national medical board exam in 1947. From that year onward, all graduating Japanese medical students were required to pass a standardized test that was then reviewed by the Council on Examinations for Medical Licensure, a group overseen at first by the Ministry of Health and Welfare. The Council on Examinations for Medical Licensure, which consisted of an annually selected committee of seventeen highly regarded Japanese physicians across all fields, supervised the new biannual four-day medical exams. The rigorous exam was designed to ensure that only the most highly qualified students passed.[86]

The changes made to Japan's medical education system were crucial to the restoration of health in Japan. While several hundred Japanese medical students were sent to the United States and Europe to study in 1945, by 1947 Japan had produced its first board-certified medical class. The incorporation of practical teaching in medical schools produced Japanese physicians who were reported to

[84] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948*, 79.
[85] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948,* 81-83.
[86] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948,* 82-84.

have been highly proficient in treating their patients.[87] While only 47,798 doctors were practicing in the year 1945, by 1948 this number had increased to 68,820. The number of physicians would continue to grow throughout the remainder of the occupation period.

The quality of Japan's hospital systems improved alongside that of their medical staff. The PH&W's transfer of military and naval hospitals to civilian hands immediately opened thousands of beds to sick and injured Japanese civilians. By 1952, 3,577 hospitals operated within Japan. Bed capacity increased from 244,709 beds in 1945 to 312,265 in 1952. While this jump in bed capacity may not seem overly impressive, it is important to remember that many of the beds counted in 1945 were little more than tatami mats. By 1952, these makeshift beds had been replaced with proper hospital beds.[88]

Sams attributed this success in rehabilitating Japan's medical system to his section's willingness to "push multiple wheels at once." He believed that Japan's health-related problems were multi-casual, and thus required multiple solutions. In the case of Japan's medical system, these solutions came in the form of hospital reform and medical education restructuring. When the PH&W section's attention turned to the issue tuberculosis in the later years of the Occupation, this multiple solutions approach would again be used to great effect.

[87] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948,* 83.
[88] GHQ, *Public Health and Welfare in Japan: Final Summary 1951-1952,* 73.

Systematizing Sanitation:

Sanitation Training and Early Vaccination Campaigns

While the steps taken to improve Japan's medical systems would lay the foundation to in-patient treatment of tuberculosis sufferers, many aspects of the preventative care used to halt the spread of tuberculosis were first tested in the PH&W section's early sanitation programs. When the PH&W section entered Japan they were faced with the dual problems of recreating clean living conditions, and halting the spread of what Sams called "wildfire diseases" like typhus and dysentery, which spread quickly throughout Japan's destroyed city neighborhoods.

The occupation's sanitation issues grew out of the destruction caused by the war. For the most part, discussions of wartime destruction, including those provided by the PH&W section, focused on the destruction that occurred in urban areas. A total of sixty-six of Japan's cities were bombed, and on average each city saw around 40% of its structures destroyed. Nearly 6,000,000 families homes were felled alongside Japan's hospitals and public buildings.[89]

Japan's newly homeless population had little choice but to live amongst the ashes of their destroyed homes. While some moved into train stations, many more constructed makeshift shelters out of the ever-increasing rubble piles that clogged their cities. Shantytowns appeared amidst the remains of fire-bombed neighborhoods, and remained there for years. As with housing, sanitation in Japan

[89] Carola Hein, "Rebuilding Japanese Cities After 1945." In *Rebuilding Urban Japan After 1945*, edited by Carola Hein, Jeffery M. Diefendorf, and Ishida Yoshifusa (New York: Palgrave MacMillan, 2003), 3.

was deleteriously affected by the frequent fire-bombing of Japanese cities. Aside from creating large rubbles piles, Allied fire-bombing also destroyed cities' sewage and drainage systems, which were integral to the maintenance of sanitary conditions in large cities like Tokyo and Osaka.

Within Japan's destroyed neighborhoods, disease spread quickly. Rats, flies, and lice infested homes and spread diseases like typhus and typhoid. The standing water created by the destruction of sewage systems provided fertile breeding grounds for mosquitos, which spread Japanese Ecehpalitis B to their human hosts.[90] The presence of sewage backflow also incited a sky-rocketing in the rates of enteric diseases like dysentery, which are caused by the accidental ingestion of bacteria-infected human fecal matter. Enteric disease became so prevalent within Japan's shantytowns that they were secondary only to tuberculosis in mortality rates.[91]

Like the wildfire diseases, tuberculosis also thrived in Japan's shantytowns. Families were pushed into smaller living spaces than they had been in the prewar period, and tuberculosis spread quickly from person to person. Families in these homes had little access to nutritious food. Likewise, fuel and clothing were in short supply during the first few years of the occupation. The shantytown's hastily constructed homes provided little shelter from either summer heat and freezing winter conditions. Tuberculosis easily overcame the immune systems of people living in such conditions. Thus, at a time when the PH&W system could not afford

[90] Japanese B encephalitis is a viral disease that causes inflammation in the brain and spinal chord.
[91] Crawford F. Sams "American Public Health Administration Meets the Problems of Orient in Japan" *American Journal of Public Health* 42 (1952), 564.

the resources to deal directly with tuberculosis, the population's defenses against the disease were down as well.

When Sams and the PH&W section surveyed living conditions within Japan after the war, the conclusions they reached were both expected and ironic. The PH&W's reactions were expected in that the impression they took from Japan's immediate postwar conditions were enough to convince them that Japan had always been severely backwards in matters concerning sanitation. The 1948 edition of the PH&W section's annual report, which was the first such report published and therefore included background information on every topic concerning the section's activities. Nonetheless, 1948 report largely overlooked the existing sanitation system, including sewage systems of the country's cities which had been largely destroyed in the bombing raids of 1944 and 1945. Similarly, the report discounted the work of Japan's neighborhood sanitation groups during the war years. These groups, called *eisei kumai*, were comprised of citizens who worked in tandem with their local police station to aid the government in maintaining sanitation standards. The PH&W's explains that at the end of the war the country only had two sanitation engineers, both of whom had been trained in the United States and Europe. While this was likely far from true, this statement suggested that the Japanese had no legitimate way to enforce health standards.[92] In the end, the report concluded that that Japanese sanitation practices were "medieval" and comprised of customs and attitudes that "had not changed in centuries."[93]

[92] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948,* 61.
[93] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948,* 61.

For his part, Sams believed that the abundance of pests running freely through Japan's shantytowns offered sufficient evidence that, unlike American citizens, the Japanese did not understand the value of pest control, and had never undertaken the task of eradicating pests from their homes.[94] He similarly dismissed prewar sanitation in Japan in his article "American Public Health Administration Meets the Problems of Orient in Japan," where he wrote off the biannual, *eisei kumai* orchestrated cleaning campaigns as little more than "spring cleanings."[95]

The PHW section's conclusions about Japanese sanitation practices are ironic in that they mirror conclusion drawn by the Japanese about sanitation within their past imperial holdings. In a 1910 report on conditions in Korea, the Japanese colonial authorities depicted Korea's sanitation much in the same way that the PH&W section would depict Japan's own sanitation conditions thirty years later. The Japanese report states that sanitation is severely lacking in Korea, as the Koreans have to "be at a standstill for a long time" and have refused to incorporate modern sanitation techniques.[96] It goes on to recount that no form of waste management exist within Korea. The streets are littered with refuse, and the soil and water throughout Korea is polluted. Near the end, the report mentions that efforts have been made to control waste-borne diseases through vaccination campaigns, and that

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[94] Sams, *Medic*, 93.
[95] Crawford F. Sams "American Public Health Administration Meets the Problems of Orient in Japan" 564.
[96] Japan Regency General, "Recent progress in Korea" in Making of the Modern World Digital Library, http://find.galegroup.com.proxy2.library.illinois.edu/mome/retrieve.do?sort=DateAscend&inPS=true&prodId=MOME&userGroupName=uiuc_uc&tabID=T001&bookId=MW2L1766700&resultListType=RESULT_LIST&searchId=R1&searchType=AdvancedSearchForm&contentSet=MOMEArticles&showLOI=&docId=U3612777622&docLevel=FASCIMILE&workId=U112777622&relevancePageBatch=U112777622&retrieveFormat=MULTIPAGE_DOCUMENT&callistoContentSet=ECLL&docPage=article&hilite=y (accessed July 11, 2014), 117.

sewage systems and water treatment plants are being built in large cities like Seoul. Furthermore, it lauds the efforts of Japanese sanitation engineers to establish the Seoul Sanitary Association. Through this group, Japanese colonial authorities hoped to train Korean medical leaders to improve the colony's sanitation.[97]

The 1910 Japanese progress report about colonial Korea is illuminating for several reasons. It demonstrates that like the PH&W section, Japanese colonizers tended to deride living conditions within their colonial holdings. Both the PH&W and the Japanese point out issues with filth, waste management, water treatment, and environmentally-linked diseases. The documents also reveal that like the PH&W section, Japanese colonial authorities were aware of solution to these issues. Within Korea, the Japanese colonial government went on to enacted waste management programs, built water treatment plants, and tested and vaccinated against diseases.[98]

The actions that the PH&W section undertook to restore sanitation control in Japan more closely resembled a return to prewar practices than the incorporation of new sanitation techniques into Japan. While Japan very likely had more than two sanitation engineers at the end of the Asia-Pacific war, sanitation engineering had been an integral part of the Japan's imperial expansion.

The PH&W section saw sanitation workers as the frontline between people and disease. As such, its first priority was to establish sanitation teams, which in turn carries out various directives aimed at eradicating diseases and cleansing urban environments. In order to do so, in late 1945 the PH&W section ordered the

[97] Japan Regency General, "Recent Progress in Korea," 118 -120.
[98] Japan Regency General, "Recent Progress in Korea," 120.

Home Ministry to establish six-man teams to serve as an immediate response to Japan's lack of sanitation workers.[99] These teams were set to work clearing rubble, repairing water supply systems, and making other repairs to the existing sanitation system. As these projects progressed, these initial teams also participated in typhus control through the spraying of DDT. In the spring of 1946, over 9,000 sanitary teams were engaged in cleaning up Japan's cities and controlling the rodent and insect populations. By the summer of 1947, 60,000 teams had been established throughout the country.[100]

Sanitation teams were gradually reduced as the occupation continued, and pest-borne diseases were brought under control. In 1946 Japan had one six-man sanitation team for every 2,000 citizens. In 1949, that ratio dropped to one team per every 15,000 Japanese.[101] During the first three years of the occupation, sanitary teams succeeded through water treatment and pest eradication campaigns in halting the spread of these so-called wildfire diseases. For example, typhus, a louse-borne disease, peaked annually in the spring. The work of sanitation teams ensured that typhus morbidity rates dropped from nearly 150 cases per 100,000 Japanese in the spring of 1947 to under four cases per 100,000 in 1948.[102] Typhoid, dysentery,

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[99] To address Japan's long-term sanitation needs, the MHW established training schools for permanent sanitation workers. By the end of the war, Japan's towns and cities employed 795 sanitary inspectors and over 20,000 general sanitation workers. Additionally, the MHW established a model community program that included over 660 communities by 1952. Model communities were expected to regularly carry out pest control campaigns in exchanged for the title. Ministry of Health and Welfare, Japanese Government, *A Brief Report on Public Health Administration in Japan* (1952), 22-23.

[100] GHQ, *Mission and Accomplishments of the Public Health and Welfare Section, 1948*, 11.

[101] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948*, 62-63.

[102] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948*, 22.

Encephalitis B, and many other diseases prevalent in the early occupation period also underwent a drastic decrease.

Like the changes made to Japan's hospital systems, the work of the sanitary teams would also be valuable to the later attack on tuberculosis. In addition to sanitary teams carting away refuse to open up areas for homes to be rebuilt, they also reestablished access to clean water. More importantly, the sanitation teams constituted the first large public health project undertaken by the PH&W and Japanese workers. While the PH&W section again chose only to orchestrate the formation of sanitation teams, and occasionally provide supplies, the various projects completed demonstrated that large public health campaigns could be successful. Many sanitation team projects, such as the widespread spraying of citizens with DDT in order to prevent the spread of typhus, would be reflected in future tuberculosis screening and vaccination campaigns.

While tuberculosis control was not an immediate concern of the PH&W section during the early occupation years, later control did benefit from the work done by the PH&W section, Japanese medical professionals, and sanitation teams in the early occupation period. The changes made to Japan's medical system ensured that when the PH&W section was ready to tackle tuberculosis, hospitals and sanatoria were better stocked and staffed. Sanitation teams not only eradicated early diseases that prevented the PH&W section from turning its attention to the less swiftly cured tuberculosis, but also helped restore sanitation to Japan's communities, and clear the way for rebuilding. Thus, in the early occupation period, the foundation was laid for the PH&W's campaign against tuberculosis.

CHAPTER 4
THE FINAL ROUND: MANAGING TUBERCULOSIS IN THE OCCUPATION PERIOD

While the Public Health and Welfare (PH&W) section spent the early years of the occupation improving both the Japanese medical system and living conditions in Japan, the specter of tuberculosis loomed large in the background. In the chaos that engulfed the first few months after Japan's surrender, tuberculosis rates rose with unprecedented speed. In 1943, the last pre-occupation year for which statics were collected, tuberculosis was reported to have mortality rate of 225 per 100,000 people. By 1945, that rate had risen to over 280 per 100,000. That year, tuberculosis accounted for nearly 15% of the total deaths in Japan.[103] General Crawford F. Sams rather dramatically remarked that the number of civilian deaths from tuberculosis in 1945 outweighed the deaths caused by Allied fire-bombing, the two atomic bombs, and fire raids combined.[104] Whether or not his statement was accurate, tuberculosis claimed the lives of tens of thousands of Japanese citizens during the war, and continued to pose a threat as the country began to rebuild following the war.

The PH&W section immediately identified tuberculosis as one of the largest health crises facing Japan. Combatting tuberculosis would require large advances to be made in regards to public education, preventative practices, and inpatient treatment. As such, tuberculosis would require General Sams and the PH&W sections to "push all the wheels" once, and to do so even more strenuously than they

[103] GHQ. *Public Health and Welfare in Japan: Annual Summary 1948*, 38.
[104] Sams, *Medic*, 109.

had when tackling Japan's medical system reforms. While many of the wheels that the PH&W section pushed, including inoculation campaigns, medical treatments, and construction of new sanatorium buildings, had to wait until the mid-occupation period, the PH&W section began planning their campaign against tuberculosis from the outset of the occupation.

The first step in overcoming Japan's tuberculosis epidemic involved careful data gathering. The same early directives that required the Home Ministry to turn over statics concerning Japan's hospitals also required them to send information on tuberculosis. As tuberculosis had been designated one of Japan's "national diseases" in 1918, the PH&W section expected to find several decades worth of records for the disease.[105] When the Home Ministry sent over their records on tuberculosis, the PH&W section quickly realized that spotty tuberculosis reporting in the past meant that new records needed to be taken.[106]

In order to assess the exact magnitude of Japan's tuberculosis epidemic the PH&W section re-mandated tuberculosis reporting. New tuberculosis statistics were collected from hospitals and physicians, but this time the Supreme Commander of the Allied Powers (SCAP) statistics bureau, not the Home Ministry, undertook the initial surveying. Only after SCAP completed their initial statistical surveys was the job of maintaining up to date statistics turned over to the Home Ministry. In order to ensure that tuberculosis statistics continued to be reported, the PH&W section mandated monthly reporting by physicians within public hospitals, sanatoria, and public health centers. These physicians worked closely with personnel from SCAP's

[105] Johnston, *Modern Epidemic*, 246.
[106] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948*, 38.

statistic bureau, who helped train the physicians in proper reporting and ensured that monthly reports were gathered.[107]

The methods involved in gathering tuberculosis statistics during the occupation did not vary greatly from those used in the years before. However, statistics reporting was more successful than prewar and wartime statistics reporting for several reasons. First, SCAP had more personnel that could be devoted to gathering statistics. Members of the SCAP statistics bureau had been highly trained in data management and survey taking and their attention was not divided amongst other tasks. As the Asia-Pacific War progressed, for example, the Japanese government shifted the labor of able-bodied males and trained physicians away from conducting surveys and gathering statistics to directly assist in the war effort.

As the occupation continued, SCAP statisticians were also able to train Japanese government employees and transfer the work of planning and executing surveys and gathering statistics to the Ministry of Health and Welfare (MHW). By 1951, the PH&W had trained over 500 MHW employees in statistical work, and had helped the MHW found their own Statistics and Research Division.[108] Because the PH&W section involved itself more closely in the process of statistics gathering through working with the MHW to create a strong force of statisticians, government institutions in Japan more closely regulated tuberculosis statistics than they had in the past. This attention led correspondingly to more accurate reporting.

Lastly, although tuberculosis reporting took essentially the same form as it had before the war, tuberculosis reporting succeeded in the occupation period

[107] *Mission and Accomplishments of the Public Health and Welfare Section, 1948*, 6-7.
[108] GHQ, *Public Health and Welfare in Japan: Final Summary 1951-1952*, 65-67.

because it was coupled with large public education campaigns. The PH&W section was well aware of the stigma that surrounded tuberculosis. Changes made to Japan's medical education system helped ensured that Japanese physicians were focused on providing quality care, not on selling palliatives. Thus, physicians lost their incentive to hide tuberculosis cases. These changes did little, however, to change the public sentiment surrounding tuberculosis that kept patients with tuberculosis coming forward in the first place. These changes would come only later through public awareness campaigns about tuberculosis.

As with the reinstitution of tuberculosis reporting, the information disseminated to the public in order to dispel tuberculosis's stigma during the occupation period was similar to the information distributed during the pre-war period. The means of distribution, however, varied greatly. While in the prewar period the Japanese government had been eager to convince the public that tuberculosis was a medical disease, not a hereditary affliction, most of the information that reached the Japanese public about tuberculosis and its prevention came from more unofficial sources. Although the government and medical community embraced prevention as a means to combat tuberculosis in the early twentieth century, they did not sponsor public education campaigns in order to teach prevention to the public. Information about sanitation and preventative techniques that could be used to combat tuberculosis reached most Japanese through the work of small neighborhood groups, called *eisei kumai*.[109] While these neighborhood groups disseminated information about sanitation, the hygienic

[109] Johnston, *Modern Epidemic*, 251.

practices they taught were not necessarily linked to tuberculosis prevention. Furthermore, these groups were comprised primarily of ordinary community members, not medical professionals or government officials. As such, their reach and influence was limited.

The Japanese government and medical community may not have sponsored widespread tuberculosis education campaigns during the early twentieth century, but groups within the United States did. Books aimed at explaining tuberculosis to the public appeared as early as the late nineteenth century, and became increasingly numerous as rates of the disease rose in the early twentieth century.[110] For example, in 1923 the Colorado Foundation for Research in Tuberculosis published an educational booklet entitled *Overcoming Tuberculosis: An Almanac of Recovery*. Using this book, a tuberculosis patient and their family could learn about the most up-to-date information about how to overcome tuberculosis, which at the time consisted of bed rest, ample nutrition, and the avoidance of strenuous mental work, and also track the progress of their recovery.[111]

By the 1940s in the United States, literature aimed at tuberculosis education had spread beyond the tuberculosis patient to target the population as a whole. One particularly interesting example of tuberculosis education literature, *Huber the Tuber* (1940) by Dr. Harry A. Wilmer, educated American citizens about tuberculosis

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[110] While tuberculosis morbidity rates peaked in 1945 in Japan, morbidity rates in the United States hit their highest in the years between 1915 and 1920. From 1920 onward, tuberculosis morbidity rates in the United States declined slowly due to increased availability of care, and public awareness concerning tuberculosis prevention. Flurin Condrau and Worboys, Micheal eds., *Tuberculosis then and Now: Perspectives on the History of Tuberculosis* (Quebec: McGill-Queen's University Press, 2010), 35.

[111] Gerald B. Webb and Ryder, Charles T., *Overcoming Tuberculosis: An Almanac of Recovery* (Paul B. Heober Inc, 1923), vii.

by anthropomorphizing various tuberculosis bacterium and casting them as key figures at a time of rising international tensions. While Huber the Tuber himself was represented as a generic *tubercule bacillis*, he was joined by Nasty von Sputum and Tojotuber, both of whom represented more virulent forms of the disease. Within *Huber the Tuber*, Nasty, a thinly veiled Hitler figure, held rallies and ordered his bacterium armies to prepare for battle. Later in the book, Tojotuber, a figure modeled on the Japanese premier Tōjō Hideki, mimicked his namesake and attacked a group of antibodies with his tuberculosis troops. Each illustration in *Huber the Tuber* was accompanied by a page describing the stage of tuberculosis depicted in the illustration and explaining the most up to date procedures and treatments. Thus, while the reader watched Huber, who himself represents tuberculosis in its relatively harmless latent stage, try to convince Nasty and Tojotuber to live peacefully within the body, they also learned about tuberculosis testing, lung surgeries that alleviate tuberculosis symptoms, and the best ways to avoid infection.[112]

Huber the Tuber linked tuberculosis with the current political tensions much in the same way that the Japanese imperial government hoped to link tuberculosis to their war efforts. In both countries, tuberculosis was seen as a threat to the army and workforce. American and Japanese governments both believed their citizens needed to keep their bodies free of tuberculosis for the good of their country. The most important difference between Japan's and the United States' approach to tuberculosis control at this time came in how the disease was presented to the

[112] Harry A. Wilmer, *Huber the Tuber: A Story of Tuberculosis* (New York: National Tuberculosis Association, 1940).

public. While Wilmer's book was not commissioned by the United States government, *Huber the Tuber*'s depiction of tuberculosis as a battle, and his use of easily recognizable enemies meshed well with the government's own agendas. Wilmer's use of cartoon characters and inclusion of detailed medical information made his book both easily accessible to young Americans and useful for older readers. The Japanese government's approach to tuberculosis control relied more on mandatory testing than on public persuasion. As such, between 1940 and 1945, when tuberculosis testing became mandatory for all males aged fifteen to thirty, inoculations were given, but public attitudes towards tuberculosis and its causes were not encouraged to change. Moreover, preventative measures like those that Wilmer encouraged in *Huber the Tuber* were not openly discussed amongst the Japanese public. Society remained able to avoid topic of tuberculosis, so long as men showed up for their annual screenings.

Society's ability to ignore tuberculosis changed during the occupation period, when the PH&W and MHW pushed the disease into the spotlight. Because public acknowledgement and reportage of tuberculosis became crucial to managing the disease, it could no longer be ignored. From 1946, PH&W section and MHW sponsored public health campaigns attacked the idea of tuberculosis as hereditary and presented the latest medical facts concerning how and why tuberculosis spreads. Public service notices explaining that tuberculosis was a bacterial disease and not hereditary ran on the radio, in newspapers, magazines, and journals, and were posted throughout Japan's shopping and business districts.[113]

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[113] GHQ. *Public Health and Welfare in Japan: Annual Summary 1948*, 40.

The Five-Front Attack on Tuberculosis:

Centers and Staff

By October 1946, the PH&W section had announced a fully developed and multi-faceted attack on tuberculosis. The PH&W section, with the aid of the MHW combated tuberculosis on five fronts, which were heavily interrelated and dependent on earlier occupation programs. First, every effort would be made to ensure that tuberculosis sufferers came forward, and sought treatment in Japan's hospitals and sanatoria. This first front relied heavily on both the work done to rehabilitate Japan's hospitals systems, and on the public campaigns against tuberculosis started during the surveying process. The second front placed heavy emphasis on physician and nursing training. Again, early occupation efforts to increase the quality of medical education played a large role in achieving this goal. The third front of the PH&W sections attack against tuberculosis involved protecting Japan's youngest citizens from tuberculosis through the introduction of a school lunch program. Finally, while the fourth front consisted of careful screenings of Japan's youth for tuberculosis, the fifth extended these screenings to the entire population.[114]

When the PH&W section announced its plan of attack on tuberculosis in 1946, the goals of returning tuberculosis sufferers to sanatoria and of staffing tuberculosis treatment centers were the most readily achievable. The efforts made

[114] GHQ. *Public Health and Welfare in Japan: Annual Summary 1948*, 42.

to encourage tuberculosis sufferers to self-report for statistical purposes overlapped with the effort to incite tuberculosis sufferers to seek aid. While informational advertisements concerning tuberculosis were represented in all available forms of media, newspapers were particularly well suited to the task of pointing tuberculosis patients towards help.

The majority of the earliest public service notices in newspapers concerning tuberculosis publicized not only the existence of treatment centers for tuberculosis patients, but also the existence of institutions offering guidance and counsel. For example, on March 27, 1946, a short article in the *Yomiuri Shimbun* announced the opening of Keiō University's tuberculosis advising office.[115] Other entries informed the public of local government health offices, such as the "AO" office in Arima, a small town near Kobe, where they were encouraged to seek advice and receive care.[116]

Advising offices, like the one managed by Keiō University, were established throughout the occupation period, but also had prewar precedents, a fact which the PH&W section and Sams often overlooked in their discussion of the health center system that was developed during the occupation. The Home Ministry opened the first prewar national health center opened in 1937 and had established fifty similar centers within Japan by 1938. The centers were expected to aid in public education, tuberculosis treatment, and provide support for mothers and children. However, because the establishment of health centers coincided with the outset of war in China, these centers were provided with little funding from the national government

[115] "Kekkaku sōdanshi kaisetsu /Keiōdaigaku byōin," *Yomiuri Shimbun,* March 27, 1946, 1.
[116] "Kekkaku ni AO/ Arima Kenkyūjo," *Yomiuri Shimbun*, August 23, 1947, 2.

and also suffered from a lack of supplies and properly trained personnel .[117] Thus, the ability of prewar national health centers to promote health was severely hampered. Furthermore, as with sanatoria, those suspecting they had tuberculosis avoided the prewar health centers for fear of being reported and ostracized. By the end of the war, most national health centers had already closed. While those that remained open offered consultations to visitors, they were unable to provide aid in the form of medicine and medical treatment.[118]

As part of the push to educate the Japanese public about tuberculosis, PH&W section reopened former health centers and built new centers. These new health centers were given expanded responsibilities, which included not only tuberculosis counseling, but also providing health education, monitoring environmental sanitation, statics work, and examination services. The PH&W section classified these health centers into three classes. Class A health centers were the largest, with a staff of sixty-one, and thus offered the most complete range of services. These centers, which were primarily found in large urban centers, employed at least eight physicians, fifteen public health nurses, and even five sanitarians. Class B centers, which have a staff of at least fifty-four, housed the same number of doctors, but only eight nurses. Finally, Class C centers, which served smaller communities, functioned with a staff of thirty-five. In favor of employing sufficient nurses and physicians to

[117] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948*, 12.
[118] MHW, *Public Health Administration in Japan*, 5.

treat their visitors, these health centers omitted extra services such as veterinary and dental care.[119]

While the new national health centers offered a wide range of services to the community, tuberculosis prevention remained one of their primary functions. Out of the sixty-one staff members working in a Class A facility, four staff members were devoted specifically to tuberculosis services. Two out of the facilities eight doctors worked exclusively with tuberculosis. As x-ray film became available in the later years of the occupation, each center employed its own technician solely for the purpose of tuberculosis screening. The final fulltime staff member devoted to tuberculosis was a non-professional staff member who preformed administrative work.[120] MHW records also show that tuberculosis related procedures comprised the large majority of all procedures performed. In the years from 1949 to 1952, tuberculosis health consultations accounted for more consultations than all other types combined. Likewise, more public nurses visited tuberculosis patients than patients with any other disease or health problem, and each year the public health centers completed more tuberculosis examinations than all other types of offered examinations combined.[121]

In 1947, the Japanese MHW revised the "Health Center Law" that had established the national health center system in 1937. The revision redefined the responsibilities of national health centers to include the health services listed above. More importantly, the law finally granted health center authority within the

[119] Crawford F. Sams, "American Public Health Administration Meets the Problems of the Orient," *American Journal of Public Health* 42 (1952), 561
[120] Sams, "Problems of the Orient," 562.
[121] MHW, *Public Health Administration in Japan*, 6.

government with regards to these tasks. In formalizing both the new goals for health centers and in granting them greater authority, national health centers changed from the toothless institutions of the prewar period to institutions government representation and with resources that actually reached the communities they served. By 1947, there were also over 657 national health centers, which together employed over 2,500 physicians and 4,200 nurses. By the end of the occupation, the MHW had established 724 centers, which employed over 4,700 physicians and 7,300 nurses.

Like Japan's newly instituted public hospital system, the success of the national health centers owed much to changes made in medical education. By 1947, the first postwar class of physicians had graduated from the country's medical universities. Due to the increased emphasis placed on laboratory work and practical training, these physicians were better equipped for work both in hospitals and at the national health centers. From the beginning of the occupation, the PH&W initiated reforms in nursing education that occurred alongside those for medical schools. The result was that Japan's qualified nursing workforce grew even more quickly than that of its physicians. Therefore, by 1948 Japan's public health centers were rebuilt, reorganized, and staffed to an unprecedented level with medical professionals who were well-trained in tuberculosis education, prevention, and care.

As in the case of national health centers, sanatoria also benefitted from an image overhaul. Newspaper campaigns, like the above mentioned ones that ran in the national daily *Yomiuri Shimbun* were also used to inform the public about long-

term care options. As in the case of health centers, these advertisements made the public aware of local sanatoria, and the fact that such places could provide a variety of services for those with the disease. With the aid of both public education campaigns and the increased distribution of information about tuberculosis by well-trained nurses and physicians, bed-occupancy with sanatoria swiftly rose. While only 25% of sanatoria beds were filled at the end of the war, just three years later 90% of all sanatoria beds were occupied. The PH&W section largely attributed this increased use of these facilities to the better trained staff and quality of care they offered as well as increased public awareness of tuberculosis as a treatable medical disease and not a hereditary defect.[122] As the occupation continued, sanatoria had even greater success in attracting patients who sought care. By 1952 all of Japan's sanatoria, which numbered over 450 by the end of that year, were at full capacity. Most sanatoria had long waiting lists from which they would call their next patients. Furthermore, most general hospitals had a number of beds set aside for tuberculosis patients. Hospitals reported bed occupancies for tuberculosis patients stood on average at 106%.[123] At the beginning of the occupation, sanatoria and hospitals could not attract tuberculosis patients to fill even half of their beds. By 1952, patients filled Japan's sanatoria and hospital wards to capacity.

While increased public education about tuberculosis through health centers and the media produced overwhelmingly positive results in regards to encouraging tuberculosis sufferers to seek treatment, it also encouraged opportunists to seek easy money. The spread of factual information about tuberculosis, which flowed

[122] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948*, 41.
[123] GHQ, *Public Health and Welfare in Japan: Final Summary, 1951-1952*, 72-73.

first from the government and medical community, through the media, and finally to the public, did not discourage opportunists from promoting tuberculosis cure-alls. As in his 1948 novel *No Longer Human*, Dazai Osamu writes of pharmacies that continued to offer miracle cures for tuberculosis. For example, Dazai describes how in 1946 one pharmacy chain aggressively advertised a new tuberculosis medicine called "Comet." This patent-medicine advertised itself as being a compound of vitamin B, calcium, and a plant-based antioxidant called Glutathione that would protect those who consumed it from contracting tuberculosis.[124] In truth, such miracle cures had little effect in preventing tuberculosis, but their widespread availability demonstrates that the cloud of misinformation surrounding tuberculosis had not fully dispersed.

Overall, the PH&W section's goals of encouraging patients to seek tuberculosis treatment and of staffing Japan's sanatoria and health centers with qualified medical professionals were achieved to great success. The medical education system made it possible to staff not only national health centers with well-trained medical professionals, but also hospitals and sanatoria. Health centers provided screenings and later vaccinations against tuberculosis, but they could not treat active cases of the disease. Patients with acute tuberculosis symptoms had to be sent to medical facilities that could admit patients. Building on the foundation of

[124] "Kekkakusei shikkan no yobō to chiryo neohatsumon/ kometto shinnyaku kuroda seiyaku," *Yomiuri Shimbun*, July 21, 1946, 1. While, as PH&W documents point out, calcium and vitamin deficiencies do increase one's risk for contracting tuberculosis, they are signs of a poor diet. Living on a poor diet for a prolonged amount of time suppresses the body's immune system, making it easier for tuberculosis to become active. With improvements to diet, calcium and vitamin deficiencies disappear and the risk for developing tuberculosis decreases. Calcium by itself has little to do with the development of tuberculosis and for this reason people who consumed large amounts of calcium based medicines by itself did little to prevent the development of tuberculosis.

its medical education reforms and increased public awareness concerning tuberculosis, the PH&W section largely succeeded in carrying out the first two fronts of its attack against tuberculosis.

Preventing Tuberculosis in Japan's Youth: The School Lunch Program

While fronts one and two of the PH&W sections attack against tuberculosis were aimed at both encouraging tuberculosis sufferers to seek treatment and at providing better treatment, the third front sought to prevent tuberculosis from spreading amongst Japan's children. At the beginning of the occupation tuberculosis mortality rates were highest amongst those between ten and twenty-years of age. The tuberculosis mortality rate in the year 1943, which was the last year in which reliable prewar data was available, was 230 per 100,000. This number, however, reflects the averaging of the death rate for those between ten and twenty-four, and all other ages. When considered as their own separate group, those aged ten to twenty-four had a mortality rate of 320 per 100,000. Statistics for all other ages demonstrated that their mortality rate stood at a much lower 190 per 100,000.[125]

In order to protect Japan's younger citizens from tuberculosis, the PH&W section focused on preventative measures. The first of these measures, the school lunch program, was aimed at building children's resistance to the disease through improving nutrition. Nutrition had been an immediate concern of the PH&W section

[125] GHQ, *Public Health and Welfare in Japan: Annual Summary 1948*, 43.

from the time the occupation began. At the end of the war most Japanese subsisted on small amounts of barley, potatoes, and whatever else they could scavenge from the countryside and the empty shelves of stores and government warehouses.[126] While some food stockpiles existed, they remained within the hands of the army. When the war ended, these stockpiles were not handed over to the people. Instead, they disappeared from military bases, and were funneled into the black market that developed in the days and weeks following Japan's surrender. While this meant that Japan's military stockpiles were now available on the market, few families could afford to by food from the black market. In the year following the end of the war, rates of unemployment were high and inflation rose by over 500% within Japan's legitimate economic market. Black market inflation rose even faster and higher.[127]

From the outset, the PH&W section involved itself in securing food aid for Japan. During the initial months of the occupation, international food aid was hard to procure for the vanquished enemy population of Japan. Moreover, food aid had to be split between Japan and other countries like Germany, where the United States was also involved in a postwar reconstruction. In the first year of the occupation, food aid often it did not arrive at all. In 1945-1946, food aid provided by SCAP and distributed by the Japanese government was available for only six of the twelve months.[128]

One of Sams's first acts as director of the PH&W department was to undertake a large nutritional survey of the Japanese people. His survey, which he

[126] Dower, *Embracing Defeat*, 114.
[127] Dower, *Embracing Defeat*, 115.
[128] Dower, *Embracing Defeat*, 113.

boasted included 150,000 participants, making it the largest scientific survey ever undertaken in Japan, concluded that the Japanese public subsisted on a diet heavy in carbohydrates, but was deficient in protein, vitamins, and calcium.[129] The PH&W section thus requested food aid for Japan that was both sufficient in calories and high in nutrients.

The PH&W section's surveys demonstrated that the greatest need for food aid existed amongst Japan's youth. While school lunch programs in elementary schools had existed in Japan since the 1880s and had been subsidized by the Home Ministry since 1929, these programs had largely fallen apart by 1940, when the ministry was no longer able to provide the needed amount of food.[130] These lunch programs had been originally designed to provide support for Japan's neediest families. Lunches were provided free of cost to students who could not afford to purchase their own. Students from financially stable families either brought their own lunch or paid a modest price for a school lunch. [131]

In December 1946, the PH&W section announced a new school lunch program. Managed by the Ministry of Education, this program provided food to a quarter million students living in the Tokyo-Yokohama area. By 1948, imported food aid had become increasingly available, and the program expanded to include over 6,000,000 school children from all over Japan.[132] The school lunch program aimed to provide five 600-calorie meals per week to children throughout Japan. The

[129] Sams, *Medic,* 55-56.
[130] GHQ, *Public Health and Welfare in Japan: Annual Summary* 1948, 131-132.
[131] Sams, *Medic,* 62-63.
[132] GHQ, *Public Health and Welfare in Japan: Annual Summary* 1948, 133.

meals were designed to provide sufficient protein, calcium, and vitamins to overcome deficiencies that had developed during the war years.

As Jacob van Staavern, an American education officer working for SCAP who oversaw school reforms in Yamanashi prefecture from 1945-1948, points out, the school lunch program achieved ends that were both "practical and humanitarian."[133] On the practical side, he explains, the provision of food aid to children helped combat starvation and civil unrest. As a humanitarian effort, the school lunch program was also designed to improve the health and wellbeing of the country's children and thereby prevent epidemics. Tuberculosis, like many other diseases endemic to Japan in the postwar period were directly associated with malnutrition.[134] Thus, the school lunch program became both a way for the PH&W section and the Home Ministry to alleviate hunger and to prevent the further spread of tuberculosis.

Prevention and Progress:
Screenings, Vaccines, and a Cure

The final two fronts of the PH&W section's attack on tuberculosis exhibited some of the most dynamic changes in the history of Japan's tuberculosis epidemic. While fronts one and two relied on public education to sweep the stigma away from tuberculosis, thus changing the disease into a medical issue in the eyes of the

[133] Jacob van Staavern, *An American in Japan, 1945-1948* (Seattle: University of Washington Press, 1994), 191.
[134] GHQ, *Public Health and Welfare in Japan: Annual Summary* 1948, 40.

Japanese public, the tuberculosis screening projects carried out in the occupation period made use of medical advancements that made it possible to finally both immunize the Japanese public against tuberculosis and to cure active cases of the disease.

As with other occupation period reforms, the tuberculosis-screening program started small. School screenings took early priority because the ten to twenty-four age group remained most at risk for developing tuberculosis. Early priority was also given to Japan's industrial workers, as their working conditions o put them not only at a higher risk for contracting tuberculosis, but also made their work crucial to other aspects of Japan's reconstruction.[135]

Tuberculosis screening was preformed in several ways. In the first three years of the occupation, when both x-ray machines and the vaccine BCG (*Bacillus Calmette–Guérin*) were in short supply, screenings consisted of checking a patient for symptoms that would hint at the presence of tuberculosis. Nurses and physicians working in health centers or visiting schools checked individuals for persistent coughs, bloody sputum, fatigue, and other symptoms. Stethoscopes were used to check for labored breathing. Patients suspected of having tuberculosis were further monitored for symptoms and when necessary referred to hospitals and sanatoria for treatment.[136]

As more sophisticated testing equipment became available under the direction of the PH&W section, the national health centers undertook more targeted screening and a initiated a vaccination program. During the first three years of the

[135] GHQ, *Public Health and Welfare in Japan: Annual Summary* 1948, 40-41.
[136] GHQ, *Public Health and Welfare in Japan: Annual Summary* 1948, 41-42.

occupation, supplies did not exist in sufficient quantities to allow for the screening and vaccination of all Japanese citizens. Therefore, the PH&W section first targeted the twenty to twenty-four year-old age groups, followed by the nine to fifteen year-old age group. Finally, in 1948, testing was expanded to include infants. [137]

In the early years of the occupation, tuberculosis vaccinations comprised a two-step process. A potential vaccine recipient was first tested with a tuberculin injection. By injecting the recipient with tuberculin, it would be possible to tell if the patient was a tuberculosis carrier. While the patient may not have been visibly sick, tuberculosis has the ability lay dormant in an otherwise healthy person. For this reason, preventative measures such as improving one's diet and receiving adequate sleep are important means of preventing the development and potential spread of the disease. Failing to do so, can result in an active case of tuberculosis.

Unfortunately, the BCG vaccination also can cause patients who are already tuberculosis carriers to become active cases. Like most vaccines, BCG was developed from a weakened strain of tuberculosis. This strain is injected into the body in serum form. As the tuberculosis bacterium contained within the vaccine attacks the body's cells, the body's immune system builds a resistance to the disease. When injected into healthy bodies, the BCG vaccine produces a immunity to tuberculosis. When BCG was injected into patients with latent tuberculosis however, the vaccine could potentially cause the patient to develop an active case of tuberculosis.[138]

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[137] Sams, *Medic*, 111.
[138] "BCG Fact Sheet" Centers for Disease Control and Preventionhttp://www.cdc.gov/tb/ publications/ faqs/qa_introduction.htm#Intro3.

For this reason, BCG could not be used indiscriminately on Japan's population. Patients would first receive tuberculin testing to determine whether or not they had prior exposure to tuberculosis. If the patient was shown to be positive for tuberculosis, a fact which could be determined by checking the tuberculin injection site for a skin reaction, the BCG vaccine could not be administered. The results of the health centers' early screening campaigns showed that nearly 50% of Japanese under the age of thirty tested positive for tuberculosis, and could not be immunized.[139]

Despite this, the early vaccination campaigns did achieve considerable success in both preventing tuberculosis and halting the spread of the disease. When compared with their 1945 levels, tuberculosis morbidity rates had dropped by 79% by 1948. Moreover, the mortality rate dropped from 280 deaths per 100,000 population members in 1945 to 181 per 100,000 in 1948.[140] In 1947, Japanese laboratories developed a method for mass producing freeze-dried BCG. Unlike the wet vaccine, which boasted only a seven-day potency period, the dry form of the vaccine could be easily transported and did not quickly expire.[141] With a steady and sufficient supply of BCG readily available thanks to the work of these Japanese medical researchers, the PH&W section mandated tuberculin testing and BCG immunization in all cases possible to begin by no later than July 1, 1949.[142]

By 1949, Japan had both sufficient means to screen for tuberculosis, and to immunize its population. Sanatoria had been restored and were well equipped to

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[139] Sams, *Medic*, 111.
[140] *Mission and Accomplishments of the Public Health and Welfare Section, 1948*, 8.
[141] GHQ, *Public Health and Welfare in Japan: Annual Summary* 1948, 40.
[142] GHQ, *Public Health and Welfare in Japan: Annual Summary* 1948, 41.

deal with active cases of the disease, and health centers provided accessible and accurate information about the disease. All that was missing was a cure for tuberculosis. Japan and the world had first hung their hopes for a tuberculosis cure on tuberculin and then on BCG. While these drugs proved to be effective tools in identifying and immunizing against tuberculosis, neither provided a means for curing the disease. However, in 1948 Japan the PH&W section introduced a cure for the tenacious disease.

Streptomycin, an antibiotic drug first isolated in a laboratory at Rutgers University in 1943, was a drug the proved its worth in the United State's military hospitals during World War II as a cure for various kinds of infections. By 1947, researchers showed streptomycin to also be an effective drug for treating patients with active cases of tuberculosis. The PH&W section received their first shipment of streptomycin in 1948.[143]

The introduction of streptomycin into Japan represented a breakthrough in several ways. Most obviously, tuberculosis became a curable disease. Streptomycin arrived in sanatoria, where it was used to treat the most serious of tuberculosis cases. The introduction of streptomycin also provided relief to Japanese citizens that had tested positive for tuberculosis and therefore could not be protected with BCG vaccinations. Finally, the introduction of streptomycin aided in dispelling the stigma surrounding tuberculosis once and for all. With a cure available, sufferers were not left worrying that their disease was incurable. In addition, the fact that tuberculosis

[143] GHQ, *Public Health and Welfare in Japan: Final Summary 1951-1952*, 14.

had a medical cure reemphasized that tuberculosis represented a medical issue, not a hereditary condition.

Tuberculosis at the End of the Occupation

By the time the occupation ended in 1952, tuberculosis control in Japan had been largely achieved. Mortality rates dropped from their all-time high of 280 per 100,000 at the beginning of the occupation to 112 per 100,000 in 1952. The PH&W sections five-front attack on tuberculosis filled sanatoria with patients no longer afraid to seek treatments. In fact, the demand for tuberculosis treatment was so great that most public hospitals had their own overflowing tuberculosis wards as well. School lunch programs provided Japan's children with the nutritious food they needed both to ward off tuberculosis and grow healthily. Finally, national health centers remained frontlines for tuberculosis prevention through their provision of information, screenings, and vaccinations.

While 1952 heralded the end of the occupation, it did not mark the end of the MHW's battle against tuberculosis. The departure of the PH&W section allowed the MHW section to step into the spotlight, and to take the lead it had been denied in tuberculosis control during the occupation period. In the year immediately following the occupation's closure, the MHW provided and additional 10,000 beds within Japan's hospitals and sanatoria for tuberculosis sufferers. It also provided government subsidies that paid for 50% of any surgeries or streptomycin courses

that patients needed.[144] The tuberculosis control program remained what the MHW considered "the most important part of health administration in Japan," but through the efforts of the PH&W section, the MHW, and countless Japanese medical professors, the tuberculosis epidemic had finally been brought under control. [145]

[144] MHW, *Public Health Administration in Japan*, 17.
[145] MHW, *Public Health Administration in Japan*, 16.

CHAPTER 5
CONCLUSION

While efforts to control the tuberculosis epidemic in Japan began long before the Allied Occupation did, the period from 1945-1952 brought together new medical techniques and old health practices in order to finally achieve control over the tuberculosis epidemic The occupation period represented a time of cooperation between the Japanese government and the Allied forces not only to establish Japan as a democracy, but also to change the lives of the Japanese people in fundamental ways. Many of these changes targeted the health of Japanese citizens, and as such, affected the tuberculosis epidemic both directly and indirectly. Whether either side realized it, cooperation was instrumental in controlling tuberculosis and other diseases endemic to Japan at the close of the Asia-Pacific War. While both the Public Health and Welfare (PH&W) section of the Supreme Commander for the Allied Powers (SCAP) and the Japanese government's Ministry of Health and Welfare (MHW) might have eventually overcome tuberculosis without the aid of the other, neither would have been able to do so as quickly as they did when working together their cooperation ensured that the tuberculosis epidemic was brought under control quickly, and that many lives were saved. The Japanese government and medical community struggled for decades to overcome the stigma surrounding tuberculosis. Doing so alone during the Occupation would have cost both time and the lives of many Japanese citizens. During the SCAP aggressively pursued tuberculosis control. While it was aided by the newest medical discoveries, without the Japanese

government's cooperation and manpower, their programs could not have been as widespread and effective as they were.

A reading of PH&W documents suggests that General Crawford F. Sams and his department paid little attention to the importance of cooperation to occupation period disease control. The PH&W documents emphasize the section's role in planning disease control projects, in reorganizing what the section saw as highly dysfunctional Japanese institutions, and in introducing "modern science" in the form of new drugs and techniques. While it is true that the PH&W section did formulate plans and mandate changes, the PH&W section also overlooked the fact that many of their plans and changes strongly resembled prewar practices that were already familiar to Japan. In this sense, Historians Christopher Aldous and Akihita Suzuki are correct in pointing out that much of the work done by the PH&W section resembled prewar practices, and that this resemblance had much to do with the PH&W sections success during the occupation period.[146]

It is also true, however, that the presence of the PH&W section, and the changes they instituted in regards to tuberculosis control were crucial to the swift overcoming of the disease. While the prewar Japanese Home Ministry and Japan's medical community attempted to dispel the social stigma surrounding tuberculosis in the early twentieth century, their attempts to do so were unsuccessful as they relied heavily on new regulations that Japan's medical community was disinclined to follow. The PH&W section's response to the issue of social stigma relied on both legislature and public education. While neither of these approaches were unheard of

[146] Aldous and Suzuki, *Reforming Public Health in Occupied Japan,* 3.

in Japan, the PH&W section took a stronger stance in regards to mandated tuberculosis reporting and committed more resources to public education campaigns. The PH&W section also brought considerable resources to the fight against tuberculosis in the form of monetary support, experts in fields including hospital administration and statics, and new medications like streptomycin. While all of these resources could have been eventually acquired without the help of the PH&W section, their acquisition would likely have taken a backseat to Japan's political and economic recovery and it's urban reconstruction projects.

Cooperation, of course, requires the combined efforts of two or more parties. The PH&W section's role in restoring health to Japan is well documented both in their own papers and in the English-language research on the occupation period. Conversely, the role of the Japan's MHW, medical professionals, and even the narratives of Japan' tuberculosis sufferers themselves tended to go unnoticed. William Johnston's *The Modern Epidemic* examines the relationship between Japan's government officials and medical community and the disease tuberculosis, however Japanese participants in the fight against tuberculosis during the occupation period remain largely invisible. While in his memoir Sams depicts his decisions and actions in detail so clear that it borders on the dubious, he never bothers to name the very people who provided the information and legwork upon which his orders rely.

The same is true of the PH&W's documents as a whole. While the PH&W section's yearly reports introduce plans to fight disease and proudly record where progress has been made, they reports fail to recognize that majority of the work on the ground is carried out by the MHW, Japanese sanitation workers, and Japan's

medical experts. While in some cases these enactors of disease control benefited from training provided by the PH&W section, the actual task of controlling tuberculosis was transferred to their hands as soon as possible. PH&W authorities certainly visited hospitals and sanatoria where tuberculosis sufferers were treated, but Japanese physicians, nurses, and medical aides provided the majority of actual tuberculosis treatment. Memos outlining SCAP directives show that the responsibility for manufacturing vaccines like BCG and medical supplies including X-ray film was turned over to the Japanese government as soon as the PH&W section determined a turnover was possible. Japanese workers were also responsible for carrying out projects like the school lunch program, which remained heavily reliant on foreign aid for years. Without Japanese cooperation and manpower, the plans laid by the PH&W section could never have come to fruition.

For this reason, future research into the history of tuberculosis during the occupation period is needed. While this paper has attempted to explain how the successful management of tuberculosis during the occupation was born out of the cooperation between the PH&W section and their Japanese counterparts, many aspects of the role that the Japanese people played in the process remain open for future historians to explore. While the PH&W and the MHW funded the occupation period public education campaigns that helped dispel the stigma surrounding tuberculosis, the advertisements and literature used for such purposes were largely the work of Japanese citizens within both the media and the medical community. Similarly, postwar sanatoria were filled with physicians and patients who related to tuberculosis differently than their prewar successors. Inquiry into either of these

subjects would unearth new voices in the battle against tuberculosis and shed new light on how attitudes towards tuberculosis changed during the occupation period.

In Japan today tuberculosis lives on in the public's imaginations rather than within their bodies. Along with classic works such as Tanizaki Junichirō's *The Makioka Sisters* (*Sasameyuki*), Dazai Osamu's *No Longer Human* remains a popular fictional depiction of one man's battle with tuberculosis. Japanese consumers can experience Ōba's tribulations not only by reading the original novel, but through the mediums of film and manga as well. More recently, Miyazaki Hayao's final film, *The Wind Also Rises*, features tuberculosis prominently, demonstrating that even today tuberculosis remains a part of Japan's historical identity. Such works ensure that future generations remember the struggles of the past.

It is my hope that the successes of the past are remembered as well, for the history of tuberculosis during the occupation period is ultimately one of these successes. More importantly, it is a shared success. The PH&W section acted quickly to control a situation that jeopardized many lives. Their actions were at times authoritarian, and their reflections on the work the had done often overlooked the role that Japanese actors played in the battle against tuberculosis, but resources and expertise the PH&W section offered saved countless lives. So, too, did the actions of the Japanese MHW, medical professionals, and others who participated in the many programs aimed at controlling the tuberculosis epidemic. They formed the foundation of every strike made against the disease, and without their work, the PH&W sections plans would never have come to fruition. The fight against tuberculosis in Japan was won through the efforts and cooperation of both the

occupier and the occupied. In the end, it represented every bit as grand a triumph of the occupation period as the democratization of Japan did.

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