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ILLNESS UNDER THE PURVIEW OF THE COLONIAL STATE: DEMOGRAPHIC INSCRIPTION OF TUBERCULOSIS AND CONTROL EFFORTS IN THE EARLY AMERICAN PHILIPPINES, 1899-1910

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This essay elucidates the character of early attempts of the American colonial state to control tuberculosis from 1899 until 1910. It traces the transition from relative neglect, to early attempts to "demographically inscribe" the TB threat, as well as the direct responses deployed to reduce mortality rates from the disease. The essay ends with an exposition of the collective character of the health measures launched by the state, and argues that TB control from 1899 until 1910 comprised a repertoire of interventionist measures aimed, on one hand, to keep in check the pathogenic vectors, and, on the other hand, to modify lifestyles and habits viewed to be filthy according to American colonial standards.

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Upon their arrival in the Philippine Islands, American colonial authorities eagerly took up the "benevolent" task of cleansing their newly acquired part of the Orient. Since 1898, when Americans had decided to stay in the Islands indefinitely, hospitals became permanent institutions of care and disease control measures became in-situ. The scope of the Americans' health concerns soon expanded to cover not only the welfare of the troops, but also the inhabitants of the Islands. A public health regime was soon installed, concomitant with the progress of the colonial project in the Philippines. Soon, Filipinos—whom the Americans viewed as extremely "filthy"—were to become subjects of the colonial state, which saw it as its right to intervene in their subjects' private realm for the benefit of the "public welfare."

The colonial state had to deal with a plethora of diseases in their new territory. One huge concern that has not been given much attention by historical studies was the chronic disease tuberculosis. As early as 1899, members of the Philippine Commission were already informed about the prevalence of the disease, which was described by medical investigators as "a much more distressing disease eventually than any of the great plagues such as cholera, etc. . . . a cause of infirmity and death among all races of people" (Philippine Commission 1900, 2: 239). In this article, I offer a narrative of the early repertoire of control measures that the American colonial state implemented against TB. Equally instructive is how the colonial state assessed the chronic disease as a public health problem as revealed by the 1903 census. In a related study, McElhinny (2009), following Rafael's commentary on the 1903 census (2000), used the term "demographic inscription" to refer to infant mortality statistics and their potential for rendering visible the subjects of colonial control and reform. While there were no TB morbidity statistics initially available to colonial officials, demographic inscription of TB in the 1903 census was mainly comprised of mortality statistics, serving to index the threat that the colonial state confronted. The demographic inscription of TB presented what the colonial state failed to save. With what was construed by the figures of the 1903 census, TB was projected as a public health threat, and colonial authorities moved (albeit quite belatedly) to control the disease with its interventionist measures and state controlled facilities that functioned more to "educate" than "cure."

THE RELATIVE NEGLECT OF TUBERCULOSIS AND EARLY DEMOGRAPHIC INSCRIPTION IN THE 1903 CENSUS

With the establishment of the civilian government sometime in 1901—and the belief that the war against Filipino *insurrectos* had been won—American colonial officials organized a civilian Board of Health to deal with causes of mortality and morbidity in the Islands. No longer did the concern pertain to the risks that U.S. soldiers faced in contracting diseases in their new colony, as the population had become integrated into the government's in-situ health campaigns. The Board of Health was thus established as the public health component of the American colonial state, and attempts to replicate the organizational setup of the Board were soon made in various pacified provinces. Although an uneasy relationship prevailed between provincial boards and health authorities in the capital Manila (most especially during the 1902 cholera epidemic), they were all crucial in the attempt to establish a balance between centralized administration and equitable devolution in implementing health measures.

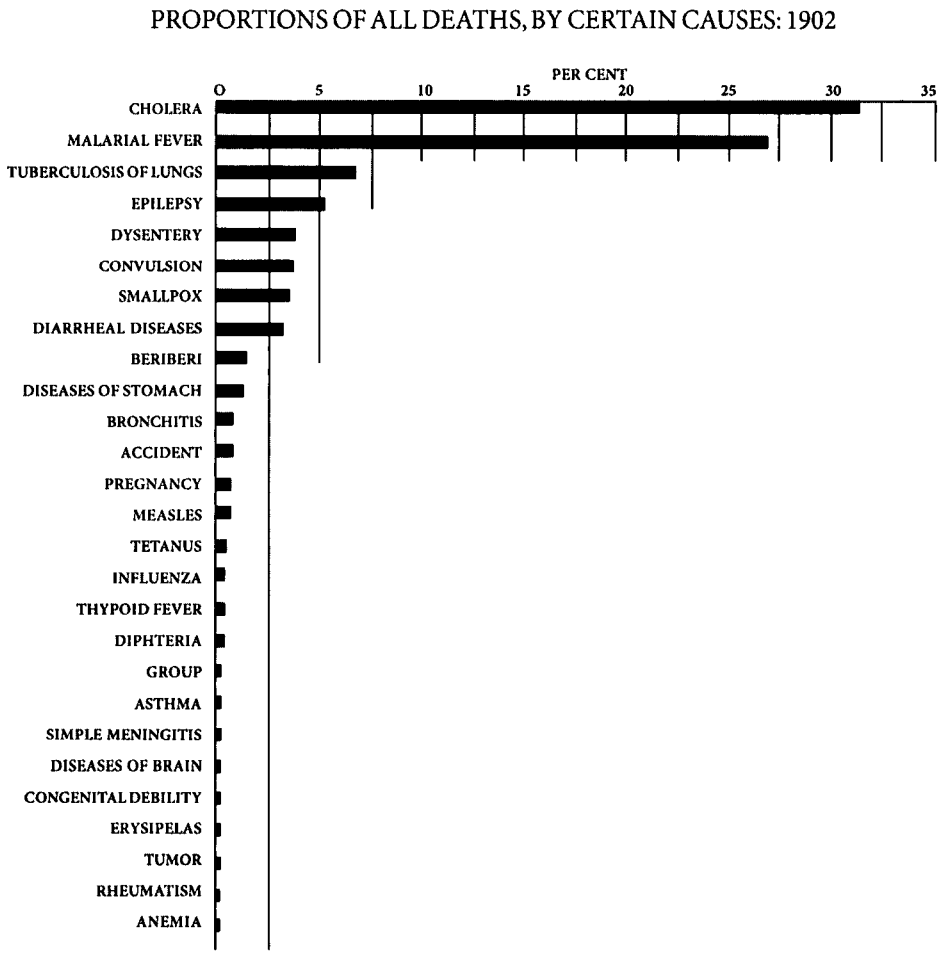
During the early years of the American occupation, epidemics had elicited most of the attention of the Board of Health, and most of the public health measures deployed in the capital Manila and in the provinces were directed toward the reduction of mortality caused by bubonic plague, smallpox, and cholera. The boards of health devoted most of their resources to the control of these diseases, as colonial officials moved to enforce interventionist measures to stop contagion, restrict social life, survey the population, and administer cures and artificial immunity, even to the extent of replicating the harshness and violence of the colonial war of aggression. Also enforced was a nation-wide segregation of lepers, which preoccupied the American health officials as they engaged their new colony and attempted to convert their new colonial subjects from semi-civilization to benevolent tutelage.[1]

Due to what the American health officials felt as the need to respond to these public health threats, measures against other diseases were postponed. Tuberculosis was one of those diseases neglected for a while. Nevertheless, health officials were not unaware of tuberculosis as a public health menace. For instance, the combined mortality from pulmonary TB for August and September of 1901 (which reached about 160 deaths) alarmed then Commissioner of Health L. M. Maus, who remarked that tuberculosis was

"very common among a certain class of the citizens," and as a public health problem the disease had become "an exceedingly serious one" (Board of Health 1901a, 3). Maus's initial plan was to learn more about the nature of its incidence, by proposing to gather "proper vital statistics" in Manila through the circulation of a blank form, which had to be filled out by physicians, sanitary inspectors, and other medical-related personnel in the city (Board of Health, 1901). But even before obtaining any data, the Commissioner already had an idea of why tuberculosis was so prevalent. Squalor, overcrowding, and the absence of sanitation all contribute to the disease's prevalence. Maus felt the necessity of an institutional remedy, and suggested that the only way to address the disease was through the construction of a "consumptive colony" outside the city (Board of Health, 1901).

The Commissioner of Health left his post without mentioning in official reports the consequence of his suggestions. At least, autopsy reports and death certificates found in municipalities provided the first demographic inscriptions that signified the threat posed by TB to the population. In 1903, the first American-sponsored census was conducted—certainly a part of the intent to carry out colonial surveillance—and it provided a separate volume on "mortality, defective classes, education, families and dwellings." In it the top causes of mortality in the country were listed, ranking tuberculosis third, after cholera and malarial fevers (Table 1).[2] The cholera outbreak of the previous year had not died down when the census was conducted, recording 311 per 1,000 deaths in 1903, nearly one-third of the total deaths during the year. Malarial fever recorded 268 per 1,000 deaths; dysentery and diarrhea recorded 69 per 1,000 deaths; tuberculosis of the lungs recorded 66 per 1000 deaths (U.S. Bureau of Census, 1905). These mortality statistics, which were derived from the heap of autopsy reports and death certificates, were also compared to those recorded in the United States for the same year (Table 2).

Table 1. Proportion of all deaths, by certain causes, in 1902



Source: U. S. Bureau of Census, 1905

Table 2. Distribution of deaths in the Philippine Islands and in the United States, by principal causes, expressed in percentages of the total number of deaths in 1902

CAUSE OF DEATH	Philippine Islands	United States
Cholera	31.3	.....
Malarial fever	26.8	1.4
Tuberculosis of the lungs	6.6	10.7
Epilepsy	5.1	6.3
Dysentery.	3.7	1.1
Convulsions	3.6	1.5
Smallpox	.3.4	0.3
Diarrheal diseases	3.2	3.3
Beri-beri	1.3	
Disease of the stomach	1.2	1.3
Bronchitis	0.7	1.9
Accident	0.7	.....
Pregnancy	0.7	0.6
Measles.	0.6	1.2
Tetanus	0.6	0.2
Influenza	0.4	1.5
Typhoid Fever	0.4	3.4
Diphtheria	0.3	1.6
Croup	0.3	1.2
Asthma	0.3	0.3
Simple Meningitis	0.2	1.2
Congestion, Hemorrhage, and softening of the brain	0.2	.....
Congenital debility and malformations	0.2	.....
Erysipelas	0.2	0.3
Tumors	0.2	0.3
Rheumatism	0.2	0.5
Anemia	0.2	0.2
Scarlet Fever	0.1	0.6
Whooping Cough	0.1	0.9
Dengue	0.1	.....
Other forms of tuberculosis	0.1	.....
Cancer	0.1	2.8
Organic diseases of the heart	0.1	6.7
Pneumonia	0.1	10.2
Nephritis and Bright's disease	0.1	3.5
Puerperal septicaemia	0.1	0.3
Female diseases of genital organs	0.1	0.3
Paralysis	0.1	2.3
Diseases of pharynx	0.1	.....
Diseases of bones	0.1	0.1
Hemorrhage	0.1	.....
Senile debility	0.1	2.8
Bubonic plague	(1)	.....
Leprosy	(1)	.....
Suicide	(1)	0.5

Source: U. S. Bureau of Census, 1905

The section devoted to tuberculosis mortality showed the attempts of health officials to make sense of mortality statistics, profiling the demographics of those who succumbed to the disease. TB mortality was laid out according to characteristics of the afflicted (age, race, sex, and occupation), and categories that were indicative of the distribution of the disease (by season, interior vs. coastal area, per province). The average age of the people who died from TB of the lungs was found to be 44.6 years old, establishing the illness as "a disease of maturity and old age rather than of youth" (table 3) (U. S. Bureau of Census, 1905, 63). With regard to "race," pulmonary TB was found to be relatively more frequent among "yellow people" (12.5 % of total TB deaths) than "brown people" (6.6 %), and least so among whites (3.3 %) (table 4) (U. S. Bureau of Census, 1905). Adopting the comparison similar to that of cholera mortality, TB mortality was found to be slightly higher in the interior areas (7.6 %) than in coastal areas (6.1 %) (U. S. Bureau of Census, 1905). The professions of those who died from TB were tallied and fell under at least three categories. Wage earners comprised 11.1 percent of the total number of those of who died of TB of the lungs; farmers and farm laborers 11.0 percent; spinners and weavers, 9.8 percent (table 5) (U. S. Bureau of Census, 1905). The percentages of TB mortality by month (table 6) buttressed the findings that seasonal change had an influence, with the wet season as most favorable to TB incidence, and cool weather the least favorable (table 7) (U. S. Bureau of Census, 1905). Mortality statistics per province and "commandancias," at least where they were available, showed high TB mortality rates, suggesting that the disease was one of the top causes of death other than cholera (table 8) (U. S. Bureau of Census, 1905).

Table 3. Average age at death of victims of the "more important diseases"

DISEASE	Average agent death
Cholera	25.1
Tuberculosis	44.6
Malarial fever	21.5
Disease incident to pregnancy	28.9
Dysentery	18.1
Convulsions	1.7
Diarrhea	17.4
Epilepsy	1.7
Beri-beri	35.2

Source: U. S. Bureau of Census, 1905

Table 4. Proportional number of victims of each disease to the total number of deaths according to race

DISEASE	Brown	White	Yellow
Cholera	31.1	42.9	31.4
Malarial fever.	26.9	4.0	10.7
Tuberculosis of the lungs	6.6	3.3	12.5
Dysentery	3.7	6.0	4.7
Diarrhea	3.1	3.3	2.8
Senile debility	1.5	1.1	0.6
Beri-beri	1.3	.....	8.8
Disease of the stomach	1.2	1.6	0.9

Source: U. S. Bureau of Census, 1905

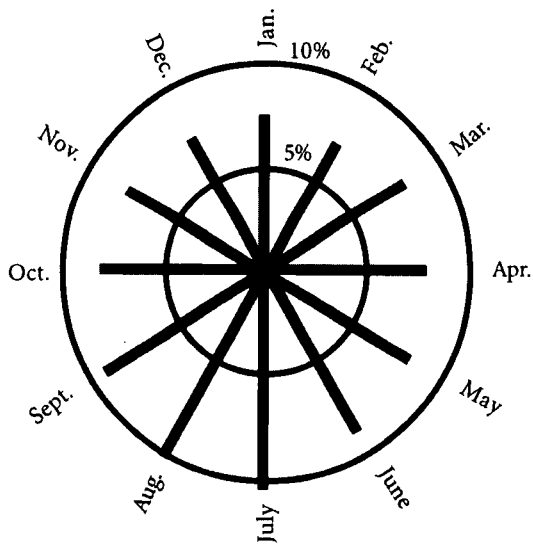
Table 5. Proportion of all deaths due to selected diseases among wage-earners, farmers and farm laborers, and among spinners and weavers

DISEASE	Total number of wage earners	Farmers and farm laborers	Spinners and weavers
Cholera	39.1	38.4	38.7
Malarial fever	27.0	28.5	30.5
Tuberculosis of the lungs	11.1	11.0	9.8
Dysentery	2.5	2.6	2.0
Diarrhea	2.4	2.5	2.2
Beri-beri	2.3	2.0	1.5
Senile debility	1.4	1.4	1.3
Pregnancy, etc	1.2	.....	2.6
Accident	1.0	1.2	0.4
Disease of the stomach	0.9	0.9	0.6

Source: U. S. Bureau of Census, 1905

Table 6. Tuberculosis death rate (percent) according to month

TUBERCULOSIS OF THE LUNGS
PROPORTION OF ALL DEATHS WHICH OCCURED IN EACH MONTH: 1902



Source: U. S. Bureau of Census, 1905

Table 7. Tuberculosis death rate (percent) according to seasons

COOL SEASON	Percent	WARM SEASON	Percent	WET SEASON	Percent
Total	29.4	Total	83.0	Total	87.6
November	7.6	March	7.9	July	10.2
December	7.3	April	7.9	August	10.1
January	7.4	May	8.8	September	9.1
February	7.1	June	8.9	October	8.2

Source: U. S. Bureau of Census, 1905

Table 8. Tuberculosis death rate (per thousand) by provinces and comandancias

PROVINCE OF COMANDANCIA	Death rate	PROVINCE OF COMANDANCIA	Death rate
La Laguna	13	Capiz	4
Bataan	9	Mindoro	4
Rizal	8	Isabela	4
Tayabas	7	Nueva Vizcaya	4
Batangas	7	Albay	3
Bulacan	7	Ilocos Norte	3
Pampanga	6	Ilocoa Sur	3
Cavite	6	La Union	3
Basilan	6	Misamis	3
Antique	6	Negros Oriental	3
Ambos Camarines	6	Romblon	3
Paragua Sur	6	Siassi	3
Lepanto-Bontoc	5	Sorsogon	3
Manila City	5	Bohol	2
Marinduque	5	Cebu	2
Negros Occidental	5	Leyte	2
Pangasinan	5	Masbate	2
Tarlac	5	Surigao	2
Iloilo	5	Davao	1
Zambales	5	Paragua	1
Nueva Ecija	5	Samar	1
Abra	4	Zamboanga	1
Cagayan	4		

Source: U. S. Bureau of Census, 1905

If, as Rafael (2000, 23) has argued, the 1903 census was a form of colonial state surveillance in which colonial subjects—the "targets of benevolent assimilation"—were rendered "visible" and therefore accessible to those charged with their supervision. Those who succumbed from tuberculosis fell under the purview of the colonial state by inscribing TB mortality statistics on its pages. Although the demographic inscription represented colonial subjects that the state could no longer save—as mortality statistics represented an infection that had already taken its toll—the 1903 census provided colonial health officials with the information on the extent to which TB posed a threat to the colony.

SPECIFIC MEASURES

In 1905 the whole Philippine Islands was declared free from the cholera epidemic. For the American health officials, the promises of the public health regime installed in the Philippines were becoming more and more palpable, such that the self-fashioning Director of Health Victor Heiser boldly declared "the white man's chances of contracting disease in the Philippine Islands are less than they are in the United States" (Heiser, 1906, 4).

During the same year, the Board of Health was reorganized and "elevated" to the status of a bureau. The goal was to centralize public health activities in the Islands, and the reorganization of the Bureau of Health was accompanied by the abolition of all provincial boards of health. The uneasy relationship between the capital and the provinces had already taken its toll, causing Heiser's predecessor, E. C. Carter, to complain that it had "not been possible to secure proper officials, and the vexation, annoyance, and failure have in many instances resulted" (Bureau of Health, 1906, 31). Moreover, provincial boards also faced intense opposition from the provinces and municipalities themselves. Sanitary authorities had been exceptionally challenged by the people's recalcitrance, such that while they had acted only in an "advisory capacity" their advice was "frequently disregarded by the provincial or municipal councils" (Bureau of Health, 1906, 31). In this context, the abolition of provincial boards seemed inevitable.

Once the health officials were freed from the need to address epidemic diseases, they turned their attention to public health problems that had been previously sidelined. The year 1905 also saw the implementation of measures specifically targeted to respond to tuberculosis. Given the Bureau of Health's predicament in asserting its clout in the provinces, these measures were initially deployed in the capital Manila. Thus, the city became the stage in which the early anti-tuberculosis campaign commenced.

Compulsory Notification

During the year, a city ordinance subjected pulmonary tuberculosis—which was the single largest cause of mortality among all forms of tuberculosis—to compulsory notification (Bureau of Health, 1906). Tuberculosis was thus included in the list of "reportable" diseases which colonial authorities were previously on the look out for, such as bubonic plague, smallpox, cholera,

and leprosy. Cases of TB that came to the knowledge of anyone had to be reported to the authorities, and the task of reporting was especially assigned to individuals who were in the position of encountering TB sufferers: managers; commissioners; school superintendents; physicians; persons in charge of public or private hospitals, dispensaries, asylums, and infirmaries; prison wardens; principals; teachers of public and private schools or convents; and officers of other public institutions. Part of the ordinance's intention was to make a civic duty of everyone to report TB, as it was obligatory—even the tubercular and his or her caregiver—to "observe all sanitary rules and regulations . . . and all city ordinances directed against the spread of pulmonary tuberculosis and other infectious diseases" (Bureau of Health, 1906, 72).

The 1907 Sanitary Code of Manila

In 1907 the Bureau of Health influenced the Municipal Board of the City of Manila to enact a Sanitary Code. According to reports, the code "simplified" and "systematized" the duties of health authorities in the city, and was intended to serve as guide to sanitary legislations in other municipalities (Bureau of Public Health, 1905). Although original in its entirety, its features were claimed by health officials to have been carefully derived from the sanitary codes of New York and other "principal oriental cities" (Bureau of Health, 1906). Heiser declared that the code's implementation was not intended to repeal previous ordinances, but was aimed at "codifying them" and incorporating necessary updates to the already implemented ordinances.

I have failed to gain access to a copy of the 1907 Sanitary Code, but the Bureau of Health reports contain sufficient descriptions of its contents. The code somewhat signified the further expansion of the powers and duties of health officials. Its provisions pertained to a variety of health concerns, from methods of addressing infectious diseases, to the issuing of marriage certificates. A few mentioned in the reports were the following: general cleaning, ventilation, and sanitary maintenance of buildings and premises; prevention of overcrowding; plumbing, drainage, and sewerage system; collection and disposal of garbage, refuse, and night soil; toilet provision in lodging houses or other public places; supervision of sale of food items and drinks; regulation of tenement houses; safeguarding of water supply; prohibition of spitting; active search and eradication of rats and other pests;

institutions of care for the poor, the sick, and the mentally retarded; veterinary sanitation; regulations on opium dens; and, finally, funeral practices (Heiser, 1907).

The enactment of the Sanitary Code was certainly intended to establish the public health regime's presence in every health-related concern—from the most urgent to the most mundane—that arose in the capital Manila. The crafting of the code involved painstaking preparation, since changes in previous ordinances and introduction of new ones had to be made known to every resident of Manila, so that the resident would "know about his right and his obligations" (Heiser 1907, 53-54). Nonetheless, the enactment of the code was met with strong opposition from local physicians, who particularly resisted the provisions on compulsory notification and hospitalization. It underwent many revisions, such that its final version was markedly different from the original, causing Heiser (1908, 55) to remark that the code's "usefulness and effectiveness have been considerably lessened." But even with a more lenient code, opposition to it would continue.

Measures against Improper Ventilation, Overcrowding, and Cramped Spaces

Before the sanitary code was passed, American authorities had already expressed their disgust over capital Manila's filthiness. A sanitary campaign soon ensued in an attempt to establish salubrity. Houses were already suspected as harboring germs, and were inspected for any signs of infection in times of epidemic (as in the case of campaigns against bubonic plague and cholera) but owners and occupants were reprimanded due to the absence of sanitation. In this context, proper ventilation was viewed as one of the features of a house that would qualify in the colonial ideal as "sanitary." In 1904 houses bearing no signs of proper ventilation—described in some reports as "Spanish houses"—were identified as conducive for TB transmission (Bureau of Public Health, 1905). An ordinance was enacted to "regulate this class of buildings in the way of giving them more light and air and securing greater sanitary conveniences" (Bureau of Health, 1905, 77-78).

With the passage of the sanitary code in 1907, exceedingly specific parameters were set to categorize conditions of "proper ventilation." The code required that building structures must have no less than 500 cubic feet of air space, corresponding to each adult staying in the building, with

two children under ten years of age counted as one adult. The code also ordered that animal quarters must have no less than 800 cubic feet of air space for each animal. On top of a mandatory 10 square foot window area per floor facing the back area of the building, every floor of a structure of dwelling was required to have at least one window "opening directly into external air," which would have a size of "at least one-tenth of the floor area" (Bureau of Health, 1906).

Cramped spaces were viewed early on as contributing to the spread of tuberculosis. Some aspects of the "sanitary engineering" of Manila—those with the intent to curb overcrowding in the city—could have regarded the high mortality from TB as a reasonable pretext for the manipulation of urban space. In the 1905 Bureau of Health report, outgoing Director of Health Carter had commented that, however significant an electric street-car system might have been in alleviating overcrowding (perhaps partly due to how it would encourage migration to the suburbs near Manila), there were "other things more important" (Bureau of Health, 1906, 38). Carter suggested that "cheap homes" with easy access to business centers would somehow address the conditions of overcrowded districts (Bureau of Health, 1906). Moreover, a system of municipal tenement houses, charging the lowest possible rent, seemed to Carter "the only feasible solution" (Bureau of Health, 1906).

The campaign to address overcrowding in thickly populated sections of the city, as well as overcrowding in tenement houses and lodging houses, continued until 1910. But, "active opposition was immediately encountered," according to reports (Bureau of Health, 1906, 38). Hostility seemed to have come from landlords and owners of tenement houses, who opposed the campaign because of what they perceived of a decrease in revenues from their rental fees. As such, the work to address overcrowding had to "necessarily proceed slowly" (Bureau of Health, 1906, 38).

If health officials saw that the enforcement of the provisions of the sanitary code pertaining to ventilation of tenement houses should be done gradually due to public opposition, they also pursued vigorous efforts to deal with cramped spaces and promote salubrity in Manila. By 1908 health officials had become alarmed of the increasing trend of nipa huts being indiscriminately set up in the outlying sections of Manila (Heiser, 1910). Although health officials recognized right away that the humble nipa hut was generally "open" and properly ventilated, the ease and inexpensive way

by which they were set up was deemed conducive to the congestion of houses. To address this problem, a "sanitary barrio"—consisting of a system of regularly laid out lots and street lines—was established in a government-owned San Lazaro Estate. Albeit a part of the needed funds was disbursed belatedly, the sanitary barrio was completed in 1910, causing health officials to remark that congestion had been addressed in some thickly populated sections of the city as "street mileage had increase" and "conditions in general improved" (Heiser, 1910, 10). Encouraged with the outcome of the venture, the Municipal Board of Manila—with a little prodding from the Bureau of Health—enacted an ordinance that prohibited the indiscriminate setting up of houses.

Measures Pertaining to the Regulation of Dairy Products

One of the provisions of the Sanitary Code pertained to the "sanitary regulation of dairies and dairy products," setting blanket guidelines to ensure the purity of milk supplies in Manila (Heiser, 1907, 44). The provision intended to cover all those which health authorities deemed infectious. It prohibited individuals with contagious disease from working in dairies, criminalized the sale of milk found to contain impurities, and made mandatory the laboratory examination of all dairy products to be sold in the market. Moreover, it made mandatory the tuberculin testing of cows and other milk-producing animals, an obvious move to address the possible spread of bovine tuberculosis. During this period, debates still hound the veracity of cows-to-humans transmission, but cautious health officials thought it best to play it safe. "While the positive conveyance of tuberculosis from domestic animals to man is still disputed by some . . . the trend of the opinion today is toward the belief that milk of all tubercular animals is dangerous to public health," Heiser surmised (Heiser, 1907, 44). Risk was deemed high as milk was regarded "such a favored culture of medium for most classes of bacteria," rendering dairy products "particularly liable to become the carrier of disease" (Heiser, 1907, 44-45). To ensure the safety of milk supplies in the city, diseased animals were viewed as the least ideal source of milk, or of meat for human consumption. On account of the incidence of bovine TB and the prevalence of human pulmonary tuberculosis in general, milk production was subjected to stringent state regulations.

Anti-spitting Measure

Perhaps the most notable provision of the Sanitary Code directly pertaining to tuberculosis control was the new anti-spitting regulation. It was the most interventionist ordinance meant to deter directly the spread of tuberculosis through the regulation of its identified mechanical vector—sputum.[3] The provision sought to prevent "the spreading of pulmonary tuberculosis and other infectious diseases," prohibiting persons to "spit or expectorate, or deposit or place any sputum, saliva, phlegm or mucus" on the floor of any place of public assembly such as churches, schoolhouses, theaters, streets, highways, and the like, including street cars or public conveyances (Bureau of Health, 1906, 73).

The crafting of the anti-spitting measure seemed to have been a tedious one. When the Sanitary Code was still pending, Carter already expressed his cognizance of the "almost absolute hopelessness" of implementing a more stringent ordinance. He declared that in coming up with an ordinance against expectorating in public places, it was advisable to deal only with "the most urgent features of question" (Bureau of Health, 1906, 73). Carter even advised that it would "undoubtedly require years of patient waiting before the results aimed at will begin to show" (Bureau of Health, 1906, 34).

For Carter to express trepidation over the effectiveness of the ordinance was not surprising. As a countermeasure against contact infection, management of sputum through an anti-spitting law was full of complications. Whereas previous ordinances dealt with specific vectors of infection—the rat for bubonic plague, the mosquito for malaria, fecal matter for cholera—in order to stop the spread of major epidemics, the measure that aimed to stop contact infection between the TB-afflicted and a susceptible host targeted a habit not necessarily viewed by the locals as disgusting. Carter had earlier attributed the prevalence of TB to the so-called "curse" of the habit of careless spitting among "Orientals" (Bureau of Health, 1906). He declared, "It is not surprising that in a country where the nature and cause of disease are so little understood by the masses as they are in the Philippines that there should prevail many habits and practices of an insanitary nature" (Bureau of Health, 1903, 33). While the remark was essentially racialist, Carter's observation hinted at the complexity of prohibiting spitting, given the Filipinos' proclivity to chew and munch on betel nut, which had been (and continued to be) a pastime of most Southeast Asian peoples for many centuries. Spitting was

a natural thing for Filipinos of all walks of life, such that, for his part, Victor Heiser remarked "many of the more intelligent are particularly careless in this matter, and so long as those who ought to know better continue the habit with such reckless abandon, it seems almost useless to preach the gospel of sanitation to others" (Heiser, 1906, 51). Nonetheless, health officials felt they needed to criminalize spitting in Manila. The ordinance was merely "a beginning of a long and unavailing warfare against the expectorating nuisance" (Bureau of Health, 1906, 73). Carter, for one, believed that sanitation must rely on laws and ordinances "to do what ought to be done by the exercise of common sense and common decency" at the early stage when a population was "still ignorant of bacteriology" (Bureau of Health, 1906, 34).

Awareness-building Campaign

Because the colonial state viewed its subjects as "still ignorant of bacteriology," a campaign to disseminate the state's medical understanding of TB had to be drummed up. Alongside the passage of the Sanitary Code in 1907, an awareness-building campaign came in the form of a health bulletin devoted entirely to tuberculosis (Health Bulletin No. 5). Copies of this bulletin, as well as those about other diseases, were distributed to the public. Arrangements were also made so that the contents of the bulletin were to be taught in public schools (Heiser, 1907).

As with other venues created to transmit state-upheld values, it was only logical for health officials to make the TB publicity campaign target the largest segment of the population possible. Bulletins were indeed essential, but for an awareness building campaign to cover as many people as possible, the information had to be brought to sites of assembly other than public schools. Theaters—which were relatively new during this period but had become quite popular among Manileños—were viable sites for education. As such, a TB publicity campaign was carried out there in 1909, with the initiative of Director of Health Heiser himself, who personally requested the management of the Empire Theater to regularly show educational "cinematographs and lantern demonstrations" on TB and other infectious diseases (Heiser, 1910, 37-38). Alfred Yearsley, the theater's owner, was more than willing to help. In the following year Heiser reported that "pictures of deadly germs" had been shown every night to thousands of people in the city, which had been met by

"great enthusiasm." Encouraged with the outcome of this type of educational campaign, Heiser suggested that arrangements be made for film showings to be conducted in the provinces (Heiser, 1910, 37-38).

A Good Year for Sanitation, but not for Tuberculosis Control

The fiscal year that ended in June 1907 seemed to have been assigned special meaning among the health authorities in the American Philippines. Other than that it was the year when the Sanitary Code of Manila was implemented, it was the year when the public health campaign seemed to have become exemplary. Victor Heiser boasted that "all records [had been] broken," as the sanitary campaign "commenced to show in a most concrete and substantial manner," with "great strides in general sanitation" being manifested in a "record-breaking feat" (Heiser, 1907, 3).

Health officials were in high spirits due to the huge decrease in mortality statistics. The mortality rate in Manila was reduced from 40.9 per 1,000 of the previous year to 36.9 per 1000 in 1907. No death from bubonic plague was reported, causing Heiser to remark that Manila stood "in favorable contrast with the rest of the Orient" (1907, 6). Mortality from smallpox was also virtually nil in the city, even in provinces usually beleaguered by high mortality rates from the disease. Cholera in "recognizable form" was reported to have disappeared entirely from the archipelago (Heiser, 1907, 3). Leprosy was viewed to have "passed from theoretical to the practical stage," accompanied by a decrease in the number of reported sufferers from 3,580 in 1905 to 2,826 in 1907 (Heiser, 1907, 6). Also considered as achievements were the introduction of a new health census in Manila and the provision of better drinking water through the installation of artesian wells in towns and provinces.

Amid the jubilant mode of health officials who considered 1907 a generally good year for disease control, not all diseases were on the decline. For instance, beriberi mortality remained at almost the same level as the previous year (Heiser, 1907). Cases of diphtheria, yaws, typhoid fever, gangosa, paragonimus (i.e., hookworm infestation), and measles had either appeared recently or increased slightly in incidence (Heiser, 1907). Collected reports of deaths from malaria—the second top killer disease in the 1903 census—exhibited a slight decline only, which was even met with doubt due to a large number of deaths with no official death certificates. An increase was also observed in the cases of amoebic dysentery, another top cause of death in the census of 1903.

Yet another disease that had to be considered was tuberculosis. In the Bureau of Health report for the year, the tone seemed to have shifted from festive to gloomy as tuberculosis was discussed. The author of the report, Director of Health Heiser, admitted that the Bureau of Health's neglect was partly to blame, due to the little attention paid to TB in the preceding years. Heiser became ever more concerned. He surmised that, while most of the reports and ordinances were made in order to address pressing diseases such as cholera, plague, and smallpox, these disease were "insignificant when compared to the great white plague—tuberculosis—which is the most universal scourge of the human race" (Heiser, 1907, 7). The mortality caused by TB was appalling, and it was equally sad that the disease was "preventable, though with greater difficulty than cholera, plague and smallpox," and was propagated by "unnatural conditions created by the victim or his friends" (Heiser, 1907, 7).

The remark that the 1907 fiscal year generally had been good for sanitation might have been an overstatement, and the optimism over the huge decrease in mortality could have been intended to attract more investments in the Islands (see, e.g., Heiser, 1907). But which ever way Heiser had chosen to showcase the achievements of his bureau, or even the new colonial order as a whole, it was easily undermined by the alarming and persistent level of TB mortality. How TB mortality statistics served as outliers in the general downward trend of mortality in 1907 compelled Heiser and the rest of the Bureau of Health to feel the immense need for more health measures. In Manila alone, TB of the lungs was the only disease with constantly increasing mortality statistics, such that by 1907 it had incurred more than a thousand deaths (table 9). At a time when no epidemic disease beleaguered the Islands, such figures were indeed alarming.

The year 1907 became a watershed in the anti-tuberculosis campaign. By the following year discussions of tuberculosis in health reports had become longer, suggesting an increase in attention given to the disease. Medical circles in general showed new interest in the disease, as indicated by the frequency of papers presented in medical conferences and published in scientific journals—primary of which was the state-financed *Philippine Journal of Science*. Most papers offered explanations for the prevalence of the disease in the Islands and promises of possible cures, while others reported on findings of experiments carried out in both animals and humans. For

Table 9. Mortality statistics among residents in the city of Manila, 1903–1907 (excluding transients and stillbirths)

	1903 -1904 Fiscal Year	1904 -1905 Fiscal Year	1905-1906 Fiscal Year	1906-1907 Fiscal Year
Asiatic cholera	376	44	317	586
Beriberi	298	291	378	408
Bubonic Plague	84	39	7	n/a
Dysentery	284	313	280	344
Intermittent fever and malarial cachexia	110	110	169	154
Leprosy	25	58	60	61
Malarial cachexia	55	18	27	19
Tuberculosis of the Lungs	**958**	**971**	**1,122**	**1,148**
Variola/ Smallpox	25	6	5	1

Source: Bureau of Public Health, 1905; Bureau of Health, 1906; Heiser, 1906; Heiser, 1907

instance, a series of experiments was carried out to assess the effectiveness of mercury-based drugs and other experimental compounds administered to Bilibid Prison inmates by Bureau of Science personnel (see, e.g., Whitmore, 1909, 1910). The experiment results were deemed "inconclusive," and no drug was used as a curative public health campaign against TB.

Prevention of the Spread of Dust

If the 1907 Sanitary Code criminalized spitting and rendered sputum dangerous to public health, anything that was viewed to facilitate infection through ingestion of sputum was similarly dealt with. Dust was seen as an ideal vehicle for infection, as it could harbor dried sputum that could still carry the tubercle bacilli. Thus, infection was seen to occur when dust, spread through air, became ingested.

Such was the basis of the circular released by the Bureau of Health in 1908. It prohibited "dry sweeping" in government buildings, apparently in response to spread of dust occurring during routine cleanings of government

buildings made during office hours, Heiser (1908, 81). The circular ordered that sweeping should be done only after government buildings were vacated, and that it must be carried out concomitant with the sprinkling of wet sawdust so as to avoid the spread of dust in the air. By the following year, the sprinkling of water on the streets of Manila became a regular measure to prevent the spread of dust during dry seasons (Heiser, 1909).

State-financed Facilities for Tuberculars

As the concern of the colonial state over tuberculosis grew, the issue of adequate health facilities drew the attention of health officials and medical pundits. On account of alarmingly high mortality statistics, hospitals or any equivalent institutions of care could serve a dual purpose in stopping the spread of the disease. On the one hand, these facilities would offer relief, comfort, or even treatment for the afflicted. On the other hand, they would prevent further contact infection (although only in a limited way) by isolating and segregating the afflicted from the rest of the healthy population. Tuberculosis sufferers in the American Philippines were able to avail themselves of the services of some health facilities in Manila. For instance, in Manila alone, San Lazaro and San Juan de Dios had admitted tuberculars even before the arrival of the Americans, while St. Luke's, Mary Johnston, and the former Civil Hospital in Manila had been added to the list of hospitals where tuberculars could have taken refuge since the start of the American colonization.[4]

By 1908 Heiser had felt the increasing need for a public health facility exclusively for tuberculars. No hospital had yet been constructed solely for tuberculosis, aside from the "Hospital B" of the Bilibid Prison in Manila.[5] In the Bureau of Health report, Heiser (1908, 81) mentioned sanatoriums as showing successful results in a number of places in the United States, arguing that it was only logical and timely for the construction of a state-financed tuberculosis sanatorium in the Philippines. To drive home his point, he mentioned the case in Germany where the construction and maintenance of sanatoriums had cost insurance companies millions of dollars. Heiser (Heiser, 1908, 81) asked, "If these companies find it worthwhile to prolong the lives of their policy holders, is it not worthwhile for the State to throw out the life line to its suffering citizens?" State subsidy of a sanatorium in the Philippines was deemed a "wise public policy," since it would save the islands from a "drain on

the productive capacity" of a significant segment of the labor force (Heiser, 1908, 81). Heiser envisioned the tuberculosis sanatorium as a site where tuberculars would be treated properly, not by some "consumption cures" like those advertised in the market—which caused Heiser to issue a warning because of their doubtful effects—but by compliance with proper hygiene and nutritious diet, and supervised medication for special conditions "as they arise" (Heiser, 1908).

Aside from its therapeutic value, the tuberculosis sanatorium was envisioned to serve a higher purpose. The structure would become central in the colonial state's "educational crusade" against TB. The sanatorium's policy was to accommodate only patients in the early stages of the disease, who would be "reformed" in matters of hygiene and tuberculosis prevention. The recovered patients, in turn, would become the preachers of the gospel of hygiene. Heiser (Heiser, 1908, 81) optimistically declared,

> An institution with a capacity of one hundred patients—that is, two hundred a year—ought to send back to the people at least 160 (80 percent) missionaries to preach hope and health to their countrymen. The people must realize the nature of this disease; that it is communicable and preventable; that taken in time and properly treated it is curable. One enthusiastic patient cured is worth more among these people than all the circulars and literature that could be produced on the subject.

Calls to establish a public health facility exclusively for tuberculars were even buttressed by Heiser's month-long sojourn to the United States in September 1908 as an official delegate of the Philippines Islands—together with then Philippine Medical School obstetrics professor Fernando Calderon—to the International Congress on Tuberculosis. The Congress comprised of paper presentations, plenary lectures, and panel exhibits on various aspects of TB control. A lecture panel on "state and municipal control"— which Heiser and Calderon considered as "of most practical interest to the Philippine Islands"—drew much attention from them (with Calderon reading his "Notes on TB in the Philippines") (Heiser, 1909, 89). Heiser and Calderon also visited states such as Philadelphia, Saranac Lake in New York,

and Boston which demonstrated combinations of anti-tuberculosis measures, ranging from compulsory registration, popular lectures, dispensaries, hospitals built for confinement of terminal cases, and a countryside sanatorium for incipient cases. During these trips, the effectiveness of tuberculosis facilities, sanatoriums in particular, was emphasized. In Pennsylvania the delegates were most intrigued by White Haven Sanatorium, whose in-house policies made its incipient tubercular patients render their labor so as to make the facility financially self-reliant. This was on top of the million dollars worth of funding that the anti-tuberculosis campaign had received from the government, which caused Lawrence Flick to remark that "at least 5,000 lives are already being saved annually" (Heiser, 1909, 91).[6] Indeed, tuberculosis facilities were as vital as the plethora of regulatory laws in the campaign against the disease, and this was intimated in the congressional resolution that urged countries to do their part in establishing hospitals, dispensaries, day and night camps, and sanatoriums (Heiser, 1909).

On their return to Manila, Heiser and Calderon made the necessary recommendations. Most of their proposals underlined how vital it was to expand nationwide, and to enforce strictly, the measures already enacted. These included the compulsory registration of the TB-afflicted, the provision of spittoons and cuspidors in public areas, the prohibition of dry sweeping in public structures and public streets, and the expansion of educational campaign in schools. Also, since hookworms were identified to cause "lowered vitality" and thus predisposed individuals to TB, a parallel health campaign was proposed in communities where hookworm was prevalent (Heiser, 1909).

Heiser and Calderon then stressed their proposal to establish facilities exclusively for tuberculars. These included a number of out-patient dispensaries in Manila to offer sputum examination and services for visiting nurses, facilities in Benguet for the trial runs of the "open-air method" (partly in order to determine the possible curative effects of temperate climate on tuberculars), and a facility located on an "elevated site near Manila" for the accommodation of individuals with incipient TB for a limited period. Calls for TB facilities soon drew support from medical circles. In the sixth meeting of the Philippine Islands Medical Association in February 1909, the call for TB facilities was "unanimously" endorsed when its president, Ariston Bautista, declared the "absolute necessity" of constructing dispensaries, hospitals, and sanatoriums (Heiser, 1909).

It was not long before the insular government enacted Act No. 1955, which apportioned P35,000 to the Bureau of Health solely for TB control. By June 1910, a number of TB facilities had been built with the funds provided by the appropriation act: an out-patient dispensary in the Philippine Medical School constructed and expanded for an average of 1,500 patients per month; additional pavilions and shacks set up in the new Baguio Hospital, which had started to admit both American and Filipino tuberculars; and an almost complete "tuberculosis camp" in the Old Deposito Grounds in San Juan del Monte (Heiser, 1910). This "tuberculosis camp" in San Juan—eventually called the San Juan Tuberculosis Hospital—would be completed in 1911 and would serve as the first sanatorium in the country for the exclusive admission of individuals afflicted with incipient tuberculosis.

These facilities functioned as sites of relief and segregation, at the same time that, their principal goal was to educate. While these facilities were deemed as sites of recovery for their admittees, the indispensability of having the admitted tuberculars "reformed" in matters hygiene and tuberculosis prevention was also given emphasis. "The influence exerted by those that are cured is the greatest power in the educational crusade against this disease," (Heiser, 1908, 81). Dispensaries were described as places where tuberculars could receive free medication and where physicians could instruct people about the significance of a diet-exercise-outdoor life regimen (Heiser, 1909). Along the same lines, admission to the San Juan TB Hospital was limited only to those who were still in the early stages of the disease and had the biggest chance of recovery. Aside from the fact that most sufferers of incipient TB were curable, Heiser saw that the admission of terminally ill tuberculars to the sanatorium would bring stigma to the institution. "It will be at once seen that if patients are taken in to die, the institution would soon be looked upon as a place of final resort, and the educational factor in its purpose entirely lost sight by the public" (Heiser 1908, 46). The San Juan Tuberculosis Hospital accommodated only a limited number of individuals who were allowed to continue their day jobs in Manila. For a period of three months, patients were allowed to work during the day, but were admitted at night. After their short stay, they returned home to become the new preachers of the anti-tuberculosis measures; they were expected "to carry out the hygienic measures which they have been taught at the night camp" (Heiser 1910, 93). In order to complement the reformatory character of the facility, a number of nurses were also stationed

in the sanatorium while others were detailed to pay regular visits to the households of formerly admitted tuberculars.

CONCLUSION

In 1909, citing an article published in the *Bulletin of Missouri State Board of Health*, Victor Heiser stated the "points of attack" with which the "war on TB" must be conducted: (1) cut off supply of tubercle bacilli that causes the disease, and (2) prevent the accumulation of susceptible persons (Heiser, 1909). It can be said that the war on TB in the Philippines was fought along the same lines during the early years of the American colonial period. From 1899 until 1910 the measures launched by the colonial state to reduce tuberculosis mortality were interventions to effect the immediate stoppage of infection.

While tuberculosis had been recognized right away by health officials as a threat, it was initially sidelined due to the attention paid to a number of public health concerns, which had elicited the Americans' urgent response. The 1903 census served as the first demographic inscription of TB mortality throughout the islands, providing health officials a profile of the TB victim, the disease's incidence by season, distribution by area and by province, among other information. More than anything else, the census provided an idea of the extent to which the disease posed a threat to the welfare of the colony, as its figures rendered "visible" to the colonial state those who fell under its purview but the state failed to save. Health measures were soon on their way, and when the whole Islands were declared as having been freed from the dreaded cholera epidemic, the colonial state implemented its initial repertoire of measures. Manileños—who were the first subjects of the anti-tuberculosis campaign—were required by law to report all cases of TB. A Sanitary Code set the standards used to assess the ventilation of building structures, the regulation of dairy products, and the criminalization of spitting. Moreover, overcrowding and the spread of dust—viewed as conducive to TB transmission—were to be addressed.

Amid the deployment of these extremely restrictive measures, there were qualms on the part of health officials. While the anti-spitting regulation was implemented to regulate a vehicle of infection, health officials were quick to recognize that it would be ineffectual in attaining their objective to

reduce tuberculosis mortality rates as it would target a habit regarded as "filthy" only by them. There seemed to have been an urgency to "reform" despite the need to "restrict." And this was not going to be fulfilled by the mere distribution of pamphlets and film showing. State-controlled facilities were to address this urgency. As much as the new clinics, dispensaries, additional pavilions, and the TB hospital-sanatorium were sites of relief and comfort, they were made to serve as sites of behavioral modification. The main clientele of these structures were curable tuberculars, who would fall under the purview of the colonial state not as fatalities inscribed in the census, but as subjects of colonial reform who would turn into active preachers of the "gospel of hygiene" and the new legionnaires of the anti-tuberculosis campaign.

NOTES

[1] For an expounded discussion of bubonic plague control measures, see Anderson 2007, 61-63; for smallpox, see Anderson 2006; 2007, 208-9; for cholera, see Anderson 2007, 63-67; De Bevoise 1997, 176-184; Ileto 1995; Sullivan 1989; 1992; for leprosy, Anderson 2007, 164.

[2] Some reports ranked tuberculosis of lungs fourth, after cholera, malarial fevers, and dysentery and diarrhea combined.

[3] Sputum is defined as any matter expectorated from the lungs and respiratory passages, such as saliva, phlegm, mucus, or pus.

[4] Rodriguez (1936, 73) enumerates the following hospitals founded before the arrival of the Americans: a hospital for Spanish soldiers (1575), Hospital of Naga (1586), San Lazaro Hospital (1878), a hospital for the natives and Spaniards (1585), Hospital of Los Baños, Laguna (1590), Hospital of Cavite / Holy Ghost Hospital (1591), Hospital of Antipolo (1602), Hospital of Sangleys (1630), Hospital of San Gabriel in Binondo (1724), Hospital of Zamboanga (1742), Hospital of Cebu for Lepers (1850), and Hospital of Nueva Caceres (1872).

[5] Hospital B of the Bilibid Prison was originally constructed for prisoners with beri-beri, but by 1908 it started to accommodate tubercular prisoners exclusively because of the excessively high incidence of TB among prisoners

[6] For more information about Lawrence Flick and the White Haven Sanatorium, see Bates 1992; Feldberg 1995, 91-100.

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