

PHILANTHROPIC STUDIES

Robert L. Payton and Dwight F. Burlingame,
general editors

MISSIONARIES OF SCIENCE

*The Rockefeller Foundation
and Latin America*

Edited by
Marcos Cueto

Indiana University Press

Bloomington and Indianapolis

3

The Rockefeller Foundation in Revolutionary Mexico

Yellow Fever in Yucatan and Veracruz

Armando Solorzano

niques of the RF's yellow-fever campaign were determined by the level of U.S. economic investment in the area and by the political conditions of the Mexican Revolution. Further, the campaign modified the revolution in significant ways: by transforming the anti-U.S. sentiments of the people of Veracruz, by helping stabilize and legitimate Mexico as a state, and by creating the basis for influencing future institutional developments in medicine and public health in postrevolutionary Mexico.

Veracruz, the United States, and the Rockefeller Foundation

By 1910 Veracruz was one of the most important U.S. economic enclaves in Latin America.² U.S. capital investments in the area were significant, and agricultural and industrial production was geared toward satisfying the demands of North American markets.³ The monopoly of the oil industry, and the continuous U.S. acquisition of land through concessions, transformed the local peasantry from landowners to wage earners. U.S. investors in Veracruz saw the Mexican Revolution as a serious threat to their interests, a perception that prompted a U.S. invasion of Veracruz of 1914. In that year, under the pretext of "protecting" the life and property of U.S. citizens, the U.S. Marines temporarily occupied Veracruz, following an incident involving the arrest of U.S. sailors.

The incident intensified the anti-U.S. sentiment of a populace already chafing against U.S. political and economic control. The revolutionary aim of "Mexico for the Mexicans" found its strongest support in the nationalism that developed in Veracruz. When the U.S. military withdrew from the city, President Venustiano Carranza occupied it and made it his revolutionary headquarters. Local residents and politicians backed Carranza and his nationalist agenda of recovering Veracruz for the Mexicans. He made special efforts to reduce nationalism to a position of anti-Americanism, however, since U.S. investors controlled the mines, oil wells, and agricultural production of the region he was trying to control, and he was concerned that regionalism could become an obstacle to the efforts of the national government.⁴

The incident in Veracruz was one of the main reasons for the RF's delay in beginning operations in Mexico. The foundation had been interested in working in Mexico since the outset of the Mexican Revolution, and had attempted, without success, to start public health campaigns there from 1911 until 1920. Three factors impeded RF efforts: President Carranza's strong opposition, grounded in nationalism; the anti-American sentiments generated by the U.S. invasion of Mexican territory in 1914; and the Mexican government's general distrust of U.S. organizations. Political conditions began to change in the late 1910s and early 1920s when, after years of civil war, revolutionary leaders be-

PRESENT METHODOLOGICAL CONCERNS rightly stress the need to scrutinize the Rockefeller Foundation's programs according to a country's economic, political, and social conditions.¹ No attention has been paid, however, to analyzing such conditions on a scale smaller than that of a nation. The underlying assumption seems to be that the development of a nation is even and uniform; internal variation is rarely, if ever, considered. This chapter addresses this gap in the literature by studying the role the Rockefeller Foundation played in the campaign against yellow fever in two very different Mexican provinces, Veracruz and Yucatan. Veracruz is located on the Gulf of Mexico, about 270 miles east of Mexico City; Yucatan, about 940 miles from Mexico City, is one of the states that separates the Gulf of Mexico from the Caribbean Sea.

Consideration of these provinces is particularly interesting because the foundation's interventions there occurred during a political upheaval, the Mexican Revolution, and because the areas reflected an uneven spread of U.S. capitalism, different revolutionary experiences, and different attitudes toward the RF's campaigns on the part of the Mexican medical elites. In addition, this study considers Mexico's early-twentieth-century efforts to improve the health of the population, and the emergence of a national public health apparatus.

When the Rockefeller Foundation attempted to begin operations in Mexico in 1911, the nation was experiencing its most agitated and violent period. Mexico was in the early process of forming itself as a state, and lacked the resources to intervene effectively in sanitation. The peculiar conditions under which the foundation had to work informed the interactions between U.S. philanthropy and U.S. capitalism in Mexico during the early 1920s.

In fact, my work supports the hypothesis that the objectives and tech-

gan to reconstruct the country, seeking stability, improved relations with the United States, and economic growth. A new president, Alvaro Obregón, came into power late in 1920, and in that same year signed an agreement with the RF's trustees for a campaign against yellow fever in the Mexican territory.⁵ The agreement established that the program would concentrate in Veracruz.

The pervasive anti-U.S. attitude that prevailed in Veracruz, however, interfered with the Rockefeller Foundation's intention to inaugurate a campaign in the province. Wickliffe Rose, director of the International Health Board, was cognizant of the attitudes of the people at Veracruz. Moreover, he acknowledged that the Rockefeller name had been linked to one of the groups dominating the economy of the area:

It is believed by many people in Mexico that the present political troubles are the result of outside economic interests; that prominent among these interests are the oil interests; and that Standard Oil has played an important part in it. Any organization therefore bearing the Rockefeller name would not be kindly received by the present government authorities.⁶

Yellow fever had existed in Veracruz since the nineteenth century, and the area was considered one of the world's major endemic centers of yellow fever. In 1903 the infection reached epidemic proportion, and the health authorities of Veracruz, directed by the distinguished Mexican physician Eduardo Liceaga, mounted an anti-yellow-fever campaign organized around the guidelines of modern sanitation and strict control of the vectors transmitting the disease.⁷ The outcomes were outstanding; by 1910 the fever was controlled. Yet, as Table 1 demonstrates, the yellow fever returned forcefully in 1920.

A major difference between the RF campaign and prior Mexican efforts against yellow fever was that the foundation set a new goal: the eradication, rather than control, of the disease.⁸ The task of eradicating the fever from Veracruz turned out to be one of gigantic proportions, especially because of the initial opposition of the people to any U.S.-directed sanitation measures.

Nourishing the revolutionary turmoil in Veracruz were, on the one hand, opposition toward the United States, and on the other, rejection of Alvaro Obregón as president. In 1920, anti-U.S. sentiment led the authorities of Veracruz to reject U.S. President Wilson's offer of \$50,000 to improve the city's sanitary conditions and combat bubonic plague.⁹ Opposition to Obregón and his pro-U.S. attitudes was overwhelming in Veracruz, as was support for Carranza, the deposed president. The peasantry of Veracruz saw Obregón as a serious step backward from the Revolution.¹⁰ The foundation was not only

Table 1. Yellow Fever in Veracruz, 1900-1924

Year	Cases Reported	Deaths
1900	543	261
1901	269	103
1902	678	285
1903	1075	228
1904	73	12
1905	54	23
1906	17	12
1907	2	1
1908	43	20
1909	3	3
1910	0	0
1911	0	0
1912	0	0
1913	0	0
1914	0	0
1915	0	0
1916	0	0
1917	0	0
1918	0	0
1919	0	0
1920	485	235
1921	75	31
1922	20	11
1923	0	0
1924	0	0

Sources: "Yellow Fever Reports, 1922," RFA, R.G. 5, Series 3, Box 147, RAC; and Archivo Histórico de Salubridad, Folder 27. Data from 1900 to 1912 were taken from Francisco Castillo Najera, "Campaña Contra la Fiebre Amarilla," *Revista Médica Veracruzana* 1 (1921): 188-205.

subject to anti-U.S. sentiments, it was perceived as a collaborator of President Obregón's.

Moreover, the work of the foundation was perceived as preparation for a future invasion of the U.S. Army.¹¹ For example, at Papantla, movies on the Armenian massacres by the Turks were used to "show" what would happen in Veracruz if U.S. intervention would take place.¹² Thus, the Veracruz authorities and people "never cooperated" with the foundation,¹³ and when the foundation's doctors arrived in some locations of Veracruz, the people persecuted them.

Although official statements suggest that the RF misinterpreted, or put aside the people's rejection, internal documents show the foundation's aware-

ness of and deep concern with the attitudes adopted by the people of Veracruz. The following is just an example of the difficult conditions that the RF had to face there. In the city of Tuxpan, the RF personnel faced life-threatening conditions:

In Tuxpan we were merely tolerated. . . . [O]ur Delegado Sanitario received absolutely no assistance from either officials or populace. Some of the medical men of the town refused to allow the inspectors to enter their homes, and even the President Municipal (a position corresponding to that of Mayor), refused to allow his water containers to be inspected. Some of the inspectors were driven from houses by machetes and pistols, while others were allowed to make inspections, but were subjected to more or less insulting remarks by residents.¹⁴

The merchants of Tuxpan showed similar attitudes, putting forward their own ideas concerning yellow fever. In a metaphor with political overtones, the merchants declared:

The fever that devastates us is not just yellow but golden. It is not the stegomyia vector that produces the virus, but the Oil Companies and the institutions working with them: not in the form of mosquitoes but in the form of dollars. . . . It is a strange fever that can be immunized with GOLD, because there is no doubt that our COUSINS (North Americans), the ones who live beyond the [Rio] Bravo in The [Oil Station] Barra, the ones who travel by boat and car without any restrictions, those ones are immunized.¹⁵

Even the physicians of Veracruz rebuffed the foundation. Dr. Casaus and Dr. Loyo, Mexican doctors in charge of the anti-yellow-fever campaign in Veracruz prior to the foundation's presence there, did not approve of the foundation's plans. They claimed that the RF doctors knew no more about yellow fever than the Mexicans did. The differences were perceived to be the RF doctors' superior economic capacity and the way they treated local physicians:

They do not waste time either making budgets or waiting for authorizations, they dispose of immediate funds and consequently they put to work all the people they need. . . . They look at us with a little disdain, they do not take our opinions into consideration, we are inferior to them; and although they treat us right most of the time, deep down you can see their desire to dominate, to impose on us always.¹⁶

Further complicating the environment in which the foundation had work was the conflict between the people of Veracruz and President Obregón. The peasantry in particular, under the leadership of Adalberto Tejeda, was de-

manding from Obregón the fulfillment of the promises of the Revolution of 1910.¹⁷ Tejeda believed that President Obregón was not faithful to the spirit of the revolution. Although the revolution had brought some gains to the peasantry, the conditions of the peasants in Veracruz remained the same as, if not worse than, before the revolution. Thus, the people were disillusioned not only with the United States but also with Obregón's revolutionary government.

Yet for the RF representatives, the revolt in Veracruz was a "new type of revolution," substantially different from the revolution of 1910. It was not a revolt in which the peasantry represented the driving force; rather it was a conflict of power among different regional elites. The RF saw it as a "local revolution," lacking national implications.

By the end of 1922, however, the RF had come to fear civil war, and that fear became a reality. The state of Veracruz openly declared its opposition to Obregón. To the foundation's surprise, some of its own personnel took an active role in organizing the opposition to the national government.¹⁸ Having the largest concentration of health workers in Veracruz, and having built a huge organization of public health in the state, the foundation believed it natural "for the Mexican Government to become suspicious of our most innocent activities."¹⁹ Wishing to avoid endangering its relationship with the government, when the RF's doctors detected workers engaged in the revolt, the foundation dismissed these workers.²⁰ In addition Emmett J. Vaughn, director of the RF's anti-yellow-fever campaign, advised to Dr. F. F. Russell in New York to move part of the foundation's offices and laboratories from Veracruz to Mexico City.²¹ The relocation had a twofold intention. First, the foundation wished to show its loyalty to President Obregón, and second, the foundation was trying to avoid the linking of its activities with the revolutionary movement in Veracruz.

As these events suggest, the RF's goal was not merely to gain the favor of the people for its campaign but also to support President Obregón, to whom the foundation had promised its solidarity and support. To overcome the opposition of the people to the U.S. and to Obregón, the foundation's doctors would have to convince the local government of their altruistic intentions.

Without doubt, Obregón needed to gain political control of Veracruz. Its resources were rich, and at the international level, it projected a negative image of Mexico as a whole. The reemergence of yellow fever in Veracruz was blurring the image of "modern Mexico" as a "civilized country," an image Obregón was trying hard to foster in the international arena. Promoting this image was especially important at a time when the government faced international distrust. Lacking sufficient financial resources and expertise, Obregón asked for the Rockefeller Foundation's assistance in the control of yellow fever in Veracruz, and the RF started its campaign in April of 1921.

Table 2. Yellow Fever Activities, 1921-1923

	1921	1922	1923
Houses inspected	883,031	2,186,026	2,575,869
Breeding places destroyed	94,210	151,903	52,249
Receptacles inspected	2,135,680	3,774,302	8,204,138
Liters of oil used	22,090	208,731	299,195
Fish deposited	160,054	1,013,787	3,368,111

Note: Data only include Tamaulipas and Veracruz.

Source: "Yellow Fever Reports, 1920-1921, 1922, 1923," RFA, Series 3, Box 147, 148, RAC.

The Campaign against Yellow Fever in Veracruz

The consensus among RF and many other medical experts was that the yellow fever could be eradicated by controlling the mosquito *Aedes aegypti*, which transmitted the fever and bred mainly in domestic water containers.²² During the antilarval campaign in Veracruz, RF personnel used "simple but efficient" methods: house inspections, deposit of small fishes into water receptacles, and the use of petroleum in ponds and marshes. Yellow-fever brigades, each composed of one sanitary inspector, one supervisor, two assistants, and seven laborers, carried out the campaign, destroying the mosquitoes and larvae wherever they were found.

The most important part of the campaign was the screening of people's houses: "The instructions given each Inspector have been to enter and inspect each home for water containers. . . ." Each house inspected was carefully re-examined every six days. To insure that all houses were visited and all the territory of the area was covered, the brigades held conferences every week.

By December of 1921, the number of yellow-fever cases had been reduced by 85 percent, and by 1923, when the fever was "eradicated" from Mexico, the RF brigades had carried out a monumental and exhaustive task. Table 2 summarizes the activities of the RF in Veracruz. In comparison with 1921, the number of houses inspected in 1922 increased 248 percent, and 291 percent in 1923. The reason for these increments was the foundation's policy of combatting yellow fever inside people's houses. Yet, visiting people's houses, with the intention of destroying the *Stegomyia*, was a method that played a fundamental role in reversing the anti-U.S. sentiments of the people.

By the end of 1923, the foundation had visited at least 41 percent of the rural population of Veracruz. Visiting "all houses without exception" was a measure strongly emphasized by the foundation, and the delicate issue of how to enter people's houses was broadly discussed by the foundation directors

and their personnel. According to specific instructions, it was "highly important that sanitary officers find a way to enter houses and premises without irritating the people, as their cooperation is essential and must be obtained even at the cost of some months delay to an effective beginning of the work."²⁴ Reaching the population was an important component of the campaign. One officer was convinced that "our public health work is going to become really effective only insofar as we can enlist the active and sympathetic cooperation of the masses of the people."²⁵

The rationale for making personal contact with "the common people of the region" was the need to gain their cooperation, but this effort was also instrumental in transforming the opposition found in Veracruz. The values embedded in the RF's campaign, the changes it required in community organizations, the health improvement, and the dedication of the Rockefeller personnel were expected to create new attitudes toward the United States and the Mexican government within the population. By the end of 1922, the work of the foundation had, in fact, changed people's attitudes. The spirit of dedication on the part of RF workers and the efficiency of some of the methods they employed brought the population to cooperate with the foundation. The foundation's representative in Mexico wrote to the director of the International Health Board, "About one half of the Indians in this area (San Andres Tuxtlan, Veracruz) do not understand Spanish but they can see the improvement in an individual after treatment and that is most excellent propaganda."²⁶ In addition, the commercial benefits of the campaign were so obvious that the merchants of Veracruz had to acknowledge them:

[The RF campaign] had saved several lives that without the campaign would have been lost, the campaign made possible a surplus population which constituted the most important part of the businesses; it guaranteed the commercial imports which was reflected in the state's income, it liberated the port of Veracruz of the harmful quarantines, and it liberated also the country from the inherent burdens implied in the rising costs of the goods.²⁷

However, the change in the attitude of the population was not only a result of the techniques applied against yellow fever. Besides eliminating mosquitoes and larvae, RF personnel opened new sewers in the city and carried out a street-cleaning campaign in Veracruz. The work of the RF became visible to the people and acquired greater legitimation. It was this popular, visible approach that opened doors to the RF. The work of the foundation implied immediate, personal contact with the entire population. Thus, a field officer reported that,

No matter how uneducated, the people speak of *La Fundacion Rockefeller* with a real affection, for they have been individually

protected from one of the most dreaded diseases by staff members who have been willing to undergo considerable personal hardship to bring yellow fever immunization to them.²⁸

Once the epidemic of yellow fever was under control, the RF announced the withdrawal of its presence in Veracruz. The people of the province reacted by demanding that the Mexican government take over the campaign.²⁹ Pressure on the Mexican state for maintaining *La Comision Especial Contra la Fiebre Amarilla* organized by the RF came from the working class of Veracruz. Sugar-mill workers, peasants, and railroad workers sent letters to the Mexican Department of Public Health. Workers appealed to the state to fulfill the revolutionaries' promises of improving the welfare of the working class.³⁰ Workers demanded that the benefits of the revolution be shared with everybody, especially with the workers and peasants who had fueled the revolutionary process. It was because of the yellow-fever campaign that the people started demanding public health programs.

The Mexican state had reached a point where it had to take responsibility for the welfare and public health programs. The foundation let the Mexican president know it was aware of the pressure to which the Mexican authorities were subjected. To alleviate the pressure, and following its rule of keeping a low profile in the administration of programs, the foundation decided to do whatever was necessary to present the success of the anti-yellow-fever campaign as a triumph of the Mexican administration. The foundation decided to remove itself from the front line and appear as a servant of the Mexican administration.

As a result, the Mexican state gained legitimation in the eyes of the Veracruz population. In addition, the RF benefited substantially, in that future work in public health was made easier. According to an RF representative, "the confidence of the people is such that we can kill a member of the family with chenopodium, and the other members will demand that they continue to receive their treatments."³¹

In part, the goals of the foundation for Mexico had been achieved. When the anti-yellow-fever campaign was over, F. F. Russell, director of the International Health Board, wrote to the president of the Rockefeller Foundation, "I have heard that there has been a real change of feelings in this country . . . that before the popular feeling was pro-German and pro-English but that now while it cannot be called pro-U.S. it is inclined that way."³²

In order to appreciate the magnitude of the transformation brought by the RF in Veracruz, it is necessary to compare it with the campaign against yellow fever that the RF implemented in Yucatan.

Yucatan, the Mexican Revolution, and the Rockefeller Foundation

While the Mexican Revolution showed its violent nature in Veracruz, the people in Yucatan remained aloof to the national revolt. According to Joseph M. Gilbert, the Yucatecan people did not engage in revolutionary violence since Yucatan, and particularly its capital city Merida, were enjoying a "golden age" in the production and sales of henequen.³³ Henequen, a yellowish, hard fiber obtained from agave leaves and used for binder twine, among other purposes, was in great demand in the international market during the early twentieth century. Further, notions of regionalism and separatism from central Mexico had been characteristic of Yucatecan people since the prerevolutionary period.³⁴ Yucatan's location, remote from central México, and the reluctance of its people to join the revolution influenced the work of the RF in that area.³⁵

It took five years for the revolution of 1910 to arrive in Yucatan. It was introduced there in 1915 by General Salvador Alvarado, who landed in the peninsula with 6,000 troops.³⁶ Surprisingly enough, the Mexican Revolution experienced a fascinating twist in Yucatan. It was not a cry for land redistribution there, as in many regions of the country,³⁷ or a struggle among regional elites, as in Veracruz.³⁸ After establishing control of the peninsula of Yucatan, Alvarado turned the Mexican Revolution into a local version of a socialist movement. The immediate goals were the consolidation of a Socialist party, the protection of the workers' rights, popular education, health benefits, and women's rights. Alvarado and his associate Felipe Carrillo Puerto transformed the revolution into the most radical movement of twentieth-century Mexico.³⁹

Official U.S. reactions to these developments came through the U.S. consul in Merida. The diplomat was torn by the idea that Yucatan would adopt the Bolshevik doctrine defended by Marxism. Alvarado and Carrillo Puerto's support of socialism was interpreted as anticapitalist and subsequently as anti-U.S. But the consular reaction was off target. In fact, in no other region of the Mexican republic were the sentiments of the people so favorable to the United States as in Yucatan. Loyalty to Mexico was more likely to be contested. The willingness of Yucatan to be separated from Mexico was expressed in 1914, when the Yucatecans petitioned to become part of the United States.⁴⁰ The wide-open enthusiasm of Yucatan for the United States brought President Carranza to consider Yucatecans as "anti-patriotic" and "pro-American."

Once Carrillo Puerto became a governor, socialist reforms were implemented. An important goal was to recover the identity of the Mayan culture, that of the main indigenous group of the region, which could be traced to pre-Columbian times. His desire to reach the population and its segregated com-

munities brought him to construct roads and make more accessible the ceremonial ruins of Chichen Itza and Uxmal, a work accomplished with the collaboration of the Carnegie Foundation.

In spite of the wide sympathy toward the United States, the American-owned businesses, International Harvester and the Peabody Co., which controlled 100 percent of the Yucatan henequen industry, felt little confidence in Alvarado or in Governor Carrillo Puerto's administration. To guarantee its properties, International Harvester demanded that the U.S. diplomats petition for an intervention of the U.S. government in Yucatan.

The U.S. government was willing to protect the henequen producers, but the protection offered was against the infection of yellow fever. Through the Department of Public Health, the U.S. government was aware of the possibilities of spreading the fever to different parts of the United States through the exports of henequen from Yucatan. Overall, Mexico's and particularly Yucatan's possible exportation of yellow fever to the United States was a continuous concern to the U.S. government. The Rockefeller Foundation was also very much interested not in controlling but in eradicating the disease from Yucatan, which was considered one of the oldest endemic centers of yellow fever on the continent.⁴¹

A complete depiction of the endemicity of yellow fever in Yucatan is provided in Table 3. Prior to 1906, the mortality and morbidity produced by the fever were attributed to the lack of an appropriate campaign. However, in 1907, Dr. Eduardo Liceaga, who was then director of the Mexican health department, carried out an impressive campaign against the fever. Between 1907 and 1918, following the cyclical behavior of the disease, there was a decline in the number of yellow-fever cases. In addition, the Mexican Department of Public Health showed a great deal of interest in controlling the fever through local campaigns.

In 1918 Wickliffe Rose met in Washington, D.C., with General Gorgas, the Surgeon General of the United States, and other U.S. functionaries to discuss the yellow-fever situation in Yucatan. The consensus of the forum was that Merida was an endemic center of yellow-fever infection and a constant menace to Cuba and other regions of North America.⁴² No Rockefeller Foundation campaign commenced, however, until 1920, when the RF reached an agreement with the Mexican government. Due to the fact that no cases of yellow fever had been reported in the region since late 1919, the foundation decided to concentrate on preventing the reintroduction of the disease, by "cleaning up" the province.

For M. E. Connor, director of the foundation's anti-yellow-fever campaign in Yucatan, one of the main goals of the public health campaign was to promote a healthy labor force.⁴³ Among the RF campaign directors there was no doubt

Table 3. Yellow Fever in Yucatan, 1899-1922

Year	Cases Reported	Deaths
1899	10	3
1900	39	12
1901	113	47
1902	112	35
1903	310	105
1904	114	39
1905	8	4
1906	119	73
1907	13	2
1908	67	35
1909	39	22
1910	0	0
1911	50	26
1912	27	11
1913	4	4
1914	27	8
1915	1	1
1916	30	9
1917	6	2
1918	0	0
1919	48	21
1920	0	0
1921	0	0
1922	0	0

Source: T. C. Lyster, "Report and Covering Cases of Yellow Fever, 1900-1920," RFA, R.G. 5, Series 2, Folder 198, RAC.

of the direct relationship between the harvest of henequen in Yucatan by American-owned companies and the spread of the fever. When crops were abundant, there was a need to import workers from other states to harvest the henequen. And while the locals had developed some immunity to yellow fever through exposure to it, the newcomers had not, and suffered the attack of the fever.⁴⁴ To maintain uninterrupted production of henequen, it was necessary to eliminate yellow fever. When henequen production was lean and demanded a small labor force, this too had implications for yellow fever: labor was not imported, and yellow fever almost disappeared.

T. C. Lyster, an RF officer, former colonel in the U.S. Army Medical Corps, and former director of the 1919 RF anti-yellow-fever campaign in Central America, called a meeting with the U.S. consul at Merida. At the conference, the diplomat and the doctor concluded that a campaign against yellow fever in Yucatan was mandatory because the disease, first, kept out foreign capital, and, sec-

ond, prevented the Mexican government from sending in federal troops in large numbers, as they would be quickly and easily overcome by yellow fever.⁴⁵

The presence of the Mexican Army was desired by the U.S. consul and by RF doctors as a means to check the strong influence of "bolshevism."⁴⁶ In 1920, when Alvaro Obregón was elected President of Mexico, he decided to extend the authority of the national government and fight against the socialist revolution in Yucatan. To guarantee the task of the Mexican Army, the RF considered it urgent to protect the soldiers against the fever. The Yucatecans were considered a low priority since a great number of them were already immune because of prior attacks or exposure to yellow fever.⁴⁷

The RF's campaign was instrumental in furthering Obregón's goals. The economic and political conditions of Yucatan were very favorable to the RF's carrying out a successful campaign there. For the directors of the foundation, the optimal conditions for starting a public health campaign in a foreign country were a positive attitude on the part of the government and the probability of cooperation by the people.⁴⁸ If Veracruz had been a nightmare for the RF, Yucatan would turn out to be a paradise.

The Campaign against Yellow Fever in Yucatan

No cases of yellow fever had been reported in Yucatan since December 1919, so the campaign the foundation initiated in February 1921 centered on prevention and the protection of the nonimmune.⁴⁹ The two main techniques implemented were antilarval measures and the use of Hideyo Noguchi's vaccine and other protective measures for the Mexican soldiers sent by the national government. The antilarval methods attempted to eliminate or greatly reduce the population of *Aedes* mosquitoes. The use of the Noguchi vaccine was recommended and urged for troops that went into areas where yellow fever had been experienced in the past.⁵⁰ However, the Noguchi vaccine was based on a scientific mistake and was discovered in the late 1920s to be completely useless; moreover, a new form of yellow fever, jungle yellow fever, was discovered.⁵¹

Based on the apparent success of the vaccine, the federal government and Dr. Connor agreed that, before soldiers were sent into the interior, they should be protected with Noguchi's inoculation. The same soldiers were requested to come back to their camps for further auscultation.⁵² After they were vaccinated with Noguchi's serum, the troops were sent to Colima, another state that was opposing the revolution and, in addition, rejecting the help of the RF yellow-fever personnel.

Although credit for preventing the fever among the Mexican soldiers was

mistakenly given to Noguchi's vaccine, other factors produced the outcome.⁵³ First, prior campaigns had eradicated the conditions that made yellow fever possible. Furthermore, the cleaning of domestic water tanks and especially the confinement of soldiers in so-called "concentration camps" protected the soldiers. The camps were specially designed to keep the mosquitoes and the illness away from the troops. In the camps, water receptacles—common breeding places for the *Aedes aegypti*—were strictly controlled, and all soldiers suspected of contracting the fever were immediately placed in isolation. In addition to these preventive measures, soldiers were subjected to medical examinations on a daily basis.

Another of the factors preventing the introduction of the fever among the soldiers was the RF's decision that the fever could not be fully eradicated without attention to the conditions of yellow fever affecting the general population. Drawing on experience gained in prior anti-yellow-fever campaigns in South America, RF doctors agreed that the use of small larva-eating fish was the best measure to apply.⁵⁴ Using the fish was cheaper than and as efficient as petro-lization, and it did not disturb the population as much. According to an RF officer,

Citizens especially those of the poorer classes, have been glad to help us in this work [the use of fish]. The majority of persons of the higher classes are in complete harmony with this campaign. . . . The results secured in keeping mosquitoes away from their homes have convinced them.⁵⁵

In spite of the overwhelming support for the foundation, however, some opposition was reported, apparently among the upper classes.⁵⁶ To guarantee full implementation of the program, the health department of Yucatan circulated an open letter appealing to the moral duty of the people to cooperate with the RF campaign and announcing penalties for those who did not.⁵⁷

The use of fish in Yucatan diminished the need for sanitary brigades. It is noticeable that, while the RF needed 203 inspectors in Veracruz, there were only 37 people involved in the campaign in Yucatan. With fewer personnel and at very low cost, the RF was achieving extraordinary success.⁵⁸

One of the main features of the Yucatan campaign was the support and cooperation of the people. Given their pro-U.S. attitudes, the Yucatecans had no qualms about accepting the advice of the foundation's doctors. People opened their houses to the brigades and were willing to cooperate. Dr. Connor considered this cooperation as the most "consistent factor" in the success of the campaign.⁵⁹

The cooperation extended to the active participation of schools, which were encouraged to take an active part in the campaign. Children also played

an important role. While the girls "could have fun" searching for and killing mosquitoes, boys could help deposit the larva-eating fish in the containers at home. With this "powerful contingent" of teachers and children, Dr. Connor saw the feasibility of the "final day" when yellow fever would be "eradicated" from Mexico.⁶⁰

If the voluntary cooperation of the people was overwhelming, the support of the medical profession at Yucatan was truly astonishing. Unlike their counterparts in Veracruz, the physicians in Yucatan were from the very beginning friendly, cooperative, and to certain extent admiring of the actions of the RF. For example, Pedro F. Rivas, a Yucatecan doctor who specialized in yellow fever, wrote the foundation that its work in Yucatan "increased my admiration for the Foundation and for the intelligent and unselfish men who belong to it."⁶¹ The openness of the medical profession was attributed to the fact that a number of the leading doctors of Merida were trained abroad and quite knowledgeable about U.S. and European medicine.

The decisive collaboration of the Yucatan doctors appears especially clear in the case of Diego Hernandez. The concentration of power by this physician can be revealed by the fact that Dr. Hernandez was a prominent political figure, the director of the health department of Yucatan, a Mexican congressman, and the mayor of the city of Merida. Any contact Dr. Connor established with Yucatecan politicians or physicians was mediated by the presence of Dr. Hernandez, whom the Americans considered to be "all in one"; that is, he carried the power of the sanitary office and Merida politics and represented Yucatan at the federal level. Not surprisingly, the presence of the RF was hardly disputed in these three political arenas of Yucatan.⁶² The RF trustees fully appreciated this close collaboration with the doctors of Yucatan and offered them fellowships to study at U.S. universities and at the Rockefeller Institute.⁶³

The cooperation of the Yucatecan people, the collaboration of their medical professionals, and the support of the national government that characterized the RF's work against the reintroduction of yellow fever in Yucatan was presented as an example for the Mexican people to follow:

In Mérida, the frequent conflicts in other parts of the country, coming from the indifference and apathy of the people toward complying with their hygienic regulations, are absent. In Mérida the people have reached the highest level of education, as is proven by the fact that the same inhabitants demand inspection of their water containers and complain to the local authorities when the inspectors do not fulfill some of their obligations.⁶⁴

In 1924 the RF announced that yellow fever was completely eradicated in Mexico. The statement was not completely accurate, however, since yellow fe-

ver had been absent in Yucatan since before the initiation of RF work. The early control of the fever in Yucatan contrasted with the situation in Veracruz, where the fever was not eradicated until December 1922, and invites comparison of the two campaigns and their implications.

Conclusions

By analyzing the RF's experience in Veracruz and Yucatan, we can draw some connections between the anti-yellow-fever campaigns and the revolutionary situation in Mexico. Certainly, the revolution brought political and economic instability, threatening U.S. economic and political interests in Mexico. These issues—social unrest and the stability of the state—were the doors that allowed the Rockefeller Foundation to enter Mexico and the Mexican Revolution. The RF provided stability in Veracruz by reversing the anti-Obregón sentiments of the people and by making the state of Veracruz more tolerant of the presence of U.S. interests. In the case of Yucatan, the RF indirectly contributed to the pacification of the region by protecting soldiers against yellow fever. Once protected, they were able to advance into Yucatan and consolidate President Obregón's position. The presence of the army in Yucatan was necessary to control the labor organizations promoted by Carrillo Puerto's socialism. With troops in place, Obregón broke the barriers of Yucatan's traditional insularism, and his army was ready to eliminate the socialist revolutionary uprising in Yucatan.⁶⁵

The RF acted as an important component in expanding the legitimation of the Mexican state. The Mexican state emerging from the 1910 revolution was not recognized by all the people as a legitimate institution. For example, newspapers in Veracruz were continuously criticizing the federal government for spending state resources to strengthen its military position or to organize its own political campaigns, and for lacking the commitment to improve the health conditions of the nation.⁶⁶

The RF was vital in legitimizing the position of the new revolutionary Mexican state since the foundation's campaigns were instrumental in presenting the Mexican government as a motive force in the improvement of the health conditions of the population.⁶⁷ The control of yellow fever was presented and perceived as a major manifestation of the Mexican state's being congruent with the principles of the Mexican Revolution, and with the constitutional commitments it made in 1917, when it promised universal health care for Mexicans.

But the role of the RF in the Mexican Revolution did not end with its help in pacifying and stabilizing conditions in Mexico. Well before the Mexican state could achieve economic solvency, the foundation took on the role of financing public health programs. Consequently, the foundation was willing to supply

the Mexican government with the necessary funds to carry out the anti-yellow-fever campaign as well as basic sanitation for some areas of the country. During the campaigns, the foundation avoided bringing the issue of financing to the Mexican state. The RF decided to provide "all the funds needed" and not to require matching sums.⁶⁸

The RF campaigns also had implications for ongoing association between the Mexican state and U.S. medicine. By financing the yellow-fever campaign, the foundation was creating the basis for future U.S. influence on the development of the Mexican health care system. After the 1920s, the RF became the most important source of financing for and consultation about health care services in Mexico. In other words, the evolution of social institutions in post-revolutionary Mexico was going to be deeply affected by the power and resources of the Rockefeller Foundation.⁶⁹

The public health campaigns of the RF not only altered the course of the Mexican Revolution, they shaped local attitudes toward the United States and the development of Mexican medicine and public health.

Notes

1. Edward H. Berman, *The Influence of the Carnegie, Ford, and Rockefeller Foundations on American Foreign Policy* (Albany: State University of New York Press, 1983).
2. See John M. Hart, *Revolutionary Mexico: The Coming and Process of the Mexican Revolution* (Berkeley: University of California Press, 1987).
3. Alberto J. Olvera et al., "La Estructura Económica y Social de Veracruz hacia 1930: Un Análisis Inicial," monograph, Centro de Investigaciones Históricas, Universidad Veracruzana, 1981.
4. Friedrich Katz, *The Secret War in Mexico: Europe, the United States, and the Mexican Revolution* (Chicago: University of Chicago Press, 1981), 255–56. Besides its U.S. connection, the city of Veracruz became the headquarters of various revolutionary leaders. Its strategic location on the Gulf of Mexico allowed revolutionaries to flee the country in case of emergency. More important, Veracruz offered revolutionary factions extraordinary opportunities to get into central Mexico. In short, during the decade of the 1910s, Veracruz was an important focus of insurrection, saturated with violence, international disputes, and local politics. See Leonardo Pasquel, *Carranza en Veracruz en 1915* (Mexico City: Editorial Citlaltepetl, 1976).
5. The details of the campaign, its eradication of the fever, and its consequences are fully analyzed in my doctoral dissertation. Armando Solorzano, "The Rockefeller Foundation in Mexico: Nationalism, Public Health and Yellow Fever, 1911–1924" (Ph.D. dissertation, University of Wisconsin–Madison, 1990).
6. Memorandum of Dr. Rose's interview in Washington, D.C., September 22–23, 1919, Wickliffe Rose, Diary, Rockefeller Foundation Archives (hereafter RFA), R.G. 12, Rockefeller Archive Center (hereafter RAC).

7. Francisco Castillo Najera, "Campaña Contra la Fiebre Amarilla," *Revista Médica Veracruzana* 1 (December 1921): 188–205.
8. The RF considered eradication a priority since Veracruz was one of the last endemic centers of yellow fever remaining in the Americas. M. E. Connor, "Notes on Yellow Fever in Mexico," *American Journal of Tropical Medicine* 3 (March 1923).
9. Adrian Carranza, "Fiebre Amarilla. Junta Vecinal de Salubridad y Mejoras de Veracruz," October 12, 1920, Folder 12. See also, Octaviano Gonzalez, "La Peste Bubónica En Veracruz," September 26, 1920, Folder 20, Archivo Histórico de Salubridad (hereafter AHS: the Archivo Histórico de Salubridad is located in Mexico City).
10. Heather F. Salamini, *Agrarian Radicalism in Veracruz, 1920–1938* (Lincoln: University of Nebraska Press, 1978).
11. An American doctor reported "the rumor—that seemed to be generally believed—that we were doing anti-yellow fever work pending the arrival of American troops." T. C. Lyster to Dr. Wickliffe Rose, September 24, 1921, RFA, R.G. 5, Series 2, Box 33, RAC.
12. *Ibid.*
13. Letter from Gabriel M. Malda to the Governor of Veracruz, December 29, 1920, Folder 13, AHS.
14. Letter from Emmett J. Vaughn to Dr. Rose, September 24, 1921, RFA, R.G. 5, Series 2, Box 33, RAC.
15. Enrique Hoyos Ruiz, "La Fiebre Dorada, Veracruz, 13 Noviembre 1920," AHS.
16. Letter from Cuaron to Vasconcelos, October 8, 1922, Fiebre Amarilla, Folder 17, AHS.
17. The organization of peasant leagues and the opposition of Tejeda to Obregón are analyzed in Salamini, *Agrarian Radicalism*.
18. Emmett J. Vaughn to Dr. F. F. Russell, December 25, 1923, RFA, R.G. 5, Series 1.1, Box 74, Folder 1057, RAC.
19. Emmett J. Vaughn to Dr. Warren, January 7, 1923, RFA, R.G. 5, Series 1.2, Box 193, Folder 2475, RAC.
20. Emmett J. Vaughn to Dr. F. F. Russell, December 25, 1923, RFA, R.G. 5, Series 1.1, Box 74, Folder 1057, RAC.
21. Letter from Emmett J. Vaughn to Dr. Warren, January 7, 1923, RFA, R.G. 5, Series 1.2, Box 193, Folder 2475, RAC.
22. The first cases of fever in Veracruz in 1921 could be traced to people immigrating from other states and other countries. T. C. Lyster, "Report of Yellow Fever for the Year 1921," October 14, 1921, Folder 31, AHS. See also, Najera, "Campaña," 183–205.
23. H. B. Richardson, "Yellow Fever Campaign in the Canton of Papantla," February 15, 1922, RFA, R.G. 5, Series 3, Box 147, RAC.
24. J. H. White, "Memorandum on Yellow Fever as an Eradicable Disease, July 30, 1914," RFA, R.G. 5, Series 2, Box 41, Folder 52, RAC.
25. Wickliffe Rose, memorandum, March 15, 1916, RFA, R.G. 3, Series 908, Box 15, Folder 151, RAC.
26. Warren to F. F. Russell, May 17, 1926, RFA, R.G. 5, Series 1.2, Box 258, Folder 3281, RAC.
27. Letters from merchants and owners of hotels to the president of the health department, October 5, 1921, Folder 14, AHS.
28. John C. Burgher, interoffice correspondence, October 25, 1950, RFA, R.G. 3, Series 908, Box 14, Folder 148, RAC.
29. See the letter from the merchants of Tierra Blanca to the director of the Department of Public Health, August 17, 1922. See also the communication from the merchants of Veracruz to the public health department, October 5, 1921, AHS.
30. An example of these appeals is the letter from workers' organizations to the President of Mexico, Veracruz, August 14, 1923, Folder 10, AHS.

31. Warren to the International Health Board, July 15, 1926, RFA, R.G. 5, Series 1.2, Box 258, Folder 3282, RAC.
32. F. F. Russell to Ms. Read, September 18, 1925, RFA, R.G. 5, Series 1.2, Box 226, Folder 2872, RAC.
33. Joseph M. Gilbert, "Revolution from Without: The Mexican Revolution in Yucatan, 1910-1940," in Edward Moseley and Edward D. Terry, eds., *Yucatan: A World Apart* (Alabama: University of Alabama Press, 1980), 145.
34. Moseley and Terry, *Yucatan*.
35. Gilbert, "Revolution from Without."
36. Moseley and Terry, *Yucatan*, 3. See also James C. Carey, *The Mexican Revolution in Yucatán, 1915-1924* (Boulder, Colo.: Westview Press, 1984).
37. John Womack, Jr., *Zapata and the Mexican Revolution* (New York: Vintage Books, 1968).
38. Salamini, *Agrarian Radicalism*.
39. Carey, *The Mexican Revolution*.
40. The petition was supported even by henequen planters. Gilbert, "Revolution from Without," 143; and Carey, *The Mexican Revolution*, 85, 62. It is interesting to note that Alvarado visited the United States on several occasions, and Carrillo Puerto spoke English fluently and maintained a romantic relationship with North American journalist Alma Reed. Joseph M. Gilbert, "The United States, Feuding Elites, and Rural Revolt in Yucatán, 1836-1915," in Daniel Nugent, ed., *Rural Revolt in Mexico and U.S. Intervention* (San Diego: Center for U.S.-Mexican Studies, University of California, San Diego, 1988), 167-97.
41. The foundation's concern about the yellow fever in Yucatan came as early as the construction of the Panama Canal. "Yellow Fever: Feasibility of Its Eradication," report sent by W. Rose to Dr. J. H. White, August 29, 1914, RFA, R.G. 5, Series 1.2, Folder 88, RAC.
42. W. Rose to Mr. Stabler, July 19, 1918, RFA, R.G. 1, Series 305, Folder 15, Box 2, RAC.
43. M. E. Connor to W. Rose, September 3, 1918, RFA, R.G. 5, Series 1.1, Box 31, Folder 530, RAC.
44. Connor, "Notes on Yellow Fever."
45. The information appears in T. C. Lyster, *Diary*, December 16, 1919, RFA, R.G. 12, RAC.
46. According to an RF doctor, "Bolshevism has complete sway in Yucatan. Strikes occur for any trivial reason." *Ibid*.
47. "The native population has . . . in the past all acquired their immunity in childhood so have no fear of the disease." T. C. Lyster, *Diary*, December 16, 1919, RFA, R.G. 12, RAC, 81-83. See also George C. Shattuck, *The Peninsula of Yucatan: Medical, Biological, Meteorological and Sociological Studies* (Washington D.C.: Carnegie Institution of Washington, 1933).
48. Memorandum from Dr. Rose to Dr. J. H. White, February 24, 1914, RFA, R.G. 5, Series 1.2, Box 6, Folder 86, RAC.
49. Shattuck, *The Peninsula of Yucatan*.
50. M. E. Connor, "Preliminary Reports, Yellow Fever, Merida Yucatan, Mexico," June 22, 1921, RFA, R.G. 5, Series 3, Box 147, RAC. See also Shattuck, *The Peninsula of Yucatan*, 84.
51. For a discussion of this topic, see Marcos Cueto, "Sanitation from Above: Yellow Fever and Foreign Intervention in Perú, 1919-1922," *Hispanic American Historical Review* 72 (1992): 1-22.
52. M. E. Connor to T. C. Lyster, August 16, 1921, RFA, R.G. 5, Series 1.1, Box 56, Folder 806, RAC.
53. The validity of the vaccine, and the identification of *Leptospira icteroides* as the organism producing the fever, was inaccurate and wrong. For an analysis of this controversy see Juan Guiteras, "Expedición al Africa y Estudios de Fiebre Amarilla," *Revista de Medicina y Cirugía de la Habana* 26 (1921): 95-115; and George K. Strode, ed., *Yellow Fever* (New York: McGraw-Hill, 1951).
54. The RF had previously employed the technique of using larva-eating fish in its cam-

- paign in Guayaquil, but this method became more attractive in Yucatan where there were plenty of larva-eating fish. See Cueto, "Sanitation from Above."
55. Yellow Fever Report 1920-1921, March 1921, RFA, R.G. 5, Series 3, Box 147, RAC.
56. *Ibid*.
57. Progreso de Castro, "Departamento de Salubridad Pública de la Nación: Servicio Especial de la Fiebre Amarilla en Yucatán," August 1920, Folder 23, AHS.
58. While the cost of depositing a fish ranged from two to three cents per fish, the cost for depositing oil varied from \$7.41 to \$13.70 per deposit. See M. E. Connor, "Narrative Report of the Yellow Fever Control Work in Zone No. 1. Mexico," RFA, R.G. 5, Series 2, Folder 194, RAC.
59. M. E. Connor, "Yellow Fever Reports, 1922," RFA, R.G. 5, Series 3, Box 147, RAC.
60. M. E. Connor, "Paper Delivered before the Association of School Teachers at Progreso, Yucatan, Mexico" (original in Spanish), October 10, 1922, Folder 16, AHS.
61. Dr. Pedro F. Rivas to the Rockefeller Foundation, May 16, 1922, RFA, R.G. 5, Series 1.2, Box 137, Folder 1819, RAC.
62. The information appears in T. C. Lyster, *Diary*, December 16, 1919, RFA, R.G. 12, RAC.
63. Later, Dr. Hernandez accepted a position at the Rockefeller Institute, with the understanding that his nomination represented a "patriotic pride and a distinction to all Mexicans." Dr. Diego Hernandez to Dr. Angel Brioso Vasconcelos, February 14, 1923, Folder 32, AHS.
64. Reported in *El Universal*, a Mexico City newspaper, 1922. No specific date is given on the clipping, which is kept in the section on yellow fever, Folder 15, AHS.
65. The Mexican Army guaranteed the peaceful and stable conditions that U.S. investors were demanding: "peace, order, and conditions conducive to work and trade." Carey, *The Mexican Revolution*, 209.
66. See the newspaper, *El Dictamen* (Veracruz), December 1922.
67. The information appears in Wickliffe Rose, *Diary*, December 28, 1920, RFA, R.G. 12, RAC.
68. *Ibid*. Some Mexican doctors working for the federal government agreed with and celebrated the foundation's decision, "General Plan for the Yellow Fever Campaign 1922," December 1921, Folder 37, AHS.
69. It is important to note that Mexico had already established a Secretariat of Public Health, but this office was far from what the Rockefeller Foundation's representatives had in mind. It was Wickliffe Rose, director of the Rockefeller Foundation, who outlined the specific characteristics that a state health department should possess.