

UNHEALTHY BODIES IN SUGAR LANDSCAPES: AMERICAN IMPERIALISM, SUGAR
ECONOMY, AND TUBERCULOSIS IN EARLY TWENTIETH CENTURY PUERTO RICO

by

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(Under the Direction of Reinaldo Román, PhD)

ABSTRACT

American occupation of the island of Puerto Rico in 1898 entailed countless economic, political, and social changes. As a result, Puerto Rican economy became increasingly dependent on sugar cane cultivation. Peasants and workers migrated to coastal areas while wages were insufficient to provide proper housing and health. In spite of promises of modernity and benevolent public health campaigns, a tuberculosis epidemic continued to claim thousands of lives while official discourse continued to obscure the connection between the sugar economy and tuberculosis mortality rates.

INDEX WORDS: Tuberculosis, Imperialism

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MPH, University of Hawaii, 1998

A Thesis Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment
of the Requirements for the Degree

MASTER OF ARTS

ATHENS, GEORGIA

2014

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ACKNOWLEDGEMENTS

This project could not have been completed without the assistance and guidance of a few people. The members of the committee, Dr. Nan McMurry and Dr. Oscar Chamosa, and my advisor, Dr. Reinaldo Román patiently helped me edit the manuscript, aiding me to overcome my weaknesses and to better utilize my strengths. I also owe a great debt of gratitude to the friendly and helpful archivists at the Asenjo Medical Sciences Library, University of Puerto Rico, and the Municipal Archives in the cities of Ponce and Mayagüez. Without their help it would have been impossible to get through the thousands of documents in their collections. Their arduous work, sometimes overlooked, protects the history and legacy of the island of Puerto Rico. The director and the friendly workers at the Puerto Rico Demographic Registry also facilitated the examination of thousands of death certificates from which many of the statistics reported and analyzed in this study originated. Finally, I owe a debt of gratitude to the person that showed me that the analysis of disease can be used as a lens to understand a country's cultural, economic, and political history, Dr. Hayley Froysland, Associate Professor at Indiana University South Bend.

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INTRODUCTION

*I understand that it is not just or humane to leave someone to die on a square without shelter, food, or assistance, and in that we absolutely agree; but, these cases are being repeated over and over again without any island authority being able to prevent it.*¹

The quote above originated from a letter written on April 8, 1919 by the mayor of the city of Ponce, the second largest city in Puerto Rico, to the Chief of Police, Mr. Miguel Hurtado. Mr. Hurtado had expressed indignation over the treatment of Rosendo Burgos, an impoverished agro-laborer suffering from tuberculosis. At the request of a representative of the sugar plantation where Burgos worked, an ambulance had transported the unfortunate individual away from the plantation in which he worked and left him to fend for himself in the streets of the city. The mayor defended those actions by stating that the Municipal Hospital had a policy of no admittance of tuberculosis patients. The lack of clear alternatives left few options for city officials in the sugar growing regions, where tuberculosis mortality rates remained high throughout the first four decades of American oversight over the island.

At the end of the Spanish-American war, Puerto Rico became American territory, providing the United States with an opportunity to display a different type of colonialism from that conducted by European countries. The American discourse that accompanied U.S. imperialistic pursuits reflected the idea of the “white man’s burden” and called for a “civilizing

¹ Letter from Mayor of Ponce, Honorable Rafael Rivera Esbri, to Chief of Police, Mr. Miguel Hurtado; April 8, 1919. Municipio de Ponce Archives.

mission.” This mission not only included improvements in public health, but also economic rehabilitation.² In spite of this discourse of modernization and progress, the efforts of American and Puerto Rican medical personnel focused on Colonel Bailey Ashford’s hookworm campaign and some efforts to fight malaria. Tuberculosis, even though mortality rates remained among the highest in the world, did not catch the attention of American physicians and their Puerto Rican counterparts.

Historians have focused on American efforts to build infrastructure and modernize sanitation and public health policies in Puerto Rico. Their historical accounts reinforced the idea that the hookworm campaign had succeeded. General opinion during the first three decades of the twentieth century agreed with this historiographical assessment of the program as Puerto Rican officials expressed gratitude for American and, particularly, Ashford’s intervention for the betterment of the poor *campesinos*. More recently, however, scholars focused on the colonizing aspects of the campaigns. Fernando Feliú expanded on this topic, emphasizing the construction of the *jíbaro* as an image that aided in the colonizing, modernizing mission.³

The Anemia Commission eventually led to the establishment of the Institute of Tropical Medicine. In 1926, this institute became the School of Tropical Medicine in cooperation with Columbia University and Puerto Rican physicians.⁴ Amador has shown how the project of rehabilitating the *jíbaro* worked through the hookworm campaign and the School of Tropical Medicine. In addition, he described the public meetings and conferences that served to publicize the successes. Trujillo-Pagán challenged earlier interpretations of the hookworm campaigns and

² Rosenberg, Emily S. *Financial Missionaries to the World: The Politics and Culture of Dollar Diplomacy, 1900-1930*. (Durham: Duke University Press), 2003.

³ Fernando Feliú, “Rendering the Invisible Visible and the Visible Invisible: The Colonizing Function of Bailey K. Ashford’s Antianemia Campaigns,” in Benigno Trigo ed., *Foucault and Latin America: Appropriations and Deployment of Discursive Analysis* (New York: Routledge, 2002).

⁴ Amador, J. *Redeeming the Tropics: Public Health and National Identity in Cuba, Puerto Rico, and Brazil, 1890-1940*. (Lansing, MI: University of Michigan), 2008, pp. 164.

has asserted that it “had limited efficacy in preventing patients from being re-infected” and that other parasites were more prevalent than hookworm.⁵ Nevertheless, the campaign served to establish American medical hegemony on the island.

The hookworm campaign and the establishment of the School of Tropical Medicine also contributed to a process of professionalization for Puerto Rican physicians. Trujillo-Pagán has argued that American policies limited physicians’ autonomy and directed physicians’ work to serve colonial interests.⁶ The influence of the American medical model and the failure of the Asociación Médica de Puerto Rico (AMPR), the Puerto Rican chapter of the American Medical Association (AMA), to improve their situation through opposition and confrontation convinced elite physicians to change their tactics. Even though Puerto Rican physicians had initially attempted to resist American intrusions into the medical profession on the island, by 1910 they had realized that in order to promote their interests and exert influence in the new medical establishment they needed to become part of it.

Puerto Rican physicians eventually became more comfortable with American methodology and, in the face of a growing tuberculosis epidemic and deficient medical care in the island, certainly could not blame the colonizing administration or their own shortcomings. Raquel Romberg discussed the concerted and well publicized efforts of the Puerto Rico Medical Association (AMPR) to counter the people’s superstitions and the influence of folk healers (*curanderos*) during the late 1940s and early 1950s.⁷ However, as Reinaldo Román pointed out, such discourses had begun long before 1948.⁸ In his discussion of the works and popularity of

⁵ Trujillo-Pagán, Nicole. *Modern Colonization by Medical Intervention*. (New York: Brill), 2013, pp. 103.

⁶ Trujillo-Pagán, pp. 160.

⁷ Romberg, Raquel. *Witchcraft and Welfare: Spiritual Capital and the Business of Magic in Modern Puerto Rico*. (Austin: Texas University Press), 2003.

⁸ Román, Reinaldo. *Governing Spirits: Religion, Miracles and Spectacles in Cuba and Puerto Rico, 1898-1956*. (Durham: University of North Carolina Press), 2007.

Julia Vásquez (*La Samaritana*), a woman ascribed with healing abilities in the early 1920s, he noted her critics' racialized notions of the healer and their laments regarding the superstitious nature of Puerto Ricans that accounted for her popularity. No doubt, the long lines of afflicted persons that gathered in San Lorenzo to see her included a good number of *tuberculosos*.

In addition to the relationship of Puerto Rican physicians with Ashford's hookworm campaign and the School of Tropical Medicine sponsored by Columbia University, the physicians participated in projects managed by other organizations. One of these American organizations that sought to contribute to the improvement of public health in Puerto Rico was The Rockefeller Foundation (RF). Like in many other Latin American countries, the RF trained physicians and orchestrated campaigns against diseases such as malaria and hookworm. In spite of this seemingly selfless and benevolent task, many scholars have argued that the RF served as an instrument of the colonial project, American imperialism, and nation-building. In the RF led campaigns in several Latin American countries and scholars have described them in several works. For example, Ann Zulawski has analyzed the foundation's intervention in Bolivia, where its leadership brought the scientific and racial constructs popular in the United States at the time; views that usually aligned with upper class, white assumptions about race and ethnicity.⁹ Even though the Americans were arrogant and authoritarian and considered Bolivian doctors to lack education and knowledge, both groups found common ground in considering Indians an obstacle to public health measures due to their race and ignorance. Although the campaign against yellow fever was successful, later campaigns against other diseases did not end triumphantly. That fact, in conjunction with the evolution of populist and nationalistic ideology, caused the Bolivians' acceptance of the Foundation to erode during the 1940s.

⁹ Zulawski, Ann. *Unequal Cures: Public Health and Political Change in Bolivia, 1900-1950*. (Durham: Duke University Press), 2007, pp. 86.

In Puerto Rico, the intense training efforts of the RF and their health campaigns facilitated the Americanization of medical ideology in Puerto Rico. Elite physicians who under Spanish colonialism had sought to maintain autonomy and had their own brand of medical ideology now sought to advance the interests of the medical class. In doing so, they adopted the American version of medicine and became agents of the colonial project.

The American colonization project also aimed at improving the economy of the island. In Puerto Rico, economic development followed similar patterns as in the Dominican Republic and Cuba, where corporate sugar monoculture quickly replaced subsistence agriculture, creating a large population of wage workers. Tobacco continued to be an important crop while coffee declined. Scholars like César J. Ayala have analyzed the effects of this transition in the Caribbean and asserted that the effects of the process of proletarianization had “enormous social consequences.”¹⁰ While these reports have analyzed the social consequences in terms of issues of race, gender, and social violence, public health policies have only appeared prominently in the analysis of the hookworm campaign and those policies that targeted issues of reproduction. Tuberculosis has received little attention even though the high incidence of the disease can be traced back to the colonization project.

The acquisition by American corporations of large portions of arable land either through direct purchase or leases resulted in increased migration to the coast in search for work in the plantations. Some workers alternated between work in the tobacco factories and sugar plantations, moving as they needed.¹¹ Low wages, the relatively high price of foodstuffs, and the living conditions in the plantations resulted in numerous labor strikes. Malaria, gastrointestinal infectious diseases, and anemia contributed to the poor health of agro-laborers. The

¹⁰ Ayala, César J. *American Sugar Kingdom: The Plantation Economy of the Spanish Caribbean, 1898-1934*. (Chapel Hill: The University of North Carolina Press), 1999, pp. 254.

¹¹ *Ibid.*, pp. 182.

historiography that has focused on the sugar industry in Puerto Rico has highlighted these issues. Yet, the relationship between the sugar plantations and the spread of tuberculosis on the island has not been analyzed. In fact, the physicians working for what later would become the Tuberculosis Program did not address housing inside plantations since tuberculosis, according to accepted understandings of the etiology of the disease, was a disease primarily of the urban poor. The idea that the major threat to sugar workers came from the bites of mosquitoes also helped dissociate the prevalence of tuberculosis from the living conditions that the American-driven sugar economy helped perpetuate.

The combination of the expansion of corporate agriculture, particularly sugar, the quest of Puerto Rican physicians for legitimization in the face of apparent American medical superiority, and an insular medical structure that did not have the resources to battle the increasing tuberculosis problem led to incidents like the one that sent Rosendo Burgos into the streets in 1919. Burgos' plight and that of other *tuberculosos* also raises questions about American racial and public health discourses. In the early phases of the American intervention on the island, colonialist personnel had viewed Puerto Ricans as "childlike" and "primitive", not quite ready for full citizenship participation.¹² Some of these ideas still prevailed during the second decade of American hegemony over the island.

The discovery of the bacillus responsible for tuberculosis disease in 1883 changed previous notions of TB as an ailment of the wealthy and educated that had prevailed in late eighteenth and throughout most of the nineteenth century. Up to the discovery of the microbial agent responsible for tuberculosis infection tuberculosis had been romanticized as a disease of the rich. The discovery also failed to bring a cure until the introduction of antibiotic therapy later

¹² Santiago-Valles, Kelvin. *"Subject People" and Colonial Discourses: Economic Transformation and Social Disorder in Puerto Rico, 1898-1847*. (New York: State of New York University Press), 1994.

in the twentieth century. In spite of this, cures and treatments continued to emphasize healthy living and fresh air. Gradually, tuberculosis became associated with poverty and filthiness. Today, tuberculosis is understood as the infectious disease that it is and where transmission occurs via moist droplets that carry the bacillus when the patient coughs. Not everyone that gets exposed develops the disease and it requires close contact, usually for a prolonged period of time. In early twentieth-century Puerto Rico, individuals working in certain closed shops and in constant proximity with infected co-workers could have contracted the disease. The poor living conditions of a great number of laborers facilitated the spread of the tuberculosis in great part because relatives and the diseased had to share very close quarters.

The public health efforts against hookworm involved the idea that eradication of this parasite would help regenerate the emaciated bodies of Puerto Ricans. In this manner, they could take their place within the new wage-labor class that sugar and tobacco agro-business needed. The *tuberculosos* could not participate in this economic regime. According to both American and Puerto Rican physicians, their own ignorance and their superstitions placed most of the blame of this condition on the shoulders of the affected. Therefore, these people traveled on the outskirts of citizenship; not only were they backward, but this backwardness was responsible for their unhealthy bodies and had made them labor “drop-outs.” As Diego Armus points out, during the first half of the twentieth century, people in other Latin American countries had started to make connections between social citizenship and the right to public health services.¹³ In Puerto Rico, this process came slowly.

This study aims at contributing to existing historiography of public health and colonialism on the island. Other scholars, such as Armus, have utilized tuberculosis as a lens to

¹³ Armus, Diego. *The Ailing City: Health, Tuberculosis and Culture in Buenos Aires, 1870-1950*. (Durham: University of North Carolina Press), 2011, pp. 111.

examine cultural and social issues during a time that preceded effective antibiotic therapies while also advancing the medicalization of society.¹⁴ The issue of American colonization further complicates the Puerto Rican case and this study aims to address the connections between the sugar economy and tuberculosis mortality. While mortality rates increased dramatically during the Great Depression, this research aims to show that tuberculosis had never stopped being one of the main causes of death in the island in spite of American promises of progress and modernity. Tuberculosis mortality rates had stayed considerably higher than 200 per 100,000 between 1899 and 1920 and had actually begun to increase during the 1920s. In illustrating the relationship between the sugar economy and the persistence of tuberculosis, mapping software has been used to highlight the connections between the landscape and the disease.

The study also underscores the ways in which the professionalization and Americanization of the Puerto Rican medical establishment actually served as temporary impediments in the battle against the disease in spite of the courageous efforts of some physicians. It examines how *curanderos* and superstitious *jíbaros* became convenient scapegoats when it became evident that tuberculosis remained a serious threat. While the study recognizes that some of the ideology and discourses utilized by physicians and officials had roots in understandings of tuberculosis prevalent during this era, imperialism and the pressure to emphasize American-led economic reforms gave discourse on the island a distinctive flavor and facilitated the dissociation from an economic system that perpetuated the conditions that made tuberculosis such a threat.

¹⁴ *Ibid.*, pp. 113.

Finally, the study expands on Lebrón's work on tuberculosis in Puerto Rico, which focused on the large numbers of women who succumbed to the disease.¹⁵ It does provide some gender analysis, but does not scrutinize in detail the textile and needlework industries that employed a great number of these workers. This work aspires to contribute to the growing historiography of public health in Latin America and the Caribbean, particularly to the studies of tuberculosis. It also asserts that the changes brought to Puerto Rico by American imperialist pursuits did not exist in a vacuum: that those changes, including economic ones, had effects that went beyond the conflicts between labor unions and sugar conglomerates. The study of the sugar industry as it operated in Puerto Rico needs to address more than wages and market interactions. The industry perpetuated a state of poverty and contributed to the poor health of the Puerto Rican laboring classes during the first half of the twentieth century. It was that same poor state of health that could then be used as a justification for continuing intervention.

The study is organized in three chapters that present different but coexisting aspects of the sugar economy, its effects on workers' health, and prevalent discourses by American and Puerto Rican officials. Chapter 1 focuses on the Puerto Rican physicians, their quest for legitimization, and how their discourse directed the efforts to control the tuberculosis epidemic. The chapter will also discuss the program's propaganda as well as the insistence of medical professionals in blaming *curanderos* and the "ignorant and superstitious" lower class for the persistence of the disease. It also explores the opposing discourses advanced by labor unions, the Nationalist Party, and a few dissenting Americans.

In Chapter 2, ArcGIS mapping software from Esri Corporation was used to illustrate the distribution of sugar growing regions and the increase of tuberculosis mortality rates on the

¹⁵ Lebrón Rivera, Rafael. *!Detengamos el jinete de la muerte! La plaga blanca ante un pueblo enfermo. La lucha por controlar la tuberculosis en Puerto Rico, 1900-1940*. University of Puerto Rico, 1990.

island. Spatial analysis facilitated the study of the association between the geographical landscape as transformed by the sugar industry and the hot spots for tuberculosis mortality. It explores the relationships between occupation, population, and tuberculosis statistics. American discourse is also analyzed to show how this discourse encouraged the dissociation of the sugar industry from the living conditions that facilitated the spread of tuberculosis. Finally, it presents some of the arguments made against the prevailing discourse and the criticisms against the sugar industry that increased during the decade of the 1930s. This chapter also presents tuberculosis statistics corresponding to the decades between 1910 and 1940.

Chapter 3 addresses the possible occupational aspects to the spread of tuberculosis in order to ascertain who the victims of the disease were. While Chapter 2 illustrates the relationship between the landscape as transformed by sugar cane cultivation and high mortality rates, this chapter seeks to examine these relationships in more detail, using the city of Mayagüez as a case study. The city of Mayagüez was chosen not only because it suffered some of the highest mortality rates between 1920 and 1940, but because it featured sugar plantations, tobacco factories, and needlework factories. Therefore, it will provide a cross section of the people who died of tuberculosis. Who were they? What were their occupations? The chapter demonstrates where the majority of the ill lived and ascertains whether the *barrios* where affected people lived depended mostly on the sugar cane for employment. Cultural perceptions and social constructs of the disease and the *tuberculosos* will also feature prominently in this chapter. It also examines the efforts of anti-tuberculosis campaigns in the city and the obstacles that municipal officials faced in trying to improve medical services and infrastructure.

The study utilized archival materials from the Municipal Archives of Ponce and Mayagüez, several U.S. Censuses, and the National Digital Archive. These materials included

letters, reports, newspaper articles, surveys, and medical journals. Some of the occupational and tuberculosis mortality data was extracted from the examination of over 1500 death certificates. The use of death certificates presented several challenges. In some of the years examined, occupational data was missing. Also, cause of death data recorded on death certificates depended greatly on the persons recording it. While in many instances the cause of death was clear due to previous history of the patient mentioned in the comments section of the certificates, other times the doctor signing the certificate inferred the cause of death from the symptoms that the deceased presented at the time of death. In addition, no other source that included occupation of the deceased could be found. In spite of these problems inherent to the use of death certificates, the officials working in the Department of Hygiene and the Tuberculosis Program during the period included in this study used these same data to report tuberculosis rates and make decisions regarding public health campaigns.

CHAPTER 1

MEDICAL DISCOURSE, TUBERCULOSIS, AND THE PERCEIVED OBSTACLES TO PUBLIC HEALTH

American authority and influence in Puerto Rico resulted in wide ranging economic, political, social, and cultural changes that aimed to modernize the island. The project to reinvent Puerto Ricans into American citizens required the island's embrace of U.S. investment, but also the introduction of education and health services that could transform the Puerto Rican peasants into productive laborers. The changes in the economy transformed the landscape and forced laborers to seek work primarily in the coastal sugar growing regions. The lack of other opportunities and low wages perpetuated detrimental living conditions that proved suitable for the spread of tuberculosis. Authorities focused on hookworm and malaria campaigns, presenting American medicine as benevolent while dissociating the high rates of tuberculosis from the American economic project. In this manner, the United States' engine of progress perpetuated the conditions that justified its intervention. As the battle against tuberculosis proved slow, Puerto Rican physicians' discourse also evolved. Even though physicians sometimes argued against American explanations for the persistence of the disease, most of them dissociated tuberculosis (TB) mortality from the sugar enterprises, constructing the poor as ignorant peasants that ignored the benefits of Western medicine while also fashioning folk healers as public health enemies.

Early twentieth century physicians and scientists understood TB as an infectious disease caused by the bacillus that Robert Koch had identified in 1882. The disease spreads through

direct and continuous contact with infected individuals and the pulmonary type continues to be the better known manifestation although the bacillus can infect other organs.¹⁶ As a result of the recognized infectious nature of the disease after the 1880s, the earlier romanticized ideas of the disease so prevalent during the early nineteenth century gave way to the association of TB with filthiness and the unhygienic customs of the lower classes. Racial and eugenic theories of the early twentieth century combined with bacteriology to explain the prevalence of TB among the poor and working classes. Physicians understood the continuous exposure to the bacillus in crowded residences that housed the infected and their families, the lack of fresh air, and lack of hygiene as primary causes of the disease. However, they often associated these conditions not with economic exploitation, but with the personal habits of lower class individuals and with racial vulnerability.

Physician discourse also had roots in elites' imagining of the peasant class during the nineteenth century. The attitude of Puerto Rican elites toward the *jíbaro* (an initially derogatory name for peasants meaning hick or backwards) had gone through some transformations during that period. Francisco Scarano has asserted that ethnic construction and new self-identification tropes allowed creoles to face the challenging changes during the pivotal revolutionary years.¹⁷ He traced how elites, particularly writers, passed "themselves as peasants", adopting the image of the *jíbaro* for their own ends. In this case, a mythologized peasant became a convenient and effective way to express resistance. In the first three decades of the nineteenth century, then, creoles took on the identity of the peasant and constructed him as the prime example of everything Puerto Rican. This changed during the last decade of the nineteenth century, when creoles, influenced by positivist views, started to envision the regeneration of the peasant and

¹⁶ Dubos, René and Dubos, Jean. *The White Plague: Tuberculosis, Man and Society*. (New Brunswick: Rutgers University Press), Third Printing, 1996, pp. 3.

¹⁷ Scarano, Francisco. "Jíbaro Masquerade", *American Historical Review*, December 1996, pp. 1400.

lower classes as a project of education. In seeking autonomy from Spain, liberals also realized the need to gain the support of the peasant male.¹⁸ Creoles presented the male peasant as part of a politically active male citizenry even though they also considered them a “future project.”

In redefining the meanings of citizenship and constructing new roles for male peasants, creole elites also created a common enemy against which lower class and elite males could rally: the prostitute. The campaign against prostitutes in the city of Ponce served as a public health campaign against the increasing threat of venereal disease. On the other hand, it also aimed at promoting *decency* and *virtue* as “markers of men’s formal citizenship rights and increasingly delineated domesticity as women’s sole sphere of respectable activities.”¹⁹ Therefore, the one large scale public health campaign that occurred in Puerto Rico during the few years preceding the invasion of American troops aimed, not at empowering physicians, but at defining women’s role in society in order to enhance male citizenship. It did not aim to regenerate the peasant class either. It instead served a political end through which males from different classes could find common ground. It constituted an anti-colonial endeavor.

Under American rule, public health campaigns took quite a different form. During the first four decades of American oversight, many members of the elite sought to regenerate the lower classes in order to strengthen American hegemony and forward the colonial project. In some cases, the elite again appropriated the *jíbaro*, imagining him as primarily white and separating him from the poor and working classes.²⁰ Therefore, whether the elite collaborated with or opposed the American imperial project, it sought to defend its status while it also aimed

¹⁸ Cubano-Iguina, A. “Political Culture and Male-Mass Party Formation in Late Nineteenth Century Puerto Rico”, *The Hispanic American Historical Review*, Vol. 78, No. 4 (November 1998), pp. 634.

¹⁹ Findley, E.J. “Decency and Democracy: The Politics of Prostitution in Ponce, Puerto Rico, 1890-1900”, *Feminist Studies*, Vol. 23, No. 3 (Autumn 1997), pp. 473.

²⁰ Guerra, Lillian. “The Promise and Disillusion of Americanization: Surveying the Socio-Economic Terrain of Early Twentieth Century Puerto Rico”. *Centro*, Vol. XI, No. 1, pp. 23.

to keep the working classes in line. In this process physicians, also members of the elite, created new constructs for the poor that also enhanced their legitimacy as medical professionals.

Prostitution and venereal diseases remained a concern under American authority. As Briggs has shown, males of all classes eventually joined forces in defending the Puerto Rican woman against the American-led campaign against prostitution.²¹ However, the efforts of public health campaigns also focused on the regeneration of the peasant in order to transform him into a productive worker, primarily in the sugar industry. The campaigns entailed both the cooperation and the transformation of the Puerto Rican medical class. These campaigns and some of their failures necessitated a discourse in which physicians represented the laboring classes as ignorant just as American officials had. The cooperation between Puerto Rican physicians and American officials, however, did not occur automatically.

The initial encounters between U.S. Army medical officials and Puerto Rican physicians resulted in a battle for legitimacy. American authorities summarily assessed the health status of the island during the short period of military occupation between 1898 and 1900. A general order dated June 29, 1899 gave the military governor the task to appoint a new Board of Health composed of four American military and two Puerto Rican physicians.²² General Order, No. 102, dated July 18, 1899, delineated the Board's responsibilities and gave it oversight over physicians' licensing procedures. In this manner, physicians not only lost control over licensing, but also lost control "over the ability to standardize the knowledge base of medicine and control

²¹ Briggs, Laura. *Reproducing Empire: Race, Sex, Science, and U.S. Imperialism in Puerto Rico*. (Berkeley: University of California Press), 2002.

²² Davis, Geo. W. Brig. General. *Report of the Military Government of Porto Rico from Oct. 18, 1898 to April 30, 1900*. (Washington DC: US Army), 1900, pp. 149.

access to the profession.”²³ They found their status undermined by an American colonial regime that considered them unprofessional and lacking in preparation.

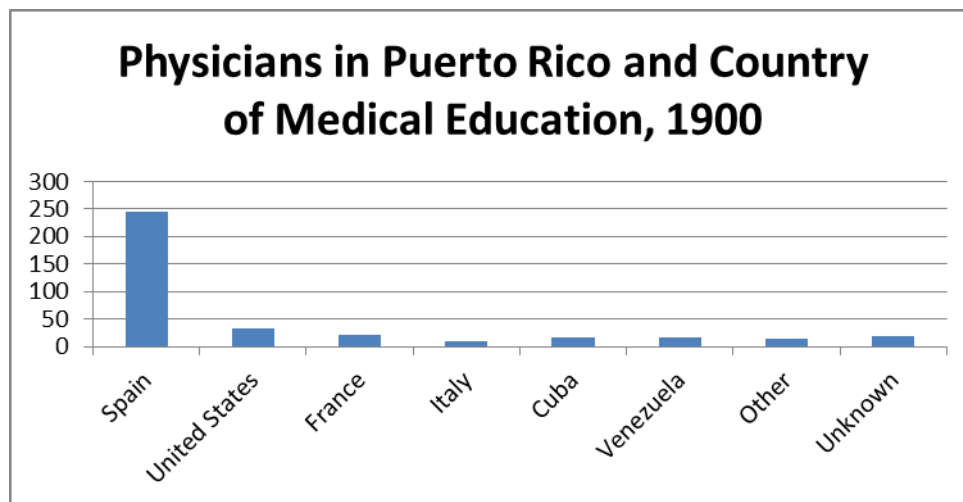


Figure 1: Physicians in Puerto Rico and Country of Medical Education, 1900. Data calculated from statistics provided in *The Report of Military Government of Porto Rico from October 18, 1898 to April 30, 1900* by Brigadier General Geo. W. Davis.

American army doctors and other observers partly based their negative opinion of Puerto Rican physicians on the poor state of health of the population. They also found that the number of physicians on the island could not adequately serve the population’s needs. Figure I shows the number of physicians registered at the time that the Americans authorities established the military government. A total of 373 trained physicians, not including other practitioners, served an island with almost a million inhabitants. Most of the registered physicians, approximately 65%, had studied medicine in Spain and only 8.6% had studied in the United States. Convinced of the superiority of American medical education and concerned about the tendency of island physicians to interfere in politics, American authorities concluded that only direct intervention could ameliorate Puerto Rico’s health problems. The intervention also served to forward the colonial project.

²³ Trujillo-Pagán, N. “The Politics of Professionalization: Puerto Rican Physicians during the Transition from Spanish to US Colonialism”. *Health and Medicine in the Circum-Caribbean, 1800-1969*, De Barros, Juanita, Ed. (Florence KY: Routledge), 2009, pp.151.

Following the establishment of a civilian government in Puerto Rico by the Foraker Act of 1900 elite physicians reacted by founding the *Asociación Médica de Puerto Rico* (AMPR) in 1902. The organization's goals included "the defense of the medical class' material interests, the establishment of ethics, moral norms and practices of physicians, and to contribute to the understanding of scientific and moral problems."²⁴ While physicians initially resisted the impositions of the new government, their lack of success led them to conclude that they would have to work within the apparatus of the colonial regime in order to advance the interests of the medical class. Consequently, in 1910, the AMPR membership voted in favor of incorporation into the American Medical Association. As Trujillo-Pagán has asserted elsewhere, Puerto Rican physicians changed strategies and, instead of mounting continued opposition, joined American counterparts in the campaign to regenerate the Puerto Rican peasant.²⁵ This shift entailed an adjustment in medical ideology and a lengthy quest for legitimacy.

The organization's incorporation into the AMA also meant that in protecting the medical class' material interests Puerto Rican physicians would have to adopt the methodology of their American cohorts. In a sense, the ideology of Puerto Rican physicians slowly became more *Americanized*. The political wars that the AMPR chose to conduct after incorporation largely reflected this change of attitude. Members of the organization that had avoided the new institutions now sought appointments into government entities even though their political power remained limited. In doing so, elite physicians slowly weaved themselves into several public health campaigns led by American organizations or government institutions.

The Anemia Commission spearheaded by Ashford also benefited from the contributions of Puerto Rican physicians such as Gutiérrez Igaravídes and Janer Soler. Elite physicians agreed

²⁴Quevedo Báez, pp. 14.

²⁵ Trujillo-Pagán, pp. 158.

with American authorities that the improvement of the island's economic situation and the regeneration of the lower classes would, in the end, also improve their financial and social status. The alleged improvement of the economic situation would hinge on the new sugar export economy and the regeneration of the poor also entailed the eradication of hookworm. The Anemia Commission eventually led to the establishment of Institute of Tropical Medicine. In 1926, this institute became the School of Tropical Medicine in cooperation with Columbia University.²⁶ Several members of the AMPR eventually became faculty at the school and also made considerable contributions as researchers and faculty. Also, the Rockefeller Foundation provided funds for Puerto Ricans students to obtain their medical degrees at American universities, which also aided in Puerto Rican physicians' quest for legitimacy.

The acceptance of the American colonial program did not necessarily entail the acceptance of all racial and eugenic views that many American scientists and physicians held. In seeking explanations for the slow progress in certain areas of public health while also maintaining a sense of physical and intellectual superiority over lower class Puerto Ricans, physicians felt compelled to explain the perceived differences between "northerners" and people living in the tropics. Since Americans had developed certain preconceptions about the tropics from their experiences during the Spanish-American War and subsequent experiences in Cuba, Puerto Rico, and Panama, Puerto Rican physicians felt compelled to "clarify" these misconceptions.

Dr. P.N. Ortiz, the Commissioner of Health in 1927, wrote that people visiting the island saw "amidst all this beauty, a queer and inferior people, lazy and indolent, and powerless to

²⁶ Amador, pp. 164.

organize a civilized community.”²⁷ He recognized that people would take away a negative impression of Puerto Ricans and he set out to explain the conditions that led to this difference. Instead of tackling the problem with straightforward ideas of race, Dr. Ortiz chose to theorize that northerners’ apparent superiority stemmed from the pressures of a harsher climate. Change in seasons forced northern people to protect themselves by building strong homes and wearing protective clothing. Therefore, in his view, environmental conditions had forced northerners to work hard and develop efficient problem-solving skills. They had experienced a constant battle for survival.

People living in the tropics, however, did not have to respond to such challenges. The mild climate made it possible for them to wear light clothes or shoes, and to live in shacks.²⁸ In contrast to northerners, people in the tropics could survive with little effort and had fewer problems to solve. Dr. Ortiz, therefore, explains the laziness inherent in the lower class and his susceptibility to disease through an environmental theory for the apparent degeneration of poor Puerto Ricans. This degeneration resulted from the climate and not from inherited characteristics, which meant that the Puerto Rican peasant could be regenerated through education. Of course, Dr. Ortiz’ explanations of the degeneration of the lower classes, and the challenges in regenerating them, failed to note the ways in which the sugar economy prolonged the conditions that prevented them to thrive.

Ortiz’ theories also aimed at explaining the apparent susceptibility to diseases like tuberculosis. He posited that Puerto Ricans, accustomed to live in a “sick community, accept this condition as normal not only of physical inferiority, but also mental.”²⁹ The detrimental living

²⁷ Ortiz, P.N. “The Tropics from the Public Health Perspective: Legends and Facts”, *Porto Rico Health Review*, Vol. II, No. 12, (June 1927), pp. 3.

²⁸ *Ibid.*, pp. 5.

²⁹ *Ibid.*, pp. 5-6.

conditions that caused diseases like TB could be explained since the peasant suffered from a mental deficiency that resulted in his acceptance of this sick environment. This mental deficiency, in Dr. Ortiz' view, resulted from the effects of hookworm since hookworm rates had climbed up to 90%. His assertion in 1927 that hookworm still remained such a huge problem contradicts the clamoring celebrations of Ashford's hookworm campaign and like others at the time he conflated the incidence of diseases like TB with hookworm. This conflation of the two diseases resulted from the understanding that hookworm and other diseases that weakened the body resulted in increased vulnerability to TB since it could not fight off the disease as well as a healthy individual.

Ortiz' theory also implies an underlying recognition that the assumed inferior mental capacity of the lower class and the peasants needed explanation. The mild climate of the tropics made these people lazy and willing to live in substandard conditions while any perceived mental deficiencies resulted from parasitic infection. While acknowledging poverty, the supposed inferiority of the peasant resulted from environmental elements inherent to the island, not to the new economy or genetic predestination. In addition, the tendency of the Puerto Rican to become accustomed to this "sick environment" explained the difficulties in regenerating him. However, public health measures and education could elevate this regenerated peasant, in accordance to Lamarckian theories popular at the time.

Puerto Rican physicians usually steered away from racial explanations of disease. This avoidance of racial issues correlated with race-less discourse in other facets of Puerto Rican politics. According to Ileana Rodríguez Silva, labor unions attempted to avoid discussions of race and formulated arguments that aimed at uniting workers under a banner of class, not race.³⁰

³⁰ Rodríguez Silva, Ileana M. *Silencing Race: Disentangling Blackness, Colonialism, and National Identities in Puerto Rico*. (New York: Pallgrave Macmillan), 2012, pp. 131.

Politicians carefully refuted all accusations of racism while others accused rivals of racism to forward their agenda. However, given the racial discourse that Americans often used to justify various interventions, physicians sometimes had to engage racial discourse even though their attempts to counter racial theories sometimes resulted in somewhat contradictory rationalizations.

Disease statistics in the United States had led many physicians to theorize that African Americans suffered from greater susceptibility to diseases like tuberculosis. Samuel K. Roberts has shown that officials used race both to justify intervention and to explain the greater incidence and mortality due to tuberculosis.³¹ In order to address the question regarding Puerto Rican blacks and also address high TB mortality rates on the island, Dr. J. Rodríguez Pastor, Chief of the Bureau of Social Medicine in Puerto Rico, took on the task of examining TB statistics. He sought to determine if Puerto Rican blacks followed the same disease patterns as African Americans in the U.S. while concurrently seeking for an explanation for the persistence of the disease.

Dr. Rodríguez Pastor conducted a statistical comparison of the incidence and mortality of tuberculosis in African Americans and the Puerto Rican “colored race.”³² He addressed American negative views of miscegenation and, while he acknowledged that a degree of miscegenation had occurred on the island, he posited that “longer contact and freer mixing” with white blood had provided colored people with greater immunity to the disease.³³ Rodríguez Pastor, then, forwarded the idea that increased “whiteness” of the Puerto Rican blacks, as compared to African Americans, gave Puerto Rican blacks an advantage against biological

³¹ Roberts, Samuel Kelton. “Infectious Fear: Politics, Disease, and the Health Effects of Segregation”. (Chapel Hill: The University of North Carolina Press), 2009.

³² Rodríguez Pastor, J. “Tuberculosis in the Colored Race in Puerto Rico”, *Porto Rico Health Review*, Vol.III, No. 10 (April 1928), pp. 416-421.

³³ *Ibid.*, pp. 417.

threat, thereby highlighting the physical superiority of the white race. He also considered the possibility that Puerto Rican blacks might have even greater immunity than whites since “the white race always lives at a disadvantage in the tropics”, a popular theory among physicians and scientists of the period that he deemed appropriate to address in his study.

This explanation represented a contradiction of sorts as it placed Puerto Rican blacks in the framework of a tropical, more savage environment while concurrently arguing a biological superiority of the white race. Nevertheless, the results of the study did not corroborate his initial hypothesis and the assumed higher incidence of miscegenation between blacks with whites on the island did not provide Puerto Rican blacks with greater immunity to disease.³⁴ The increased miscegenation in Puerto Rico as opposed to segregation in the U.S. had not provided Puerto Rican blacks with an advantage. Tuberculosis caused more deaths and greater disease incidence in Puerto Rican blacks than in white Puerto Ricans, the same trend observed in the United States. Susceptibility to diseases like tuberculosis, of course, had little to do with racial inferiority and Dr. Rodríguez Pastor also failed to make any connections with the sugar economy.

The discourses of physicians like Ortiz and Rodríguez Pastor attempted to do more than to explain away perceived Puerto Rican peasant deficiencies. Kelvin Santiago-Valles has shown how the colonial project disseminated discourses that presented the “native majorities as needy children and dependent females.”³⁵ By fashioning the natives as childlike and feminized, the regime could justify regulation and intervention. The privileged Creoles, including physicians, found themselves in a dilemma between resistance and cooperation. Most made concerted efforts to distinguish themselves from this dirty and unruly “native majority.”³⁶ Physicians that adopted some of the same constructs to describe and create this image of the poorer masses not only

³⁴ *Ibid.*, pp. 420.

³⁵ Santiago-Valles, pp. 52.

³⁶ *Ibid.*, pp. 154.

justified public health intervention. Through the adoption of such notions, they also identified with the colonizer's superiority, distancing themselves from the peasants and lower class Puerto Ricans.

Puerto Rican physicians, then, aligned themselves with American campaigns regardless of their personal views regarding race, designing interventions that highlighted differences based on class. However, in spite of the establishment of the Bureau of Social Medicine under the direction of Dr. Rodríguez Pastor in 1925 and attempts to "regenerate" the peasant and lower classes, TB continued to ravish the population. As the case of Mayagüez will illustrate in Chapter 3, dispensaries, where they were available, mainly served as centers for education and diagnosis of TB. Tuberculosis patients usually got referred to other institutions, such as the tuberculosis sanatoriums in a few cities, including San Juan, Rio Piedras, Ponce, Cayey, and, eventually, in Mayagüez. Educational films also warned about prevention and keeping hygienic conditions in the home, especially if a tuberculosis patient lived in the property.³⁷ The actual effectiveness of such campaigns cannot be ascertained, although it is difficult to imagine that poor people who lived at some distance from the theaters would have watched them. Therefore, it would be logical to assume that the audience most likely consisted of city dwellers and more affluent members of society.

The campaign also included education and medical surveillance of children attending school. The dispensaries also distributed fliers and posters that called to action and explained preventative measures. Most of these, however, did not include illustrations that illiterate laborers could easily understand. Figure 2 shows examples of these posters and signs. The messages include advice to keep windows open and allow fresh air into the home, advice to

³⁷ Simonet, Jacobo. "La Lucha Anti-Tuberculosa en Puerto Rico", *Boletín de la Asociación Médica de Puerto Rico*. Vol. XXXI, No. 7, pp. 256.

avoid spitting in public places, and to avoid sharing drinking cups. The degree to which these posters and fliers reached laborers is difficult to determine as is the degree to which people actually could read and understand them. Table 1 shows that, even though literacy had increased during the first three decades of American oversight, 41% of the population remained illiterate by 1930.³⁸ Certainly, campaigns conducted between 1907 (the year when the League began operations on the island) and the 1920s that depended on published materials to educate people about the dangers of TB would have been particularly inefficient in a region where over half the population did not read. In spite of the improvement in literacy rates, an *El Mundo* editorial in 1933 described the lower classes as an “army of illiterates.”³⁹ It also presented evidence that, in spite of the purported construction of schools under American sovereignty, many towns still lacked sufficient classrooms, teachers, and supplies. Therefore, the effectiveness of a campaign that relied on reading material may not have provided the expected results.

The persistent of disease and high TB mortality rates, then, needed to be explained and the lower classes presented easy targets to blame for the failures of the insular health system. Some physicians were aware of the literacy problem. Dr. Rodríguez Pastor, for example, considered the uneducated peasant a problem. He reiterated that “educational campaigns lost their effectiveness when it is confronted with the problem of an illiterate father with tuberculosis surrounded by five or six children.”⁴⁰ So, instead of making suggestions as to how to adjust the campaign in order to address the illiteracy of the commoner, he simply offered illiteracy as an explanation for the failure. He placed emphasis on illiteracy and lack of education instead of

³⁸ *Early Twentieth Century Schools in Puerto Rico*, see:

http://www.nps.gov/nr/feature/school/2012/Early_20th_Century_Schools.htm

³⁹ Alonso, Sandalio E. “El ejército de los analfabetos”, *El Mundo*, June 12, 1933.

⁴⁰ Rodríguez Pastor, J. “Lo que se ha hecho en Puerto Rico para combatir la tuberculosis”, *El Mundo*, May 23, 1933.



Figure 2: Examples of posters utilized by the Anti-Tuberculosis Campaign in Puerto Rico.

Table 1: Percent Illiteracy in Puerto Rico (U.S. Census 1910, 1920, 1930).

Year	% Illiteracy, Individuals > 10 yrs. old
1899	73
1910	66.5
1920	55
1930	41

placing it on the system that forced illiterate peasants to live in crowded conditions. He went as far as suggesting that complete isolation of active cases of tuberculosis had to become a priority even though the lack of medical facilities made this an unlikely alternative. In later years, however, Rodríguez Pastor did acknowledge that poverty and the conditions it created

presented difficulties in battling the spread of the disease.⁴¹ Still, he fell short of pointing to the sugar economy as the main catalyst for the perpetuation of detrimental living conditions.

Other physicians avoided the issue of literacy completely. Dr. Fernós Isern, a prominent Puerto Rican physician, sought to explain TB mortality rates by asserting that the “jíbaro – meaning bashful, backward, hick – have lived for generations widely scattered” and could not fight off diseases like tuberculosis.⁴² Since peasants lacked “the immunity which city life offers”, the previous way of life of the peasant was responsible for his susceptibility to TB. Fernós Isern fell short of blaming the living conditions that resulted from the sugar economy. In his view, the peasant was ill-prepared because he had never lived in those conditions before. He thought that living in crowded conditions could result in immunity and the peasant’s demise resulted from his lack of preparation in dealing with the new living conditions. His explanations failed to address the actual conditions or the reasons why people lived in those slums. It also failed to explain why so many people that had lived in the slums for some years also became victims of the disease.

Physicians also noted the higher mortality rates among women and attempted to explain them. As later shown for the case of Mayagüez, TB mortality rates in women remained higher throughout the island until 1949. Physicians, both American and Puerto Rican, often explained this difference by highlighting what they perceived to be a greater susceptibility to the disease in women due to more severe malnutrition than males, the increased demands of house and family management, and the tendency of women to become the caretakers of the ill. Cultural notions of gender roles in Puerto Rican society may have added to this belief since society expected women to remain in the home and yield to men’s wishes and needs. In the 1930s, the role of women in society had also become highly contested due to debates over women’s suffrage and physicians

⁴¹ Dr. Rodríguez Pastor wrote a summary of the TB campaign in November 21, 1939 that was published both in the *Porto Rico Journal of Public Health* and *El Mundo* newspaper.

⁴² Fernós Isern, *Porto Rico Health Review*, Vol. I, No. 4, pp.3.

were not isolated from such debates. Some people viewed women as incapable of making political decisions while others viewed women's domesticity as a positive influence. For example, in an editorial that favored women's suffrage, the author reiterated that "a good woman is the woman of the home, not of the street."⁴³ This "home-bound" woman's vote could be valuable because politics had not yet "domesticated" her and she would, above all, make decisions in accordance with what could benefit her home. In spite of this purported beneficial point of view that home life provided, physicians considered women's home life as a cause for greater susceptibility to disease. The Puerto Rican family followed patriarchal hierarchy and division of labor, where the male provider usually consumed the best of the food available.

Lower class women, however, did not limit their activities to the care of home and family. Their precarious economic condition forced many of them to seek some form of income, adding to their duties. These jobs could include needle work, whether contracted to be done in the home or in a factory setting. They also worked by providing laundry services, rolling cigars, and so on. Many of these jobs could potentially expose them to TB. Yet, as the case of Mayagüez will illustrate, women's occupations outside home duties were many times ignored. Dr. Rodríguez Pastor, however, addressed this issue when he described the situation of three families affected by TB.⁴⁴ A widow and three of her nine children suffered from TB and their income was so low that the sick mother worked sewing and washing to help support her children. In another family, the father's disability forced the consumptive mother to work as a washer woman. A third family depended on the children's grandmother for their care because the mother had been admitted to the Insular Sanatorium and the father had died. These examples show the tremendous stress under which many women of the laboring classes had to live and die.

⁴³ Unamuno, Miguel. "Acerca del voto de las mujeres", *El Mundo*, November 18, 1933.

⁴⁴ Rodríguez Pastor, J. "Organizing the Work against Tuberculosis", *Porto Rico Health Review*, Vol. I, No. 4, October 1925, pp. 21.

Even though Rodríguez Pastor, like other physicians, acknowledged the difficulties that women faced, he did not always consider women as unwitting victims of their role in society. In another article, he asserted that “ignorance and carelessness in bringing up children usually makes them victims of the White Plague.”⁴⁵ With this statement, the physician questioned women’s ability to properly care for their children and blamed their ignorance for the incidence of TB in their children. He added that the “habit of kissing which is so common in the Latin American countries when women greet and say good-bye to each other” compounded the problem. Here, he identified women as the individuals who adhered to Latin American cultural practices that hindered public health efforts. Whether he meant it or not, Rodríguez Pastor juxtaposed women’s tendency to adhere to cultural notions to male rationality. Rational men proposed the solutions and sentimental women acted in ways that nullified them. In this sense, Latin American culture and women’s persistence in holding on to it presented an obstacle to public health.

Dr. J.A. Franco, a physician in Rio Piedras, understood the role of women in the TB epidemic in a different way. He explained that the battle against the disease had to include the intervention of women’s love and care. Women had steered away from their high calling as a result of a feminist movement that sought to “separate them from their noble mission of mother, daughter, and wife.”⁴⁶ The feminist cause, then, contributed to the epidemic because it resulted in women’s dereliction of their duty. The solution lied in women’s return to their “spirit of sacrifice.” In order to defeat TB, women had to place their liberation on hold so that they could help defend the family and society from its greatest foe. So, while physicians many times

⁴⁵ Rodríguez Pastor, J. “The Educational Campaign Launched by the Bureau of Tuberculosis of the Department of Health”, *Porto Rico Health Review*, Vol. I, No. 5, November 1925, pp. 21.

⁴⁶ Franco, J.A. “La tuberculosis como problema social en Puerto Rico.” *Boletín de la Asociación Médica de Puerto Rico*, April 1937, No. 4, pp. 193.

acknowledged the economic situations that forced women to find work outside the home, they also viewed their claims to equality and their wandering away from their domestic duties as obstacles to public health. At the same time, they continued to ignore the inequality in pay and the working conditions that continued to spread the disease and to make women more susceptible to it.

The ignorance and cultural practices of the laboring classes could become obstacles in other ways. In spite of public health campaigns, many Puerto Ricans continued to seek the services of folk healers (*curanderos*) and also consumed patented concoctions that manufacturers claimed could cure all sorts of ailments, including tuberculosis. Figure 3 shows one such advertisement for Scott's Emulsion. Made from cod oil, the advertisement guaranteed that it helped combat tuberculosis, other respiratory ailments, weakness, anemia, and even aided in tooth formation. Ironically, this emulsion was not a *curandero's* mix of oil and herbs, but a product distributed by a company in New York. Advertisements such as this appeared in newspapers and magazines throughout the island. These advertisements irritated physicians, not only because they encouraged people to self-medicate with questionable products in lieu of visiting a physician, but also because they thought that these medications infringed on physicians prerogative to write prescriptions.

Physicians considered *curanderos* and these over-the-counter medications as a threat to the profession. Dr. J.H. Font, president of the AMPR, expressed as much in a speech during a meeting of the organization.⁴⁷ He argued not only that *curanderos* and self-medication constituted threats to the profession, but that all physicians had a medico-social duty to "battle in the trenches...against the vicious habits and the traditional custom of a considerable part of the

⁴⁷ Font, J.H. "Discurso pronunciado por el Presidente de la AMPR durante la asamblea anual de 1936", *Boletín de la Asociación Médica de P.R.*, January 1937, No. 1.

population to visit the curandero.” This attitude towards folk healers differed from the sometimes cooperative relationship between physicians and curanderos that had existed under Spanish sovereignty. This is not to say that physicians did not consider folk healers a nuisance during Spain’s governance over the island. Puerto Rico, like in Spain, had developed laws and rules for licensing physicians that also delineated punishments for those who practiced illegally.⁴⁸ However, after 1898, the professionalization of medicine and the physicians’ quest for legitimacy galvanized and augmented the boundaries between legal and illegal practice.



Figure 3: Advertisement for Scott Emulsion, Medication for Combatting Tuberculosis⁴⁹

⁴⁸ Forestier-Montalvo, Kayla. *Ponce a la vanguardia en los servicios de salud*, (San Juan: Universidad de Puerto Rico), 1989, pp. 168.

⁴⁹ Advertisement Scott Emulsion, *El Mundo*, December 10, 1933.

The occasional articles in the American press about Puerto Rico's tendency for superstition and the flourishing of "fakers" on the island did not help matters. One 1926 article asserted that charlatans wrote prescriptions, especially in the mountainous regions of the island and stated that scarcity of physicians made the problem worse.⁵⁰ The article added that even wealthy farmers "who have not enjoyed the benefits of modern education often fall victim" and that "Porto Rico, like other places, has one born every minute." Articles such as this one provided a picture of Puerto Rico that Puerto Rican physicians and politicians alike viewed as detrimental and counterproductive. Moreover, it placed superstitions and non-rational behavior across those class boundaries that physicians had so carefully constructed. Those boundaries did not seem as clear-cut if uneducated Puerto Ricans could become wealthy, but did not leave superstition behind and did not embrace rationality. The presence of American physicians and institutions on the island also resulted in an imperative for the AMPR to demonstrate a commitment to modernization. In addition to the loss of possible income for licensed physicians, the lower classes', and sometimes even the elites', insistence on consulting folk healers undermined efforts to present the island as an example of progress and modernity.

The appeal that certain curanderos enjoyed rested in the religious syncretism that Catholicism in the island had allowed. Curanderos and healers could have different backgrounds and religious inclinations. On the other hand, some movements promoted a scientific, enlightened approach. The Spiritist movement, for example, had lost steam during the early twentieth century and healers initially considered charlatans promised to invigorate the movement.⁵¹ The popularity of La Samaritana, a female healer that allegedly cured ailments through the curative properties of the magnetized waters near barrio Hato, caused great debate,

⁵⁰ "Fakers Flourish in Porto Rico: Island is Rich Hunting Ground for Medical Charlatans, False Mediums, and Witches", *The New York Times*, August 29, 1926.

⁵¹ Román, pp. 108.

not only among Spiritists, but also among other Puerto Rican leaders that saw the belief in such superstitions as proof that the “goals of civilizing and modernizing the island were far from being realized.”⁵² Román noted her critics’ laments regarding the superstitious nature of Puerto Ricans that accounted for her popularity. No doubt, the long lines of afflicted persons that gathered in San Lorenzo to see La Samaritana and the people that bought the mineral water in Barrio Salud in Mayagüez included a good number of *tuberculosos*. Clearly, the public health campaigns had failed to sway the peasants away from alternative healing practices. In the next two decades, physicians continued to lament the situation.

The campaign against the curandero faced many challenges. Even though Dr. Garrido Morales had been more successful than previous directors of the Commission of Health in acquiring funding to expand the facilities that cared for TB patients and increase the number of nurses and physicians, these measures still fell short of the need. By the 1940s, 752 physicians, 61 of whom were foreigners, practiced on the island.⁵³ The Department of Health, public and municipal hospitals, and other clinics had vacancies that they could not hope to fill in the near future, in spite of the alleged thirty four physicians that would graduate from American universities that in 1948. Therefore, traditional customs and superstitions alone did not drive Puerto Ricans to the curanderos. In reality, many of them had nowhere else to go. Even though TB mortality rates had begun to decrease by the end of the 1930s, they still remained very high and outbreaks of dysentery and measles occurred with some frequency.⁵⁴ Yet, the campaign against the curandero only deepened.

⁵² Ibid., pp. 119.

⁵³ “Fases de un problema”, *El Mundo*, March 7, 1948.

⁵⁴ “Suben casos de difteria en la Isla”, *El Mundo*, January 18, 1948.

Romberg has discussed some of the AMPR's efforts to counter the people's superstitions and the influence of folk healers during the late 1940s and early 1950s.⁵⁵ Although the organization held valid concerns regarding public health, targeting folk healers and other practitioners served as a distraction from persistent problems and also served to legitimize Puerto Rican physicians in the eyes of American counterparts. The campaign against folk healers and other illegal practitioners also created an image of elite physicians as modernizing leaders while placing blame on the healers for encouraging and taking advantage of the lower classes' ignorance and naïveté. Other officials and the press agreed with physicians. As one editorial puts it, the curandero exemplified the worst possible ill as he "maintains people in ignorance and, without healing the body, fills the mind with superstitions and fantasies."⁵⁶ The campaigns used some of the same strategies that the anti-TB campaign used: films, radio, and conferences. Like the TB campaign, it assumed that people would have the interest, means, and time to attend some of these events.

The efforts on the part of many physicians to call attention to the ignorance of the lower classes, the lack of domesticity of lower class women, and people's tendency to consult folk healers not only aligned them with the expectations of American authorities, but also obscured the failures of Puerto Rico's health system. The few medical facilities that existed on the island could not handle the number of patients. To make matters worse, hospitals closed with some frequency, leaving municipalities without facilities that could care for the poor.⁵⁷ The condition of the insular health system, the insufficient number of nurses and physicians, and the slow construction of appropriate medical infrastructure, contributed to the failure of the campaign.

⁵⁵ Romberg, Raquel. *Witchcraft and Welfare: Spiritual Capital and the Business of Magic in Modern Puerto Rico*. (Austin: Texas University Press), 2003.

⁵⁶ "Persiste el curandero", *El Mundo*, February 6, 1948.

⁵⁷ "Diez o doce pueblos cerrarán este año sus hospitales." *El Mundo*, May 8, 1933.

American physicians like J.G. Townsend had focused on these deficiencies, highlighting the poor condition of existing hospitals and the lack of trained personnel.⁵⁸ Yet, in spite of the recommendations of American physicians the TB campaign continued to suffer from lack of funds. American officials continued to divert more resources to the battle against other diseases like malaria and hookworm. In addition, improvements to sanitation and sewer systems, hospitals, and other services, while still featured prominently in public health plans, did not occur promptly. The existence of convenient scapegoats could point in a direction away from on the authorities and the medical class.

In spite of medical discourse that identified particular obstacles to public health and maintained dissociation between tuberculosis and the sugar economy, some voices of dissent struck directly at the health system and the Commission of Health. Rosa González, a nurse that had trained under the auspices of Protestant missionaries, had served as Executive Secretary of the Association of Registered Nurses in Porto Rico when she had the opportunity to organize the School of Nursing in the Municipal Hospital of San Juan.⁵⁹ During her short tenure as the director of the school, González often brought deficiencies to the administration's attention and, ultimately, was forced to resign. In order to bring public attention to these deficiencies and to clear her name of accusations that described her as intransigent, he published correspondence between her and several people in administrative positions within the health system as well as reports that she had written during her tenure. Even though she did not address the TB hospitals in particular, she perceived the problems as symptomatic of the entire health system. González wrote of misuse of funds, lack of supplies, theft of supplies by employees, untrained personnel, and administrators who filled job vacancies with friends and family. The problems encountered

⁵⁸ Townsend, J.G. *Tuberculosis Survey of Puerto Rico, October 11, 1922 to April 18, 1923*. (Washington: Washington Printing Office), 1924, pp. 54.

⁵⁹ González, Rosa. *Los Hechos Desconocidos*. (San Juan: Imprenta Venezuela), 1929.

in the construction of the Mayagüez sanatorium later discussed in Chapter 3 gives some credence to such allegations.

Other insiders used the press to discuss perceived deficiencies and problems in the insular system. Dr. Ramón Berríos Berdecía, prominent physician and Director of the Rio Piedras Hospital, expressed his concerns in a newspaper article. He stated that the Commission of Health had practically duplicated the sanitary system of the U.S. without considering “our traditions and our race.”⁶⁰ His opinion correlated with criticism of the colonial project that viewed Americanization as either unpatriotic or, as in his case, counterproductive. Dr. Berríos believed that health problems in Puerto Rico necessitated solutions that considered the particularities of the island and its people. Health and sanitation programs that simply reproduced the American system could not yield the same positive results they had yielded in the mainland. So, while some physicians presented culture and traditions as obstacles to public health, others argued that public health intervention should consider cultural precepts. This point of view, however, appears to have been in the minority.

Critics not only aimed at unveiling deficiencies in the health system. In spite of the fact that medical discourse did not often publicly associate the health problems on the island with the sugar economy, some individuals did make this connection. Surprisingly, among these voices of dissent, Dr. Franco presented one of the most poignant. Whatever opinions he held about women, he also asserted that sugar conglomerates now owned a large portion of Puerto Rico’s arable lands and, as a result, dispossessed people had no choice but to seek work on the coast.⁶¹ Even though he did not directly address the issue of wages and even though the issue of landlessness has been disputed by some historians, he believed that the colonial economic system

⁶⁰ “Hablando con Dr. Ramón Berríos Berdecía”, *El Mundo*, May 11, 1933.

⁶¹ Franco, pp. 190.

had caused the problem. He added that the government had to share a good deal of the responsibility and that it should arrange for more financial help for poor patients. Therefore, Dr. Franco advocated some sort of welfare measure that would minimize the effects of colonial economy. Franco's exaltation to action occurred in 1937; so, his suggestions are not necessarily surprising in view of New Deal policies that the Roosevelt administration had put into effect in the U.S. and in view of the growing labor activities during the 1930s.

Sometimes American physicians agreed that the focus on sugar cane production had resulted in the poor health condition of laborers and their families. Dr. H.C. Sherman had observed that the sugar economy and the tariff advantages of Puerto Rican sugar in the U.S. market had resulted in providing laborers and their families with "only half-subsistence."⁶² He added that "there has occurred under our own flag and in our own generation such a demonstration of exploitation by absentee landlordism." His statements point to the contradictions between American discourse of development and benevolence and the actual results. Instead of improving workers' lives, the economic system encouraged by the U.S. and the type of enterprise chosen by entrepreneurs had sustained the conditions that American officials had so adamantly blamed on the Spanish regime in 1898. Clearly, some physicians recognized the imperial origins of some of the people's woes and the persistence of the conditions that made TB so prevalent.

American intervention on the island had, however, encouraged and legalized unionization and labor activism at the same time it oppressed the lower classes.⁶³ Labor struggles within the sugar industry often focused on working conditions and wages. Occasionally, however, they would address living conditions and disease. On the eve of yet another strike of sugar workers,

⁶² Herman, C.H. "A Glimpse of Social Economics in Puerto Rico", *Porto Rico Journal of Public Health and Tropical Medicine*, Vol. VI, No. 2, December 1930, pp. 223.

⁶³ Guerra, pp. 22-23.

Rafael Alonso Torres, President of the Free Federation of Workers, announced that it would be impossible to maintain a peaceful situation in the industry.⁶⁴ The reasons for this impasse included low wages, the use of violence against workers, and the persistence of sugar lords to use the law not to defend human rights, but to retain their dominance and perpetuate the laborers' pauper-like living conditions. In the union's view, then, the call for a strike also aimed at improving miserable conditions outside the sugar cane field.

Labor leaders understood the connection between the sugar industry, living conditions and disease. Luisa Capetillo, a renowned labor leader, made this connection while recounting her impressions during a tour around the island. In describing her train ride from her hometown in Isabela, she recalled a girl that she had observed working in the fields. She described her as a victim of "the greedy hydra of exploitation" while she also foresaw the girl's future as a "life of want and penury, ending perhaps a beggar, perhaps in the hospital, the only refuge for those who produce everything and enjoy nothing."⁶⁵ In Capetillo's view, disease was a likely outcome of the work in the fields. However, she linked disease, not to malnutrition due to hookworm, but to the exploitation of workers by corporate enterprises.

The association of disease with housing conditions also featured prominently in the discourse of the Free Workers Federation. The union favored the construction of laborer housing sectors "in view of the fact that in the principal industrial and manufacturing centers there exists a veritable congestion of residents, and the health of the people is constantly menaced with epidemics and illness thereby."⁶⁶ Workers understood that the changes in the labor system brought about by the change in sovereignty on the island had ultimately led to the perpetuation of

⁶⁴ "Los patronos del azúcar en la mayoría tratan de dominar por el terror, dice Alonso", *El Mundo*, January 3, 1934.

⁶⁵ Capetillo, Luisa. "Memories of the Free Federation (1911), in *Workers' Struggle in Puerto Rico: A Documentary History*, Quintero Rivera, Angel, Ed. (New York: Monthly Review Press), 1976, pp. 41.

⁶⁶ Free Workers Federation. "The Tyranny of the House of Delegates", in *Workers' Struggle*, pp. 55.

disease. Regardless of health campaigns, the health of the laboring class could not improve until living conditions improved and the sugar industry had not responded to workers' needs.

Socialists and nationalists agreed. Dr. Albizu Campos, the leader of the Nationalist Party, often spoke out against the sugar industry, which he viewed as just another arm of an imperial endeavor. He compared working in the sugar industry with slavery, designed to exploit the Puerto Rican worker.⁶⁷ He argued that the industry purposely kept workers in a situation where even the most basic needs remained out of reach. The misery, in which Puerto Rican families lived, not only affected their health, but also had forced women into the labor force with detrimental consequences for them and their families. Albizu Campo's discourse expressed sentiments that reflected his socialist tendencies and conservative views of the role of family in Puerto Rican society. Although he somewhat idealized the last few years under Spanish oversight and his desire for independence colored his views about U.S. intervention on the island, his condemnation of the sugar economy shows that some people did associate it with the many ills of the Puerto Rican people.

If physicians and officials did not outright link diseases such as tuberculosis with the sugar industry, some workers certainly made those connections and vocalized their concerns. The American-led government, however, viewed strikes and the worker movement through the lens of the First Red Scare after World War I and also considered strikes a disruption of American economic endeavors. The encounters between strikers and the police many times turned violent. The press coverage of these violent encounters may have turned the attention away from workers' demands and the connections between the industry and the prevalence of disease. The Partido Popular (Popular Party), which originally supported workers, eventually took a different stance, luring investors by highlighting cheap labor and a strategy of labor peace

⁶⁷ Albizu Campos, P. "La esclavitud azucarera", editorial in *El Mundo*, January 19, 1934.

with employers.⁶⁸ The attitude of American and Puerto Rican officials and the sugar industry towards workers' concerns helped placed a veil over the connections between the economic endeavors on the island and disease.

The economic system, the government that favored it and Puerto Rican physicians' reactions to their new situation diverted attention from the factors that created obstacles to the eradication of diseases like tuberculosis on the island. Puerto Rican physicians reacted to the change in regime, initially confronting it, but eventually embracing American medical ideology and education. In their efforts to legitimate the medical class in the eyes of American physicians and officials, Puerto Rican doctors identified themselves with the colonizer. In that process, they sometimes felt compelled to counter racial notions that Americans used to justify intervention and constructed the distinctions between the elites, themselves included, and the majority of the population in terms of class. Although they acknowledged the increasing mortality rates due to tuberculosis, Puerto Rican physicians aligned with ideology that conflated tuberculosis with hookworm. The anti-tuberculosis programs directed by Puerto Rican officials and doctors had to contend with the increased allocation of funds into other efforts that focused on hookworm and malaria. The educational campaigns may have also failed to reach the people that needed it most and the insular health system proved insufficient to fill the island's needs. To make matters worse, the sugar economy perpetuated the conditions that facilitated the spread of tuberculosis. As a result, high tuberculosis mortality rates persisted through the 1940s.

The failure to abate the tuberculosis epidemic enticed Puerto Rican physicians to find explanations for the failures and they often publicly denounced the ignorance of the laboring classes and their continued dependence on folk healers, who they viewed as enemies of public

⁶⁸ Nodin Valdes, Dionicio. *Organized Agriculture and the Labor Movement before the UFW*. (Austin: University of Texas Press), 2011, pp. 81.

health. Women and the rapid changes that catalyzed changes in the traditional patriarchal family also shared some of the responsibility for the failures of the public health campaigns. Moreover, the medical discourse that continued to place the persistence of disease usually followed the tactics of omission that American officials conducted, dissociating the miserable living conditions from the sugar economy. The promises of modernity and economic improvement that Americans had promised had not been fulfilled. Yet, many Puerto Rican physicians perhaps considered the denunciation of the American regime a threat to their quest for legitimacy, just like opposition had not served them well in the initial phases of American intervention. Cooperation seemed a better option and medical discourse constructed the Puerto Rican laboring class and the poor as both the cause and the casualties of the tuberculosis epidemic.

CHAPTER 2

THE SWEET ENTICEMENT OF PROGRESS: AMERICAN IMPERIALISM, PUBLIC HEALTH CAMPAIGNS AND TUBERCULOSIS

The Spanish American War of 1898 propelled the United States (U.S.) into a position of power and in a short time galvanized Americans' self-perception as guardians of the Western Hemisphere. The acquisition of territories from Spain also placed the U.S. in the awkward position of having to justify American imperialism, developing a discourse in which Americans became bearers of modernity and progress. The island of Puerto Rico had the potential to become a prime example of the type of positive transformation that American imperialism could bring to depressed, "less civilized" areas. Americans found on the island a public health infrastructure that did not meet their standards and a lower class that suffered from a variety of diseases. The high incidence of disease, while an obstacle to the process of proletarianizing the Puerto Rican peasant, could give Americans an opportunity to transform the public health infrastructure by importing into the new territory the latest advances in American medicine. In spite of public health campaigns, however, mortality rates remained high during the first four decades of American occupation. This was particularly true of mortality rates for intestinal diseases and tuberculosis. Officials and physicians offered explanations for the persistence of high tuberculosis mortality rates that obscured the relationship between TB and the American driven sugar economy while also maintaining a discourse of benevolence and civilization, and concurrently placing blame on the Puerto Rican "other" for the lack of improvement.

Previous historiography has emphasized the growth of American sugar investment during the first half of the twentieth century, labor conflicts and the struggles between small growers, and the effects of the global economy on sugar production on the island. On the other hand, the historiography of public health in Puerto Rico has focused on the campaigns that officials and the press highlighted: hookworm, malaria, the campaigns against prostitution, and the advocacy for birth control. Tuberculosis (TB) has not found a place in this historiography because authors assume a relationship between the disease and poverty, which makes the persistence of the disease easily explained. However, a study of TB and the relationship between the sugar operations and TB mortality rates have not been explored. What this study provides is not only a glimpse into racial and class relationships through the lens of TB and public health, but also an understanding of the ways in which officials and physicians distanced the effects of the sugar industry in creating the conditions that made TB proliferation possible and the discourse that explained the persistence of TB in terms of race and class.

The high incidence of disease, including dysentery, anemia, and tuberculosis (TB), and the perceived unsanitary conditions in the island provided a platform on which the U.S. could exert authority while also imparting modernity and benevolence. The promotion of a sugar economy in Puerto Rico also implied the utilization of a laboring class that could withstand the rigors of work in the fields and the mills. Therefore, public health objectives included, in addition to encouraging these new colonial subjects to buy into the colonial project through medical benevolence, the rehabilitation of Puerto Rican bodies in order to incorporate them into the new economic regime. The real results of public health campaigns, however, did not match expectations. The sugar operations and the consequences they brought for the Puerto Rican peasant made it difficult for public health programs to yield any substantial progress.

Nevertheless, political discourse obscured the contradictions between the seemingly exploitative nature of sugar cane work and the efforts to rehabilitate workers' bodies.

American investment on the island increased rapidly after occupation in spite of the concern regarding the poor health of the Puerto Rican peon. Prior to 1898, sugar plantations had decreased and coffee had become the main export commodity. Puerto Rican coffee growers had found a European market eager to consume the island-grown coffee. However, Americans considered the soil and the fairly flat terrain of the coastal areas made the cultivation of sugar cane feasible and potentially profitable. Although other areas of investment existed, sugar quickly became the primary target of business venture.⁶⁹ In addition to the favorable conditions for sugar cane production, the relatively peaceful nature of American colonization in the first three decades of the colonial project in Puerto Rico meant that such investments did not face the outright opposition that American companies had to contend with in other areas of Latin America and the Caribbean. What Maurer calls "the empire trap", did not exist in Puerto Rico.⁷⁰ Elsewhere in Latin America the U.S. sometimes had to arbitrate and maneuver diplomatically, or directly protect American investments through military intervention. This direct involvement of American government and military institutions occurred while officials concurrently retained a discourse that highlighted the benefits of modernity and the construction of infrastructure. Even though the latter filled the needs of corporate agriculture, officials pointed to it as an added benefit.

The status of Puerto Rico as a formal colony with indefinite U.S. presence meant that the conflicts that corporate agriculture caused on the island did not entail the same diplomatic and foreign relations issues that they caused elsewhere. Moreover, if problems arose, officials could

⁶⁹ Ayala, pp. 1.

⁷⁰ Maurer, Noel. "The Empire Trap: The Rise and Fall of U.S. Intervention to Protect American Property Overseas, 1893-2013". (Princeton: Princeton university Press), 2013.

quickly call on the police or the military to abate trouble. As Ayala points out, the stability in Puerto Rico made it a desirable territory for American investment and granted entrance of its sugar to the U.S. markets without having to pay duties.⁷¹ In addition, the overpopulation in the island and the racial make-up of the laboring class implied promises of cheap labor although laborers' health needed to improve. The particular nature of the relationship between Puerto Rico and the U.S. made it possible to integrate the island into the economic plans that Americans had for the Caribbean while avoiding the problems it confronted elsewhere in the region.

Issues of health did not slow down American investment, then, and a discussion of the changes in the landscape and the economy of the island propelled by American investment is imperative for understanding the persistence of tuberculosis in Puerto Rico and the attitude of Puerto Rican physicians already outlined in the previous chapter. According to Ayala, the land acquisition pattern that American followed in Puerto Rico differed from the patterns followed in Cuba and the Dominican Republic. The population density and patch-like configuration of land ownership made it difficult for American companies to obtain large tracts of continuous land.⁷² U.S. corporations controlled, either through ownership or lease, approximately 24% of the cropland cultivated with sugar cane while *colonos*, independent farmers, cultivated the rest. While some of the *colonos* owned enough farmland to necessitate the hiring of laborers, most owned or leased small tracts of land that they cultivated with family support.⁷³ They then sold their product to American companies at the price determined by these foreign groups. Whether they owned a parcel, leased the land, or merely sought to sell their labor, the fact remained that a large sector of the population depended on the sugar cane production that American investment had imposed.

⁷¹ Ayala, pp. 107.

⁷² *Ibid.*, pp. 138.

⁷³ *Ibid.*, pp. 140.

The gradual decline of coffee cultivation and the accelerated rate at which the economy switched to primarily sugar cane production resulted in rapid migration from the mountains to coastal areas and the cities. After 1898, Puerto Rican coffee growers had lost access to Spanish and European markets. This particularly hurt coffee-based agriculture because Americans had usually disliked the bold and rich flavor of Puerto Rican coffee.⁷⁴ The lack of work in coffee plantations and the establishment of sugar mills near towns and cities encouraged people to migrate in order to find work. Mayagüez alone had two such mills, the remains of which can still be recognized long after they ceased operations.

This concentration of large numbers of people near cities on the coast inevitably resulted in a housing crisis that lasted several decades and perpetuated the spread of tuberculosis. A study financed by the four American companies cultivating sugar on the island acknowledged that company housing in the cane cultivation areas continued to be a problem, having up to 15 laborers living in company barracks and an average of 5.7 laborers in each house during peak periods.⁷⁵ Barracks would have created prime conditions for the spread of TB since men slept in close quarters. Even though the report does not specify the average dimensions of barracks built by the sugar companies, the limitation of arable land on the island and the efforts to utilize as much of that land in the cultivation of sugar argues against the construction of large barracks for workers.

Many laborers chose to live as squatters on land cultivated with sugar cane or in close proximity to sugar cane operations instead of living in barracks. The report on the sugar economy of the island also indicated that the size of these homes differed greatly from those built in regions dedicated to other crops, such as fruits or tobacco. In regions planted with sugar cane,

⁷⁴ Guerra, pp. 9.

⁷⁵ Gayer, Arthur D., Homan, Paul T., and James, Earle K. "The Sugar Economy of Puerto Rico." (New York: Columbia University Press), 1938, pp. 214.

about 25% of the houses had less than 100 feet in floor space. In contrast, houses smaller than 100 square feet made only 12% for fruit areas, 8% for coffee, and 2% for the tobacco regions.⁷⁶ These homes rarely housed the laborer alone, but instead housed entire families. The higher incidence of tiny homes in the sugar growing regions probably reflects the rapid expansion of the sugar economy as opposed to regions dedicated to crops that had dominated the island's economy before U.S. occupation. Laborers that had constructed homes in the coastal sugar producing regions had most likely done so in haste, considering the rapid pace at which the sugar economy took over their lives. They also lacked the home gardens that had previously provided home crops for household sustenance, a situation that worsened malnutrition among the poor. Even though laws existed to regulate construction of new homes, enforcement focused on physical hazards to the public such as structural damage. As these homes appeared in the landscape, discourse compartmentalized the spaces they occupied away from the sugar operations. If poor and crowded housing conditions aided in the spread of TB, as officials believed, then the relationship to the sugar cane economy should have become evident.

One way in which physicians and officials explained high incidence of TB, however, was by placing emphasis on the occupational exposures of sugar workers rather than on the connection between sugar and their housing arrangements. Cane laborers worked outdoors, where they could encounter mosquitoes infected with malaria, and, in their opinion, the possibility of infection by TB was minimal. In contrast, the association between TB and the tobacco industry continued because of the occupational exposure to the disease.⁷⁷ The proximity to other workers in the closed, small spaces where tobacco processing took place made a direct connection between the spread of TB and work. Physicians and officials clung to the outdoors

⁷⁶ *Ibid.*, pp. 216.

⁷⁷ Townsend, pp. 48.

nature of sugar cane work even though exposure to TB in sugar mills could potentially occur. Moreover, by highlighting the occupational exposures and not the social conditions brought about by the switch to a sugar export economy, culpability for the persistence and eventual increase in TB mortality on the island landed elsewhere. After all, workers who had decided to become squatters on sugar cane cultivation areas had done so on their own accord. Therefore, responsibility for the poor hygienic conditions under which they lived lied in workers' hands, exculpating the sugar cane operations.

The exculpation of sugar cane operations, conscious or not, served to reinforce the process by which Americans taught Puerto Rican workers "the virtues of working for somebody else in exchange for a wage."⁷⁸ Kelvin Santiago-Valles posited that the imposed economic regime and its process of transforming the peasant into a fruitful worker entailed making changes in the structural foundations of the island. In order for Puerto Ricans to learn this new system and accept it, officials needed to emphasize its perceived advantages and downplay its negative consequences. Santiago-Valles also asserted that the quality of life of the worker was irrelevant and that investment assumed that their productive output was limited by their "low-skill levels and demeaned bodies."⁷⁹ As a result, officials, investors, and physicians considered the detrimental consequences of the new labor system a part of the process and those consequences had explanations outside of the economic regime itself. In their view, the inferior nature of the Puerto Rican peasant exacerbated the growing pains and even constituted an obstacle to becoming a more civilized subject that accepted his place in this new scheme.

The sugar cane worker suffering from TB may have become a casualty of discourse, neglect, or strategic planning, but spatial data from a variety of sources has made possible the

⁷⁸ Santiago-Valles, pp. 50.

⁷⁹ *Ibid.*, pp. 51.

reconstruction of the landscape on the island. Figure 4 shows the extent of land utilization for sugar cultivation, tobacco, and coffee by 1937. Multiple sources, including César Ayala, mention that sugar had become sporadic throughout the island during the last two decades of Spanish oversight, giving way to smaller operations during the late nineteenth century. This changed after 1898 when sugar became the primary export crop under the economic direction of the U.S. Sugar transformed the landscape and some large cities, considered to be urban centers, in actuality became important agricultural hubs, attracting peasants and agricultural laborers. Moreover, many barrios within these landscapes exhibited both rural and urban characteristics. Crops often extended into housing areas. The proliferation of squatters and the construction of shacks on or near sugar cane fields earlier would have facilitated their access to possible work and wages. The figure also shows the tobacco and coffee regions on the island. Coffee production declined as the export economy switched to sugar and the industry found it more and more difficult to find laborers since workers preferred to work in the sugar plantations.⁸⁰ Workers that migrated did not simply seek to live in urban centers; they followed the trail that led to agricultural jobs in the sugar industry.

It was mostly in these sugar cultivation regions where tuberculosis claimed the most victims. Mortality rates remained high, but fairly stable on the island until 1920 (see Table), but, between 1920 and the end of the 1930s, rates increased substantially. While some could argue that the Great Depression and the hurricanes of 1928 and 1932 also helped increase TB mortality rates by worsening the living conditions of the lower classes, it is important to note that the upward trend in mortality rates had begun before the 1928 hurricane and before the island

⁸⁰ Boyce, pp. 129.

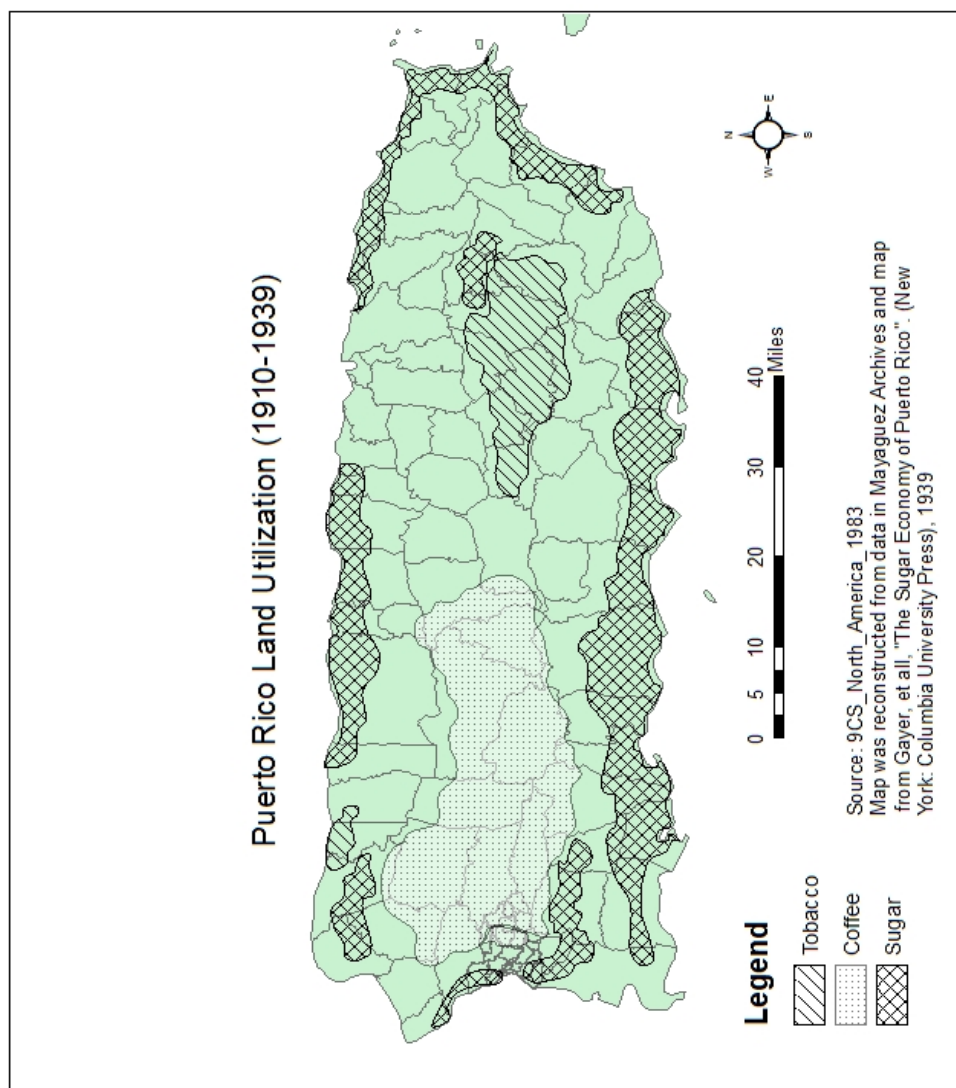


Figure 4: Land Utilization in Puerto Rico, 1910-1939.

Table 2: Tuberculosis Mortality Rates in Puerto Rico by Year and Percent of Total Deaths⁸¹

Year	Tuberculosis Mortality Rate per 100,000	Percent of Total Deaths
1910	214.6	9
1920	202.2	8.9
1925	226.4	9.2
1930	262.9	14
1935	297.8	16.6
1940	260.2	14.2

could feel the effects of the Great Depression. In fact, the TB mortality rate had already reached 268 per 100,000 by 1927.⁸² In addition, the island's TB mortality rates consistently became one of the highest in the world between 1910 and 1940, and higher than in other states in the U.S. For example, in 1924, ten years before the epidemic reached its peak, Puerto Rico's rate was 221.4 per 100,000, 89 in the U.S., and 133 in Germany. The highest rate in the U.S mainland was California's, 152.7.⁸³ In 1898, the U.S. had criticized Spanish and Puerto Rican liberal public health institutions, highlighting the peasants' poor condition. Three decades later, the promises of a new era of American medicine, economic prosperity, and modern institutions had not materialized.

Maps were constructed to show how the TB mortality rates in the different municipalities in Puerto Rico changed over time. When comparing Figures 5 through 7 with the map that illustrates the land utilization throughout the island, the connection between sugar and TB comes into focus, particularly for the west and the south. With the exception of areas dedicated mostly

⁸¹ Saéz, Olga I. *La mortalidad por tuberculosis en Puerto Rico, 1900-1970*. (Rio Piedras, PR: Universidad de Puerto Rico), 1972, pg. 16.

⁸² Costa Mandry, O. "Epidemiology of Tuberculosis in Porto Rico". *Porto Rico Review of Public Health and Tropical Medicine*, Vo. IV, No. 1, July 1928, pp. 3.

⁸³ *Ibid.*, pp. 5.

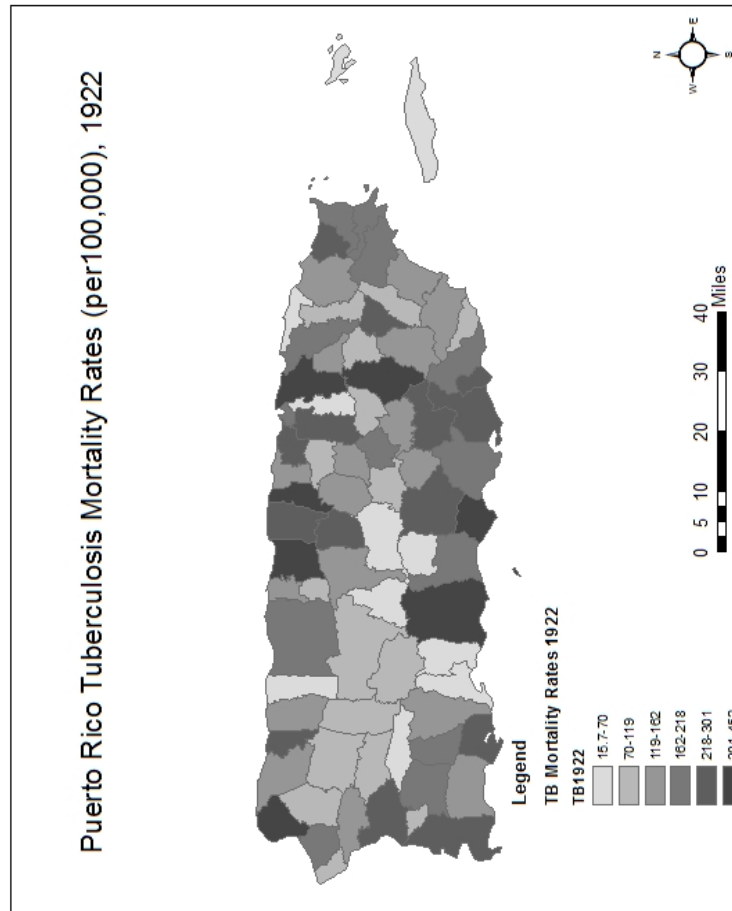


Figure 5: Puerto Rico TB Mortality Rates by Municipality, 1922

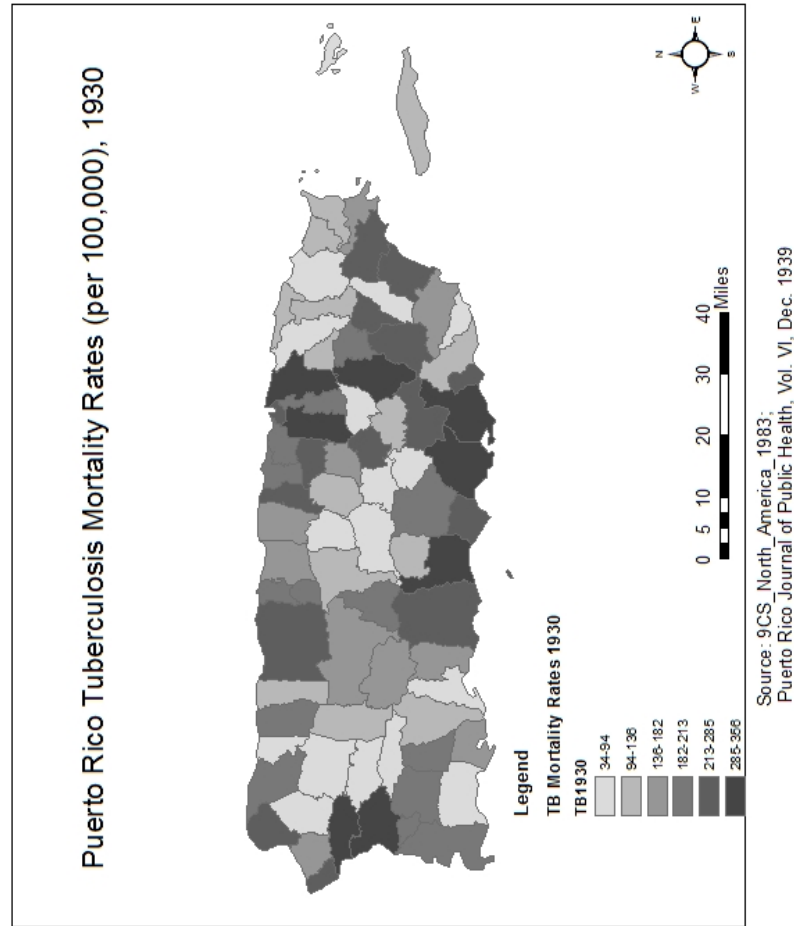
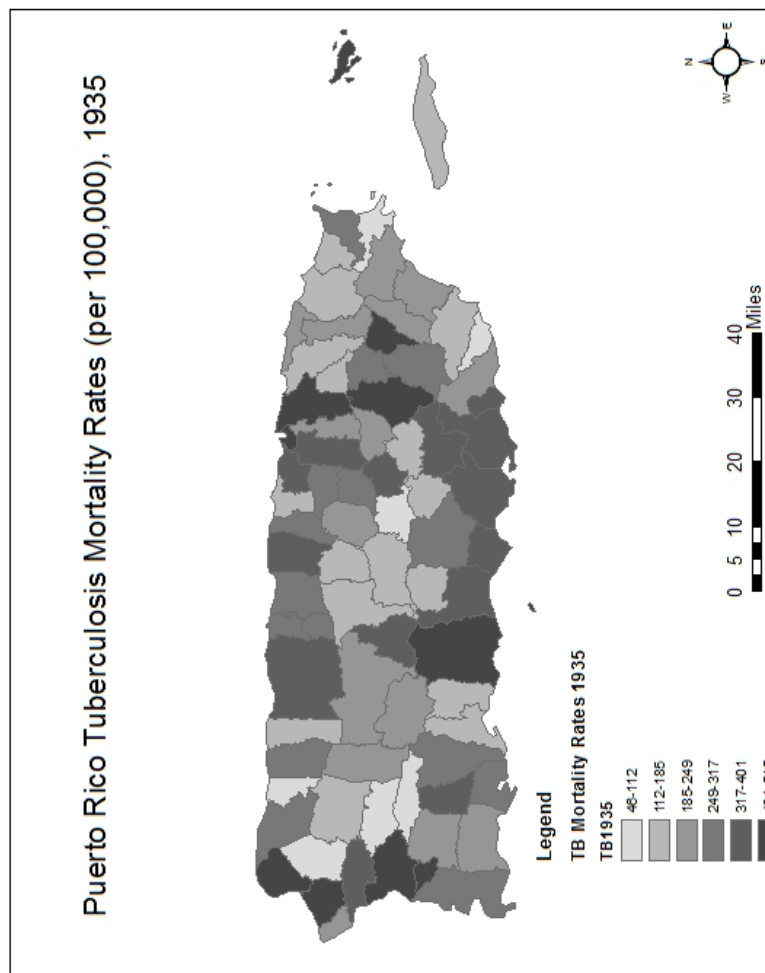


Figure 6: Puerto Rico TB Mortality Rates by Municipality, 1930



Source: 9CS North America, 1983:
Puerto Rico Journal of Public Health, Vol. VI, Dec. 1939

Figure 7: Puerto Rico TB Mortality Rates by Municipality, 1935

to tobacco cultivation and processing, which also experienced high mortality from TB, high TB mortality rates correspond with sugar cane cultivating areas. People did not simply migrate to cities in search for modernity; people followed the sugar. In the cities that also integrated large sugar cultivation and processing, the boundaries between urban and rural blurred significantly and well-to-do families could live right next door to a slum of shacks inhabited by agricultural workers. Slums on sugar cane areas could appear overnight. Therefore, large urban areas could have TB mortality rates as high as large cities with economies depending mostly on agriculture.

This conflation of urban and rural also facilitated the compartmentalization of the causes for the epidemic away from the sugar cane economy. Physicians wrote and spoke of these causes in general terms: poor hygiene, ignorance of the lower classes, overpopulation, and poverty; all of which could be blamed on the laborer himself and not on the new economic system that colonialism had imposed.

The maps also indicate how mortality rates increased over time in these areas.⁸⁴ Towns located in sugar growing regions not only suffered from higher TB mortality rates than other regions, but TB mortality rates there increased dramatically between 1922 and 1935. The towns that experienced the greatest increases included Ponce, Santa Isabel, Guayama, Fajardo, Mayagüez, and Isabela, towns located in sugar growing regions. The only towns outside sugar growing regions that showed increasing rates were Juncos, Rio Piedras, and San Juan. The latter had the largest population and it comprised mostly urban areas and urban slums like La Perla and Puerta de Tierra. Rio Piedras was also increasingly urban. Juncos, however, depended greatly on the tobacco industry, both the cultivation and processing of tobacco, an industry understood at the time as fomenting conditions that favored the spread of TB.

⁸⁴ TB mortality statistics by municipality for the years illustrated can also be found in: "Tuberculosis Mortality in Puerto Rico", *Boletín de la Asociación Médica de Puerto Rico*, 1939, No.3, pp. 341.

In spite of the high incidence and mortality due to TB, officials focused their attention on other maladies perceived to cause the degeneration of the peasant. Malnutrition became one of the explanations for the poor physical condition of peasants and in the propagation of TB. Several studies and a number of entities spurred by Progressive ideals had concluded that, in addition to poor housing, the malnutrition and hookworm that remained so endemic among the lower classes contributed to their susceptibility to the disease. Peasants and workers simply could not fight off TB when the anemia that resulted from hookworm infestation and malnutrition had already weakened their bodies. Physicians correctly made a connection between malnutrition and TB since it can affect the body's ability to fight off disease, making the poor more susceptible. However, officials avoided making the connection between malnutrition and the poverty that the sugar economy perpetuated.

The hookworm campaign alone could not regenerate the lower classes. Progressive-inspired organizations and other medical entities had taken on this job soon after occupation. The Rockefeller Foundation (RF), an organization founded in 1913 whose advertised mission is to "improve the well-being of humanity", embarked on ambitious research and disease control campaigns throughout the world, particularly in Latin America.⁸⁵ In the early twentieth century, RF trained physicians and outlined programs for the control of diseases like malaria and hookworm. A variety of reports written by the foundation specify the funding appropriated for work in Puerto Rico. The 1935 annual report outlined its activities in funding education for public health workers and physicians, malaria control, establishment of laboratories, and projects

⁸⁵ The Rockefeller Foundation is still operating, conducting and funding scientific research, (rockefellerfoundation.org).

conducted at the Institute of Tropical Medicine of Puerto Rico.⁸⁶ The RF continued work in Puerto Rico in spite of the public relations nightmare that the Rhoads letter caused in 1932.⁸⁷

The Rhoads' incident notwithstanding, the RF has constituted a powerful arm of American state-building in Puerto Rico in addition to the portrayal of public health campaigns as benevolent efforts to improve the life of Puerto Ricans. For example, recognizing that the economic, political, and social changes the U.S. sovereignty brought to the island, the RF funded studies by researchers at Cornell University with the goal of studying the island's cultural background.⁸⁸ The report highlighted the importance of measuring loyalty to the U.S. in the construction of security measures. Moreover, it stated that the study aimed to "determine what makes for rejection or acceptance of various cultural differences" in order to develop practical measures dealing with the island's social problems.⁸⁹ This shows that the RF's goals did not merely tackle health problems. Since loyalty had also become an issue, this study did not merely aim to find ways to change Puerto Ricans' attitudes towards modern medicine in order to improve their health. This study also had a political agenda under the guise of scientific endeavor and, although it did not directly affect anti-tuberculosis measures, it illustrates the multi-faceted goals of American public health efforts.

The one organization that arrived on the island with the specific goal to combat TB was the Anti-Tuberculosis League. Examination of archival documents in Ponce and Mayagüez places the initial networking efforts of the League as early as 1907 when the organization's

⁸⁶ *Annual Report of the Rockefeller Foundation*. (New York: Rockefeller Foundation), 1935.

⁸⁷ Dr. Cornelius Rhoads worked in Puerto Rico in 1931 under a cancer study funded by the Rockefeller Foundation. A worker intercepted a letter from Rhoads to a friend in which he described Puerto Ricans in derogatory, racialized terms and stated that he had injected patients with cancer cells, and sent a copy to Nationalist Party leader, Albizu Campos. Albizu Campos, in turn, made the letter public, accusing Rhoads and the RF of genocide. Although officials considered the letter just an outburst of anger and Rhoads explained it as a bad joke, an investigation ensued. No evidence of injecting patients with cancer was found. However, the incident not only discredited American public health efforts on the island for some time, but has remained ever present in Puerto Rican memory.

⁸⁸ *Annual Report of the Rockefeller Foundation*. (New York: Rockefeller Foundation), 1948, pp. 40.

⁸⁹ *Ibid.*, pp. 218.

bylaws appeared in print.⁹⁰ Under the direction of Edith Elmer Wood, a philanthropist that later became involved in housing reform and the New Deal's housing initiatives, the League started by requesting sponsorship not only from citizens with a deep pocket, but also from several municipalities on the island. For example, Wood mailed a letter to Simón Moret Gallart, Mayor of Ponce, which requested sponsorship from the municipality. Ponce's Assembly responded with Resolution #87 that pledged cooperation with the League.⁹¹ Although specific issues regarding the relationship between the League and governmental agencies in Puerto Rico constitute a discussion in another chapter, it is important to note that the Anti-Tuberculosis League not only organized education campaigns, but also had direct involvement with the treatment of patients on the island. The League, however, did not receive much funding from the American government and depended on the donations of individuals and municipalities. Nevertheless, it brought American Progressive ideals to Puerto Rico and it managed to acquire property and land, some of which will be addressed in the following chapters.

Regardless of the alleged triumphs over hookworm and the efforts of organizations like the Anti-Tuberculosis League, mortality rates remained high, particularly TB mortality rates. Even though TB persisted, the one disease that medical officials associated with the sugar cane fields and tackled head-on was malaria since sugar cane work was an outdoors endeavor. Tuberculosis, due to its mode of transmission and the lack of a cure at the time, did not offer the advantages that malaria and yellow fever campaigns provided. American public health objectives in Puerto Rico constituted a part of a Caribbean and even Latin America-wide effort to exert influence through a seemingly benevolent endeavor. The malaria and yellow fever campaigns in

⁹⁰ *Estatutos de la Liga Anti-Tuberculosa de Puerto Rico*. (San Juan, PR: Presa de L.E. Tugo Co.), 1907; Ponce Municipal Archives, Box S-296-1.

⁹¹ Letter from Edith Elmer Wood to Moret Gallart, dated March 10, 1907; Resolution #87, City of Ponce; Ponce Municipal Archives, Box S-296-1.

the Caribbean and the Panama Canal have caught the attention of historians like J.R. McNeill. He posited that the effective control of malaria and yellow fever changed the balance of power in the Americas and in the world.”⁹² Amador outlined the campaigns in the Panama Canal and Cuba while Espinosa analyzed the sanitation efforts in Cuba during the occupation in 1898 and the occupation of 1906.⁹³ She shows that the interest of the U.S. on yellow fever stemmed from concerns over trade, not soldiers or helping Cuban people. In addition, Cubans didn't suffer from yellow fever much. Diseases like tuberculosis caused far more deaths, but yellow fever epidemics in the South had begun with ships coming from Cuba. Moreover, Americans maintained the threat of occupation if Cubans did not continue to abate yellow fever. So, disease and public health went hand in hand in justifying American exercise of power in Caribbean.

The malaria campaigns in Puerto Rico and elsewhere not only emphasized American superiority, but also exerted control over subjects through the enforcement of sanitation and hygiene regulations. The efforts to promote these campaigns as successes overshadowed the realities on the island. Even though American and Puerto Rican health officials acknowledged tuberculosis as a major problem on the island, they continued to separate the incidence of TB from the sugar enterprise. This separation many times entailed overt omission. The numerous papers, reports, and newspaper articles examined in this study clearly overstate the mode of living by laborers and the crowded conditions in coastal cities as a major factor in the spread of TB, failing to mention sugar cane cultivation as a catalyst for the changes in the landscape that favored the spread of the disease. On other occasions, particularly when conflicts between the

⁹² McNeill, J.R. *Mosquito Empires: Ecology and War in the Greater Caribbean, 1620-1914*. (Cambridge: Cambridge University Press), 2010, pp. 307.

⁹³ Espinosa, Mariola. *Epidemic Invasions: Yellow Fever and the Limits of Cuban Independence*. (Chicago: University of Chicago Press), 2009.

sugar conglomerates and the colonos and laborers erupted, the separation between sugar capitalist interest and disease became explicit.

The study by Gayer et al. previously cited aimed to respond to accusations by unions and colonos that the sugar economy had a detrimental effect on the laboring classes. For example, it highlighted the seemingly generous wages they extended their laborers. In this manner, the connection between sugar production and that other factor in TB infection, malnutrition, could remain tenuous. The study reported that the maximum field wage between 1927 and 1928 was \$0.292 per hour, \$0.278 between 1932 and 1933, and \$0.30 between 1935 and 1936. Mill wages averaged close to ten cents per hour higher.⁹⁴ However, several articles published in *El Mundo* between 1925 and 1940 reported wages at a maximum of approximately \$1.00 per day. Townsend, a physician with the U.S. Public Health Service, reported a maximum of \$1.00 per day for most field work with most of the work paying approximately \$0.70 daily in 1922.⁹⁵ Moreover, he reported a substantial difference in pay depending on the region. He also stated that workers located in the northern and eastern regions enjoyed higher wages than those on the west and south. If this was the case, then, sugar cane workers must have worked rather short days at \$0.292 an hour!

Any alleged benefits acquired through wages, however, diminished in importance when one accounts for the seasonal nature of sugar cane work and the fact that most of those laborers were unemployed unless they migrated back to coffee areas and worked during the sugar cane off-season. The report did acknowledge that the nature of the seasonal work hindered any cultivation of food. The *tiempo muerto*, the period where work in the sugar fields stopped, resulted in in up to six months when laborers could find little work. Table 3 shows the

⁹⁴ Gayer, Table 91, pp. 187.

⁹⁵ Townsend, pp. 47.

unemployment data for various years between 1899 and 1930. The table illustrates how the economy after American intervention actually resulted in increasing unemployment. This data corresponds to people without employment, but it does not consider the *tiempo muerto* when rates could be much higher.⁹⁶ Interestingly, this downward spiral in employment opportunities had begun before the Great Depression, in great part as a result of the decrease in sugar prices after World War I. The monoculture economy also had the effect of making laborers very susceptible to market influences. Therefore, the tendency of sugar industry supporters to emphasize the alleged high wages paid served to place the blame for the poor living conditions of the peasant elsewhere.

Table 3: Unemployment Rates in Puerto Rico per Year (U.S. Census 1910, 1920, 1930: Diffie & Diffie, pp. 166).

Year	% Unemployment, Work Force > 10 yrs. old
1899	17
1910	17.9
1920	20
1926	30.2
1930	36.9

The significance of unemployment data and the battle over wages comes into focus when the proportion of laborers engaged in agriculture is considered. Tables 4 and 5 show the percent of the total employed individuals engaged in each occupation category.⁹⁷ The great majority of laborers worked in agriculture and 19.4% of all employed individuals worked in the sugar industry in 1920. Manufacturing and Mechanical Trades comprised of 13.5% in 1910 and 17.5% in 1920. The textile and needlework industries made up the greater proportion of this

⁹⁶ Diffie Bailey W. & Diffie, Justine. *Porto Rico: A Broken Pledge*. (New York: The Vanguard Press), 1931, pp. 167.

⁹⁷ Note: The occupational categories used for the censuses of 1910 and 1920 differed from those used in the census of 1930. For this reason, the data is shown in two different tables.

manufacturing sector and a great number of these workers were women. Tobacco processing was also included in this category. Other occupations made up small portions of the employed population. In 1930, the agricultural factor still remained the most important source of jobs. This meant that during the *tiempo muerto*, a large portion of the population found itself idle and without income. This contributed to the overwhelming poverty that resulted in living conditions that made the transmission of TB possible.

The sugar industry also attempted to emphasize other alleged benefits of working in the sugar cane fields. Gayer's report asserted that the larger American operations provided better medical services to employees that added \$2.00 worth of indirect wages per year to each worker.⁹⁸ However, while the report explained how the Workmen's Accident Compensation Law worked in relationship to the companies' medical services, no specific mention was made of disease. The silence is important since it implies that medical services mainly served to treat occupational accidents and mishaps, not life-threatening diseases. Mention of the medical services offered by sugar companies also appeared in the TB survey prepared by Townsend. He concluded that TB among sugar workers did not constitute a problem and that medical relief doctors working in sugar cane operations did not encounter TB among those laborers very often.⁹⁹ Not only was this conclusion based on purely anecdotal evidence, but he failed to ask important questions. First, would sugar cane workers who suspected TB be inclined to seek medical attention at their place of employment? Second, what consequences did laborers face if such a diagnosis was made?

⁹⁸ Gayer, pp. 217.

⁹⁹ Townsend, J.G., pp. 54.

Table 4: Percent of Total Employed Individuals per Occupation in Puerto Rico (U.S. Census 1910, 1920).

Occupation	Percent of Employed Individuals (1910)	Percent of Employed Individuals (1920)
Agriculture Total	61	58.9
Sugar Cane Laborers	Not reported	19.4
Coffee Laborers	Not reported	9.2
Tobacco Agriculture Laborers	Not reported	6.9
Manufacturing & Mech. Industries	13.5 (34.3% of these workers were women)	17.5 (43.1% of these workers were women)
Transportation	2.3	2.4
Trade	6.4	6.3
Domestic Service	13.9 (82.1% of domestic workers were women)	9.7 (82% of domestic workers were women)

Table 5: Percent of Total Employed Individuals per Occupation in Puerto Rico, U.S Census 1930.

Occupation	Percent of Employed Individuals (1930)
Agricultural Laborers	41.7
Independent Hand Trades	8.9
Tobacco Processing	3.1
Clothing	1.4
Food	3.1
Transportation	3.4
Trade	8
Domestic Service	9.6 (77% of Domestic Workers were Female)

Laborers that suspected TB would have probably avoided going to the medical facilities or relief physicians associated with sugar cane companies. Townsend himself summarized some of the reasons that discouraged people from seeking help: fear of the patient to learn of condition, unwillingness to consult medical advice when advice could not be practically followed, and lack of desire of physicians to treat TB.¹⁰⁰ Doctors offering services in the sugar cane operations could have also preferred not to treat TB patients. Sugar cane workers did not differ greatly from the rest of the Puerto Rican population and they would have also experienced fear. Moreover, on an island stricken by poverty, the possible consequences of seeking medical treatment at the sugar plantations must have served as sufficient deterrents for laborers.

¹⁰⁰ *Ibid.*, pp. 15.

Consequences of seeking medical attention at the plantations probably varied. However, the contagious nature of the disease and the stigma associated with it would have made laborers wary of making their condition public. Loss of wages during treatment, if at all available, would have had substantial detrimental effects on the laborer and his family. The case of Rosendo Burgos, a sugar cane plantation worker near Ponce, Puerto Rico's second largest city at the time, clearly illustrates the consequences and the lack of willingness on the part of the sugar cane companies to deal with laborers afflicted with TB. After discovering that Burgos suffered from TB, the plantation sent for an ambulance that took him away and left him, ill and destitute, to fend for himself in the city's streets.¹⁰¹ Not only did the plantation management send Burgos away without considering the poor man's fate or offering any type of financial assistance, but the ambulance workers left him in the streets, where he could become a source of infection to others. Moreover, if plantations discarded laborers in this manner, then obviously TB incidence in plantations would artificially appear lower than they actually were. In this manner, the association between the sugar industry and TB could have remained obscure.

The tendency to dissociate the sugar industry from TB also had roots in racial views of the time. Americans' assessments regarding the racial make-up of the new colonial subjects informed public health efforts and reflected the complications of justifying a civilizing mission. On the one hand, Puerto Ricans had to be white enough to achieve a certain degree of civilization. On the other, their perceived racial difference had to be constructed in such a way that would validate American colonial imperatives. Brigadier General Davis, the military governor in the island from 1900 to 1902, exemplified these contradictory views. In his report of

¹⁰¹ *Letter from Mayor of Ponce, Honorable Rafael Rivera Esbri, to Chief of Police, Mr. Miguel Hurtado*; April 8, 1919. Municipio de Ponce Archives, Digitalized Documents.

1900, Davis asserted that the majority of the population was “pure white.”¹⁰² Yet, in describing the peons, he added that 75% of males over twenty one lived in poverty and ignorance, and that “between the negro and the peon there is no visible difference.”¹⁰³ So, while Davis began by highlighting the whiteness of the population, he also proposed that this whiteness was suspect, whiteness not comparable to the American colonizer’s that had inherent traits more consistent with blackness.

Davis expanded on his construction of the Puerto Rican “other” through his explanation for the Puerto Rican’s propensity for disease and his slow improvement in civilization. In the General’s view, blame belonged on the Puerto Rican’s character and this “character, his indolence, and mode of living, are due to the habits and customs of the Indian, Mediterranean, and African races, which he represents rather than his contact with the European.” He concluded this explanation by stating that the Puerto Rican’s “difficulty is racial.”¹⁰⁴ Here, Davis’ hierarchical notions of race became evident. The Mediterranean (Spanish) may have been white, but not the same kind of white as “the European” and the fact that the Indian and African races constituted part of the racial make-up of the island’s population further explained Puerto Rican inferiority, propensity for disease, and inability for self-government.

The association of Puerto Rican lower classes with “blackness” or a suspect type of white is significant because American officials and physicians brought to Puerto Rico their experience with African-American subjects as well as public health policies meant to control TB. As Samuel K. Roberts has argued in his study of tuberculosis in segregated Baltimore, officials usually

¹⁰² Gen. Davis. “Report of the Military Governor of Porto Rico on Civil Affairs”. (Washington: Washington Printing Office), 1900, pp. 16.

¹⁰³ *Ibid.*, pp. 18.

¹⁰⁴ *Ibid.*, pp. 308.

explained anti-tuberculosis measures in terms that “were often class-and race-inflected.”¹⁰⁵ Moreover, white patients from the middle and upper classes rarely had to contend with visiting nurses, home inspections, etc. In Puerto Rico, laws enacted by the American government in 1902 made the quarantine of tuberculosis patients in their homes and the registration of their homes mandatory.¹⁰⁶ The lack of primary sources on the enforcement of these regulations makes it difficult to ascertain the extent to which officials and patients adhered to these regulations. The lack of health workers and nurses during the first half of the twentieth century and the insistence of physicians on the lack of adherence to reporting rules make enforcement strict enforcement unlikely.

Americans’ understandings of the relationship between race and unsanitary living conditions also had their roots in their experiences at home. Officials had interpreted the living conditions of African-Americans as “being rooted in racial characteristics.”¹⁰⁷ The fact that their living conditions originated from the neglect of sanitary services in African-American neighborhoods did not enter into their calculations. Similarly, the Puerto Rican peasant and lower class worker lived in conditions perpetuated by the new economy regardless of the insistence of American and Puerto Rican elite officials and physicians in considering the disease as rooted on the attitudes and customs of the worker. Officials’ statements to the press sometimes reflected the sentiment that blame belonged on the Puerto Rican peasant. A former consul to South America, Louis S. Delaplaine, wrote that the U.S. had tried to teach peasants sanitation, but “the Porto Rican has but little desire to be civilized.”¹⁰⁸ He ended by stating that Puerto Ricans lived in shocking condition and described them as dirty. Statements such as this one

¹⁰⁵ Roberts, pg. 11.

¹⁰⁶ Townsend, pp. 16.

¹⁰⁷ Roberts, pp. 14.

¹⁰⁸ “Porto Ricans Ungrateful: No Thanks to Uncle Sam for Trying to Make Them Healthy”, *El Mundo*, February 23, 1921.

reflected the attitude of officials that not only held opinion of the Puerto Rican as unwilling to rehabilitate, but also explained the public health measures' lack of success in terms of race. In their view, Americans had provided the tools to improve living conditions and become civilized; but, Puerto Ricans had not learned to use them.

These new colonial subjects were also responsible for the overpopulation on the island, a major obstacle to the regeneration of Puerto Rican society in officials' views. Table 6 shows the population in Puerto Rico between 1899 and 1950 and brings the problem into focus. Population grew an average of 18.5% every ten years.¹⁰⁹ Overpopulation became the underlying cause of most of the ills in Puerto Rican society, including disease. It was both a result of Puerto Rican backwardness and a reflection of the lack of morality. Davis had asserted that the amoral attitudes of the lower classes and the high number of illegitimate births were at the core of the island's social problems.¹¹⁰ As early as 1900, the efforts to regenerate the Puerto Rican had begun with reforming marriage and divorce laws, which, according to Finlay, became "important elements of early U.S. efforts to bring racially fluid Puerto Rican moral "backwardness" up to the "modern" standards of the self-styled "civilizer of primitive nations"."¹¹¹ While new laws and the legalization of divorce attempted to bring Puerto Ricans to standards acceptable to Americans, the connection made between overpopulation and a lack of restraint, worked to reinforce eugenic ideology that convinced many officials that the situation warranted an extensive birth control campaign.

¹⁰⁹ Percent increase was calculated using data from U.S. Census.

¹¹⁰ Davis, pp. 20.

¹¹¹ Finlay, Eileen J. "Imposing Decency: The Politics of Sexuality and Race in Puerto Rico, 1870-1920". (Durham: Duke University Press), 1999, pp. 183.

Table 6: Total Population in Puerto Rico by Year¹¹²

Year	Total Population
1899	953, 243
1910	1, 180, 012
1920	1, 299, 809
1930	1, 543, 913
1940	1, 869, 255
1950	1, 210, 703

The point to make about overpopulation is not that it would not influence conditions, but rather the manner in which officials used it to construct notions of race, gender, and sexuality, topics that Briggs aptly analyzed in her work. In her view, U.S. officials endorsed Spanish policy, laws, and regulations that protected the *gente decente* (decent people).¹¹³ At the same time, they constructed women as the principal cause for lack of morality, the great number of illegitimate children, and overpopulation. Therefore, the solution to the TB problem partly rested on the control of Puerto Rican women's bodies. Physicians and public health officials, such as Dr. S.A. Knopf, who had studied TB for decades and had written many works on the subject, also clung to Malthusian theory and blamed overpopulation in Puerto Rico for the TB epidemic. As early as 1912, Dr. Knopf had established a relationship between tuberculosis and overpopulation, advocating birth control as well as the deportation of immigrants that suffered from TB.¹¹⁴ In response to Puerto Rico's problems, Knopf also promoted his ideas about the need of birth control and the relationship of overpopulation and TB on the island. A variety of U.S. newspapers published his views in 1932, provoking responses from other Americans.

Some Americans had not found Knopf's arguments so convincing even though other physicians, American and Puerto Rican, agreed with his conclusions. In a response to a letter from Dr. Knopf in which the physician advocated birth control measures for the island, a trustee

¹¹² Population data was obtained from Brigadier General Davis' 1900 report and U.S. Census (www.census.gov).

¹¹³ Briggs, pp. 32.

¹¹⁴ Knopf, S.A. *Some Newer Problems and Some Newer Phases of the Anti-Tuberculosis Warfare in the United States*, as read before the American Public Health Association, Washington D.C., 1912.

of the National Catholic Alumni Federation stated that Dr. Knopf had not given “us all of the facts of the pathetic condition of the people of Puerto Rico.”¹¹⁵ Although the opposition of Catholics should come to no surprise, the author of the response argued that rather than an overpopulation problem, the plight of the Puerto Rican had its origins in social injustice and the exploitation of workers in spite of “the *protection* of the American government.” However, such criticisms did not preclude colonial discourse from constructing Puerto Ricans as the makers of their own economic and health problems.

In a poignant critique of the sugar industry and American imperialism in Puerto Rico, Bailey and Justine Diffie addressed the issue of overpopulation. They asserted that population density presented difficulties, but officials should not use it as “a lame excuse for the inactivity so far characteristic of the United States government.”¹¹⁶ In their view, the economic and health-related problems that Puerto Ricans had to confront did not originate from overpopulation, but from the poverty that resulted from the monoculture economy and low wages. American imperialism had failed to bring the fruits of modernity and progress. Instead, it was “an indeed inglorious spectacle for the visitor to this island where American Imperialism may be seen at its best.”¹¹⁷

Other critics also emphasized the ways in which the sugar industry had taken profits out of the island and had little concern for the community. The Puerto Rico Policy Commission had published a report that emphasized the need for diversification and suggested that Puerto Rico needed to go through agrarian reform in order to improve social conditions.¹¹⁸ Esteban Bird, an

¹¹⁵ Butler, Edmond B. “Social Justice Suggested as Puerto Rico’s Chief Need”, *The New York Times*, October 30, 1932.

¹¹⁶ Diffie & Diffie, pp. 165.

¹¹⁷ *Ibid.*, pp.184.

¹¹⁸ Chardón, Carlos. *Report of the Puerto Rico Policy Commission*. (San Juan, P.R.: Bureau of Supplies, Printing and Transportation), 1934.

American official, wrote a critique in which he asserted that sugar cane operations had failed to pay taxes to municipal governments.¹¹⁹ As will be seen in the next chapter, municipalities like Mayagüez faced tremendous shortages of funds and struggled to improve infrastructure and medical services. Funds from the sugar industry would have gone a long way to improve the municipalities' treasuries.

Anti-Imperialism rhetoric and the criticism of the sugar industry such as that of Diffie and Diffie found some reform-oriented individuals during the New Deal era. However, scientific discourse carried the weight of authority and constructed notions of the Puerto Rican laborer as undisciplined, unhealthy, and racially suspect during the first four decades of American oversight over the island. The seemingly benevolent public health campaigns aimed to regenerate Puerto Ricans and to save them from their own inadequacies. This same scientific discourse aided in the exculpation of the sugar industry, creating distance between sugar cane operations and the continuing tuberculosis problem. Instead, political ideology presented the new economic system as an instrument of modernity and progress. The imperialist machine worked in the same manner as an illusionist performs his magic: the machine chose the information that it wished people to see and it skillfully hid others from sight.

¹¹⁹ Bird, Esteban, Picó, Rafael, & Cordero, Rafael. *Report on the Sugar Industry in Relation to the Social and Economic System of Puerto Rico*. (San Juan, P.R.: Bureau of Supplies, Printing, and Transportation), 1941.

CHAPTER 3

LANDSCAPES OF DISEASE: TUBERCULOSIS, SUGAR ECONOMY, AND PUBLIC HEALTH IN MAYAGÜEZ, PUERTO RICO

The city of Mayagüez lies on the western side of the island and by 1898 was its third largest city.¹²⁰ A cultural and political center, the city had grown considerably during the 19th century, although it lacked industrialization, and twenty-five neighborhoods (*barrios*) existed within its boundaries. After the change in sovereignty, the sugar cane production reignited and expanded considerably, particularly in the flatter sectors of the municipality. Mayagüez also continued to grow and export coffee, as well as a variety of fruits. The emphasis on agriculture between 1898 and 1940 and the high tuberculosis mortality rates make Mayagüez a good case study for the effects of the sugar cane economy, the efficiency of the Tuberculosis Program, and the interventions of both governmental and charity organizations. The hopes that had accompanied the American colonial promises of economic development and enlightened medicine shattered as agricultural development did not improve the living conditions of workers and public health measures failed to curb the tuberculosis epidemic.

The geography of the city had a direct effect on the growth of the different barrios and the type of agriculture emphasized. Only about 15% of the total area is flat with hills near the ocean to the west. Figure 8 shows not only the geography of the municipality, but barrio boundaries and the type of agriculture that drove everyday life in them.¹²¹ Flat areas dominated

¹²⁰ For information on the geography and the history of the city of Mayagüez, please see, Bayrón Toro, Fernando. *Mayagüez: Temas de su historia y geografía*. (Mayagüez, P.R.: Museo Eugenio María de Hostos), 2013.

¹²¹ Municipality or *municipio* describes the political entity that includes the city center (*pueblo*) and the barrios that surround the *pueblo* and fall under that particular jurisdiction. It is a political entity that was established under

Mayagüez, P.R., Sugar Cane and Coffee Growing Areas, 1910-1940

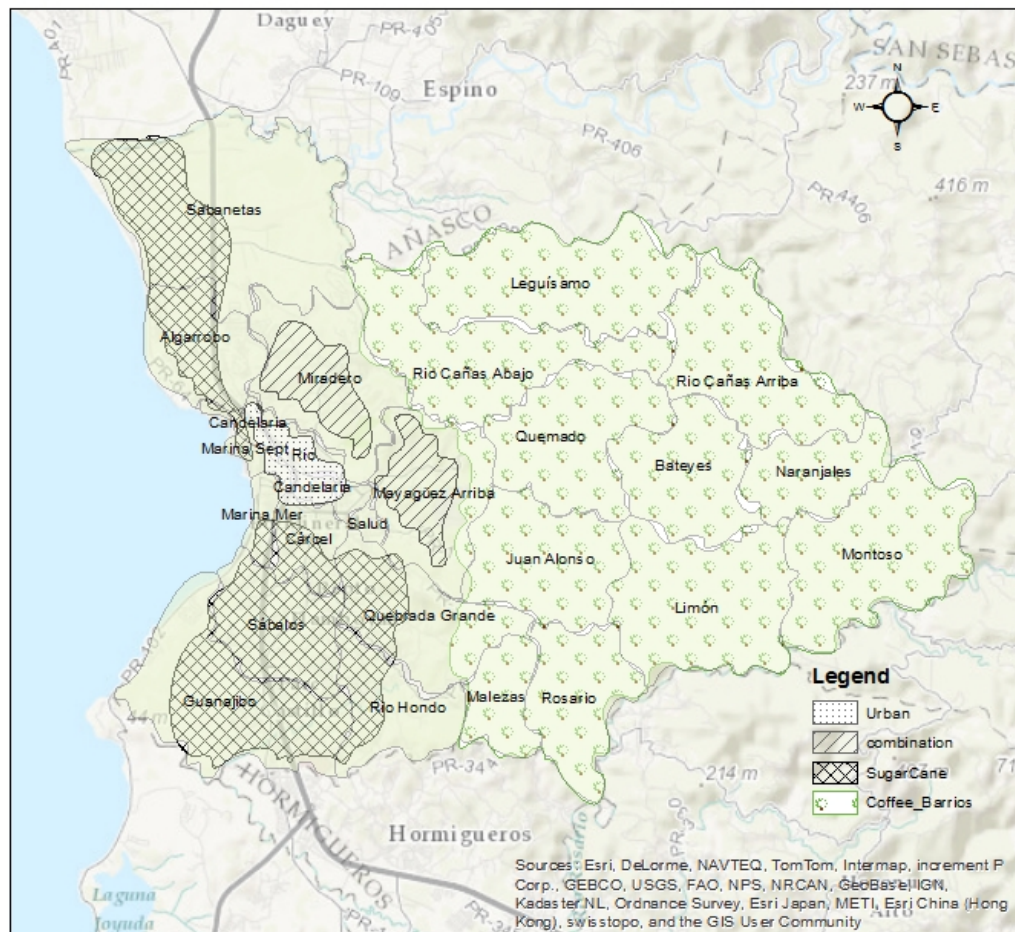


Figure 8: Percent of Total TB Deaths per Barrio in Mayagüez, P.R., 1935

Spanish authority and remained after the U.S. occupied the island. For the purposes of this study, the terms “city” and “municipality” are used interchangeably.

the barrios of Algarrobos, part of Sabanetas, Candelaria, Rio, part of Cárcel, Sábalo, part of Guanajibo, part of Rio Hondo, and Marina.¹²² These barrios included small residences that either bordered or stood on sugar cane fields and *haciendas*. Tobacco processing outfits also operated in Barrio Marina. For example, inhabited areas of Cárcel continued to expand into sugar cane fields between 1910 and 1940. A smaller sugar mill for the Hacienda Carmen operated within this barrio. Three large mills (*centrales*) operated within the municipality: Central Rochelaise stood in Barrio Guanajibo, Central Igualdad operated in Sabanetas, and Central Eureka stood in an area bordering Guanajibo, originally governed by the Mayagüez Municipality, but ceded to Hormigueros in 1900. Many workers from Mayagüez worked in this central as well. Barrio Mayagüez Arriba, in spite of its hillier geography, also intermittently cultivated sugar cane and coffee. A combination of sugar cane and coffee operations also often appeared in Quebrada Grande and Miradero, but due to the intermittent nature of these operations, the barrios are not included in the sugar or coffee areas outlined in the map. Municipal and government buildings, shops, and urban housing comprised most of Barrios Candelaria and Rio.

The barrios towards the interior comprised the hillier and mountainous region of the municipality. During the first half of the 20th century, these barrios' economy greatly depended on coffee cultivation and processing although cultivation of fruits such as bananas, pineapple, lemons, and oranges also shared the landscape. These barrios' populations remained relatively small in comparison to the geographically flatter barrios that depended mostly on sugar cane cultivation. Transportation to and from the barrios in the interior presented great challenges to a population that depended on horse or cattle-pulled wagons to transport their produce or coffee down to Cárcel, where the *Plaza del Mercado* (fresh market) stood. Exports to other parts of the

¹²² Marina has historically been divided in two sectors, Meridional and Septentrional. Since both sectors had similar economies and similar mortality rates, this study refers to them as one barrio.

island and the U.S. had to reach the port or the railroad at Barrio Marina. Even though the Mayagüez Port declined in importance for other types of commerce, it remained the most important site for the export of sugar cane out of the island until the 1950s.¹²³ It also endured as an important site for the export of rum and needlework products. However, Mayagüez relied greatly on agriculture until mid-century. Mayagüez' economy and geography marked the landscape of disease that would persist for much of the twentieth century.

The city had already suffered from high tuberculosis mortality rates before 1898. The public health policies and campaigns after the Americans took charge of the island did not change TB rates much. In fact, between 1925 and 1935, the mortality rates increased dramatically to an all-time high. While the Great Depression certainly worsened the situation, the rates had not decreased dramatically after 1898 and had also begun to increase before 1930. Table 1 shows the TB mortality rates for the municipality in selected years between 1910 and 1935. In 1934 (not shown on the table), the mortality rate reached 615/100,000, approximately ten times higher than the rate in New York City. Between 1934 and 1938, Mayagüez had higher TB mortality rates than San Juan, the investment, and Ponce, the second largest city.

The living conditions in which laborers and their families lived provided suitable conditions for the spread of TB. Ironically, the statistics collected by the U.S. Public Health Service of 1924 show that homes in Mayagüez had an average of 3.62 rooms as compared to San Juan's average of 2 room and Ponce's 1.86 rooms.¹²⁴ An average of 8.62 people occupied each home in Mayagüez, one more than in San Juan or Ponce. The larger density of occupants likely nullified the relative advantage of the larger size of the homes. Moreover, homes in Mayagüez had an average of only one window, the same as in San Juan and Ponce. These statistics likely

¹²³ Bayrón Toro, pp. 148.

¹²⁴ Townsend, pp. 42.

worsened as the population increased throughout the 1920s and 1930s due to migration from rural areas and slight improvements in infant mortality.

Table 7: Mortality Rates in Mayagüez, P.R. ¹²⁵

Year	Mortality Rate per 100,000
1900	302
1910	388
1920	286
1925	317
1930	347
1934	615.3
1935	515
1936	533.4
1937	432.5
1938	404.8

The distribution of TB deaths throughout Mayagüez provides some insight into the epidemic. Figures 9 through 11 illustrate the percentage of TB deaths that each barrio contributed to the total in Mayaguez in 1910, 1920, and 1935, respectively.¹²⁶ In the years 1910 and 1920, the highest percentage of the total deaths due to TB resided in the barrios of Mayagüez Arriba, Cárcel, Marina, Sábalos, Guanajibo, Quebrada Grande, Rio Hondo, and Sabanetas. These barrios had large sugar cane operations. As mentioned earlier, Mayagüez Arriba had a mixture of coffee and sugar cane operations within its boundaries. By 1935, however, the epidemic had reached such proportions that most of the barrios had become affected, even though Marina, Cárcel, Mayagüez Arriba, Marina, and Sábalos had the highest number of deaths due to TB. If

¹²⁵ “Report on Tuberculosis”, *Porto Rico Journal of Public Health and Tropical Medicine*, Vol. VI, Dec. 1939; calculations from death certificates from 1910, 1920, 1925, 1930.

¹²⁶ The data for the barrios in Mayagüez originated from an examination of death certificates for the years indicated. Over 1500 death certificates were examined, 638 of which stated TB as the cause of death. These death certificates many times provided the sex, occupation, age, and barrio of residence for the deceased and these statistics were recorded accordingly. Since the medical literature did not provide TB data for Mayagüez for 1910 and 1920, all TB deaths were recorded for these years. Due to time constrictions, approximately a third of all death certificates that stated TB as cause of death were recorded for 1925, 1930, and 1935. A third of all death certificates still provide a good sample from which the conditions present in the municipality for those years can be surmised.

compared to the areas of coffee and sugar cane cultivation in Figure 8, it becomes evident that these barrios were adjacent to or were centers for sugar cane cultivation and processing.

The great majority of the male population in Mayagüez worked in agriculture, as illustrated in Table 8, which shows the occupational breakdown for the city in 1930.¹²⁷ The two major industries in the city were agriculture (for the most part, sugar cane and coffee) and the textile industry. The majority of workers in the textile industry were women while men dominated the agricultural work force. Given that the majority of employed male laborers worked in agriculture, it follows that a great number of TB deaths in the male population would occur among these workers.

Proximity or involvement with sugar cane operations in the barrios does not provide the only evidence that signals a connection between sugar and TB. Table 9 shows the occupations listed in the death certificates of males that died from TB and the percentage of the total that each occupation contributed.¹²⁸ The classification of “industrial” is interesting since there were no true industrial operations in the municipality until the late 1930s when the brewery, Cervecería India, began operations in 1937. The census data illustrated in Table 8 also shows that the proportion of male workers employed in truly industrial occupations remained low. The emphasis on sugar production, as in other parts of the island, precluded the integration of industrial enterprises that did not somehow tie their processes to either sugar or tobacco production and processing.

¹²⁷ The census for 1910 and 1920 did not include a breakdown for major cities like the census of 1930 did. Many changes to the compilation of occupational data were made for the census of 1930, which provided much more detailed information than previous censuses. However, it is logical to assume that occupations between 1910 and 1930 did not change much for males as most of the work available was agricultural in nature. Employment of women would have increased in the 1920s as a result of an increase in the needlework in Mayagüez, which became one of the most important sectors for this industry through the 1950s.

¹²⁸ For reasons unknown, deaths certificates for 1930 and 1935 included a large number that did not list occupational data. Whether this reflects a high unemployment rate or oversight by clerks cannot be ascertained. The 1930 U.S. Census showed that Mayagüez had an unemployment rate of 28%, slightly better than the 36.9% for the whole island.

Percent of Total TB Mortality Rates per Barrion, Mayagüez, P.R., 1910

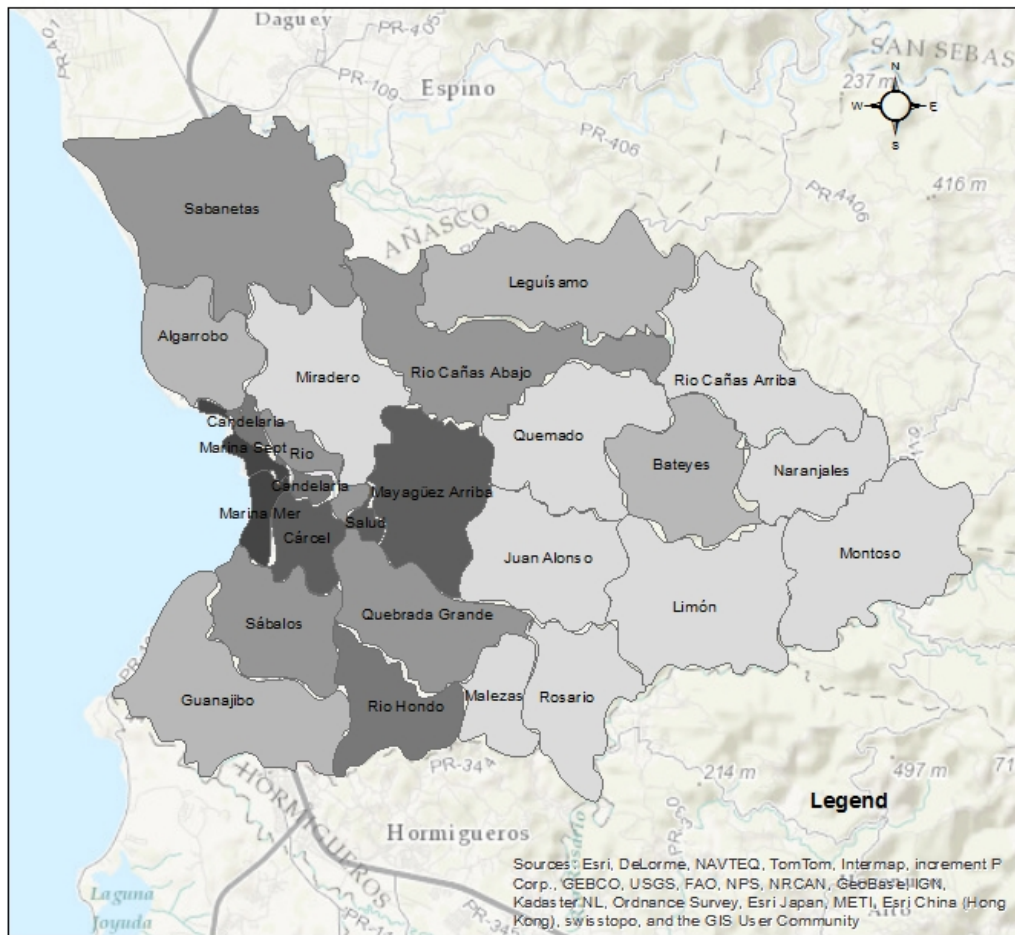


Figure 9: Percent of Total TB Mortality Rates per Barrion, Mayagüez, P.R., 1910

Percent of Total TB Mortality Rates per Barrion, Mayagüez, P.R., 1920

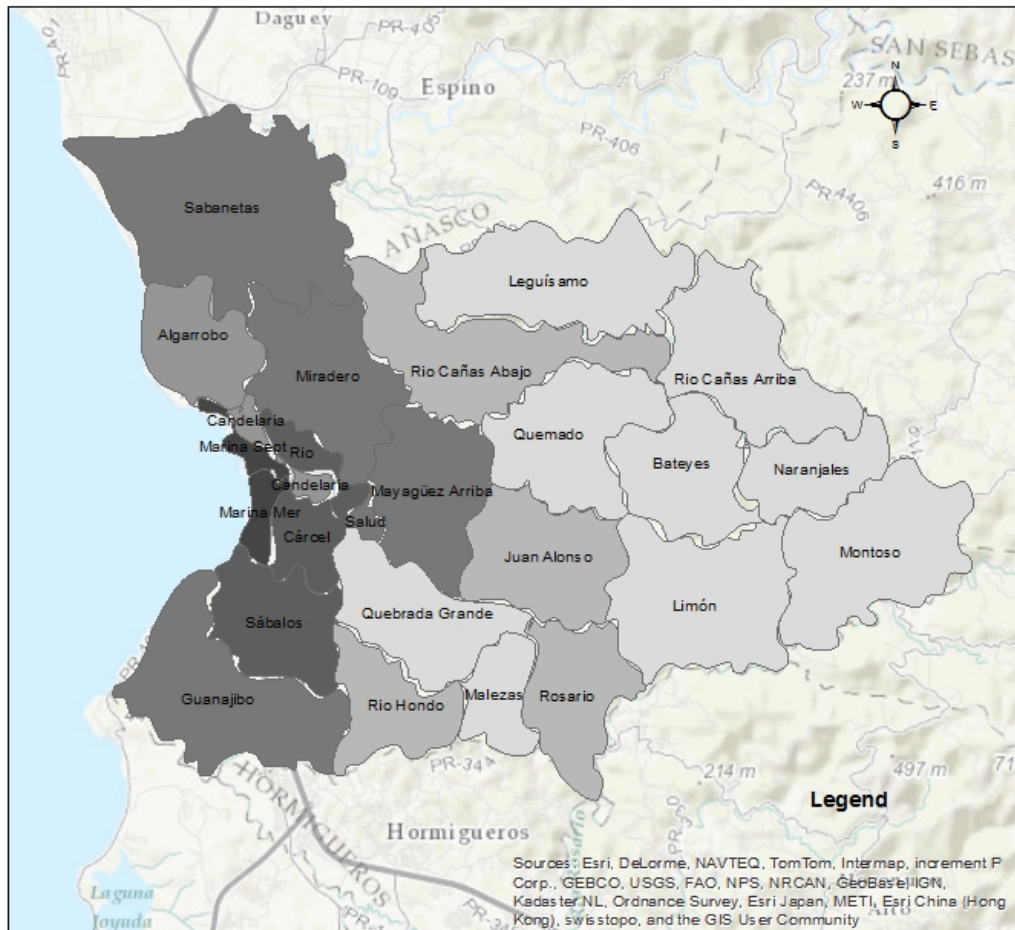


Figure 10: Percent of Total TB Mortality Rates per Barrio, Mayagüez, P.R., 1920

Percent of Total TB Mortality Rates per Barrion, Mayagüez, P.R., 1935

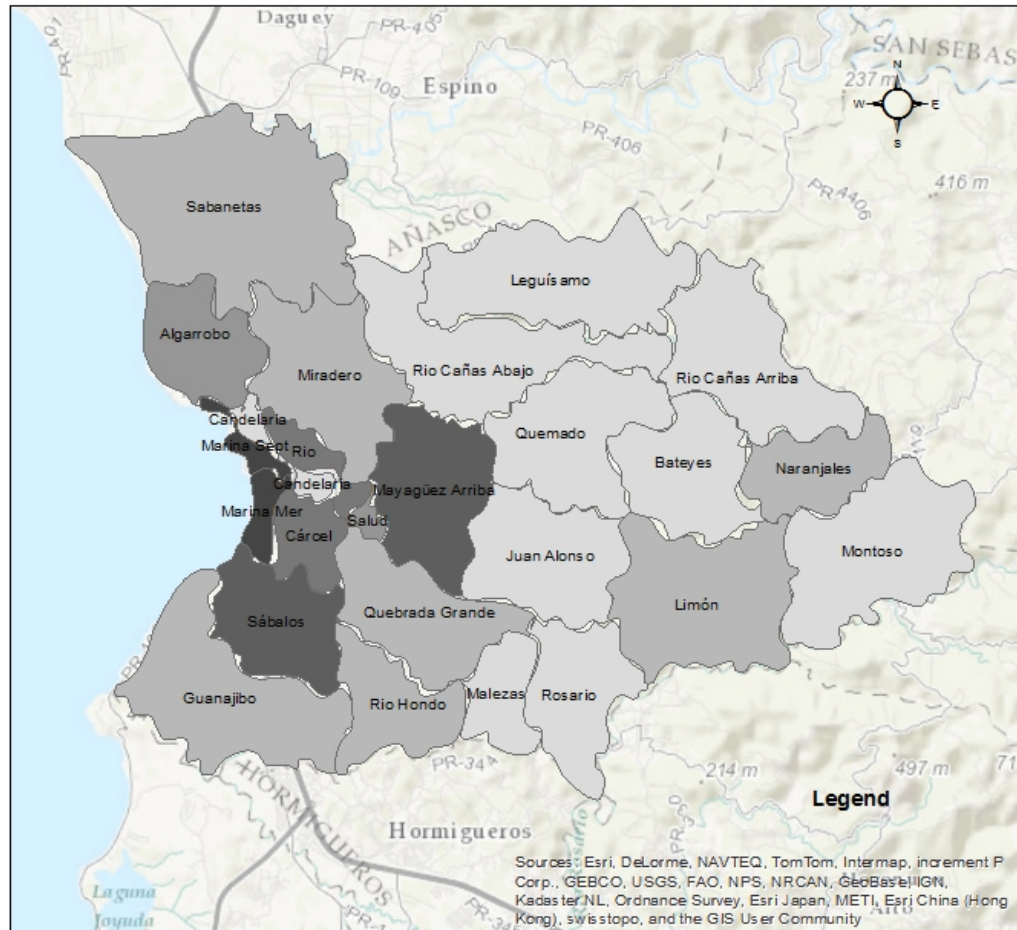


Figure 11: Percent of Total TB Mortality Rates per Barrio, Mayagüez, P.R., 1935

Table 8: Percent of Employed Individuals per Occupation in Mayagüez, P.R. (U.S. Census 1930).

Occupation	Percent of Employed Individuals (1930)
Agricultural Laborers	17.7
Construction	3.7
Tobacco Processing	0.7
Clothing	4.4
Textile	16.8 (94% of textile workers were women)
Retail	12.7
Food	2.2
Railroad	0.65
Transportation	4.1
Domestic Service	10 (70% of domestic workers were women)

Table 9: Percent of Total Male Tuberculosis Deaths per Occupation, Mayagüez, P.R.

Occupation	1910	1920	1925	1935
Industrial	34	38	35	0
Agricultural	15	27	31	16
Laborer	20	14	8.6	0
Tobacco	1	2.3	5.2	0.2
Laundry	0	0	1	4
Vendor	0	0	0	6
Other	8	14	7	16.3
Unknown	22	4.7	7	57.5
	100	100	100	100

The effective business licenses in 1917 also illustrated the lack of truly industrial enterprises. These included a number of small shops, a shoe repair shop, warehouses, a couple of import houses and shipping companies, coffee and sugar cane operations, pharmacies, bakeries, a tanning shop, a couple of large stores, two needlework operations, and a butcher.¹²⁹ Therefore, the classification of “industrial” most likely referred to sugar mill work or tobacco processing. The few professionals and skilled workers that died from TB specified their trade and are included in the classification of “other.” Among these occupations, the certificates specified some carpenters, a student, a professor, shoemaker, mechanic, and mason.

The classification of “laborer” may also include workers that did some work for the sugar cane operations. Many laborers hired their services for whatever work they could find. Laborers

¹²⁹ Report to Insular Board of Tax Revision, 1917, Mayagüez Municipal Archives, 1917 Vol. 2.

could have also worked cleaning the streets and other unskilled work. Only a few of the death certificates specifically mention “tobacco worker” as the occupation, even though Townsend had recognized the high incidence of TB among tobacco workers.¹³⁰ This fact heightens the suspicion that physicians and administrators recording deaths sometimes classified as “industrial” certain occupations that entailed working in an environment resembling a factory, i.e. sugar mills, tobacco stripping, and cigar rolling.

The only other occupation that this study could consider industrial was needlework. As shown in Table 8, the majority of needlework factories primarily hired women for those jobs. Occupations related to laundry and ironing only became somewhat significant among males by 1935. The absence of males classified in occupations related to laundry until 1935 probably reflects the association of laundry work with women since lower class women had traditionally hired their services to affluent families to do their laundry as an additional source of income. The fact that some appear by 1935 perhaps reflects the appearance of professional laundry outfits by the 1930s. Advertisements for professional laundry businesses appeared in examined *El Mundo* newspapers printed after 1930. Therefore, the appearance of such operations in Mayagüez, which entailed working in somewhat enclosed environments that kept laborers working in close proximity, can be surmised.

The death certificates also included a considerable number that left the occupation line blank, especially in 1910 and 1935. Whether this reflects the recorders’ lack of interest, lack of knowledge regarding the occupation, or a large number of unemployed victims of the disease cannot be ascertained. However, the statistics make clear that agricultural workers, most of whom the recorders classified as *braceros*, made a large percentage of TB victims. Since a large percentage of these workers lived in barrios associated with sugar cane cultivation and

¹³⁰ Townsend, pp. 48.

processing, not in coffee producing barrios, the data justifies a further association between TB and the sugar economy. Even though these workers probably had direct contact with the sugar cane operations, other laborer and workers in the municipality depended on jobs that in turn depended on the sugar industry. Laborers working in transportation, the port, construction, etc. drew their income indirectly from sugar cane production. Consequently, the low wages for workers directly involved in the sugar economy had an impact on their living conditions. Consequently, in a bad crop year or when sugar prices plummeted, many others would also suffer the consequences and from lower standards of living that made TB such a great threat.

The occupational statistics analyzed so far refer to male TB victims. However, women in Mayagüez, as in the rest of the island, suffered from high TB mortality rates. Table 10 shows the percentage of Mayagüez TB deaths for males and females in 1910, 1920, 1925, 1930, and 1935. These statistics are consistent with data for the whole island. For example, in 1925 women in Puerto Rico died at a rate 16.4% higher than males.¹³¹ Island-wise mortality rates for women remained much higher than rates for men until 1949.¹³²

Table 10: Percent of Tuberculosis Deaths per Sex, Mayagüez, P.R.

Sex	1910	1920	1925	1930	1935
Male	46	37	43.3	37	45
Female	54	63	56.7	63	55

The lack of occupational data recorded in the death certificates of female victims of TB makes the analysis impossible. The administrators that recorded their deaths usually listed their occupation *doméstica*, a term used for housewives. Only one woman in 1920 was listed as launderer, one as launderer in 1935, and one woman was listed as needle worker in 1935. These

¹³¹ Rodríguez Pastor, J. "Epidemiology of Tuberculosis in Puerto Rico", *Porto Rico Journal of Public Health and Tropical Medicine*, Vol. IV, No. 10, April 1929, pp. 438.

¹³² Saéz, pp. 59.

are the only three women that have an occupation listed other than *doméstica*. However, the classification of *doméstica* presents a problem that even Townsend had identified. Puerto Rican culture did not encourage women to work even though the conditions made it imperative to do so.¹³³ Therefore, Townsend concluded that recorders simply did not write down occupations other than *doméstica*. Therefore, many of the female victims of the disease probably worked, at least on a part-time basis, on jobs that did not entail home management.

In spite of the lack of occupational data listed on death certificates, Table 2 illustrated that over 16% of the employable population over 10 years old worked in the textile industry and women comprised 94% of textile workers. It is logical to assume that a great number of these workers could have encountered TB in the workplace even if their death certificates did not list an occupation. The working conditions on many of these factories qualified them as “sweatshops”, a result in great part of American investment.¹³⁴ Although this study focuses mainly on the impact of the sugar industry on the persistence of TB on the island, American imperialistic economic endeavors also affected women workers occupied in other industries and needlework and textile enterprises comprised a very large portion of female employment.

As mentioned earlier, many women also hired their services as launderers to more affluent families. Families paid them in cash and such work would not have been recorded in insular statistics. Some women also worked as tobacco strippers and rollers. Many of these jobs could have resulted in exposure to the TB bacilli. Moreover, women could easily become exposed at home since male relatives could have transmitted the disease to them. In Mayagüez, a large number of those male relatives would have worked in the sugar industry. Therefore, the

¹³³ Townsend, pp. 13.

¹³⁴ Diffie & Diffie, pp. 180.

living conditions perpetuated by the sugar economy would have affected women as well, even if they did not work for sugar cane operations.

Physicians attempted to explain the higher mortality rates among women as a result of malnutrition due to the tendency for males to consume more of the food that their wages purchased. Townsend also alluded to this possibility and added that women suffered from “higher pressures of life.”¹³⁵ Throughout papers written by physicians between 1922 and 1939, they also explained higher female susceptibility to the disease as a result from the role of women as the caretakers of sick relatives, increasing the possibility of exposure. Others, however, considered women as obstacles to public health.

Table 11: Total Population in Mayagüez, P.R. (Source: U.S. Census Data).

Year	Population
1899	38,915
1910	42,429
1920	41,612
1930	58,270
1940	76,487

The population in Mayagüez also drew concern from physicians and politicians alike. Table 11 shows the population in the municipality between 1899 and 1940. The population remained relatively stable for the first two decades and the reasons could be varied. The figures are incompatible with the statistics for the whole island, which for the period between 1910 and 1920 was a total of net growth of 181,797.¹³⁶ So, while the island’s population had increased dramatically between 1910 and 1920, the population in Mayagüez had not. In fact, it decreased. In 1918, an earthquake had struck the city, killing 116 people, 48 due to a resulting tsunami, and

¹³⁵ *Ibid.*, pp. 12.

¹³⁶ Bayrón Toro, pp. 41.

causing extensive damage to homes and other buildings.¹³⁷ Even though reconstruction occurred relatively quickly, some people may have decided to leave and the event may have prevented a substantial migration of people into the city between 1918 and 1920.

The period between 1920 and 1940 poses a different scenario since the population in Mayagüez grew by 34, 875. The total growth for the island in that same time frame was 569, 446, which meant that Mayagüez was responsible for 6.1% of the island's population growth. While the births during those two decades would not have affected the availability of employment immediately (children born in 1920 would not have entered the workplace until sometime in the 1930s), the increasing strain on already stretched incomes would have decreased the standards of living even further. Also, a number of migrations from rural municipalities into Mayagüez certainly contributed to its total population. The hurricanes of 1928 and 1932 may have also influenced migration. Mayagüez escaped with only slight damage and few injuries while the storms devastated towns in the eastern and northern parts of the island.¹³⁸ The sugar cane and other crops in Mayagüez were largely spared in comparison to other municipalities and workers may have gone there in search of employment.

Population increase and overcrowding certainly did not do much to ameliorate the situation. However, if the economy had not become so susceptible due to its lack of industrial diversity, TB rates would have decreased in spite of the population. Economic diversity and some industrialization occurred after the establishment of the Commonwealth, thereby improving general living conditions after 1952. Therefore, Malthusian theories had limitations in explaining the persistence of high TB mortality rates. Most physicians and politicians of the

¹³⁷ Data collected from US Census Reports for 1910, 1910, 1930, and 1940.

¹³⁸ Various sources describe the effects of the two hurricanes: Report to the Governor of Puerto Rico (1928 and 1932), and "The Public Health Aspect of the Hurricane of San Ciprian, September 26-27, 1932", *Porto Rico Journal of Public Health and Tropical Medicine*, Vol. VI, No. 4, pp. 261.

time, however, accepted Malthusian theories as true and, in the case of Puerto Rico they also represented convenient explanations for the situation that further distanced the poor living conditions from the sugar economy. The situation in Mayagüez had grown worst over time, and the municipality had needed an intensive intervention in order to limit exposure, incidence, and mortality. In spite of this, the limited scope of public health intervention in Mayagüez owed more to charitable organizations and labor efforts than to governmental involvement until the establishment of the Anti-Tuberculosis Hospital in 1934.

The Anti-Tuberculosis League filed its statutes and started operations on the island in 1907 under the interim leadership of Edith Elmer Wood, a Progressive reformer. In March of that year, Wood had sent correspondence to the major municipalities of the island, requesting cooperation and monetary donations to begin the work.¹³⁹ In 1908, Wood announced in a memo sent to all the charters that Dr. Pedro Gutiérrez Igaravídes had joined the League and the membership had chosen him as Vice-President. Dr. Gutiérrez Igaravídes also worked alongside Col. Ashford in the ongoing anti-hookworm campaign, and Wood considered this fact a benefit since “he would direct the campaign of two associated maladies: anemia and tuberculosis.” Wood’s statement shows how civic leaders and physicians conflated the campaign against hookworm with tuberculosis. The idea that curing hookworm would solve most of Puerto Rico’s health problems not only unwittingly exculpated the sugar economy from contributing to malnutrition and susceptibility to disease, but also diverted hopes and monetary investment from TB efforts and towards hookworm. Therefore, although the League had no direct links to the American colonial project, it certainly did not oppose it either.

¹³⁹ Edith Elmer Wood to City Mayors, March 1907, Ponce Municipal Archives, Box Labeled “Tuberculosis”, S296-1

Subsequent documents in Mayagüez allude to a charter of the League organized in each major city, Mayagüez included. The League cooperated with the National Association for the Study and Prevention of Tuberculosis to sponsor a traveling exhibition with the objective of educating the public about tuberculosis prevention. The first one of these exhibitions to travel around the island, including Mayagüez, took place in 1909.¹⁴⁰ Such exhibitions and conferences had become popular among Progressive reformers and anti-TB organizers in the United States. Exhibitions organized by the League continued until the 1930s when the Insular Commission of Health took over the TB prevention campaigns. While officials at the time usually considered these exhibitions a success, their efficiency in reaching the people that most needed it must be questioned. In an island where every day constituted a fight for survival for a large majority of the population, making the time to visit an exhibition in the center of town does not seem realistic.¹⁴¹

Exhibitions only comprised a fraction of the League's efforts, however. Donations from private sponsors, on the island and abroad, allowed the League to acquire lands through the island and it used to build seven dispensaries (one in Mayagüez) and a small sanatorium near the investment, as specified in a memo from Wood.¹⁴² However, the financial contribution of the insular government remained minimal. In Wood's estimation, the legislature wished to save money and contributions tagged for tuberculosis campaigns would be reduced. The memo did state that the Insular Treasury would provide payment for the transport of poor and indigent TB patients from any town on the island to the sanatorium. The ruling specified a quota of 42 patients per legislative district. A few patients from Mayagüez must have also taken advantage of

¹⁴⁰ Edith Elmer Wood to League City Charters, January 16, 1909, Ponce Municipal Archives, Subseries, Bubonic Plague and Tuberculosis, Box S-296.

¹⁴¹ More information regarding the actual campaign that the League conducted and that was later conducted by the Department of Hygiene is included in Chapter 3.

¹⁴² Edith Elmer Wood to City Mayors, January 31, 1909, Ponce Municipal Archives, Box S-296.

this benefit even though the quota had to be shared among several municipalities that made up the district. The examination of death certificates for Mayagüez revealed only two patients that had died outside the boundaries of the municipality, and they had died at the Insular Sanatorium in Rio Piedras, not the League's sanatorium. She also emphasized that "it was not desirable to send moribund patients." Therefore, the League did not desire to spend resources on poor people that had no hope of recovery.

The League's efforts on the island eventually dwindled. By 1934, the year in which TB mortality rates soared to 615/100,000, the League requested that the Mayagüez municipality buy the lands it owned there.¹⁴³ These lands were adjacent to the Anti-TB sanatorium being built on Cerro Las Mesas, located within Barrio Quebrada Grande. The League also wished the municipality to liquidate their debt of \$4500. Mayagüez Treasurer, Rafael P. Méndez, expressed to Commissioner of Health, Dr. Garrido Morales, that the municipality did not have the funds to acquire the land and requested the Insular Commission of Health to acquire the lands. Dr. Garrido Morales replied that the Commission could take over the lands, but lacked the resources to liquidate the debt. Consequently, Méndez requested help from L.A. McLeod, Auditor of Puerto Rico, who suggested that Méndez acquire the funds from the insular Legislature or through donation campaigns.¹⁴⁴ In the end, the insular government provided the money to liquidate the debt and the lands allowed for an expansion of the sanatorium.

Efforts to combat tuberculosis and to educate workers on the prevention of the disease also originated from labor unions. For example, the Federación Libre de los Trabajadores de Puerto Rico (Free Federation of Workers, FLTPR), had embarked on an Anti-TB campaign in

¹⁴³ Correspondence between Commissioner of Health, Dr. Garrido Morales, and Mayagüez Treasurer, Rafael P. Méndez, February 1934, Mayagüez Municipal Archives, 1934, Vol. I.

¹⁴⁴ Correspondence between Rafael P. Méndez and L.A. McLeod, February 1934, Mayagüez Municipal Archives, 1934, Vol. I.

1909 and 1910. The Central Labor Union of Mayagüez, the FLTPR's chapter in the municipality, planned a conference on Labor Day, 1910.¹⁴⁵ The union hoped that the conference, titled "Ways to Combat Tuberculosis in the Laborer's Home", would attract Governor Geo Colton and a number of physicians and government officials. The memo requested a donation of \$200 from the Mayagüez Assembly in order to help with expenses and help in the cause "to combat the terrible illness commonly known as the white plague." The request was denied due to lack of funds and the conference did take place on a smaller scale. Whether the denial also reflected political motivations cannot be ascertained, but it also demonstrated that the unions recognized the tuberculosis problem and willingly took on the fight to educate workers, even if it meant financing such efforts with union funds.

Labor unions had also attempted to offer services that governmental entities did not provide. Townsend recognizes the efforts of labor organizations, particularly among tobacco workers, in offering not only education about prevention and hygiene in the workplace and at home, but also a type of employee health insurance.¹⁴⁶ The funds for the insurance originated from small fees paid by workers who, upon diagnosis of TB, could draw on insurance payments that helped cover medical expenses and loss of wages. The plan continued in the cities where tobacco processing took place, which would have included Mayagüez, until 1920 when lack of funds forced the discontinuation of this service. Townsend noted that approximately 7.5% of the workers that contributed to the fund actually drew benefits and 85% of them perished. Again, the lack of funds hindered the efforts of labor organizations to provide some relief. More information about unions' efforts to improve living conditions for workers and to bring attention to workers' health issues is included in the next chapter.

¹⁴⁵ Memo from J. Aybar, President, and J.M. Balsar, Secretary, Unión Obrera Central de Mayagüez, undated, Mayagüez Municipal Archives, 1910, Vol. I.

¹⁴⁶ Townsend, pp. 53.

Religious organizations also concerned themselves with tuberculosis and other public health issues. Protestants considered health matters as opportunities for conversion and, while not interested in the colonial project of rehabilitating the lower classes with the purpose of generating a productive labor force, medical interventions provided occasions in which to introduce Protestantism to patients.¹⁴⁷ Dr. Manuel Guzmán Rodríguez, a Protestant missionary doctor, opened a dispensary in Mayagüez in 1901.¹⁴⁸ Other missionary doctors visited the sugar cane plantations and offered their services, but the scarcity of physicians forced these dispensaries to operate on a part-time basis. As a result of the widespread poverty, these doctors accepted non-cash payment for services, from chickens to fruits. The financial burden made it difficult for these dispensaries to adequately serve their patients. This led to the construction of the small Presbyterian Rye Hospital in Mayagüez.¹⁴⁹ This hospital, however, served mostly as a place where the tuberculosis patient could be diagnosed and treated as an outpatient. Examination of death certificates did not reveal any TB victims that had died at the Protestant hospital.

The Catholic Church, in response to Protestant accusations that it had forgotten the poor, also opened dispensaries and continued to operate some hospitals. The Church had founded the Hospital Concepción in San Germán in 1514 and in 1882 the Daughters of Charity took over its administration.¹⁵⁰ The hospital, located about fifteen miles from Mayagüez, many times admitted patients from that municipality. In addition, concerned about the malnutrition and susceptibility to disease in Puerto Rican children, Sister Mary Padden, who worked in the Academia de la Inmaculada Concepción (AIC), established a school lunch program at the school in 1906. The

¹⁴⁷ Walsh, Ellen. *Advancing the Kingdom: Missionaries and Americanization in Puerto Rico, 1898-1930s*, Dissertation. (Pittsburgh: University of Pittsburgh), 2008, pp. 153.

¹⁴⁸ *Ibid.*, pp. 156.

¹⁴⁹ *Ibid.*, pp. 159.

¹⁵⁰ For details about the history of Hospital Concepción, visit the website, www.hospitalconcepcion.net.

AIC, founded by the Church in 105, originally had two separate schools, one that catered to students of affluent families that paid for their education and another school that offered free education to poor children.¹⁵¹ The lunch program that Sister Padden established at the AIC became the model for the island-wide school lunch program. These lunches comprised the main meal for many poor children.

Table 12: Percentage of TB Victims that Perished at Hospital San Antonio.

Year	Percentage of TB Victims
1910	36
1920	36
1925	27
1930	18
1935	20.4

The Sisters of Charity also served as nurses and care-takers at the municipal hospital, Hospital San Antonio, founded in 1867.¹⁵² They continued to serve the hospital until 1970. This hospital did admit many TB patients, and the municipality paid for much of the expenses in the case of poor patients. Table 12 shows the percentage of TB victims that died at Hospital San Antonio, according to the death certificates examined. Through the 1930s, most patients still died in their homes. Only two victims were recorded as having died at the Anti-TB hospital in 1935; two victims between 1920 and 1930 were recorded as having expired at Asilo de los Pobres (Asylum for the Poor), and one 14-year old boy died of TB at the Correctional School. Therefore, between 1910 and 1935, Hospital San Antonio admitted patients suffering from TB in relatively large numbers and a large percentage of them expired there. The willingness to treat TB patients contrasted with other hospitals throughout the island that had a policy of turning those patients away.

¹⁵¹ Bayrón Toro, pp. 156.

¹⁵² *Ibid.*, pp. 104.

The efforts of the labor, Progressive, and charitable organizations proved insufficient in combatting such a great epidemic. Not only were they not able to change the living conditions of the lower classes, but the American government for the most part left public health measures against TB in the hands of insular and municipal governments. In Mayagüez, these efforts consisted of the continuation of certain programs that had been in effect before 1898. Several reports of the Mayagüez Treasury between 1900 and 1935 indicated that the city paid for the burial of poor and indigent citizens.¹⁵³ A ledger of the Treasury also specified reimbursement to people who had transported patients from their residences to Hospital San Antonio.¹⁵⁴ Patients suffering from all ailments could benefit from such services since transportation to and from some of the barrios presented difficulties due to the municipality's geography. The city also financed the Asylum for the Poor.

Another way in which city funds could have benefitted TB patients consisted of public works that targeted the slums in which laborers and agricultural workers had built their shacks. However, lack of funds made this a very slow process. Photos of Mayagüez between 1910 and 1920 illustrate the conditions that existed in even the major streets in the center of town.¹⁵⁵ A resolution requesting funds from the Civil Works Administration to pave roads surrounding the City Hall did not appear in the records until 1917.¹⁵⁶ After a fire in Marina that destroyed several homes, a letter from the Sanitary Service to a victim of the fire stated that it permitted the reconstruction of homes as long as they had a latrine.¹⁵⁷ A 1940 census map of the city showed the locations of operating sewer lines by that year, and the lines extended from the center of town

¹⁵³ These reports can be found at the Mayagüez Municipal Archives, in bound volumes for each year.

¹⁵⁴ Ledger of the Treasury, Mayagüez Municipal Archives, 1917, Vol. I.

¹⁵⁵ For digitized photos of Mayagüez and Puerto Rico in the 20th century, visit the Archivo Histórico y Digital de Puerto Rico, <http://archivofotograficodepuertorico.com/>.

¹⁵⁶ Resolution of the Municipal Assembly, Mayagüez Municipal Archives, 1937, Vol. I.

¹⁵⁷ Letter from Servicio de Sanidad to Juan Zapata, May 21, 1917, Mayagüez Municipal Archives, 1917, Vol. II.

towards parts of barrio Rio, all of Candelaria, a small part of Cárcel, and a small sector of Marina.¹⁵⁸ Therefore, even by 1940 a large portion of the municipality lacked sewer service.

While sewer services did not have a direct relationship with TB exposure and mortality, the lack of services and sanitation illustrated how “modernity” and “progress” did not arrive to the city for many decades in spite of officials’ discourse to the contrary.

The conditions in the barrios many times forced citizens into action. A letter signed by over twenty residents of sector La Mineral in barrio Salud described the situation in detail.¹⁵⁹ In addition to not having sewer or water service, the citizens complained of poorly lit streets where “scandalous behavior” occurred and “not even the police dares to patrol at night.” The letter added that the unpaved alleys and streets flooded when it rained and exposed residents to unhealthful red dirt when it was dry, and no garbage pick-up service reached the area. No records of a response from the Assembly exist. Since the 1940 census map does not show any sewers reaching most of Salud, it must be concluded that the Assembly did not address most of the complaints. Ironically, barrio Salud means “health” in Spanish and it was given this name due to a natural spring that people thought had curative properties.¹⁶⁰ A local entrepreneur eventually made a business of bottling the water and selling it (Rodríguez Agua La Mineral).

The case of Salud is hardly unique in terms of the living conditions experienced by lower class citizens. While the American press and American officials praised the degree to which American funds had built roads and bridges, the reality in the cities mirrored that of Mayagüez, where some funds had been allotted to pave streets important to government business and roads that the sugar industry needed. While PRRA (Puerto Rican Relief Administration) attempted to

¹⁵⁸ U.S. Census, 1940, blueprint of City of Mayagüez, U.S. Census Service.

¹⁵⁹ Letter from Citizens of La Mineral to the Municipal Assembly, March 20, 1934, Mayagüez Municipal Archives, 1934, Vol. I.

¹⁶⁰ Bayrón Toro, pp. 255.

build up the infrastructure of the island and build low cost housing for the laboring class as part of New Deal programs in the 1930s, the lack of funds also hindered these activities. Public housing in Mayagüez did not replace the slums until after the 1950s where funds facilitated the construction of housing in the barrios Sábalos, Guanajibo, Marina, Algarrobos, and Cárcel.¹⁶¹ Therefore, the government, regardless of the level, did not do much to alleviate the situation that perpetuated tuberculosis mortality among the lower classes.

The Insular Commission of Health had started an Anti-TB campaign in the mid-1920s that, in addition to the continuation of exhibitions and conferences like the ones the League had organized, also increased the number of public health facilities. Dispensaries and units of public health appeared in major cities, including Mayagüez.¹⁶² However, the dispensary included only one visiting nurse to serve a municipality of over 45, 000 people. While this remained a problem for communities in the U.S. as well, the persistence of such high TB mortality rates and the increase in population in Mayagüez made it very difficult for this program to become effective. To make matters worse, the unit of public health often ran into funding difficulties that made the performance of duties rather difficult. For example, in a letter to the Mayor, Sub Commissioner of Health Ramón Sifre requested that the Assembly pass a resolution to exempt the city's Unit of Public Health from having to make utility payments in view of the unit's lack of funds and the service it provided. This case illustrates how, even with the construction of dispensaries and hospitals, the lack of funding often caused problems and limited the services that they could provide.

Hookworm remained an important target of health initiatives, as did malaria. However, by the 1930s it had become clear that the campaign against the TB epidemic could no longer

¹⁶¹ *Ibid.*, pp. 66.

¹⁶² "Report of the Bureau of Tuberculosis of the Department of Health of Porto Rico", *Porto Rico Health Review*, June 1926, Vol. I, No. 2, pp. 25.

depend on the eradication of hookworm, even though many physicians still saw malnutrition as a result from hookworm and a major factor in TB susceptibility. In addition, some American physicians had become concerned about the TB mortality rates in the late 1920s, and surveys such as Townsend's made the epidemic difficult to overlook. Some changes occurred after the appointment of Dr. Garrido Morales as Commissioner of Health in 1933. Following the recommendations of American health officials, Garrido Morales procured some funds with which to add a number of beds to the existing sanatoriums in Rio Piedras, Cayey, and Ponce, and also finance the construction of smaller sanatoria in Guayama and Mayagüez.¹⁶³ Even though these represented great progress toward helping people that needed treatment, they also presented challenges.

The improvements that Dr. Garrido Morales promoted did not only utilize funds from the insular government budget. Municipalities that benefitted from these changes had to contribute funds from their treasuries to complete the projects and to the wages of many of the employees of the new facilities. The sanatorium in Mayagüez, scheduled to open in July, 1934, ran into problems from the onset. The Commission planned the sanatorium to house 100 patients, and to be equipped with a cafeteria, and quarters for nurses. However, it had sponsored the construction of the hospital with the condition that the municipality would pay for all the equipment.¹⁶⁴ A month before the scheduled opening, Mayagüez had not made the necessary purchases and Dr. Garrido Morales sent the mayor a letter, instructing him to follow Guayama's example: to get a loan and immediately purchase the equipment so that installation and official inauguration could proceed as planned.

¹⁶³ "Dr. Garrido Morales Driving Tuberculosis and Malaria from Puerto Rico", *EL Mundo*, September 11, 1938.

¹⁶⁴ Letter from Dr. Garrido Morales to Alfonso González, Mayor of Mayagüez, June 14, 1934

The problems had started much earlier than June, however, and many problems hindered the actual construction of the sanatorium. In a letter from the engineer Marc Lejeune to Dr. Garrido Morales, the contractor summarized the problems.¹⁶⁵ He asserted that the plans for the sanatorium did not include plans for a morgue, a laundry, and a storage room for coffins. It also stated that his workers would need to level the terrain in order to add the floors that remained to be built. He also suggested the addition of tanks that would collect rain water since he believed that the water provided by the natural springs in the area would not suffice. In other words, the new sanatorium would not have included a morgue, a laundry, or water services and it was Lejeune who took it upon himself to point these deficiencies and suggest solutions. The letter ended stating that he hoped that other would forgive him for his blunt approach regarding the needs of the sanatorium, but that since “I’ve been living here, I have been in constant contact with death.” The construction of the sanatorium had certainly attracted a lot of attention from the press; yet, even the manner in which the hospital was constructed points to the neglect of Mayagüez in spite of the high mortality there.

The sanatorium had not enjoyed an auspicious beginning. However, by 1937, 489 patients had spent time there, according to Dr. Ramón Colón, physician in Mayagüez.¹⁶⁶ In addition to the treatment of patients, the sanatorium presented opportunities for epidemiological studies. Dr. Colón’s studies, for example, showed that 56% of the patients in the sanatorium had been in contact with other sick individuals. He concluded that people in the city did not understand the importance of preventive measures and officials had failed to intensify the anti-

¹⁶⁵ Letter from Marc Lejeune, Engineer and Contractor Mayagüez Sanatorium, to Dr. Garrido Morales, Commissioner of Health, March 20, 1934; Mayagüez Municipal Archives, 1934, Vol. I.

¹⁶⁶ Colón, Ramón T. “Estudios de Contactos en los Centros Anti-Tuberculosos de la Isla”, *Boletín de la Asociación Médica de Puerto Rico*, pp. 170.

TB campaign.¹⁶⁷ While he appreciated the efforts of organizations like the Anti-Tuberculosis League, he realized that Mayagüez had not caught the attention of government officials until after 1930. The archival records justify his conclusion that officials had neglected Mayagüez.

Dr. Colón's assumption that people in the municipality did not understand how tuberculosis spread or the preventive measures that would protect them even in the cases where relatives had contracted the disease pointed to the lack of education. He also believed that many physicians in Mayagüez had not completely accepted the contagion theory and held on to inheritance mode of transmission.¹⁶⁸ If this was indeed the case, then physicians would not have felt the need to educate patients and their families. This also means that education would have fallen in the hands of the League during the period between 1898 and 1925. These education efforts materialized mostly in the forms of exhibits, conferences, and pamphlets. While commendable, this type of material may not have efficiently reached the lower classes.

The unions would have probably enjoyed a little more success, but the lack of funding and their contentious relationship with the sugar and tobacco conglomerates may have steered their attention elsewhere. Additions made by the government to public health services that served the least affluent classes consisted of only one visiting nurse and one TB dispensary in Mayagüez between 1925 and 1934. The limited services provided meant that education would have reached few people and, when it did, it may have done so too late. In the 1930s, the Garrido Morales education campaign also depended greatly on movies shown in theaters, which entailed the same challenges as conferences and exhibits, probably not attracting the attention of the population that needed it most.

¹⁶⁷ *Ibid.*, pp. 171.

¹⁶⁸ *Ibid.*, pp. 169.

Officials also failed to build infrastructure that kept pace with the needs of the people. On the other hand, infrastructure directly related to commerce and the sugar industry had caught the attention of federal officials who made decisions regarding the allocation of funds. Island officials had to face municipal and insular shortages of funding that could be utilized for other services. Taxation of businesses brought in some income, but, as many historians of the sugar industry have shown, the profits from sugar did not really stay in Puerto Rico. Consequently, officials could not promote the construction of public housing and essential services to the majority of the barrios, perpetuating the laborers' detrimental living conditions. Lack of funding also prevented the construction of hospitals and health facilities that could offer services and education. Labor struggles, brought about in large measure by the sugar economy, also took officials' attention away from infrastructure construction. The fight over wages and working hours could have steered discussions away from the impact that those wages had in improving public health, placing emphasis on the work place rather than on the laborer's home environment.

Mayagüez' participation in the sugar economy transformed its landscape, and the presence of American investment could have encouraged many elites to believe that Mayagüez actually had better opportunities than other towns regardless of the grim reality in which laborers lived daily. After all, for many Puerto Ricans, the American intervention meant opportunities for modernity and progress. Officials could not publicly admit that this modernity came at a price to the lower classes and that it failed to deliver on many of its promises. To do so would have meant that this was indeed a colonial project that entailed exploitation rather than the true uplift of the less affluent people on the island.

Mayagüez' location at the other end of the island from the investment, where insular and American officials spent most of their time, could have also kept the municipality out of sight and out of mind. When disease statistics reached health officials in San Juan, Mayagüez would have also fitted well into the ongoing discourse that explained away incidence and mortality rates in terms of people's ignorance and unhygienic habits, dissociating the poor health of Puerto Ricans from the realities that resulted from the sugar economy. At the same time, the tendency to conflate tuberculosis with hookworm anemia placed all the hopes and resources into combatting the latter. But, if American officials had their view about how to fix Puerto Rico, Puerto Rican physicians made their own assessments about where the responsibility for the failure of public health efforts lay.

CONCLUSION

Tuberculosis killed thousands of people in Puerto Rico between 1900 and 1940. Anti-tuberculosis campaigns did not effectively abate the spread of the disease until the development of antibiotic therapy in the late 1940s. The availability of labor in Puerto Rico diverted attention from the economic burdens that tuberculosis caused. Infected workers continued to go to work until the disease made it impossible for them to do so. In the process, they infected others, including co-workers and relatives. Public campaigns directed at medical foes previously encountered, such as malaria and yellow fever, diverted funds away from services geared towards anti-tuberculosis efforts. In addition, the sugar industry perpetuated the living conditions that facilitated the spread of tuberculosis while concurrently keeping funds away from municipalities that could have used them to improve housing conditions and municipal health services.

The sugar industry and American emphasis on converting the Puerto Rican economy into one of monoculture was one of the major projects of American imperialism on the island. It had initially been accompanied by promises of modernity and progress that were not realized for decades. Moreover, it placed a large portion of Puerto Rican laborers at the mercy of the market's supply and demand fluctuations. When sugar prices plummeted, many laborers lost even the seasonal employment they had. As a result of low wages and the lack of other avenues for employment, Puerto Rican laborers erected shacks in or near sugar cane cultivation regions. These small buildings not only lacked sanitation services, but also housed a large number of

people. Low wages contributed to malnutrition, weakening the bodies of the laborer and their families even further. The *tiempo muerto* worsened these conditions and placed additional burdens of laboring families. All these factors made the spread of tuberculosis easier and kept mortality rates higher than 200 per 100,000 for four decades. While officials acknowledged that malnutrition made people more susceptible to the disease, they avoided associating malnutrition with the sugar economy.

The city of Mayagüez became a central focus point for the disease, displaying the higher tuberculosis rates on the island for several years. Data from this town showed that people had few alternatives for employment other than agriculture and that 17 to 19% of people who died from tuberculosis held jobs as agricultural workers, mostly males. The location of their homes coincided with *barrios* that depended greatly on sugar cane operations. Women also comprised a large proportion of the deaths due to tuberculosis. Death certificates did not include occupational data for most of these women. While exposure could have occurred at the home, the consensus at the time was that many women had to seek outside sources of income to help them provide for their families. They often provided domestic and laundry services, and worked in tobacco or textile factories. Exposure could have also occurred in these environments.

The data for Mayagüez coincided with island data. Municipalities near or engaged in sugar cane cultivation had the greatest tuberculosis mortality rates. Workers migrated to the coast in the hope of getting a job. Most of the work force on the island engaged in agricultural work since the colonial project had emphasized agriculture and sugar monoculture over diversification and industrialization. Mortality rates for women remained higher than rates for men until the late 1940s, following a similar pattern to that of the city of Mayagüez. The data also showed that, even though conditions worsened and rates increased during the Great Depression, the increasing

trend had begun in the 1920s. The drop in sugar prices during this time may have worsened the prospects for jobs and, as a result, made it difficult for laborers to improve health and living conditions.

The medical infrastructure of the island proved greatly inadequate to serve the needs of the people in Mayagüez and the rest of the island. Propaganda and education campaigns could only go so far in alleviating the problem. Puerto Rican physicians, concerned about their legitimization as professionals, rarely confronted American counterparts about the contradictions built into the colonial project. Their discourse placed blame on the ignorance and superstitious nature of the peasant, who, in their view, preferred to self-medicate using patented concoctions or preferred to visit the curandero instead of consulting a licensed physician. Propaganda portrayed curanderos as selfish quacks that sought only profit and had no true knowledge of medicine. Yet, people really had few alternatives even if they wished to consult a physician.

In spite of the obvious relationship between the sugar economy and the prevalence of the disease, discourse avoided such associations. Even during the 1930s, Dr. Garrido Morales, Director of the Department of Hygiene, continued to divert a large amount of funds towards malaria campaigns. While education campaigns increased during his tenure and several new sanatoriums opened their doors, the need continued to exceed the resources. Progressive and religious organizations, such as the Anti-Tuberculosis League and Protestant Missionaries attempted to combat the epidemic through education campaigns and medical assistance. The effectiveness of education campaigns conducted by the League and the Department of Hygiene may not have reached the level that the epidemic warranted. Illiteracy remained high into the 1930s, limiting the effectiveness of printed material. Theaters also showed educational movies

about tuberculosis. However, one must question the effectiveness of this type of campaign in reaching poor people whose main concern was mere survival day to day.

Tuberculosis has proven to be not only a historical subject on its own right, but also a window to understand how colonialism in Puerto Rico did much more than change economic and political systems. The arms of the colonial project reached into the heart of Puerto Rican homes, many times with deadly consequences. The history of American intervention on the island is not only one of culture clash, political subjugation, or labor conflicts. It is a history of sick people who had few options in finding sources of income and medical care. It is also a history of the process by which discourse constructed sick bodies into the agents of their own demise.

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