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*Public health or public menace? The Rockefeller Foundation and public health in Mexico, 1920-1950\**

**Abstract**

This article explores how the Rockefeller Foundation's hookworm campaigns, sponsorship of local sanitary units and involvement in public health education in Mexico shaped the conceptualisation and practice of public health during the decades following the Mexican Revolution. A 1923 hookworm agreement set the terms of the relationship, minimising the Foundation's financial commitment while maximising its administrative control. In establishing rural health units, the Foundation adapted to local conditions without compromising scientific public health by ingeniously incorporating midwives while shunning other traditional healers. When President Lázaro Cárdenas's socialist politics threatened the Rockefeller model of public health in the 1930s, delicate tactics enabled the Foundation to overcome these challenges. For the Mexican government, the overriding goals of modernisation and progress required an acceptance of Rockefeller pressure and scientific expertise. The special status granted the Rockefeller Foundation, its political, administrative, educational and financial strategies, and its institutional flexibility enabled it to influence profoundly the development of the Mexican public health system.

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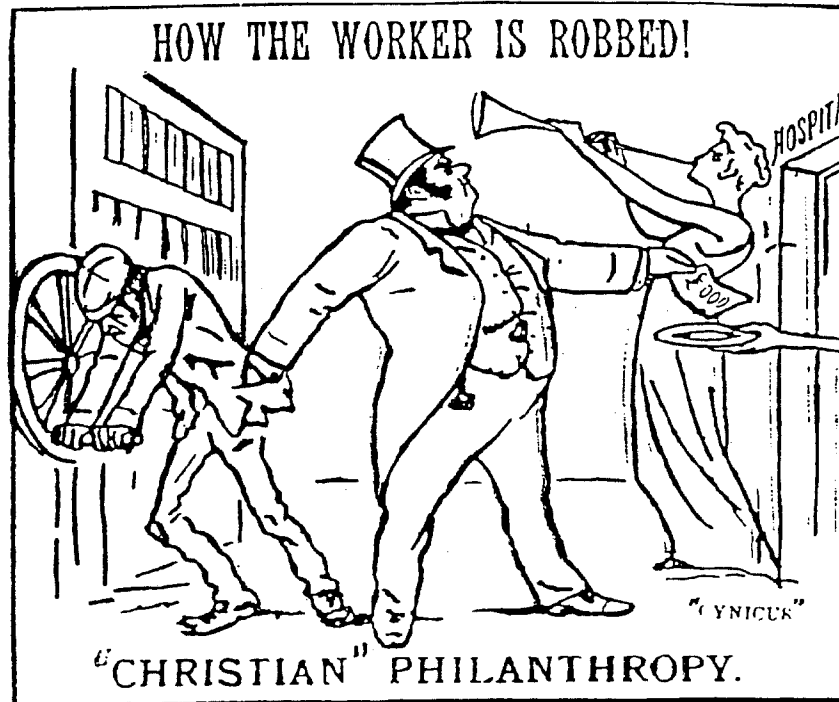
In 1933 John D. Rockefeller, Jr asked Mexican painter Diego Rivera to create a mural for the Rockefeller Center, a distinctive urban complex of shops, offices, restaurants and public art in New York City. Rivera delivered a prescient depiction of the effects of modern life on working people, entitled 'Man at the Crossroads', but he challenged the liberality of his sponsor by endowing the mural's central figure with more than a coincidental resemblance to Vladimir Lenin. With neither side willing to yield, the mural was demolished, and Rivera deserted Fifth Avenue permanently.

'Man at the Crossroads' offers an apt analogy for the public health activities of the Rockefeller Foundation in Mexico, not only because of the parallels in the cast of characters. Rivera shared with Mexican politicians the belief that science would enable the nation's development, fulfilling the goals of the Mexican Revolution. Rockefeller and the Rockefeller Foundation (RF) concurred, with development pictured as an expanded and more resilient capitalism. These competing expectations of the Rockefeller public health programmes persisted throughout the 1930s and 1940s (Birn, 1993).

This paper seeks to understand why a large American philanthropic organisation and a progressive Mexican government were attracted to each other and *how* the RF's public health projects influenced the development of public health and social welfare institutions, scientific beliefs, and patterns of medical and public health authority in post-revolutionary Mexico. Mexico offers a particularly interesting case study of philanthropy and health because of its proximity to and historically ambivalent relationship with the United States, its status as the first country to undergo a popular revolution in the twentieth century, and the Rockefeller Foundation's distinctive solutions to these challenges.

Before entering into the particular case of Mexico, I will briefly review the origins of modern American philanthropy. The rapid growth of the US's free market economy in the second half of the nineteenth century led to the appearance of a new class of extraordinarily wealthy citizens, one based not upon heredity, as in older European societies, but upon active participation in business and industry. At the same time, the increasing militancy of the labourers who were creating but not profiting from this wealth led to a growing popular resentment of these 'robber barons' (Hofstadter, 1955; Huberman, 1960; Wiebe, 1967). The magnates, distressed by the populist and reformist impulses of this era, were seeking new outlets for investment for their accumulated millions. In 1889 Andrew Carnegie, whose fortune sprang from the manufacture of steel, published an article in the *North American Review* entitled 'The gospel of wealth', outlining his belief that rich individuals were only the trustees of their amassed fortunes and had a responsibility to channel their wealth to the public good by supporting hard-working, ambitious individuals rather than charity cases (Carnegie, 1889). For Carnegie, this duty led to a concrete legacy of several thousand libraries, baths, and research and cultural organisations (Hendrick, 1933; Wall, 1970; Lagemann, 1983).

At the end of the nineteenth century, big business could not depend on government to further its interests. Large-scale philanthropy served as a conciliatory mechanism between men of business and the public, without the encumbrances of government. The beginnings of philan-



Drawing from *The Comrade*, 1903, Vol.2, No.11, p. 249

thropy coincided with both the growing power of the US labour movement and the example of European states, where the working class began to achieve an expanded role for government in social welfare. Many workers were sceptical of the social development role of philanthropy, as can be seen in the image of 'Christian philanthropy' (above) published in a 1903 issue of *The Comrade*, in which a corpulent capitalist robs money from the pocket of an overburdened worker — who is literally turning the wheels of industry — in order to build a grand hospital decorated with the statue 'Cynicus'.

John D. Rockefeller, whose prosperity stemmed from investments in oil and finance, admired Carnegie's efforts but sought to put his money to work in a systematic manner that would more directly and effectively address social problems (Fosdick, 1989, pp.4-6). A devout Baptist, Rockefeller had contributed a portion of his earnings to charity since his youth, but by the 1890s he had become dissatisfied with his pattern of donations to churches, schools and hospitals. After fellow Baptist Frederick Gates joined Rockefeller in the 1890s, he became the mastermind of the Rockefeller philanthropies (Ettling, 1981; Fosdick,

1989). Following successful donor relationships with the University of Chicago, the Rockefeller Institute for Medical Research, and the General Education Board (Brown, 1979; Berliner, 1985),<sup>1</sup> in 1909 Rockefeller earmarked \$50 million (\$747 million in 1991 dollars) worth of his Standard Oil Company's shares for a trust devoted to the development of science, education and religion. By 1930 the Foundation had received close to \$250 million (over \$2 billion in 1991 dollars) from the Rockefeller family. This sum was carefully placed in two areas of investment: first, in the financial and business sectors, allowing the Foundation's endowment to grow and ensure the provision of a steady income. The second investment was made in particular sectors of society: in the medical, natural and social sciences (Wheatley, 1988); in the humanities, through grants to universities and individual researchers; and in worldwide public health efforts to control particular diseases and promote the development of permanent public health departments.

In 1909 Rockefeller sponsored his first public health project. The Rockefeller Sanitary Commission for the Eradication of Hookworm Disease defined a new type of activity for the Foundation. Hookworm, the so-called 'germ of laziness', was believed a key factor in the South's lower productivity; its eradication would pave the way for the industrialisation of this large section of the country. The brainchild of a maverick medical zoologist, a powerful philanthropy officer and a prominent educator (respectively Charles Wardell Stiles, Frederick Gates and Wickliffe Rose), the Sanitary Commission marked the beginning of a long and romantic affair between philanthropy and scientific public health (Shaplen, 1964; Cassedy, 1971; Boccaccio, 1972; Link, 1988). From 1910 to 1914, the Commission, comprised of teams of physician-sanitary inspectors and laboratory technicians, travelled to countless rural communities in eleven states in a bid to educate more than a million poor Southerners about hookworm, to administer hundreds of thousands of treatments against the disease, and to convince inhabitants to wear shoes and to build and use latrines to avoid the future spread of hookworm. This extended effort, costing about \$800,000 (\$11.3 million in 1991 dollars), relied on the co-operation of local governments and boards of health, as well as the participation of agricultural clubs and churches (Ettling, 1981). Though only moderately successful, the Sanitary Commission awakened the Rockefeller Foundation to a variety of public health needs, including professional training, the permanent organisation of health departments and popular health education. In addition, it served as a model for international efforts in public health for over forty years.

The Sanitary Commission was incorporated into the new Rockefeller Foundation in 1913 and rapidly reincarnated as the International Health

Commission (re-christened as the International Health Board in 1916, and the International Health Division in 1927) (Hackett, 1960; Williams, 1969; Soper, 1977; Fosdick, 1989). Eager to extend its public health plan around the world, the new Commission soon initiated hookworm control programmes in the Caribbean and South America. These projects illustrated the Progressive Era's confidence in science's ability to systematically solve man's secular problems. The ready invitation to the Rockefeller Foundation by over 90 countries of varying political hues, I would argue, is the result of the special status accorded philanthropy and science as manifestly benevolent institutions committed to human development.

The role of public health in imperialist development stemmed from centuries of experience in tropical medicine: first for the protection of invading armies, next for the health maintenance of colonial settlers, and subsequently for the promotion of the productivity of local workers. The invaders believed that medicine and public health had a civilising effect upon society (Doyal, 1979; Navarro, 1981; Patterson, 1981; Arnold, 1988; MacLeod and Lewis, 1988; Packard, 1989; Alchon, 1991; Bala, 1991; Farley, 1991; Kumar, 1991; Meade and Walker, 1991; Cueto, 1994).

The Rockefeller Foundation was interested in employing modern medical techniques to help develop Mexico, but the even more pressing concern of protecting international commerce from yellow fever led the RF's International Health Board (IHB, later IHD) to spend over \$100,000 per year from 1921 to 1924 to eliminate this menace from Mexico (Ferrell, 1941). The yellow fever campaign effectively courted the people of Veracruz, the country's largest port and the locus of the campaign, and improved diplomatic relations (Solórzano, 1992), but it was replaced with a strategy that was both more economical (the RF budget for Mexico was some \$6,900 in 1927 compared to \$2,200 in 1928) and more influential. Modest grants for the development of hookworm brigades and local health organisations, together with scholarships for doctors, nurses and sanitary engineers to train in the US, afforded the Rockefeller Foundation the chance to exercise ingenuity and influence in a low key. With the Foundation guiding decisions but footing less than one-sixth of the bill, renewable public health programmes subtly, but permanently, changed the way the Mexican government and health establishment conceptualised and combated the country's health problems.

The remainder of the paper will briefly examine these components of the Rockefeller strategy in Mexico: the hookworm campaign, the establishment of local health units, and the training of public health fellows.

### The hook of hookworm

The RF's IHB was more interested in promoting the establishment of public health institutions and spreading the 'knowledge of scientific medicine' — which linked each disease to a specific microbe — than in reducing the burdens of illness and death, and each IHB disease activity served a specific purpose in reaching this goal. Hookworm worked as a 'preliminary survey' of health and disease conditions, a 'demonstration of cure and prevention' and an introduction to the role and value of a community health organisation (International Health Board, 1927). Diseases chosen needed a rapidly demonstrable, economical cure. Costly projects, like diarrhoea control through construction of water and sewage systems, did not serve as effective propaganda. Yellow fever, which was regarded an imminent threat to world commerce, served as an expensive exception to the rule of reasonably-priced programmes.<sup>2</sup>

The RF initiated its leverage over Mexican public health in the planning stages for a hookworm programme. In early 1923 Wickliffe Rose, the IHB's influential first director, solicited Mexico Health Department chief Alfonso Pruneda for his country's participation in a cooperative hookworm campaign. Rather than proposing a joint plan, however, the IHB insisted that Mexico request assistance, promising that the invitation would 'receive sympathetic consideration' (Rose to Pruneda, 4 December 1922). The IHB called this process a mere formality, but it immediately turned the Mexican government into a subservient player. In place of IHB gratitude to Mexico, Pruneda had to obsequiously thank the RF (Pruneda to Rose, 19 February 1923; Pruneda to Russell, 20 March 1923). Mexican President Alvaro Obregón, pleased with the outcome of the yellow fever campaign, overlooked this affront. He quickly approved the hookworm programme, hoping that it would help quell continuing unrest and strengthen his political position (Solórzano, 1992).

In the next phase of negotiation, RF officials demonstrated their masterful administrative tactics. The 'invitation' by the Mexicans obliged the acceptance of a lengthy list of Rockefeller requirements. The Mexican government was to maintain a central office, provide clinical settings around the country, pay the salaries of Mexican officials, furnish a chauffeured car for the IHB representative, and lift customs fees for both programme and personal materials. Most importantly, virtually all decision-making (including budgeting, personnel and project planning) was relinquished to the Rockefeller representative, even once the Mexican government was paying the entire hookworm budget (*Proyecto ... para dominar la Uncinariasis*, 1923). Notwithstanding its extensive control, the publicity-shy RF insisted that the host government

receive all credit for programme accomplishments (Vincent to Sheffield, 21 May 1925).

Each year of the five-year hookworm project the RF reduced its financial contribution to the \$24,000 budget by 20 per cent: the first year paying 80 per cent, and the fifth year, when the project was incorporated into the Health Department, paying nothing.

Why did nationalistic Mexico acquiesce to these conditions? For the Mexican elite and Western-trained physicians,<sup>3</sup> Rockefeller programmes offered professional and technological advancement, international interaction and a means of improving the health and strength of the working population (Brown, 1976).<sup>4</sup> The chance to modernise overshadowed concerns of foreign interference. Revolutionary politicians, anxious to fulfil their promises to the Mexican people, believed that science and public health were neutral forces that would bring progress to the nation when coupled with social and political measures such as land redistribution and worker protections (Partido Revolucionario Nacional, 1933). The strict conditions imposed by the RF appeared an inevitable part of a desired public health model that would eventually be implemented, with or without foreign participation.

Once the hookworm campaign was approved in November 1923, the first task was to survey hookworm prevalence and general conditions around Mexico in order to select a locale. Secretary of Health Pruneda's proposal that a survey be conducted by an IHB physician with two Mexican assistants was rejected by the RF home office, even though IHB officers in Mexico strongly endorsed the idea (Pruneda to Vaughn, 14 March 1924; Vaughn to Russell, 15 March 1924). RF home office administrator Frederick Russell pictured the 'place' of Mexican doctors in the 'office doing routine campaign work ... so they can take it over when we leave', insisting that junior IHB officer Henry Carr head the hookworm survey alone for 'he will do it properly' (Russell to Vaughn, 25 March 1924).

After several months surveying hookworm prevalence in coastal communities, Carr was most struck by the relatively *low* level of hookworm infestation, compared to the South of the US or the West Indies (Carr to Russell, 18 September 1924). This observation was overlooked by the home office, which was committed to a hookworm programme regardless of the ailment's epidemiological importance in Mexico. The RF was convinced that state and local authorities need only be exposed to the hookworm campaign in order to 'create ... a desire for a local health service capable of dealing with the more pressing public health problems' (Ferrell to Carr, 8 October 1929).

In fact, the IHB had pinpointed the desired campaign locale before the survey was even begun. Veracruz, the focus of the yellow fever campaign, remained strategic for both the Mexican government and

the IHB as a hub of oil production, international commerce and agriculture. Health activities could increase popular morale, diminish the threat to exports and keep productivity high. In addition, a powerful group of anti-government rebels was based in Veracruz. As Solórzano has suggested, the federal government wished to heighten its activities to gain the support of the general population and counter the rebels (Solórzano, 1990). In Veracruz the RF could carry out a federally supported health programme while maintaining relations with the revolutionary forces. Like a magnate who donates money to rival political campaigns, the RF painstakingly courted both the rebels and the Obregón government.

With hookworm staff selected and trained, and supplies arriving, IHB officers were expecting to go to Veracruz but, due to 'military disturbances', the programme was instead launched in Tlaxcala in April 1924. The RF maintained that sites were selected for the scientific and practical reasons of high disease prevalence and co-operative local authorities, yet Carr's survey showed virtually no hookworm in Tlaxcala. However, Tlaxcala was accessible to Veracruz, located part way from Mexico City adjacent to the main artery (Carr, 1926b). Thus, the hookworm demonstration programme began in a region known to be hookworm free.

As soon as conditions permitted, the campaign moved its mobile brigades into rural Veracruz. The IHB pursued two approaches: one preventive, the other curative. First, health education strategies were used to try to convince rural Mexicans to wear shoes and build and use latrines. Poverty precluded both options, but peasants gradually began to use the latrines that were built for them. Second, uniformed IHB officers administered an oral dose of chenopodium and a purgative either in a clinic or in the home. The medicine 'magically' cured the hookworm, not unlike the herbs of local healers, but otherwise the treatment process was completely alien to rural Mexicans. Most villagers did not perceive themselves as sick, because hookworm's symptoms of anaemia were a customary part of life. Moreover, the IHB health officers sought patients, not vice versa.

The campaign to promote the use of latrines posed a great challenge to the hookworm brigades: 'On account of the poverty and the lack of intelligence ... no type [of latrine] suits the needs of the people here'. For a peasant to spend a large sum to construct 'a place to defecate when he and his ancestors have for hundreds of years used the open spaces without apparent cost, is almost too much for us to expect him to comprehend' (Warren to Russell, 9 July 1925).

Reports from Mexican officials reflected more understanding of the cultural norms surrounding shoe-wearing and defecating. Future Minister of Health Bernardo Gastelum's report on Alvarado, Veracruz



explained that although girls only defecated in one place, they began wearing shoes at the age of ten, which reduced their rate of infection. Young boys always defecated in a new place, but as they grew older, they began to concentrate their scatological deposits in one place. Because they did not customarily wear shoes, infection rates increased among older boys (Gastelum, 1925).

As John Ettling has noted, before the RF 'could set about the business of destroying' hookworm, they had to expend energy and money to 'create the disease in the minds of the people' (Ettling, 1981, p.23). Most people with anaemia did not consider hookworm an illness but an unavoidable (and largely unrecognised) fate like hunger. Yet IHB officers expected their illustrated, house-to-house seminars on the life cycle of hookworm to replace popular conceptions of sickness. Villagers stared at the posters and were intrigued by the practices of the newcomers and often pleased at the new government activities, but few, if any, subscribed to the germ theory (León, 1991).

A pamphlet entitled *La Historia de un Niño* (Departamento de Salubridad Pública, 1930) played on the stereotypes of Mexican men's pride in being bigger and stronger than women. On the front cover of the pamphlet was Tomás García, a 'skinny, swollen, pale, and yellow' boy. Tomás 'should have grown up to be a tall and strong man but was left weak and small because he had hookworm'. On the next page Tomás was shown cured, but he never grew to his expected manly size. His younger sister Elena, cured from hookworm at an earlier stage, had grown to be a beautiful and healthy young woman, taller and stronger than her older brother.

In 1926 the IHB placed Mexican doctors at the head of each of the hookworm brigades, which by then had expanded into the states of Oaxaca and Chiapas. These physicians, who later held important positions in the Health Department, became committed advocates of hookworm control.

Rockefeller officers recognised treatment as the International Health Division's (IHD; starting in 1927) 'best sort of propaganda for good health'. Each cure of hookworm was 'a very obvious and dramatic occurrence', which became 'an advertisement for better hygiene'. Yet the hookworm brigades served to convince local and state government officials and health officers of the effectiveness of public health measures more than the people. Because the brigades were in each community for a few weeks only, they served more as a novelty to villagers, not unlike the annual fairs.

Yet within a year or two the RF became pleased with the 'good co-operation from district peons' (Russell to Carr, 24 March 1927). RF officer Andrew Warren boasted, '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 treatment' (Warren to Russell, 15 July 1926).

The RF home office was highly satisfied that 'public health work will help to clarify ... a new relationship between the peon and the state and federal governments, and help the peon to understand and appreciate the duties and responsibilities of government to the people and convince him that the government has a real interest in his welfare, health and happiness' (Russell to Warren, 31 December 1925).

### **Co-operative health units**

Mexicans had begun to think systematically about rural health services from the time of the 1917 Constitution, which guaranteed (in Article 4) every citizen the 'right to health' (Mazzaferrri, 1968). During the Revolutionary period Dr José Mariá Rodríguez began forming mobile health brigades in response to smallpox and malaria outbreaks in various parts (Alvarez Amézquita et al., 1984). The RF rapidly sought a role in this effort. Rockefeller Mexico director Carr realised that although his hookworm talks and clinics were well-attended, most villagers suffered from a range of health problems (Carr, 1926a). He proposed the transformation of the hookworm brigades into permanent rural health departments to include: full-time service of physicians and nurses, employment according to ability instead of political favouritism, attractive salaries, and moral and financial co-operation between the Federal Department of Health, the state and the municipality (Carr to Estrada Cajigal, 18 December 1930) to 'awaken them to their obligation to assume part of the responsibility for the improvement of the health conditions' (Carr to Ferrell, 18 July 1930). Carr's plan committed the Mexican government to contribute a growing proportion of its budget to the health units. Once again, the RF provided only 10 per cent of the budget yet specified the services to be offered, the basis for the personnel's local authority and much of the intercourse with health unit attenders. Through such budgeting incentives, the RF was able to fashion the major activities of the Health Department.

The Mexican government, however, was unwilling to sign a restrictive contract like the one governing the hookworm programme, preferring to maintain an oral agreement. Simultaneous to Carr's efforts, the Mexican Health Department developed its own extensive plan to replace the country's travelling health brigades with permanent rural hygiene services. The architect of this endeavour was Dr Miguel Bustamante, a returned RF fellow. Both the IHD and the Mexican Health Department staked claim to the idea, not by chance but because they were based on the same model, one that Bustamante had studied

at the Johns Hopkins School of Hygiene and Public Health in Baltimore, USA. While Bustamante shared many of the public health ideas of his American counterpart, his plan went further, seeking to address some of the underlying causes of high death rates, such as inadequate water provision and sewage disposal, while the IHD plan continued to concentrate on the diseases that could be combated most economically and most dramatically (Bustamante, 1930).

Though Bustamante held several positions in the new Servicio de Higiene Rural, he was eventually punished by the RF, which complained that he was 'capable but he has a strange character and an unhappy faculty of making enemies and frequently is unscrupulous to obtain his aims' (Bailey to Ferrell, 12 May 1935) and then demoted him. Bustamante subsequently became Assistant Secretary of Health in Mexico and Secretary-General of the Pan American Sanitary Bureau in Washington, DC.

By the end of 1927, Carr had helped arrange the first 'Unidad Sanitaria Cooperativa' which he promised would adapt modern, scientific public health methods to local conditions, emphasising problems 'encountered in proportion to the relative importance of the disease ... in the locality' (Carr to Russell, 5 December 1927). The new units were in Minatitlán and Veracruz's second port city Puerto México, located in a southern Veracruz river valley with a combined population of 25,000. The RF was confident that the permanent health units 'will awaken interest not only among national health authorities but also in civil leaders and the inhabitants themselves, who will co-operate with an organization directly interested in their welfare' (Carr, 1928).

The early activity of the Minatitlán-Puerto México sanitary units heavily emphasised hookworm diagnosis and treatment, the testing of anti-helminthic drugs, latrine construction and popular health education lectures, despite Carr's promises to attack the most important diseases. The continued emphasis on hookworm long after the establishment of the co-operative health units rested on the need to show concrete achievements. Hookworm's easy identification and treatment made its control far simpler than any other disease eradication endeavour. At seven each morning, dozens of empty-stomached persons would arrive for hookworm treatment, receiving 'the same attention as in the private office of the best physician', but for free (Report of the Hookworm Campaign, 1931). Mexican Reports repeatedly stressed the importance of hookworm in Mexico's excess morbidity and mortality rates. The first was an exaggeration and the second close to a lie, but years of hookworm propaganda had convinced Mexican health officials that hookworm control was the nation's most valuable public health crusade.

In 1931, the Minatitlán-Puerto México units initiated a plan to expand the role of visiting nurses in the community. Nurses would dedicate every afternoon to making home visits to pregnant women and new mothers, showing them how to care for themselves and their children. In the sanitary units, some IHD doctors haughtily warned pregnant mothers: 'Just because you have been pregnant before does not make you an expert', but in the home nurses more compassionately urged their patients to heed advice (Report of the Hookworm Campaign, 1931) and these visits became an important component of the popular acceptance of the units.

Nonetheless, as rural health units began to spring up around the country, their acceptance was not as easy as the RF had predicted. Traditional practitioners, or *curanderos*, formed the core of local resistance to the sanitary units. Displeased at the new providers who began to displace them, the *curanderos* and their communities held to a unified concept of spiritual and physical well-being as opposed to the bifurcated beliefs of the outsiders, who failed to attend to the spiritual needs of the ill (Guerra, 1979).<sup>5</sup> Public health measures not only exported the curing, repairing and pain mitigation roles of western science but also its ideological and philosophical orientation — the Cartesian duality between mind and body, a mechanistic view of the body, and the allopathic duality between prevention and cure — notions incompatible with the philosophies of indigenous Mexican cultures. While traditional healers in most settings were powerless to challenge the sanitary units, *curanderos* and *brujos* (witches) in hilltop towns in Morelos staged vehement protests against the doctors in the early 1930s, scaring them off, if only temporarily (Espinoza Canales, 1991).

Another major conflict arose when IHD officer Charles Bailey attempted to close down a cycle of local Morelos fairs during an epidemic of cerebro-spinal meningitis. These annual fairs drew up to 70,000 people to small towns, creating conditions that favoured disease transmission, but the Governor and the Federal Health Department knew that it was unwise to suspend the events. In Jonacatepec, where a health officer tried to close a fair, there were violent scenes and five soldiers were killed (Bailey to Ferrell, 9 May 1940).

In larger towns the IHD units faced the unexpected opposition of another group of practitioners: university-trained physicians. In Minatitlán and Puerto México, local physicians charged the unit with 'trying to diminish the amount of disease in the area, jeopardizing their livelihood'. The frustrated IHD officers tried to argue that the clinics would not diminish the doctors' clientele but rather boost it, for 'as the people become more "health conscious" they will be more ready to consult the physician' (Carr to Russell, 19 August 1928). Local physicians were also irritated by the modern equipment used by the

sanitary units. These doctors feared that their patients would begin to demand the sophisticated apparatus. Carr viewed this as a positive development, but many physicians believed that the new technology would put them out of business, leaving rural populations without even basic medical care services.

The training of midwives was an entirely novel attempt at incorporating traditional health practitioners into the modern sanitary unit. While *curanderos* had been brushed aside as superstitious witches, midwives were needed to carry out a service the units could not fulfil alone. The units sought to train midwives to carry out their practice in a more sanitary, 'modern' manner. In the early 1930s training sessions brought dozens of midwives, many of them barefoot, into the units, equipping them with a bag of instruments, teaching them how to use forceps, and persuading them that supine mothers delivered the healthiest babies (Informe del Servicio de Higiene Rural, 1931; Coronel, 1991).

The greatest challenge to the RF's project in Mexico was the election of Lázaro Cárdenas to the Presidency at the end of 1934 and his endorsement of the 'Six Year Plan'. The Six Year Plan was the first systematic attempt by the ruling National Revolutionary Party (PRN) to transform the ideals embodied in the Mexican Constitution into functional, national policy. The plan targeted land distribution, rural education and workers' rights as the nation's principal goals (*National Revolutionary Party's Six Year Plan, 1935*). In the field of public health it favoured above all the improvement of sanitation and the reduction of infant mortality, but the Six Year Plan also held that social and economic conditions were the most important considerations. The plan called for tripling the Health Department's budget, but it admitted that until general unhealthy conditions were eliminated, medical services remained 'a secondary defense'. The plan immediately put the RF on alert.

In August 1935, the President issued a resolution creating sanitary services throughout the country, based on the need to address four problems:

1) Poor general health conditions; 2) The absence of adequate nutrition based on healthy food and drinks; 3) The absence of efficient health services; 4) The public's ignorance of medicine and personal hygiene (Siurob to Cárdenas, 6 August 1935).

According to the RF, Mexico's health problems stemmed mostly from the latter two causes; the Cárdenas administration accepted the RF's offer of aid in these areas, intending to improve general health conditions and nutrition on its own.

Immediately following Cárdenas's election, the RF decided to establish a state-wide demonstration project of local health services in the state of Morelos. Rockefeller officials claimed to choose this site because it was located in the populous yet rural central plateau region and was close to Mexico City and accessible to major roads, allowing federal officials to observe the functioning of sanitary units (Carr to Estrada Cajigal, 18 December 1930), but this description also applied to other nearby states. Morelos was important because continuing peasant strife threatened the potentially lucrative agricultural use of its rich terrain and, as the home of the most popular Revolutionary hero, Emiliano Zapata, Morelos's unrest posed a threat to the country's stability.

Cárdenas agreed to the establishment of sanitary units in Morelos, believing that 'the country is ready for this progressive health development, the public are interested and are daily realizing the benefits and are demanding preventive measures' (Bailey to Ferrell, 28 November 1936). The Cárdenas administration also believed that public health measures were the perfect appetiser to the slower moving meal of land redistribution in Morelos.

These efforts were successful in Morelos, but they also further embedded the RF public health framework rather than the model put forward by Cárdenas. In 1937, the Cárdenas government planned a large number of public health activities, only one of which involved the RF directly. Money was committed to dozens of projects ranging from hospital construction to disease control campaigns, favouring technical interventions over social and environmental measures (Siurob and Priani, 1937). Even under Cárdenas, the RF had profoundly shaped the structure of the Health Department, the reliance on allopathic medical services and practitioners in rural Mexico, and the discussion on the nature of causality in public health.

Because of RF officer Bailey's confidence in his good relations with the Mexican government, he was especially surprised by the nationalisation of foreign oil companies on 18 March 1938. Considering Cárdenas's move to be a personal indignity, Bailey could not recover his faith in Mexican officials (Bailey to Ferrell, 29 March 1938). But the home office reacted coolly: 'When conditions become disturbed because of economic or political stress, one would not be surprised if some impairment of efficiency should arise.' Administrator John Ferrell felt encouraged by the RF's role during two decades of 'consistent advances in public health' in Mexico, and he recommended allowing the Mexican federal government 'to determine the services and the conditions under which we may render aid' (Ferrell to Bailey, 9 November 1939). By refusing to change its policy following the expropriation, the RF supported the idea that its health interventions had nothing to do with politics.

### Education as 'infiltration'

Wickliffe Rose's adherence to 'trickle-down' education was an essential component of the Rockefeller Foundation strategy. He believed that an elite group of scientists trained in modern medicine and public health would disperse their acquired knowledge into society through research and teaching. Not only did this approach save money, enabling the RF to implement programmes in more places, but the trained nationals would be in a better position to disseminate theory and practice in a culturally relevant manner (Rose, 1920). These educated elites, vastly better off than the majority of their countrymen, would themselves be highly dependent upon their relationship with the United States.

Many of the most lasting changes in the conceptualisation and practice of public health in Mexico were effected through the grants the RF offered to individual health professionals for study in the US. Over three decades, these prestigious fellowships went to 42 physicians, six nurses and twenty sanitary engineers (Rockefeller Foundation, 1950). During the same period dozens of Mexican health officials, including each incoming Minister of Health, received travel grants to visit North American public health offices and research centres (Fellowship Recorder Cards, Rockefeller Foundation Archives). These administrators would assure that the IHD models would stay firmly in place and that a new generation of public health officers would be trained similarly. Through the 1960s local health units were headed by returned fellows and staffed by health personnel instructed in Mexican training centres set up jointly by the Mexican Health Department and the IHD. As of 1940, 587 health officers had been instructed at field training stations in Mexico; thousands more were trained over the next years (Bailey to Ferrell, 7 July 1940).

Fellows were selected for their intelligence, capacity to work and, especially, the likelihood that they would dedicate their careers to government service (Ferrell to Carr, 31 January 1930). Such guarantees seemed unattainable, yet in 1940 IHD representative George Payne could proudly report that of 39 Mexican fellows, 36 were serving in the government. Most occupied influential positions, including Secretary-General, Director of Epidemiology, and head of the Institute of Hygiene (Payne to Ferrell, 25 October 1940). The home office was elated: 'If infiltration of the governmental health structure of Mexico with trained personnel continues ... the outlook is with real optimism' (Ferrell to Payne, 28 October 1940).

## Conclusions

RF programmes had a striking effect on the evolution of public health in Mexico — they involved not just the sharing of expertise of simple technical interventions that left the rest of society intact, but changed the way public health problems were conceptualised and confronted. The RF recognised that the dozens of returned fellows were its greatest spokespersons, planners and designers of the public health system. The tremendous control wielded in programme administration represented a major element of the RF's considerable command over Mexican public health. On the federal level, new patterns of government service were cultivated, with US-trained fellows serving in important posts, flashing fancy techniques and following foreign organisational structures. Diseases were attacked one by one, using foreign knowledge and technology. Prevention and cure were separated. International standards, not Mexican needs, began to determine budgeting priorities.

Not all Mexicans wholeheartedly embraced the North American model of public health. *Curanderos* and small-town physicians opposed the imposition of outside schemes. Socialist President Cárdenas, too, sought solutions appropriate to Mexican needs, attempting to integrate public health services with improvements in land redistribution, education, working, housing and social conditions. Nonetheless, when the Rockefeller Foundation offered to help establish local health units which had much more circumscribed activities, Cárdenas could not turn down this expertise. The Cárdenas administration intended to integrate the RF programme into its larger social efforts, but the verticality of the health units, their reliance on expensive technology, their narrow disease-based approach, and the sway of the units' US-trained managers ultimately thwarted efforts at integration.

In the end, patterns of public health work, training, research, finance and rural health strategies were all influenced by Rockefeller presence over a period of thirty years. This was achieved through the expenditure of only a few hundred thousand dollars (excluding yellow fever), a fraction of the amount spent in Brazil and other Latin American countries (International Health Division, 1913-1940). Despite this low cost, the RF argued, 'There is no more important country for our purposes than Mexico' (Russell to Carr, 19 May 1927). This system of budget incentives has persisted to the present, suggesting that the influence of international organisations in public health is far larger than their reported expenditures.

While the RF's mission was far more involved than just improving the health of Latin Americans, its selection of the field of public health was not accidental. Late nineteenth and early twentieth century advances in the theory, diagnostic and preventive armamentaria, and



professional organisation of medicine and public health led to growing confidence in science's ability to systematically solve humankind's secular problems.

Many segments of society shared this faith. American foundations enlisted science in an attempt to ready the world for a market economy. In Mexico, US scientific developments were accepted as a tool to fulfil the promises of the Revolution. For Mexicans, high expenditures, RF pressure, and the birth of a new dependence upon outside models, technology and drug supplies were viewed, at least temporarily, as a necessary step in the country's public health and social development. In the end, neither Diego Rivera's art nor the Rockefeller Foundation's science could be deemed neutral.

#### Notes

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- \* The author gratefully acknowledges the assistance provided by Christine Ridge in the preparation of this manuscript. This article is based on a paper presented at the International Society for Third-Sector Research 1994 Inaugural Conference held at Janus Pannonius University, Pécs, Hungary, July 1994.
- 1 In 1901 Rockefeller pledged \$200,000 (\$3.2 million in 1991 dollars) over a ten-year period to the Rockefeller Institute for Medical Research. All dollar monetary conversions have been calculated using the Composite Consumer Price Index from McCusker (1992, Table A-2, pp.323-32). In 1902 Rockefeller gave one million dollars to launch the General Education Board to promote public education of both blacks and whites in the South and other regions of the country. The General Education Board later became involved in higher education, especially the reform of medical education.
- 2 Through the 1920s a 'yellow' journalist could earn a sizeable bonus by exposing a yellow fever outbreak in a Mexican or Brazilian port. Yellow fever also served as an entering 'wedge' into a country, but the urgency of its elimination dictated different operating conditions. In Mexico, for example, the Rockefeller Foundation shouldered almost the entire cost (over \$100,000 per year) and did not mask its commanding role in the campaign.
- 3 Those at the top of the medical profession stood to gain in prestige through the expansion of the legitimacy of American-style allopathic medicine (interview with Felipe García Sanchez, former RF fellow, Health Department official, Mexico City, 5 June 1991; see also, Lambert, 1936).
- 4 Private Mexican citizens and businessmen wrote to the RF in New York to express admiration and to ask 'God that all the benefits that this noble Institution has spread throughout the entire world may be converted into blessings on behalf of the great North American people' (Thomas Perrín to George Vincent, 6 April 1926).

- 5 Mexican officials and physicians were mostly the descendants of Spaniards, holding European religious and scientific views. Catholic *mestizos*, who assumed a larger role in public life following the Revolution, comprised the majority of the Mexican population. Numerous indigenous communities had been 'converted' to Catholicism, and Christian symbols were often incorporated into the traditional religion.

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