The Medicalization of Nordestinos: Public Health and Regional Identity in Northeastern Brazil, 1889-1930

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THE MEDICALIZATION OF NORDESTINOS:
PUBLIC HEALTH AND REGIONAL IDENTITY
IN NORTHEASTERN BRAZIL, 1889-1930*

In his 1927 annual report to the Pernambucan state legislature, Governor Estacio de Albuquerque Coimbra wrote that “the economic, intellectual, moral and civic value of the Nation and the State is shaped, with the expression of human activity, in the excellence of physical and moral robustness of its population.” He believed that government was responsible for improving the condition of its citizens, and that “man, healthy or sick, . . . ought to fall under the knowing gaze of the Governments, preserving or restoring him to health, to benefit the Nation.” Under Coimbra’s administrations, the Pernambucan government inaugurated public health, public assistance, and education programs designed to improve the material and physical well-being of Pernambucan citizens. This was not an easy task; regional economic underdevelopment and perennial budget crises threatened government-sponsored social programs. While public health programs could be implemented and administered with relative ease in the state’s capital of Recife, transportation problems and low population density made the extension of such services to the residents of the state’s interior almost impossible. Despite these obstacles, public health programs and the physical well-being of the state’s populations had become the single most important concern of the Pernambucan government by the mid 1920s, and the expectation of future economic development and social progress was tied to the development of effective public health programs.

Public health became increasingly important in northeastern Brazil in the 1910s due to growing local, national, and international interest in improving

* An earlier version of this essay was presented at the Latin American Studies Association meeting held in Miami in March 2000. I would like to thank David Swinell, Heather McCrea, Daisy Delgado and the anonymous TAM reviewer for their suggestions and comments.

1 Estado de Pernambuco, Mensagens apresentadas ao Congresso Legislativo na abertura da 4.a sessão da 12.a legislatura pelo Governador do Estado Dr. Estácio de Albuquerque Coimbra, Governo do Estado de Pernambuco, Mensagens, ex. 8, Arquivo Público Estadual Jordão Emeirencino, Recife, Pernambuco, Brazil (hereafter APEJE), pp. 23-24.
sanitary conditions in the region. In addition to services offered by the Pernambucan government, reformers and federal legislators created the national Rural Preventive Health Service (Serviço de Profilaxia Rural) as a response to increased knowledge of health conditions in the northeastern sertão, the arid interior of the region. The Rockefeller Foundation also played a role in developing public health services in the region, administering rural health posts for the treatment of angiocystomiasis, or hookworm disease, and mosquito control programs designed to eliminate yellow fever and malaria. Despite these efforts to improve public health conditions, Brazilian and foreign observers believed the Northeast to be one of the most unhealthy regions in the nation.²

Pernambucan, national, and foreign government officials each had different understandings of the nature and causes of northeastern public health problems.³ These conflicts reflected widely divergent opinions about the social and economic value of the Northeast and nordestinos, as inhabitants of the region were called. In the late nineteenth and early twentieth centuries, Pernambucan reformers and public health officials offered generally optimistic assessments of nordestinos’ social and economic value. While nordestinos were unhealthy, officials believed that effective public health programs could control diseases and improve the populations of the region. Conversely, national and foreign public health officials’ understandings were shaped by prevailing understandings of race and Brazilian national identity which constructed nordestinos as racially inferior to other Brazilians.⁴ With few exceptions, while they believed that public health programs would improve social and economic conditions in the region, they also believed that nordestinos would never become the equals of Brazilians from more developed areas of the nation. These beliefs about the region and its peoples shaped political debates about public health throughout the 1910s and 1920s. At the same time, ideas about diseases and their long-term effects on nordestinos became an essential component of constructions of north-

⁴ In the 1910s and 1920s, these positive assessments of nordestinos’ moral and racial qualities derived in, in large part, from Euclides da Cunha’s Ox sertões, 38th ed. (Rio de Janeiro: Francisco Alves, 1997). The faculty of the Recife Law School problematized rather than embraced Brazilians’ mixed racial heritage, as Lilía Moritz Schwarz argues in O espírito das raças: cientistas, instituições e questão racial no Brasil—1870-1930 (São Paulo: Companhia das Letras, 1993), pp. 143-72.
eastern regional identity. By 1930, both northeastern and national reformers and politicians most often expressed their concerns about the region using the language of medicine and public health. While northeastern, national, and international public health officials at times disagreed about medical techniques and the management of public health campaigns, they agreed that the Northeast was the most unhealthy region in the nation.

The development of public health services in early twentieth century Brazil has received considerable attention from historians who have focused on changing understandings of disease, new public health techniques, and the political dimensions of what constituted the first social services offered by the Brazilian federal government. In the late 1910s and early 1920s, politicians and reformers, led by physicians associated with the Oswaldo Cruz Institute in Rio de Janeiro and assisted by the Rockefeller Foundation’s International Health Board, succeeded in creating the National Department of Public Health and the Rural Preventive Health Service. Most scholars have focused on the national importance of these programs, and have successfully argued that they comprised an integral part of national state-building efforts during the Old Republic (1889-1930). Little attention has been paid, however, to the regional and local origins and development of public health programs, and more specifically to the differences between national, regional, and local understandings of disease and public health. With few exceptions, historians have excluded the Northeast from their examination of the origins of Brazilian public health services, as it is usually assumed that economic underdevelopment precluded the establishment of effective programs. An examination of public health services created in the northeastern Brazilian state of Pernambuco between 1889 and 1930 provides an example of the regional importance of public health reforms and the ways in which medical ideas were used to construct a regional identity. Although Pernambucan reformers and public health officials were far removed from the leading Brazilian scientific and medical research centers located in São Paulo, Rio de Janeiro, and Bahia, and were hampered by inadequate fund-

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5 Studies of public health in Brazil that make comparisons between less developed regional public health services and more “advanced” national and foreign organizations include Castro-Santos, "Power"; and Nancy Stepan, Beginnings of Brazilian Science: Oswaldo Cruz Medical Research and Policy, 1890-1920 (New York: Science History Publications, 1976).

ing, they were nonetheless able to create public health services that were more than a mere imitation of public health programs in more “developed” regions of the nation. This article examines the development of the public health movement in Pernambuco from the late nineteenth century through the 1920s, focusing on the ways in which nordestinos came to be regarded as a public health threat. I look at the ways in which local, national, and foreign public health campaigns produced unique understandings of the region and its peoples and how these constructions were applied to social and political ends. I argue that concern with the control, treatment, and elimination of diseases became the dominant way in which Brazilian politicians and reformers expressed their apprehensions about the social and economic development of northeastern Brazil.

DISEASE, GEOGRAPHY, AND RACE

At the end of the nineteenth century, Pernambucan physicians’ and public health officials’ understandings of disease differed little from those of their colleagues in São Paulo and Rio de Janeiro, the two leading Brazilian centers of medical research. Pernambucan public health officials were familiar with recent developments in medical research and treatments for diseases utilized both in Brazil and abroad. While the majority of Pernambucan public health officials and physicians had come to accept the germ theory of disease transmission by 1910, earlier explanations of disease had not been discarded—geography and climate were still considered important factors in disease transmission well into the 1920s. Strategies for controlling epidemics and treating the ill varied little from practices in southern Brazil. Federal public health authorities were responsible for disease control at ports of entry, while state and municipal authorities were responsible for public health conditions in urban and rural areas of the state.

3 See Stepan, Beginnings; Peard, Race, Place, and Medicine; and Schwartz, O espetáculo, on Brazilian medical research of the late-nineteenth and early twentieth centuries.
4 On concerns about the redundancy of federal, state, and municipal public health services, see Estado de Pernambuco, Higiene Pública, Relatório apresentado à S. Exc. o Sr. Governador do Estado Conselheiro Japuca Carneiro de Araujo pelo Dr. Rodolpho Galvão Inspector Geral de Higieine de Pernambuco (Recife: Typographia da Manoel Figuerico de Faria e Filhos, 1898), Relatórios Diversos, 1856–1910, APEJE, p. 4.
In urban areas public health officials were concerned with epidemics of smallpox, plague, and yellow fever, which were commonplace in Pernambuco and its capital, Recife, well into the twentieth century. In 1898 Rodolfo Galvão, Pernambuco’s General Inspector of Hygiene, informed the state governor that “the causes of unhealthfulness in any urban agglomeration are complex. Some of these causes are intangible and cannot be modified by human will and force: some are meteorological accidents and cosmic fatalities. Others are dependent on topographical conditions and because of this they can only be modified with the cost of a great deal of work and time...” Public health officials were especially concerned with epidemic diseases because they could lead to the closure of Recife’s port, which accounted for the majority of the state’s imports and exports. Public health officials recorded deaths from tuberculosis, malaria, ancylostomiasis, dysentery, trachoma, leishmaniasis, leprosy, and syphilis, but limited fiscal resources and the fact that these diseases were endemic rather than epidemic (which meant that they did not pose an immediate economic threat) allowed Pernambucan state public health officials to ignore them. Whether public health officials believed the cause of a specific disease was miasma, contagion, or germ, they treated the diseases in the same way. Strategies for controlling diseases included eliminating biological and environmental causes of disease by upgrading sewer, water, and sanitation services, as well as isolating the sick, providing disinfection services, and conducting home visits which were collectively designed to “improve the sanitary interests of the population.”

Public health officials often expressed concern about Recife’s urban slums (locally called mocambos). Rodolfo Galvão noted that “one of the worst causes of unhealthiness of this capital, ... is the humidity of the housing [of the lower classes].” In the early twentieth century, public health officials and politicians attempted to improve living conditions in lower class neighborhoods. In 1916 Pernambuco’s governor, Manoel Antonio Pereira Borba, argued that “large urban zones are swampy and unhealthful and, in the midst of waters and near them, innumerable houses where an enormous population of poor people live prolifically, creating a generation that, from its inception, is weak, debilitated and condemned to death by the inconvenient conditions in the environment in which they are born and

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11 See José Octavio de Freitas, O clima e a mortalidade da cidade do Recife (Recife: Imprensa Industrial, 1905); and Emílio Béringer, Estudos sobre o clima e a mortalidade da capital de Pernambuco (Brasil) (Pernambuco: Tipografia Comercial, 1891).
12 Ibid., p. 3.
13 Ibid., p. 37.
14 Ibid., p. 72.
live.\textsuperscript{15} The solution to the problem of lower class housing was to construct "hygienic" workers' housing (casas operarias), in new neighborhoods outside the city center and to tear down mocambos. At the same time, the state legislature amended the public health code to reflect growing concern over the location, building materials, and layout of lower class housing in Recife, although these measures were largely ineffective, as they could not be enforced. Strategies for improving the living conditions of the urban poor and reducing the impact of diseases were predicated on the notion that social conditions and housing, rather than the poor themselves, were the cause of high disease rates in lower- and working-class neighborhoods. Pernambucan public health officials believed they could control epidemic diseases if they could improve living conditions.

The sertão provided a stark contrast to humid, tropical, coastal areas, and the region presented unique public health problems. Since the mid-nineteenth century northeastern physicians, including a group of researchers and clinicians associated with the Faculdade de Medicina in Bahia, had taken up the study of regional diseases, including the question of whether diseases common to coastal regions took different clinical forms in the sertão.\textsuperscript{16} Physicians and public health officials argued that coastal and interior regions each gave rise to unique forms of diseases, and that specific treatments were required for these regional variations. While European tropical medicine influenced Brazilians' understandings of diseases, northeastern physicians formulated their own ideas about diseases based on their clinical and field observations. Most Pernambucan physicians and public health officials believed that the interior was inherently more healthy than coastal regions due to the lack of humidity and cooler temperatures in the highlands. In 1878 Pernambucan Public Health Inspector Pedro de Ataíde Lobo Moscoso argued that government efforts to develop the region could produce a climate that "would be the most healthful that could be imagined."\textsuperscript{17} Despite the fact that scientific knowledge of diseases common to the sertão had increased by the early twentieth century, public health officials could do little to improve conditions due to transportation difficulties, budget shortfalls, and a political unwillingness to promote development in a region of the

\textsuperscript{15} Estado de Pernambuco, Mensagens 1916, Governo do Estado de Pernambuco, Mensagens, ex. 2, APEHE, pp. 5-6.

\textsuperscript{16} On the connection between climate and disease in the region see Peard, Race, Place, and Medicine, pp. 81-108.

\textsuperscript{17} Estado de Pernambuco, Relatório que apresentou ao Exm. Sr. Presidente da Província em 27 de Novembro de 1878 a Inspector de Saúde Pública Dr. Pedro de Ataíde Lobo Moscoso (Pernambuco: Typographia de Manuel Figueiroa de Faria e Filhos, 1879), Relatórios Diversos, 1856-1910, APEHE, pp. 10-11.
state where few ballots were cast. Nonetheless, the Pernambucan Public Health Department established a presence in interior cities by the late 1910s, with the primary goals of containing outbreaks of the plague and providing vaccinations against smallpox.18

The periodic droughts that struck the northeastern sertão presented an additional public health challenge. Based on their observations of the “Great Drought” of 1877-1879, and less severe droughts in the 1890s and 1910s, Pernambucan politicians and public health officials came to fear epidemic outbreaks. During a drought, which usually lasted one to two years, epidemics of otherwise controllable diseases would break out as thousands of nordestinos sought relief in refugee camps and coastal cities. Drought victims were frequently hungry and weak, and the squalid conditions in the camps facilitated the transmission of disease. State and federal authorities responded to these threats by distributing vaccines for smallpox and the plague and if at all possible, by isolating victims. In 1920 the Pernambucan governor, José Rufino Bezerra Cavalcanti, argued that “the famished populations constitute the best material for an epidemic combustion.”19 Concern with these threats was short lived, however, due to the temporary nature of the drought and the associated human displacement. When the rains returned the threat of epidemics subsided, and drought victims’ health was no longer important to government officials.

Pernambucan public health officials were also interested in “cleaning up the sertão” in order to make the region more attractive to European immigrants.20 Late nineteenth-century public health campaigns in Rio de Janeiro were designed in part to make the city appealing to European immigrants, and Pernambucan officials likewise believed that the diseases common to the sertão constituted the principal obstacle to immigration.21 Public health measures would ensure regional development not because nordestinos’ health and productivity would improve, but because the elimination of trop-
ical diseases would encourage supposedly superior European immigrants to settle in the region. Pernambucan politicians pursued immigration plans during the 1920s as they searched for a way of improving the economy. Few immigrants chose the northeast over the coffee plantations of the south, however, and Pernambucan politicians' visions of economic development were unrealized.

Immigration plans nonetheless revealed Pernambucan officials' attitudes toward race, which were not often divulged publicly. Despite the fact that the majority of the region's population could be classified as having Afro-Brazilian origins, politicians and reformers paid little attention to racial inequalities that had resulted from three centuries of African slavery. Discussions of the problems associated with lower-class housing in Recife overlooked race, and public health officials generally did not consider race to be a factor in the transmission, diagnosis, and treatment of diseases. There were several reasons behind Pernambucan politicians' and civil servants' reticence in discussing race. Brazilians stressed racial harmony in daily life and embraced branqueamento, or racial whitening, as a social and racial ideal. To problematize race was considered bad form. Pernambucan public officials did not want to call attention to the problem that they believed was the most formidable obstacle to regional development—the supposed racial inferiority of northeastern agricultural workers. They realized that aside from their fanciful immigration plans, little could be done to address the problem. Race was an innate quality so they instead chose to focus on germs and diseases—which could be controlled or eliminated—as the cause of the region's social and economic problems. In fact, public health officials from southern Brazil and

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22 Estimates of the racial composition of Brazil’s population vary considerably, although historians and demographers agree that there was a higher percentage of pardos and pretos in the Northeast than in the South. See Skidmore, *Black into White*, p. 45 and George Reid Andrews, “Racial Inequality in Brazil and the United States: A Statistical Comparison,” *Journal of Social History* 26 (Winter 1992), pp. 229-63.

23 See, for example, João Azevedo’s discussion of meconambos in “Saneamento das habitações de cidade do Recife,” *Arquivos de Higiene Pública e Medicina Tropical* 1:1 (June 1915), Biblioteca Pública Estadual Castelo Branco, Recife, Pernambuco, Brazil (hereafter BPECB), pp. 49-62. On the connection between ideas of race and medicine see Warwick Anderson, “Disease, Race, and Empire” *Bulletin of the History of Medicine* 70 (1996), pp. 6-67; Skidmore, *Black into White*, pp. 179-85; and Peard, “Tropical Disorders.”

24 See Skidmore, *Black into White*. George Reid Andrews refutes Florestan Fernandes’ argument that slavery produced an Afro-Brazilian work force that was not up to the rigors of modern economic production. Employers in the Northeast embraced this idea, despite the fact that there was no alternative to native Brazilian workers. See *Blacks and Whites in São Paulo, Brazil, 1888-1988* (Madison: University of Wisconsin Press, 1991), pp. 34-89.

abroad were more likely than their Pernambucan counterparts to call attention to race. Pernambucan officials, who wanted to present the region in a more favorable light, avoided the subject.

Discussions of the public health problems of the 1910s and 1920s revealed a concern with epidemic diseases rather than with Pernambucans themselves. In urban and rural areas, public health officials focused on diseases, climate, and geography as the principal causes of illness among nordestinos. Attitudes toward race reinforced the belief that the fundamental public health threat was epidemic diseases rather than nordestinos themselves. The public health programs and campaigns of the early twentieth century were predicated on this principle.

CONTROLLING EPIDEMICS

Beginning in 1900, public health officials and political leaders in Pernambuco initiated a number of public health reforms which expanded and regularized public health services. Nineteenth-century public health efforts were restricted to responses to epidemics, and little attention was paid to endemic diseases and nordestinos' overall health. By the turn of the century, however, the state's political leaders increasingly turned to public health programs not only as a way of preventing disease, but also as a means of improving Pernambucans' health and the state's economy. Political leaders negotiated the transfer of church-run hospitals to state control, built new public hospitals, and appropriated funding for new public health programs to treat the state's rural and urban populations. House-to-house visits by nurses, vaccination campaigns, disinfection services, a sanitary police force, and continued improvements in urban sanitation were employed to improve public health conditions. Most of these efforts were limited to Recife and its immediate suburbs, and thus benefited only a small percentage of the state's population. It would take decades for the public health movement in Pernambuco to make a substantial impact on nordestinos' health, but these initial efforts were significant in that they established public health programs as an appropriate government response to social and economic problems.

The prevention of smallpox became the most important public health concern in Pernambuco in the late nineteenth century, and vaccination campaigns became the most visible—and controversial—means of controlling the disease.²⁶ Pernambuco's public health department operated a small laboratory to

²⁶ Deaths from smallpox epidemics averaged 2,000 deaths per year in 1890 and 1896. See José Octávio de Freitas, Os trabalhos de higiene em Pernambuco: relatório apresentado ao secretário geral do Estado (Recife: Oficinas Gráficas da Imprensa Oficial, 1919), p. 83.
produce vaccine for free public distribution, and employed nurses who conducted home visits to ensure that individuals were vaccinated. In 1897 state public health officials considered the merits of an obligatory smallpox vaccination campaign, limited to students and the police, arguing that such a campaign would be easy to carry out and would produce little public resistance. This proposal was not immediately taken up by the state legislature, and public health officials again proposed a vaccination campaign in the spring of 1904. However, in the same year a revolt against a mandatory vaccination campaign in Rio de Janeiro convinced Pernambucan public health officials and political leaders that mandatory vaccinations would produce too much public resistance, and they abandoned their vaccination plan. The human cost of this decision must have been only too apparent in the following year when a smallpox epidemic killed 3965 Pernambucans. As deaths from smallpox rose in late 1905, vaccine production was increased, and distributed without cost by visiting nurses and at health posts throughout the capital.

Public health officials also attempted to control infectious diseases through “disinfection” techniques designed to eliminate pathogenic materials from buildings and public spaces. Locations where an individual had contracted, convalesced, or died from a disease were targeted for cleansing by a special “disinfection service.” Pernambucan public health officials, like their national and foreign counterparts, placed considerable faith in disinfection. In 1898 the Pernambucan Inspector of Public Health wrote that “the disinfectory is an ideal aid to home disinfections” and told the state’s political leadership that disinfection services were the most important tool of the public health department in the fight against disease. As late as 1910 the disinfection service comprised the largest single public health expenditure in Pernambuco. The service was located in a small building in the

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27 Estado de Pernambuco, Mensagens 1897, Governo do Estado de Pernambuco, Mensagens, cx. 1, APEJE, p. 42.
29 De Freitas, Os trabalhos, pp. 83.
31 Estado de Pernambuco, Hygiene Publica, Relatorio 1898, p. 22.
32 Estado de Pernambuco, Relatorio apresentado ao Exm. Sr. Dr. Herculano Bandeira de Mello Governador do Estado pela Secretario Geral do Estado Riccielo José Ozório de Queira em 31 de Janeiro de 1910 (Recife: Typographia do Diario de Pernambuco, 1910), Secretario Geral, Relatorios, cx. 1, APEJE, p. 89.
center of Recife, and when cases of smallpox, yellow fever, or bubonic plague were reported to the public health department, as was required by state law, the disinfection service was dispatched to the location. Houses that were deemed unsanitary were “disinfected” by spraying or burning chemicals in affected rooms. In rural areas, smaller houses were covered with canvas tents to facilitate the fumigation of germs and pests, and in some cases, particularly in the sertão where bubonic plague was endemic, houses were burned down as a so-called “sanitary measure.” The reported number of cases of plague in rural municípios declined as the number of disinfections increased, but this may have been a testament to local residents’ fear of the service rather than its sanitary or medical effectiveness.

The disinfection service was also used as a preventive measure; between 1912 and 1918 approximately 75% of disinfections carried out in Recife were classified as “preventive,” indicating that the public health service was responding to general sanitary conditions rather than specific reports of disease. As Steven Williams has shown in his study of mosquito control measures in Brazil, disinfection and fumigation techniques had political as well as public health benefits; the fumigation of a house or neighborhood demonstrated the government’s effectiveness in responding to public health problems, regardless of whether the action provided any actual medical benefits.

By the turn of the century, the public health department began using the “sanitary police” as a means of controlling disease in Pernambuco. According to the state’s public health code of 1905, the sanitary police were responsible for “removing any cause prejudicial to public health,” as well as inspecting houses, places of business, and public spaces for infractions of the public health code. In 1912 the sanitary police had evolved into a service dedicated to controlling mosquitoes, which by this time were known to carry both malaria and yellow fever. While there were relatively few deaths from yellow fever (88 in 1912 and 6 in 1913), the service recorded over 571,000 inspections for mosquitoes in 1913. The “mosquito police” became a highly visible presence throughout Recife and its suburbs. When the mosquito population increased to dangerous levels, or when a few cases of yellow fever.

31 In 1917 99 houses were incinerated by the service in six rural municípios. Soc de Freitas, Os trabalhos, pp. 29-35.
32 Ibid., p. 22.
33 Williams, "Nationalism," p. 25.
34 Estado de Pernambuco, Regulamento para o servico de higiene publica do estado de Pernambuco (Recife: Imprensa Industrial, 1905), Governo do Estado de Pernambuco, Exposição, APEJE, p. 13.
35 Estado de Pernambuco, Mensagem 1914, Governo do Estado de Pernambuco, Mensagens, ex. 4, APEJE, pp. 11-12.
produced public fear of an epidemic, public health officials increased the frequency of visits and claimed that every building in Recife was inspected on a biweekly basis. Even as death rates from the disease remained low, public health officials continued their inspections. Citizens, politicians, and public health officials were comforted by the visible presence of mosquito killers in the state capital. More significantly, efforts to control yellow fever focused on mosquitoes—thus the problem lay with the disease or, in the case of yellow fever, the disease vector, rather than with the sanitary habits of the general public or the conditions in which they lived.

In the early twentieth century, vaccinations, disinfections, and sanitary policing became the standard techniques of the Pernambucan public health service. Public health efforts focused on germs and their carriers rather than on nordestinos themselves, and Pernambucan officials remained optimistic about improving nordestinos and the region. Local officials did not have a negative opinion of their own people—they believed that nordestinos were merely the victims of disease. If germs could be eliminated and epidemics controlled, so the reasoning went, then nordestinos would be as healthy as other Brazilians. In 1909 Pernambuco’s governor, Herculano Bandeira de Mello, wrote that he was “certain that in a short time, . . . Recife will become one of the most healthful cities, in accordance with its climate and magnificent topographic location.”38 Still, the growing familiarity with public health conditions in the state was unsettling for some public health officials. Optimism would give way to pessimism during an epidemic or when a budget crisis necessitated cutbacks in public health programs. By the late 1910s it was becoming apparent that the populations of Recife and Pernambuco, and indeed the entire Northeast, were not as healthy as had previously been thought.

Government interest in, and support for, public health increased substantially after the founding of a medical school in Recife in 1915.39 Classes were first held at the Recife Law School, and in 1920 the medical school moved to a new location and accepted its first class of 15 students.40 Edgar Altino, a faculty member, spoke about “the true role of Hygiene” at the inauguration of a course in public medicine: “Effectively, deadly and varied endemics (plaudism, Chagas disease and ancylostomiasis) exist and spread

31 Estado de Pernambuco, Mensagem 1909, Governo do Estado de Pernambuco, Mensagens, cx. 2, APJE, p. 5.
32 On the founding of the Faculdade de Medicina do Recife see Salomon Kehrer, et al. História da Faculdade de Medicina do Recife 1915-1985 (Recife: Universidade Federal de Pernambuco, Centro de Ciências da Saúde, 1985); and José Ovídio de Freitas, História da Faculdade de Medicina do Recife, 1925 a 1943 (Recife: Imprensa Oficial, 1944).
40 Kehrer, História, p. 28.
out through our fields, rendering our men of the interior invalids and preparing in Brazil a generation of physical and mental degenerates." The solution to the problem, Altino argued, was to utilize "prophylactic measures" to "destroy the diseases and restore our citizens to health, or to return the happiness of work that dignifies and encourages, preparing and executing the grand work of the incessant progress of our nation." The Medical School would contribute to these efforts in several important ways. First, while the graduating classes were small, Pernambuco's Department of Public health could count on a pool of physicians to fill public posts. This was crucial, as the department's directors often noted that they had difficulty hiring physicians, especially in the interior of the state. Second, the presence of a medical school in Pernambuco encouraged faculty and students to pay more attention to regional and local public health problems through clinical training and studies of epidemic and endemic diseases. This concern with local public health issues was reflected in the theses written by students pursuing post-graduate degrees and prospective faculty competing for teaching positions. Finally, the presence of a medical school increased public and governmental interest in medicine and public health as a solution to regional economic and social problems. Just as the faculty of the Law School had been consulted in developing social policies (and indeed most public officials in Recife had been trained at the Law School), Recife's medical school provided the intellectual justification and technical support to the state government's growing interest in medicine and public health.

The medical community in Recife also produced a number of periodicals: the *Jornal de Medicina de Pernambuco* was first published in 1905, the *Archivos de Higiene e Medicina Tropical* in 1914, and the *Revista Médica de Pernambuco* in 1931. These journals provided the medical community with a forum for publishing results of research, sharing new medical techniques, and discussing the political and social dimensions of their work. In the first issue of *Archivos de Higiene e Medicina Tropical*, which was published by Pernambuco's Directorate of Hygiene, the editor wrote that the mission of the journal was to educate public health officers and physicians about "our NATURE," which would, in turn, "contribute to the scientific progress of our surroundings." He argued that the journal would "provide the most salient benefits to the State, in attempting to elucidate questions

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42 Regional themes became more common in the theses written in late 1920s and 1930s.
already important to the scientific study of orienting and systematizing administrative and legislative precautions and measures in relation to the most vital interests of our collective.”44 He added that “the problem of the sanitation of the State of Pernambuco, and with it, economic issues, involves the study of the more profound scientific questions, connected with its climatology, nosology and medical geography, . . . which requires the knowledge of our tropical science and specialized adaptations that only appear when conveniently activated [by regional conditions].”45 Although the journal would only be published for two years, articles concerning the organization and activities of the directorate of hygiene, the treatment and prevention of specific diseases, and the public health dimensions of social problems, revealed the increasing importance of medicine and public health to the Pernambucan government. At the same time, the state government tripled spending on public health services between 1913 and 1917.46 As a result of their increased awareness of the state’s public health problems, public health officials began to realize that Pernambuco was not as healthy as they previously thought. José Octavio de Freitas, the director of Pernambuco’s Directorate of Hygiene and Public Health, bluntly stated in 1919 that Recife was “the city in Brazil where more die,” and Pernambuco’s governor admitted that the city’s death rates were the highest in the nation.47 Their concerns would be confirmed by federal and foreign public health authorities who carried out their own medical surveys of Pernambuco in the 1910s.

THE OSWALDO CRUZ INSTITUTE SURVEYS OF THE NORTHEAST

Beginning in the 1910s, national and international public health programs began to exert a profound influence on national and regional understandings of nordestinos. The Brazilian federal government became interested in sanitary conditions in the northeastern interior as part of programs designed to mitigate the effects of the periodic droughts that affected the region. At the same time, the state government sought to explore the possibilities for economic development in the interior as a means of providing employment for nordestinos who could not find jobs in the sugar industry. In 1914, the Pernambucan governor stated that “the exploration of land, an unending source of riches, deserves our most spirited attention.”48 There was, however, little practical or

44 Directoria de Higiene de Pernambuco, “Editorial,” *Archivos de Higiene Publica e Medicina Tropical* 1:1 (June 1915), BPECB, p. 2.
45 Estado de Pernambuco, *Mensagens 1917*, Governo do Estado de Pernambuco, Mensagens, cx. 2, APRJE, p. 27.
46 De Freitas, *O clima*, p. 52, emphasis in the original; Estado de Pernambuco, *Mensagens 1912*, Governo do Estado de Pernambuco, Mensagens, cx. 4, APRJE, p. 7.
47 Estado de Pernambuco, *Mensagens 1914*, p. 3.
scientific information about the northeastern sertão that could be used in
designing development projects. To remedy this, the federal Inspectorate of
Works Against the Drought commissioned the Oswaldo Cruz Institute of Rio
de Janeiro to study the sertão. From 1912 to 1914 three expeditions of physi-
cians, scientists, and their assistants surveyed the region and produced detailed
reports about geography, human populations, diseases, and economic activi-
ties. As several historians of the Brazilian public health movement have noted,
the knowledge of medical conditions in the interior contained in these reports
proved instrumental to the development of a national public health service and
Brazilian state-building efforts of the 1920s.48

The physicians’ reports, published in scientific journals and later circu-
lated among federal legislators, were consistent in their condemnation of life
in the sertão.49 The expeditions’ leaders kept a daily journal of their activi-
ties, noting unique species of plants and animals, diseases, and general
observations of life in the interior. In each village the physicians examined
the locals for signs of unusual and unknown diseases. Medical services were
either nonexistent or beyond the means of most sertanejos, as inhabitants of
the sertão were called, and they sought out the expedition physicians mem-
bers upon hearing of their arrival. The physicians treated sertanejos as best
they could given their limited medical supplies, but they seemed more inter-
ested in compiling an inventory of epidemic and endemic diseases, and
especially finding cases of the recently discovered Chagas’ Disease (Amer-
ican sleeping sickness). The physicians carefully noted the presence of dis-
eases unique to the region, some of which they dismissed as mere folk
superstitions, and others of which were taken seriously and ear-marked for
further investigation.50 Arthur Neiva and Belisario Penna, the leaders of one
expedition, concluded that they had “become acquainted with almost all the
states of Brazil, and it saddens us to say that, with the exception of the states
of the South . . . almost all the others . . . are vast abandoned territories, for-
gotten by rulers, with populations vegetating in misery and obscurity . . .
defeated by drought and . . . annihilating diseases.”51

48 See Castro-Santos, “Power”; Skidmore, Black into White; and Linn and Hochman, “Descobrindo
a nação.”
49 Arthur Neiva and Belisario Penna, “Viagem científica pelo norte da Bahia, sudoeste de Pernambu-
cuco, sul do Piauí e de norte a sul de Goiás,” Memórias do Instituto Oswaldo Cruz 8:3 (1916), pp. 74-
224; and Adolpho Lutz and Astorgildo Machado, “Viagem pelo rio S. Francisco e por alguns dos seus
50 These diseases included “entletação” (literally, to be put in a difficult situation) and “vazamento
do coração” (vacation of the heart). Physicians theorized that these were psychological disorders which
resulted from the periodic droughts that affected the region. See Neiva and Penna, “Viagem científica,”
p. 132-42.
Neiva and Penna believed that sertanejos’ weakened physical state, a result of droughts and difficult living conditions produced by the depressed economy, decreased their resistance to disease and thus contributed to the high rate of disease in the interior. A lack of adequate medical care, and the absence of physicians, hospitals, and pharmacies in the sertão were also cited as contributing factors. In addition, they argued that sertanejos’ racial background was a cause of the region’s backwardness. Neiva and Penna pointed out that there were many blacks and caboclos (mestizos of black and Indian origin) in the interior, and they carefully recorded the presence or absence of whites in each town that they visited. Adolfo Lutz and Astorgildo Machado, who surveyed the São Francisco valley, wrote that:

In regard to the population, it is worth noting that the Indian element is almost zero. Nevertheless, the black race is present in large numbers, and is in many cases predominant. Among the natives, it is not rare to find places where there is a complete absence of the white element. This, naturally, greatly influences the characteristics of a population that generally lives in a very primitive fashion.

In areas where whites made up a larger proportion of the population, the physicians claimed that “the inhabitants are more vigorous,” thereby equating whiteness with healthiness and economic progress, and conversely, blackness with disease and indolence. Not only were sertanejos racially inferior to the whiter populations of southern Brazil; the physicians also believed that the sertão itself brought out the “primitive” characteristics and behaviors of the region’s population. They noted, for example, the presence of traditional “African habits” such as tooth filing among local populations, which was offered as further evidence of regional backwardness. Neiva and Penna believed that the non-white sertanejos had regressed to their primitive origins in the vast expanse of the sertão, where they lived beyond the civilizing influences of modern Brazilian society.

While sertanejos of African descent became a symbol of what was wrong with the sertão, European immigrants represented progress. Neiva and Penna told the story of an Italian immigrant who worked for a fazendeiro in a drought-stricken area. The worker had transformed arid land into a thriving garden, which was presented as evidence of the ability of Euro-

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51 Ibid., p. 167.
54 Ibid., pp. 172-73.
55 The Oswaldo Cruz Institute physicians believed that sertanejos descended from African slaves while Northeastern politicians and intellectuals argued for Indian and Portuguese descent.
pean immigrants to improve the sertão, a task the doctors believed that the native sertanejos were incapable of completing. Like most Brazilian intellectuals, Neiva and Penna believed that racial whitening (branqueamento), the dominant racial theory during the old republic, would assure the steady progress and development of the nation. Neiva and Penna noted that they had encountered only 18 foreigners in their travels, and wrote that "for us this fact explains the overwhelming backwardness of these parts; the progress of Brazil is, in large part, due to foreigners." They found it incomprehensible that the political leaders of northeastern states had done so little to promote immigration, and blamed them for perpetuating the myth that the tropics were inhospitable to Europeans. Neiva and Penna considered immigration to be an indispensable component of any plan to develop the sertão, and suggested that federal and state authorities "intelligently explore the land, populate it with able and wise men, and give them exact instructions and knowledge of the prophylaxis of regional diseases, all of which are avoidable with rational and continual assistance and with the learned laws of the careful perfection of the races." There was simply no place for the poor, diseased, uneducated, and racially inferior sertanejo in the region’s future. While Penna later rejected racial causes of nordestino inferiority, his overall opinion of nordestinos did not change, and he and Neiva did not propose a comprehensive public health campaign which would have helped nordestinos in their 1916 report. He did advocate the creation of mobile health posts as a means of improving conditions in the interior, but this amounted to little more than a humanitarian gesture. The Oswaldo Cruz Institute physicians believed that the inhabitants of the sertão were beyond the salvation of modern medicine. Their solution to the "northeastern problem" was simply to repopulate the sertão with eugenically superior European immigrants.

The public health surveys of the northeastern sertão had two important effects. First, the knowledge of sanitary conditions in the interior prompted the creation of a federal Rural Preventive Health Service in 1918. Belisario Penna had successfully raised national public awareness of the plight of sertanejos in a series of articles published in the Rio de Janeiro newspaper Correio da Manhã in 1916 and 1917 that described the problems in the

58 Skidmore, Black into White, pp. 64-69.
60 Ibid., p. 221.
61 On Penna’s later rejection of racial determinism, see Belisario Penna, Saneamento do Brasil: sanear o Brasil é povoal-o; é enriquecer-o; é moralizar-o (Rio de Janeiro: Typographia Revista dos Tribunais, 1918).
interior and proposed legislation for new public health services. The resulting Rural Preventive Health Service received federal funding and Rockefeller Foundation technical assistance, and was given the responsibility of improving sanitary conditions in both coastal and interior areas. Second, and perhaps more important, was the effect new medical knowledge had on understandings of nordestinos. The surveys and Penna's articles provided scientific evidence that sertanejos, and by extension all nordestinos, were inferior to other Brazilians. While most northeastern intellectuals and physicians rejected racial explanations of the northeastern difference, they still considered nordestinos to be backward; in contrast, the survey physicians used race rather than disease to explain regional differences. Several historians of the national public health movement have placed too much emphasis on this shift, and have argued that a goal of the Rural Preventive Health Service was to "prepare" nordestinos for the labor markets of the south, and concluded that public health efforts in the Northeast and changing attitudes toward nordestinos constituted a shift toward a more inclusive national identity. In fact, the cause of nordestinos' backwardness was less important than their actual condition, and the national public health programs of the 1910s had scientifically established that nordestinos were unhealthy.

What was novel about the Oswaldo Cruz Institute surveys' medical assessments of nordestinos was the notion that the primary public health problem in the region was not epidemic diseases such as smallpox, yellow fever, or the plague, but endemic diseases. Federal public health officials designed programs that concentrated on chronic, debilitating diseases such as malaria, hookworm, and Chagas' disease, disorders which, they argued, left workers in a physically weakened state. Belisario Penna argued that "75 percent or more of the rural and urban Brazilian population consists of anemic individuals with a level of hemoglobin and number of red cells in their blood below and far below normal, in addition to other abnormalities." Penna concluded that there was a "perfect relationship between general diseases, ... and the proclaimed indolence and incapacity of the indigenous worker."

63 De Freitas, Os trabalhos, p. 54.
65 Penna, Saneamento, pp. 150-51.
The national public health campaigns of the 1910s and 1920s succeeded in medicalizing nordestinos. Penha's notion that nordestinos suffered long-term, debilitating effects from endemic diseases was new, and much more pessimistic than previous medical assessments of nordestinos. While northeastern public health officials regarded nordestinos as victims of the epidemic diseases they sought to control, federal public health officials saw nordestinos themselves as the fundamental problem as they fixed their attention on chronic debilitating diseases. This change in medical thought had important implications for subsequent studies of nordestinos. While the Oswaldo Cruz Institute physicians' more advanced medical knowledge and training was partially responsible for new ideas about the nature of public health problems in the region, southerners' belief that the Northeast was a backward, underdeveloped region within the nation was more influential.

The widespread acceptance of this idea among public health officials from the South also indicated the increasing inability of northeastern intellectuals, scientists, and politicians to shape discussions of northeastern regional identity. In the face of overwhelming national support for the idea of nordestino inferiority, northeastern physicians and public health officials found themselves in a difficult position. While they wanted to raise national public awareness of conditions in the Northeast in order to receive financial support from the federal government, they took issue with the increasingly negative assessments of nordestinos expressed by civil servants, politicians, and public health officials from southern Brazil. Pernambucan officials could argue that the gravest public health problems were confined to the sertão, but they could not deny that the northeast was one of the most unhealthy regions in the nation.

The Rockefeller Foundation in Northeastern Brazil

The history of public health in Brazil in the early twentieth century cannot be told without including the efforts of the Rockefeller Foundation.66 While considerable attention has been paid to the Foundation's activities in Brazil, little light has been shed on its efforts in northeastern Brazil. In addition to carrying out medical research and promoting medical education in Brazil, the Rockefeller Foundation sponsored three public health campaigns against

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66 Historians disagree about the impact of the Rockefeller Foundation on public health programs in Northeastern Brazil. Luiz A. de Castro-Santos argues that the Foundation played an important role in "promoting rural sanitation programs in Brazil," but concludes that "the contribution of the Rockefeller Foundation—though having an early and direct impact on public health—should not be overestimated." See Castro-Santos, "Power," pp. 135-36. Others place more importance on the Foundation's activities; see Cotto, Missionaries of Science.
hookworm disease (ancylostomiasis), yellow fever, and malaria. The Foundation’s public health officers introduced new medical ideas and practices that differed from those of their Brazilian counterparts.

The most influential change in Brazilian public health programs that resulted from the Foundation’s involvement was the treatment of hookworm disease, which, despite research conducted by Bahian researchers in the nineteenth century, had received little clinical attention in northeastern Brazil prior to the Foundation’s arrival in 1916.67 For Brazilian public health officials, ancylostomiasis represented a fundamentally different type of disease. Not only was it common among poor agricultural workers, but it was understood as a disease that had lasting, debilitating effects on its victims. Physicians knew that hookworms entered their human hosts through the feet, and that those most likely to acquire the parasite were poor agricultural workers who did not wear shoes or use properly constructed latrines. The hookworms settled in the digestive tract and fed on the blood supply, reducing the amount of blood available to the body, and thus diminishing the “vitality” of the victim. Foundation officials estimated that ancylostomiasis reduced the victim’s “productive capacity” by 20 percent, and argued that untreated individuals could sustain a hookworm infestation for years, struggling through life, unable to live up to their full economic potential. Officials argued that the disease diminished resistance to other diseases, and had a profound effect on “future workers” as “infected children are known to be physically and intellectually retarded.”68 Many Foundation officials had participated in efforts against hookworm in the United States between 1909 and 1915, and they applied their experiences to Brazil.69 The campaign against hookworm disease proved to be a political and medical success in southern Brazil, and northeastern public health officials moved quickly to design their own program to treat the disease. In 1918, Pernambucan officials conducted independent surveys of two islands close to Recife—Pina and Itamaracá. Results showed that 75 to 79 percent of the population was infected.70 Public health officials quickly organized a treatment service modeled on Rockefeller Foundation services in order to “combat ancylostomiasis, the terrible

67 On nineteenth-century understandings and treatments of ancylostomiasis see Peard, Race, Place, and Medicine, pp. 61-78.
70 Estado de Pernambuco, Mensagens 1918, Governo do Estado de Pernambuco, Mensagens, cx. 2, APEJE, p. 19.
infestation that has already pauperized and annihilated the inhabitants of the state.” In the first year of the service, some 2500 individuals were treated for the disease.71

In what must have been interpreted as an affront to Pernambucan public health officials’ abilities, Rockefeller Foundation officials conducted their own hookworm survey of Pernambuco in 1920, and found that 98 percent of the population was infected with the parasites.72 Foundation officials accounted for the differences in the rates of infection between São Paulo, Rio de Janeiro, and Pernambuco by highlighting the racial differences between the populations of northern and southern Brazil. In a 1920 report, Wickliffe Rose, the Foundation’s director in Brazil, claimed that race was an important difference between the two regions: “The northern boundary of the State of São Paulo divides Brazil into two sections presenting contrasts, with respect to populations, as sharp as those between Mexico and the United States.”73 He argued that the populations of northeastern Brazil were “composed of shiftless blacks, parasitic whites of Portuguese origins, and a large percentage of their hybrid progeny, with traces here and there of Indian characteristics.” Rose’s thoughts on race reflected not only his own biases, but also prevailing Brazilian racial ideologies. For Rockefeller officials, the Brazilian geographies of race and disease were congruent. More importantly, hookworm disease was increasingly accepted by Brazilian politicians and public health officials as a valid scientific explanation of regional backwardness and underdevelopment.

Despite the fact that Pernambucan Public Health Department had established its own campaign against hookworm disease, state officials signed a contract with the Rockefeller Foundation in 1920 to operate health posts in the sugar-growing region south of Recife.74 At the inauguration of the first post, Pernambucan governor José Rufino Vezerra Cavalcanti spoke about the social and public health benefits that the posts would bring, arguing that the state’s rural workers should not be left to “the stratagems of paludism [malaria], hookworm disease, miasmic fevers, and other diseases.”75 He was concerned that ancylostomiasis would lead to a decline in agricultural pro-

71 Ibid., p. 3.
72 See Paes de Azvedo, “Medical Inspection of the State of Bahia May 21, 1921,” RFA, r.g. 5, s. 2, bx. 25, f. 150, RAC; and Fred L. Soper, “Hookworm Infection Survey of the State of Pernambuco, Brazil May 17th, 1920 to August 31st, 1920,” RFA, r.g. 5, s. 2, bx. 25, f. 150, RAC.
73 Wickliffe Rose, “Public Health Situation and Work of the International Health Board in Brazil” RFA, r.g. 5, s. 2, bx. 25, f. 153, RAC, p. 8.
75 Estado de Pernambuco, Mensagens 1926, p. 12.
duction, and eventually to “our ruin and, consequently, the depopulation of the fields, the congestion of the cities, the augmentation of the number of unemployed, and, finally, a threat to health of the race.” Cavalcanti believed that the Rockefeller Foundation-run Postes de Prophylaxia Rural would ensure a “rapid and systematic cure for a population attacked by verminosis and malaria,” while Gouveia de Barros, Pernambuco’s director of Hygiene and Public Health, argued that the posts marked “the beginning of this highly humane and national plan, to raise the moral and material level of our workers.” Recife’s intellectual community also adopted Rockefeller Foundation officials’ understanding of the disease. At a lecture delivered to Recife’s Society of Medicine and Tropical Hygiene, Joaquim Pimenta argued that the disease “retards the growth of the child, predisposing it to rickets, tuberculosis and syphilis, making it infected, wanting, and unfit for life; and in adults extinguishes the desire for work and courage, the spirit of initiative, the joy of life that is characteristic of healthy organisms.” To mitigate the effects of the disease, Pimenta deemed it essential “to cultivate and teach the best of life, to convince the most obtuse spirits that health and prosperity are one and the same; to remodel our people, physically, morally, and intellectually by rational and positive processes, to combat the microbes with the same vehemence that we destroy the preconceptions of those who disorient the mind. . . .” Ancylostomiasis had become the perfect explanation for the economic and political decline of the region. Pernambucan politicians, public health officials, and intellectuals, while wary of, and perhaps threatened by, the increasing presence of federal and foreign public health programs in the state, nonetheless embraced the idea that debilitating diseases were common among nordestinos. As state and local governments struggled to explain the causes of the region’s economic decline, public health and medicine offered both an explanation of and a remedy for the region’s social and economic ills.

In 1923, Rockefeller Foundation officials, satisfied with the results of the hookworm campaign, embraced yellow fever as the next disease to be conquered in Brazil. The Foundation, in conjunction with the National

75 Estado de Pernambuco, Mensagem 1921, Governo do Estado de Pernambuco, Mensagens, ex. 5, APEIR, p. 5; and Gouveia de Barros, Programa sanitario em Pernambuco (Recife: Imprensa Industrial, 1921), Coleções Especiais, BPECB, p. 20.

76 Joaquim Pimenta, “Saúde e riqueza (Conferência que, por motivo de molestia, deixou de pronunciar o autor na sessão inaugural da Sociedade de Medicina e Hygiène Tropical, realizado no dia 2 de Julho de 1919),” RAFPDR 27 (1919), pp. 44-61, quote p. 57.

77 Ibid, p. 60.

Department of Public Health, undertook a nation-wide campaign against yellow fever.\textsuperscript{80} Utilizing the so-called “intensive method” to control mosquitoes, Rockefeller Foundation guardas (inspectors) concentrated on killing mosquito larvae and eliminating deposits of standing water.\textsuperscript{81} The frequency and thoroughness of inspections increased in the mid 1920s and continued until Foundation officials were convinced that yellow fever no longer posed a threat in northeastern Brazil. With few exceptions, the Rockefeller Foundation had little problem gaining the trust and, more importantly, the compliance of the general public. The director of Rockefeller Foundation activities in Pernambuco wrote that he was “reasonably certain that the average citizen in Brazil will come to the aid of any movement which gives a promise of raising the sanitary standards of his household or community. I have found the general public most responsive to our request and they have given intelligent and continued co-operation in the present campaign.”\textsuperscript{82}

By the late 1920s Rockefeller Foundation officials considered the campaign against yellow fever to be successful.\textsuperscript{83} While some Brazilian physicians questioned Rockefeller foundation techniques, arguing that Foundation officials were more concerned with mosquitoes than victims of yellow fever, and pointed out that there were relatively few deaths from yellow fever prior to the campaign, Pernambucan politicians and public health officials embraced the Yellow Fever Service because it provided an effective model of sanitary policing.\textsuperscript{84} The Yellow Fever Service established a public health presence in every household in urban areas—guardas regularly inspected households and monitored Pernambucans’ sanitary habits. While the Pernambucan public health department had relied on visiting nurses, disinfection services, and flying brigades of mosquito police in their efforts against epidemic diseases, they had not developed services that were as detail-oriented and methodical as those of the Yellow Fever Service. In addi-


\textsuperscript{81} Williams, “Nationalism,” pp. 24-25.

\textsuperscript{82} M. E. Connor, “Summary of Activities of the Comissão de Febre Amarela in Brazil in 1927,” RFA, r.g. 5, s. 3, bx. 114, RAC, p. 11.

\textsuperscript{83} Peter J. Crawford, “Annual Report 1928 Recife—Pernambuco Station, Yellow Fever Commission of Brazil, The International Health Division, The Rockefeller Commission,” RFA, r.g. 5, s. 3, bx. 100, RAC.

\textsuperscript{84} “Yellow Fever,” A notice, cited in Alexander W. Burke, “Bahia, Brazil Station Journal, Monthly Statistical Reports 1928,” August 30, 1928, RFA, r.g. 5, s. 3, bx. 128, RAC. Pernambucan public health officials recorded an average of 8.6 deaths per year from yellow fever between 1897 and 1913. See de Freitas, Os trabalhos, pp. 25, 28-29.
tion, Rockefeller Foundation officials proved effective in using educational propaganda, existing local public health regulations, the police, and pressure on local and state politicians to further their goals. Despite some resistance, the general public accepted these efforts, and the guaridas became a highly visible and powerful symbol of state authority. The Pernambucan government and the Rockefeller Foundation both benefited from the Foundation’s presence in the region. The Pernambucan government took advantage of the Foundation’s technical expertise and deep pockets to advance their own state-building efforts, while Foundation officials argued that they had controlled deadly diseases in one of the most unhealthy regions of Latin America. That Pernambucan officials adopted Rockefeller Foundation techniques and understandings of diseases should not be surprising. Ancyclostomiasis, an endemic, debilitating disease common among rural workers, provided Pernambucan officials with a plausible explanation of regional underdevelopment, and the Rockefeller Foundation’s “intensive method” provided them with a solution to that same problem.

THE END OF AN ERA

Within a year after the opening of the first federal health post in Pernambuco in 1920, local politicians and public health officials embraced the Rural Preventive Health Service and argued that the posts had already succeeded in improving sanitary conditions in the region. This belief was based as much on their perception of the political benefits gained from sponsoring the service as on measurable improvements in nordestinos’ health. In 1921 Gouveia de Barros, Pernambuco’s Director of Hygiene and Public Health, declared that:

We have enjoyed . . . the benefits of a systematic cure...for a population affected by worm disease and malaria...Within a few months we have seen all these people, jaundiced by hookworm and by malaria, permanently tired, without energy and vigor, humbled by their physical condition and enslaved by a moral incapacity which originates in a profound anemia that removes sentiment and intelligence . . . return to their rude cabins with faces colored by blood rich in hemoglobin and the rays of an ardent sun, with minds satisfied and able to feel and think of a happy and more comfortable existence, which produces more human aspirations in their inferior lives.85

Despite his doubts concerning nordestinos’ character, De Barros expressed complete faith in the ability of the Rural Preventive Health Service to improve public health and economic conditions in the Northeast. Physicians

85 De Barros, Programa sanitario, p. 5.
and politicians alike believed that the considerable cost of running the posts was justified by the potential economic benefits. They argued that public health programs were an effective means of stemming the economic decline of the region, and unlike explanations of nordestino backwardness that focused on race, climate, and geography, medical explanations allowed the possibility of treating and controlling diseases.

However, despite their initial enthusiasm, Pernambucan officials began to realize that there were limitations to the effectiveness of the Rural Preventive Health Service. Because the posts were run by the Rockefeller Foundation, their main focus was the treatment of hookworm disease. Gouveia de Barros argued that more comprehensive services were required and that treatments for hookworm disease provided only a temporary cure; the material conditions of nordestinos' lives had not changed, and they were likely to become re-infected from the same sources. Amaury de Medeiros, Pernambuco's director of public health, argued that the posts were ineffective because they were not permanent. Indeed, once treatments had been dispensed in a town or village, public health workers would close shop and move on to a new location. Medeiros also pointed out that local governments could not afford to underwrite the operation of the posts for extended periods. When the Rockefeller Foundation was satisfied that they had rid the state of hookworms, they turned the control of the posts over to local authorities, who had neither the resources nor the will to continue their operation, and the Foundation shifted its focus to mosquito control programs. Government support for public health programs was abruptly reduced in 1921 when a sharp decline in the price of sugar on international markets forced the state government to abandon all but essential services due to a lack of tax revenues. By 1923, Pernambuco's public health department had been subjected to a number of budget cuts, and was barely functioning. In an annual report of that year, Pernambuco's governor lamented that "our sanitary organization gives a sad picture of our culture and our development." In 1926, only one state-run health post remained open, located in an "old and inappropriate building" and operating "infrequently and without action." By the mid 1920s, efforts to improve nordestinos' health had been abandoned, and the so-called "heroic age" of public health was over. Although the death rates from epidemic diseases such as smallpox, plague, and yellow fever had fallen, the Rural Preventive Health Service had failed to achieve permanent

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80 Amaury de Medeiros, Saúde e assistência: doutrina, experiências e realizações 1923-1926 (Recife: n.p., [1926]), APESE, p. 43.
81 Estado do Pernambuco, Mensagens 1923, p. 12.
82 Estado do Pernambuco, Mensagens 1926, Governo do Estado de Pernambuco, Mensagens, cx. 6, p. 46.
results. Unfortunately the legacy of these efforts was the notion that nordestinos were intrinsically unhealthy. While Pernambucan politicians and public health officials had reservations about promoting this idea, they realized that the medicalized nordestino justified the creation of social reform programs and, more importantly, federal financial support. By 1925 most public health officials, reformers and politicians accepted the idea. Even José Octavio de Freitas, who had previously argued that climate, geography, and germs were the causes of the region’s public health problems, began to see nordestinos themselves as a threat. In 1919 he wrote that the cumulative effect of endemic diseases “had thus created, little by little, a population of weaklings, anemics, and individuals susceptible to all diseases.”

THE EXPANSION OF PUBLIC HEALTH SERVICES

In 1923 the Pernambucan government introduced new public health programs predicated on the notion that nordestinos were intrinsically unhealthy. Pernambucan governor Sérgio Loreto and the newly appointed director of the state’s Department of Health and Assistance, Amaury de Medeiros, laid out a program of new public services that were designed to improve living conditions and nordestinos’ overall health. In outlining new public health programs for Pernambuco, de Medeiros placed an emphasis on education and Pernambucan children. In 1926 he wrote: “I foresee an epoch in which an extensive service of infant hygiene will expand, protecting all of the new generation; and this generation will come to supplant the old, with a mentality entirely shaped by sanitary questions, knowing where they ought to live and how they ought to live, at the same time defending life against all the causes of unhealthfulness.” De Medeiros was an advocate of a “constructive,” or positive eugenics, and in 1927 he proposed a national voluntary prenuptial examination. His concern with children was echoed by Pernambuco’s leading politicians, and in his 1928 annual report to the state legislature, governor Estácio de Albuquerque Coimbra stressed that “the importance of problems that relate to the child, from the medical, sanitary, and social points of view, ought to be foremost in the consciousness of the men of government of Brazil, in a way that turns all Brazilian children into a true national cult.”

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90 See Estado de Pernambuco, Mensagem 1926, p. 48; and De Medeiros, Saúde e assistência, p. 2.
91 De Medeiros, Saúde e assistência, p. 135.
93 Estado de Pernambuco, Mensagem 1928, Governo do Estado de Pernambuco, Mensagem, ex. 8, APHE, p. 35.
legislators to create an Infant Hygiene Service and a League Against Infant Mortality. The League was funded by a tax on alcoholic beverages sold in the state, and functioned primarily in rural areas by providing medical assistance and food to infants and mothers.94

Another crucial aspect of the public health reforms of the late 1920s was the use of education and propaganda to instill proper notions of hygiene in the general public. The Public Health Department used public lectures and demonstrations, pamphlets, educational programs, radio lectures, and films to inform the public. Amaury de Medeiros believed that "hygiene education" was "the most modern preoccupation, the most idealistic, the most suggestive of all current sanitary activity."95 He argued that education allowed "perfection not only of the human machine but also his intelligence and his morals." Albuquerque Coimbra echoed de Medeiros’s concerns, writing that hygiene education would "thus transform each individual into a active collaborator of the sanitary service on behalf of the State."96 A Statistics, Propaganda, and Sanitary Education Service was created in 1924, and by the late 1920s, the Service offered instruction on basic hygiene, sanitation of the home, handling and preparation of food, and avoiding and treating common diseases.97 Pernambucan officials believed that education would play a key role in improving nordestinos’ health. Given the recurring budget crises that restricted the governments’ ability to offer public health services, educational programs were believed to be a cost-effective means of improving nordestinos’ lives.

The services created in the late 1920s reflected growing concern about economic development and the condition of Pernambuco’s industrial workers. In 1926 Amaury de Medeiros proposed the creation of an Industrial Hygiene Service which would study workers’ health and regulate conditions in the workplace.98 In 1929 the Pernambucan government created two additional services dedicated to studying the connections between social and economic development and public health: the Inspectorate of Social Hygiene and the Institute of Professional Selection and Orientation. The Inspectorate was charged with producing studies of "the anthropological conditions existing in the different classes of the population, the reciprocal

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94 Estado de Pernambuco, Mensagens 1929, Governo do Estado de Pernambuco, Mensagens, cs. 9, APBE, p. 35; Estado de Pernambuco, Mensagens 1930, Governo do Estado de Pernambuco, Mensagens, cs. 10, APBE, p. 40.
95 De Medeiros, Saúde e assistência, pp. 155-56.
96 Estado de Pernambuco, Mensagens 1927, p. 24.
97 Estado de Pernambuco, Mensagens 1924, p. 11.
98 De Medeiros, Saúde e assistência, p. 321.
relations existing between health problems and social phenomena,” as well as “Brazilian man as an ethnic element, social unit, factor in labor, and physical type.” The Inspectorate produced one of the first anthropological studies of Pernambucans in 1928, based on the study of over seven thousand domestic workers. Researchers subjected workers to “a rigorous somatic exam, preceded by a complete interrogation, selecting healthy elements and imposing on the carriers of transmissible diseases internment in hospitals or asylums.” The results of the study were not encouraging—of the 7,473 domestic workers examined, 469 were tested for diseases, and 66 were prohibited from working. The author of the study, Geraldo de Andrade, concluded that “the domestic worker of Recife is not very robust,” and that “factors such as misery and syphilis contribute to make the servants of Recife a rachitic type.” The Institute of Professional Selection and Orientation was created in order to produce “perfect knowledge of the mentality of our people” by Antonio Carneiro Leão, an educator from Rio de Janeiro, outlined the social importance of the Institute in a report on education prepared for the Pernambucan government in 1929. He argued that “psychological science is becoming, in all places, a fundamental preoccupation of governments, of industrial organizations, and educational evaluations.” He added that “in no other State of Brazil are better conditions encountered to create an Institute, since there is already a regularly functioning Office of Psychology which gathers individual data cards, standards of intelligence, etc.” While detailed psychological studies of Pernambucans were not produced until the early 1930s, interest in the psychological development of nordestinos indicated the degree to which the problem of regional economic development was predicated on the idea that nordestinos were unhealthy, lacked job skills, and were physically and psychologically unprepared for the rigors of the modern industrial workplace.
The mid-1920s also saw a shift in government priorities to a new category of diseases that were used as indicators of nordestinos’ health. While diseases that produced high numbers of deaths were still of concern, especially during epidemics, disabling and disfiguring diseases occupied more of public health officials’ attention. Ancylostomiasis provided a model for thinking and writing about endemic diseases, and officials expressed a new-found anxiety about tuberculosis, syphilis and other venereal diseases, leprosy, and “social diseases” such as alcoholism, gambling, and prostitution. Beginning in the mid-1920s, medical journals published numerous articles on the diagnosis and treatment of endemic diseases, and public health officials and politicians expounded on their devastating social and economic impact. In 1929 Augusto Lins e Silva, a Law School faculty member, wrote an article entitled “Five Open Wounds” in which he identified the five most dangerous public health threats as syphilis, tuberculosis, ancylostomiasis, alcoholism, and leprosy. He argued that these diseases “weaken the existence of nationality” and “darken us as black phantasms.” The significance lay in the fact that Lins e Silva focused on the ways in which these diseases manifested themselves as physical weaknesses that corrupted the body. Brazilian intellectuals and public health officials believed that individuals who suffered from these diseases would become physically and morally weak. Lins e Silva argued that the five diseases required “before all else, the strengthening of the blood of the nation, the improvement . . . of its hemoglobin, and the atelectasis of its lungs.” He concluded that “for the nation, the epoch ought to take on a shining aurora of hygienic redemption.”

By 1930, it was clear that Pernambucan public health had moved beyond a concern with deadly epidemic diseases to embrace a vision of public health that focused on nordestinos themselves. Nordestinos were no longer viewed as an essentially healthy people who were victims of epidemic diseases and an unfavorable climate and geography. Instead, they had become the carriers of debilitating endemic diseases that, if left untreated, would further impoverish the region and its peoples. The new public health services

105 See, for example, Anaury de Medeiros, “A proposito da peste branca,” *Jornal de Medicina de Pernambuco* 21:12 (December 1925), pp. 2-5; and Francisco Clementino, “A luta contra a lepra e as doenças venéreas em Pernambuco,” *Jornal de Medicina de Pernambuco* 24:6 (1928), pp. 87-98.
107 Ibid., pp. 345-46.
108 Afíni Lenchuro argues that diseases and the body were used as political metaphors during the *Estudo Novo* (1937-1945) in *Sociedade da Política* (Campinas: Papirus, 1986).
created after 1923, while on the whole unsuccessful, nonetheless indicated the degree to which Pernambucan politicians and public health officials had succeeded in medicalizing nordestinos.

CONCLUSIONS

Public health efforts in northeastern Brazil produced complex, and at times, contradictory understandings of nordestinos. From the 1890s through the 1910s, northeastern public health officials were more optimistic about nordestinos than their federal and foreign counterparts, who concluded that both race and disease had produced a people who were physically, psychologically, and morally inferior to other Brazilians. By 1920, most Pernambucan physicians, intellectuals, and politicians had begun to accept these understandings of nordestinos. Regional elites were more willing to overlook the negative implications of these studies because public health campaigns had become essential to the construction of a modern state government that possessed the capacity to identify and solve social problems. Unlike their Pernambucan counterparts, physicians and public health officials from Rio de Janeiro and the Rockefeller Foundation tended to concentrate on race, and were thus more negative in their assessments of nordestinos. Pernambucan politicians and public health officials expressed a variety of opinions on nordestinos. While they recognized that nordestinos were unhealthy, they believed that they could be improved through public health programs, public assistance, and development projects. At the same time, Pernambucan legislators endorsed an immigration program that would have replaced northeastern agricultural workers with supposedly racially superior workers from southern Brazil. Pernambucan officials usually spoke more favorably about sertanejos and less favorably about coastal agricultural workers and the urban poor, who were more likely than sertanejos to be of Afro-Brazilian descent. It is not surprising that Pernambucan politicians, public health officials, and intellectuals would offer a more nuanced view of nordestinos than their national counterparts. As residents of the region, they were less willing to condemn nordestinos. Physicians and public health officials from Rio de Janeiro and abroad simply did not have as much invested in the region; in condemning nordestinos they were not condemning themselves.

It is also not surprising that regional elites used the language of medicine and public health to express their concerns about nordestinos.\textsuperscript{10} Despite the fact that Pernambuco and the Northeast were not leading centers of scien-

tific research, the Recife Law School was at the heart of a northeastern intellectual community which promoted the scientific study of Brazilian society. Most of its faculty were positivists, and since the 1870s they had applied science, including criminal anthropology and other "pseudo-sciences," to their study of law. Pernambucan politicians and intellectuals, many of whom had graduated from the law school, formulated questions about Brazilian social problems using the language of science. The founding of a Medical School in 1915 further promoted interest in public health and medicine as valid explanations of and solutions to social problems. Graduates of these institutions often secured positions in the state government, which came to depend on their expertise. While public health campaigns became tools of reform throughout Brazil, the case of Pernambuco is significant. Despite the economic underdevelopment of the region and a lack of funding, public health became the primary way in which the Pernambucan government attempted to improve the economic and physical well-being of its peoples. Regional underdevelopment underscored the political and social importance of public health.

The relationship between state-building and public health was similar in northeastern and southern Brazil, yet the public health movement in Pernambuco was more than a regional variation of national programs. Its significance went beyond national elites' purported desire to sanitize the region, prepare workers for jobs in the south, and create a more inclusive national identity, as some historians have argued. Regional and national leaders searched for explanations of the northeast's economic and political decline, and public health provided a diagnosis, treatment, and cure for the northeastern "problem." The political success of public health programs in northeastern Brazil indicated the importance of science and medicine in a region where tight budgets and the lack of scientific and medical traditions should have made effective public health programs impossible.

The public health programs of the 1910s and 1920s played an important role in the creation of a negative stereotype of nordestinos, a discourse which would prove particularly durable over the course of the twentieth century. While public health officials and politicians consciously medicalized nordestinos, they unintentionally created a paradigm for future social reform programs. Interest in public health as a solution to social problems prompted Pernambucan reformers and politicians to embrace new "sciences," includ-

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ing social hygiene, eugenics, mental hygiene, and biotypology in their efforts to improve nordestinos in the 1930s and 1940s. Despite the fact that the medicalization of nordestinos failed to bring lasting improvements to nordestinos' health, this process was a crucial step in the creation of a modern, scientific, northeastern regional identity.

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