

**Struggling Against Leprosy: Physicians, Medicine, and Society
in Colombia, 1880-1940**

by

Diana Obregón

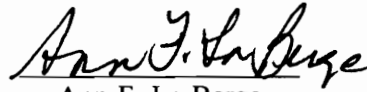
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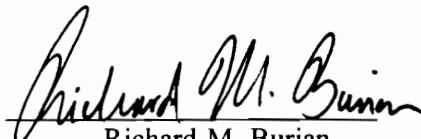
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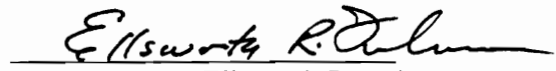
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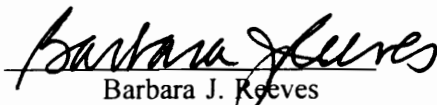
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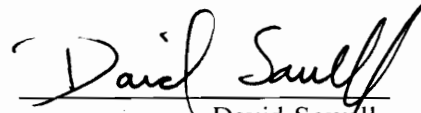
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ABSTRACT

This study examines the constructions of leprosy in Colombia from the late nineteenth century to the 1930s. In the nineteenth century Colombian physicians constructed leprosy as highly infectious and threatening and adopted rigid segregation of “lepers” to prevent its propagation. At the same time, medicine was becoming a profession in Colombia, and physicians used leprosy to build their cultural and scientific authority. In order to assert their power, doctors exaggerated the number of leprosy sufferers, and unfolded a nationalist rhetoric.

Colombian isolation policies had their roots in Spanish medieval traditions and in international examples. Colombian physicians were aware of European scientific developments. In the 1870s, the Norwegian physician Gerhard A. Hansen postulated what later came to be known as *Mycobacterium leprae* as the causative agent of leprosy. In 1897, the first international conference on leprosy declared leprosy a disease produced by Hansen’s bacillus. Meanwhile, Westerners discovered leprosy in their colonial territories during their imperialist expansion of the late nineteenth century. They developed a racist image of leprosy as a disease afflicting inferior peoples, and instituted an international movement to build leprosaria in which to isolate patients. Colombian doctors also adopted a colonialist attitude towards their own leprous population.

In the early twentieth century, the Colombian government, took charge of leprosaria, imposing severe regulations related to compulsory isolation. The state and the

physicians treated leprosy as a disease apart, reinforcing prejudices of medieval origin. They tried to transform the town-lazarettos, which had been built by patients themselves in the 1870s, into colonies exclusively for lepers. Patients actively resisted the medicalization of leprosy, and non-leprous people remained within the lazarettos during this period.

In the 1930s, the medical rhetoric started to change. As a result of improvements in leprosy therapy , doctors began to regard leprosy as a curable disease and to reject compulsory isolation for patients in all stages of infection. The physicians' emphasis shifted from isolation to prevention and research. Scientific prevailed over social reform, and physicians and the government gave priority to searching for a vaccine instead of improving the general living conditions of the population.

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Preface

In the early sixteenth century the Spanish conquistador Gonzalo Jiménez de Quesada explored and conquered most of the territory which we now call Colombia. The historian of literature Raymond Leslie Williams tells us that Jiménez de Quesada

"was motivated by a fiction: the legend of El Dorado. Venturing up the Magdalena River with his soldiers, he found neither gold mines nor the fountain of eternal youth but a mine of emeralds, a mountain full of salt, and butterflies with blue wings."¹

The purpose of the historian was to provide an example of the complex interaction between a literary and an empirical understanding of Colombia over the centuries. What Williams omitted was that Jiménez de Quesada has also been considered the first "leper" of Colombian history. Indeed, most accounts of leprosy in Colombia tell the story of the conquistador's death from leprosy in Mariquita (Colombia) in 1579.² However, other historians and nineteenth-century leprologists such as Juan de Dios Carrasquilla oppose this point of view and suggest that Jiménez de Quesada more than likely died of syphilis.³ Nonetheless, beyond the details of the disease afflicting the conquistador, what I want to emphasize is the presence of leprosy, real or fictitious, in the history of the nation. Jiménez de Quesada not only founded Bogotá, the city-capital, but, according to the legend, can be held responsible for the introduction of leprosy in the country.

Comparing this fable with an anthropological study of leprosy in Colombia, carried

¹ Raymond Leslie Williams, The Colombian Novel, 1844-1987 (Austin: University of Texas Press, 1991), p. 3.

² For example, Pedro M. Ibáñez, Memorias para la historia de la medicina en Santafé de Bogotá (Bogotá: Imprenta de Vapor de Zalamea Hermanos, 1884), pp. 6-8; see also: Fernando Serpa Flórez, "Apuntes para la historia de la lepra en Colombia," Consulta, 1984, 11 (4):16-20, on p. 17.

³ Juan Bautista Montoya y Flórez, Contribución al estudio de la lepra en Colombia (Medellín: Imprenta Editorial, 1910), pp. 6-7.

out from 1990 to 1993 for the World Health Organization (WHO), some contrasts can be noted. In fact, the anthropologist Elías Sevilla Casas informs us that leprosy today is *invisible* in Colombia. He explains that a sort of "magic syllogism" operates in Colombian culture, according to which "Leprosy *belongs* to the past. It should not exist. *Therefore*, it does not exist."⁴ What has happened in Colombian history to bring about such a change? Why has leprosy ended up being invisible after being central for so long in Colombia's culture and fiction? This study provides partial answers to these questions. Although it does not trace the whole history from the Spanish conquests until the date of Sevilla's investigation, this analysis explores the social, cultural, and political, effects of the omnipresence of leprosy in Colombia.

Colombia is currently the second country in South America, after Brazil, in terms of incidence of leprosy. The study advanced by Sevilla and other social scientists analyzed the social image of the disease and the distress it generates for patients. The main intention of that study was to assess the cultural aspects of leprosy in light of the purpose of the WHO to complete the eradication of leprosy. The researchers wanted to explore in particular the social and cultural effects of deformities and disabilities which are produced when the disease is not properly managed. Chemotherapy for leprosy which is available today is capable in most cases of rapidly rendering patients non-infective. However, one of the conclusions of this clever study was that the cultural and social images attached to the disease are still strong obstacles for the adequate application of that medical technology. Furthermore, according to this investigation, notions dating from the colonial era, when leprosy was called *elefancia*, are still alive in rural Colombian populations where leprosy is endemic.⁵ The results of this recent study on the current state of leprosy in Colombia constitute a powerful justification for the need for an examination of the history of the disease.

⁴ Elías Sevilla Casas, Los mutilados del oprobio: estudio sobre la lepra en una región endémica de Colombia (Bogotá: Colcultura, 1995), p. 138.

⁵ Ibid, pp. 131-42.

The origin of my investigation was almost accidental. Studying the formation of scientific societies in Colombia between 1859 and 1936, I was overwhelmed by the number of articles on leprosy published in Colombian medical journals. It seemed to me that leprosy had been the main concern of Colombian doctors. However, I have to confess, I could not avoid looking at those articles with a sense of horror. Once I finished my study on scientific societies, I forgot about leprosy. Then I became interested in the evolution of the germ theory in Colombia and the ways in which bacteriology changed medical practices and ideas, but again some of the main figures of that story had been involved with leprosy research: Juan de Dios Carrasquilla and Federico Lleras Acosta. At that time it became clear to me that I needed to investigate the history of leprosy in Colombia. I collected documents almost in a random process, and I packed them all with me when I came to the United States to pursue my doctoral studies. That was the best idea I ever had. Not only did I have the time to read them all, but also, thanks to the Interlibrary Loan section of the Virginia Tech library, I was able to locate other documents from places remote to me, like Hawaii and Norway, where leprosy had also been a problem. Those documents and secondary sources such as the careful study by Zachary Gussow, allowed me to put my previous information in context, and the story of leprosy in Colombia started to make sense to me. I have learned so much in this process that I have to say that leprosy has changed me. The former sense of terror when reading of leprosy, especially when looking at pictures that usually accompanied medical descriptions, was replaced by a strong need of knowing more about the disease. Not only did I want to understand the biological details of *M. leprae* and the undesirable changes that this microorganism produces in human bodies, but also what it generates in human minds and in human relations. The result is this study.

A word on conventions employed in this investigation. In the United States it is currently politically improper to refer to "leprosy"; instead, patients and physicians prefer the term "Hansen's disease." The British, however, still prefer to use the old name "leprosy." They argue that a new designation does not alter centuries of misapprehensions.

In countries where leprosy is endemic and also highly stigmatized, changing the name has not guaranteed any variation of the cultural outlook on leprosy. During the 1930s, some physicians began to avoid the term "leper," and started to use more frequently the name "Hansen's disease," according to the new medical protocol of the international leprological community. However the former language did not disappear from medical literature. This is why throughout this study I use the words "leper," "leprosy," and "leprous." During the period covered by this investigation, individuals afflicted with leprosy were "lepers" rather than "leprosy patients."

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Introduction

The Presence of Leprosy

"Lepers! Are there still lepers? That's always the slightly dreadful cry that welcomes you when you plead in favor of those unfortunates.

Alas! There are still lepers. Thousands and millions. In Asia, in Oceania, in Africa... in Europe.

Even in France."¹

In November 1952, the first Expert Committee on Leprosy of the World Health Organization (WHO), founded in 1948, met at Rio de Janeiro and at São Paulo, Brazil. In its report, the committee declared: "leprosy is not a disease apart; it is a general public-health problem in the countries where it is endemic."² This remarkable statement alluded to a peculiarity of leprosy: until the period following World War II, the care and treatment for leprosy patients, if any, was provided by members of religious orders or isolated missionaries.³ As the historian of leprosy Zachary Gussow has explained, this situation was the result of the formation of vast colonial empires by Western powers. The rediscovery of leprosy in colonial regions during the period of imperial domination of the late nineteenth century has been mostly responsible for the status of leprosy as a disease apart.⁴

The first WHO committee on leprosy also emphasized two points: the great epidemiological variety of the disease in different countries, and the existence of an "unreasoning horror attached to leprosy."⁵ Indeed, most people still have a very vague

¹ Raoul Follereau (de l'Académie des Sciences Coloniales), Tour du monde chez les lépreux (Paris: Flammarion, 1953), p. 7.

² WHO, First Report, Expert Committee on Leprosy Technical Report Series No. 71 (Geneva: WHO, 1953), p. 6.

³ Ilse J. Volinn, "Health Professionals as Stigmatizers and Destigmatizers of Diseases: Alcoholism and Leprosy as Examples," Social Science and Medicine, 1983, 17 (7): 385-393, on p. 386.

⁴ Zachary Gussow, Leprosy, Racism, and Public Health: Social Policy in Chronic Disease Control (Boulder, CO: Westview Press, 1989), 111-112.

⁵ WHO, First Report, pp. 3, 10.

notion of leprosy. They usually think of it as an awful illness in which fingers and toes drop off, producing horrible disfigurements, ulcers, sores, and general affliction and distress. The image of a "leper" has been a powerful metaphor provided by literature for the general public. Unfortunately, the picture of the most extreme cases of leprosy is the one which has been used by international religious societies in order to raise funds for their leprosy missions. Leprosy certainly is a serious disease. But in many cases, these appalling descriptions constitute the sole information that most people possess of the illness. Therefore, in practice, religious societies greatly contributed to the creating of the formidable stigma of leprosy. They equated modern leprosy with the ritual uncleanness described in the Bible, thus intensifying the already existent prejudice.⁶ As the leprologist Robert G. Cochrane points out, "the general approach to leprosy is largely based on an appeal to the emotions" (see, for example, the epigraph to this introduction).⁷

Scientific and popular literature often describe leprosy as an unique and mysterious illness because of the many uncertainties that still surround the disease. The uniqueness of leprosy is also related to the strong social prejudice that it still generates. This peculiarity has greatly interfered with the expansion of knowledge about leprosy. As Zachary Gussow and George S. Tracy pointed out in 1970, and is still the case, research on leprosy is scarce, because the disease has not quite been culturally defined as a disease, but as a "parabolized moral status." Indeed, in the late nineteenth century, church-affiliated agencies identified persons with leprosy with biblical "lepers," bringing to life a modern parable. These organizations discovered a mission among leprosy sufferers: to Christianize them according to the biblical status of "lepers."⁸ Additionally, the growth of scientific knowledge on

⁶ Gussow, Leprosy, Racism, and Public Health, pp. 21, 216-219.

⁷ Robert G. Cochrane, Biblical Leprosy: A Suggested Interpretation (London: The Tyndale Press, 1961), p. 3; and Stanley G. Browne, "Leprosy: The Christian Attitude," International Journal of Leprosy, 1963, 31 (2):229-235, on pp. 229-230.

⁸ Zachary Gussow and George S. Tracy, "Stigma and the Leprosy Phenomenon: The Social History of a Disease in the Nineteenth and Twentieth Centuries," Bulletin of the History of Medicine, 1970, 44 (5):425-449, pp. 446-449.

leprosy has been slow, partly because most patients live in impoverished rural areas of the so called "Third World."⁹ Major drug companies are not interested in its study, as they make small profit in what has been called "tropical" diseases.¹⁰ However, since Norway was one of the world's regions in which leprosy was endemic until the mid nineteenth century, the connotation of "tropical" that leprosy received in the late nineteenth century, only indicates that leprosy belonged to poor regions of the world. As a consequence of the marginality of leprosy, there are many difficulties and unresolved questions in the current knowledge of the disease. For example, its mode of transmission is unknown, and its degree of contagiousness is highly controversial. Leprosy is extremely variable in its symptoms, so that it is easy to confuse it with other conditions or to misdiagnose it.¹¹ A study published in 1995 by medical anthropologists and sociologists in Colombia, a country where the disease is still endemic, showed the almost absolute inability of doctors and other health workers to recognize leprosy in health centers.¹²

⁹ As the anthropologist Arturo Escobar noted, the notions of "underdevelopment" and "Third World" are discursive results of the post-World War II era constructed as part of the process whereby the West redefined itself and the rest of the world. See: Arturo Escobar, Encountering Development: The Making and Unmaking of the Third World (Princeton, NJ: Princeton University Press, 1995), on p. 31. In particular, the term Third World was a French invention: in 1952, during the French colonial wars, the demographer Alfred Sauvy first referred to those countries that were neither industrialized (the First World) nor communist (the Second World) as the Third World. The name (in French, Tiers-monde) comes from Third Estate (Tiers-État) and it was coined to refer to that poor, exploited, and ignored world that was nothing, but wanted to be something. See: Edwige Liliane Lefebvre, "The Third World: French Ethnocentricity and its Impact on Post-colonial Science Analysis," Paper presented at the ORSTOM Conference Les sciences hors d'Occident au xxème siècle, Sep. 1994, pp. 127-130.

¹⁰ On the advent of the area of research called "tropical medicine," see: Michael Worboys, "The Emergence of Tropical Medicine: A Study in the Establishment of a Scientific Specialty," Perspectives on the Emergence of Scientific Disciplines ed. by Gerard Lemaire *et al.* (Mouton: Maison des Sciences de l'homme, 1976), pp. 75-98.

¹¹ W.H. Jopling, Handbook of Leprosy 3rd. ed. (London: William Heinemann Medical Books, 1984), p. 18; Robert Cochrane and T. Frank Davey, Leprosy in Theory and Practice 2nd ed. (Bristol: John Wright & Sons, 1964), p. 280.

¹² Elías Sevilla Casas, Los mutilados del oprobio: estudio sobre la lepra en una región endémica de Colombia, (Bogotá: Colcultura, 1995), pp. 123-124.

Medical Understanding of Leprosy

Leprologists describe Hansen's disease as a chronic infectious ailment which primarily affects the skin and peripheral nerves, and secondarily involves deeper structures such as muscles, bones, eyes, and viscera. Today the leprological community accepts the *Mycobacterium leprae* as the etiological agent of the disease, even though the three Koch's postulates (isolation-culture-inoculation) have not been fulfilled for the bacillus.¹³ Thus the history of the acceptance of *M. leprae* as the cause of leprosy provides a clear example of negotiation within the scientific community, as I will explain in chapter 3. These postulates, sometimes called the Henle-Koch postulates, define a method to study microorganisms. In order to become the object of scientific discourse and to be a candidate for the cause of a disease, the bacteria have to be first, isolated from impurities, then cultivated outside the body (these two were Henle's rules), and third (added by Koch), inoculated into a healthy organism to produce the disease with all its typical symptoms.¹⁴ Gerhard Armauer Hansen (1841-1912) first observed and described what would later be known as *M. leprae* between 1870 and 1874. This was the first identified bacterium pathogenic to humans.¹⁵

M. leprae has a preference for nerves, and it is the only bacterium that has the ability to enter them.¹⁶ This microorganism together with *M. tuberculosis* belong to the genus *Mycobacterium* which comprises about thirty different species. The name *Mycobacterium* was given by Karl B. Lehmann and R.O. Neumann in 1896 because of the mold-like appearance of strains when grown on liquid media, and not because of any special relation

¹³ John M. Grange, Mycobacterial Diseases (New York: Elsevier North Holland, Inc., 1980), p. 56.

¹⁴ Anne Marie Moulin, Le dernier langage de la médecine: Histoire de l'immunologie de Pasteur au Sida (Paris: Presses Universitaires de France, 1991), p. 30.

¹⁵ Gerhard Armauer Hansen, "Undersogelser angaaende Spedalskhedens Arsager Norsk Magazin for Laegevidenskaben, 1874, 9 (4):1-88. Reprinted as "Causes of Leprosy," International Journal of Leprosy, 1955, 23 (3):307-309.

¹⁶ Jopling, Handbook, p. 13.

with fungi.¹⁷ The leprosy bacillus was included in this genus on the basis of its acid fastness.¹⁸ Finding a suitable model for experimentation has been a particularly difficult task, since only very few animals have been demonstrated to contract the disease. The inoculation of leprosy bacillus in the foot-pads of mice by Charles Shepard in 1960, and more recent studies with armadillos and primates opened new avenues of research in terms of testing drugs, assessing drug resistance, and evaluating the effect of possible vaccines.¹⁹ Although, the Venezuelan scientist Jacinto Convit has found nine-banded armadillos (*Dasypus novemcinctus*) naturally infected with leprosy, the disease remains, for practical purposes, restricted to human beings.²⁰ The issue of cultivation of *Mycobacterium leprae* in vitro is a contested field. The last expert committee on leprosy of the WHO (1988) claimed that "it has not yet been possible to culture the bacillus in vitro."²¹ However, in a recent study, the scientist Lida H. Mattman contends that the idea of the impossibility of culturing *M. leprae* came from the fact that growing acid-fast bacilli required time. According to

¹⁷ Karl B. Lehmann, and R.O. Neumann, Atlas und Grundriss der Bakteriologie und Lehrbuch der speciellen bakteriologischen Diagnostik (München, 1896). See also: Grange, Mycobacterial Diseases, pp. 1-7.

¹⁸ The name "acid-fast" comes from a peculiarity of *Mycobacteria* established by Paul Ehrlich in 1882. Tubercle bacilli are difficult to stain, but once stained with gentian violet and saturated aniline solution in water, they resist decolorization by mineral acids. Thus, this peculiarity became the principal method of differentiating them from other microorganisms. See: Yoshio Yoshie, "Advances in the Microbiology of *M. leprae* in the Past Century," International Journal of Leprosy, 1973, 41 (3):361-371, on p. 363.

¹⁹ Charles Shepard, "Acid-Fast Bacilli in Nasal Excretions in Leprosy, and Results of Inoculation of Mice," American Journal of Hygiene, 1960, 71: 147-157; Elizabeth W. Etheridge, Sentinel for Health: A History of the Centers for Disease Control (Berkeley: University of California Press, 1992), pp. 131-3.

²⁰ Jacinto Convit, "The Armadillo as Experimental Model in Leprosy Research, Leprosy: Cultivation of the Etiologic Agent, Immunology, Animal Models, Proceedings of the Workshop on Future Problems in the Microbiology of *M. leprae* (12-15 Oct. 1976) Scientific Publication No. 342 (Washington: Pan American Health Organization, 1977), pp. 53-56. See also "Discussion," Ibid., pp. 63-69.

²¹ WHO, Sixth Report, Expert Committee on Leprosy Technical Report Series No. 768 (Geneva: WHO, 1988), p. 20.

Mattman, leprosy workers were able to cultivate *M. leprae* in vitro as early as 1911.²²

Scientists generally believe that leprosy spreads from human to human, but the exact method of transmission is unknown. In the past, they supposed it was contracted by skin-to-skin contact, but the observation that *M. leprae* is not always present in large quantities on the epidermis, made researchers suspect the existence of a nidus outside the living host in which bacilli can exist and multiply. Some hypotheses propose insects as vectors, and others suggest soil as a source of *M. leprae*, but scientists have confirmed none of these theories. The most plausible assumption today is that *M. leprae* enters the organism through the respiratory tract and reaches the nerves and skin via the blood stream. Specialists also consider the nose a major outlet for the bacilli. It is likely, leprosy can be transmitted by more than one means. Scientists assume that contagion takes place after prolonged and intimate communication with infected persons, but occasionally short contacts may result in infection.²³ The incubation period of leprosy is long. From three to five years may pass between the infection and the appearance of clinical manifestations, although some exceptional cases have been diagnosed in infants less than one year old, and in other rare instances the latent period has been 15 or 20 years.²⁴ Immunity to mycobacterial diseases depends not on the production of antibodies, but rather on cell-mediated immune responses. It seems that most of the population possess a natural immunity to leprosy. Even in areas with a high incidence of infective cases, infection with *M. leprae* appears to be common, but most individuals never develop obvious clinical manifestations of the disease, and others produce just a localized lesion that cures spontaneously.²⁵ Although several immunological tests have been developed to measure

²² Lida H. Mattman, Cell Wall Deficient Forms: Stealth Pathogens 2nd ed. (Boca Raton, FL: CRC Press, 1993), pp. 197-199.

²³ John R. Trautman, M.D. "Epidemiological Aspects of Hansen's Disease, Bulletin of the New York Academy of Medicine Second Series, 1984, 60 (7): 722-731, on p. 728; Grange, Mycobacterial Diseases, pp. 62-63.

²⁴ Trautman, "Epidemiological Aspects of Hansen's Disease," p. 725; WHO, Sixth Report, p. 11.

²⁵ Grange, Mycobacterial Diseases, pp. 4, 37-38; WHO, Sixth Report, p. 12.

M. leprae-specific antibodies and antigens, they lack the required sensitivity to be a useful tool for early detection of leprosy infection, or subclinical infection.²⁶

Leprosy is a disease that presents substantial clinical and histopathological variation. The type of leprosy that a susceptible host will develop as well as its prognosis depends on the immunological status of the person. From a histological point of view, leprosy is classified into six groups which constitute the spectrum of the disease: indeterminate, tuberculoid, borderline tuberculoid, mid-borderline, borderline lepromatous, and lepromatous.²⁷ Indeterminate leprosy presents impairment of sensibility and non-specific lesions that either heal spontaneously or evolve into determinate lesions. That is, they move to the next stage of the spectrum, and the patient develops a more severe form of the disease. The two ends of the spectrum are: lepromatous, in which there is a low immune response and the bacilli multiply tremendously; and tuberculoid, in which there are fewer bacilli in the lesions and there is a higher immune response, but one which is not effective enough to eliminate the bacteria. The borderline cases show transitional characteristics between lepromatous and tuberculoid.²⁸

In tuberculoid leprosy the main clinical features are a few lesions in the skin and in the peripheral nerves. In lepromatous leprosy many maculae arise, anaesthesia appears, and nerve damage is gradually progressive. In this form of the disease bacilli disseminate to many organs, such as eyes, bone marrow, testes, lymph nodes, muscle, larynx, liver, spleen, and others, producing blindness, corneal ulceration, paralysis, deformity and even destruction of the phalanges and the nasal bones.²⁹ Popular and literary descriptions of leprosy are usually based on these extreme forms, ignoring more benign and common cases.

²⁶ WHO, Sixth Report, p. 23.

²⁷ See: Amarjit S. Bhatia et al., "Clinical and Histopathological Correlation in the Classification of Leprosy," International Journal of Leprosy, 1993, 61 (3): 433-438, on p. 434.

²⁸ Grange, Mycobacterial Diseases, pp. 38-39; see also Jopling, Handbook, pp. 18-44.

²⁹ Grange, Mycobacterial Diseases, pp. 56-60.

The last expert committee on leprosy of the WHO (1988) reported that the clinical profile of the disease has changed dramatically in the last twenty years:

"Ulcerating nodular lesions and the leonine facies of lepromatous leprosy are now rarely seen. Likewise, the distressing complications of advanced laryngeal leprosy and perforation of the hard palate are rarely encountered."³⁰

Patients with lepromatous leprosy are the most infectious, while tuberculoid forms are less infectious or non-infectious. However, it is possible to rapidly render lepromatous cases non-infective through chemotherapy, and this is an important factor in controlling the disease.³¹

Until the mid nineteenth century, leprosy was considered incurable. Traditional Indian medicine taught the Western world the virtues of chaulmoogra oil, the only substance capable of arresting in some cases the progress of the infection until the synthesis of sulphones in the 1940s. In fact, F.J. Mouat, a doctor of the Bengal Medical Service, first brought this ancient Indian remedy for leprosy to the attention of British physicians in 1854. Chaulmoogra oil was obtained from the seeds of *Taraktogenos kurzii*, a shrub that grows in Burma and South-west India.³² Presumably, Spanish Arab doctors knew of chaulmoogra and used it to treat leprosy as far back as the twelfth century. However, there is no indication of its use by Spanish doctors in the modern era before the mid-nineteenth-century.³³ Apparently, Japanese physicians also employed chaulmoogra seeds for treating

³⁰ WHO, Sixth Report, p. 13.

³¹ Ibid., p. 11.

³² Mouat published a paper about this medication in 1854 in the Indian Annals of Medical Science which was reproduced as: F.J. Mouat, "Notes on Native Remedies: No. 1. The Chaulmoogra," International Journal of Leprosy, 1935, 3 (2):219-22.

³³ Félix Contreras Dueñas and Ramón Miquel y Suárez Inclán, Historia de la Lepra en España (Madrid: Gráficas Hergon, 1973), pp. 56-58; and Imelda San Martín Bacaicoa, La lepra en la España del siglo XIX Cuadernos Valenciano de Historia de la Medicina y de la Ciencia (Valencia: Facultad de Medicina, 1966), p. 78-79.

leprosy in the early eighteenth century.³⁴ The adoption of this medication by Western physicians is one of various examples that can be cited to challenge diffusionist models of the spread of scientific and technological knowledge from Europe to the rest of the world.³⁵

Nonetheless, the application of chaulmoogra presented several limitations. Used by mouth and also as an ointment, chaulmoogra was effective only in certain cases, was extremely nauseating for some patients, and had to be administered for many years to obtain improvement. In 1894, physicians began to dispense the oil by injection, but the method was painful. In 1915, the British leprologist Leonard Rogers started to use sodium salts of chaulmoogra oil and hydnocarpus (one of the acids of chaulmoogra) in watery solution. This modification in the use of chaulmoogra made the injections less painful, and for the first time patients and doctors began to perceive leprosy as a curable disease.³⁶ In 1943, Guy H. Faget at the Carville leprosarium of Louisiana tested a new anti-bacterial drug that had been used to treat tuberculosis, but was suspended because of its severe side effects. The drug, called *promin*, which was the result of the manipulation of the sulfonamide molecule, proved more effective than previous medications.³⁷ However, this compound was fairly toxic and had the inconvenience that it had to be given daily by intravenous injection. Later, the same team of leprosy workers found that the active principle of *promin*, called *dapsone*, lacked *promin*'s toxic side effects and could be given orally. *Dapsone* thus became the "miraculous" drug for leprosy until the emergence of sulphone-

³⁴ Olaf K. Skinsnes, "Notes from the History of Leprosy," International Journal of Leprosy, 1973, 41 (2):220-248, on p. 224.

³⁵ The locus classicus of diffusionist models of science is George Basalla, "The Spread of Western Science," Science, 1967, 156 (May):611-622.

³⁶ Patrick Feeny. The Fight Against Leprosy (New York: American Leprosy Mission, 1964), p. 111.

³⁷ Frank Ryan, The Forgotten Plague: How the Battle Against Tuberculosis Was Won-and Lost (Boston: Little Brown and Co., 1993), pp. 227-28; see also: G.H. Faget et al., "Present Status of Promin Treatment in Leprosy," International Journal of Leprosy, 1946, 14:30-36; and Allison M. Hahn, "Changes in the Quality of Patient Care and Treatment at the United States Public Health Service Hospital in Carville, Louisiana during the Period 1936 to 1985," Master's Thesis, Department of History, Louisiana State University, Baton Rouge, 1990.

resistant mutant strains of *M. leprae* in the 1960s. According to the WHO, the most alarming phenomenon of leprosy control since the synthesis of the new drug has been the worldwide increase of primary and secondary resistance of *M. leprae* to *dapsone* which has been since the 1940s the standard medication for leprosy.³⁸

Currently, the WHO recommends a multidrug therapy of three medications combined: *rifampicin* which kills *M. leprae* very quickly, *clofazimine* which is bactericidal and anti-inflammatory, and *dapsone*, as the standard worldwide regimen for leprosy patients. Treatment for leprosy remains controversial and difficult since cases of resistance to *rifampicin* and *clofazimine* have also begun to occur. Other drugs, mainly *thioamides*, have been developed, but they can cause serious side effects, among them, liver damage. On the other hand, these medications are expensive, and they are not always available for people in developing countries. Leprologists regard what they call the "application gap" as the main challenge leprosy control programs presently face. This gap is the distance between scientific knowledge and its effective use, and it is clear to them that only through comprehension of what they call non-medical factors involved in leprosy control that it will be possible to reach people and to eradicate the disease.³⁹ Moreover, effective treatment of leprosy requires more than just arresting the disease in individuals and reducing the spread of the infection in the community. Besides chemotherapy, other aspects of leprosy control include supervision of immunological reactions, care of anaesthetic, ulcerated or deformed limbs, prevention of blindness, reconstructive surgery of the face and limbs, and physical, occupational, and social rehabilitation.⁴⁰

³⁸ Secondary resistance is the type of resistance developed in lepromatous cases as a result of long-term monotherapy. Primary resistance occurs in persons infected by *dapsone*-resistant *M. leprae*. See: Jopling, Handbook, p. 84. The first case of primary *dapsone* resistance was reported in Colombia in 1977; see: Fabio Londoño, "Primary Sulfone Resistance" (Letter), Leprosy Review, 1977, 48 (1):51; WHO, Sixth Report, pp. 8, 27-28.

³⁹ T.W. Meade, "How Effective is the Treatment of Leprosy?" Leprosy Review, 1977, 48 (1):3-8; Sevilla Casas, Los mutilados del oprobio, pp. 11-19.

⁴⁰ WHO, Sixth Report, pp. 29-37; Grange, Mycobacterial Diseases, pp. 64-66, 96-97; Jopling, Handbook, pp. 84-95. On the problems of rehabilitation see: WHO, Scientific Meeting on

The number of cases of leprosy is difficult to estimate because diagnostic criteria and definitions are unclear. The World Health Organization calculates the prevalence of leprosy in 1988 at 10 to 12 million cases with a total of 5,100,000 registered cases in 1987. Most people suffering from leprosy live in third world countries such as India, southeast Asia, China, central and east Africa, and Brazil. The disease is also present to a smaller extent in Japan, Korea, the Okinawas, Iran, Iraq, Turkey, Greece, Italy, Portugal, Spain, north central Australia, and central and south America with the exception of Chile.⁴¹ An official census in Colombia in 1990 found 17,181 registered cases, making the country the second in south America after Brazil in terms of the prevalence of leprosy.⁴²

This is the scientific description of leprosy as scientists understand it today. However, this study is not an exercise of Whiggish history that praises the "right," and reprimands the "wrong."⁴³ I intend to avoid comparisons of what past physicians believed about leprosy with current science to indicate their errors or backwardness, or to refer to their anticipations in a sort of pre-figuration of ideas and notions developed later. My purpose is to suggest that diseases are not only natural entities, but also social constructs; they are, using Peter Wright and Andrew Treacher's words, "a socially-generated way of grouping phenomena which endows them with particular significance."⁴⁴ The underlying conception in almost every description of leprosy according to which "Hansen's disease" needs to be understood in rational, scientific, and laic terms, permeates scientific claims

Rehabilitation in Leprosy Technical Report Series No. 221 (Geneva: WHO, 1961); and Paul Brand and Philip Yancey, Pain: The Gift Nobody Wants (New York: Harper Collins Publishers, 1993).

⁴¹ Trautman, "Epidemiological Aspects of Hansen's Disease," p. 722.

⁴² Sevilla Casas, Los mutilados del oprobio, pp. 73-74.

⁴³ See: Ludmilla Jordanova, "The Social Construction of Medical Knowledge," Social History of Medicine, 1995, 8 (3):361-381, on p. 363.

⁴⁴ Peter Wright and Andrew Treacher, "Introduction," The Problem of Medical Knowledge: Examining the Social Construction of Medicine ed. by Peter Wright and Andrew Treacher (Edinburgh: Edinburgh University Press, 1982), p. 9.

about it. For example, there are unagreed-upon issues such as the extent of infectiousness of leprosy. Depending on the circumstances, some authors would describe leprosy as "the least communicable of communicable diseases" or just "infectious in some cases," if the purpose is to counter exaggerated fears of infection.⁴⁵ In other cases the assertion would be that leprosy is "more infectious than previously thought," if the intention is to awake public awareness about a disease otherwise forgotten.⁴⁶ In spite of the efforts of leprosy patients and workers, leprosy is certainly a disease with deep cultural and social implications which often evokes anxieties coming from a distant past.

Leprosy, Stigma, and Hansen's Disease

Leprosy is by no means the only disease that has been stigmatized throughout history. Individuals suffering from many other illnesses, such as syphilis, tuberculosis, cancer, epilepsy, schizophrenia, and nowadays from herpes and AIDS, have sometimes been treated as outcasts. Nonetheless, some examples suggest that leprosy bears the strongest stigma: it possesses the unique characteristic of having become the universal reference as the worst of all diseases.⁴⁷ Leprosy became the metaphor par excellence to which other illnesses were compared, confirming what Susan Sontag has suggested: that some ailments are used as adjectives to refer to what is taken as morally wrong or dangerous. The more mysterious an illness seems to be the more metaphorical it becomes.⁴⁸

Doubtless the greatest stigma for an ill person has been the potential confusion with a "leper," as the examples below will show. Historian Sheila M. Rothman quotes a woman

⁴⁵ Trautman, "Epidemiological Aspects of Hansen's Disease," p. 729; Jopling, Handbook, p. 1; Volinn, "Health Professionals as Stigmatizers," p. 388.

⁴⁶ WHO, A Guide to Leprosy Control (Geneva, WHO, 1980), p. 13.

⁴⁷ On the notion of "stigma" see the classical work by Erving Goffman, Stigma: Notes on the Management of Spoiled Identity (Englewood, N.J.: Prentice Hall, 1963).

⁴⁸ Susan Sontag, Illness as Metaphor (New York: Farrar, Straus and Giroux, 1978) and AIDS and Its Metaphors (New York: Farrar, Straus and Giroux, 1989).

suffering from tuberculosis in the nineteenth century United States: patients at the sanatorium were like one family staying "very close to each other because of the suffering and the attitude of the public that we were lepers."⁴⁹ Even in the twentieth century, the head of the almoner's department at the Brompton Hospital in England wrote in 1959 of the "leper complex" that many patients developed when being told that they had tuberculosis.⁵⁰

Furthermore, comparisons between sanatoria and leper colonies were common: when P.J. Varrier-Jones created Papworth Village Settlement for patients of tuberculosis in England in 1917, he felt compelled to explain that the sanatorium was not a "leper colony."⁵¹ Historian of tuberculosis Linda Bryder also recounts memories of TB patients about visitors that entered the sanatorium as if they were entering a "leper colony," and about communities surrounded by sanatoria that regarded these institutions as leprosaria.⁵²

Venereal diseases have also been compared with leprosy. The American feminist writer Charlotte Perkins Gilman discussed the issue of medical secrecy in her novel *The Crux* published in 1911. When Dr. Hale, a male physician, refuses to reveal a patient's syphilis to his fiancée, Dr. Bellair, a female colleague, responds: "Suppose a patient of yours had the leprosy, and wanted to marry your sister; would you betray his confidence?" As recently as 1980, referring to genital herpes, *Time* called the disease the "new sexual leprosy," and patients with AIDS have also been called "lepers."⁵³

⁴⁹ Quoted in Sheila M. Rothman, Living in the Shadow of Death: Tuberculosis and the Social Experience of Illness in American History (New York: Basic Books, 1994), p. 234.

⁵⁰ Linda Bryder, Below the Magic Mountain: A Social History of Tuberculosis in Twentieth-Century Britain (Oxford: Clarendon Press, 1988), p. 223.

⁵¹ Quoted by Bryder, Ibid., pp. 158-159.

⁵² Ibid., p. 201.

⁵³ Allan M. Brandt, No Magic Bullet: A Social History of Venereal Disease in the United States since 1880, Expanded edition (New York: Oxford University Press, 1985/1987), pp. 18, 179; on the comparison between leprosy and AIDS see: Ilse J. Volinn, "Issues of Definitions and their Implications: AIDS and Leprosy," Social Science and Medicine, 1989, 29 (10):1157-1162, on p. 1157.

Referring to the stigma of individuals with herpes, the historian Allan M. Brandt indicates another source of disgrace: certain diseases generate nouns that identify the patient with the disease, such as herpetic, epileptic, syphilitic, (Linda Bryder adds "tuberculous" or "lunger") thus contributing to the separation of people suffering from those diseases from the rest of the population. Brandt contends that at times the very same institutions that seek to aid the victims of stigma contribute to strengthening it.⁵⁴ This is also the case with leprosy. An article describing the social factors that make leprosy a disruptive experience in two Philippine provinces refers to leprosy patients as "Hansenites."⁵⁵ By differentiating them by the name "Hansenites," some social scientists reinforce traditional prejudices they try to condemn.

In order to avoid the stigma traditionally attached to the disease, leprologists gathered in the Fifth International Congress on Leprosy held in Havana in 1948 concluded that leprosy patients should not be called "lepers." The Havana conference also suggested changing the name of the ailment to Hansen's disease, after Gerhard A. Hansen, the Norwegian physician who "discovered"⁵⁶ its causative agent.⁵⁷ Although some argue that the disease has been described prior to Hansen's "discovery," and others contend that the new name would receive the old discredited connotations, the movement for "Hansen's disease" has been successful, particularly in the United States.⁵⁸ Indeed, patients, physicians, and other leprosy workers at the United States Public Health Service Hospital,

⁵⁴ Brandt, No Magic Bullet, p. 181, and Bryder, Below the Magic Mountain, p. 226.

⁵⁵ Luzviminda B. Valencia et al., "Society and Leprosy: A Philippine Experience," Philippine Sociological Review, 1986, 34 (1-4):80-90, especially on pp. 85-90.

⁵⁶ As I will explain later in this introduction, I believe that science is socially produced, instead of "discovered." Thus, when occasionally I use terms such as "discover," or "discovery," I will put them in quotation marks.

⁵⁷ On the Havana conference, see: Perry Burgess, Born of Those Years (New York: Henry Holt and Company, 1951), pp. 273-274.

⁵⁸ On a skeptical view of the results of a name's variation, see: George L. Fite, "Leprosy, Society, and Hansen's Disease," International Journal of Leprosy, 1956, 24 (4):457-463, on pp. 460-2.

the Carville Louisiana leprosarium, the only continental leprosarium within the United States, claim that the stigma is worse than the disease itself and have been supporters of a destigmatization campaign. In consequence, they have developed a "destigmatization theory" that includes the renegotiation of the social definition of the disease, the publication of a journal called The Star, and acquaintance with the history of leprosy and with the biological details of its etiology and transmission. They maintain that by spreading accurate scientific information about the illness and specially by breaking up the erroneous association between "Hansen's disease" and the Biblical references to "leprosy," it will become a disease like any other, and the blemish will disappear.

According to students of leprosy, Gussow and Tracy, the "destigmatization theory" advanced by leprosy patients and workers is somewhat of a myth--its proponents wrongly believe that leprosy invariably produces reactions of contempt. Even if the stigma of leprosy is and has been widespread, they argue that not all cultures regard leprosy as a source of opprobrium.⁵⁹ For example, in Sri Lanka, Nigeria, Tanzania, and Norway, leprosy patients are (or have been) treated with compassion and are not (nor have they been) the object of segregation. On the other hand, in India, Ethiopia, China, in most European and American countries with a strong Judeo-Christian cultural influence, and in many Muslim nations, leprosy generates repulsion and ostracism. Although Muslim cultures never arranged compulsory segregation for leprosy sufferers in the way Christians did.⁶⁰

Historians of leprosy, for example Saul N. Brody, have also developed explanations for the disgrace of leprosy in terms of a continuous feature of Western culture since ancient times. For Brody, the image of "the leper," as a hallmark of depravity and sin has been

⁵⁹ Gussow and Tracy, "Stigma and the Leprosy Phenomenon," pp. 425-449; and Gussow, Leprosy, Racism, and Public Health, pp. 17-22.

⁶⁰ Nancy Waxler, "Learning to be a leper: a case study in the social construction of illness," Social Contexts of Health, Illness, and Patient Care ed. by Elliot Mishler et al. (Cambridge: Cambridge University Press, 1981), pp. 172-177.

permanent in Western culture.⁶¹ Gussow and Tracy refute the interpretation according to which the stigma of leprosy has been perpetual from Antiquity through the Middle Ages to our times. For them the current stigma is a construction of nineteenth-century imperialism. According to Gussow and Tracy, leprosy was "retainted" when the imperialist nations "rediscovered" this disease as endemic in poor regions of the world they were colonizing. Leprosy then came to be seen as an illness of "inferior," and uncivilized people. With the rediscovery of a disease which was believed to have expired with the Middle Ages, old Christian mythologies revived, and pious institutions took the opportunity to revitalize themselves.⁶² The religious agencies founded at the time with the purpose of caring for "lepers," like the British Mission to Lepers, established in 1874, and the National Leprosy Fund, created in 1889, strongly contributed to the "retainting" of leprosy by portraying it as a disease apart, whose patients needed special (moral) care and support.⁶³

The Social Construction of Disease

Because perhaps no other illness in Western culture has been so strongly stigmatized, the historical study of modern leprosy offers us the opportunity to discuss how concepts of disease are socially constructed. Diseases are socially produced, not only in the important sense that, for example, tuberculosis attacks mostly the working class, or that pellagra is a disease of poverty and malnutrition, but in the sense that its conceptual definition also has a social character. According to Sontag, before diseases are conceptualized in scientific terms, before their causes and modes of transmission are understood in modern medical language, people tend not only to describe them using metaphors of moral decay, but also to

⁶¹ Saul Nathaniel Brody, The Disease of the Soul: Leprosy in Medieval Literature (Ithaca: Cornell University Press, 1974), p. 197.

⁶² Gussow, Leprosy, Racism, and Public Health, pp. 201-228.

⁶³ See for example, Walter Fancutt, The Mission to Lepers: 90 Years of Leprosy Service 1874-1964 (London: The Mission to Lepers, 1964).

regard them as emanating from many different causes.⁶⁴ This was the case with leprosy. However, as historians of medicine Elizabeth Fee and Daniel M. Fox noted, Sontag wants to see disease divested of the images imposed upon it; she wants "to calm imagination," and limit the vision of illness to its "pure" biological reality.⁶⁵ Sontag's brilliant analysis stops where science begins--scientific language is not metaphorical for her, but truth. By contrast, historians and sociologists of medicine have gone beyond the biological approach in order to understand diseases in their social and cultural contexts.⁶⁶

This research is based on a notion that has become commonplace in the specialized language of historians and sociologists of medicine, science, and technology: the idea that all knowledge, medical or techno-scientific, is inherently social, not only because of the circumstances of its production, but in its content itself. The social and the cognitive are inseparable.⁶⁷ The physician and philosopher Ludwik Fleck in his 1935 work on the genesis and development of the concept of syphilis, claimed that scientific facts are produced, not discovered. For him, particular "thought-styles" dominate specific historical periods, and different styles of thought induce different observations and classifications. All scientific knowledge is entrenched in the style of thinking which is dominant at the time. Knowledge thus depends on previous cognition, but also on the "thought-collective" of the knower. Fleck defines the "thought-collective" in a broad sense as any "community of persons mutually exchanging ideas maintaining intellectual interaction."⁶⁸ According to

⁶⁴ Sontag, Illness as Metaphor, pp. 60-61.

⁶⁵ Elizabeth Fee and Daniel M. Fox (eds), AIDS: The Making of a Chronic Disease (Berkeley: University of California Press, 1992), p. 2; Sontag, AIDS and its Metaphors, p. 14.

⁶⁶ See for example: Charles Rosenberg and Janet Golden (Eds), Framing Disease: Studies in Cultural History (New Brunswick, NJ: Rutgers University Press, 1992), and Charles Rosenberg, Explaining Epidemics and Other Studies in the History of Medicine (Cambridge: Cambridge University Press, 1992).

⁶⁷ David Bloor, Knowledge and Social Imagery 2nd ed. (Chicago: The University of Chicago Press, 1976/1991).

⁶⁸ Ludwik Fleck, Genesis and Development of a Scientific Fact Ed. by Thaddeus Trenn and Robert K. Merton (Chicago: The University of Chicago Press, 1935/1979), p. 39.

Fleck, cognition is the most socially-conditioned activity, and knowledge is the foremost social creation.⁶⁹ Traditional philosophers present scientific claims as the product of reason and the successful application of the so-called "scientific method." This is because they analyze science as a final product without focusing on the processes whereby those claims were produced, contested, negotiated, transformed, and accepted as scientific. After those negotiations, "black boxes" are closed and scientific practice appears as invested with a special status that separates it from any other intellectual activities and from daily life. Thus, scientific claims become incontestable. The enormous power of scientific knowledge in contemporary society comes from the fact that scientists usually define scientific and technical knowledge as impartial, free from social and political interests, and independent of any influence of the historical conditions within which it is produced.⁷⁰ In the case of leprosy, I will follow physicians in their making of knowledge about leprosy. Their statements about transmission, contagiousness, isolation of patients, and treatment of the disease, were the outcome of complex social negotiations among the international medical community, as well as with patients, and society in general. The production of scientific knowledge is a social process rather than the "discovery" of the truth by rational minds uncovering the veils of irrationality and superstition. This is not to reduce the status of medicine by claiming that medical knowledge is spurious, that medicine is not scientific, that diseases are fantasies, or that medical practice is false. This is to assert that science and medicine are essentially social activities, and that there is no "pure" cognitive moment. Medicine is a form of social practice that observes, codifies and understands diseases not as universal transhistorical entities, but in their technically organized communities, and as a part of the ampler society. Medicine is a highly specialized domain of social practice whose

⁶⁹ Ibid., pp. 38-43.

⁷⁰ There is an extensive literature on the sociology of scientific knowledge. See for example: Karin Knorr-Cetina, The Manufacture of Knowledge (Oxford: Pergamon Press, 1981); Bruno Latour, Science in Action: How to Follow Scientists and Engineers through Society (Cambridge, MA: Harvard University Press, 1987); of the same author, The Pasteurization of France (Cambridge: Harvard University Press, 1988); and Andrew Pickering (ed) Science as Practice and Culture (Chicago: The University of Chicago Press, 1992).

limits and contents are established by wider social practices.⁷¹ Medicine and modern science can also be understood as cosmologies, as systems of natural symbols that help us filter and construct our experience to understand our existence in the world.⁷² Nature and society are inseparable, whether with respect to the manufacturing of beliefs, such as the idea that leprosy is a punishment for sin, or to scientific claims, such as the notion of a micro-organism as the causative agent of leprosy.

Another major theoretical element within this study is the notion that knowledge and power are intimately linked. From the sociologist Pierre Bourdieu and from the philosopher Michel Foucault I take the idea that the exercise of power does not require conscious intention nor explicit decision, and that power is not only repressive but also productive of new relations and realities.⁷³ For Foucault, medicine is a totality of practices, discourses, and institutions that constitutes its own objects.⁷⁴ The notion of "medicalization" is a proper example of the relation between power and knowledge. Medicalization refers to the never ending process by which an increasing number of aspects of human behavior which previously were regarded as normal or deviant by the lay public became assigned to medical control and redefined as health or illness. At the same time, medicalization alludes to the tendency of the community to delegate to medical expertise their matters of health and illness.⁷⁵ From the eighteenth century on a general medicalization of conducts, discourses, and desires was produced in European society, and

⁷¹ Wright and Treacher, "Introduction," pp. 10-15.

⁷² Mary Douglas, Natural Symbols: Explorations in Cosmology (London: Barrie and Rockliff, 1970).

⁷³ See for example, Michel Foucault, "Politics and the Study of Discourse," The Foucault Effect: Studies in Governmentality Ed. by Graham Burchell, et al. (Chicago: The University of Chicago Press, 1991), pp. 53-72, and Pierre Bourdieu, "The Specificity of the Scientific Field and the Social Conditions of the Progress of Reason," Social Science Information, 1975, 14 (6):19-47.

⁷⁴ Michel Foucault, The Birth of the Clinic (London: Tavistock, 1973).

⁷⁵ Michel Foucault, "La crisis de la medicina o la crisis de la antimedicina," Educación Médica y Salud, 1976, 10 (2):152-169; and "Historia de la medicalización," Educación Médica y Salud, 1977, 11 (1):3-25.

medicine became a dominant institution so much so that almost no facet of human life escaped its power.⁷⁶

Related to the notion of medicalization is the concept of "scientific authority." For Bourdieu, two inseparable features define scientific authority: technical ability and social power. In other words, "scientific competence" is the socially recognized capacity that a particular agent has to speak and act legitimately (in an authorized and authoritative way) about scientific questions.⁷⁷ For the sociologist Paul Starr, "cultural authority" is the probability that certain definitions of reality and judgments of meaning and value will be taken as valid and true.⁷⁸ Experts argue that they enjoy special access to the works of nature. Possession of power grants a social group opportunities to define what acceptable knowledge is, which claims must be taken as scientific, and which as non-scientific. At the same time, numerous instances of successful claims of possession of knowledge increase such power.⁷⁹ The frontiers between science and non-science are not given but are the outcome of negotiations among diverse social forces. The modern professions possess the power to establish such frontiers.⁸⁰ In the case of Colombia, medicine became a profession in the late nineteenth and early twentieth centuries, and physicians acquired the cultural and social power to define leprosy as a contagious and dangerous disease. Hence, they dismissed humoral, miasmatic, and hereditary notions as "pre-scientific."

This study is also based on the concept that the structuralist and constructivist

⁷⁶ See, for example: Jean-Pierre Goubert, (Ed) La Médicalisation de la Société Française, 1770-1830 (Waterloo, Ontario: Historical Reflections Press, 1982).

⁷⁷ Bourdieu, "The Specificity of the Scientific Field," on p. 19.

⁷⁸ Paul Starr, The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry (New York: Basic Books, 1982), pp. 13-15.

⁷⁹ Wright and Treacher, "Introduction," p. 6.

⁸⁰ Thomas F. Gieryn, "Boundary-Work and the Demarcation of Science from Non-Science, Strains and Interests in Professional Ideologies of Scientists," The American Sociological Review, 1983, 47:781-795.

approaches are necessary and inseparable. According to Bourdieu, the actual rationale of action resides not in institutions nor in agents themselves, but in their relation, in the permanent encounter between history objectified in things and history incarnated in bodies. Individuals produce the social world around them, they are not just dominated by external forces. Individuals choose and construct meaningful paths of action and actively contribute to determine the same social factors that move them.⁸¹ This approach does not deny the effectiveness of structures, because agents are socially structured themselves. To recognize agency does not mean to embrace a subjectivist sociology that describes individuals acting intentionally according to utilitarian or rational theories. For Bourdieu, there exists an "ontological complicity" between the objective structures of the external world and the internal complex of mental and bodily dispositions of individuals.⁸²

These notions are particularly useful for thinking about the problems of the history of medicine, science, and technology in Latin America which have been conceptualized in terms of the center/periphery model. According to such a model, science, technology, and medicine spread from Europe, the center, to the rest of the world, the periphery.⁸³ Today there is a virtual consensus among the students of these questions as to the need for surpassing the diffusionist paradigm and replacing it by a more sophisticated analysis of the social and cultural circumstances and particularities of Latin America. According to critiques of diffusionist approaches, it is necessary to consider the local culture's variations, and to describe the active role of Latin American scientists. Indeed, they were not passive receivers of science, technology and medicine, but active constructors of their own

⁸¹ Pierre Bourdieu, The Logic of Practice (Stanford, CA: Stanford University Press, 1990), pp. 52-65.

⁸² Loïc J.D. Wacquant, "On the Tracks of Symbolic Power: Prefatory Notes to Bourdieu's *State Nobility*," Theory, Culture & Society, 1993, 10:1-17, on pp. 10-15.

⁸³ Basalla, "The Spread of Western Science," pp. 611-622; see also by the same author, "The Spread of Western Science Revisited," Mundialización de la ciencia y cultura nacional Actas del Congreso Internacional "Ciencia, descubrimiento y mundo colonial" ed. by A. Lafuente, A. Helena y M.L. Ortega (Madrid: Doce Calles, 1993), pp. 599-603. Several critiques of the model have been formulated; for a comprehensive review of these analyses, see: David Wade Chambers, "Locality and Science: Myths of Centre and Periphery," Mundialización de la ciencia, pp. 605-617.

history.⁸⁴ Structure and agency are inseparable. For example, Colombian physicians adopted models used in the colonial world to control leprosy. Such decisions are better understood if we refer them to the structure of social relations of domination and dependence within which those choices were made. However, the Colombian medical community was not a passive follower of international models. Practices of isolation of leprosy patients which became standard procedures in the late nineteenth century were in effect in Colombia long before international approval. Physicians had plenty of opportunities to determine paths of action. However, their decisions were not always in the best interest of the patients, or even of the Colombian society as whole.

Historiography

The study of the modern history of leprosy, that is, since its description as a contagious disease produced by a specific microorganism, has been neglected by professional historians. There exist histories of what was called leprosy in Antiquity and in the Middle Ages, and several analyses of its religious rituals of segregation throughout Europe in those periods.⁸⁵ In addition, the historian R.I. Moore studied the role that oppression of "lepers," together with heretics and Jews, played in the formation of a "persecuting" society in twelfth-century Europe.⁸⁶ There are general histories of epidemics and public health

⁸⁴ See for example, Marcos Cueto, Excelencia científica en la periferia: Actividades científicas e investigación biomédica en el Perú (Lima: Grade Concytec, 1989); Marcos Cueto (Ed.) Missionaries of Science: The Rockefeller Foundation and Latin America (Bloomington, IN: Indiana University Press, 1994); Nancy Stepan, Beginnings of Brazilian Science: Oswaldo Cruz, Medical Research and Policy, 1890-1920 (New York: Science History Publications, 1981); Nancy Stepan, The Hour of Eugenics: Race, Gender and Nation in Latin America (Ithaca: Cornell University Press, 1992); and Antonio Lafuente and José Sala Catalá, "Ciencia Colonial y Roles Profesionales en la América Española del Siglo XVIII," Quipu, 1989, 6:387-403; and Patrick Petitjean, Catherine Jami and Anne Marie Moulin (eds.) Science and Empires: Historical Studies about Scientific Development and European Expansion (Dordrecht: Kluwer Academic Press, 1992).

⁸⁵ Some examples are: Peter Richards, The Medieval Leper and His Northern Heirs (Cambridge: D.S. Brewer, 1977); and Piera Borradori, "Histoires d'exclusion et de solidarité: La lèpre au Pays de Vaud," Revue Médicale de la Suisse Romande, 1992, 112:1025-1033.

⁸⁶ R.I. Moore, The Formation of a Persecuting Society: Power and Deviance in Western Europe, 950-1250 (Oxford: Basil Blackwell, 1987).

covering extensive periods that devote some space to leprosy as one of those diseases that disappeared mysteriously from Europe between the fourteenth and the sixteenth centuries.⁸⁷

However, the equation of leprosy with the disease described in the Bible and in medieval times remains uncertain, since medieval medical descriptions were usually vague. The disease was easily confused with syphilis, and with many other skin conditions. However, the adoption of medieval procedures and ideas about "lepers" in the nineteenth century, in practice equated modern Hansen's disease with medieval leprosy.

Most historical work on modern leprosy has been written by leprosy workers themselves. Indeed, leprologists, nurses, and religious missionaries have produced a fair amount of historical and sociological literature usually published in specialized journals of leprology.⁸⁸ In addition, the treatises on leprosy printed in the period considered in this research often include extensive historical introductions about the disease.⁸⁹ Even the suggestive study by the psychiatrist-turned-historian Zachary Gussow on leprosy, racism, and public health was produced within the world of leprosy control itself. Indeed, Gussow joined the staff at the Carville leprosarium in the early 1960s in order to do field work on psychiatry with leprosy patients. Hence, his interest in stigma. Using sociological and anthropological approaches, Gussow compares the cases of Norway, Hawaii, and Louisiana, showing the contrasts between those models for managing leprosy and traces the development of leprosy stigma to its historical origin in the nineteenth century.⁹⁰ Leprosy

⁸⁷ William H. McNeill, Plagues and Peoples (Garden City, NY: Anchor Press/Doubleday, 1976), pp. 175-77; Charles-Edward Amory Winslow, The Conquest of Epidemic Disease: A Chapter in the History of Ideas (Madison, WI: University of Wisconsin Press, 1943/1980); and George Rosen, A History of Public Health (Baltimore: The Johns Hopkins University Press, 1958/1993).

⁸⁸ See for example: George L. Fite, and H.W. Wade, "The Contribution of Neisser to the Establishment of the Hansen Bacillus as the Etiologic Agent of Leprosy," International Journal of Leprosy, 1955, 23:418-28.

⁸⁹ See for example, Dom Sauton, La Lèpre (Paris: C. Naud, 1901); Sir Leonard Rogers and Ernest Muir, Leprosy (New York: William Wood and Co., 1925); and Édouard Jeanselme, La Lèpre (Paris: G. Doin et Cie. Éditeurs, 1934).

⁹⁰ Gussow, Leprosy, Racism, and Public Health.

has generated its own traditions of historical work, while historians have remained uninterested in leprosy.

The history of leprosy in Latin America, and particularly in Colombia, follows the same patterns: it has been written by leprosy workers, especially by physicians and missionaries.⁹¹ The history of medicine and public health in Colombia has also been neglected by professional historians. The work by the historian Christopher Abel constitutes an important exception. He has recently explored the role of the Rockefeller Foundation in the development of the field of public health in Colombia. Because this study focuses mainly on the Foundation officials and documents, it overlooks the role that Colombian nationals played in those developments.⁹² The author has produced a broader perspective about these issues in a preliminary study on health care in Colombia.⁹³ Among the few scholarly works on this subject, the studies by Emilio Quevedo Vélez, Néstor Miranda Canal, and Mario Hernández Álvarez deserve special mention. Quevedo traces the history of medicine and medical education since the first Spanish conquests, but particularly from the eighteenth until the mid-nineteenth century.⁹⁴ Miranda focuses on the evolution of medicine and medical education from the mid-nineteenth century to the mid-twentieth century.⁹⁵ Although both authors study the history of medicine within the broader social

⁹¹ See for example: H.C. Souza-Araujo, História da Lepra no Brasil 3 vols. (Rio de Janeiro: Departamento de Imprensa Nacional, 1946/1956); and Antonio S.J. Aznar, El cura Brochero en su apostolado sacerdotal. Su vida espiritual y legendaria en heroísmos (Buenos Aires: Ediciones Paulinas, 1951).

⁹² Christopher Abel, "External Philanthropy and Domestic Change in Colombian Health Care: The Role of the Rockefeller Foundation, ca. 1920-1950," Hispanic American Historical Review, 1995, 75 (3):339-376.

⁹³ Christopher Abel, Health Care in Colombia c.1920-c.1950: A Preliminary Analysis (London: University of London, 1994).

⁹⁴ Emilio Quevedo Vélez, "Institucionalización de la Medicina en Colombia 1492-1860: Antecedentes de un Proceso," Historia Social de la Ciencia en Colombia vol. 7 (Bogotá: Tercer Mundo, 1993).

⁹⁵ Néstor Miranda Canal, "La medicina colombiana de 1867 a 1946," Historia Social de la Ciencia en Colombia vol. 8 (Bogotá: Tercer Mundo, 1993), pp. 13-160.

context, their main interest is to show the dynamics of concepts and the influence of European medical theories on Colombian medicine. As a result, their studies parallel the method of traditional histories of ideas. In another investigation about public health and the state in Colombia, these authors together with Mario Hernández Álvarez, use a rather reductionist approach. They relate scientific concepts to the Colombian society in the form of "reflection" of the social and historical structure. In other words, Quevedo and his colleagues privilege the social context, but the two aspects (the scientific and the social) remain clearly separated.⁹⁶ Nonetheless the studies reviewed serve as valuable sources for a subject which is still highly undeveloped.

About this Study

This study intends to overcome previous difficulties. I aim to explain the significant role that leprosy played not only within the development of public health institutions in Colombia, but its prominence in the Colombian collective imagination. Using the historian Karl Figlio's expression, I intend to explore the extension and quality of the historical particularity of leprosy in Colombia.⁹⁷ This research proposes to analyze the disease, the observers of the disease, and the social and political significance of the disease as constitutive aspects of the same history. The subject of knowledge (the medical profession) and its object (leprosy) grew together in a reciprocal correlation. As the historian Roger Cooter points out, medical knowledges are in themselves part of social and cultural totalities where concepts and theories are mutually constitutive with their material/social circumstances.⁹⁸

⁹⁶ Emilio Quevedo Vélez et al., "Ciencias médicas, estado y salud en Colombia: 1886-1957," Historia Social de la Ciencia en Colombia vol. 8 (Bogotá: Tercer Mundo, 1993), pp. 161-289.

⁹⁷ Karl Figlio, "How Does Illness Mediate Social Relations? Workmen's Compensation and Medico-Legal Practices, 1890-1940," The Problem of Medical Knowledge, pp. 174-224, on p. 174.

⁹⁸ Roger Cooter, "Anticontagionism and History's Medical Record," The Problem of Medical Knowledge, pp. 87-108, on p. 94.

This investigation focuses on the crusade against leprosy developed in Colombia between the 1880s and the late 1930s and the specific social relations among the principal actors involved: patients, physicians, and the Colombian government. However, since this subject has hardly been investigated, I need to outline the history of what was called “leprosy” in earlier periods in order to present an overall picture. I also felt compelled to track the history of what was understood as medieval leprosy, as many practices and notions of *elephantiasis* in Colombia undoubtedly referred to medieval traditions. Although most historians of leprosy debate whether medieval leprosy was indeed Hansen's disease as we understand it today, its reconstruction as contagious in the late nineteenth century *made* it the same disease. Therefore, leprosy received the connotations and traditions of the medieval condition. In the 1870s, leprosy became an object of medical knowledge within the context of bacteriology; much later it became an object of public health policy. Colombian physicians constructed leprosy as a highly contagious and dangerous infectious disease. Through the incitation of fears and through the use of scientific rhetoric, physicians used leprosy to promote their own professional interests.

In the case of Colombia, a predominantly Catholic country, the argument of the historical continuity of leprosy and Gussow's argument of the nineteenth-century retainting of the disease are both applicable. Indeed, there existed an obvious continuity of practices and concepts related to leprosy, then called *elephantiasis*, from the era of Spanish rule (roughly 1510-1819) to the late nineteenth century when medical knowledge made leprosy an infectious disease. Even then, practices of segregation originating in medieval Spanish conventions continued. The image of the “leper” as an object of contempt and fear, but at the same time as a recipient of charity and pity were well entrenched in Colombian society and culture. At the same time, when Westerners constructed leprosy as a disease of “inferior” races in the nineteenth century, Colombian lepers acquired such attributes. Therefore, leprosy was doubly stigmatized: the image of leprosy combined the medieval features of a repugnant putrescent infection with the disgrace of a racially inferior illness. With the present research I seek to explore the role of doctors' interests in the development

of knowledge about leprosy in Colombia. I will examine the complex interaction between foreign and indigenous knowledge, its national/international dynamics, the transformation of that knowledge by local agents, and the power struggle of physicians in which the construction of leprosy became a relevant component.

In the first chapter of this study, I describe medieval rituals and ideas about the disease, placing leprosy in the context of medieval society. Some of these old notions about leprosy and practices of confinement directed to lepers revived in the nineteenth and twentieth centuries. The continuity and reconstruction of practices and ideas originated in the distant past is the reason to explain them with some detail in this chapter. In the second chapter, I expound on the persistence in Colombia until the nineteenth century of these ancient procedures and views on leprosy (then called *elefancia*) by way of the Spanish culture and traditions, and the role of charity in the caring for lepers. Doctors understood *elefancia* as an infectious and putrescent disease, partly physical partly spiritual. *Elefancia* was also in the colonial society an important political issue which confronted the central Spanish government and the provinces. Local authorities demanded the construction of leper hospitals, but the colonial administration in Bogotá persisted on a centralized policy of isolating lepers at the *San Lázaro* hospital in Cartagena. Most of these conflicts and patterns to deal with *elefancia* remained throughout the Colombian independent republic until the last third of the nineteenth century.

In the third chapter, I describe the "discovery" of Hansen's bacillus, and the construction of leprosy as a contagious disease in the nineteenth century. Since this microorganism could not be cultured in vitro, physicians, bacteriologists and epidemiologists, negotiated the definition of leprosy as a microbial disease produced by a specific microorganism. Two contrasting public health models to control leprosy evolved in Norway and Hawaii; Norwegians developed a nationalistic and effective medical approach, while in Hawaii, Western imperial powers generated a racist and colonialist strategy to control leprosy. Many feared that eventually the infection would spread to Europe and the United States. In the context of nineteenth-century colonialism, Europeans

and North Americans made leprosy an extremely contagious and dangerous disease. In the fourth chapter, I explicate how Colombian doctors constructed leprosy as a microbial disease. They exaggerated the incidence of leprosy in the country to medicalize the disease and to empower the medical community. The medical profession and the concept of leprosy as a contagious disease produced by a specific etiological agent constituted each other.

In the fifth chapter, I explore the process by which the Colombian elites began the modernization of the state in the early twentieth century. Leprosy became an obstacle to progress and civilization as conceived by the upper classes, thus the government and the physicians commenced an operation aiming at eradicating the disease. The Colombian state took control of leprosy, and doctors started to medicalize the disease. However, the strategy adopted, which essentially maintained leprosy as a unique condition, generated conflict with leprosy patients, and obstacles to medicalization. In the sixth chapter, I clarify the changes which came about in the 1930s in leprosy control at both the national and international levels. The modifications of the public health policy were related to broader social and political changes of the Colombian society in the 1930s. Physicians and the government recognized that the rigid policy of segregation of leprosy sufferers was expensive and ineffective, and started to confer importance to bacteriological investigation and to search for a vaccine for leprosy. However, this reductionist approach to public health was limited, not only because of the technical difficulties involved in the cultivation of the leprosy bacillus, but also because it neglected poverty as a major cause of disease and mortality among the Colombian population.

Chapter 1

The Legacy of the Past

"I forbid you to ever enter the church or monastery, fair, mill, marketplace, or company of persons. I forbid you to ever leave your house without your leper's costume, in order that one recognize you and that you never go barefoot. I forbid you to wash your hands or any thing about you in the stream or in the fountain and to ever drink; and if you wish water to drink, fetch it in your cask or porringer. I forbid you to touch anything you bargain for or buy, until it is yours. I forbid you to enter a tavern. If you want wine, whether you buy it or someone gives it to you, have it put in your cask. I forbid you, if you go on the road and you meet some person who speaks to you, to fail to put yourself downwind before you answer. I forbid you to go in a narrow line, so that should you meet any person, he should not be able to catch the affliction from you. I forbid you, if you go along any thoroughfare, to ever touch a well or the cord unless you have put on your gloves. I forbid you to eat or drink from any dishes other than your own. I forbid you drinking or eating in company, unless with lepers."¹

The history of leprosy offers a good example of the social reconstruction of a disease. An important element of the singularity of leprosy has been its alleged past legacy. Some of the popular images of "lepers"² have been constructed through a long history which goes back to the Bible and to medieval European traditions. The lengthy history of the disease supposedly started with Biblical descriptions of an affliction whose name was translated as "leprosy," and continued with medieval rituals and prescriptions for "lepers."³ In the Middle Ages, leprosy was understood as venereal disease and as a condition of moral decay.

Persecution of lepers (as well as oppression of other social groups such as Jews and heretics) and erection of leper hospitals was an integral part of the formation of new

¹ *Ex veteri codice S. Albini Andegavensis* (n.d.), in Martène, cols. 1005-1006. Quoted by Saul Nathaniel Brody, The Disease of the Soul: Leprosy in Medieval Literature (Ithaca: Cornell University Press, 1974), pp. 66-67.

² The categories "leper" and "leprosy" are taken in this study as social constructions rather than as natural objects. When these terms can generate confusion, I will use them in quotation marks to indicate the distinction between modern leprosy and what people historically meant by them.

³ For a succinct presentation of the history of leprosy see: Ann G. Carmichael, "Leprosy," The Cambridge World History of Human Disease ed. by Kenneth F. Kiple (Cambridge: Cambridge University Press, 1993), pp. 834-839.

methods of government for the church and the state in twelfth-century Europe. Leprosy disappeared from European social/cultural traditions by the sixteenth century, and leper hospitals became mostly madhouses and prisons. However, some of the ideas and practices related to modern leprosy paralleled medieval conventions, even until the twentieth century.

Leprosy and the Bible

From biblical times through the middle ages, "the leper" was an emblem of spiritual corruption, and leprosy, more than any other illness, was associated with immorality and uncleanness. Although the connection between leprosy and sin appeared in the Bible, as the historian Nathaniel S. Brody suggests, this link is even older, for the writers of the Old Testament were just preserving and elaborating a tradition already existent.⁴ Moreover, leprosy as a punishment for sin was not an exclusive trait of Christianity. Medieval Islamic society related leprosy to immorality, and disdained "lepers" accordingly, but never isolated them in the same way as did Christians.⁵ Hindus in the Himalaya region saw leprosy as the effect of severe transgressions in a past incarnation, and retribution for them would even extend to anyone who approached the leper. The Zande of the Upper Nile held leprosy to be the punishment for incest.⁶ Ancient Chinese traditions also asserted that leprosy was a visitation from Heaven, and it was usually seen as a venereal disease. Even in the twentieth century, some Chinese believed that leprous sufferers can "sell" their illness through sexual interaction with a healthy partner. Thus, by means of this procedure, sick individuals would have "less" of the disease themselves.⁷ If sufferers from leprosy died naturally from the

⁴ Brody, The Disease of the Soul, pp. 107-108.

⁵ Michael W. Dols, "The Leper in Medieval Islamic Society," Speculum, 1983, 58 (4):891-916, on pp. 895, 912.

⁶ R.I. Moore, The Formation of a Persecuting Society: Power and Deviance in Western Europe, 950-1250 (Oxford: Basil Blackwell, 1987), p. 61.

⁷ Olaf K. Skinsnes, "Leprosy in Society," International Journal of Leprosy, 1964, 35 (1):21-35, on p. 23.

disease, the Chinese believed that the affliction would pass on to other members of the family.⁸

There are many references to “lepers” and “leprosy” in the Old and New Testaments, typically establishing the correlation of the disease and transgression, but it is the Book of Leviticus which gives a detailed description of leprosy and the rituals to handle it. According to Leviticus,

"the leper in whom the plague is, his clothes shall be rent, and his head bare, and he shall put a covering upon his upper lip, and shall cry, Unclean, unclean. All the days wherein the plague shall be in him he shall be defiled; he is unclean: he shall dwell alone, without the camp shall his habitation be."⁹

Lepers remained outside the camp for at least seven days, until they were recognized by a priest and declared ready for the ritual of purification. The priest transferred the pollution to a bird which was then taken out of the camp and liberated. After seven days, lepers were expected to shave and to wash their body and clothes. On the eighth day, the priest should present himself at the entrance of the temple, accompanied with the lepers to be purified. The lepers were supposed to bring lambs in good condition, flour and oil to offer before the Lord. This sacrifice would remove the lepers' impurity, and the priest could declare them clean.¹⁰

Some historians have taken this mandatory ritual of separation and cleansing as an

⁸ Patrick Feeny, The Fight Against Leprosy (New York: American Leprosy Mission), p. 20.

⁹ Leviticus 13:45-46. Note the use of the singular (and masculine) "leper" in these ordinances and the ones that come from medieval times, corroborating what Herzlich and Pierret wrote about leprosy compared with plague: the image of leprosy is that of a disease which attacks an individual, while plague is consistently portrayed as a collective scourge. See: Claudine Herzlich and Janine Pierret, Illness and Self in Society (Baltimore: The Johns Hopkins University Press, 1987), p. 7.

¹⁰ Leviticus 14:11; Brody, The Disease of the Soul, pp. 111-112.

early example of public health policy to protect the population from contagion.¹¹ They have understood this ceremony as an instance of rational epidemiology: "The system for controlling 'leprosy,' however, involving differential diagnosis, isolation, quarantine and disinfection, remains the most brilliant application of rational epidemiology of ancient times and was a controlling influence in public health practice down to modern days".¹² Interpreting these rituals just in our own medical terms results in anachronism, and projection into the past of contemporary ideas of contagion. Rather than a public health treatise, Leviticus is a collection of laws about sacrificial ceremonies, the location of priests, cleanness and uncleanness, and diverse rituals and obligations. The opposing conditions of "clean" and "unclean" which refer to situations of purity and impurity, holiness and unholiness are the key to understanding its content.¹³ Most of Leviticus describes the requirements for things to be offered in sacrifice and the way for humans to clothe and behave in the temple. The idea of perfection alludes to holiness in the sense of wholeness and completeness. This is why the animals for sacrifice must be without defect, women must be purified after childbirth, and lepers should be separated and ritually bathed in order to enter the tabernacle. Scholars nowadays take the abominations of Leviticus as a whole, interpreting them as concerning systems of classifications and religious defilement, and not necessarily relating to disease.¹⁴ As the historian of medicine Owsei Temkin pointed out, there is no need to deny an empirical insight of Leviticus in terms of washing and bathing to

¹¹ George Rosen, A History of Public Health Expanded edition (Baltimore: The Johns Hopkins University Press, 1958/1993), on pp. 39-40.

¹² Charles-Edward Amory Winslow, The Conquest of Epidemic Disease: A Chapter in the History of Ideas (Madison, WI: The University of Wisconsin Press, 1943/1980), on p. 80.

¹³ Brody, The Disease of the Soul, p. 108.

¹⁴ Mary Douglas, Purity and Danger: An Analysis of Concepts of Pollution and Taboo (New York: Frederick A. Praeger, 1966), p. 51; Moore, The Formation of a Persecuting Society, p. 62.

avoid contamination, but "the guiding thought was that of a ritualistic religious taboo."¹⁵

The Legacy of the Middle Ages

Nonetheless, the long historical influence of the Bible, and a series of interpretations of the original Hebrew concepts made possible what the historian Peter Richards has called the "deep confusion upon which the Church based its attitude towards leprosy" in the Middle Ages.¹⁶ The Hebrew word used in the Bible *tsara'ath* has the connotation of "smitten of God." Presently, it has been interpreted as a generic term that refers to general pollution. As stated in Leviticus, *tsara'ath* can affect leather, walls, and cloth, as well as the human skin. This Hebrew word was translated into Greek as *lepra* (which was scabies) whose etymological source is the term *lepos* or "scale." Greek authors such as Aretaeus of Cappadocia (ca. A.D. 150) and Rufus of Ephesus (ca. A.D. 100) described a disease similar to what we call today leprosy (Hansen's disease). They called it *elephantiasis* due to the elephantine appearance of the face deformed by excessive nodulation in advanced stages of the disease.¹⁷ However, the term "lepra" was popularly used in various ways. For instance, Sir William Mac Arthur, who studied medieval leprosy in the British isles, found that the Scottish referred to bubonic plague as "lepra." He also discovered that some writers used the name "leprosy" in a similar manner as they employed the word "plagues," and that several authors alluded to mange in animals and disease in crops as "leprosy." Furthermore, according to him, at least one document mentioned "the leprosy that is called smallpox."¹⁸

¹⁵ Owsei Temkin, "An Historical Analysis of the Concept of Infection," The Double Face of Janus and Other Essays in the History of Medicine (Baltimore: The Johns Hopkins University Press, 1977), pp. 456-471, on p. 458.

¹⁶ Peter Richards, The Medieval Leper and His Northern Heirs (Cambridge: D.S. Brewer, 1977), p. 8.

¹⁷ Robert G. Cochrane, Biblical Leprosy: A Suggested Interpretation (London: The Tyndale Press, 1961), p. 3; Stanley G. Browne, "Some Aspects of the History of Leprosy: The Leprosy of Yesterday," Proceedings of the Royal Society of Medicine, 1975, 68 (8):485-93, on p. 486; Richards, The Medieval Leper, p. 9.

¹⁸ Sir William Mac Arthur, "Mediaeval 'Leprosy' in the British Isles," Leprosy Review, 1953, 24 (8):8-19.

A series of translations, first from Hebrew to Greek, and then from Greek to Latin were responsible for the philological association of leprosy with the condition described in Leviticus. Physicians and scholars in Western Europe first learned about Greek medicine and science in Arabic versions. An Arabic school of medicine flourished around the tenth century, in Damascus, Cairo, and Baghdad, first by interpreting Greek medicine and then by developing its own classical literature. Latin became the language of medical texts after approximately A.D. 500. A second center of Arabic medicine prospered in the Arab domains of Spain, with most of its physicians being Jews, between the eleventh and the twelfth centuries. Salerno (Italy), the first famous medical center of the Middle Ages, received this Arabic intellectual influence. Constantinus Africanus (ca. 1020-1087), who worked at Salerno, was a commentator of Arabian physicians, and translator of classical works from Arabic. He translated *elephantiasis* into Latin as *lepra*, considering that Arabian physicians already used the term *elephantiasis* to describe a different illness--*filariasis* (*das fil* in Arabic). This disease, which is caused by a filarial worm transmitted by mosquitoes, is still known today as *elephantiasis Arabum* because limbs grossly swollen and wrinkled by the disease resemble elephant's legs.¹⁹ A different Arabic word, *judham*, described *elephantiasis Graecorum*.²⁰ *Judham* was the expression translated by Constantinus Africanus into Latin as *lepra*. Therefore, Greek *elephantiasis* was confused with the Levitical concept of impurity, and acquired all the religious connotations of moral defilement described by the Hebrew word *tsara'ath*.²¹

Ecclesiastical and Medical Traditions of Leprosy

Later commentators of the Old Testament, Jewish and Christians independently, elaborated

¹⁹ Erwin H. Ackerknecht, History and Geography of the Most Important Diseases (New York: Hafner Publishing C, 1965), pp. 110-2.

²⁰ Dols, "The Leper in Medieval Islamic Society," p. 893.

²¹ Erwin H. Ackerknecht, A Short History of Medicine, Revised edition (Baltimore: The Johns Hopkins University Press, 1955/1982), pp. 82-85.

the notion of leprosy as a consequence of sin. For example, the belief that a leprous child will be born of a woman that had sexual intercourse during her menstrual period, found in one of the earliest Hebrew interpretations of the Old Testament, was common among medieval Christian authors such as the physician Bartholomeus Angelicus (ca. 1225). By the medieval period, the leper as the symbol of immorality was a token definitely established, and leprosy began to hold a special place in medieval society. As Brody points out, leprosy "was a disease of the soul as well as the body." Some of the Fathers of the Christian Church related specific sins to specific diseases. Leprosy was correlated with envy, hypocrisy, lust, malice, pride, simony, slander, among other vices. More generally, leprosy was the sign of general ethical decay, the genuine symbol of sinfulness. The patristic interpretations of leprosy had no doubt a strong influence on the popular image of leprosy as a consequence of iniquity.²²

In particular, the analogy between heresy and leprosy became one of the most powerful images in medieval literature: Leprosy symbolized false doctrine; the leper became an allegory of the heretic, and the heretic was seen as a "moral leper." Heresy was also an "infectious disease," but like leprosy, a disease of the soul: through their infected breath, the sick (the heretics), infested the atmosphere, and heresy spread. However, leprosy was considered even more dangerous when it was communicated as a *virus*, through the seminal fluid. Lepers and heretics were characterized as filthy, with staring eyes and hoarse voice.²³

There was also an old and venerable medical tradition that connected leprosy with lust: Aretaeus indicated that *elephantiasis* was called sometimes *satyriasis* "from the redness of the cheeks, and the irresistible and shameless impulse *ad coitum*."²⁴ Aëtius of Amida (ca. 550) asserted that individuals suffering from *elephantiasis* experienced strong

²² Brody, The Disease of the Soul, pp. 107, 114-120.

²³ Ibid., pp. 124-135; Moore, The Formation of a Persecuting Society, pp. 62-65.

²⁴ Quoted by Brody, The Disease of the Soul, p. 53.

sexual desires. Medieval physicians also classified leprosy as a venereal disease, and described lepers in subjective terms, such as "angry," "evil," "afraid in sleep," "many burn with desire for coitus," "schemers and deceivers," and "furious."²⁵ Roger of Salerno (ca. 1170) stated that leprosy was contracted by coitus. Theodoric of Cervia (1205-1298) author of an extensive treatise on leprosy with descriptions of the transient lesions at early stages and the characteristic numbness, explained that "A person becomes infected, also, from coitus with anyone suffering from lepra, sometimes after coitus calidi and sometimes after coitus frigidi."²⁶ The myth that identified leprosy with sexual depravity was not only Christian or Jewish. The supposed first historically identified mention of leprosy is found in one of the three great classics of Brahmanic medicine, the *Sushruta Samhita* (ca. 600 BC) which described a disease in which there is loss of sensation, deformity of limbs, ulceration, falling of the fingers, and sinking of the nose. The author also pictured the illness as a punishment for unchastity.²⁷

This cultural and historical legacy illustrates how leprosy became associated with syphilis in the medical tradition of Western Europe at the end of the fifteenth century. Paracelsus (1493-1541) wrote that syphilis originated from the combination of leprosy and "bubas" (a medieval name for venereal infection) "in the same manner as from coition of a

²⁵ Ibid., pp. 51-52.

²⁶ Ibid., p. 54.

²⁷ Keith Manchester, "Leprosy: The Origin and Development of the Disease in Antiquity," Maladie et Maladies: Histoire et Conceptualisation. Mélanges en l'honneur de Mirko Grmek ed. by Danielle Gourevitch (Genève: Librairie Droz S.A., 1992), 31-49, on p. 38; on the medieval concept of leprosy as a venereal disease, see: J.R. Whitwell, Syphilis in Earlier Days (London: H.K. Lewis, 1940), pp. 16-27. Stephen R. Ell argued that although the connection of leprosy and enhanced eroticism is entirely wrong from a modern point of view, some medical features of the immune status and endocrine function of leprosy patients can account for these medieval descriptions. I believe Ell's interpretation is a typical example of "realism" in the understanding of leprosy. For him, leprosy is a natural entity whose history and symptoms can be traced to the past. I will refer again to "realist" interpretations of leprosy. See: Stephen R. Ell, "Blood and Sexuality in Medieval Leprosy," Janus: Revue Internationale de l'Histoire des Sciences, de Médecine et de la Technique, 1984, 71:153-164, on pp. 158-61.

horse and ass the race of mules is produced."²⁸ Juan Almenar of Spain, author of a treatise on syphilis, advised in 1502 that a highly contagious disease called leprosy was the result of kissing and sexual intercourse. On the other hand, Girolamo Fracastoro (1478-1553) believed that *elephantiasis* and leprosy were the same disease, and they were different than syphilis. According to him, his contemporaries confused Greek leprosy (scabies) with true leprosy, and *elephantiasis* with syphilis. However, Fracastoro, emulating the tradition, described violent sexual excitement as one of the symptoms of leprosy.²⁹

The academic medicine of the Middle Ages, rooted in the Hippocratic and Galenic heritage, was closely interwoven with Christian practices of healing. Physicians customarily viewed confession as the first step conducive to curing, and sometimes the obligation of confession was incorporated in the ordinances of colleges of physicians. Both legacies, sacred and profane, were unified in their battle against superstition, magic, and witchcraft in the practice of medicine. Interpretations of sicknesses on grounds of God's punishment, proclaimed by the Church, and theories of disease based on natural causes, advocated by the Hippocratic-Galenic tradition, were harmonized by doctrines of primary and secondary causation.³⁰ Accordingly, medieval doctors attributed leprosy to a varied series of causes, besides transgression: keeping company with lepers, the bite of a poisonous worm, contaminated wine, rotten or highly spiced meats, meats that easily rot, infected and corrupt air, the conception of a child during the menses, the infection of a child from father or mother, among others. Some of these ideas, including the connection between leprosy and lust, reappeared in the nineteenth and early twentieth centuries.³¹

²⁸ Quoted by Brody, The Disease of the Soul, pp. 56-57.

²⁹ Ibid., pp. 54-57; Browne, "Some Aspects of the History of Leprosy," p. 491; on the confusion between leprosy and syphilis, see also Esmond R. Long, "Leprosy in Historical Perspective," International Journal of Leprosy, 1964, 32 (4):424-27.

³⁰ Richard Palmer, "The Church, Leprosy and Plague in Medieval and Early Modern Europe," The Church and Healing ed. by W.J. Sheils (Oxford: Basil Blackwell, 1982), pp. 79-99. on pp. 85-91.

³¹ Brody, The Disease of the Soul, p. 55.

Medieval Ambivalence

The situation of so-called lepers in medieval society was nonetheless ambiguous and contradictory. One of the salient features of medieval culture was that it oscillated between extremes. The greatest repulsion was usually attached to outstanding actions of love and devotion. This was the meaning of the practice of kissing lepers and cleaning their lacerations that noble men and women occasionally performed as acts of intense piety and charity. Lepers were subject to vexations, persecution, and segregation, as it is documented in medieval sources, but at the same time, they were exalted, and even envied, as chosen by God for salvation.³² Leprosy was sometimes called "the sacred malady,"³³ and according to the Scriptures, lepers were granted direct access to heaven without passing through purgatory since they were already punished on earth for their sins.³⁴

Leprosy was called *morbis Sancti Lazari*, and lepers were labeled "lazars," names derived from Saint Lazarus who represented two different biblical characters: Lazarus, the beggar covered with sores that lay at the rich man's gate, and Lazarus of Bethany whom Jesus resurrected from the dead, in an allegory of the promise of paradise for lepers. Several references in the New Testament to Jesus curing lepers symbolized how the soul tainted by sins was cleansed through baptism. These narratives reveal the paradoxical attitudes of medieval society regarding leprosy.³⁵ Another instance of medieval ambivalence towards lepers was their expulsion from the city of Constantinople by the

³² Johan Goudsblom, "Public Health and the Civilizing Process," The Milbank Quarterly, 1986, 64 (2):161-88, on p. 167; Moore, The Formation of a Persecuting Society p. 61; Richards, The Medieval Leper, p. 78.

³³ I have found no indication that this term is in any way related to the Hippocratic "sacred disease" which referred to epilepsy. See: G.E.R. Lloyd, (ed.) "The Sacred Disease," Hippocratic Writings (London: Penguin, 1978), pp. 237-251.

³⁴ Brody, The Disease of the Soul, pp. 100-103; Browne, "Some Aspects of the History of Leprosy," p. 488.

³⁵ Brody, The Disease of the Soul, pp. 122-123; Richards, The Medieval Leper, p. 8; see also: Darrel W. Amundsen, Medicine, Society, and Faith in the Ancient and Medieval Worlds (Baltimore: The Johns Hopkins University Press, 1996), p. 344.

emperor Constantine (ca. 382). One of Constantine's officials, named Zoticos, protected the lepers instead, after which he was punished by being dragged down and shattered by mules. The emperor later regretted having ordered such extreme measures, and built a permanent leprosarium, consecrated to the memory of Zoticos, where the official had previously sheltered the sick.³⁶

Segregation: The Fate of Lepers

From the current body of knowledge about medieval society it is impossible to ascertain when segregation of lepers actually started. The Councils of Orléans (549) and Lyon (585) took basically a charitable position on leprosy by ordering that bishops must protect lepers and give them food and clothing. The first identified mandate ordering the seclusion of lepers was a decree by Rothari, king of the Lombards, in 635:

"If anyone is afflicted with leprosy and the truth of the matter is recognized by the judge or by the people and the leper is expelled from the *civitas* or from the house so that he lives alone, he shall not have the right to alienate his property or to give it to anyone because on the day that he is expelled from the home it is as if he had died. Nevertheless while he lives he should be nourished on the income from that which remains."³⁷

It seems that the practice of isolation was not generalized by the eleventh century, although it had become routine by the early twelfth century. The decree of the Third Lateran Council, issued by Pope Alexander III in 1179, prohibited leprous people from associating with the healthy, from sharing their church, and from being buried with them; it declared special ceremonies for the seclusion of lepers analogous to those described in Leviticus. Although the domination of one Church imposed uniformity on the attitudes and laws towards lepers throughout medieval Europe, the rigor with which they were enforced

³⁶ Michel Mollat, Les Pauvres au Moyen Age (Paris: Hachette, 1978), p. 26.

³⁷ Quoted by Moore, The Formation of a Persecuting Society, p. 48.

was varied. The ritual was very similar to the office for the dead--its crucial meaning was to remove the leper from the world. In some places like Amiens and Christian Spain, lepers were required to descend to a grave in a cemetery with their face covered by a black veil, simulating an inhumation, while the mass was said.³⁸ The priest would throw a spadeful of earth from the cemetery on the head of the leper three times, declaring that the ritual symbolized the death of the leper to the world. Then, the priest, using vernacular language, would read the interdictions against entering church, market, mill, bakery, or tavern; lepers were forbidden to drink from the public fountains, eat with others, and touch anything with their bare hands, but their own belongings; if they stopped to talk to someone on the road they must stand downwind, and they must abstain from getting into narrow lanes to prevent others from contracting the affliction (see the epigraph of this chapter). Sometimes the rites were omitted, and even more brutal procedures, like tying lepers to a post and setting them afire, or taking them to the cemetery and burying them alive, were applied.³⁹ After the ceremony lepers were no longer part of the living, and it was assumed that they would wear special costumes, gloves, and a clapper or a bell to warn others of their presence. In some places such as Reims, the priest would counsel lepers to be patient. The cleric also would comfort lepers by reassuring them that separation was only corporeal. Because they remained part of the Church, people of means would provide for their small needs. As Michel Foucault has pointed out, this social exclusion offered lepers a new form of communion, of spiritual reintegration.⁴⁰

Wealthy lepers had the choice of entering institutions other than leprosaria, or being secluded in their own home or in the countryside. But most lepers were poor, so they were coerced into joining the leper houses that were located outside cities and towns. The period

³⁸ Félix Contreras Dueñas and Ramón Miquel y Suárez Inclán. Historia de la lepra en España (Madrid: Gráficas Hergon, 1973), pp. 33.

³⁹ Richards, The Medieval Leper, pp. 50-51; Brody, The Disease of the Soul, pp. 64-69; see also: Feeny, The Fight Against Leprosy, pp. 29-30.

⁴⁰ Michel Foucault, Madness and Civilization (New York: Random House, 1961/1965), p. 7.

when segregation of lepers became mandatory, by the early twelfth century, was also the time of rapid expansion of urban life. The *civitas*, defined as a self-sufficient community, was characterized by *politia* (order) and by market activities. Urban population in medieval cities increased significantly, and with them commercial and business enterprises, civic liberties, and a peculiar urban life style emerged which will be later called "civilization."⁴¹ Therefore, excluding lepers and setting them apart from the community clearly defined them as different. In Spain, for example, the rich leper went to a leper hospital, but the poor was segregated in a hut located outside urban areas. An alms box placed nearby indicated to travelers the presence of the leper and the need for Christian charity.⁴²

According to the Third Lateran Council asylums should have their own chapel, cemetery, and priest. The Church was usually in charge of leper houses, but sometimes it appointed lay headmasters to administer them. According to the peculiar ambiguity of medieval society, leper institutions were like quasi-religious orders, and the inhabitants were required to take the vows of poverty, chastity, and obedience, and to wear the religious habit. Rather than a warning sign of infection, the dress was the mark of the outcast, the sign of uncleanness, corruption, and contempt. Lepers who refused to observe the religious obligations were excluded. Regulations at the leper hospitals were strict: men and women were separated, and fornication, drinking, gambling, and chess were forbidden. There were several punishments for breaking the leprosarium rules, but the most severe sanction was expulsion. This punishment suggests that prevention of infection was hardly the main purpose of seclusion. The detailed ordinances of early medieval hospitals show concern with improving souls and caring for those who could not support themselves, rather than with containing the spread of infection, or healing bodies. Given the severity of the laws,

⁴¹ Hans-Werner Goetz, Life in the Middle Ages from the Seventh to the Thirteenth Century (Notre Dame, IN: University of Notre Dame Press, 1993), pp. 233-236; on the concept of *civitas*, see: David Luscombe, "City and Politics before the Coming of the *Politics*: Some Illustrations," Church and City: 1000-1500 Essays in Honour of Christopher Brooke (Cambridge: Cambridge University Press, 1992), pp. 41-55.

⁴² Contreras Dueñas and Miquel y Suarez Inclán, Historia de la lepra en España, p. 33.

and the deprivation of all their rights--although it is also true that they were not applied with the same rigor everywhere--the best option for "lepers" was to join the leprosarium. At least there they had a shelter to be protected from the abuses and humiliations resulting from the terror that people displayed at the sight of a leper.⁴³

Declaring lepers dead for the world, as stated in Rothari's law of 635, had an immediate legal implication: from the day of their separation from society they lost all right to property, to inherit goods, or to make gifts or contracts. In some cases, a person would be placed in a leper hospital so that the *seigneur* could obtain benefit or revenge.⁴⁴ Admission into the asylum involved a payment. Lepers were required to turn their fortune, or a portion of it in case they had families, over to the leprosarium otherwise they would be excommunicated. Leper institutions were also supported by gifts, tolls, and taxes, although their resources originated primarily from endowments. Consequently, leprosarua became affluent institutions, and their prosperity provoked acts of persecution. Philip V accused lepers (and Jews) of having poisoned the wells of France in 1321, and launched a zealous persecution against them. After tormenting and incinerating hundreds of lepers, he usurped the gains of the leper houses.⁴⁵ The story of the supposed lepers' conspiracy spread rapidly, and in several Spanish domains lepers were also arrested and executed.⁴⁶

⁴³ Richards, The Medieval Leper, pp. 53-55; Brody, The Disease of the Soul, p. 86; Moore, The Formation of a Persecuting Society, pp. 61, 79; Browne, "Leprosy: The Christian Attitude," p. 489; Palmer, "The Church, Leprosy and Plague," pp. 80-82; see also: Pierre Delaveau, "Lèpre du corps et lèpre de l'âme: recherches thérapeutiques anciennes," Revue d'Histoire de la Pharmacie, 1974, 22 (222):155-169.

⁴⁴ Contreras Dueñas and Miquel y Suarez Inclán mention at least one instance from late fifteenth-century Spain of a judicial decision whereby three individuals were compelled to return to a cleric the goods they had taken from him on the basis that the latter was affected by leprosy; according to the judge, several doctors examined the priest, and he showed no signs of "Saint-Lazarus malady." See: Contreras Dueñas and Miquel y Suarez Inclán, Historia de la lepra en España, p. 88.

⁴⁵ Richards, The Medieval Leper, p. 33; Charles A. Mercier, Leper Houses and Mediaeval Hospitals, (London: Lewis, 1915), p. 17.

⁴⁶ Michael R. McVaugh, Medicine Before the Plague: Practitioners and their Patients in the Crown of Aragon, 1285-1345 (Cambridge: Cambridge University Press, 1993), p. 220.

Fear of Pollution

The ordinances to contain lepers promoted ideas already expressed by the Church and by physicians: lepers were physically and morally corrupt, and communication with them was dangerous. Examples of these laws were a royal mandate of Edward III in 1346 excluding lepers from London, and several decrees issued by the provost of Paris in the late fourteenth and early fifteenth centuries with the same purpose. They warned about the peril of contagion by their polluted breath, and asserted that lepers found pleasure in infecting others, especially by visiting prostitutes and other "secret places."⁴⁷

Some historians have interpreted this obvious fear of contamination in terms of notions of contagion elaborated by the germ theory of diseases in the late nineteenth century. They have treated these beliefs as prefigurations of scientific ideas developed later.⁴⁸ However, I interpret these public edicts and mandates as products of anxieties about social and moral pollution and religious defilement in the sense described by Mary Douglas.⁴⁹ They show fear of the poor and respect for social boundaries rather than interest in public health in the way that became common among nineteenth-century administrators. Motives for separation were essentially religious--taken from Leviticus. A concrete belief in the contagiousness of leprosy had no tangible meaning, even if people feared that they might become afflicted with the disease.⁵⁰

That this avoidance of defilement has a different meaning from the specific fear of contagion of infectious diseases is revealed by the special regard that these regulations showed for the purity of graves. According to the decree of the Third Lateran Council of

⁴⁷ Brody, *Ibid.*, pp. 96-98; Édouard Jeanselme, "Comment l'Europe, au Moyen Age se protégea contre la lèpre," *Bulletin de la Société Française d'Histoire de la Médecine*, 1930, 24 (11-12):1-155, on p. 18; also Édouard Jeanselme, *La Lèpre* (Paris: G. Doin, 1934).

⁴⁸ See for example, Rosen, *A History of Public Health*, pp. 41-42.

⁴⁹ Douglas, *Purity and Danger*, pp. 140-158.

⁵⁰ Charles Creighton, *A History of Epidemics in Britain* with additional material by D.E.C. Eversley et al. Vol. I (London: Frank Cass & Co., 1894/1965), p. 102.

1179, lepers should be buried apart, so that cemeteries would not be polluted. On the other hand, evidence suggests that lepers were not effectively and entirely isolated, they could obtain permission to leave the hospitals, and often being admitted to an asylum was a privilege. The prohibitions lepers were subjected to were revoked on certain special holy days when they could mix with others. Also the fact that devotees and aristocrats used to embrace lepers and wash their sores in those acts of pity that were characteristic of medieval culture, show no concern for hygiene and infection, and demonstrates that fear of contamination was essentially ritualistic. That apprehension for contagion was not prevalent is reflected in the fact that non-leprous people, often old and rich, sought refuge in leper hospitals.⁵¹

The dilemma of attributing meaning to medieval notions of contagion has been elucidated by Temkin. Although all ailments could be conceived in terms of God's retribution, there existed a classification of diseases into clean and unclean. Unclean illnesses, among them leprosy, gonorrhea, plague and epilepsy, were essentially "infectious" and bore a religious stigma.⁵² The differentiation between infection and contagion was explained by Fracastoro in the sixteenth century. As summarized by Temkin,

"contagious diseases spread by transfer of imperceptible particles (*seminaria*) from an infected body to another by direct contact, via an intermediate object (*fomes*), or at a distance. While infection can originate in a sick body spontaneously, contagion accounts for the transmittal of the same disease to other bodies. Infection, primary as well as induced, is a form of putrescence."⁵³

Leprosy, then, as general decay fit quite well into the category of infectious disease.

⁵¹ Richards, *The Medieval Leper*, pp. 33, 49, 96; Goudsblom, "Public Health and the Civilizing Process," pp. 166-167.

⁵² Temkin, "An Historical Analysis of the Concept of Infection," p. 459-460.

⁵³ *Ibid.*, p. 463.

European Leprosy: An Epidemic

At the beginning of the twelfth century sources reveal increasing concern toward “lepers.” Laws and decrees expressed intensified fears for the possibility of infection caused by the growth of the number of lepers in cities and towns. From the eleventh to the thirteenth centuries, numerous hospitals and leper houses were founded all over Western Europe. In Christian Spain, however, the first leper hospital had been founded in the ninth century, but the peak was reached later; most leper hospitals were founded between the twelfth and the sixteenth centuries.⁵⁴ Some authors have interpreted these foundations as an indicator of a recrudescence of the disease called “leprosy” in that period. However, as the historian Peter Richards noticed, the movement for the creation of leprosaria cannot be taken as a dependable indication that “leprosy” was increasing, although it provides an evidence that it was widespread.⁵⁵ There is the possibility that some of these establishments as they appeared in the chronicles were just the first mention of hospitals already existent. On the other hand, the size of the institutions varied. Some, like Harbledown in Britain with one hundred lepers, were important asylums lodging many leprous people, besides clerical and secular assistants, while some others, like St. Giles' leper hospital at Norwich accommodated a master, eight chaplains, two clerks in holy orders, seven choristers, two sisters, and just eight lepers. It became a conventional routine at this time to erect a chantry chapel with an annex for lepers. The explicit motives for setting up these shelters were, as stated in the preambles of the charters of donations, basically charitable. Benefactors traded charity for prayers. However, this immense altruistic enterprise should not hide the fact that the hostility to lepers and the belief that they should be separated seriously increased

⁵⁴ By the contrary, Muslims in Spain did not segregate lepers. See: Contreras Dueñas and Miquel y Suarez Inclán, Historia de la lepra en España pp. 38, 51-56; and Dols, "The Leper in Medieval Islamic Society," p. 907.

⁵⁵ Richards, The Medieval Leper, pp. 11-12. See also: Martha Carlin, "Medieval English hospitals," The Hospital in History ed. by Lindsay Granshaw and Roy Porter (London: Routledge, 1989), pp. 21-39, on pp. 21-23.

between the eleventh and the thirteenth centuries.⁵⁶

The supposed increase in the incidence of the disease after the eleventh century is usually seen as a result of the intensification of contact with the middle east that came with the Crusades, but this influence cannot be verified from documentary sources.⁵⁷ Doubtless, the decree of the Third Lateran Council in 1179 prompted the move for the organization of asylums for lepers at the time. The historian R.I. Moore has interpreted this animosity against leprosy as part of the general persecution of a variety of social groups in a period of great social, economical, cultural and political transformations that was crucial in Western European history. Lepers together with heretics, Jews, but also prostitutes and sodomites, were defined as the enemy, and became the targets of subjugation of what Moore called the "persecuting society." According to this author, these were not pre-existing and objectively identified groups, but aspects of a complex process of social reclassification. Leprosy sufferers were socially and culturally redefined in the category "lepers," as the object of a new fear and disgust. Persecution was the "dark underside of the revival of the twelfth century" and it was inherent to it.⁵⁸ Nevertheless, it also played a more constructive role which was to contribute to the formation of new governmental techniques for the church and the state. Accordingly, by excluding some individuals as perverted, it strengthened the unity of the rest, and particularly, the solidarity of those who directed the subjugation. The formation of the European persecuting society was also related to the emergence of a bureaucracy specialized in the profession of government, and the advent of the theorists of persecution.⁵⁹

⁵⁶ Moore, The Formation of a Persecuting Society, pp. 53-57; Manchester, "Leprosy: The Origin and Development of the Disease," p. 43.

⁵⁷ Moore, Ibid., p. 49; Manchester, Ibid., pp. 44-45.

⁵⁸ Moore, , p. 140.

⁵⁹ Ibid., pp. 98, 136-140. In some places, like the canton of Vaud in Switzerland, active exclusion against lepers started later. Piera Borradori locates very precisely this moment of "crisis"--in the summer of 1321, when lepers abandoned their place as "marginiaux apprivoisés," to become in people's imagination a danger to be fought. See: Piera Borradori, "Histoires d'exclusion et de

After approximately 1250, the donations to create leper houses and hospitals diminished--there were more vacant places in asylums than lepers to fill them--and by the sixteenth century, presumably, the number of lepers had declined dramatically. Leprosy was a rarity in Britain by the fifteenth century, and unusual by the sixteenth century in France and Italy. In Denmark, the mid-sixteenth century leper hospitals were transferred to the administration of general hospitals for their use. The same pattern is found in the south of Sweden.⁶⁰ By contrast, in the north of Sweden as well as in Norway and Finland, leprosy was still increasing in the early nineteenth century. After the sixteenth century, the newly founded European states took control and reorganized the immense fortune represented by the endowments of leper houses. The wealth of leprosaria was given to general hospitals or to hospitals of incurable people. This fall in the foundation of leper institutions has been taken as an indication of the definitive decline of leprosy in Europe. Foucault pointed out that leprosaria were turned into the madhouses, prisons, and poor houses of early modern Europe, modeling their statutes on the ordinances and restrictions designed for lepers some centuries before.⁶¹

Hansen's Disease? The Palaeopathological Response

Most students of the history of leprosy in ancient and medieval times have tried to establish if medieval leprosy was indeed Hansen's disease. Thus, paleopathology constitutes an

solidarité: La lèpre au Pays de Vaud," Revue Médicale de la Suisse Romande, 1992, 112:1025-1033, on p. 1025.

⁶⁰ For instance, Edward III king of England ordered an inquiry into the leper hospital of Ripon in 1342 and found no one there; the leprosarium of Saint Albans (England) accommodated only three lepers in 1348, and Sherburn hospital in England built to accommodate 65 inmates, lodged just two in 1434, and housed no lepers by 1552; other examples like these multiply. Richards, The Medieval Leper, pp. 83-86; Michel Foucault, Madness and Civilization (New York: Random House, 1961/1965), p. 5; Moore, The Formation of a Persecuting Society, p. 51.

⁶¹ Foucault, Madness and Civilization, pp. 3-7; Miri Rubin, "Development and change in English hospitals, 1100-1500," The Hospital in History, pp. 41-59, on 44-45; Moore, The Formation of a Persecuting Society, p. 106; Richards, The Medieval Leper, pp. 86-89.

important research tradition among historians of leprosy. This approach to the problem indicates a “realist”⁶² position about the disease which takes leprosy as a natural entity whose symptoms and characteristics are the same throughout history. However, these historians encounter an almost complete lack of archaeological evidence. According to them, hypotheses about the epidemiology of leprosy at that time are mostly grounded on literary or artistic sources whose reliability is limited. By means of palaeopathological research, they consider possible to achieve a more reliable indication of the existence of lepromatous leprosy that produces characteristic bone erosion in hands and feet, and specific leprosy changes in the skull. These transformations are atrophy of the anterior nasal spine and/or atrophy of the central part of the alveolar margin of the maxillary bone, producing loss of the upper incisor teeth.⁶³

From this point of view, the earliest identified skeletal evidence of leprosy came from the Dakhleh Oasis, Egypt. Four skeletons out of seventy one excavated from a second-century-BC graveyard presented what is considered rhinomaxillary changes of leprosy. Before that time, there are no archaeological or Egyptian literary references to “leprosy.”⁶⁴ The earliest cases of this disease in Asia were four leprosy skeletons found in Byzantine monasteries of the Judean Desert from the fifth century. Palaeopathologists detected the typical bone erosion of leprosy on the feet and lower legs of a Romano-British

⁶² On the debate between “realism” and “anti-realism” in the philosophy of science, and in social studies of science and technology, see: Ian Hacking, Representing and Intervening: Introductory Topics in the Philosophy of Natural Science (Cambridge: Cambridge University Press, 1983), and Andrew Pickering (ed.) Science as Practice and Culture (Chicago: The University of Chicago Press, 1992).

⁶³ Comparing contemporary osseous changes in leprosy patients and archaeological leprosy findings, palaeopathologists work under the assumption that there has been no variation of the pathological response to *M. leprae* in the past two millennia. See: Manchester, “Leprosy: The Origin and Development of the Disease,” p. 35; Vilhelm Moller-Christensen, Leprosy Changes of the Skull (Odense: Odense University Press, 1978), 133-135; and of the same author: “Evidence of Leprosy in Earlier Peoples,” Diseases in Antiquity ed. by Don Brothwell and A.T. Sandison (Springfield, IL: Charles C. Thomas, 1967), pp. 295-306.

⁶⁴ See also Isidore Simon, “La lèpre a-t-elle existé en Égypte à l’époque biblique?” Histoire des sciences médicales, 1975, 9:9-21, who answered this question with the negative.

skeleton from the fourth century A.D., but because the skull was absent, they found that a diagnosis of leprosy was not irrefutable. On the other hand, a study of more than 18,000 skeletons showed signs of leprosy in some of the skeletons from the sixth century A.D. from Egypt, France, and Britain. Before that age the investigation revealed no palaeopathological evidence of this illness.⁶⁵ Archaeologists have described a few Anglo-Saxon samples from the sixth and the seventh centuries A.D. exhibiting leprosy changes. They have also identified leprosy remains from the seventh-century continental Europe in a Merovingian cemetery. The earliest examples of leprosy found in the Nordic countries were from the tenth century in Lund, Sweden, with one case from Hungary. However, from this fragmentary paleopathological evidence they found impossible to conclude anything in terms of prevalence of leprosy, other than reporting that although it existed in the ancient world and in the early Middle Ages, it was uncommon.⁶⁶

In addition, from the very period of the supposed "peak" of the leprosy epidemic which corresponds to the increased founding of leprosaria (eleventh to thirteenth centuries), there is virtually no archaeological "confirmation" of leprosy. The most impressive paleopathological verification of medieval leprosy came from a small cemetery of St. Jorgens leper hospital at Naestved (Denmark), where 155 skeletons out of 202 individuals were detected to be leprosy. Another excavation at the church of St. George's leper hospital also in Denmark resulted in all nine well conserved skeletons being leprosy. From these two instances, archaeologists imply that people segregated were actually affected by lepromatous leprosy, and that in some cases, medieval diagnosis of leprosy was not altogether mistaken. However, archaeological evidence from other European cemeteries

⁶⁵ The historian William H. McNeill suggests that leper hospitals established in Europe since the fourth century A.D. seem to be the effect of the christianization of the Roman empire with its adoption of Levitical precepts of ritual defilement, rather than an indication of the presence of leprosy. William H. McNeill, Plagues and Peoples (Garden City, NY: Anchor Press/Doubleday, 1976), pp. 144-45.

⁶⁶ Manchester, "Leprosy: The Origin and Development of the Disease," pp. 39-42; Moore, The Formation of a Persecuting Society, p. 47.

between the eleventh and the thirteenth centuries is either lacking or is too weak to be considered conclusive. Therefore, their only reasonable deduction is that their current knowledge is insufficient to evaluate how important the threat of leprosy was between the eleventh and thirteenth centuries.⁶⁷

Archaeological findings of ancient and medieval skeletons exhibiting what has been interpreted as signs of lepromatous leprosy, indicate the presence of *M. leprae* in ancient and medieval Europe, but not much more. Furthermore, the Latin word "lepra" evokes many diverse conditions: from the Biblical entity, a product of divine punishment whose segregation rituals were described in Leviticus, to the disease known today as "Hansen's disease." Medieval leprosy was certainly much more and much less than "Hansen's disease." It was more because it was often confused with syphilis and with other venereal and skin diseases; it was less because what we call Hansen's disease today includes types of leprosy that do not produce facial or bodily deformities, making it impossible to recognize by using Biblical and medieval criteria. The discussion about whether or not medieval leprosy was authentic Hansen's disease seems irrelevant to me. What I think is important is the legacy of that past: the persistence of certain conceptions and practices related to leprosy in some areas of the world, for example, in colonial New Granada (what today is called Colombia). Our understanding of diseases certainly must go beyond the biological existence of micro-organisms. Borrowing David Arnold's words referring to cholera, leprosy has in itself no meaning; it is only a disease produced by a micro-organism:

"It acquires meaning and significance from its human context, from the ways in which it infiltrates the lives of the people, from the reaction it provokes, and from the manner in which it gives expression to cultural and political values."⁶⁸

⁶⁷ Richards, The Medieval Leper, pp. 112-120; Moore, The Formation of a Persecuting Society, pp. 73-75.

⁶⁸ David Arnold, "Cholera and Colonialism in British India," Past and Present, 1986, (113):118-151, on. p. 151.

Palaeopathological research has also been complemented with attempts to determine the accuracy of earlier diagnosis of “leprosy.” According to Brody, scholarly medieval physicians identified *elephantiasis*, the erudite term for the disease. Theodoric of Cervia, for example, recognized some of its earliest symptoms at the stage of indeterminate leprosy—the loss of sensation at the nerve ends, and the emergence of lesions that rapidly cure again. However, this medieval doctor also contended that a reliable sign of leprosy occurred when three grains of salt dissolve immediately in a patient's blood. Guy de Chauliac (1300-1370), the personal physician of the Pope of Avignon, and one of the leading medical authorities, also enumerated a long and vague inventory of leprosy symptoms that doubtless led to the diagnosis of several other illnesses as leprosy. However, Brody concluded, even if medieval doctors actually differentiated *elephantiasis* from other conditions, the separation between the theory that was taught at the universities and the actual practice of medicine did not guarantee the “precision” of its diagnosis.⁶⁹ Indeed, the identification of leprosy was habitually carried out by juries composed by ecclesiastical or secular officials, which rarely included physicians. Medieval law required lepers to report themselves, but it was usually the neighbors who accused suspected individuals. Competent and honorable citizens, including a number of lepers, conducted the examinations. Frequently, gate porters, policemen, and monks acted as arbitrators.⁷⁰ Given this situation, it is obvious that sometimes charges of leprosy could occur when neighbors disapproved of certain conduct or when they felt threatened for some reason. During the fifteenth and sixteenth centuries, medical practitioners gradually replaced civilians, priests, and officials in identifying lepers, and by then the presumed epidemic was already over.⁷¹ However, according to historian

⁶⁹ Brody, *The Disease of the Soul*, pp. 34-40, 63-64.

⁷⁰ Moore, *The Formation of a Persecuting Society*, p. 78

⁷¹ Moore, *Ibid.*, pp. 77-79; Palmer, “The Church, Leprosy and Plague,” p. 81. Among the historians who argue strongly in favor of the accuracy of the diagnosis of leprosy in the Middle Ages are: Stephen R. Ell (“Blood and Sexuality,” pp. 153-154) who maintains that modern lepromatous leprosy was the disease described and isolated in leprosaria, Richards (*The Medieval Leper*, passim) who also claims that the ailment was correctly identified, and François-Olivier Touati

Michael R. McVaugh, in the Crown of Aragon (Spain) this “medicalization” started in the early fourteenth century.⁷² Historian Luke Demaitre has also suggested that learned physicians were concerned with the care of leprosy patients as early as the fourteenth century. This at least was the case with the famous physician Jordanus de Turre, a royal doctor and a professor at Montpellier, who wrote a treatise on the treatment of leprosy sometime between 1313 and 1320.⁷³ However, from the fact that physicians began to be in charge of the diagnosis of leprosy, does not follow that their diagnoses were “accurate” in modern terms. Moreover, from the point of view of the social/cultural responses to the disease called “leprosy,” the question of the precision of medieval diagnoses seems irrelevant.

Students of medieval leprosy have also proposed several theories to explain the alleged downfall of leprosy in Europe. Some of them are: loss of pathogenicity of *M. leprae* produced by antigenic shifting; effectiveness of isolation; dietary improvements; amelioration of housing, hygiene, and clothing; rising incidence of pulmonary tuberculosis; and aftermath of the Black Death (1348-50).⁷⁴ However, they found no evidence of antigenic shifting in the case of this disease, and no accurate indication that the living conditions were better at the time of its decline. Moreover, they argue that the policy of segregation was far from complete in the Middle Ages.⁷⁵ According to the hypothesis

("Facies leprosum: réflexions sur le diagnostic facial de la lèpre au Moyen Age," Histoire des Sciences Médicales, 1986, 20:57-66, on pp. 62-64) who contends that the role played by the examination of the face (*facies leprosum*) in the diagnosis of leprosy from the eleventh to the thirteenth centuries contributed to correct identification of cases. Although the emphasis on the face also implies that only the most spectacular ones by the deformation, those of lepromatous type, were recognized.

⁷² McVaugh, Medicine Before the Plague, pp. 218-225. See chapter 3.

⁷³ Luke Demaitre, "The Relevance of Futility: Jordanus de Turre (fl. 1313-1335) on the Treatment of Leprosy," Bulletin of the History of Medicine, 1996, 70 (1):25-61, on p. 53.

⁷⁴ McNeill, Plagues and Peoples, pp. 175-177; Richards, The Medieval Leper, p. 95.

⁷⁵ Manchester, "Leprosy: The Origin and Development of the Disease in Antiquity," p. 42; Browne, "Some Aspects of the History of Leprosy," p. 490.

about the rise of tuberculosis, medical historians refer to an immune-cross reaction between *Mycobacterium leprae* and *Mycobacterium tuberculosis* in a way that exposure to one of them provokes an increase in the resistance to the other. In such a competition, *M. tuberculosis* would have the advantage because of its greater mobility. Scholars have engaged in much discussion about this issue, and have recently pointed out the negative correlation between leprosy and tuberculosis, and leprosy and urbanization in Africa as an example of what could have happened in Europe.⁷⁶

Other historians argue that the Black Death probably contributed directly and indirectly both by killing lepers, and by reducing the total population including latent cases of leprosy.⁷⁷ According to Richards, leprosy people together with the poor were probably the first victims of the economic crisis that followed the plague since they were dependent on charity for their survival.⁷⁸ However, Brody notes that more than half a century after the plague there were still edicts against leprosy people like the one issued by Charles VI in 1413 which banned one more time the entrance of lepers into the city of Paris mentioning that "many leprosy men and women, infected with the disease of leprosy, each day are constantly going and coming in the said city."⁷⁹

There are other ways in which the Black Death and subsequent plague epidemics were historically tied to leprosy. The historian Michael Dols speculated that because plague was more obviously communicable than leprosy, it was probably after the attack of the Black Death that physicians attached increased importance to contagion in the sense of

⁷⁶ John M. Hunter, and Morris O. Thomas, "Hypothesis of Leprosy, Tuberculosis and Urbanization in Africa," Social Science and Medicine, 1984, 19 (1):27-57, on pp. 30-31.

⁷⁷ On the Black Death see Philip Ziegler, The Black Death (New York: Harper, 1969), and Brian Pullan, "Plague and perceptions of the poor in early modern Italy," Epidemics and Ideas: Essays on the historical perception of pestilence ed. by Terence Ranger and Paul Slack (Cambridge: Cambridge University Press, 1992) pp. 101-123. Richard Palmer, "The Church, Leprosy and Plague," does not address the issue of the vanishing of leprosy due to the plague.

⁷⁸ Richards, The Medieval Leper, p. 83.

⁷⁹ Cited in Brody, The Disease of the Soul, p. 100.

communicability from person to person.⁸⁰ On the other hand, the medieval leper hospitals, called Saint Lazarus's hospitals, became in Italy plague hospitals or *lazaretti*. Often the administrative boards in charge of leper institutions became committees to deal with the plague menace. These boards of health created in the Italian cities from the fourteenth century on spread in the following centuries to England, Russia, and other European regions, and became the models of sanitary councils and quarantines.⁸¹ It is interesting to note that even if leprosy disappeared from most of western Europe, the archetype of the leper house remained in a modified version.

For students of medieval leprosy none of the theories proposed to explain its epidemiology seem to be definitive. They conclude that conceivably all of the possible causes combined to produce the postulated decrease.⁸² Nonetheless, what was called leprosy did not vanish from Europe--as has been restated again and again. It certainly decreased in most of Western Europe, but it remained endemic in areas of Scandinavia, Russia, and southern Europe well into the eighteenth and nineteenth centuries.⁸³ What definitely faded by the end of the fifteenth and the sixteenth century in most of Western Europe was the network of institutions and practices that made of leprosy a loathsome disease tainted by opprobrium and disgrace. Certainly, plague epidemics became more important threats to be faced, and medical practices became more secularized as the role played by the church in healing diminished significantly.⁸⁴

In conclusion, the name of "leprosy" has lasted since the time of the Biblical

⁸⁰ Dols, "The Leper in Medieval Islamic Society," p. 912.

⁸¹ Palmer, "The Church and Healing," p. 80; Paul Slack, "Introduction," *Epidemics and Ideas*, pp. 1-20, on p. 15-19.

⁸² See Hunter and Thomas, "Hypothesis of Leprosy and Urbanization in Africa," p. 31.

⁸³ McNeill, *Plagues and Peoples*, p. 175.

⁸⁴ On the secularization of medicine in the late medieval period, see: Charles Webster, "Paracelsus Confronts the Saints: Miracles, Healing and the Secularization of Magic," *Social History of Medicine*, 1995, 8 (3): 403-421.

translations, and the Middle Ages made of this disease the epitome of physical and moral decay. Beyond the discussion as to whether or not ancient/medieval leprosy is the same as what we call today Hansen's disease, "leprosy" came to have a long history. Even if by means of archaeological methods the biological presence of *M. leprae* could be "proved" in the distant past, the task of the student of the relations between nature, society, and knowledge has just started. What I found important in this study was to examine the social/cultural responses to specific phenomena classified as illnesses, and how people understood them, attached cultural significance to them, and devised means to control them.

In the remainder of this thesis I will scrutinize the social/political fact that medieval traditions related to lepers and leprosy persisted even until the twentieth century.

Chapter 2

Elefancia in Colombia: Between Charity and Exclusion

"Cayetano had reached the end of his strength. He was handed over to the Holy Office and condemned at a public trial that cast suspicions of heresy over him and provoked disturbances among the populace and controversies in the bosom of the Church. Through a special act of grace, he served his sentence as a nurse at the Amor de Dios Hospital, where he lived many years with his patients, eating and sleeping with them on the ground, and washing in their troughs with water they had used, but never achieving his confessed desire to contract leprosy."¹

Practices of segregation of leprosy sufferers and ideas about the disease in what is now Colombia persisted from the period of Spanish rule which started in the early sixteenth century. Isolation of "lepers," originated in medieval Spanish traditions, was a common procedure in the colonial era and lasted long after the country achieved its independence in 1819. Physicians generally believed that "leprosy," then called *elefancia* or *mal de San Lázaro*, was infectious in the sense that it caused putrefaction of the body and could spread to others.² Doctors usually enumerated several factors as causes of *elefancia*, among them, food, climate, uncleanness, and they conceived the ailment mostly in humoral and miasmatic terms. Physicians and the popular mentality typically regarded *elefancia* as venereal disease, general decay, and as a moral as well as a physical condition. In the nineteenth century most European doctors regarded leprosy as inherited. However, the hereditary theory which was prevalent in most scientific circles was not as influential in

¹ Gabriel García Márquez, *Of Love and Other Demons*. Translated from the Spanish by Edith Grossman (New York: Alfred A. Knopf, 1995), p. 146.

² The names *lepra*, *elefancia*, *lázaro*, *mal de San Lázaro*, *gafedad*, were interchangeable terms for leprosy in Spanish and colonial Spanish American literature. They were sometimes used in the plural form, like *lepras* or *elefancias*. From them derived the adjectives *leproso*, *elefanciaco*, *lázaro*, *lazarino*, and *gafó*; the latter was rare in New Granada, and common in Spain. See: José Manuel Reverte Coma, "La lepra en la historia," *Revista de Leprología Fontilles*, 1980, 12 (5):565-592, on pp. 580-582.

New Granada (now, Colombia)³ partly due to the fragility of academic medicine at the time.

The Spanish monarchy first, and then the central republican government of Bogotá (the capital city), stipulated a centralized policy of isolation of *elefanc acos* in the leper hospital of Cartagena. This rigid policy was ineffective and caused considerable resistance from the provinces. In the colonial period, but also during most of the nineteenth century, the provinces demanded the foundation of local hospitals for lepers, petitions to which administrators never responded. It was only at the end of the nineteenth century, mostly because lepers were objects of persecution, that leprosy sufferers founded town-lazarettos with governmental and charitable support. However, these lazarettos were philanthropic rather than medical institutions. Lepers were objects of Catholic charity. The role of the Colombian state at the end of the nineteenth century was to encourage charitable institutions by providing assistance for them. The purpose of the policy of the exclusion of lepers throughout the period was to keep them apart rather than to provide medical care for them. Leprosy was not principally a medical concern, as I will explain in this chapter.

New Granada: The Colonial Society

The first Spanish expeditions meandered along the Caribbean coast of what is now Colombia in the early years of the sixteenth century. The search for gold and slaves was the main purpose of these explorations. Early settlements like Santa María la Antigua del Darién did not last, but cities such as Santa Marta, founded in 1526, and Cartagena, established in 1533, became permanent bases from which to conquer the interior. The Spaniards located themselves in populated zones where they could exploit Indian labor and resources, like the central Chibcha region of Bogotá and Tunja which they called the New Kingdom of Granada. In the early stages of colonization pillage was the main source of gold; from around 1560, mining replaced looting as a means of obtaining precious metals.

³ During the colonial era (roughly 1510-1819) and most of the republic until 1863, the name "New Granada" persisted over political and administrative changes of what is now Colombia. Therefore, I will refer to the country as New Granada throughout this period.

The formation of a mining economy deeply shaped the colonial society, and most towns were founded in the mining districts. These towns, however, were not centers of commercial exchange with the rural areas. Instead, they were centers of power where Spaniards controlled the native agricultural societies and supervised the extraction of gold. Spanish colonization also produced large landholdings in the Kingdom of New Granada around Bogotá and Tunja, in Antioquia in the west, and in the upper Cauca valley around Popayán in the south. In these landholdings, the Spaniards used Indian labor to grow European crops and to raise cattle for trade in city markets and mining zones.⁴

In the mid sixteenth century the political structure of New Granada was settled. The Spanish monarchy created the Audiencia of New Granada with its center in Santafé de Bogotá in 1550.⁵ The ultimate authority was the king in Spain, advised by a Council of the Indies. This council in practice functioned as administrative board, source of legislation, and appeals court. For most of colonial period New Granada was a dependency of the viceroyalty of Peru. However, Lima's viceroy was too distant to be effective, thus in 1564 the monarchy established the Captaincy-General of New Granada which included most of what is now Venezuela. The colony was divided into territorial and administrative units called *gobiernos*, *corregimientos*, and *alcaldías mayores* which differed in size, wealth and prominence. The most important were the *gobiernos* of Santafé, Tunja, Cartagena and Popayán (see map 2 in the Appendix). These cities (*ciudades letradas*) remained important nuclei of political, ecclesiastical and intellectual power in New Granada until the nineteenth

⁴ Anthony McFarlane, Colombia before Independence: Economy, Society, and Politics under the Bourbon Rule (Cambridge: Cambridge University Press, 1993), pp. 7-28; on the colonial economy see also: Germán Colmenares, Historia económica y social de Colombia, 1537-1719 3rd ed. (Medellín: La Carreta, 1978).

⁵ Santafé de Bogotá was the complete name of the city, but it was usually called *Santafé* during the colonial era, the name which I will use here. After the Independence (1810-1819) the name of the capital of the new republic of Colombia was changed to Bogotá.

century.⁶ However, New Granada did not form a unified entity, as these separate administrative jurisdictions fragmented the government. For example, the governor of Cartagena was directly appointed by the king; therefore, he was highly independent from the Audiencia in Santafé. Popayán was under the double authority of the audiencias of Santafé and Quito. In fact, one of the motives behind the creation of the viceroyalty of New Granada, first in 1719 and definitely in 1739, was to consolidate the political power over the provinces. However, the first viceroyalty collapsed after five years of its establishment due to administrators' inefficiency. The Spanish crown concluded that the costs of maintaining a viceregal court outweighed the benefits and suppressed it in 1724. In 1739 the Spanish monarchy reestablished the viceroyalty to impose greater royal authority, to control contraband, to increase the New Granada's fiscal and economic yield, and to fortify the colony against military assault. The new viceroyalty of New Granada included the presidencies of Quito and Panama. The lower level of the political system were the *cabildos* or town councils formed by local residents--either Spaniards or Creoles (native-born whites).⁷

Besides, the topography of New Granada reinforced this fragmentation of political power. Some of the geographical features of Colombia are worth mentioning since they have molded the history of the country in various ways. In particular, they have contributed to the extreme regionalism which characterizes Colombian culture and history. Colombia is located in the northwestern corner of South America, within the torrid zone near the Equator. Therefore most of the territory is tropical. However, the country is also mountainous, which brings changes in altitude and a wide variety of climates. In fact, the

⁶ The notion of *ciudad letrada* refers to cities like Bogotá where the power of the literate civil and ecclesiastical bureaucracy was mainly supported by a large illiterate population. See: Angel Rama, La ciudad letrada (Hanover, N.H.: Ediciones del Norte, 1984).

⁷ David Bushnell, The Making of Modern Colombia: A Nation in Spite of Itself (Berkeley: University of California Press, 1993), pp. 7-13; see also: Jaime Jaramillo Uribe, "Estado, administración y vida política en la sociedad colonial," Manual de Historia de Colombia vol. 1 (Bogotá: Instituto Colombiano de Cultura, 1978), pp. 349-415; see also McFarlane, Colombia before Independence, pp. 195-198.

Andes in Colombia enter through the south and are divided into three main ranges (see map 1 in the Appendix). The Andes also separate the territory into distinct zones, define temperatures, and influence the facility of human access. Much of the country's land area is formed by hot lowland plains, but most of them, at least until the mid twentieth century, were unoccupied because they were considered to be unhealthy places. Indeed, the Magdalena valley and the Caribbean coast were endemic foci of yellow fever, malaria, and dysentery. The majority of the population preferred temperate higher elevations, like the mountains of Antioquia and the upper Cauca valley, and the cold eastern basins and plateaus, usually at altitudes of more than seven thousand feet. In the colonial period, throughout the nineteenth century, and even today, most of the population lives in the Andean region because of its cooler climate and healthier environment.⁸

Although New Granada was not densely populated, until 1890 it had the second largest population among South American states, behind Brazil. According to a census conducted in 1778-80, New Granada had 792,668 inhabitants; its population was smaller than it had been in the early sixteenth century, on the eve of the Spanish conquest and colonization. Most of the population was composed of *libres* or *mestizos* (46%), followed by whites (26%), Indians (20%), and black slaves (8%). In terms of size and wealth, New Granada was a colony of second rank compared to the viceroyalties of Peru and New Spain (México). It was formed by many small towns with populations of about 200 to 2,000 inhabitants. Santafé de Bogotá, the viceregal capital, was the largest urban center with a population of 20,000 on the eve of Independence, and 40,000 by 1870. By contrast, México had more than 100,000 inhabitants in the late eighteenth century, and Lima 60,000. After Independence, the population of New Granada was slightly over a million people, somewhat more than 1.6 million in the 1830s, and more than 2.2 million by the middle

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On Colombian geography see: Francisco Javier Vergara y Velasco, Nueva Geografía de Colombia escrita por regiones naturales 2 vols. (Bogotá: Banco de la República, 1901/1974).

nineteenth century.⁹

Spanish Domination, Medicine and *Hospitales de San Lázaro*

In the Middle Ages Spanish medicine was very prestigious in Europe. When the Arabs dominated Spain, they organized several teaching hospitals, achieved what has been considered significant advances in pharmacology, and introduced state regulation of physicians. The works of Avicenna (980-1037), for example, preserved and enriched the legacy of Hippocrates and Galen, and by the fourteenth century, medicine was one of the major university faculties.¹⁰ Several Spanish Arab doctors described a disease called *judham* (Greek elephantiasis). In the tenth century, Rhazes characterized the skin and nervous lesions produced by *judham*, and Abul Qasim (Abulcasis) depicted anesthesia and muscle atrophy as symptoms of the disease. In the twelfth century, Abdel Malek ben Zahr (Abenzoar) incorporated the use of chaulmoogra oil, used also in India, to treat the lesions produced by this disease, and Abu Ali Idris, physician and pharmacologist, tried a remedy called "aatirilal" which, according to physicians Félix Contreras Dueñas and Ramón Miquel y Suárez Inclán, was employed for three centuries to treat leprosy sufferers. These historians of leprosy, suggest that, as in the case of Christian Spain, Arab theoretical knowledge on "leprosy" was mainly applied to wealthy patients.¹¹ As I mentioned before, historian Michael R. McVaugh found abundant evidence of what he calls "medicalization" of leprosy in the Crown of Aragon in the early fourteenth century, where most medical practitioners were Christians. According to McVaugh, physicians, instead of lay juries,

⁹ McFarlane, Colombia before Independence, pp. 32-34; see also: Frank Safford, The Ideal of the Practical: Colombia's Struggle to Form a Technical Elite (Austin: Texas University Press, 1976), pp. 21-24, and Jaime Jaramillo Uribe, Ensayos sobre historia social colombiana (Bogotá: Universidad Nacional de Colombia, 1974).

¹⁰ Michael E. Burke, The Royal College of San Carlos: Surgery and Spanish Medical Reform in the Late Eighteenth Century (Durham, N.C.: Duke University Press, 1977), pp. 19-22.

¹¹ Félix Contreras Dueñas and Ramón Miquel y Suárez Inclán, Historia de la Lepra en España (Madrid: Gráficas Hergon, 1973), pp. 56-58.

started to diagnose leprosy at that time. The public as well as the suspect lepers themselves appealed increasingly to doctors as arbiters in frequent disputes over who was leprosy. In this sense, medicalization of leprosy, that is, delegation to physicians of the power of the community in matters of leprosy occurred earlier in Aragon than elsewhere in Europe.¹² In fact, historian R.I. Moore dated this phenomenon for England and other European regions from the fifteenth century.¹³

In 1477, the Catholic Monarchs Ferdinand and Isabella established in Spain the *alcaldes examinadores mayores* (later called *protomédicos*) who were physicians appointed by the crown to inspect and license medical practitioners, surgeons, healers, apothecaries, spicers and herbalists. The *Protomedicato* was a unique structure in the context of European medicine. This institution certified physicians, arbitrated disputes among them, and punished malpractice and quackery.¹⁴ The crown also secured the control of leper hospitals by appointing physicians called *alcaldes de lepra* (leprosy magistrates). The *alcaldes de lepra* replaced priests and ecclesiastical judges in examining suspected lepers and diagnosing leprosy.¹⁵ The prestigious Arabic knowledge was incorporated into the official Spanish medicine after the reconquest of Spain by Christians which culminated in 1492, the same year as the discovery of America. Soon after the first conquests, Ferdinand

¹² Michael R. McVaugh, Medicine Before the Plague: Practitioners and their Patients in the Crown of Aragon, 1285-1345 (Cambridge: Cambridge University Press, 1993), pp. 218-225. This earlier medicalization of leprosy is also reported by the historian Luke Demaitre, "The Relevance of Futility: Jordanus de Turre (fl. 1313-1335) on the Treatment of Leprosy," Bulletin of the History of Medicine, 1996, 70 (1):25-61.

¹³ R.I. Moore, The Formation of a Persecuting Society: Power and Deviance in Western Europe, 950-1250 (Oxford: Basil Blackwell, 1987), pp. 77-79.

¹⁴ David C. Goodman, Power and Penury: Government, Technology, and Science in Philip II's Spain (Cambridge: Cambridge University Press, 1988), pp. 209-210, 221. On the *Royal Protomedicato*, see: Burke, The Royal College of San Carlos, pp. 27-31.

¹⁵ Maria del Carmen Frances, "La prevención y la lucha contra la lepra en España en el siglo XV," Boletín de la Sociedad Española de Historia de la Farmacia, 1979, 30:251-254; J.M. Carrillo Montesinos, "La lepra en la edad moderna. Historia del Hospital de San Lázaro de Málaga," Revista de Leprología Fontilles, 1983, 14 (1):5-7; and Contreras Dueñas and Miquel Suarez Incl n, Historia de la lepra en España, pp. 87.

and Isabella ordered the foundation of hospitals in America for Indian and Spanish sick and indigent. Spanish sovereigns considered charitable acts as part of their Christian obligation towards their vassals. In what later became New Granada, the monarchy founded several hospitals in the first Spanish settlements--Santa María la Antigua del Darién (between Panama and Colombia) in 1513, Santa Marta in 1530, Cartagena in 1534, and *San Juan de Dios* hospital (Bogotá) in 1564.¹⁶ These institutions were similar to medieval hospitals in other European countries whose main purpose was hardly medical. Hospitals played a wider role than just to attend the sick; they acted in many other ways--they cared for the poor, widows and orphans, and they dispensed social and religious compensations for patrons.¹⁷

During the sixteenth and seventeenth centuries, the monarchy established several hospitals in Spain. Particularly, Philip II (1516-1556) inaugurated the tradition of creating royal hospitals which improved the level of surgical practice.¹⁸ General hospitals explicitly excluded individuals affected by infectious diseases, such as the plague, *bubas* (a medieval name for venereal infection) and leprosy. For them there existed special institutions: patients with chronic illnesses were sent to hospitals for the incurably ill, and lepers, to *hospitales de San Lázaro*.¹⁹ From the sixteenth century, patients of *bubas* began to be

¹⁶ Andrés Soriano Lleras, La Medicina en el Nuevo Reino de Granada, durante la Conquista y la Colonia (Bogotá: Imprenta Nacional, 1966), pp. 38-42; and by the same author, Crónica del Hospital de San Juan de Dios desde su fundación hasta su administración por la Junta de Beneficencia de Cundinamarca, 1564-1869 (Bogotá: Junta de Beneficencia de Cundinamarca, 1964).

¹⁷ Delfín García Guerra, El Hospital Real de Santiago (1499-1804) (La Coruña: Fundación Pedro Barrie de la Maza, 1983), pp. 25-34. On the history of hospitals in England, Italy and the United States, see: Lindsay Granshaw and Roy Porter (eds.), The Hospital in History (London: Routledge, 1989); on the case of the United States, see also: Charles Rosenberg, The Care of Strangers. The Rise of America's Hospital System (New York: Basic Books, 1987).

¹⁸ Burke, The Royal College of San Carlos, pp. 22-26.

¹⁹ About *San Lázaro* hospitals in Spain, see: Antonio Contreras Más and Ramón Rosello Vaquer, "La asistencia a los enfermos en Mallorca durante el antiguo régimen," Revista de Leprología Fontilles, 1982, 13 (6):635-641, and Olga Gallego Domínguez, "Hospitales de la Provincia de Orense," Boletín Auriense, 1976, 6:207-263, on pp. 255-263.

received in general hospitals in order to be cured, thus changing the nature of these institutions. Indeed, previously, hospitals were just places where the poor sick went to die.²⁰ Complying with medieval conventions on leprosy, the Spanish monarchs erected leper hospitals in their possessions in America from the sixteenth to the eighteenth centuries. The first hospital for lepers in America was built in Talxaplana (Mexico) by Hernán Cortés in 1528, followed by hospitals in Santo Domingo (Dominican Republic), Lima and Cuzco (Peru), Cartagena (New Granada), Havana (Cuba), Rosario de Santa Fe (Argentina), and New Orleans (Louisiana). The Spanish monarchy also built leper hospitals in Manila and Culion (Philippines).²¹

The theme of *mal de San Lázaro* appeared early in Spanish chronicles. Gonzalo Fernández de Oviedo (1478-1557) author of the 50-volume history of the new world Historia general y natural de las Indias (1535-57) mentioned the malady of *bubas* (venereal disease) which was highly contagious in various ways: by wearing clothes of infected persons, by eating and drinking with them or using their dishes, by sleeping in their beds, inhaling their breath and sharing their sweat, and by carnal indulgence with contaminated individuals.²² According to the chronicler, once infected with venereal disease, people would become afflicted with *San Lázaro* or *gaphos* (another medieval Spanish name for this disease). As in medieval Spain, segregation of “lepers” became customary in New Granada. Colonial Spanish authorities created the *Hospital Real de San Lázaro* in Cartagena de Indias in 1608 to gather lepers from all over the colony. In spite of the

²⁰ Delfín García Guerra, “La asistencia médica en el Hospital Real de Santiago al final del Antiguo régimen,” Enfermedad y Castigo ed. by José Luis Peset (Madrid: CSIC, Instituto “Arnau de Vilanova,” 1984), pp. 287-300, on pp. 291-295.

²¹ Contreras Dueñas and Miquel Suarez Inclán, Historia de la lepra en España, pp. 87-91. Gordon Schendel, Medicine in Mexico: From Aztec Herbs to Betatrons (Austin: University of Texas Press, 1968), p. 105.

²² Juan Bautista Montoya y Flórez, Contribución al estudio de la lepra en Colombia (Medellín: Imprenta Editorial, 1910), p. 9. This 455-page volume contains a history of leprosy in Colombia published in 1910 by a former director of the Central Office of Lazarettos, and a compilation of early official documents, as well as Montoya's own observations of leprosy patients.

pompous name, the hospital was just a number of huts without resources. The Catalan Jesuit Saint Pedro Claver carried out part of his mission in this hospital from 1615 until his death in 1654.²³ One of Claver's hagiographers related stories of the saint who used to kiss the sores of lepers, as his medieval peers did, and to instruct them with the conventional Catholic outlook on the disease: "make of life a ladder to heaven, leprosy of the body does not matter if the soul is clean."²⁴ As in medieval Europe, leper hospitals in America were more concerned with the care of souls than with the care of bodies.

Because royal hospitals were part of the royal patrimony, they were regulated directly by royal decrees (*Cédulas Reales*). Presumably, the oldest document about *elefancia* (elephantiasis) in New Granada was a 1627 royal decree by Philip IV. This *cédula real* ordered the removal of the diseased to *Hospital de San Lázaro* carrying with them their movable property in order to avoid that the "contagion would pass to others."²⁵ Another royal decree of 1651 allotted to the hospital the fee for anchoring ships called the *derecho de anclaje de navíos*. The edict also nominated a *mayoral* (administrator), a procurator, and a chaplain for the hospital, as well as two almoners located in Cartagena, and one almoner in each of the towns which usually referred lepers to the royal hospital.²⁶ The Catholic virtue of charity was essential as a means to subsidize this kind of hospital. The regulations for leper hospitals in New Granada were similar to the rules enacted by several monarchs between 1393 and 1556 to guarantee royal control over similar institutions in Spain.²⁷ Local colonial authorities of New Granada also made arrangements

²³ Contreras Dueñas and Miquel y Suarez Incl n, Historia de la lepra en España, p. 90.

²⁴ Angel Valtierra, S.J. Peter Claver: Saint of the Slaves (Westminster, MD: The Newman Press, 1960), p. 156.

²⁵ Montoya, Contribución, p. 11.

²⁶ Ibid., pp. 12-13; see also: Soriano Lleras, La Medicina en el Nuevo Reino, p. 74.

²⁷ Juan Bosch Millares, "El Hospital de San Lázaro de Canarias: Su primer emplazamiento," Medicina e Historia, 1975, 2 (43):10-20.

to control the disease. In 1675, the *cabildo* of Santafé de Bogotá, alarmed by the introduction of a "contagious malady," commissioned four physicians, under the charge of 500 *patacones*, to examine men and women suspected of being "touched by the *mal de San Lázaro*."²⁸ Throughout the colonial era, lepers were essentially objects of charity, and this attitude toward leprosy persisted in the country until the late nineteenth century. However, by the end of the eighteenth century, some members of the enlightened elite of New Granada began to conceive of leprosy as part of the health problem of the population.

Elefancia, the Enlightenment, and Population Policies

The eighteenth century was a distinctive era in the history of Spain and its colonies, characterized by a revival of Spanish imperialism, almost a "second conquest of America."²⁹ The period started with the accession of the Bourbon dynasty to the Spanish throne, and the need of the new regime to restore Spain's command over its empire. In the case of New Granada, the economic and political ties of the colony with the central government were feeble, and the royal authority was fragile. Reforms started with the creation of the Viceroyalty of New Granada first in 1719 and finally in 1739, followed by several economic reforms aimed at securing the flow of colonial resources. However, the bulk of the reorganization was not particularly felt in New Granada until the reign of Charles III (1759-1788).³⁰

The royal decrees that Charles III issued regarding the *Hospital Real de San Lázaro* should be interpreted in the light of the general picture of rationalizing the colonial political and economic system. In 1784 the king created a special tax on the consumption of *aguardiente* (an alcoholic beverage made from the molasses of sugar) in order to sustain the

²⁸ Montoya, *Contribución*, p. 13.

²⁹ The term comes from John Lynch, *The Spanish American Revolutions, 1808-1826* (New York: W.W. Norton, 1973), pp. 1-7.

³⁰ McFarlane, *Colombia before Independence*, pp. 1-28.

hospital. This tariff called *cuartillo sobre el azumbre de aguardiente* consisted of a quarter of each *real* sold of every measure of *aguardiente*. The crown also ordered the relocation of the hospital in a new place called "La Cantera" (later, "Caño de Loro") away from the center of town. According to the enlightened spirit of the innovations, the royal order also mandated that the hospital be constructed conforming to a design prepared by the engineer Antonio Arévalo. Viceroy José de Ezpeleta executed the royal mandate in 1791 moving the hospital to "La Cantera."³¹

The issue of *elefancia* became relevant in the second half of eighteenth-century New Granada as part of the general interest in the population question. Some of the problems envisioned by members of the enlightened Creole elite at this time were the serious depopulation of the colony since the time of the conquest, and the backwardness of the country. As in other parts of America, in New Granada native populations went into serious demographic decline during the sixteenth and seventeenth centuries. This demographic catastrophe resulted not only from direct massacres during the conquest, but also from sheer exploitation and dislocation of indigenous social structures. A significant element within the Amerindian depopulation was the propagation of diseases previously unknown in the new world, among them, influenza, yellow fever, smallpox, and measles.³² In the late eighteenth century, the population decrease started to alarm the enlightened New Granadan elite, inspired by European traditions of social and political thought concerned with population policies. Indeed, British political arithmeticians, mercantilists, and French physiocrats regarded population size or its rate of growth as an indicator of prosperity.³³

³¹ Contreras Dueñas and Miquel y Suarez Inclán, *Historia de la lepra en España*, p. 112; see also: Montoya, *Contribución*, pp. 19-20, and Soriano Lleras, *La Medicina en el Nuevo Reino*, pp. 136-137.

³² Francisco Guerra, "La Invasión de América por Virus," *Maladie et Maladies: Histoire et Conceptualisation: Mélanges en l'honneur de Mirko Grmek* ed. by Danielle Gourevitch (Genève: Librairie Droz, 1992), pp. 219-225; see also William H. McNeill, *Plagues and Peoples* (Garden City, NY: Anchor Press/Doubleday, 1976).

³³ Theodore M. Porter, *The Rise of Statistical Thinking 1820-1900* (Princeton: Princeton University Press, 1986), on pp. 20-23; see also, Marie-Noëlle Bourguet, *Déchiffrer la France: La statistique départementale à l'époque napoléonienne* (Paris: Éditions des Archives Contemporaines, 1988); and

From the point of view of the new dynamics produced in Spain with the Bourbons in power, the main difficulty of the viceroyalty was its lack of productivity, and the main challenge was to make it produce a greater income for royal coffers. One of the answers (besides controlling foreign contraband and developing the economy by exploiting its natural resources) was to exercise rigid scrutiny over taxation, a policy that demanded control over the population. Consequently, the first general census of the whole viceroyalty was conducted in 1778-80.³⁴

Furthermore, according to enlightened political economy, the population needed to be improved in order to be more efficient. One of the means devised by the colonial government to accomplish this aim was modernizing the old system of Indian governance which protected Indian lands and communities.³⁵ Other ways, particularly recommended by enlightened Creole thinkers, involved dealing with sanitary issues. Indeed, some physicians wrote accounts on the miserable state of the majority of the population. The physician López Ruiz, for example, drafted a letter to viceroy Flórez in 1778, which he never delivered, under the title "Report against empirics and quacks." His main complaint was the lack of medical professionals in New Granada, so that people were forced to consult charlatans, midwives, and bloodletters, all of whom in his opinion caused more harm than good. The surgeon José Antonio Burdallo also authored a 1796 essay describing the deplorable sanitary conditions of Cali and Popayán in contrast with those of Lima. Both authors concluded that the difficulties derived from the lack of physicians, and from the fact that there was no medical instruction in the viceroyalty.³⁶

George Rosen, A History of Public Health (Baltimore: John Hopkins University Press, 1958/1993), p. 139.

³⁴ On the reform of colonial economy and politics under the Bourbon rule in the eighteenth-century New Granada, see: McFarlane, Colombia before Independence, especially chapters 7 and 8.

³⁵ McFarlane, Colombia before Independence, p. 206.

³⁶ Emilio Quevedo Vélez, "Institucionalización de la Medicina en Colombia 1492-1860: Antecedentes de un Proceso," Historia Social de la Ciencia en Colombia vol. 7 (Bogotá: Tercer Mundo, 1993), pp. 119-121.

Pedro Fermín de Vargas, an eminent leader of the Enlightenment in New Granada and one of the earliest Spanish American revolutionaries, wrote a critical analysis of the socioeconomic conditions of the viceroyalty, in 1791. He referred to general sanitation, mentioning leprosy and smallpox as the two main scourges that afflicted the population of New Granada. He characterized leprosy as a contagious and incurable illness that afflicted at least 300 people in the Socorro region. Vargas suggested building a hospital which would be "no different than a big enclosure," removed from any communication. According to his plan, *lazarinos* would cultivate the land, would live from charity, marriages would be strictly forbidden, so that leprosy would be extinguished in fifty years. To control the spread of smallpox, Vargas recommended the practice of inoculation. To contain all the other diseases, he proposed the foundation of hospitals and the study of medicine.³⁷

A prominent physician, José Celestino Mutis (1732-1808), also referred to the problem of New Granada's population. Mutis, a graduate of the first Spanish college of surgery in Cádiz, a viceroy's physician, a renowned naturalist, director of the Botanical Expedition and a professor of mathematics and Newtonian physics in Santafé, was reputed to have introduced relevant aspects of the Enlightenment into New Granada. Mutis was the most prestigious figure and one of the leaders of the scientific movement of the New Granada in the late eighteenth century. He recruited a group of young naturalists from the Creole intelligentsia to explore the flora and fauna of the country, and most of them became involved in the Independence movement of the early nineteenth century.³⁸ In his 1801 report on the "State of medicine and surgery in the *Nuevo Reino de Granada* in the eighteenth century and means to remedy its deplorable backwardness," Mutis alluded to

³⁷ Pedro Fermín de Vargas, Pensamientos políticos y Memoria sobre la población del Nuevo Reino de Granada (Bogotá: Biblioteca Popular de Cultura Colombiana, 1791/1944), pp. 106-108.

³⁸ On Mutis see: Jos Antonio Amaya, Celestino Mutis y la Expedición Botánica (Madrid: Editorial Debate/Itaca, 1986); for a critical analysis of Mutis, see: Olga Restrepo, "Naturalistas, saber y sociedad en Colombia," Historia Social de la Ciencia en Colombia vol. 3 (Bogotá: Tercer Mundo, 1993), pp. 13-327, on pp. 49-118.

endemic and epidemic diseases which attacked the population making them unproductive and worthless from the standpoint of public happiness. Among the endemic conditions were scrofula, *bubas*, ulcers, *lázaro*, and "other vices that go with the primitive gallic malady." As a way to improve sanitation and public health, Mutis recommended the training of physicians within New Granada, instead of relying on medical doctors sent from Spain.³⁹ He also suggested rigid official control over the exercise of the medical profession, and the licensing of practitioners. Mutis prepared, together with Miguel de Isla, curricula for medical studies which combined theoretical training in physics, mathematics and natural sciences with clinics and practical training in hospitals. Their models were modern Spanish colleges of surgery.⁴⁰ As a result, the colonial government created the chair of medicine in the *Colegio del Rosario* in 1802 and nominated Miguel de Isla as its founding professor. Fourteen students started the first year, but with the documentation available it is impossible to ascertain how many of those graduated.⁴¹ Other reforms included the decision that hospitals' revenues be controlled by the civil administration instead of religious orders, and plans to found a military hospital in Santafé which apparently was never established.⁴² The enlightened colonial government attempted some reforms in the teaching and practice of medicine to elevate New Granada to the rank of other viceroyalties which were more prosperous and important such as New Spain (Mexico) and Peru. However, most of these

³⁹ José Celestino Mutis, "Estado de la Medicina y de la Cirugía en el Nuevo Reino de Granada en el siglo XVIII y medios para remediar su lamentable atraso. Santafé, 3 de junio de 1801," Escritos científicos de don José Celestino Mutis ed. by Guillermo Hernández de Alba, vol. 1 (Bogotá: Kelly, 1983), pp. 33-62.

⁴⁰ On the reform of medical education in the eighteenth-century Spain, see: Burke, The Royal College of San Carlos, especially chapters 3 and 6. On the reform plans of medical education in eighteenth-century New Granada and their relations to reforms in Spain and other Latin American countries, see: Quevedo, "Institucionalización de la Medicina en Colombia," pp. 91-188.

⁴¹ Soriano, La Medicina en el Nuevo Reino, pp. 161-174.

⁴² Quevedo, "Institucionalización de la medicina en Colombia," p. 121; see also: Soriano, Crónica del Hospital de San Juan de Dios, pp. 25-33.

plans were hardly ever implemented.⁴³

Elefancia: An Infectious Disease

During the second half of the eighteenth-century, the enlightened public in New Granada believed that *elefancia* was infectious, and that the disease was spreading from the Socorro region. For example, in 1775, the priest of Socorro delivered to Santafé a list of lepers, commenting that the illness was contagious not only directly, but also at a distance by materials such as wool or cotton.⁴⁴ Furthermore, during the eighteenth century Socorro was a prosperous producer of crude cotton cloth, among other goods, for most of the New Granada.⁴⁵ Pedro Fermín de Vargas maintained in 1791 in an essay about the population of New Granada that leprosy was transmitted through Socorro's textiles.⁴⁶ Three Socorro residents conveyed the same idea in a 1775 memorandum, pleading with the central government to build a local hospital to arrest the spread of the disease. Otherwise, they predicted the end of the commerce in cotton cloth.⁴⁷

At this time, the physicians of New Granada confused *elefancia* with venereal diseases. For example, Juan José de Cortés, a physician graduate of Montpellier, a former *protomédico* in Santafé, and appointed *alcalde de lepra* for the province of Socorro in 1778, claimed that leprosy was propagated through the "venereal act," paralleling medieval notions.⁴⁸ Alejandro Gastelbondo, a physician graduated from the *Colegio Mayor de*

⁴³ Emilio Quevedo Vélez, "El conflicto entre tradiciones científicas modernas europeas y americanas en el campo de la medicina en la América Latina colonial," Mundialización de la ciencia y cultura nacional ed. by Antonio Lafuente, Alberto Helena and María Luisa Ortega (Madrid: Doce Calles, 1993), pp. 269-286, on p. 274.

⁴⁴ Montoya, Contribución, p. 25.

⁴⁵ McFarlane, Colombia before Independence, p. 39.

⁴⁶ Vargas, Pensamientos políticos, pp. 93-94.

⁴⁷ Montoya, Contribución, p. 15.

⁴⁸ Ibid., p. 16.

Nuestra Señora del Rosario, also echoed such ideas when he referred to the "libidinous ardours" of *elefanci acos*, in a 1779 report on leprosy in the Socorro area. Other doctors, like Miguel de Isla, physician of the *Hospital San Juan de Dios* and *protomédico* in Santafé, believed that venereal diseases transmuted into leprosy. Isla was required to examine a patient suspected of leprosy in 1795. Consequently, he reported the patient as a *lazarino*, and explained that *elefancia* was an affliction of the skin with three possible causes: a certain type of food, the particular astrological constellation of a place, or a venereal disease that had not been cured. Isla also concluded that *elefancias* and *lepras* (notice the plural) were not contagious, but were just specific conditions of certain individuals and particular locations.⁴⁹

The patient must have been a wealthy or influential person, because Mutis was also asked to examine him. In his report about the patient suspected of being afflicted with leprosy, Mutis regarded *elefancia occidental* [sic] as a combination of scurvy and "gallic" (generic term for venereal disease, from *morbus Gallicus*). Mutis agreed with Isla's diagnosis, but unlike him, Mutis believed that the rapid spread of *elefancia* in New Granada was evidence of its contagious nature. Mutis reported that inhabitants of Socorro and San Gil were so well acquainted with *elefancia* that even without medical books or doctors they were able to recognize its symptoms. European authors, according to him, had recently assumed that the disease was not contagious. Mutis dismissed these suppositions with the argument that European physicians were not authorities in this matter because leprosy had disappeared from that continent long ago. However, he estimated that the disease was not equally contagious throughout all its stages, so that it was imperative to investigate this issue further. For Mutis, *elefancia* was not the result of specific climate, air, water or food, but it was produced by a disposition plus an "occasional cause." The disposition resulted from the excess of consumption of salted meats and pork or pork fat without fresh vegetables. The "occasional cause" was the contagion from a *lazarino*. Mutis

⁴⁹ *Ibid.*, pp. 18, 26-27.

recommended building a hospital in the mountains where the climate was healthier to separate the sick, so that the disease would eventually disappear as had happened in Europe.⁵⁰

However, some doctors contested the belief that *elefancia* was contagious. Sebastián López Ruiz, a graduate of the university of San Marcos (Lima) one of the major universities of Spanish America, *protomédico* of Cuzco and Panama, wrote against the theory of contagion in a 1796 report to viceroy Ezpeleta. López's description of leprosy was an interesting mixture of medieval overtones and eighteenth-century medical ideas. He believed that *lázaro* was a "depravation and interior corruption of the humours" which according to the Swedish botanist Carolus Linnaeus (1707-1778) was most probably produced by "singular imperceptible worms" usually observed in leprous pustules. López believed that popular notions of the contagiousness of leprosy, which he opposed, derived from the putrefaction produced by the disease in the humours of the sick. He argued that doctors, surgeons, and priests who were often in contact with *lazarinos* were never infected.⁵¹ López's apparent contradictory view of contagion paralleled the medieval idea of infection, as distinct from contagion--a form of decay that could arise spontaneously in a body.⁵²

Requesting Local Hospitals for Lepers

The issue of elephantiasis also revealed long and deep conflicts between central and local powers. Although the Cartagena hospital was instituted to accommodate lepers from towns and villages of all the New Granada territory, during the eighteenth century the provinces of

⁵⁰ José Celestino Mutis, "Sobre la enfermedad llamada San Lázaro," Escritos Científicos de Don José Celestino Mutis ed. by Guillermo Hernández de Alba, vol. 1 (Bogotá: Editorial Kelly, 1983), pp. 123-127.

⁵¹ Montoya, Contribución, pp. 33-34.

⁵² Owsei Temkin, "An Historical Analysis of the Concept of Infection," The Double Face of Janus and Other Essays in the History of Medicine (Baltimore: The Johns Hopkins University Press, 1977), pp. 456-471, p. 463.

Quito, Guayaquil, Panama, Popayán, and Socorro often refused to send their diseased to Cartagena. The alleged reason for this resistance was the extremely long and difficult journey to this city, located on the Caribbean coast, and the high cost of those trips. However, the actual motivation behind the refusal was economic--to avoid payment of the required tax on consumption of *aguardiente*. For example, a 1786 memorandum from Quito directed to the viceroy in Santafé de Bogotá claimed that there were five or six persons afflicted with leprosy in the district and added that it was impossible to transfer them to Cartagena. The president of Quito thus decided to isolate them in the smallpox hospital in that city and requested consent from the viceroy to keep the tax (*cuartillo sobre el azumbre de aguardiente*) in order to sustain the sick. The tax which the president alluded to was the excise that provinces were forced to pay to be able to transfer their lepers to the *Hospital de San Lázaro*. The administrator of the hospital denied Quito's plea on the grounds that the revenues of the asylum were already insufficient to support its 119 inmates. Nevertheless, sometime before 1798, the colonial government built a leper hospital in Quito. Whereas Panama was much closer to Cartagena, in 1787 the governor, the surgeon, and the physician of the battalion of Panama, refused to remove eleven *elefanciácos* alleging that their condition was too critical to survive the trip.⁵³ Evidently, the provinces refused to pay the tax to Cartagena.

Occasionally, local colonial administrators would found leper houses, like the small institutions created in Cali and Buga in 1706 and 1742. More frequently, city councils submitted proposals to the viceroy to build local hospitals for lepers. The case of Socorro is illustrative not only because this region had the highest rate of leprosy of the viceroyalty at that time, as it still does today, but also because Socorro was the center of one of two major popular rebellions of the late colonial period in Spanish America (the other was the Indian

⁵³ Letter to viceroy Caballero y Góngora from Gobernador y Comandante General Brigadier D. José Domas y Valle et al, Panama, Aug. 7th, 1787, quoted by Montoya, *Contribución*, pp. 20-21. See also: Eduardo Posada and P.M. Ibáñez (eds), *Relaciones de mando: Memorias presentadas por los gobernantes del Nuevo Reino de Granada* (Bogotá: Imprenta Nacional, 1910), pp. 244-246.

uprising of Túpac Amaru in Peru, also in 1780-1781). Indeed, the rebellion of the *Comuneros* (1781) was a direct popular response against new taxes and regulations affecting the production and sale of tobacco and *aguardiente* introduced by the modern Spanish rule. On the other hand, Socorro had gained the legal status of a town in 1771 after a long and vigorous campaign and experienced an active political life based in local issues.⁵⁴

Doubtless, *elefancia* was an important concern for Socorro's leaders.⁵⁵ In 1775, the *cabildo* of this town asked the viceroy to build a *San Lázaro* hospital far away from the commercial center, to be financed by the *aguardiente* tax. The hospital was apparently never built--the same petition was submitted in 1778, and again in 1796. In this latter year, the *cabildo* requested explicitly that the towns of Socorro and Leyva be exempted from paying the tariff to the hospital in Cartagena, arguing that the income would be used to erect a local hospital for lepers. Socorro's *cabildo* used an argument that would become conventional for nineteenth-century Colombian physicians--the rhetoric of exaggeration to promote immediate action on the question of leprosy. According to the *cabildo*, the lack of a prompt remedy would soon cause the whole population to be infected with leprosy. The next year, the *cabildo* of Socorro counted 200 *elefanci acos* in the whole province. The answer from Santafé to Socorro's appeal was that all lepers--without exception--were to be sent to Cartagena. The fact that Socorro continued forwarding its fee to the royal hospital, probably indicates that they continued directing their lepers to Cartagena. Indeed, according to a report by the Cartagena hospital's *mayoral* in 1797, the only provinces that paid the mandatory tax were Santafé, Medellín, Socorro and Cartagena.⁵⁶

Similar conflicts between localities and the central government occurred elsewhere.

⁵⁴ See: McFarlane, *Colombia before Independence*, pp.251-255.

⁵⁵ Horacio Rodríguez Plata, "Origen de la lepra en la antigua provincia del Socorro," *Boletín de Historia y Antigüedades*, 1987, 74 (759): 751-54.

⁵⁶ Letter by Francisco Ambrosio et al, Socorro, June 21st, 1796, quoted by Montoya, *Contribución*, pp. 30-31. *Ibid.*, pp. 29, 35.

The governors of Guayaquil and Cuenca (today part of Ecuador), and the *cabildos* of Pamplona and Popayán made analogous petitions for provincial leper hospitals in 1796, and again in 1798, which were also denied by the viceroy.⁵⁷ Occasionally, local governments made their own arrangements. For example, in 1790, the governor of Panama ordered that any person was required to declare the name and address of any individual known to be afflicted by leprosy under the penalty of twenty-five pesos. Between 1794 and 1796, authorities and doctors expressed concern about leprosy in Santafé. In 1794, the viceroy Ezpeleta instructed the magistrates to send all *lazarinos* from the capital to Cartagena. In 1796, Honorato Vila, a physician graduated from the University of Cervera (Spain) and from the Royal College of Surgery of Barcelona, publicized in Santafé a summary of the symptoms of "true *elefancia*," so that people could recognize the disease.⁵⁸

Finally, a 1799 *cédula real* commanded the viceroy Pedro Mendinueta to build leper hospitals as requested by the provinces. Consequently, after 1800, the government suspended the practice of sending lepers to Cartagena from Panama, Guayaquil, Quito and Popayán. The viceroy ordered instead their seclusion in general hospitals. This measure was not well received by the sick isolated in Cartagena. In fact, an 1806 memorandum by *elefanciácos* of *Caño de Loro* to viceroy Amar y Borbón alleged that since Quito had stopped sending its tax, lepers' allowances had been severely reduced. By 1812, a hospital for lepers was eventually established in *El Curo* in the province of Socorro. By 1817, the *Hospital Real de San Lázaro* in Cartagena was still operating with eleven employees, among them a surgeon, a medical practitioner, and a chaplain.⁵⁹ To summarize, until the early nineteenth century, the provinces of New Granada rejected the centralized policy of sending lepers to Cartagena. They wanted to keep their money in the provinces, instead of

⁵⁷ Letter from Juan de Urbina, governor of Guayaquil to Virrey Ezpeleta, Nov. 21st, 1796, and letter by Pedro Antonio Valencia *et al.* Pamplona, June 4th, 1796, quoted by Montoya, *Contribución*, pp. 30, 32-33; see also: Posada and Ibáñez, *Relaciones de mando*, pp. 327-329.

⁵⁸ Montoya, *Contribución*, pp. 24, 30.

⁵⁹ *Ibid.*, pp. 37-46.

sending tax resources to support the royal hospital.

Changing Political Contexts, Continuing Practices

After Independence was achieved in 1819, the Government of the new republic of Gran Colombia (1819/1822-1830), which included what today is Ecuador and Venezuela, carried on an approach to *elefancia* similar to the one pursued during Spanish domination.⁶⁰ The administration of Simón Bolívar passed a law in 1826 (echoing the royal decree of 1651) which ordered that all national and foreign ships were to pay an anchorage fee. This tax would be devoted exclusively to establishing and maintaining hospitals for lepers, and any unused funds would be destined for other hospitals. This decree revealed the continuity not only of policies from the colonial era, but of the special status that medieval Spain conferred to *elefanci acos*.⁶¹

The need for local hospitals for lepers was as evident to the republican government as it had been to Bourbon administrators. Several republican administrations perpetuated the spirit of the 1799 *cédula real* arranging the foundation of local leper hospitals. In 1833, a law ordered the creation of three national lazarettos as follows: one for the provinces of Bogotá, Casanare, Neiva, Pamplona, Socorro, Tunja and Vélez; a second one for Antioquia, Chocó, Buenaventura, Popayán and Pasto; and a third one for Cartagena, Riohacha, Mompox, Mariquita and Santa Marta. In order to establish leprosaria, the government requested from the Faculty of Medicine at Bogotá an essay about the organization of hospitals for *elefanci acos*. Following French conventions since the elites began to look for French models to imitate, in 1831 the government had assigned to the Faculty of Medicine

⁶⁰ After Independence, the new republic bore several different names: *Gran Colombia* which included Venezuela and Ecuador (1819/1822-1830), *Nueva Granada* (1830-1857), the *Confederación Granadina* (1857-1863), *Estados Unidos de Colombia* (1863-1886), and *Republica de Colombia* (from 1886 until today).

⁶¹ Montoya, *Contribución*, p. 47.

the obligations previously held by the colonial institution of *protomedicato*.⁶² These obligations included vaccination, the licensing of pharmacists and midwives, measures to be taken during epidemics, the admission of candidates to medical practice, and the regulation and supervision of medical practice.⁶³ Physician José Félix Merizalde, director of the Faculty of Medicine, responded in 1834 with a statement specifying the preferred rules for the to-be-founded leprosaria. He defined the lazaretto as a "philanthropic asylum," and specified "to watch for the moral and political conduct of the inmates," among the responsibilities of the administrator.⁶⁴ For Merizalde leprosy was a moral rather than a physical condition.

However, the project was not accomplished, because the republic of New Granada (1830-1849), which had recently lost the territories of Ecuador and Venezuela, lacked resources. Indeed, New Granada was at this time an array of provinces scarcely articulated, characterized by acute poverty and economic stagnation. Most inhabitants of New Granada were attached to their regions, and the nation was an abstract and meaningless concept for them.⁶⁵ Other New Granadan laws also tried to control the issue of *elefancia*. In 1841, a national law instructed governors of provinces and the police to search out people affected by the disease and to direct them to leprosaria.⁶⁶ In 1842, in a centralizing move, the government attempted to reduce the three existent leper hospitals (*Caño de Loro*, *El Curo*, and presumably a third one in the Cali region) to one or two. However, this undertaking

⁶² Quevedo, "Institucionalización de la Medicina en Colombia," p. 208. On the case of France, see: Matthew Ramsey, *Professional and Popular Medicine in France, 1770-1830: The Social World of Medical Practice* (Cambridge: Cambridge University Press, 1988), pp. 48-49.

⁶³ John L. Young, "University Reform in New Granada, 1820-1850" Ph.D. Dissertation, Columbia University, 1970, p. 130.

⁶⁴ José Félix Merizalde, "Memoria que la Facultad Médica presenta sobre los Lazaretos que manda la Ley," in Montoya, *Contribución*, pp. 48-52, on p. 50-51.

⁶⁵ According to the historian David Bushnell, the country was a nation-state, not yet a nation; see: Bushnell, *The Making of Modern Colombia*, p. 74.

⁶⁶ "Ley sobre Policía general, 18 de Mayo de 1841," in Montoya, *Contribución*, p. 55.

was never realized. An 1844 decree ratified the anchorage fee which had been established by the Spanish monarchy in the eighteenth century and endorsed by Simón Bolívar in 1826.⁶⁷ As in colonial times, the legislation on *elefancia* reflected the struggle of provinces for autonomy in the unstable power balance of nineteenth-century New Granada.

In practice, the republican government continued the policy of sending lepers to Cartagena. However, the intention of the authorities to isolate all *elefanci acos* from New Granada in the Cartagena *Hospital de San Lázaro* was as difficult in the nineteenth century as it had been in colonial times. Communication between the interior and the Caribbean coast, and among the different regions was extremely difficult in New Granada. For example, over a thousand kilometers separate Cartagena from Pasto on the borders of Ecuador. The only connection between the mountainous populated areas, very distant from the Caribbean coast, and the external world was the Magdalena river. Historian Frank Safford describes this transit:

"While sweating travelers huddled miserably, at the mercy of the mosquitos, the poled boats that plied this tropical river made their slow progress more than six hundred miles to the headwater of navigation below Honda. There freight and travelers were transferred to mules for the long haul over several ridges of the steep eastern cordillera to Bogotá or across the even more difficult western cordillera to the Cauca valley. Until the middle of the nineteenth century it might take as long as three months for goods from the coast to reach the capital, six months for them to reach Popayán in the upper Cauca region."⁶⁸

If travelers were not merchants, but leprosy sufferers, a trip from the interior lands to distant Cartagena must have been a nightmare, and the centralized isolationist policy to struggle with *elefancia* was simply impossible. A variety of laws after 1833 ordered the creation of leprosaria, but they were not actually created until the second half of the nineteenth century.

⁶⁷ Montoya, *Contribución*, pp. 47-62.

⁶⁸ Safford, *The Ideal of the Practical*, pp. 21-24.

Indeed, the succession of legislation on leprosy reflects the political changes that New Granada went through in the course of the nineteenth century.

Academic Medicine in New Granada

New Granadan physicians were scattered and powerless during most of the nineteenth century. In 1837, there were thirteen chairs of medicine in the country, most of them offered in small provincial *colegios* with limited resources.⁶⁹ Therefore, the courses taught by these professors did not provide an adequate training for physicians. The few interested in medicine, if they were affluent enough, traveled abroad for medical training. As in most intellectual matters, New Granadans preferred France for scientific and technical education.

More frequently, the procedure for those seeking a medical career was an apprenticeship with a practitioner.⁷⁰ Nonetheless, because the market for doctors was small, there were few incentives to undertake a medical career in New Granadan society. The 174 physicians accredited by the Faculty of Medicine of Bogotá to care for a population of 1,200,000 seemed excessive to contemporary observers. One doctor for every 7,350 inhabitants was considered a luxury for the impoverished New Granada.⁷¹

Additionally, the political instability of the country was one of the main obstacles to the advancement of university studies during the nineteenth-century. Typically, students and professors participated actively in the recurrent civil wars, academic buildings were used as barracks, equipment was destroyed, and studies seriously disrupted.⁷² The secretary

⁶⁹ Ibid., pp. 105, 110.

⁷⁰ Néstor Miranda Canal, "La medicina colombiana de 1867 a 1946," Historia Social de la Ciencia en Colombia vol. 8 (Bogotá: Tercer Mundo, 1993), pp. 13-160, on pp. 58-59; see also: Pedro M. Ibáñez, Memorias para la historia de la medicina en Santafé de Bogotá (Bogotá: Zalamea hermanos, 1884), pp. 96-7.

⁷¹ Young, "University Reform in New Granada," p. 127.

⁷² Diana Obregón Torres, Sociedades Científicas en Colombia: La invención de una tradición, 1859-1936 (Bogotá: Banco de la República, 1992), p. 77, 123.

of the interior (1841-1845) Mariano Ospina Rodríguez, appalled by the civil war of 1839-1842, interpreted this outbreak as a result of the overabundance of doctors. According to him, the excess of students in the traditional careers, law and medicine, and the surplus of unemployed lawyers and physicians prompted their engagement in political turmoils. Consequently, Ospina launched an educational reform aimed at controlling the number of professionals. The reform established only three national universities, Bogotá, Cartagena and Popayán, which were authorized to award professional degrees in law and medicine. The *colegios* of the provinces were supposed to teach only technical matters--which possessed a low status in the highly hierarchical society of New Granada. In the name of academic standards, Ospina's educational reform attempted to restrict academic liberties and to eradicate the study of authors such as Jeremy Bentham. By limiting the possibilities of studying professional careers such as law and medicine, Ospina aimed at maintaining the political power in the hands of his own political group.⁷³

As a reaction to these restrictions, the liberal government of José Hilario López (1849-1853) enacted a law in 1850 which established complete freedom for teaching and exercising medicine, law, and engineering, and abolished the previous requirement of professional title for exercising these liberal professions. This law also renamed the three national universities (Bogotá, Cartagena and Popayán) as *colegios nacionales*, indicating the intention of the government of according more autonomy to the provinces while limiting central powers.⁷⁴ This reform, comparable to the abolition of medical regulations in France in 1792-1794, was part of a thorough liberal opposition to any kind of monopoly, either economic, social or political.⁷⁵ Indeed, the liberals engaged in a complete transformation of colonial institutions which were still in place in New Granada. The

⁷³ Safford, The Ideal of the Practical, pp. 116-123; Restrepo Forero, "Naturalistas, saber y sociedad en Colombia," pp. 239-242.

⁷⁴ Miranda Canal, "La medicina colombiana," pp. 58-59; see also: Safford, The Ideal of the Practical, pp. 134-135.

⁷⁵ Ramsey, Professional and Popular Medicine in France, pp. 74-75.

revolution of the 1850s abolished slavery, reduced Church power and privileges, and pursued economic reforms according to the liberal doctrine of *laissez-faire, laissez-passer*. Liberals wanted to create a society free of restrictions where individuals could realize their potential and be subject only to the discipline of the marketplace. Hence, academic regulations were seen as barriers that ought to be removed.⁷⁶ Since academic diplomas were only optional for teaching and practicing medicine, few were interested in its study. As a result, the existing faculties of medicine in Bogotá, Cartagena and Popayán were virtually annihilated. The 1850 law revealed the limited power of New Granadan physicians as a professional group in the mid-nineteenth century.

Pork, Filth, the Atmosphere, and Other Causes

Colonial notions of *elefancia* persisted throughout most of nineteenth century New Granada, partially due to the weakness of academic medicine. In the study on lazarettos written by Merizalde by official request in 1834, titled *Memoria que la Facultad Médica presenta sobre los lazarettos que manda la Ley*, he presented a list of physical as well as spiritual causes of leprosy that is worth transcribing since these causes were the medical knowledge of the time: atmospheric alterations; sudden transitions from heat to cold; consumption of alcoholic and fermented beverages, fresh or salty fish, pork, or spoiled food; use of stagnant and putrescent water; uncleanness of body and clothing; sadness and passions that produce sedative impressions; living near putrid swamps, or breathing humid air in hot climates; and contagion originating from procreation (like other inherited diseases), lactation, and cohabitation with a diseased person.⁷⁷ Indeed, these were common causes to explain most diseases until the bacteriological era.⁷⁸

⁷⁶ On the Colombian liberal reforms see Bushnell, *The Making of Modern Colombia*, pp. 101-139; see also: David Sowell, *The Early Colombian Labor Movement: Artisans and Politics in Bogotá, 1832-1919* (Philadelphia: Temple University Press, 1992), pp. 54-59.

⁷⁷ Montoya, *Contribución* pp. 48-51.

⁷⁸ See: Owsei Temkin, "Health and Disease," *The Double Face of Janus and Other Essays in the History of Medicine* (Baltimore: The Johns Hopkins University Press, 1977), pp. 419-440.

Merizalde's notion of an "atmospheric alteration" as a cause of leprosy, as well as Isla's eighteenth-century belief according to which the disease was produced by a "particular constellation," referred to planets and conjunctions responsible for epidemics. These ideas were common in European medical accounts from Antiquity to the Renaissance. These concepts were mingled with notions of the influence of weather, winds, seasons, floods, and earthquakes that prevailed within medicine until the second half of the nineteenth century.⁷⁹

According to Merizalde, ancient authors believed that contagion of *elefancia* was constant, fast, and fatal, while modern authors were divided: some considered it non-contagious, and others as contagious only in some individuals and in particular circumstances. Hence, the desire to inventory all conceivable particular and accidental conditions. Merizalde concluded that *elefancia* was communicable, but for such a communication to occur, an organic predisposition was required.⁸⁰

José Joaquín García, a graduate of the *Colegio Mayor del Rosario*, author of monographs about dysentery, cholera, and goiter, also published, in 1842, a work about *elefancia* entitled *Parálisis Tegumental*. He described *elefancia* as a "peripheral neuritis" and regarded the lack of sensation as its essential symptom. García described the clinical manifestations of leprosy, and pointed out the longevity of lepers. García also speculated that the cause of leprosy might be "a virus of unknown nature."⁸¹ The notion of virus at the time had the medieval connotation of stain, evil smell, putrescence, and miasma, ideas associated with infection and contagion. If a dye could taint a large quantity of water, or a poison could kill a big creature, or a spoiled substance marked by a bad smell could putrefy what was undamaged, in the same manner, a virus could pollute a body and propagate among a population. This broad and general explanation of infection was still in place in the mid-nineteenth century, and this is why the notion that leprosy was infectious was not

⁷⁹ Temkin, "An Historical Analysis of the Concept of Infection," p. 459.

⁸⁰ Montoya, *Contribución*, pp. 50-51.

⁸¹ *Ibid.*, p. 57.

contradictory with the idea that it could be inherited as well.⁸² There is no coincidence that García offered the following description of *elefanci acos*, totally imbued with medieval overtones:

"they endure very strong venereal stimulus...the stench of their breath and their perspiration is like putrid flesh, the color of the skin blackens, tumors ulcerate, limbs fall off, fingers drop off, hands pull off...and patients disfigured by the disease and delirious by their disgrace display in their face and voice the image of a furious lion."⁸³

Since *elefancia* was conceived as *the* disease par excellence, to list the presumed causes of illnesses in general was certainly a cautious strategy. For example, the doctor Ricardo de la Parra published in Paris in 1864 *El Zaarah de Moisés o la Elefantiasis de los Griegos*, a study on leprosy that deeply impressed Colombians at the time. De la Parra interpreted *elefancia* as "the synthesis of all diseases," as "the epitome of all sorrows and the condensed formula of all miseries of humanity." He offered a complicated definition of *elefantiasis* that showed, nonetheless, his acquaintance with the classical work on leprosy by the Norwegian physicians Daniel Cornelius Danielssen (1815-1894) and Carl Wilhelm Boeck (1808-1875). These physicians described leprosy in clinical and anatomic-pathological terms, and differentiated the disease from other illnesses in a work published in 1847.⁸⁴ In particular, they regarded leprosy as a "dyscrasia sanguinis"--an imbalance in the blood for the presence of poisonous material. According to de la Parra, *elefancia* was

"a deep asthenia of the nervous system due to great perturbations caused by

⁸² Temkin, "Health and Disease," p. 426.

⁸³ Montoya, *Contribución*, p. 56.

⁸⁴ Daniel C. Danielssen and Carl W. Boeck, *Traité de la Spedalsked ou Eléphantiasis des Grecs* Monograph (Paris: J.B. Ballière, 1848); also: *Atlas de la Lèpre par D.C. Danielssen et C.W. Boeck, Bergen en Norvège, 1847* Édition commemorative du centenaire ed. by Héraclides-Cesar de Souza-Araujo (Rio de Janeiro, 1946).

one or several diastolic successive discharges."⁸⁵

Throughout his treatise, written in biblical language and abounding in hideous literary images, de la Parra reiterated that he conceived these ideas twenty years earlier, in an unsuccessful attempt to claim priority over the renowned Norwegian physicians. De la Parra also represented lepers as "choleric, envious, cowardly, suspicious, apathetic, and sometimes, evil, and perverted," once again indicating how much concepts of leprosy in the middle of the nineteenth century owed to medieval approaches.⁸⁶ Additionally, the student of medicine José María Ruiz presented for his graduation a thesis called *La Elefancia* to the Faculty of Medicine in 1867. He asserted that the disease was contagious in "certain unknown conditions," and propagated through "predisposing causes," such as the effect of swamps, and through "determinant causes," like sudden temperature transitions.⁸⁷

However, not all physicians understood *elefancia* as an infectious putrescent disease spreading through telluric causes. For example, Ignacio Pereira, a homeopathic doctor, wrote a study on *elefantiasis* in 1867 in which he claimed that leprosy was a transmissible disease produced by "parasites."⁸⁸ This was indeed an interesting speculation preceding Hansen's observation of the leprosy bacillus. Nonetheless, Pereira's hypothesis was rejected by most Colombian doctors, since they supported humoral and miasmatic theories of leprosy. Most physicians conceived *elefancia* in the Hippocratic-Galenic tradition as an infectious disease in the sense of general physical and moral decay, marked by bad smell, and produced by a myriad of causes. Its potential cure relied as well on various remedies including the use of several herbs, cleanliness, moderate exercise, and special diet. The diseased were to live in dry and warm climates, according to García. De la Parra

⁸⁵ Quotations from de la Parra in Montoya, *Contribución*, p. 66.

⁸⁶ *Ibid.*, pp. 63, 67.

⁸⁷ *Ibid.*, pp. 71-73.

⁸⁸ Ignacio Pereira, "Elefantiasis de los Griegos," in Montoya *Contribución*, pp. 73-79.

recommended isolation for lepers rather to avoid the adverse influence of feelings of humiliation and shame than to refrain from infecting others. More bizarre medications, some of them pertaining to medieval medical traditions, involved the bite of a snake, snake meat, certain poisons, pregnancy, and the crisis of acute diseases.⁸⁹ Colombian physicians of the pre-bacteriological era maintained numerous explanations of *elefancia*. This endless enumeration of diverse causes seems to indicate a need of avoiding the omission of any possible antecedent in the absence of a single certainty.

Physicians and the Hereditary Doctrine

The work on leprosy published by Danielssen and Boeck in 1847 created a consensus in most European medical circles that the disease was transmitted by heredity. However, in New Granada the hereditary hypothesis never achieved high prestige, it was just one among several interpretations. Miasmatic and humoral theories were considerably more influential.

The professors of medicine of the first half of the nineteenth century were disciples of the initial generation of physicians trained in New Granada since 1802, who had been educated in Hippocratic-Galenic principles. This was the case of Merizalde who was a student of Vicente Gil de Tejada, a pupil of Mutis and Isla. Therefore, it is not surprising that the old medical group came into conflict with a number of European doctors, mainly French and British, hired by the government to teach anatomy, surgery and natural sciences. For example, Merizalde engaged in a bitter argument against the French physician Pierre Paul Broc because the teachings of the latter were based on the doctrines of Bacon, Rousseau and Condillac whose empiricism and sensationalism Merizalde rejected.⁹⁰

As to leprosy, only few physicians supported the concept that leprosy was inherited. One of them was Samuel Durán, who presented a thesis titled *Elefantiasis de los Griegos* to

⁸⁹ Montoya, *Contribución*, p. 67; on medieval treatments of leprosy, see: Demaitre, "The Relevance of Futility," pp. 40-43.

⁹⁰ Quevedo, "Institucionalización de la medicina en Colombia," pp. 204-205.

the Faculty of Medicine in 1873. He argued, echoing Danielssen and Boeck, that leprosy propagated through heredity rather than atmospheric conditions or contagion.⁹¹ The limited influence of the hereditary theory is partially explained by the fact that academic medicine was extremely weak in New Granada at the time heredity became the leading explanation for the transmission of leprosy. Therefore, without an organized profession prepared to embrace and to teach current sanctioned knowledge, numerous theories disputed their primacy without a powerful group able to approve any of them.⁹²

Lazarettos, Philanthropy, and Segregation

The colonial tradition of segregating lepers persisted during the nineteenth century, and as in the colonial era the issue of leprosaria opposed the central and local governments. From 1858, leaders of the country adopted a federalist constitution, using a number of arguments, among them the successful example of the United States. The constitution divided the nation into states which in practice simply formalized what was already taking place (see map 3 in the Appendix). The regions of New Granada, geographically isolated by poor communications, were quasi-autonomous governments with fragile links among them and with the central government. The growth of the export economy also contributed to loose regional ties by strengthening provincial links with foreign markets.⁹³

As in colonial times, the provinces aspired to have their own institutions for lepers. Thus, several states established legislation on *elefancia*. For example, an 1861 decree of the assembly of Santander (formed by the union of the provinces of Socorro and Pamplona) authorized the governor to found a lazaretto in the province of Socorro to replace the old *El Curo* asylum, thus establishing the *Contratación* lazaretto. Between 1864 and 1867 the

⁹¹ Samuel Durán, "Elefantiasis de los griegos," in Montoya, *Contribución*, pp. 81-83.

⁹² On the relation between professions and knowledge, see for example: Thomas F. Gieryn, "Boundary-Work and the Demarcation of Science from Non-Science, Strains and Interests in Professional Ideologies of Scientists," *The American Sociological Review*, 1983, 48 (Dec.):781-795.

⁹³ Bushnell, *The Making of Modern Colombia*, pp. 114-119.

state of Cundinamarca purchased a property in a place called *Agua de Dios*, not far from Bogotá to establish a leprosarium. This was the origin of the *Agua de Dios* lazaretto which would later become the largest of Colombian leprosaria.⁹⁴

The character of these institutions for lepers, nonetheless, remained philanthropic, even when they were established by the sovereign states of the radical liberal republic (1863-1880).⁹⁵ Notions of lepers both as targets of persecution and as objects of special moral care persisted throughout the nineteenth century. The name *hospital de San Lázaro* which was still in use in the early nineteenth century was abandoned, to be replaced by the term *lazaretto*. The Italian word *lazaretti* (from *Saint Lazarus*, the saint of lepers) referred to leper hospitals. During the fourteenth-century plague epidemic, *lazaretti* became quarantine facilities, and these institutions, including the name *lazaretti*, spread from Italy to other European countries.⁹⁶ Practices and ideas devised to control leprosy in the medieval society were subsequently applied to plague, and then such procedures were employed again to contain leprosy in the nineteenth century. Since plague was the paradigmatic epidemic disease in Europe until the nineteenth century, and outside Europe until even later, segregation of lepers set the standard procedures in cases of epidemics.⁹⁷

The question of leprosy was intertwined with the problem of poverty. In a renowned essay published in 1867, Miguel Samper, industrialist and liberal politician, described poverty in Bogotá in a period of intense economic recession:

⁹⁴ Montoya, *Contribución*, pp. 68-69.

⁹⁵ On the liberal republic see: Bushnell, *The Making of Modern Colombia*, pp. 101-139.

⁹⁶ Richard Palmer, "The Church, Leprosy and Plague in Medieval and Early Modern Europe," *The Church and Healing* ed. by W.J. Sheils (Oxford: Basil Blackwell, 1982), pp. 79-99, on p. 80; Paul Slack, "Introduction," *Epidemics and Ideas: Essays on the Historical Perception of Pestilence* ed. by Terence Ranger and Paul Slack (Cambridge: Cambridge University Press, 1992), pp. 1-20, on p. 15-19.

⁹⁷ For a non-European example on plague, see: Rajnarayan Chandavarkar, "Plague panic and epidemic politics in India, 1896-1914," *Epidemics and Ideas*, pp. 203-240.

"The streets and parks of the city are infested with burglars, drunks, *lazarinos*, loafers, and even lunatics."⁹⁸

In that same year, the sovereign state of Cundinamarca promulgated a law ordering the foundation of the *Agua de Dios* lazaretto. This law embodied a charitable stance, defining *elefanci acos* as "unfortunate beings worthy of all special commiseration from Christian souls," and establishing alms and endowments of private charity as part of the income of leper hospitals.⁹⁹ In 1869 the government of Cundinamarca established the *Junta de Beneficencia* (Board of Charity) which took charge of *San Juan de Dios* hospital, the *Casa del Refugio* (a workhouse), and the *Agua de Dios* lazaretto, among other institutions for the poor. Philanthropy, which had been dismissed by liberals in the mid-nineteenth century, once again became the answer to social issues. Samper reported that liberals started to collaborate with conservatives and members of the Catholic Church on charity boards.¹⁰⁰ The religious language of the 1867 law seemed unusual in a country ruled by radical liberals who advocated strict separation of Church and state. However, such inconsistencies were among the salient features of the period which was characterized by a fragile economy and an extremely weak central government.

During the nineteenth century, it became customary for leprosy sufferers to search for cures in thermal springs which were considered beneficial for the treatment of several diseases. One well known spring was Tocaima, a town located in the country's central region. However, lepers were not always welcome visitors. By 1870, inhabitants of Tocaima violently expelled about seventy lepers and their families who had presumably lived there for several years in close proximity to the rest of the population without being

⁹⁸ Miguel Samper, *La Miseria en Bogotá y otros Escritos* (Bogotá: Biblioteca Universitaria de Cultura Colombiana, 1969), p. 10. On the nineteenth-century Colombian economic situation and its social impact, see: Sowell, *The Early Colombian Labor Movement*, pp. 20-21.

⁹⁹ "Ley del 12 de Sep. 1867," in Montoya, *Contribución*, pp. 69-70.

¹⁰⁰ Samper, *La Miseria en Bogotá*, pp. 136-137.

persecuted.¹⁰¹ The leprosy sufferers banished from Tocaima found refuge in *Agua de Dios*, the property purchased by the state of Cundinamarca to build a lazaretto. The governor of this state charged the recently created Board of Charity with the administration of the leprosarium which in practice was no more than a leper village. According to Édouard Jeanselme, a French specialist on leprosy who studied the history and distribution of leprosy throughout the world, the foundation of leper villages was an old and worldwide struggle of leprosy patients to find a place where they would not be rejected.¹⁰² The expulsion of leprosy sufferers from Tocaima, together with the decrees issued by the state of Cundinamarca and by the central government already referred to, were the origin of the *Agua de Dios* lazaretto.¹⁰³ The federal government started funding the asylum, so that it actually became a national leprosarium that admitted lepers from all over the country. Endowments and the inheritance tax were destined to finance the institution.¹⁰⁴ By the end of the nineteenth century, there existed lazarettos in three sovereign states (from 1886 called departments): *Agua de Dios* in Cundinamarca, about sixty eight miles from Bogotá, *Contratación* in Santander, about 197 miles from Bogotá, and *Caño de Loro* in Bolívar, near Cartagena, in the Caribbean lowlands.

The most important means to improve the town-lazarettos was through charity. For example, in 1892, the Santamaría family from Bogotá donated funds to *Agua de Dios* for the construction of a special building to house healthy children of leprous parents. In 1877, José María Gutiérrez de Alba, a writer and journalist from Bogotá, had donated several books and copies of his own newspaper and started a plea for contributions to a library that *Agua de Dios*'s inhabitants had already started. In eight months the library had 744

¹⁰¹ Antonio Gutiérrez Pérez, Apuntamientos para la historia de Agua de Dios (Bogotá: Imprenta Nacional, 1925), pp. 11-12.

¹⁰² Édouard Jeanselme, La Lèpre (Paris: G. Doin, 1934), p. 592.

¹⁰³ Gutiérrez, Apuntamientos, pp. 11-12.

¹⁰⁴ "Ley 14 del 21 de Marzo, 1871," in Montoya, Contribución, p. 79.

volumes. By 1919, it owned 5,000 volumes, in Spanish and other languages, besides newspapers and pamphlets. At this time, the growth of *Agua de Dios* was such that patients were about to inaugurate two more libraries. In fact, the town that had about 200 lepers and about 600 healthy people in 1878, by 1899 counted 1,200 diseased plus nearly the same number of healthy people, and by 1919 enumerated 6,000 inhabitants both sick and healthy.¹⁰⁵

The first Salesian priest, the Italian Miguel Unia, joined the lazaretto in 1891, and by the end of that year, the *Casa Salesiana* (Salesian House) was firmly established in *Agua de Dios*. The Salesian order of Turin (Italy), whose main purpose was not medical, had been hired by the Colombian government in 1891 to provide craft training to poor children.¹⁰⁶ The presence of father Unia in *Agua de Dios* was fortuitous. When he discovered that his friend, the priest Leopoldo Medina, had been ordered to visit the lazaretto, Unia was astonished that there were lepers in Colombia. He then decided to accompany Medina and remained within the lazaretto until few months before his death which occurred in Turin in 1895. Unia understood his duty as a civilizing mission and a moral crusade. He was committed to eliminating drinking, festivities, and other popular customs of the *Agua de Dios*'s residents. One of his preferred methods of moralizing was to disguise himself while he patrolled the town. The care for souls, characteristic of medieval leper hospitals, acquired civilizing overtones in nineteenth-century Colombian lazarettos.¹⁰⁷

The principal object of leprosaria was hardly medical. *Agua de Dios* and *Contratación* became small towns that soon were given the status of municipalities, and *Caño de Loro* remained a small refuge for lepers. The three lazarettos served to hide leprosy sufferers and to separate them from the rest of the population, rather than to provide them with medical treatment, which was in any case of dubious value at the time. Mad

¹⁰⁵ Gutiérrez, *Apuntamientos*, pp. 14-38, 132, 141-142; Montoya, *Contribución*, p. 86.

¹⁰⁶ Safford, *The Ideal of the Practical*, p. 207.

¹⁰⁷ Gutiérrez, *Apuntamientos*, pp. 18-32.

people in eighteenth-century France were treated in a similar way. As Foucault suggested, lepers had an implicit contract with society: they had the privilege to be fed by the state, only if they accepted the physical and moral coercion of confinement. At the same time, the intention of segregation was not to extinguish the disease but "to keep it at a sacred distance."¹⁰⁸ This purpose was clear for the diseased and for their benefactors. For example, José María Rosales, administrator of *Agua de Dios*, not afflicted by leprosy himself, recounted the prejudices against the diseased in a newspaper published by the patients:

"For the healthy, *elefanci acos* are a double nightmare. This is why we see that most of society invents means to estrange them."¹⁰⁹

Rosales contested prevalent notions which imputed the origin of leprosy to relaxation of moral habits and to God's retribution. He also wanted to dispel false ideas about *elefanci acos* as dissolute and deceitful.¹¹⁰ For contemporary observers like Rosales, it was clear that the intention of segregation of leprosy sufferers was not to avoid contagion--healthy relatives of lepers moved themselves to the lazarettos, and most people seemed to disregard the risk of contagion.

The Patients' Perspective

Antonio Gutiérrez, a leprosy sufferer and one of the oldest inhabitants of *Agua de Dios*, published in 1925 a history of the lazaretto. By the time his book was published, he had been in the leprosarium for more than fifty years and was almost blind. The 476-page volume contains his personal memories, recollections of important events, descriptions of

¹⁰⁸ Michel Foucault, *Madness and Civilization* (New York: Random House, 1961/1965), pp. 17, 48.

¹⁰⁹ José María Rosales, "Justicia," *La voz del proscrito*, 1880, 1 (6) in Gutiérrez, *Apuntamientos*, pp. 252-254, on p. 252.

¹¹⁰ *Ibid.*, pp. 253.

the town-lazaretto, reproductions of letters, transcriptions of newspapers and articles written by patients, speeches by priests, and a number of other documents related to life in *Agua de Dios*. In this book, Gutiérrez revealed himself as an extremely religious person who constantly praised the actions of the Board of Charity which was in charge of the lazaretto, and of the numerous priests and nuns who lived and worked there. His intention by publishing this book was to show that after all the town-lazaretto was not such a horrible place, and that its inhabitants were mostly devout Catholics, as opposed to versions of lepers being angry and evil people. Gutiérrez also wanted to demonstrate how life in the lazaretto was happier before the Colombian government and the physicians took control of the institution in the early twentieth century, as I will explain in chapter 5.¹¹¹

According to Gutiérrez, life transpired normally, as in any other town, from 1870 until the early twentieth century when the new governmental measures started having an effect on the leprosarium. Families of leprosy sufferers usually accompanied them to the lazaretto, and the neighboring towns developed commercial and social relations with residents of the lazaretto, whether sick or healthy. *Agua de Dios*'s inhabitants built their houses, cultivated lands provided by the *Junta de Beneficencia*, opened workshops, got married, had children, organized civic and religious associations, and published newspapers and pamphlets such as La Esperanza (The Hope), and La Voz del Proscrito (The Voice of the Proscribed), issued between 1879 and 1880. Editors of these newspapers published local news, printed articles by the inhabitants of the lazaretto about religious, moral and philosophical issues, and published poetry, according to a distinctive Colombian predilection for poetry. Authors recommended Catholic virtues like humility and resignation and encouraged reading and cultivation of the spirit as ways to overcome adversity.¹¹² Compelled to face an illness that was incurable, mysterious, and often

¹¹¹ Gutiérrez, Apuntamientos, pp. 17-19.

¹¹² These newspapers, reproduced in Gutiérrez, Apuntamientos, pp. 185-262 were: La Esperanza with two issues in 1879 and La Voz del Proscrito with six issues in 1880. The latter was directed by the patient Luis Carlos Pradilla, a nephew of doctor Ricardo de la Parra, who published about leprosy. His relative's illness was probably de la Parra's main motivation to investigate leprosy. De la Parra

disfiguring, enhancing the spirit was virtually their only release.

Nonetheless, life in the lazarettos was far from ideal. The average temperature in *Agua de Dios* was ninety degrees Fahrenheit throughout the year and there was a serious water shortage. The patient-artisan Segundo Rodríguez, using bamboo channels, carried water from a distance of 2,300 meters. However, the liquid was available just for a couple of hours each day. The president of the Board of Charity, Francisco Bayón, was still in 1880 requesting the Congress to approve the budget to construct a waterway in *Agua de Dios*.¹¹³ Until at least 1889, when the Board of Charity hired an engineer to build an aqueduct, there was no water in the leprosarium. By 1920 water was still the most serious problem of *Agua de Dios*. The situation of other leprosaria was no better. Some leprosy sufferers from the Socorro region preferred to emigrate to *Agua de Dios* instead of entering the *Contratación* lazaretto because the state of Santander was in no position to provide food for them. A 1909 report declared that *Contratación* had never had a physician, lepers' allowances were often delayed, the diseased rarely received clothes, and the settlement was uncomfortable and unsanitary. Besides, the climate of *Contratación* was hot and humid, a factor which aggravated patients' conditions. In *Caño de Loro* there were few lepers, but they were often forced to go to Cartagena to search for assistance from public charity.¹¹⁴

Health conditions at *Agua de Dios* were unsatisfactory, but they were probably no worse than in any other Colombian town at the time. Several epidemics of yellow fever and smallpox decimated the population from 1880 to 1890. The first doctor of the lazaretto, Marcelino Liévano, was appointed only in 1879, and the first hospital was built in 1887. Typically, the official doctors of the lazaretto had their residence in nearby Tocaima,

also wrote a poem to his unfortunate nephew; see: Ricardo de la Parra, "Genio y Dolor: A mi amado sobrino Luis Carlos Pradilla," *La Voz del Proscrito*, 1880, 1 (5) in Gutiérrez, *Apuntamientos*, p. 243.

¹¹³ Francisco Bayón, "Carta a la Cámara de Representantes," *La Voz del Proscrito*, 1880, 1 (6) in Gutiérrez, *Apuntamientos*, pp. 251-252.

¹¹⁴ Pablo García Medina, "Profilaxia de la lepra en Colombia," *Repertorio de Medicina y Cirugía*, 1909, 1 (1):52-9, on pp. 54-5.

visiting the leprosarium merely twice a month. *Agua de Dios* had a resident doctor only briefly. Marcelino Vargas, a doctor and leprosy patient himself, was designated physician of the lazaretto in 1881, but he died of yellow fever the next year. The health of the population was in the hands of assistants, often patients themselves, like Luis Carlos Pradilla, who practiced homeopathic medicine. The initial four nurses, all Sisters of Charity, arrived only in 1892 to serve the hospital, and to teach at recently created schools for children.¹¹⁵

During the second half of the nineteenth century, patients at *Agua de Dios* seemed to disapprove only occasionally, at least publicly, any measures taken by the Board of Charity. For instance, patient León Ranjel complained in 1880 about a newly appointed board of charity, indicating that its decisions violated patients' constitutional rights. Ranjel, nevertheless, omitted any additional explanation of his criticism and expressed hope that the board would soon correct its procedures. Ranjel's protest presumably referred to new regulations established in 1880. In fact, the new Board prohibited gambling, drinking, concubinage, construction of houses by healthy people not closely related to patients, and leaving the lazaretto without special authorizations.¹¹⁶ However, these measures do not seem to have been actually enforced. Other complaints were absent from pamphlets published by patients between 1879 and 1880; they did not even mention their tiny daily allowance of fifteen cents. The patient Luis Carlos Pradilla published in 1878 in Bogotá a booklet titled "Agua de Dios" to appeal to charitable institutions for the construction of an aqueduct, and for the appointment of a physician for the lazaretto who would be willing to "study experimentally the disease in a large scale."¹¹⁷ However, few doctors were interested in experimental studies of leprosy at this time. Scientific research was

¹¹⁵ Gutiérrez, *Apuntamientos*, pp. 14-24, 126.

¹¹⁶ León Ranjel "La Nueva Junta de Beneficencia," *La Voz del Proscrito*, 1880, 1 (2) in Gutiérrez, *Apuntamientos*, pp. 201-202; Montoya, *Contribución*, p. 94.

¹¹⁷ Montoya, *Contribución*, pp. 86-87.

exceptional in Colombian society; it was regarded as the product of geniuses rather than a matter of discipline and resources.

A patient who resided in *Agua de Dios* for just over a year before dying put forward the most important criticism of the appalling situation of leprosaria. Adriano Páez (1844-1890), a well-known writer and journalist afflicted with leprosy, visited *Agua de Dios* several times to see his friend and colleague, Luis Carlos Pradilla. Páez was what in nineteenth-century Colombia was called a "literate." Literati were educated people (usually men, but many women were literati also) who occasionally worked for the government and devoted their lives to writing in newspapers and to debating philosophical, political, social and literary issues. They commonly spoke French, only occasionally English, and spent some time in Europe, particularly in France. The Hispanic tradition of seeking aristocratic status through university studies was solid in Colombia. In a country where the majority of the population was illiterate, power and writing were strongly associated.¹¹⁸ During the second half of the nineteenth century a dynamic political journalism flourished in Colombia associated with the foundation of several political, literary and scientific societies. Typically, each of these societies published a newspaper. This movement was similar to that of the creation of political and intellectual associations during the first half of the nineteenth century in France and Spain, where they provided support for constructing a bourgeois sociability.¹¹⁹

Páez, a typical literate in the sense described, and a radical liberal who belonged to the elite, apparently discovered he had the leprosy when he was a Colombian consul in Saint Nazaire (France). Páez returned to Colombia, still founded several political and literary newspapers, and undertook various political and cultural projects. Determined to

¹¹⁸ Raymond Leslie Williams, *The Colombian Novel, 1844-1987* (Austin: University of Texas Press, 1991), pp. 3-5, 20-23. On the social functions of the title of "doctor" in the Colombian society, see: Restrepo, "Naturalistas, saber y sociedad in Colombia," pp. 239-247.

¹¹⁹ On the notion of "sociability" and the French case, see: Maurice Agulhon, *Le cercle dans la France bourgeoise: 1810-1848* (Paris: Librairie Armand Colin, 1977); on the case of Spain, see: Alberto Gil Novales, *Las sociedades patrióticas 1820-1823* Vol. 1 (Madrid: Tecnos, 1975).

dedicate his life to studying the disease and to examining the conditions at leprosaria, he engaged in numerous discussions at the end of 1878 with the then president of the *Junta de Beneficencia*, lawyer Ramón Gómez. Referring to the situation of the lazarettos Páez claimed:

"Legislators that probably think of themselves as altruistic and even statesmen, have purchased a piece of land in a climate of thirty degrees [Celsius], have approved pathetic sums of money to build some huts and have sent there hundreds of unfortunates to gangrene and to die, in the name of public charity!"¹²⁰

Páez had access to French newspapers from which he became acquainted with the sanitary movement which was taking place in Europe. He had also traveled throughout France and had probably seen or read about modern sanatoria for patients of tuberculosis, where they were treated with pure air, pure water and pure food.¹²¹ According to Páez, Colombian lazarettos without doctors, nurses, medicines and pharmacies neglected elementary scientific principles. Compared to European hospitals, he contended, Colombian leprosaria were just asylums in which patients could grieve and die: "the state of our lazarettos is not worthy of people that have the most liberal Constitution," Páez concluded.¹²² He referred to the 1863 Colombian Constitution which named the country *Estados Unidos de Colombia* (United States of Colombia). This constitution was liberal to a point in which its excessive protection of individual liberties made it inconsistent. For example, the state guaranteed absolute press liberty and freedom of speech; it also secured

¹²⁰ Adriano Páez, "Carta segunda a Ramón Gómez," Nov. 1878, in Gutiérrez, *Apuntamientos*, pp. 147-149, on p. 147.

¹²¹ On tuberculosis, see the classical study by René and Jean Dubos, *The White Plague: Tuberculosis, Man and Society* (Boston: Little Brown, 1952), pp. 173-181; see also: Sheila M. Rothman, *Living in the Shadow of Death: Tuberculosis and the Social Experience of Illness in American History* (New York: Basic Books, 1994), pp. 201-204.

¹²² Páez, "Carta segunda," p. 149.

the inviolability of human life, but the citizens were also free to keep weapons. Additionally, the federal states became so powerful that the organization of a centralized Colombian state became almost impossible.¹²³

According to his Liberal and enlightened convictions, Páez suggested establishing sanitary commissions composed of doctors, engineers and philanthropists from each state of the republic. These committees would organize a census and gather detailed information about leprosy, its causes, and the influence of weather and food in its origin and evolution. He also proposed building local lazarettos in each of the states where the disease was prevalent. These lazarettos were to be colonies in which patients would work and live with their families, following hygienic precepts. The lazarettos would be provided with a number of hospitals and doctors for the late stages of the disease. According to Páez's plan, at least one of those hospitals should be devoted to the study of the disease and to the application of scientific and rational therapies. He also recommended the diffusion of hygienic rules not only related to *elefancia* but also to syphilis and to other diseases.¹²⁴

Páez however did not live long enough to see the materialization of any of these proposals. He advocated above all the medicalization of leprosy which only came about in the early twentieth century. Nonetheless, the partial realization of Páez's projects was far from complying with his enlightened dreams of science, freedom, and happiness. When doctors took over control of the disease, sick and healthy inhabitants of *Agua de Dios*, according to their testimonies, encountered more oppression than they had never experienced before. When Páez died in 1890, celebrated writers such as the Ecuadorean Juan Montalvo and the Colombian Jorge Isaacs, and renowned doctors, like Juan de Dios Carrasquilla, wrote sensitive testimonies to his memory.¹²⁵ Páez became a tragic laic hero,

¹²³ See: Bushnell, *The Making of Modern Colombia*, p. 122-127.

¹²⁴ Adriano Páez, "Carta tercera," in Gutiérrez, *Apuntamientos*, pp. 150-53, and "Carta cuarta," in *Ibid.*, pp. 153-158.

¹²⁵ Carrasquilla published Páez's book *Viaje al país del dolor* and wrote an introduction. See sections of this book in Gutiérrez, *Apuntamientos*, pp. 270-293.

comparable to romantic tuberculosis heroes of the early nineteenth century.¹²⁶ This was one of the few instances in which leprosy was romanticized, no doubt because it affected a member of the elite.

Ideas about leprosy and practices related to the disease, remained essentially unchanged in Colombia from the colonial era through the republic. Throughout the period physicians believed that leprosy was caused by many causes, such as: miasmas, humoral imbalances, rotten food, contagion and heredity, among others. The vision that the disease was inherited, which was the leading European theory of the etiology of leprosy until the bacteriological era, was not as influential in Colombia partially due to the frailty of the academic medical community. Without a powerful profession prepared to teach and support a particular theory, each doctor maintained a different doctrine about the causation of leprosy. Physicians and the Colombian government regarded *elefancia* as a special condition, partly physical, partly spiritual, similar to medieval notions of the disease. This continuity was carried through the Spanish Catholic culture and persisted even during periods of liberal domination in nineteenth-century Colombia. Lazarettos were intended to conceal leprous people, to keep them out of sight. *Agua de Dios* and *Contratación* grew as small towns with the special trait that some of their inhabitants, often the minority of the population, were *elefanci acos*. Lepers were treated as repugnant and offensive people that deserved to be separated--but not necessarily to prevent contagion. The Colombian state provided a daily allowance for lepers, as an action of its Catholic obligation of caring for the poor. Lepers were also objects of pity and recipients of private Christian charity. Seclusion was enforced for their benefit--exclusion from society would protect them from aggression and apprehension. Leprosy, persecution of lepers (real or intended), and ritual places for segregation, were continuous features of Colombian culture and society from colonial times

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On the issue of the romantizing of tuberculosis, see: David S. Barnes, The Making of a Social Disease: Tuberculosis in Nineteenth Century France (Berkeley: University of California Press, 1995), pp. 48-73; see also: Dubos and Dubos, The White Plague, specially chapter 5; Susan Sontag, Illness as Metaphor (New York: Farrar, Straus and Giroux, 1978), pp. 26-39; and Claudine Herzlich and Janine Pierret Illness and Self in Society (Baltimore: The Johns Hopkins University Press, 1987).

throughout the nineteenth century.

Chapter 3

Leprosy in the Nineteenth Century: Between Bacteriology and Epidemiology

"The whole system of medical police by which leprosy was finally driven out of Europe was based on the notion that it was contagious, and no measures not based on that principle have ever had the slightest effect in checking its ravages. The alarming spread of this loathsome pest in recent years is in my opinion due to the fact that for some time the opposite doctrine gained ascendancy, and held captive the minds of men."¹

Although most European doctors believed that leprosy was transmitted through heredity, the notion that the disease was produced by various causes was still in place during most of the nineteenth-century. However, by the end of that century, the idea that leprosy was caused by one specific microorganism became the dominant outlook on the disease. From that time on, there were hardly any supporters of hereditary or miasmatic doctrines. Gerhard A. Hansen observed the leprosy bacillus in the 1870s and postulated that it was the causative agent of the disease. Nonetheless, scientists were not certain of this theory, since the microorganism proved impossible to cultivate in vitro. Therefore, many investigators, adopting what they considered a rigorous scientific standpoint, refused to declare the disease communicable. Scientists and public health officers negotiated the contagiousness of leprosy on the basis of epidemiological data rather than bacteriological evidence. While Norway provided laboratories, research hospitals, and a valuable source of epidemiological information, the colonial world, and Hawaii in particular, dispensed outlandish instances of transmission of leprosy. Not only did the disease become "parasitic," it also became "tropical," this is, a disease of inferior and poor people. The "Dark ages" with all their horrors seemed to be present in the colonies, and Europeans and North Americans feared that the appalling illness would propagate to the "civilized" world. At the end of the

¹ Sir Morell Mackenzie M.D., The Dreadful Revival of Leprosy (New York: William Wood, 1890), p. 616.

nineteenth century, the past traditions which had made of leprosy a heinous disease revived. Old practices of compulsory segregation became the only method to arrest its propagation. The rationale for this revival was the slow evolution of leprosy, its contagiousness, and its supposed incurability.

What had been called "leprosy" declined and nearly disappeared from most European countries by the sixteenth century, and the modern Western world virtually forgot about it. Small endemic foci still existed in Norway, Sweden, Iceland, Finland, Russia, Spain, Portugal, France, Italy, Sicily, Crete, and Greece during the nineteenth century, but they were not the object of special concern.² However, by the middle of the nineteenth century, Europeans and North Americans "rediscovered" leprosy in the colonial world: Hawaii, India, Indonesia, Nigeria, Philippines, New Caledonia, West Indies, among others.³

Within the context of the worldwide expansion of colonialism, some European scientists reconstructed it as a contagious, tropical, and dreadful disease.

Historian Zachary Gussow points out that, although leprosy was prevalent in colonial regions such as India and the Far East, Norway and Hawaii provided two contrasting models to deal with the disease: the Norwegian model was democratic whereas the Hawaiian was colonial. The first was promoted by Norwegians themselves under special cultural conditions: the rise of nationalism that impelled physicians to study Norwegian circumstances and population needs. For Gussow, the relevance of this experience was its solid foundation on scientific research "in the laboratory, in the hospital, in the field."⁴ The second model to manage leprosy was effected in Hawaii by metropolitan administrators who developed a special repugnance for the disease and for its patients.

² On the geographical distribution of leprosy in the nineteenth century, see: Dom Sauton, La Léprose (Paris: C. Naud, 1901), pp. 43-92.

³ Zachary Gussow and George S. Tracy, "Stigma and the Leprosy Phenomenon: The Social History of a Disease in the Nineteenth and Twentieth Centuries," Bulletin of the History of Medicine, 1970, 44 (5):425-449, p. 440.

⁴ Zachary Gussow, Leprosy, Racism, and Public Health: Social Policy in Chronic Disease Control (Boulder, CO: Westview Press, 1989), p. 71.

Nonetheless, Gussow seems to suggest that the Norwegian approach to leprosy was "rational," "enlightened," and "scientific" while the Hawaiian was ideological and inspired by political interests.⁵ I contend that both paradigms were influenced by political as well as scientific motives, nationalism in the case of Norway, scientific reductionism in the case of Hawaii. On the other hand, the virtual extinction of leprosy in Norway by the end of the nineteenth century persuaded physicians and governments worldwide that isolation of patients was the only strategy to deal with the disease. What colonial administrators found convincing about the Norwegian model was its segregation. They failed to recognize the social, cultural, and political context in which measures against leprosy were taken in Norway, which was the key to their success. Imperial managers copied isolation since they could not reproduce, and were not interested in, the democratic context in which Norwegian society designed and developed its effective public health approach to leprosy.

Norway: Nationalism and Public Health

The Norwegian approach to leprosy was closely connected with the strong nationalism that emerged with the declaration of independence and the writing of a Norwegian constitution in 1814. Although Norway remained a dependency of Sweden until 1905, the national sentiment increased throughout the nineteenth century. This nationalism brought to public attention the harsh social, economic, and sanitary conditions of the rural population. Leprosy, together with scabies, worm diseases, rickets, chronic rheumatism, pulmonary tuberculosis, scrofula, and syphilis were among the most frequent ailments of the poor peasants. On the other hand, the Norwegian peasantry became an influential political force, and the political structure of the nation was reorganized into powerful local self-governments.⁶

⁵ Ibid., p. 85.

⁶ Ibid., pp. 67-69; Lorentz Irgens, 1992, "Hansen, 150 Years after his Birth, the Context of a Medical Discovery," International Journal of Leprosy 60 (3): 466-69, on pp. 466-467.

Early in the nineteenth century, the chaplain of the medieval St. Jorgen leper hospital in Bergen brought up the question of leprosy, and called for reforms, describing the hospital as a "cemetery for the living lepers."⁷ The government ordered epidemiological surveys to assess the magnitude of the problem. Between 1832 and 1856, five partial or total leprosy censuses were carried out. The enumeration of 1856 was one of the first national leprosy registers ever undertaken for an individual illness.⁸ That year was also the peak year of leprosy in Norway, with 3,000 cases out of a population of about 1,300,000 inhabitants; this is, 0.23 per cent of the population was affected by leprosy, and the disease was spreading.⁹ In consequence, a leprosy research center (Lungegaarde hospital) with room for ninety patients was founded in Bergen, in 1849, and several local hospitals housing a total of 1,000 patients opened between 1854 and 1861. The hospital capacity was ample, considering that there were never more than 3,000 leprosy sufferers in the country at any one time.¹⁰ After 1856, the number of cases declined rapidly; in 1895 the disease had decreased so much that two of the three hospitals near Bergen were closed, and Rekwas hospital at Molde was made into a tuberculosis sanatorium. By 1923, only 140 leprosy patients remained in Norway, and by 1973, there were just four persons afflicted with leprosy in the country.¹¹

During most of nineteenth century most Norwegian physicians believed that leprosy was an inherited disease. Indeed, an emphasis on hereditarian explanations of ill health was

⁷ Th. M. Vogelsang, "The Termination of Leprosy in Norway: An Important Chapter in Norwegian Medical History; Together with a Portrait of Armauer Hansen circa 1873," International Journal of Leprosy, 1957, 25 (4):345-51, on p. 345.

⁸ Gussow, Leprosy, Racism, and Public Health, p. 71.

⁹ Vogelsang, "The Termination of Leprosy in Norway," p. 345.

¹⁰ Lorentz Irgens, "Leprosy in Norway: An Interplay of Research and Public Health Work," International Journal of Leprosy 41 (2):189-198, on p. 192.

¹¹ Sir Leonard Rogers and Ernest Muir, Leprosy (New York: William Wood and Co., 1925), pp. 18-19; and Gussow, Leprosy, Racism, and Public Health, p. 70.

common during the nineteenth century, even before *eugenics*, as a science of the biological improvement of the human being, emerged in the early twentieth century.¹² Consequently, the Medical Committee of the Ministry suggested in 1851 that nursing institutions, instead of research hospitals, be founded. The expansion of the disease would be prevented by keeping the patients sexually isolated. The committee also proposed a law forbidding the marriage of leprosy patients, as well as descendants of leprosy patients. This proposal generated ample debate, and the Norwegian parliament finally rejected it. Although the disease was believed to be incurable, the need for more research on leprosy seemed to be more important than the mere idea of keeping patients from reproducing.¹³

Fundamental elements of the leprosy control program in Norway were its local, democratic and holistic character. The government established local Boards of Health in each district in 1856, and entrusted District Health Officers with control measures at the local level. The Norwegian authorities created hospitals in the districts where the disease was prevalent, so patients were not removed from their surroundings, and combined medical care with surveillance and registration of cases.¹⁴ The Norwegian government appointed a Chief Medical Officer for Leprosy in 1854 to secure central coordination of activities. In 1856 it established the national leprosy registry for the dual purpose of research and public health work. This registry gathered detailed information on each patient, and pursued epidemiological studies on the etiology of the disease. Local officers who were acquainted with the indigenous cultural conditions carried out these activities at the local level.¹⁵ The holistic nature of the control program of leprosy consisted of the close

¹² On *eugenics*, see: Lyndsay Andrew Farrall, The Origins and Growth of the English Eugenics Movement 1865-1925 (New York: Garland, 1985), p. 11; and Mark B. Adams, The Wellborn Science: Eugenics in Germany, France, Brazil, and Russia (New York: Oxford University Press, 1990).

¹³ Irgens, "Leprosy in Norway," p. 192.

¹⁴ Gussow, Leprosy, Racism, and Public Health, p. 73.

¹⁵ Irgens, "Leprosy in Norway," p. 192.

connection between scientific research, treatment, and prevention, within a framework of general improvement of living conditions. As a result, Norwegians regarded leprosy as just another illness, without developing any particular apprehension towards the disease.¹⁶ On the other hand, they developed a research tradition that is still alive today.¹⁷ For example, worldwide scientists still use the Norwegian Leprosy Registry as an exceptional source of information to discern the epidemiology of a disease that remains a puzzle in many respects.¹⁸

Heredity vs. Contagion

In this nationalist cultural context, the Norwegian model of leprosy control produced a significant amount of epidemiological, clinical, and bacteriological research. Norwegian physicians became the first scientific authorities on leprosy in the nineteenth and early twentieth centuries. Indeed, Daniel C. Danielssen, a physician at St. Jorgens hospital, and Carl W. Boeck, a professor of dermatology who had a grant from the Norwegian government to study leprosy in Europe, defined leprosy as a distinct nosological entity. In 1847 they published the monograph Om Spedalskhed (On Leprosy) together with an atlas which established the clear distinction between leprosy and syphilis, scurvy, psoriasis, tuberculosis, and scabies.¹⁹ The German pathologist Rudolf Virchow, who visited endemic Norwegian areas in 1859 to investigate leprosy, considered Danielssen and Boeck's work

¹⁶ Gussow, Leprosy, Racism, and Public Health, p. 16.

¹⁷ I claim that Norwegian physicians developed a distinct tradition of research on leprosy beginning in the nineteenth century with several generations of scientists supporting different theories of the etiology of leprosy. I will refer to this later in this chapter.

¹⁸ Irgens, "Leprosy in Norway," p. 196.

¹⁹ Daniel C. Danielssen and Carl W. Boeck, Traité de la Spedalsked ou Eléphantiasis des Grecs (Paris: J.B. Ballière, 1848); also: Atlas de la Lèpre par D.C. Danielssen et C.W. Boeck, Bergen en Norvège, 1847 Édition commémorative du centenaire ed. by Héraclides-Cesar de Souza-Araujo (Rio de Janeiro, 1946).

the beginning of the modern scientific knowledge of leprosy.²⁰ Danielssen and Boeck described leprosy in traditional humoral terms such as an inherited "dyscrasia sanguinis," which indicated the presence in the blood of harmful substances, in this case, an increase of albuminate.²¹ They characterized the clinical signs and pathological anatomy of the disease and classified it into the two basic forms which are still recognized today, although under other names: the tubercle or nodular (today called "lepromatous") and the anaesthetic (today called "tuberculoid"). These Norwegian physicians considered leprosy incurable. They believed that it could be produced by several causes, but primarily it was inherited. According to them, one-eighth of the cases were due to incidental factors, such as, unhealthy and hard environmental and living conditions.²² The idea that leprosy was an inherited disease which has also been believed for centuries in China, Japan, and some parts of Africa, gained worldwide ascendancy in medical circles during the nineteenth century until the emergence of the germ theory of disease. According to the leprologists Rogers and Muir, the hereditary hypothesis was so dominant that even after the scientific community agreed that the leprosy bacillus was the causative agent of the disease, some of the physicians who supported the contagion theory only used as evidence in favor of contagion, those cases in which all possibility of hereditary influence could be excluded.²³ The prominence of this theory was also attested to by the fact that the government of Indonesia canceled by decree its policy of segregation of leprosy patients in 1865, due to the scientifically accepted conviction that the disease was inherited.²⁴

²⁰ Virchow was opposed to the theory of contagion as a mode of transmission of leprosy see: Rudolf Virchow, "Virchow's Leprosy (From Die Krankhaften Geschwulste, Translated by George L. Fite)," International Journal of Leprosy, 1954, 22 (1):71-9; and 22 (2):205-17, on pp. 75-7.

²¹ See: Virchow, "Virchow's Leprosy," p. 78. The term "dyscrasia" comes from the Greek: *dys* meaning bad, difficult, ill, and *krasis* meaning mixture.

²² Gussow, Leprosy, Racism, and Public Health, p. 72; Irgens, "Leprosy in Norway," p. 191.

²³ Rogers and Muir, Leprosy, pp. 57-63.

²⁴ B. Zuiderhoek, "The Approach to the Leprosy Problem in the Past in Indonesia," Tropical and Geographical Medicine, 1993, 45 (1): 2-5, on p. 3.

A report from the Royal College of Physicians of London, prepared in 1862 at the request of the Secretary of State for the Colonies, and published in 1867, lent major support to the hereditary assumption about the origin of leprosy. The report, based on answers to a questionnaire sent in by colonial physicians from all the British colonies, was the first international epidemiological study of leprosy. It concluded that leprosy was not communicable from diseased to healthy persons. In consequence, according to the committee of the Royal College, there was no reason to justify measures of compulsory segregation of "lepers." Apparently, the committee sent the report endorsing the hereditary view to the Colonial Secretary when only fifty of the total 250 replies had been received. When all the answers were collected in 1865, the majority of which came from India, the committee of the Royal College declared that the anti-contagionist view had been much reinforced by these later responses.²⁵ However, in 1866, the physician N.C. Macnamara, an Indian Medical Service officer with long personal experience with leprosy who believed the disease was contagious, examined the information submitted to the College from India, and concluded that out of eighty-six responses displaying some cognizance of the disease, forty-two percent supported the contagionist view, thirty percent were doubtful, and only twenty-eight were against it. Macnamara criticized the College report claiming that

"leprosy is contagious, but it is necessary for the propagation of the disease by this means that the discharge from a leprous sore should enter the blood of a healthy person: and further, the disease may even then remain undeveloped in the system for years."²⁶

The physicians Leonard Rogers and Ernest Muir, who became recognized leprologists in the early twentieth century, and believed that the disease was contagious, commented the

²⁵ Report on Leprosy by the Royal College of Physicians Prepared for Her Majesty's Secretary of State for the Colonies (London: George Edward Eyre and William Spottiswoode, 1867).

²⁶ Quoted by Rogers and Muir, Leprosy, p. 64.

Royal College commission's report in their well-known treatise on leprosy published in 1925. They examined the total answers to the commission, finding that no less than sixty percent of them were examples of the contagious nature of leprosy which were entirely dismissed by the official report. According to them, this "erroneous" non-contagious report on leprosy, and the ensuing orders by the British Colonial Secretary "to cease enforcing, and to repeal, all laws affecting the personal liberty of the lepers," led to an increase in the prevalence of leprosy not only in English colonies, but also in other European possessions in the mid nineteenth century.²⁷ The above is an instance of the role that theories played in the analysis of data. The committee of the Royal College subscribed to the scientific view of leprosy which was at the time hereditary rather than contagious, and Macnamara believed his own epidemiological observations. On the other hand, the medical authorities on leprosy, Rogers and Muir, in their scientific/historical analysis of the disease, examined the report to justify their own outlook on the etiology of leprosy.

Numerous doctors like Macnamara, who conducted field work on leprosy in colonial areas, carefully recorded data to demonstrate the communicability of the disease. For example, the physician C.L. Drognant-Landré published in 1869 the book De la contagion, seule cause de la propagation de la lèpre which had a decisive influence on Hansen and convinced him of the necessity of investigating the communicability of leprosy.²⁸ This work was based on the author's long practice with leprosy patients in Guiana, and his evidence was mostly comprised of cases of Europeans who contracted the disease by living in close contact with affected "Negresses."²⁹ Within the framework of colonialism, leprosy was regarded in a different light; it became a disease of racially "inferior" people. Many observations had made sufficiently clear that leprosy was difficult

²⁷ Ibid., pp. 53, 63-64.

²⁸ C.L. Drognant-Landré, De la contagion, seule cause de la propagation de la lèpre (Paris: Germer-Baillière, 1869); see also: Irgens, "Leprosy in Norway," p. 193.

²⁹ Rogers and Muir, Leprosy, p. 65.

to communicate from the diseased to the healthy. Therefore, when Europeans became infected, they were censured for having become too intimate with natives, suggesting that, as in medieval times, leprosy was acquired by sexual transmission.

The Construction of a Contagious Disease

Working at the leprosy research center in Bergen as the assistant to Danielssen, the physician Gerhard A. Hansen made what came to be known as the first observation of the "leprosy bacillus" (what was later called *Mycobacterium leprae*) sometime between 1870 and 1874. In his annual report to the Medical Society in Christiania published in 1874, Hansen described bacteria-like rods taken from leprosy nodes which at the time he suspected, but could not prove, to be the cause of leprosy.³⁰ Hansen's main argument to support the assertion that the disease was contagious was epidemiological. He took information from the leprosy registry and from his own field work to show that the number of new cases of the disease decreased most rapidly in districts where isolation of leprosy patients had been more strictly implemented.³¹

A typical scientific priority dispute over the "discovery" of the leprosy bacillus between Hansen and the German bacteriologist Albert Neisser surrounds the history of the construction of Hansen's bacillus as the causative agent of leprosy.³² Neisser, using leprosy bacilli provided by Hansen himself, and other material taken from leprosy patients from Granada (Spain), succeeded in staining the microorganism by employing techniques

³⁰ Gerhard Armauer Hansen, "Undersogelser angaaende Spedalskhedens Aarsager," Norsk Magazin for Laegevidenskaben, 1874, 9:1-88, reprinted in 1955 as "Causes of Leprosy," International Journal of Leprosy 23 (3): 307-9.

³¹ Gerhard Armauer Hansen, The Memories and Reflections of Dr. G. Armauer Hansen translation G.A. Hansen (Würzburg: German Leprosy Relief Association, 1976), pp. 95-109; and Irgens, "Leprosy in Norway," pp. 194-195.

³² George L. Fite and H.W. Wade, "The Contribution of Neisser to the Establishment of the Hansen Bacillus as the Etiologic Agent of Leprosy," International Journal of Leprosy, 1955, 23 (4): 418-28; and J.K.A. Clezy, "Hansen and his Bacillus," Papua New Guinea Medical Journal, 1973, 16 (2):77-79, on pp. 77-78.

developed in 1879 by Carl Weigert and Robert Koch, and immediately published his accomplishment.³³ Thanks to these techniques he was able to offer a more substantial description of the lepra bacillus than the one suggested by Hansen. Nevertheless, the Norwegian physician was rewarded with eponymy because of his early publication of 1874.

Hansen, according to his memoirs, was reluctant to announce "his discovery" because he considered that "there was still a great deal to be done before one could claim that the bacillus was definitely the origin of the disease."³⁴ Under the advice of Danielssen, his chief and former father-in-law, Hansen responded by promptly publishing in German, in English, and in Norwegian, his theories about the cause of leprosy.³⁵

Although the dominant etiological view in the nineteenth century was hereditarian, several other conjectures about the causation of leprosy competed for primacy: miasmatic, dietetic, hygienic, and contagious. Hansen opposed most of these assumptions, and firmly believed the disease was communicable. Even though he belonged to the Norwegian research tradition on leprosy, inaugurated by Danielssen and Boeck, Hansen's work (and Neisser's) introduced a new paradigm to explain the etiology of the disease. I understand the term "research tradition" in a broad sense to indicate a network of institutions and generations of scientists working with a national style, in a similar way the historian Mary Jo Nye uses the notion of "research school."³⁶ Scientists belonging to the same research tradition can disagree on specific points. For example, some aspects of the scientific understanding of leprosy, such as its classification and the anatomical lesions produced in advanced stages, remained common knowledge for both "schools"--the contagionist and the

³³ Albert Neisser, "Zur Aetiologie der Lepra," Breslauer Artzl. Zeitschr., 1879, 1:200-215.

³⁴ Hansen, The Memories, p. 98.

³⁵ Gerhard Armauer Hansen, "Bacillus leprae," Virchow's Archiv, 1880, :32-42; Nordiskt Medicinskt Arkiv, 1880, 12:1-10; and Quarterly Journal of Microscopical Science, 1880, 20 (Jan):92-102.

³⁶ See: Mary Jo Nye, "National Styles? French and English Chemistry in the Nineteenth and Early Twentieth Centuries," Research Schools: Historical Reappraisals Ed. by Gerald L. Geison and Frederic L. Holmes Osiris, 1993, 8:30-49, on p. 32.

hereditary. In other words, the making of Hansen's bacillus as the etiological agent of leprosy did not imply a complete redefinition of all aspects of the disease. Beyond cognitive assumptions, Hansen and his mentor, Danielssen, experienced the same nationalistic interest in finding answers to the problem of leprosy.

In his memoirs, Hansen gave some helpful hints on reconstructing the path of his "discovery" which provide a good example of the hypothesis that scientific knowledge is theory-laden rather than data-driven.³⁷ In 1870, Hansen obtained a grant to work at the laboratory of Max Schultz in Bonn, and after finishing this work he traveled throughout other European countries.³⁸ He claimed that his stay abroad did not teach him a great deal in a conventional sense. However, its unexpected benefit was the discovery of Charles Darwin's writings which were entirely unknown in Norway:

"I now commenced to study his books thoroughly and from them reached the heart of scientific research and reasoning: to set aside every preconceived opinion and to diagnose from every approach that might have bearing on an ultimate solution. Nothing I had previously encountered had so fertilized my thought and my work. My goal had become that of researching as open mindedly and honestly as Darwin had, to be as thorough and, at the same time, as cautious as he in arriving at my conclusions. My previous scientific experience had left me well prepared to accept his teaching."³⁹

Despite Hansen's interpretation of Darwin's influence on his approach to science, his preconceptions contributed to his scientific work. Hansen was so interested in finding an answer to the origin of leprosy that he spent significant amounts of time traveling through the districts most affected by leprosy. The Norwegian physician was an atheist, rationalist

³⁷ Karin D. Knorr-Cetina and Michael Mulkay, "Introduction: Emerging Principles in Social Studies of Science," Science Observed: Perspectives on the Social Study of Science (London: Sage, 1983), pp. 1-17.

³⁸ Hansen, The Memories, p. 72.

³⁹ Ibid., p. 95.

scientist, very much opposed to the religious convictions of Norwegian peasants. Their customary answer when asked whether they had any idea of how they had contracted leprosy--"the Almighty has given it to me"--and their reluctance to accept anything suggestive of personal blame, so much irritated Hansen, that he was known as having a disparaging judgment of the Norwegian peasant. According to Hansen, it demanded "more courage to accept one's own responsibility than to blame everything on fate or the Almighty."⁴⁰ At the same time, he was a nationalist, and he was optimistic about the capacity of his fellow country people for improvement through education. By locating the responsibility of their situation within the people themselves, Hansen wanted them to adopt what he saw as rational behavior and to learn habits of cleanliness and hygiene. At the time, he was already convinced that Danielssen and Boeck's hereditary theory was wrong. His rational attitude and his optimistic belief in progress were at the root of his conviction that leprosy was communicable:

"In most instances the patients could--or would--give little information but I found a few who talked convincingly. They advanced my belief that leprosy wasn't an hereditary illness but that *its source lay within range of human discovery and control.*" [My emphasis] (...) "It was obvious to me that we could do nothing, or next to nothing, against it if it were hereditary but that there was every promise of achieving eventual results if it were caused by bacteria and infectious."⁴¹

The hypothesis of heredity which implied that leprosy was incurable fitted well with the religious traditions of Norwegian peasants. Nonetheless, for Hansen it was unacceptable that humans were unable to control and dominate nature according to their rational judgment and to a plan previously conceived. He was then "convinced that the enemy

⁴⁰ *Ibid.*, pp. 102-103.

⁴¹ *Ibid.*, p. 97, 99.

would be found in the form of a bacillus."⁴² In order to demonstrate his hypothesis and to comply with the rules of the "scientific method," he needed to rely on his laboratory observations, and on his own field work on leprosy as a resident physician at Lungegaard hospital which he started in 1868. This is why when Hansen first published the results of his research and his thoughts on the contagious character of leprosy, he presented them as mere conjectures.⁴³

Because the "Hansen bacillus" did not fulfill the three Koch-Henle's postulates, scientists did not easily accept the contagion theory of leprosy. Virchow, for example, in the first international congress on leprosy in Berlin in 1897, declared that the contagiousness of leprosy would be never accepted as a dogma, until the day when Hansen's bacillus could be cultivated and inoculated.⁴⁴ In spite of the enormous prestige of the German scientist, the Berlin conference was the turning point in Hansen's scientific career, marking his international recognition as a first-rate scientist.⁴⁵ From this conference also dated the official acceptance of the theory of the contagiousness of leprosy: "A considerable portion of the discussion has related to the *Bacillus leprae*, which the conference accepts as the virus of leprosy." About the hereditary theory, which still had adherents at the time, the leprological community claimed that "[it] is now further shown to have lost ground in comparison with the now generally accepted theory of its contagiousness."⁴⁶ Nonetheless, from the point of view of the bacteriological paradigm at the time, there was no proof of the bacillus being the "cause" of leprosy. The verification had to come from some other source,

⁴² Ibid., p. 97.

⁴³ Hansen, "Causes of Leprosy," p. 309.

⁴⁴ Sauton, La L  prose p. 131.

⁴⁵ Hansen wrote about his accomplishment in his memoirs: "I have, of course, become famous through it. This was apparent in 1897 at the leprosy conference in Berlin." See: Hansen, Memoires, p. 100.

⁴⁶ Donald H. Currie, "Resolutions Adopted by the Berlin Conference of 1897," Public Health Reports, 1909, 24 (38):1361.

in this case, epidemiological data. There was already enough accumulation of epidemiological data that supported contagionist views, not only from Norwegian physicians, but from other doctors working in the colonies.⁴⁷ The scientific community gathered in Berlin negotiated the contagiousness of leprosy in the absence of any other convincing hypothesis, and on the grounds that Hansen's bacillus was always present in patients with leprosy, and was absent in healthy persons. Physicians also admitted the communicability of leprosy because the germ theory had become the dominant view on the etiology of diseases, replacing explanations involving miasmata and spontaneous generation.⁴⁸ In fact, leprosy is currently considered the first human illness that was causally connected with a microorganism.⁴⁹ However, convincing proof of the communicability of leprosy did not come from the labs of bacteriologists. It came unexpectedly from the colonial world, as I will indicate.

Searching for bacteriological evidence, Hansen attempted many times not only to culture the bacillus in different artificial media, but also to inoculate leprosy bacillus into animals. All these attempts were unsuccessful. Because during the nineteenth century and well into the twentieth, scientists were unable to find animals receptive to "Hansen's bacillus," the history of leprosy research abounds with incidents of human experimentation. Danielssen inoculated himself several times with leprosy material, and he also inoculated volunteers (two hospital orderlies and a nurse) with negative results. In 1879, Hansen, following this tradition, inoculated material taken from a leprosy nodule of a patient suffering from lepromatous leprosy into the eye of a woman, an inmate of one of the leprosy hospitals in Bergen, who was affected by tuberculoid leprosy. The operation failed

⁴⁷ See for example: W. Munro, "Leprosy," Edinburgh Medical Journal, 1876-1879; and some other works on the communicability of leprosy published in the nineteenth century, registered by Rogers and Muir, Leprosy, pp. 65-66.

⁴⁸ See the classical study by William Bulloch, The History of Bacteriology (New York: Dover, 1938/1979).

⁴⁹ W. H. Jopling, Handbook of Leprosy 3rd. ed. (London: William Heineman Medical Books, 1984), p. 12.

to produce a leprous nodule in her eye, but produced some discomfort and pain to the patient.⁵⁰

In consequence, Hansen was prosecuted, on the basis that he undertook the operation without the patient's consent, and without explaining to her the nature of the experiment and its possible consequences. In his defense, Hansen argued that these practices were usual, that they had been routinely performed before without complaint. With a typical scientific attitude that dismissed other knowledges different than scientific, he also contended that an explanation of the experiment to the patient would have been useless because she would never have regarded it from the same scientific point of view as he did. As a result, Hansen was forced to renounce his post as a physician at the leprosy hospital, but he retained his appointment as Chief Medical Officer for Leprosy which he held until his death in 1912. The Norwegian justice Knut Blom who recently studied the case, suggested other motives underlying the incident: most patients resented Hansen because of his conviction that isolation for leprosy sufferers should be rigorous. Patients were also probably offended by Hansen's public opinion, already referred to, that instead of providence or fate, the diseased should blame themselves for contracting leprosy. On the other hand, the episode shows that, unlike many other countries, the cause of leprosy patients had its supporters in Norway, and that even a famous scientist would be castigated if violations of patients' rights could be demonstrated.⁵¹

The Prestige of a Public Health Model

The Norwegian state had practiced some form of control and mild isolation of leprosy patients since the mid nineteenth century, long before Hansen postulated the leprosy

⁵⁰ Clezy, "Hansen and his Bacillus," p. 78; Irgens, "Hansen, 150 Years," pp. 468-9; and William B. Bean, "Walter Reed and the Ordeal of Human Experiments," Bulletin of the History of Medicine, 1977, 51 (Spring): 75-92, on p. 79.

⁵¹ Knut Blom, "Armauer Hansen and Human Leprosy Transmission: Medical Ethics and Legal Rights," International Journal of Leprosy, 1973, 41 (2):199-207.

bacillus as the etiological agent of the disease. Due to his contagionist conviction, Hansen's views on the isolation of leprosy patients were drastic. Therefore, when Hansen was designated Chief Medical Officer for Leprosy in 1875, he decided to enforce hospital isolation even of patients whose general physical condition was relatively good. Hitherto, admittance at the hospital had been optional. In 1877, the Act for the Maintenance of Poor Lepers was passed. According to this act, leprosy patients who were incapable of supporting themselves should be hospitalized. It was also forbidden for leprosy sufferers to enter regular hospital wards. In 1885, a second law, the Act on the Seclusion of Lepers, was enacted. This bill ordered that all affected with leprosy must be either isolated in separate rooms at home, or hospitalized, if necessary with the help of the police. This act gave rise to intense opposition; antagonists said that it placed people with leprosy in the same category as criminals, and claimed that the disease could be eradicated without compulsory isolation. Hansen's argument that the number of cases diminished more rapidly where isolation was consistently implemented contributed heavily to the approval of the act. The contagiousness of leprosy became generally accepted in Norway. However, physicians and authorities believed that leprosy was only slightly contagious and that intimate and prolonged contact was necessary for its transmission. In consequence, the isolation enforced in Norway was relatively mild. Hospital inmates had freedom of movement, and their only requirement was to spend the night in the hospital.⁵²

The successful eradication of leprosy in Norway meant that the Norwegian program became the international public health paradigm for leprosy by the end of the nineteenth century. In fact, in 1873 the British government sent the English Surgeon Major Henry Vandyke Carter from India to Norway to study leprosy control. Carter, persuaded by the virtues of the model, recommended the introduction of some of its aspects into India.⁵³ In

⁵² Irgens, "Leprosy in Norway," pp. 195-196; Vogelsang, "The Termination," p. 346; see also: Hansen, Memories, p. 99.

⁵³ Henry Vandyke Carter, Report on Leprosy and Leper-Asylums in Norway: With Reference to India (London: G.E. Eyre and W. Spottiswoode, 1874).

1890, the physician Robson Roose published another report on the Norwegian experience with leprosy, in which he emphasized the importance of isolation of patients in order to prevent the spread of leprosy infection.⁵⁴ The definitive indication that the Norwegian approach to leprosy had become known worldwide occurred when the first international leprosy congress, held in Berlin in 1897, adopted the following resolution, proposed by Hansen: "the system of obligatory notification, and of observation and isolation, as carried out in Norway, is recommended to all nations with local self-government and a sufficient number of physicians."⁵⁵ Wherever leprosy was endemic, the authorities tried to emulate Norway's public health paradigm. For instance, in 1899, Manuel Antonio Sanclemente, then president of Colombia, invited Hansen to visit the country in order to assist the government in its efforts to control the disease.⁵⁶ Although Hansen never made such visit, this was another example of international recognition of Norway's successful results of leprosy control. Addressing a meeting of Scandinavian dermatologists in 1928, H.P. Lie, Chief Medical Officer for leprosy in Norway gave more importance to the role of social/economic factors in their management of leprosy:

"The course of leprosy in Norway must be regarded in connection with the whole economic and cultural history of the country. The increase and decline of the malady seem to follow, at some distance, periods of depression and prosperity in the country. (...) The great decrease in the prevalence of the disease since 1856 must therefore be regarded in the light of the great progress the country has made during that time in all respects, and not least in hygiene and sanitation. And as an important factor in this respect *isolation*, conceived and applied as I have shown above, has played a

⁵⁴ Robson Roose, Leprosy and its Prevention as Illustrated by Norwegian Experience (London: H.K. Lewis, 1890).

⁵⁵ Currie, "Resolutions Adopted by the Berlin Conference in 1897," p. 1361.

⁵⁶ See: "Informe del Secretario Bienal," Revista Médica de Bogotá, 1899, 21 (243):362-373, on p. 367, and Hansen, Memories, p. 125. I will refer again to this incident.

considerable role."⁵⁷

Nonetheless, when leprologists gathered in Berlin recommended isolation "as carried out in Norway," they failed to realize that the Norwegian public health model was not a commodity that could be merely transferred from one society to another.⁵⁸

Hawaii: Colonialism and Leprosy

While Norwegian physicians were dealing with Norwegian leprosy patients, leprosy was not an international concern. The "revelation" of the existence of a "leprosy world" occurred in Hawaii in the early 1860s when several European countries and the United States were competing for political and economic influence on the islands. Following a typical colonial pattern, Hawaii (known in the nineteenth century as the Sandwich Islands) was subject to several political transformations: from a native Polynesian monarchy, Hawaii became first, the quasi-independent Kingdom of Hawaii (1840-1894), and then the Republic of Hawaii (1894-1900). In 1900, Hawaii turned into a territory of the United States, and in 1959 became one of the states of that country.⁵⁹

Leprosy was not mentioned as one of the diseases present in the isles when the Hawaiian Board of Health was established in 1850. However, the German physician William Hillebrand in his annual report at one of the major hospitals, the Queen's Hospital, in April of 1863, reported that a new disease that the Hawaiians called "Mai Pake" (Chinese disease) was rapidly spreading, since it had been introduced by the Chinese in 1848. In December of 1863, the first official discussion of what Hillebrand called "Oriental leprosy" took place at a meeting of the Board of Health, and in February of 1864, in another meeting,

⁵⁷ H.P. Lie, "Why Is Leprosy Decreasing in Norway?" *International Journal of Leprosy*, 1933, 1 (2):205-216, on p. 216.

⁵⁸ I will return to this point later.

⁵⁹ Gussow, *Leprosy, Racism, and Public Health*, pp. 85-86.

physicians reported that leprosy was propagating on the other islands. The Board of Health decided to conduct a census of lepers, and requested Dr. Hillebrand and Dr. Edward Hoffman to study the questions of heredity, contagion, and first origin of the disease.⁶⁰

The outbreak of leprosy in Hawaii caused great alarm among the European and American populations living in the islands, and in January, 1865, the Board of Health, whose members were mostly non-natives, approved an act to prevent the spread of leprosy. This act ordered the reserving and setting apart a land owned by the government to erect an establishment to secure the absolute seclusion of lepers; any person alleged to be a leper should be arrested by the police and delivered to the Board of Health. The law authorized the Board of Health to make arrangements to found a hospital for treatment of leprosy patients in the incipient stages of the disease. Emulating a medieval practice, the act also declared that the property of all leprous persons should be "liable for the expenses attending their confinement."⁶¹ At the end of that year, the Board of Health opened Kahili Hospital, situated about two miles from Honolulu, to accommodate incipient cases of leprosy, and to serve as a detention station to temporarily confine advanced cases. The board also purchased a lot in a peninsula on the north side of the island of Molokai, separated from the rest of the island by a mountain barrier, for those whose leprosy was already "incurable." From 1866 to 1905, more than 5,800 individuals, most of them Hawaiians, were sent to the leper colony in Molokai.⁶² From 1870 to 1894, the cases in the settlement numbered from 0.867 to 1.188 per cent of the total population of Hawaii. This rate was high compared with the Norwegian incidence of 0.23 per cent in 1856.⁶³

Ambrose Hutchison, resident superintendent of the settlement at Molokai from 1884

⁶⁰ Rogers and Muir, Leprosy, p. 40; Arthur A.St.M. Mouritz, The Path of the Destroyer: A History of Leprosy in the Hawaiian Islands and Thirty Years Research into the Means by Which It Has Spread (Honolulu: Honolulu Star-Bulletin Press, 1916), p. 32.

⁶¹ See: "Act to Prevent the Spread of Leprosy, 1865," in Mouritz, The Path of the Destroyer, p. 34.

⁶² Mouritz, The Path of the Destroyer, p. 63; Gussow, Leprosy, Racism, and Public Health, pp. 94-96.

⁶³ Rogers and Muir, Leprosy, p. 41.

to 1897, himself afflicted with leprosy, described the dreadful conditions at the colony, the "pathetic side of my life as a condemned outcast and prisoner," beginning with his arrival at Kalaupapa (Molokai) in 1879 with other lepers, and being left on the rocky shore without food or shelter. The circumstances of the lepers' transportation were so harsh that patients frequently died just after their arrival.⁶⁴ Arthur A. Mouritz, physician at the colony from 1884 to 1887, asserted that fifty years after the foundation of the leprosarium, the situation of the transfer of the sick to Molokai was still as adverse as Hutchison's description revealed.⁶⁵ The Belgian Catholic cleric Father Joseph Damien de Veuster, who arrived at Molokai in 1873 as the resident priest of the settlement, also recounted the miserable conditions of the camp: it was a "living graveyard," the diseased had no clothes for the winter, houses were small damp huts, the general hygienic conditions were deplorable, the death-rate was high, and there were no medicines, and no medical care.⁶⁶ His concern for the well-being of lepers forced Damien to engage regularly in confrontations with the officials of the Board of Health. As a result, he contributed immensely to improving the situation of the colony: the supply of clean water was deficient, so Damien studied the situation, suggested several possibilities, and with the help of some patients constructed a reservoir on the cliff side to pipe fresh water to the settlement. Damien obtained from the government a quantity of lumber to build new houses, better food, and surgical dressings; he also started a school with about forty children, and frequently acted as nurse, doctor, judge, ruler and teacher.⁶⁷

In 1879, six years since Damien's arrival, the Board of Health started sending visitor

⁶⁴ See: Ambrose K. Hutchison's autobiography in: Mouritz, The Path of the Destroyer, pp. 204-207.

⁶⁵ Ibid., p. 210.

⁶⁶ See: Rev. Joseph Damien, Catholic Priest, "A Personal Experience: Thirteen Years' Residence and Labor Among the Lepers at Kalauwao," in Ibid., pp. 211-228.

⁶⁷ Anthony Weymouth, Through the Leper-Squint: A Study of Leprosy from Pre-Christian Times to the Present Day (London: Selwyn and Blount, Paternoster House, 1938), pp. 157-160; Rev. L.W. Mulhane, Leprosy and the Charity of the Church (Chicago: D.H. McBride, 1896), pp. 79-88.

physicians to the leprosarium. However, when Queen Kapiolani visited the settlement in 1884, patients at Molokai were still requesting the presence of a resident physician because the visits of doctors were so short and hurried that "no practical advantage was to be derived from them."⁶⁸ The first group of nurses, the Sisters of Charity from the Franciscan Convent of Saint Anthony at Syracuse, New York, arrived at Kakaako Hospital, near Honolulu in 1883; only five years later they were transferred to Molokai.⁶⁹ Although Damien worked to ameliorate the conditions at Molokai, in 1884 the death rate was still very high. According to doctor J.H. Stallard from the College of Physicians of London, the mortality at the settlement in 1883 was 150 per thousand annually, and during 1884 it increased by twenty-five per cent, being ten times higher than any other unhealthy community. This incidence was produced not by leprosy, but by dysentery which was caused by "gross neglect."⁷⁰

Under these conditions it is understandable that people feared segregation and refused to be taken to Molokai. Mouritz reported several instances of violent episodes in which leprosy patients employed firearms to avoid their banishment to the settlement. Hawaiians rejected the policy of segregation which they regarded as unnecessary and tyrannical, "a special device aimed at them only to cause trouble, injustice, and break up their homes." Moreover, some Hawaiians claimed that if the *haoles* (the Hawaiian name for Caucasians) were afraid of leprosy, they could return to their own countries.⁷¹ Westerners, on the contrary, perceived the Hawaiian attitude as "ignorant contempt" for the fears of foreigners, and condemned the natives' habits of sleeping in one-room houses, eating with their fingers, and smoking the same pipe with lepers, each of which they considered as a means to propagate leprosy.⁷²

⁶⁸ See: "Report of Her Majesty Queen Kapiolani's visit to Molokai, by H.R.H. Princess Liliuokalani," July, 1884, in Mouritz, The Path of the Destroyer, pp. 295-312, on p. 302.

⁶⁹ Mouritz, The Path of the Destroyer, p. 170.

⁷⁰ J.H. Stallard, M.B.L., "Dr. Stallard's Report," in Ibid., pp. 313-19, on pp. 316-17.

⁷¹ Mouritz, The Path of the Destroyer, pp. 70-82, 59.

⁷² Gussow, Leprosy, Racism, and Public Health, pp. 96-99; Rogers and Muir, Leprosy, pp. 40-41.

Science and Leprosy in Hawaii

The general public and some physicians attributed to vaccination the unusually rapid dissemination of leprosy in Hawaii. Indeed, after the smallpox epidemic of 1853, non-medical citizens practiced indiscriminate vaccination, sometimes directly bringing the lymph from one arm to another without hygienic precautions. At this time, newspapers in India also mentioned that arm-to-arm vaccination could transmit diseases such as syphilis and leprosy.⁷³ This suggests that those were widespread beliefs. Closely connected to the question of vaccination was the issue of inoculation. The German pathologist and bacteriologist, Edward Arning, who was commissioned by the Hawaiian Board of Health to carry out scientific research on leprosy, conducted a "crucial experiment" to attempt the inoculation of leprosy.⁷⁴ Arning chose for the experiment a prisoner condemned to death, named Keanu, whose death sentence was commuted to life in prison for allowing the operation. Arning investigated Keanu's family looking for some "leprous taint," and examined his body searching for clinical symptoms of leprosy. He wanted to avoid possible allegations of heredity or previous contamination. With Keanu's written permission, Arning started inoculating him with leprosy bacilli, in September of 1884, and for the four weeks following. During nearly fourteen months, Arning examined Keanu regularly, without the convict's showing any signs of the development of leprosy, although bacilli leprae were present in the cicatrix.

When Arning wrote his report to the Board of Health, on November 14th, 1885, the experiment was not concluded, and therefore not ready for scientific publication. However, the German scientist was not able to finish his research due to his dismissal by the Board of Health shortly after the presentation of the report. Twenty-five months after the inoculation,

⁷³ David Arnold, Colonizing the Body: State, Medicine, and Epidemic Disease in Nineteenth-Century India (Berkeley: University of California Press, 1993), p. 140.

⁷⁴ "Appendix I. Report by Dr. Edward Arning. Honolulu, H.I. Nov. 14th, 1885," Appendix to the Report on Leprosy of the President of the Board of Health to the Legislative Assembly of 1886 (Honolulu: P.C. Advertiser Steam Print, 1886), pp. xlii-xlv.

Keanu developed nodular leprosy. Many understood Keanu's leprosy as being caused by the previously practiced inoculations. However, physicians intensely contested this interpretation at the time, arguing that Keanu not only had leprous relatives, but had lived in the same house with them.⁷⁵ The case of Keanu became internationally known. For example, the Colombian medical press published the news and debated extensively over the event as evidence of the contagious character of leprosy.⁷⁶

This case is interesting not so much for the scientific relevance of the experiment, but because it shows the conflicting opinions of the Hawaiian Board of Health and the German scientist, and their implications for public health work. The Hawaiian government did not seem to provide suitable conditions for the advancement of scientific knowledge of leprosy. Arning conducted his investigations in Hawaii from November 1883 until December 1885, when the Board of Health removed him from his position as leprosy researcher. After the German physician, other scientists attempted to study leprosy in Hawaii, but according to Mouritz, the relations between the doctors and the Board of Health invariably became tense, and all the physicians left office:

"The many drawbacks, hindrances, and petty tyrannies displayed towards leprologists, have not tended to advance the esteem or enthusiasm of the outer world physicians towards the scientific study of leprosy in Hawaii."⁷⁷

In his report, Arning notified the Board of Health about the results of his research which he classified into clinical, anatomical, bacterial, therapeutic, and hygienic. Arning wanted to

⁷⁵ "Report of Dr. Edward Arning," Honolulu, H.I., November 14th, 1885, in Mouritz, The Path of the Destroyer, pp. 320-340, on pp. 326-7; on the issue of vaccination, see: Ibid., p. 329; see also: Gussow, Leprosy, Racism, and Public Health, pp. 106-7; and Mouritz, Ibid., p. 154.

⁷⁶ See: Juan de Dios Carrasquilla, "Disertación sobre la etiología y el contagio de la lepra, Revista Médica, 1889, 13 (137):473-4 (note); and "Naturaleza contagiosa de la lepra," Ibid., 1889, 12 (134):337-8.

⁷⁷ Mouritz, The Path of the Destroyer, p. 111.

elucidate, among other questions, the problem of the etiology of leprosy. His bacteriological study included searching for the leprosy bacillus in the air, water, and food, and culturing it outside the living organism on artificial soils. However, most of his conclusions were negative:

"I have not once succeeded in obtaining an independent and pure growth of the bacillus leprae...The negative results of all this work are not valueless and discouraging. On the contrary, they act as a stimulus for further research. I am not in the habit of drawing hasty conclusions, especially from negative evidence, but as from well proven analogy with kindred diseases we know that the bacillus leprae *is* the etiological factor of the malady."⁷⁸

On the other hand, Arning abstained from giving scientific details to a nonprofessional health committee because, according to him, they "will find their place in medical publications." The Board found the report "incomplete and inconclusive," and expected more definitive information from Arning after two years of research under the support of the Hawaiian government.⁷⁹ More specifically, the Board wished to reciprocate to foreign powers that had formerly replied to a questionnaire issued by the government of the islands on the subject of leprosy, by sending them all the information possible on leprosy in Hawaii. Arning responded that his investigations were not yet completed: "[it] will probably take many more years to allow me to come to positive conclusions."⁸⁰ Besides, he was not willing to deliver his notes or specimens because they were collected for his private use, and "for future scientific information and publication," and not for the purposes of the Board of Health.⁸¹ Moreover, the German scientist was not willing to

⁷⁸ "Report of Dr. Edward Arning," pp. 325-26.

⁷⁹ "Copy of the Correspondence between the Board of Health and Dr. Edward Arning," in: Mouritz, The Path of the Destroyer, pp. 341-342.

⁸⁰ Ibid., p. 343.

⁸¹ Ibid.

provide details about sufferers of leprosy that he interviewed as part of his study on the causes of the spread of leprosy, and who were still on the islands without being detected by the authorities. He considered this the duty of the police. As a result of these conflicting opinions on the role and purposes of scientific research on leprosy in Hawaii, the Board of Health discontinued the services of Arning. Members of the Hawaiian medical profession requested that the Board of Health reconsider its decision and allow Arning to continue his investigations for two more years, but all the Board offered him was a position as a resident physician at Molokai. Arning immediately declined this position and returned to Germany.⁸²

Arning, interested in "pure" scientific research, was what historian Lewis Pyenson has called a "seeker" as opposed to a "functionary" of science. Pyenson described two kinds of "missionaries" of science. One was the seeker, who was primarily interested in advancing the cause of knowledge and publishing scientific articles. Pyenson found that German scientists were usually in conformity with this model. The other, the functionary, was more interested in building scientific institutions abroad to further metropolitan interests. This ideal type mainly corresponded to French scientists.⁸³ In this sense, Arning was a seeker. His main concern was the private property of his scientific results, and his aim was to publish in prestigious German journals. Hawaiian public health, or the development of a local research tradition on leprosy were of little interest to Arning. On the other hand, the Board of Health seemed to have been unacquainted with the nuances of scientific research, by expecting conclusions too shortly. However, beyond the details of the controversy, scientific research was detached from public health in Hawaii. The colonialist model of controlling leprosy implied that scientific understanding of leprosy was

⁸² Ibid., pp. 346-355.

⁸³ Lewis Pyenson, "Functionaries and Seekers in Latin America: Missionary Diffusion of the Exact Sciences, 1850-1930," Quiju, 1985, 2 (3):387-420, on pp. 388-393; see also: Lewis Pyenson, Cultural Imperialism and Exact Sciences: German Expansion Overseas, 1900-1930 (New York: Lang, 1985).

produced abroad. When originated in Hawaii, knowledge had to be sanctioned and published in Europe, and then imported in the form of journal articles, like any commodity. This aspect of the imperial approach to leprosy reinforced the vision of leprosy as a disease suffered by "others."

Leprosy: A *Tropical* Disease

According to archaeological studies, the inhabitants of Hawaii previous to the expedition of Captain James Cook in 1778, suffered from few infectious diseases. When Cook arrived at the Hawaiian archipelago, the Polynesian population counted approximately 800,000, according to a recent estimate. One century later, there were only 48,000 native Hawaiians, among them those with part Hawaiian parentage. This immense demographic decline was precipitated by Western colonization, particularly by diseases carried by the colonizers--measles, whooping cough, influenza, smallpox, tuberculosis, and venereal infections. For this reason, Western powers encouraged Chinese immigration, among others, as a way to prevent total depopulation. The first Chinese coolies began arriving in the 1850s, followed by Japanese, Philippine, Portuguese, and other laborers. When the colonial European and American settlers discovered leprosy in the islands, they made the Chinese immigrants responsible for the introduction of leprosy. On the other hand, Westerners misunderstood as promiscuous Hawaiian traditions of sexual hospitality, and transformed their customs of sexual generosity into prostitution. The obsolete Hawaiian core of sexual mores and Western expectations made of the natives easy victims of venereal diseases.⁸⁴

The long history of confusion between leprosy and syphilis prompted the colonizers to accuse Hawaiians of the propagation of leprosy. The British writer, Robert Louis Stevenson, a traveler to Polynesia, interpreted the fact that leprosy spread faster among Hawaiians than among resident foreigners to these sexual practices:

⁸⁴ Alfred W. Crosby, "Hawaiian Depopulation as a Model for the Amerindian Experience," Epidemics and Ideas: Essays on the Historical Perception of Pestilence ed. by Terence Ranger and Paul Slack (Cambridge: Cambridge University Press, 1992), pp. 175-201, on pp. 176-78, 197.

"To refuse a male is still considered in most parts of Polynesia a rather unlovely rigour in the female; and if a man be disfigured, I believe it would be held a sort of charity to console his solitude. A kind island girl might thus go to the leper's bed in something of the same spirit as we visit the sick at home with tracts and pounds of tea."⁸⁵

Furthermore, Walter M. Gibson, prime Minister of Hawaii (1882-1887), and president of the Board of Health, maintained that "syphilitic blood poisoning" played an important part in the development of leprosy in Hawaii, and doctor Edward Hoffman, physician at the Kahili Hospital since 1865, was unable to distinguish between syphilis and leprosy, according to contemporary reports.⁸⁶ George L. Fitch, physician of the leper settlement at Molokai from 1882 to 1884, believed that "leprosy was the fourth stage of syphilis." He was also convinced that the disease was non-contagious, but transmitted by hereditary means.⁸⁷

Although other physicians differentiated leprosy and syphilis as two distinct etiological entities, and denied that leprosy was transmitted by sexual intercourse, there was a strong tendency to connect leprosy with specific cultural traits of Hawaiians. Mouritz associated leprosy with the social habits of the Hawaiians, such as eating, drinking, sleeping, living, and marrying lepers, displaying "non-aversion and ignorant contempt" for the disease. For him, foreigners who acquired leprosy were "those who have been in particularly promiscuous, friendly, and intimate contact with Hawaiians."⁸⁸ When Mouritz

⁸⁵ Robert Louis Stevenson, Travels in Hawaii ed. by A. Grove (Honolulu, 1973), p. 81, cited by Crosby, "Hawaiian Depopulation," pp. 194-195.

⁸⁶ See: Walter M. Gibson, Report of the President of the Board of Health to the Legislative Assembly of 1886 on Leprosy (Honolulu, H.I.: Daily Bulletin Steam Printing Office, 1886), p. 29; and Gussow, Leprosy, Racism, and Public Health, p. 95.

⁸⁷ Mouritz, The Path of the Destroyer, pp. 54-58.

⁸⁸ Ibid., p. 22.

described these practices to Robert Koch in his visit to Hawaii in 1909, the prominent bacteriologist apparently expressed skeptical remarks about the chances of stamping out the disease in the islands.⁸⁹ Gibson also wrote about leprosy in his report to the Legislative Assembly of 1886, describing leprosy in terms of physical corruption, analogous to medieval versions, and defining leprosy as "tropical," disregarding obvious non-tropical instances, such as the Norwegian, where leprosy had been endemic:

"it is a disease caused in its earliest incipency by a demoralization of the system by uncleanness, not merely of the surface of the body...but of the blood, poisoned, perhaps, to a very great extent by a degraded condition of living, or by excessive indulgence of the animal nature in a tropical climate; for, so far as my reading extends, I may be permitted to say that the disease was not only originated in but thriven better in hot than in cold climates; the exceptions of Norway and New Brunswick are comparatively minor ones in proportion to the leper populations of the tropical world."⁹⁰

From a forgotten illness supposed to belong to the distant past, leprosy became in the late nineteenth century a disease of non-Western, racially inferior people, a "tropical" disease. As historian Michael Worboys noticed, so-called "tropical" diseases such as malaria, cholera, plague, and yellow fever were as present in Europe and North America as they were in the tropics in the late nineteenth and early twentieth century. A scientific discipline called "tropical medicine" emerged because of the developments of biology and natural history in the nineteenth century, but equally as a result of economic and political imperialism.⁹¹

In the case of Hawaiian leprosy, since Europeans and North Americans seemed not

⁸⁹ Ibid., pp. 58-59. On Mouritz's evidence that leprosy was not conveyed by sexual intercourse, see: pp. 112-113.

⁹⁰ Gibson, Report of the President, p. 29.

⁹¹ Michael Worboys, "The Emergence of Tropical Medicine: A Study in the Establishment of a Scientific Specialty," Perspectives on the Emergence of Scientific Disciplines ed. by Gerard Lemaire et al. (Mouton: Maison des sciences de l'homme, 1976), pp. 75-98, on pp. 80, 93.

to acquire leprosy, it became definitely the disease of "the other." Earlier European colonizers tended to regard the tropics as dangerous for "white men" due to their greater susceptibility to "tropical" diseases. Europeans saw indigenous populations as less vulnerable because they enjoyed the *noble savage's* good health. Although this view changed later, the idea of greater susceptibility for whites led some colonial scientists to devise a theoretical general public health project to prevent the expansion of diseases. This was the case of the British scientist Ronald Ross, who received the 1902 Nobel prize for his research on the relation between malaria and the mosquito. Ross proposed a holistic public health model for the colonies, consisting of systematic improvement of the sanitary conditions which would benefit both populations. His approach, which was defeated by the reductionist view of Patrick Manson the "father of tropical medicine," also implied abolishing the current physical separation of residences for British and for natives.⁹² Leprosy in Hawaii was practically confined to native Hawaiians. If occasionally Westerners developed the illness, it was seen as their personal responsibility, a result of some sort of transgression of norms, as in the medieval society. Additionally, ignorance of the mode of transmission of leprosy, led colonial authorities to justify and enforce a policy of segregation, neglecting the need of a public health program for the general population. The model applied for controlling other tropical diseases, namely the attack on specific "agents of disease," was transformed into an attack on the only known vectors of infection of leprosy--the patients themselves.⁹³

Leprosy: An Imperial Danger

The news about the rapid increase of leprosy in Hawaii was disseminated promptly, resulting in considerable concern about the possibility that the disease would spread from Hawaii to other colonies, to Europe and to the United States. This fear provided the

⁹² *Ibid.*, pp. 84, 91, 96 n.38.

⁹³ On the reductionist view of British tropical medicine, see: *Ibid.*, pp. 90-91.

motivation behind the survey (referred to previously) regarding the expansion of leprosy in the British colonies conducted by the Royal College of Physicians in 1862.⁹⁴ Yet, when Father Damien announced to his parish in 1885 that he also had contracted the disease, the terror of leprosy reached limits of hysteria. Father Damien died at Kalawao, Molokai, on April 15, 1889, after over twenty-five years of living in Hawaii, and his death became a significant event in the history of leprosy.⁹⁵ In fact, the death of the Catholic missionary who contracted the dread illness as a result of his dedication to lepers in the remote Sandwich Islands caused an immense effect in the "civilized world" of the late nineteenth century. Father Damien became a modern Christian hero, comparable to those medieval devotees consecrated to lepers. However, there were dissenters: three months after his death, Reverend Charles McEwen Hyde, head of the Presbyterian mission in Honolulu, suggested in a letter that Damien was not a "pure man" in his relations to women, and attributed his leprosy to his vices and carelessness, reviving the old-fashioned association between leprosy and lust.⁹⁶ In any case, Damien's death directed the attention of the "civilized" world, particularly of England, to leprosy and its victims.

Some colonial officers of the British Empire declared in 1889 that leprosy was an "imperial danger," created the National Leprosy Fund (supported by the Prince of Wales) in remembrance of the priest, and ordered an investigation of the disease. As a result, British official commissioners visited India for a year to appraise the state of leprosy and devise policies to control it. They examined two thousand leprosy patients and received answers to a carefully prepared questionnaire from medical officers of the Indian Civil Service of the army. The report of the Indian Leprosy Commission discounted heredity as the origin of leprosy, but reiterated the previous conclusion of the 1867 report of the Royal College of

⁹⁴ See Gussow, Leprosy, Racism, and Public Health, pp. 93-94.

⁹⁵ According to doctor Mouritz who examined the priest, Damien's leprosy had probably started ten or eleven years earlier than his first announcement. Mouritz, The Path of the Destroyer, pp. 234, 249. About Father Damien, see also: Weymouth, Through the Leper-Squint, pp. 153-183.

⁹⁶ Weymouth, Through the Leper-Squint, pp. 167-168.

Physicians of London that the disease was not contagious, that it spread "by ways and means unknown," and that segregation was unnecessary. The commission concluded that leprosy was not a threat to the Western world, and that the decline of the disease in Europe resulted from better hygiene and expanded material prosperity.⁹⁷ As a result, the National Leprosy Fund selected a special committee comprised of the undersecretary for India, a delegate of the Executive Committee of the Fund, and two members each from the Royal College of Physicians and the Royal College of Surgeons, to evaluate the report. This special committee objected to the account of the Indian Leprosy Commission, especially its concept of contagion, and thus, its policy of non-segregation, expressing an antithetical opinion. The original report was published in 1893, including the opposing view of the special committee.⁹⁸

The British physician Sir Morell Mackenzie, a convinced contagionist, wrote a forceful attack on the College's report and claimed that the Royal College of Physicians of London was chiefly responsible for the "disastrous consequences that have flowed and continue to flow" from the report (see the epigraph of this chapter).⁹⁹ Mackenzie's main fear was that leprosy would propagate to Europe since, according to him, Englishmen had ceased to show immunity against the disease "which was once thought to be their privilege."¹⁰⁰ His apprehensive views contrasted with current beliefs of colonial doctors in Hawaii according to which leprosy was contracted only by close contact with the diseased, therefore, sanctioning a permanent physical and cultural separation of natives and colonizers. Mackenzie observed leprosy as a metropolitan doctor, and presumed that it was easily acquired. His opinions supported the notion of leprosy was an "imperial danger,"

⁹⁷ Report of the Leprosy Commission to India, 1890-1891 Published for the Executive Committee of the National Leprosy Fund (London: William Clowes and Sons, 1893), pp. 389-390; see also: Mouritz, The Path of the Destroyer, p. 169.

⁹⁸ Gussow, Leprosy, Racism, and Public Health, pp. 106-107; Rogers and Muir, Leprosy, pp. 66-67.

⁹⁹ Mackenzie, The Dreadful Revival of Leprosy, p. 616.

¹⁰⁰ Ibid., p. 614.

and, again, reinforced policies of segregation.

Hansen and others set forth theories of leprosy as a communicable disease, but they could find no conventional scientific confirmation from the stand point of the bacteriological knowledge of the day. However, these hypotheses found an unexpected "proof" with the expansion of the disease in Hawaii, and specially with the well-publicized case of the unfortunate Father Damien. In his report to the Board of Health in 1886 Mouritz asserted that

"The whole history of leprosy in the Hawaiian islands from its introduction to its present rapid spread and development, verily proves that it can only be accounted for by regarding it as a contagious disease, and that it spreads from individual to individual."¹⁰¹

In the absence of a conclusive theory of contagion, segregation as a public health policy had been practiced during the nineteenth century, although with diverse emphases: it was moderate in Norway, and violent in Hawaii. After Damien's death, advocates of fierce isolation found a rationale for their position. Most physicians and relevant parties were "converted" to the contagion theory of leprosy without a clear understanding of its mode of transmission. As Mouritz wrote:

"When Fr. Damien fell a victim to leprosy and later succumbed to the disease, his semi-tragic death created a marked change and revulsion in the opinions previously held about the *non-contagiousness* of leprosy."¹⁰²

The events in Hawaii prompted an international movement in favor of the organization of leprosaria and special legislation to control the imminent danger of

¹⁰¹ "Special Report of Arthur Mouritz, M.D." Physician to the leper Settlement and Island of Molokai, January 1st 1886, in Mouritz, The Path of the Destroyer, pp. 357-380, on p. 370.

¹⁰² Ibid., p. 174.

leprosy.¹⁰³ Several countries passed laws to segregate lepers: South Africa approved the Leprosy Repression Act in 1892; the Malay states enacted the Leprosy Prevention Ordinance in 1893; the French colonizers opened a central asylum for lepers in New Caledonia in 1893; the government of East Prussia started segregating poor lepers in the Memel District (called today Klaipeda, Lithuania) in 1893; and Jamaica ordered the compulsory segregation of all pauper and vagrant lepers in 1896.¹⁰⁴ In fact, the international leprosy congress, held in Berlin in 1897, declared the disease virtually incurable, and proclaimed that "every leper is a danger to his surroundings." In consequence, the conference recommended compulsory notification and segregation of patients as the only method to deal with the disease.¹⁰⁵

As I explained previously, the scientists gathered in Berlin encouraged emulating the Norwegian model for controlling leprosy. However, the colonies and many independent countries where leprosy was endemic lacked the social/political conditions of self-government and sufficient numbers of physicians. Therefore, the model was reduced to enforcing segregation in leprosaria which the sick tried to avoid as best they could. At the end of the nineteenth century, physicians and governments looked for leprosy and found authentic or false cases everywhere. For example, there were very few accounts of leprosy in New Zealand from 1854 to 1890, but from 1890 on, physicians began to record numerous cases. In 1902, New Zealand's Chief Health Officer examined some forty or fifty alleged leprosy patients among the Maoris, but he was able to confirm only two of them.¹⁰⁶ In Cuba, a new interest in leprosy also surfaced in this period. Indeed, between 1860 and

¹⁰³ Gussow, Leprosy, Racism, and Public Health, pp. 92-5.

¹⁰⁴ Weymouth, Through the Leper-Squint, pp. 186, 263; Rogers and Muir, Leprosy, pp. 103, 112; about the case of Malaysia, see: A. Joshua-Raghavar, Leprosy in Malaysia: Past, Present and Future (Montfort Boys: Batu Siga, Selangor, 1983), p. 43.

¹⁰⁵ Currie, "Resolutions Adopted by the Berlin Conference of 1897," p. 1361.

¹⁰⁶ John Z. Montgomerie, "Leprosy in New Zealand," Journal of the Polynesian Society, 1988, 97 (2):115-152, on pp. 135-7.

1890 sixteen articles on leprosy were published, while in only nine years, between 1890 and 1899, twelve essays on the disease were published in Cuba.¹⁰⁷ Indonesian law declared leprosy contagious and ordered compulsory registration and isolation in agricultural colonies in 1907.¹⁰⁸ In Canada and the United States, Chinese and Mexican immigrants were blamed for introducing the disease.¹⁰⁹ In the summer of 1895, the Cincinnati Commercial-Gazette published an article under the title "The Menace of Leprosy" which asserted:

"A terrible and constantly increasing danger menaces the lives of tens of thousands, if not hundreds of thousands of people in the United States. A horrible, lingering, living death, far more to be feared than either yellow fever or cholera, under which the individual either quickly succumbs, or is cured within a few days, is now face to face with the Americans in the incurable and loathsome disease of leprosy."¹¹⁰

Nevertheless, not every government adopted a rigorous policy of segregation. For example, Ethiopia's government founded its first leprosarium in 1901, but patients had complete freedom of movement. Since Ethiopians regarded leprosy as an inherited disease given by God, a policy of strict segregation was for them useless.¹¹¹ However, in many countries at the turn of the century, governments and the public believed that leprosy was increasing, that it was highly contagious, and that it was a serious threat to civilization.

Due to historical circumstances, such as the expansion of European imperialism in the nineteenth century and the discovery of endemic leprosy in colonial territories, medieval

¹⁰⁷ Miguel A. González Prendes, Historia de la lepra en Cuba (La Habana: Museo Histórico de las Ciencias Médicas "Carlos J. Finlay," 1963), pp. 229-231.

¹⁰⁸ Zuiderhoek, "The Approach to the Leprosy Problem," p. 4.

¹⁰⁹ Erwin H. Ackerknecht, History and Geography of the Most Important Diseases (New York: Hafner Publishing C., 1965), pp. 114-5.

¹¹⁰ Quoted by Mulhane, Leprosy and the Charity, p. 38.

¹¹¹ Richard Pankhurst, "The History of Leprosy in Ethiopia to 1935," Medical History, 1984, 28: 57-72, on p. 71.

visions revived with an unusual force, and became the dominant Western outlook regarding the disease. These notions were popular even in the 1930s. For example, the author Paolo Zappa in 1933 referred to lepers as insane and sadistic, since they coveted the transfer of their infection to others. He also conveyed the idea that leprosy was communicated through sexual intercourse and that the disease enhanced sexual desires, conventional notions of the Middle Ages.¹¹² Writing in 1938, the historian of leprosy Anthony Weymouth described lepers in Molokai as immoral, drunk, and sexually indulgent, common medieval depictions of lepers.¹¹³

The difference between the two contrasting historical experiences with leprosy, Norwegian and Hawaiian, lay in the fact that the first model was promoted by Norwegians themselves to deal with a problem of their own population, while the second model was developed by colonizers to manage a disease that they saw as suffered by "others." Locally developed scientific knowledge played an important role in Norway. The Norwegian government created several hospitals throughout the country to treat patients in their own regions, and to investigate leprosy. Norwegian doctors studied the disease in its own settings, and developed a significant clinical and epidemiological knowledge of leprosy. Their program to arrest the spread of leprosy was holistic rather than reductionist, as scientific research and public health were closely linked.

In Hawaii, in the contrary, Western scientists and physicians were in charge of research and care of indigenous leprosy patients. The conflict of interests between European scientists, mostly engaged in advancing their own scientific careers, and the established public health boards gave place to a reductionist approach to managing leprosy. The scientists tried to find answers to scientific puzzles, as in the case of the German pathologist Arning, and the public health boards tried to find political solutions. Ignorance

¹¹² Paolo Zappa, Unclean! Unclean! translated by Edward Storer (London: Dickson, 1933), pp. 97-98, 118-129.

¹¹³ Weymouth, Through the Leper-Squint, p. 159.

of the mode of transmission of leprosy led the colonizers to enforce segregation as the only policy to prevent the spread of the disease.

Since *M. leprae* proved impossible to cultivate in vitro, the contagiousness of leprosy could not be demonstrated from the point of view of bacteriology. Thus, the community of leprologists negotiated the communicability of the disease. The construction of leprosy as a microbial disease in the late nineteenth century, and political, economical, and cultural imperialism, prompted a worldwide movement for creation of leprosaria to segregate leprosy patients. The holistic public health and epidemiological approach to leprosy, which was considered successful in controlling the diffusion of the disease in Norway, was recommended by the first international conference of leprosy. However, the diffusion of the model implied primarily the adoption of only one of its features--segregation of patients as it was practiced in Hawaii. As I will explain in the remainder of this study, Colombia was one of the cases in which the government, advised by physicians, imposed policies of compulsory isolation on leprosy sufferers. Because of social/political conditions, the Colombian strategy of isolation paralleled the colonial racist approach to leprosy.

Chapter 4

Making a Contagious Disease, Building Cultural Authority

"Splendorous glory would reflect upon the government that would come to establish lazarettos in Colombia, because this is the first need of the Nation, since the consequences of such scourge in the future are more fearful than those of civil war and any other causes of regression and barbarism."¹

Colombian doctors constructed leprosy as an extremely dangerous and contagious disease, neglecting long-time observations about its low contagiousness. Confronting the lack of reliable statistics to measure the actual incidence of the disease, physicians fabricated an exaggerated number of leprosy sufferers in the country. In dealing with the issue of leprosy, doctors used a rhetoric of progress and civilization in which inciting fears played a major role, thus creating a great concern about the rapid spread of the disease among the population. Although this panic corresponded to the great concern of leprosy in Europe and the United States, it was also intended to serve local medical interests. In Colombia, leprosy up to this point had not been primarily a medical problem; instead it was in the hands of charitable institutions. By exaggerating the incidence of leprosy, doctors furthered the purpose of reinforcing the cultural authority of physicians to medicalize the disease. In other words, doctors used leprosy to enhance their power.

During the late nineteenth century, Colombian medicine went through important social and political changes, and eventually became an organized profession. Colombian physicians' main project as a professional group was to construct a national medicine in order to contribute to scientific "universal" knowledge. The professionalization of medical practices in Colombia coincided with the period in which medicine became "scientific." The influence of French medical knowledge was strong in Colombia and the development of the germ theory to explain the cause and transmission of diseases had a powerful

¹ Nicanor G. Insignares S., quoted by Carlos Michelsen U., "La lepra," *Revista Médica*, 1898, 21 (232):1-29, on pp. 12-13.

influence in the Colombian medical profession. Unlike hereditary theories of leprosy which were never particularly fashionable among the medical group, the concept that the disease was microbial easily became the accepted doctrine. Since the mode of transmission of leprosy was unknown, the new contagionist theory reinforced old practices of segregation. Bacteriology also produced some optimism in terms of the possibilities of curing the disease through serotherapy. However, this aspiration proved to be premature, and leprosy remained a mysterious and incurable disease.

Professionalization of Medicine and Public Health

As I have explained previously, there were few doctors in Colombia during the first half of the nineteenth century. The chairs of medicine virtually disappeared when the Liberal revolution of 1850 abolished the requirement of professional title to exercise medicine.² The radical Liberal Colombian regime (1863-1880) reversed the *laissez-faire* measures taken in 1850, and decided to promote vigorously public education. One of their achievements was the creation in 1867 of the *Universidad Nacional de Colombia* in Bogotá which included a Faculty of Medicine and Natural Sciences. In fact, the university incorporated a private medical school which the physician Antonio Vargas Reyes, a graduate of the Paris Faculty of Medicine, had founded in 1864.³ The curriculum adopted at the National University in 1868 was a mixture of French sensationalism (the doctrine that all knowledge is acquired through the senses), utilitarianism, and Spencerian evolutionism. Although it is unclear if all these courses were actually taught, the program of studies included anatomy, pathology, pharmacy, obstetrics, and public and private hygiene. The state of Antioquia founded another school of medicine in Medellín in 1872 which organized the first course of bacteriology of the country. However, practical training in these subjects

² See Chapter 2.

³ Anales de la Universidad Nacional de los Estados Unidos de Colombia, 1868, 1 (1):3-6. On Vargas Reyes, see: Néstor Miranda Canal, "La medicina colombiana de 1867 a 1946," Historia Social de la Ciencia en Colombia vol. 8 (Bogotá: Tercer Mundo, 1993), pp. 13-160, on pp. 59-63.

in Bogotá and Medellín, as well as later attempts to initiate the study of physiology and histology was obstructed by the lack of laboratories and equipment. At the end of the century the Faculty in Bogotá incorporated classes of ophthalmology and syphilology, and a course of bacteriology was created in the early twentieth century.⁴

The Conservative reaction that started in 1886 and lasted until 1930 reversed reforms of previous Liberal administrations of the 1850s and 1860s. Under a new national constitution issued in 1886 and inspired by president Rafael Núñez, the political structure of the government changed from the extreme federalism of the 1863 constitution to rigid centralism. The once powerful sovereign states were renamed departments. The constitution was also a reaction against Liberal anticlericalism. For example, the government returned to the Church the properties which had been confiscated in the 1850s, and paid the Church an indemnity for those properties which could not be returned. As to education, all levels of public instruction were to be guided by Catholic doctrines which gave to the Church the power to determine curricula and to object to teacher nominations.⁵ However, Colombian doctors continued organizing medical societies to advance the professionalization of medicine.

In 1873 doctors created the *Sociedad de Medicina y Ciencias Naturales de Bogotá* to advance the study of medicine and the natural sciences and to encourage solidarity among doctors. The association started the journal Revista Médica (1873-1922) which played an important role in the professionalization of medicine by encouraging doctors to publish clinical observations and medical research.⁶ Revista Médica also helped the diffusion of scientific knowledge through translations from European and North American

⁴ On the plan of studies of the Faculty of Medicine at the National University, see: Miranda, "La Medicina colombiana," pp. 71-77; and Emilio Quevedo Vélez et al., "Ciencias médicas, estado y salud en Colombia: 1886-1957," Historia Social de la Ciencia en Colombia vol. 8 (Bogotá: Tercer Mundo, 1993), pp. 161-289, on pp. 168-171.

⁵ David Bushnell, The Making of Modern Colombia: A Nation in Spite of Itself (Berkeley: University of California Press, 1993) pp. 143-144.

⁶ Revista Médica, 1873, 1 (1):1-3.

periodicals. Due to these physicians' efforts, the government sanctioned the first set of regulations on the practice of the profession in 1887, and the society of medicine became *Academia Nacional de Medicina* in 1891. Physicians in the provinces also founded numerous professional local medical societies, among them, the *Academia de Medicina de Medellín* organized in 1887, and the *Sociedad de Medicina del Cauca*, created in 1889. They also published journals in medicine, surgery and hygiene. From 1893, Colombian doctors launched national conferences of medicine which discussed issues related to epidemic and endemic diseases, hygiene, and the regulation of medicine and pharmacy.⁷

As in France, the National Academy of Medicine served as an official consultative body for the Colombian state on questions of public health.⁸ Other Colombian medical societies and academies were also developed as an arena where doctors discussed sanitary questions such as sewage systems, pavements, cemeteries, slaughterhouses, hygiene in prisons and barracks, epidemics, nutrition, milk, water supply, food inspection, quarantines in city ports, and disinfection of vessels. However, during the nineteenth century, the relationship between doctors and the state was rather unidirectional--physicians advocated sanitary reforms and permanently appealed to the government to introduce hygienic laws and to enforce them.⁹

Before the professionalization of medicine, members of the elite had created a society for the propagation of the smallpox vaccine in Bogotá in 1847, and a philanthropic

⁷ On medical societies in Colombia, see: Diana Obregón Torres, Sociedades Científicas en Colombia: La invención de una tradición, 1859-1936 (Bogotá: Banco de la República, 1992), pp. 51-68.

⁸ On the French public health movement, see: Ann F. La Berge, Mission and Method: The Early Nineteenth-Century French Public Health Movement (Cambridge: Cambridge University Press, 1992).

⁹ See, for example: "Acta de la sesión del día 16 de Noviembre," Revista Médica, 1886, 10 (109):360-1; "Instrucciones acordadas por la Sociedad de Medicina del Cauca para ser aplicadas en el Puerto de Buenaventura y encaminadas a prevenir las enfermedades contagiosas de carácter epidémico y especialmente de la 'peste bubónica'," Revista Médica, 1905, 25 (302):339-40; and Ricardo Amaya Arias, "Datos sobre saneamiento y mejoras higiénicas de algunos servicios municipales de la ciudad de Bogotá," Repertorio de Medicina y Cirugía, 1910, 11-15 (3):105-113.

society which functioned as a sanitary board to control the spread of cholera in 1849.¹⁰ However, these organizations were only short-lived. The new Conservative regime that started in 1886 assigned to the state a limited role in controlling sanitary ports, regulating food and drink, and preventing epidemics. Thus, the government began to request medical advice on questions of hygiene and public health, recognizing physicians' expertise. Since most of the public health problems of the Colombian population were due to poverty, charity played an important role as a means of redistributing wealth.¹¹ Following the example of countries like France in the 1830s, and England and the United States in the second half of the nineteenth century, in 1886 the Colombian government ordered the creation of *Juntas de Higiene* (Boards of Hygiene) in Bogotá and in each of the capitals of the departments.¹² Unlike the board of hygiene of Bogotá which started operating in 1887 with members submitted by the then Society of Medicine of Bogotá, other local boards of hygiene actually never met. Therefore, the Bogotá board operated as a Central Board of Hygiene (*Junta Central de Higiene*). One of its first activities was the establishment of quarantines in city ports to comply with international conventions.¹³

Sanitation in sea ports was vital to the development of the Colombian export economy in agriculture. For the Colombian elite participation in the world market was the pathway to progress and economic development. The opening of markets with Europe and the United States, was for the upper classes synonymous with Colombian incorporation into "civilization." They wanted to Westernize the masses of peasants and artisans. Between

¹⁰ Manuel Ancizar, Reglamento de la Sociedad de Propagación de Vacuna, 1847, Nov. 12; El Filántropo (Bogotá, Imprenta del neogranadino, 1849) (1) Aug. 17.

¹¹ Quevedo et al., "Ciencias médicas, estado y salud," p. 178-179; and Guillermo Restrepo Ch. and Agustín Villa, Desarrollo de la salud pública colombiana (Medellín: Universidad de Antioquia, 1980), pp. 28-30.

¹² On the French case, see: La Berge, Mission and Method, pp. 144-7; on England and the United States, see: George Rosen, A History of Public Health Expanded edition (Baltimore: The Johns Hopkins University Press, 1958/1993), pp. 196-199, 224-226.

¹³ Quevedo et al., "Ciencias médicas, estado y salud," p. 178.

1870 and 1910 the coffee economy was established and consolidated in Colombia. Ironworks were organized to meet the needs for railroad construction, and light industries developed in Bogotá and Medellín. As Frank Safford pointed out, the period marked the change from an economy based on gold, mules and tobacco, to one founded on coffee, railroads, and banks.¹⁴ However, this economic growth was not continuous, and by the end of the century, Colombia remained one of the poorest Latin American countries.¹⁵

Although we lack specific studies on the professionalization of medicine in Colombia, based on the information available about Colombian society and economy, one can speculate that there was a limited market for doctors. By the end of the nineteenth century, Colombia was characterized by agricultural economy, restricted participation in international trade, regional fragmentation, and political instability. The population was scattered in small towns, separated by a complex topography, with poor communications. Therefore, a physicians' small clientele was mainly composed of wealthy patients. Frequently, doctors treated poor patients, as part of their customary exercise of charity. Emilio Quevedo and his colleagues alluded briefly to this problem. According to them, professional doctors served a clientele formed by large coffee growers, the incipient group of industrialists, civil servants, and railroad workers.¹⁶

Colombian physicians also wanted to participate in the civilizing project of the elites. Their most important objective at the time was to form a national medicine which would embrace the study of local diseases and their relationship to the diverse regions, climates, altitudes, food, and people's habits. For them, this national medicine was to be an essential part of the scientific "universal" medicine. At the same time, medicine was to be

¹⁴ Frank R. Safford, "Commerce and Enterprise in Central Colombia, 1821-1870," unpublished Ph.D. thesis, Columbia University, 1965, p. 13, quoted by Marco Palacios, Coffee in Colombia, 1850-1970: An Economic, Social, and Political History (Cambridge: Cambridge University Press, 1980), p. 12.

¹⁵ On Colombian economic history, see: Palacios, Coffee in Colombia; and José Antonio Ocampo, Colombia y la economía mundial 1830-1970 (Bogotá: Siglo XXI, 1984).

¹⁶ Quevedo et al., "Ciencias médicas, estado y salud," p. 179.

an integral component of the construction of the nation.¹⁷ Colombian medical students in France and England transmitted back to Colombia the news about current medical debates. Among their preferred subjects were the controversies on the germ theory of diseases of the Paris Academy of Medicine, and the weekly lectures on nervous disorders by Jean-Martin Charcot in the Salpêtrière.¹⁸ As to leprosy, in 1880 Daniel E. Coronado summarized the lessons by Jonathan Hutchinson on leprosy at the Royal College of Surgeons of England, and Carlos E. Putnam wrote an 1882 report on an anatomo-pathological study of a patient who died of leprosy in the Hôtel-Dieu of Lyon.¹⁹ Translations from Revue des Sciences Médicales, Lancet, British Medical Journal, and Philadelphia Medical Times, among other journals, were common in Colombian medical periodicals.²⁰ To increase national professional prestige, Colombian doctors sought recognition in European, particularly French medical spheres. Physicians who owned a degree from an European school of medicine or who had published in Paris were held in great esteem back in Colombia.²¹

By the end of the nineteenth century, the physicians organized in medical associations began to be oriented towards the professional group rather than to their own patients. Since these societies and academies encouraged the study of diagnosis, classification and causation of local diseases, scientific research became an important means

¹⁷ Revista Médica, 1875, 3 (25):203.

¹⁸ See for example a letter by the physician Juan E. Manrique reporting from Paris the discussions on the germ theory: Revista Médica, 1883, 8 (86):42-43; see also Daniel E. Coronado, "Apuntaciones sobre las enfermedades nerviosas tomadas en la Salpêtrière, durante diciembre de 1877," Revista Médica, 1878, 4 (45):368-372.

¹⁹ Carlos E. Putnam, "Estudio anatomo-patológico de la lepra de los griegos," Revista Médica, 1882, 7 (75):121-4; and D.E. Coronado, "Lepra," Revista Médica, 1884, 8 (94):419-21.

²⁰ See, for example, Ch. Nicolle, "Reproducción experimental de la lepra en el mono," (translated from *Revue pratique des maladies cutanées, syphilitiques et vénériennes*) Revista Médica, 1905, 25 (299):247-50; and Rober Sinclair Black, "Nuevo aspecto de la patología y tratamiento de la lepra" (translated from *The Lancet*) Revista Médica, 1907, 27 (321):177-81.

²¹ Miranda, "La Medicina Colombiana," pp. 58-66.

to acquire prestige within the profession.²² This interest generated new debates among doctors. For example, the question of the specificity of leprosy occupied the Societies of Medicine of Bogotá and Cauca in the last two decades of the nineteenth century. The problem was whether or not illnesses known as *mal de San Antonio*, syringomyelia, and Morvan's disease were true leprosy.²³ Gabriel J. Castañeda argued that all of them were leprosy. Some French physicians also discussed the question, arguing that they were leprosy.²⁴ Evaristo García, who participated in the debate, believed that compared with European doctors, Colombian physicians were in a special position to clarify those distinctions. Certainly, the new professionals were eager to contribute their expertise in worldwide debates about the specificity of diseases.²⁵ In the same vein, physicians began to displace other professionals, such as lawyers, in semi-public philanthropic institutions. For example, by 1891, the physician Bernardino Medina had replaced the lawyer Ramón Gómez as the director of the *Junta de Beneficencia*, a position in which he had to deal with leprosaria.

Colombian medicine started to become a distinct occupation in the last quarter of the nineteenth century.²⁶ Physicians as a group began to claim that they possessed special

²² Obregón, *Sociedades Científicas en Colombia*, pp. 56, 77-79.

²³ Leonardo Tascón and Cenón Solano believed they were distinct diseases. See: Leonardo Tascón, "El mal de San Lázaro y el mal de San Antonio," *Revista Médica*, 1887, 11 (114):607-614; and Gabriel J. Castañeda, "Diagnóstico diferencial entre la lepra y el mal de San Antón, Tesis para el doctorado por el Dr. Cenón Solano R.," *Revista Médica*, 1889, 13 (138):503-6; 13 (139):531-6; and 13 (140):571-4.

²⁴ D  m  trius Al. Zambaco Pacha, "Travaux Originaux:   tat de nos connaissances actuelles sur la l  pre," *La Semaine M  dicale*, 1893, 13:289-295, on p. 289.

²⁵ Evaristo Garc  a, "Enfermedad de Morv  n y lepra anest  sica," *Revista M  dica*, 1891, 15 (163-4):512-9.

²⁶ The professionalization of medicine occurred earlier in countries like England and France; see for example: Ivan Waddington, *The Medical Profession in the Industrial Revolution* (Dublin: Gill and Macmillan Humanities Press, 1984), pp. 191-4; Jean-Pierre Goubert (ed.), *La M  dicalisation de la Soci  t   Fran  aise 1770-1830* (Waterloo, Historical Reflections Press, 1982); on the case of the United States, see: Paul Starr, *The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry* (New York: Basic Books, 1982).

technical abilities and enjoyed special access to the workings of the human body. They commenced to construct their cultural authority, that is, the social power which granted them the probability that their definitions of reality and their judgements of meaning and value would be taken as valid and true.²⁷ At the same time, to use the words of the sociologist Pierre Bourdieu, Colombian physicians began to assert their scientific authority, that is, their power to speak and act in an authorized and authoritative way about medical questions.²⁸

Hansen's Bacillus: *The sine qua non* condition

Colombian physicians, like most of their peers in other countries, viewed the development of the germ theory as the most important revolution of modern medicine.²⁹ Indeed, Pasteur and the Pasteurians themselves, overemphasized the innovative aspects of bacteriology calling it a scientific revolution and assuming that it was "the" starting point of modern medicine.³⁰ Colombian physicians, well aware of European medical and scientific achievements, soon became acquainted with the discovery of Hansen's bacillus and the ensuing debates about the causative agent of leprosy. In 1882, the doctor Gabriel J. Castañeda published one of the first accounts of leprosy from the point of view of the germ

²⁷ Starr, The Social Transformation of American Medicine, pp. 13-15.

²⁸ Pierre Bourdieu, "The Specificity of the Scientific Field and the Social Conditions of the Progress of Reason," Social Science Information, 1975, 14 (6):19-47, on p. 19.

²⁹ There are numerous studies on the relationship between medicine and laboratory in the late 19th and early 20th centuries. See, for example: Charles-Edward Amory Winslow, The Conquest of Epidemic Disease: A Chapter in the History of Ideas (Madison, WI: The University of Wisconsin Press, 1943/1980). Morris J. Vogel and Charles E. Rosenberg, eds. The Therapeutic Revolution: Essays in the History of American Medicine (University of Pennsylvania Press, 1979); Nancy Tomes, "The Private Side of Public Health: Sanitary Science, Domestic Hygiene, and the Germ Theory 1870-1900," Bulletin of the History of Medicine, 1990, 64 (4):509-539; Andrew Cunningham and Perry Williams, eds. The Laboratory Revolution in Medicine (Cambridge: Cambridge University Press, 1992).

³⁰ Anne Marie Moulin, "Bacteriological Research and Medical Practice in and out of the Pastorian School," French Medical Culture in the 19th Century ed. by Mordechai Feingold and Ann LaBerge (Amsterdam: Rodopi, 1994), pp. 327-349, on pp. 327-8.

theory, and in 1885 the physician Proto Gómez translated and published a précis of the 1885 discussions of the Paris Academy of Medicine on the contagiousness of leprosy.³¹ Castañeda also clarified that "elephantiasis" was only a symptom of several diseases, among them, leprosy and filariasis. Although many doctors continued calling leprosy by the names of *elefantiasis* or *elefancia*, this designation started to lose ground in the same way that "fever" stopped being an ailment to become a symptom of a disease.³² The designation *lepra* (leprosy), often with the explanation "ancient Greek elephantiasis," became more common.³³ In 1899, a Spanish version of the 1895 English edition of Hansen's work on leprosy was published in the *Revista Médica*.³⁴

The old confusion between Greek and Arab elephantiasis was left behind. The name "elephantiasis" was reserved only for filariasis which physicians identified as a parasitic disease. As I have mentioned previously, between 1877 and 1878, the British physician Patrick Manson inaugurated a new scientific field called "tropical medicine." As a physician of the Imperial Customs Service working in China, Manson had to face diseases such as leprosy and elephantiasis to which he was not accustomed. The worm *Filaria sanguinis hominis* had been previously connected with elephantiasis, but the exact relation

³¹ Gabriel J. Castañeda, *Causa y tratamiento racional de la lepra de los griegos hallados por inducción* (Bogotá: Imprenta de Echeverría hermanos, 1882); and "Elefancia de los Griegos. Caso de Curación por el nuevo tratamiento del doctor Unna de Hamburgo. Por Mr. Barthelémy" (Translated by Proto Gómez) *Revista Médica*, 1886, 10 (107):260-269. See also: "Discussion sur la contagiosité de la lèpre," *Bulletin de l'Académie de Médecine*, 1885, 14 (42):1396-1414.

³² See: Owsei Temkin, "Scientific Approach to Disease: Specific Entity and Individual Sickness," *The Double Face of Janus and Other Essays in the History of Medicine* (Baltimore: The Johns Hopkins University Press, 1977), pp. 441-455.

³³ Gabriel J. Castañeda, "Estudio sobre la lepra," *Revista Médica*, 1888, 12 (128):133-140; and 12 (129):172-181; and by the same author, "Siringomielia y lepra nerviosa," *Revista Médica*, 1891, 15 (167-8):633-6.

³⁴ "La lepra en sus aspectos clínicos y patológicos". Por el doctor Armauer Hansen y el doctor Carl Looft. (Traducción de Andrés Vargas Muñoz, dedicada a los señores doctores Juan de Dios Carrasquilla, Pedro M. Ibáñez y Roberto Azuero). *Revista Médica*, 1898, 21 (235):113-24; *Ibid.* 21 (240):280-8; *Ibid.*, 1899, 21 (241):311-9; *Ibid.* 21 (242):344-52; *Ibid.* 21 (244):410-6; *Ibid.* 22 (245):444-8; *Ibid.* 22 (246):477-80; *Ibid.* 22 (247):488-512; and *Ibid.* 22 (248):533-41.

between the worm and the disease was unknown. Manson established that the filaria's life cycle was associated with a vector, the common mosquito (*Culex fatigans*).³⁵ This new scientific understanding opened avenues in the search for a possible vector of leprosy and also allowed physicians to abandon old terms such as Greek elephantiasis.

Although Colombian physicians had a long standing interest in the etiology of leprosy, the germ theory generated a new enthusiasm in the causative mechanism of leprosy. For example, Juan de Dios Carrasquilla, one of the earliest Colombian bacteriological researchers on leprosy, presented Hansen's discovery of the etiological agent of leprosy as an instance of the ability of the new bacteriological approach to explain the origin of diseases which had previously been a puzzle.³⁶ But for Colombian physicians to participate in research and/or debate on the etiology of disease they would need facilities and instruction. Hence, the physician Proto Gómez argued that the study of medicine in Colombia lacked practical training in the new sciences of bacteriology, histology, and legal medicine. Referring to the "Pasteurian revolution," Gómez claimed:

"...spending vast resources, [the government] acquires means of war that carry devastation and death among men themselves under the harsh supposition that they are our main enemies, without thinking that the authentic enemies of the human species are those innumerable armies of the infinitely small which defeat us hour by hour for not knowing the necessary means to defend ourselves and to fight them."³⁷

Colombians needed to identify their real "enemies" and devise means to combat them.

³⁵ Michael Worboys, "The Emergence of a Tropical Medicine: a Study in the Establishment of a Scientific Specialty," Perspectives on the Emergence of Scientific Disciplines ed. by Gerard Lemaire et al. (Mouton: Maison des Sciences de l'homme, 1976), pp. 75-98, on pp. 80-3.

³⁶ Juan de Dios Carrasquilla, "Disertación sobre la etiología y el contagio de la lepra, Revista Médica, 1889, 13 (137):441-84.

³⁷ Proto Gómez, "Importancia de los estudios bacteriológicos," Revista Médica, 1888, 12 (128):129-33, on p. 132-3.

They needed to get their priorities straight. The defense against microscopic invaders should be as important as that against human invaders.

Like their European peers, Colombian physicians performed human experiments in their attempt to determine the mode of transmission of leprosy. For example, in 1893, the physician Daniel Vega conducted trials in *Agua de Dios* which were concealed from the general Colombian public. Vega inoculated leprosy products such as serum and blood into fourteen "voluntary" healthy children residents of the lazaretto. Although twelve of them subsequently developed leprosy, the experiment proved nothing. Since the children's parents were leprosy sufferers, they could have contracted the disease from heredity, environment, or by mediate or immediate transmission. However, apart from the dubious scientific merit of the experiments, they show the appalling living conditions of leprosy patients and their families within the lazarettos. Parents gave consent for their children's inoculations because most patients disbelieved the theory of contagion. But more importantly, they were also attracted by the promise that their children would receive the daily allowance as lepers from the moment of the inoculations, even in the case they did not develop leprosy.³⁸ The trials also evidence the scientific attitude of nineteenth-century doctors who on the name of science were willing to perform hazardous experiments. For their part, Colombian physicians were eager to participate in the international debate on leprosy by "proving" that the disease was transmitted through inoculation. Hence, *Agua de Dios* residents became available objects of experimentation. Their bodies began to be medicalized in the sense that they started to serve to confirm or to verify scientific statements.

By the end of the nineteenth century, there were hardly any physicians who supported miasmatic, humoral or hereditary theories of leprosy. The notion that leprosy was a specific disease transmissible by an active agent easily became the dominant

³⁸ Juan Bautista Montoya y Fl rez, Contribución al estudio de la lepra en Colombia (Medellín: Imprenta Editorial), p. 295.

explanation. Notions of climate, diet and heredity which physicians had previously considered as causes of disease became predisposing antecedents. Hansen's theory about the contagiousness of leprosy produced several debates and different interpretations within Colombian medical circles. Physicians from Santander, Cauca, Boyacá, and Antioquia, directed their clinical observations to the Academy of Medicine in Bogotá in order to participate in the debate on contagion.³⁹ By 1891, statements deriding hereditary, miasmatic and telluric theories, became commonplace. For example, the doctor Manuel S. Algodona from Boyacá ridiculed his professor of clinical medicine at the National University who believed that leprosy was produced by certain topographies, by atmospheric variations, by heredity, and by specific and individual predispositions. According to Algodona, these factors played no role in the causation of the disease. Instead, Hansen's bacillus was the "sine qua non condition" for the transmission of leprosy.⁴⁰

Advocates of either contagion or heredity as the origin of leprosy supported their theories by observation. One of the few supporters of heredity, the doctor Alberto García, published a study called *Nuevas observaciones sobre la lepra elefancia, su etiología y su curación*. García cited the numerous cases of people living in close contact with leprosy patients such as doctors, nuns, and nurses who never contracted the disease to argue against contagion.⁴¹ The impossibility of cultivating Hansen's bacillus was another argument of the adherents of the heredity doctrine, such as the physician Démétrius Zambaco from Constantinople, well known in the Colombian medical community.⁴²

Followers of the contagion theory publicized as evidence the conditions of the

³⁹ For example, R. Navarro presented a case he interpreted as hereditary. See: R. Navarro, Letter to Dr. Proto Gómez, *Revista Médica*, 1889, 13 (143):674-5; and from the same author, "Lepra: Notas enviadas al señor redactor de la Revista Médica," *Revista Médica*, 1890, 14 (148):4.

⁴⁰ Manuel S. Algodona, "Contribución al estudio de la higiene: Historia sucinta de la lepra en Paipa," *Revista Médica*, 1891, 15 (166):619-26, on pp. 625-6.

⁴¹ See a summary of García's study in: Montoya, *Contribución*, pp. 106-7.

⁴² Zambaco, "Travaux Originaux," passim.

spread of leprosy in Hawaii, including the case of Keanu, the prisoner inoculated with leprosy bacillus, and the resulting debates which took place at the Paris Academy on the subject in 1888.⁴³ Curiously, physicians rarely mentioned the circumstances of the death of Father Damien as evidence of contagion. This was probably because in Colombia French culture and medicine were far more influential than British. For example, Colombian physicians tended to translate and publish French studies on the disease, such as La léprose by the French specialist Dom Sauton, rather than British.⁴⁴ Furthermore, the Colombian medical community obtained information on the struggle against leprosy in British colonies principally through French translations such as La lutte contre la lèpre dans les colonies anglaises, by the French Édouard Jeanselme.⁴⁵ As Damien's case was better known and used as an argument for the contagiousness of leprosy in England and in the English-speaking world than anywhere else, Colombian physicians rarely mentioned it in their debates over the etiology of leprosy.⁴⁶

The French medical influence played a key role in Colombian discussions about contagion vs. heredity of leprosy. The doctor Juan de Dios Carrasquilla synthesized the two approaches, maintaining that heredity and contagion were not necessarily opposed. He believed that the disease was produced by a bacillus and acquired by contagion from an infected person. However, the fact that some people did not develop the disease even after

⁴³ On the discussion in Colombia about the research conducted in Hawaii, see: Gabriel J. Castañeda, "Lepra de los griegos: Resumen ordenado de los estudios hechos sobre esta enfermedad en la última década," Revista Médica, 1892, 16 (177-8):173-88, on p. 185; and Carrasquilla, "Disertación," pp. 473-4. On the discussions of the Academy of Paris, see: "Naturaleza contagiosa de la lepra," Revista Médica, 1889, 12 (134):337-338; see also: "Sur la nature contagieuse de la lèpre," Bulletin de l'Académie de Médecine, 1888, 20 (48):751-752..

⁴⁴ Dom Sauton, "Contagio de la lepra," Revista Médica, 1901, 23 (259):239-43; 1902, 24 (261):312-7; and (263):370-81.

⁴⁵ Édouard Jeanselme, "La lucha contra la lepra en las colonias inglesas," Revista Médica, 1901, 23 (253):57-61; and (254):76-90.

⁴⁶ On the case of Damien and its importance in England, see: Zachary Gussow, Leprosy, Racism, and Public Health: Social Policy in Chronic Disease Control (Boulder, CO: Westview Press, 1989), p. 113.

relatively long contact with leprosy patients was still an enigma. Carrasquilla explained this phenomenon by the ideas of "terrain" and "grain."⁴⁷ As the grain has to be planted in the appropriate terrain in order to grow, the leprosy bacillus had to find suitable conditions in order to produce the disease. The terrain itself would never grow anything if the circumstances were inappropriate. The conditions relevant for the transmission of leprosy were seen as inherited. Therefore, leprosy itself was not an inherited illness, because no disease was itself considered inherited by the followers of contagionist views. However the "predisposition" to get some kinds of diseases was conceived as inherited.⁴⁸ Scientists were puzzled at the time by the problem of "immunity," and by individual responses to the actions of specific microorganisms.⁴⁹

Beyond theoretical nuances, doctors agreed that leprosy was a serious problem. Bernardino Medina and Gabriel J. Castañeda declared in 1886 that leprosy was rapidly spreading among the Colombian population.⁵⁰ Whether it was contagious or inherited, physicians asserted that there was only one answer to the problem of leprosy--isolation. For example, the doctor Juan David Herrera, one of the few believers that leprosy was transmitted through heredity recommended segregation with strict separation of the sexes to avoid transmission.⁵¹

⁴⁷ On the importance of concepts of "terrain" and "seed" on discussions of the etiology of leprosy, see: Dom Sauton, *La Léprose* (Paris: C. Naud, 1901), pp. 323-339.

⁴⁸ Carrasquilla, "Disertación sobre la etiología," pp. 441-84; see also some of the ensuing discussions in: Gabriel J. Castañeda, "Contagio y herencia," *Revista Médica*, 1889, 13 (138):485-6.

⁴⁹ The French historian Anne Marie Moulin suggests that discussions about "idiosyncrasy" (a supposed inequality among men) were prompted by the needs of colonization at the end of the nineteenth century, which referred to the differences of adaptation to a new milieu. *Le dernier langage de la médecine: Histoire de l'immunologie de Pasteur au Sida* (Paris: Presses Universitaires de France, 1991), p. 144.

⁵⁰ See the discussion about leprosy in: "Actas de las sesiones de los días 24 y 31 de Agosto de 1886," *Revista Médica*, 1886, 10 (107):241-243; and Gabriel J. Castañeda, "La lepra en el estado de Antioquia," *Ibid.* :258-259.

⁵¹ Montoya, *Contribución*, p. 102.

Consequently, leprosy patients were decided adversaries of theories of contagion and heredity, since they opposed measures of compulsory isolation. For example, in 1878 leprosy patient Adriano Páez wrote a series of letters to the lawyer Ramón Gómez, president of the Board of Charity, about the issue of leprosy. According to Gómez, leprosy was inherited. Thus marriage was to be prohibited and absolute separation of sexes was to be enforced. As a convinced Liberal, Páez opposed those theories in the name of individual rights.⁵² Páez was also convinced that the key to the problem of leprosy relied primarily on science. In his memories published by Juan de Dios Carrasquilla, Páez advocated the scientific study of the question by Colombian doctors. According to him, scientific conclusions found abroad were not suitable for Colombian conditions. Only through scientific experimentation conducted in Colombia would it be possible to find out if leprosy in the country was contagious.⁵³

Luis Carlos Pradilla, another leprosy patient, argued against contagion from the perspective of the old doctrine of infection. The medieval distinction between infection and contagion allowed him to understand leprosy as infectious, and to reject both contagion and heredity. Writing in 1878, he explained that the variety of *elefancia* common in Colombia was endemic since it was produced by specific telluric conditions. In other words, leprosy was peculiar to certain regions due to their specific geographic and climatic circumstances. At best, it was infectious, in the sense of corrupt, but never contagious in the sense of transmissible. For Pradilla, medieval European leprosy disappeared following a policy of segregation because it was "imported" from Asia; European leprosy was contagious rather than endemic. But for endemic leprosy like the Colombian version, seclusion of leprosy sufferers, according to Pradilla, was entirely useless.⁵⁴

⁵² See Páez's letters in Antonio Gutiérrez Pérez, Apuntamientos para la historia de Agua de Dios (Bogotá: Imprenta Nacional, 1925), pp. 161-165.

⁵³ Adriano Páez, Viaje al país del dolor (Fragments) in Gutiérrez, *Ibid.*, pp. 270-295, on pp. 293-295.

⁵⁴ See the argument by Pradilla in Montoya, Contribución, pp. 86-8.

When policies of mandatory segregation became predominant in the 1890s, *Agua de Dios's* residents also contested contagion theories. A common argument was that in Tocaima, which had been for a long time a favorite place for leprosy patients because of its thermal waters, no cases of the transmission of leprosy had occurred within a century. This was also one of the arguments used by the physician Samuel Durán in favor of the hereditary doctrine.⁵⁵ The physician Abraham Aparicio, a strong defender of contagion, responded that the dry and warm climate of *Agua de Dios* acted as a deterrent for the communication of leprosy. Otherwise, he concluded, there would be no healthy persons in *Agua de Dios*. The notion of climate, which physicians in pre-bacteriological accounts regarded as a possible cause of leprosy, became a deterrent in Aparicio's version. Combining Hippocratic-Galenic ideas with bacteriological concepts, Aparicio maintained that diseases were not inevitably contagious. Besides microorganisms, local conditions also played a role, either favoring or preventing their development.⁵⁶

Patients lost the battle against the idea that leprosy was a contagious disease. By the end the century the notion that leprosy was produced by a microorganism and that it was transmissible from diseased to healthy individuals became commonplace within the medical community and the Colombian public.

From Empirical Cures to *Rational* Treatments

In the first decades after its foundation in 1870, all kinds of medicine coexisted in *Agua de Dios*.⁵⁷ Popular healers, homeopaths, herbalists, and empirics, abounded in the lazaretto. If

⁵⁵ Samuel Durán, "Elefantiasis de los Griegos," Tesis de la Facultad de Medicina, Bogotá, 1873, in Montoya, *Contribución*, pp. 81-83; on patients' arguments against contagion see for example, Gutiérrez, *Apuntamientos*, p. 129.

⁵⁶ Abraham Aparicio, "Propagación de la lepra elefanciaca en Colombia," *Revista Médica*, 1890, 14 (155):241-3, on p. 242.

⁵⁷ I refrain here from epistemological judgment about the "scientificity" of popular and homeopathic nineteenth-century practices. I use "scientific" in its sociological connotation: doctors as a professional group excluded others and declared their own practices "scientific," as opposed to other practices that became "non-scientific." See: Thomas Gieryn, "Boundary-Work and the Demarcation

patients were wealthy enough to pay a doctor, medicine was a private matter between doctor and patient. In the medical marketplace of the lazaretto, physicians offered their secret "specifics" in open competition with empirics. Leprosy sufferers medicated themselves and experimented with remedies offered by popular practitioners. Some patients, anxious for a cure, were willing to spend large amounts of money in those treatments. Among the miraculous cures were obscure compounds containing parts of reptiles (a medieval treatment for leprosy) and other enigmatic remedies. Empirical treatments based on native plants such as *otoba* (*Myristica otoba*), *zábila* (aloe), *guaco* (*Mikania guaco*), and *teatina*, (a type of grass) were also popular.⁵⁸ The *Junta de Beneficencia* sponsored all these efforts. In 1880, for example, the *Junta* provided resources to Francisco R. Ardila and to Mauritz Hoffman, popular healers, to try their medicines in *Agua de Dios*. According to Antonio Gutiérrez, an *Agua de Dios*'s patient, most practitioners were charlatans seeking easy profits who usually left town once their incompetence was discovered.⁵⁹

Professional physicians usually prescribed chaulmoogra oil, the ancient Indian medicine to treat leprosy. The first shipment of chaulmoogra oil arrived at *Agua de Dios* in 1880, sent by Lino de Pombo, general Consul of Colombia in New York. In 1880, Antonio J. Márquez, a Colombian resident in New York (probably a trader), sent to Lino de Pombo a package of fifteen pounds of chaulmoogra oil plus a pamphlet, written by himself, summarizing information taken from contemporary medical journals about the medication. Márquez also dispatched the medicine and the relevant details to Adriano Páez who

of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists," *American Sociological Review*, 1983, 48 (December):781-795.

⁵⁸ On native Colombian plants used for therapy in cases of leprosy, see: Wenceslao Sandino Groot, "Plantas colombianas que se han usado contra la lepra. Teatina," *Revista Médica*, 1889, 13 (136):436-8.

⁵⁹ Gutiérrez, *Apuntamientos*, p. 123.

advertised them in Colombian journals and newspapers.⁶⁰ As had reported in other countries, chaulmoogra effected improvement in some patients, but was ineffective in other cases. In addition, the oil was difficult to tolerate because of its nauseating effects.⁶¹ These difficulties and repeated failures with empirical cures led most patients and physicians to regard leprosy as incurable. The issue of therapeutics reveals the limited power of medicine in relation to leprosy, and demonstrates that the disease was barely medicalized in the last decades of the nineteenth century.

The few professional doctors that occasionally ventured to *Agua de Dios* during the nineteenth century were general practitioners. With one exception, they did not publish a study on the disease--they did not claim to be specialists on leprosy. The exception was Marcelino Vargas, an official doctor of *Agua de Dios*, a leprosy patient himself, who published a study on the disease in 1881 in order to demonstrate that leprosy was not contagious.⁶² Conversely, those who published works on leprosy never practiced in the lazarettos. Doctors like Ricardo de la Parra relied almost exclusively on theoretical knowledge, citing authors such as Aretaeus, Galen, and occasionally, Danielssen, with the addition of a few observations from their private clientele.

The new professional status of doctors started to bring about changes in the doctor-patient relationship by the end of the century. Patients, as clients, tended to demand certain types of treatment, and even certain kinds of diagnosis. For instance, most studies of leprosy published until the third quarter of the nineteenth century, the pre-Hansen era, dealt extensively with the issue of therapeutics. Doctors, whose careers depended on patients, and who were thus interested in securing a clientele, edited long and detailed lists of remedies and possible cures for leprosy. In fact, the anonymous manuscript titled "Regime

⁶⁰ See letters by Márquez, Pombo, and Páez, in: "La Lepra," Anales de la Instrucción Pública en los Estados Unidos de Colombia, 1881, 2 (7):21-41.

⁶¹ Gutierrez, Apuntamientos, pp. 123-124; on the use of chaulmoogra, see: Patrick Feeny. The Fight Against Leprosy (New York: American Leprosy Mission, 1964), p. 111.

⁶² His study was titled "Elefantiasis de los griegos." See: Montoya, Contribución, pp. 95-96.

that every person attacked by elephantiasis or leprosy should observe in any stage of the disease," published in 1858, finished with a note advertising that doctor Ricardo de la Parra prepared and sold the medications described.⁶³ In the same vein the medical convention of presenting examples of alleged cures of leprosy to political authorities should be understood as a way to guarantee potential profit. This was the case of the doctor Esteban Pardey from Barranquilla who in 1847 presented two leprosy patients he had supposedly cured to the then president of the republic, General Tomás Cipriano de Mosquera (1845-1849).⁶⁴ Interest in therapeutics certainly did not vanish with the professionalization of medicine, but the issue of medications tended to be presented more as an integral part of a rational comprehension of diseases, than as the outcome of a random process of trial and error. Supporters of contagion as the cause of leprosy, started to champion "rational" treatments. For example, Gabriel J. Castañeda advocated an hygienic and parasiticide therapy, and the physician Gutiérrez y Arango from Santander promoted his "rational" treatment of *dioxibenzine*. Whether effective or not, the proponents of professional medicine combated the "senseless" remedies of charlatans which according to them induced only hopelessness among patients.⁶⁵

Serotherapy: The Promise from the Bacteriological Era

By the end of the century, the successes of the tetanus antitoxin and the diphtheria antitoxin in Europe made physicians hope that similar methods could be used against other diseases, like pneumonia, typhoid fever, cholera, anthrax, tuberculosis, and leprosy. Serotherapy was based in a principle explained by Emil von Behring, a German scientist, and Shibasaburo

⁶³ "Régimen que debe observar todo enfermo atacado de elefancia o lepra, en cualquier estado de la enfermedad" in Montoya, *Contribución*, pp. 60-61.

⁶⁴ Esteban Pardey, "Exposición del Dr. Esteban Pardey sobre el uso del huano en la elefancia" in *Ibid.*, pp. 59-60.

⁶⁵ Gabriel J. Castañeda, "Tratamiento parasiticide de la lepra," *Revista Médica*, 1884, 8 (96):513-20; and Gutiérrez y Arango, "Observación de lepra tuberculosa: Tratamiento por la resorsina," *Revista Médica*, 1891, 15 (163-4):519-32.

Kitasato, a Japanese bacteriologist, in 1890. They treated rabbits and mice with tetanus cultures and found that their immunity depended on the capacity of the cell-free serum to neutralize toxins produced by the tetanus bacillus. This capacity was lasting and was also transferable to other animals. For a few years, serotherapy was regarded as the panacea against infectious diseases, until the first fatal accident was reported in 1896.⁶⁶ Additionally, scientists soon found that, in many instances, there was no difference between normal and immune serum; any could have the same protective properties. Therefore, sera were not specific treatment for specific diseases, and eventually serotherapy was abandoned as an effective therapy.⁶⁷

Colombian physicians grasped the importance of these scientific achievements and started to put them into practice. As I mentioned previously, professional doctors tended to direct their activities towards the organized profession itself, as opposed to just treating their private clientele. Therefore, they had more chances to advance research activities. By accepting that a microorganism caused leprosy, doctors came to believe that it can be cured; this in turn generated a wave of optimism. For example, Carlos Putnam, a graduate of the Lyon Faculty of Medicine in France, began to test the new serological treatment in *Agua de Dios* in 1895. As with attempts to use serotherapy for other diseases, the results of the anti-leprosy serum were varied: some patients improved, but the symptoms of some others were aggravated. The new remedy caused certain optimism among patients. However, for unclear reasons, the experiment had to stop when the physician Juan de Dios Carrasquilla, who had been applying serotherapy on leprosy patients from Bogotá, claimed to the Academy of Medicine his priority as inventor of serotherapy for leprosy.⁶⁸ As a result of

⁶⁶ The healthy son of the German doctor Langerhans died after his father, as a preventive measure, inoculated him with antitoxins. See: Moulin, *Le dernier langage*, pp. 68-69, 143; and William Bulloch, *The History of Bacteriology* (New York: Dover, 1938/1979), pp. 261-4.

⁶⁷ On the issue of serotherapy and the science of serology, see the classical study by Ludwik Fleck, *Genesis and Development of a Scientific Fact* Ed. by Thaddeus Trenn and Robert K. Merton (Chicago: The University of Chicago Press, 1935/1979).

⁶⁸ Gutiérrez, *Apuntamientos*, p. 31.

his claim, the Academy of Medicine certified that Carrasquilla was the leading exponent of the therapeutic use of the anti-leprosy serum. Apparently, the Viennese pathologist Victor Babes had attempted serotherapy to treat leprosy, but he used dogs immunized against tuberculosis whose serum inoculated in leprosy patients produced a tonic effect.⁶⁹ Carrasquilla's method was inspired by the analogy between leprosy and syphilis, and he used horses to prepare the serum directly from the blood of leprosy patients.⁷⁰ The beneficial effects in some patients from Bogotá made General Rafael Reyes, then Minister of Government, acclaim Carrasquilla the "savior" of leprosy sufferers. Subsequently, the government created a Serotherapeutic Institute to advance serological investigations.⁷¹

The physician Pedro Pablo Nates from Bogotá, working with five medical students as assistants, began the experiments with the Carrasquilla serum in *Agua de Dios*. The trials lasted several months. However, in some cases the results were harmful, as Antonio Gutiérrez, one of the patients who received the new treatment recalled:

"The few injections that [the author] received caused him a deep and disastrous perturbation of the nervous system which kept him between life and death for more than six months; when he was revived, after horrible suffering, he was blind, the whole body completely atrophied, with his hands useless."⁷²

Gutiérrez's experience, as well as this of the unfortunate Langerhans' son, illustrate the great

⁶⁹ On Babes's serum, see: Leonard Rogers and Ernest Muir, *Leprosy* (New York: William Wood, 1925), p. 250.

⁷⁰ Pablo García Medina, "Comunicaciones sobre el empleo de la seroterapia en la lepra, hechas a la Academia Nacional de Medicina de Bogotá (Colombia) por el señor doctor Juan de D. Carrasquilla L.," *Revista Médica*, 1895, 18 (204):296-308, on pp. 296-8 (note), 307-8.

⁷¹ Edmundo Rico, "Doctor Juan de Dios Carrasquilla," *Repertorio de Medicina y Cirugía*, 1925, 16-7 (187):304-13, on p. 307.

⁷² Gutiérrez, *Apuntamientos*, p. 33. Gutiérrez's use of the third person in his memoirs is noteworthy; he probably used this device to indicate an objective point of view.

confidence that nineteenth-century doctors had in bacteriology.

Carrasquilla, nonetheless, presented extensive and optimistic communications to the Academy of Medicine.⁷³ The news about the promising results spread rapidly. For example, in 1896, the *Real Academia de Medicina* of Madrid, Spain discussed the new treatment by Carrasquilla.⁷⁴ The Colombian government designated Carrasquilla to represent the country in the international leprosy conference in Berlin in 1897, where serotherapy was designated as one of the topics for discussion.⁷⁵ Reports presented at the conference, indicated that "Carrasquilla's serum" had been widely used. Indeed, physicians had tried the serum in the Saint-Louis hospital in Paris, in the Hematological School in Vienna, and in Robben Island Leper Hospital in South Africa. Physicians such as the Germans Edward Arning and Albert Neisser and others from Algeria, Berlin, London, and Copenhagen had also employed the serum. Nonetheless, their results were far from positive. Only Neisser and an unnamed doctor from Berlin, reported some improvement in certain cases.⁷⁶

Although apparently the Colombian government withdraw its support to the Serological Institute after learning the judgment from Berlin's conference, Carrasquilla continued the study of leprosy in his private laboratory. However, he introduced modifications. Instead of using leprosy bacilli directly from the blood of leprosy patients to

⁷³ Juan de Dios Carrasquilla, "Tercera comunicación sobre un procedimiento seroterápico aplicado al tratamiento de la lepra griega, presentada a la Academia Nacional de Medicina de Bogotá (república de Colombia) por el doctor..." *Revista Médica*, 1896, 18 (206):321-52; (207):368-9.

⁷⁴ See: "Actas de sesiones literarias," *Anales de la Real Academia de Medicina*, 1896, 16:61-69; see also: Imelda San Martín Bacaicoa, *La lepra en la España del siglo XIX* Cuadernos Valencianos de Historia de la Medicina y de la Ciencia (Valencia, 1966), pp. 85-86.

⁷⁵ Juan de Dios Carrasquilla, "Memoria sobre la Lepra Griega en Colombia," *Mittheilungen und Verhandlungen der internationalen wissenschaftlichen Lepra-Conferenz zu Berlin im October 1897* vol. 1 (Berlin: Verlag von August Hirschwald, 1897), pp. 81-124.

⁷⁶ "Conferencia Internacional sobre la lepra, habida en Berlín del 11 al 16 de Octubre de 1897" (Extracto de las discusiones hecho por el Dr. E. Kummer para la *Semaine Médicale* de París, traducido por el Dr. M.N. Lobo), *Revista Médica*, 1898, 20 (228):269-82), on pp. 271-5.

inoculate horses, he started using bacilli cultured from material taken from leprous lesions.⁷⁷

The Colombian Academy of Medicine also judged Carrasquilla's research and presented an official report in 1899.⁷⁸ According to the commission from the Academy, the treatment by Carrasquilla's serum was ineffectual. Nonetheless, the committee considered the work already done to be valuable and encouraged Carrasquilla to continue his studies.⁷⁹ Although Carrasquilla's research did not yield an immediate cure for leprosy, his work was extremely valuable. Unlike many of his colleagues, Carrasquilla stood out as an exemplary physician who searched for answers to the problem of leprosy while maintaining a rational outlook toward the disease, and a humanistic attitude towards its patients.

The new role of the medical profession is exemplified by Carrasquilla's request to be declared the inventor of serotherapy. Up to this point, both physicians and popular healers had made of patients objects of experiments. But their use of empirical treatments remained in a private realm. Since medical practice was scarcely regulated in nineteenth-century Colombia, the success or failure with a particular therapy had no specific meaning beyond personal harm or robbery. In contrast, Putnam had to stop his experiments in *Agua de Dios* while the matter of serotherapy was elucidated elsewhere--in the Academy of Medicine. As in other instances of the professionalization of medicine, questions regarding therapeutics were being placed within the domain of a professional body which possessed the power to approve or to condemn.

⁷⁷ "Cuarta comunicación del señor doctor D. Juan de Dios Carrasquilla L., sobre lepra," Revista Médica, 1899, 21 (240):257-66. See also Sauton's comments: Sauton, La Léprose, p. 453.

⁷⁸ "Informe del Secretario Bienal," Revista Médica, 1899, 21 (243):362-73, on pp. 362-5.

⁷⁹ Yet in 1912, P.A. Lara, a physician from Rio de Janeiro, maintained that Berlin's judgment of Carrasquilla's work was premature and too severe. He regarded Carrasquilla's first attempts as valid and recommended further investigation. Elie Metchnikoff and Alexandre Besredka attributed the reported improvements in the patient's health not to the specificity of the serum, but to the presence of hemotoxins. Mistakenly, according to Lara, these early bacteriologists thought that Hansen's bacillus was not present in the blood of leprosy patients. See: P.A. Lara, "Naturaleza y tratamiento específico de la lepra," Revista Médica, 1912, 30 (355-7):57-85. However, later scientific scrutiny revealed that Carrasquilla's serum was indeed ineffective; see: Rogers and Muir, Leprosy, pp. 249-250.

The Rhetoric of Exaggeration

Debates about leprosy were frequent among physicians after the creation of societies of medicine which provided forums for discussions. In Colombia, as in Britain and the United States, the spread of leprosy provoked the greatest concern in the 1890s.⁸⁰ This anxiety was partly induced by international influence, but it was in the main produced by the needs of the medical profession itself. In fact, leprosy was not a medical problem in the nineteenth century. Charitable institutions, such as the Board of Charity, the Society of Saint Lazarus, a philanthropic entity created by pious persons to assist leprosy sufferers residing within lazarettos, the Salesian order, and the Sisters of Charity, were in charge of leprosaria and the care of lepers. Physicians promoted fear about leprosy as a means to medicalize the disease. They exaggerated the number of leprosy sufferers, thus creating the legend that Colombia was beset by the disease. One of them was Abraham Aparicio who, using murky examples, claimed that the leprosy bacillus resisted putrefaction. According to him, the microorganism was still alive in cadavers, therefore, exclusion of lepers needed to be not only "complete" and "absolute," but perpetual:

"The locality occupied by the lazarettos should be sequestered from any social movement, any commercial movement; and the period of this isolation cannot be calculated in one or several generations...but in the entire life of nations which is the same as to say while man is on earth..."⁸¹

In order to estimate the incidence of the disease, Gabriel J. Castañeda undertook the first enquiry of the number of leprosy sufferers ever done in Colombia, and presented his results to the *Junta Central de Higiene* in 1890. The census was incomplete--only 122, out

⁸⁰ On the alarm about the spread of leprosy at the turn of the century, see: Gussow, Leprosy, Racism, and Public Health, pp. 111-129.

⁸¹ Abraham Aparicio, "La lepra y los lazaretos," Revista Médica, 1891, 15 (163-4):506-12, on p. 511.

of 920 Colombian municipalities (13%) answered the questionnaire. The total of leprosy sufferers enumerated was 1,724. The departments most ravaged with the disease were Santander with 57.3% of the leprosy population, and Cundinamarca with 34.8%. Hence, Castañeda recommended the construction of leprosaria in dry and warm climates which, he claimed, were not suitable for the development of leprosy.⁸² However, Castañeda's census had more far-reaching consequences than he probably intended. Abraham Aparicio, commenting on Castañeda's report, declared that propagation of leprosy was alarming--in the case of some towns, two thirds of their population were already leprosy. Although most of the answers to Castañeda's enquiry were given by non-medical people, Aparicio regarded them as "facts of observation." He demanded that the government take urgent action and impose hygienic measures, that is, the isolation of lepers. The Society of Medicine of Cauca declared that contagiousness of leprosy was demonstrated by instances such as its propagation in the Sandwich Islands and the new foci of leprosy in the United States originating with Norwegian and Chinese immigrants. More importantly, the societies of medicine of Bogotá, Medellín, and Cauca indicated that isolation in Colombia had never been effective; lazarettos were just villages where the healthy and the sick mingled together without precaution.⁸³

Abraham Aparicio not only described leprosy in despicable terms, he also exaggerated Castañeda's statistics. In fact, without presenting new data, Aparicio claimed that the number of Colombian lepers was 20,000. To ensure that his colleagues understood that this was certainly an enormous figure, he explained that Colombia possessed twenty times more lepers than India, which was known worldwide for its high prevalence of

⁸² Gabriel J. Castañeda, "Investigaciones sobre la lepra en la República de Colombia," in Montoya, *Contribución*, pp. 108-111.

⁸³ Abraham Aparicio, "Propagación de la lepra elefantiaca en Colombia," *Revista Médica*, 1890, 14 (153):161-5.

leprosy.⁸⁴ Aparicio offered no source for his statistics, other than a brief note: "data given by Dr. J. David Herrera."⁸⁵ However, Herrera had conducted no census of leprosy, neither he did publish statistics on leprosy. According to Juan Bautista Montoya y Flórez, a graduate of the Paris Faculty of Medicine who studied the exaggerated figures of leprosy sufferers given by late nineteenth-century doctors in 1910, "Dr. Herrera's personal and private opinion became a public statistic."⁸⁶ From that moment on, physicians and other interested groups reported an ever increasing number of real or fictitious lepers without the data provided by a census. For example, in 1898, Nicanor Insignares, a graduate of the Paris Faculty of Medicine, estimated the number of leprosy sufferers to be between 20,000 to 30,000.⁸⁷ If Insignares's count was correct, this figure indicates that between 0.5% and 0.75% out of a population of about 4 million people had leprosy. This would be a very high rate if we consider that in Norway, in one of the peak years (1856), the prevalence of leprosy was estimated in 0.23%.⁸⁸

The Salesian order took physicians' exaggerated data on leprosy in Colombia and amplified it for its own purposes. The Salesians had been in charge of Colombian lazarettos since 1891, and their authority within those institutions was far greater than the power of the Colombian government or the medical community. The Italian priest Evasio Ravagliati initiated a campaign on his own in order to collect funds to create lazarettos and magnified

⁸⁴ Although there were no accurate data about the actual incidence of leprosy in India, most leprologists until the 1930s, claimed that India presented one of the highest rates of leprosy; see: Édouard Jeanselme, La Lèpre (Paris: G. Doin, 1934), p. 75.

⁸⁵ Abraham Aparicio, "La lepra y los lazaretos," Revista Médica, 1891, 15 (163-4):506-12, on p. 506.

⁸⁶ Montoya, Contribución, p. 345.

⁸⁷ Physician Carlos Michelsen summarized Insignares's study; see: Carlos Michelsen U., "La lepra," Revista Médica, 1898, 21 (232):1-29, on p. 8.

⁸⁸ Th. M. Vogelsang, "The Termination of Leprosy in Norway: An Important Chapter in Norwegian Medical History; Together with a Portrait of Armauer Hansen circa 1873," International Journal of Leprosy, 1957, 25 (4):345-51, on p. 345.

the total of lepers to 50,000.⁸⁹ Different interested parties fabricated statistics of leprosy according to their own purposes. The aim of Ravagliati's crusade was to stimulate charity, while the intention of the medical community was to medicalize leprosy by taking it over from philanthropy. The exaggerated figure of 20,000 to 50,000 Colombian lepers became known worldwide. Renowned leprologists recorded Colombia as one of the regions of the world in which leprosy was most endemic. For example, the French leprologist Dom Sauton in his 1901 report on the geography of the disease, claimed that "Colombia is the world's region most ravaged by leprosy," and the Turkish physician Démétrius Zambaco maintained in 1914 that three per cent of the Colombian population was afflicted with the disease.⁹⁰

However, the only census of leprosy taken in Colombia during the nineteenth century was Castañeda's. Although it was incomplete, Castañeda's census reported only 1,724 leprosy sufferers. All other nineteenth-century data on leprosy were a fabrication. Dr. Carlos Michelsen portrayed doctors as "sincerely taking care of the future of the country," and exhorted the government not to delay the solution of the "grave problem of leprosy."⁹¹ Insignares expressed his alarm of the fact that Colombians experienced no fear of leprosy which he referred to as "the monster of one hundred heads."⁹² According to him, beautiful and healthy women married lepers, and healthy people in the lazarettos engaged in all sorts of commerce with the sick population with no repugnance at all. Leprophobia spread quickly among the upper classes. In 1898, members of the "learned segment of the Bogotanian society," held a meeting in the *Colegio del Rosario* where they expressed their

⁸⁹ Montoya, *Contribución*, pp. 351-353.

⁹⁰ Sauton, *La Léprose*, p. 75; and Démétrius Zambaco, *La lèpre a travers les siècles et les contrées* (Paris: Masson, 1914), p. 609.

⁹¹ Carlos Michelsen U., "La lepra," *Revista Médica*, 1898, 21 (232):1-29, on p. 1.

⁹² Nicanor Insignares quoted by Michelsen; see: Carlos Michelsen U., "La lepra," *Revista Médica*, 1898, 21 (232):1-29, on p. 8.

alarm at the rapid expansion of leprosy in the country.⁹³ They saw leprosy as an awful scourge which caused retrogression and barbarism (see the epigraph of this chapter). The main political and cultural project for the Colombian elites at this time, was to participate in what they called "civilization." The historian Marco Palacios points out that no other word "was used as often or as emphatically as *civilization*" in nineteenth-century Colombia.⁹⁴ Colombian physicians, as their French peers, understood theirs as a civilizing mission.⁹⁵

Setting the Disease Apart

In 1890, in accordance with suggestions made by the Academy of Medicine, the Colombian parliament enacted the first laws ordering mandatory segregation for leprosy sufferers. The legislation on lazarettos approved in the 1860s by the federal states, and by the central government, was part of a philanthropic endeavor. For those legislators, lepers were objects of compassion and charity. The sole duty of the Colombian state was founding lazarettos to protect these "unfortunate" individuals and to encourage public charity to provide for their assistance.⁹⁶ In contrast, the law of 1890 expressed a new sense of urgency:

"isolation or sequestration of individuals who suffer the disease known by the name Greek elephantiasis is an hygienic measure of urgent public necessity."⁹⁷

The edict excepted those whose resources allowed them to accomplish home isolation according to the rules established by the *Juntas de Higiene* of the departments.

⁹³ Proto Gómez quoted by Michelsen; see: Carlos Michelsen U., "La lepra," *Revista Médica*, 1898, 21 (232):1-29, on pp. 17-18.

⁹⁴ Palacios, *Coffee in Colombia*, p. 2.

⁹⁵ La Berge, *Mission and Method*, p. 42.

⁹⁶ "Ley del 12 de Sep. 1867," in Montoya, *Contribución*, pp. 69-70.

⁹⁷ See: Ley 43, 14 Nov. 1890, in *Ibid.*, pp. 112-113, on p. 112.

Contravention of those regulations would imply immediate seclusion in the nearest lazaretto. The government committed itself to organizing as many lazarettos as the *Junta Central de Higiene* considered necessary. The turning point, however, was the enactment of another law in 1890 which established leprosy as a disease apart--in need of special consideration. This law designated one of the Colombian islands either on the Caribbean or the Pacific coasts to be used for segregating leprosy sufferers from the whole country. The proposal implied that the whole leper population residing within the existing leprosaria, together with newly identified cases, would be removed to an island.⁹⁸ The 1890 law sanctioning the building of an island-colony was doubtless based on the model that European colonialists had been developing in Hawaii since the 1860s.⁹⁹

The Board of Hygiene, the Academy of Medicine, and the medical congress of 1893 approved the establishment of the new national lazaretto on Coiba, a 20-mile-long island off the southwest coast of Panama.¹⁰⁰ However, by the end of the century several discussions about the convenience of putting into practice such decisions took place in the Academy of Medicine. Proto Gómez and Abraham Aparicio strongly encouraged the proposed isolation of Colombian lepers on an island, justifying this policy by the idea that ancient and medieval procedures of segregation conformed to scientific principles, even if medieval authorities were ignorant of such knowledge.¹⁰¹ Supporters of rigid segregation also claimed that the example of European, especially Norwegian, history proved rigorous

⁹⁸ "Ley 113, Dic. 1890," in *Ibid.*, p. 113. A complementary decree of 1896 established isolation for prisoners and soldiers affected by leprosy and tuberculosis. The former would be segregated in lazarettos and the latter, in general hospitals; see: Acuerdo de 22 de Octubre de 1896, Pablo García Medina, *Compilación de leyes, decretos, acuerdos y resoluciones vigentes sobre higiene y sanidad en Colombia* Formada por el Dr. Pablo García Medina, ex-director de Higiene y Asistencia Pública (Bogotá: Imprenta Nacional, 1932), p. 125.

⁹⁹ On the Hawaiian model, see: Gussow, *Leprosy, Racism, and Public Health*, pp. 85-107.

¹⁰⁰ Montoya, *Contribución*, p. 113.

¹⁰¹ Proto Gómez, quoted by Carlos Michelsen U., "La lepra," *Revista Médica*, 1898, 21 (232):1-29, on pp. 24-25; and Abraham Aparicio, "La lepra y los lazaretos," *Revista Médica*, 1891, 15 (163-4):506-12, on p. 509.

isolation to be the only effective way to solve the problem of leprosy.¹⁰²

The physician Insignares believed that a unified lazaretto, as an island-colony, was the best solution for Colombia since it would guarantee complete isolation. However, he opposed the proposal because he considered it completely unattainable. Insignares compared the migration of the Colombian leper population to the island of Coiba to a civil war, and regarded such movement throughout the country as a "very dangerous social perturbation" that should be avoided:

"Such movement could be compared to a small war for the huge expenses that it would cause, for the persecutions and abhorrences that would be pronounced *against the governors and their agents* [my emphasis] which the despicable partisan spirit would agitate..."¹⁰³

The metaphors used by Insignares were recognizable allegories in nineteenth-century Colombia, a country divided by deep political enmities, permanently at the verge of civil war. On the other hand, it is remarkable that Insignares's main concern was the potential abuse against government officials. Since his main interest was to preserve the social order, the actual objects of persecution, the lepers themselves, were imperceptible.

The most clamorous antagonist of the disease-apart approach to leprosy was Carrasquilla. In the paper he presented at the Berlin's conference on leprosy (1897) Carrasquilla opposed proposals which implied treating leprosy patients as if they were criminals. He referred to these procedures as policies of extermination based on the false belief that leprosy was highly contagious. Carrasquilla contested the claim that isolation was the only method to halt the spread of leprosy. He maintained that if segregation was advocated on a supposedly scientific basis, the same policy should be applied to all

¹⁰² See: "Contagiosidad de la lepra" (Translation from The Lancet), Revista Médica, 1890, 14 (153):165-7.

¹⁰³ Nicanor Insignares quoted by Carlos Michelsen U., "La lepra," Revista Médica, 1898, 21 (232):1-29, on p. 9.

infectious diseases, including tuberculosis and syphilis.¹⁰⁴ The proposal of the island-colony was never implemented, not so much because of Carrasquilla's and other doctors' opposition, but because the expenditures required to organize such a leprosarium were beyond the reach of Colombia's budget. The sick remained within the old leprosaria--*Agua de Dios*, *Contratación*, and *Caño de Loro*.¹⁰⁵ The recommendations of the Berlin congress were widely diffused in the Colombian medical press, contributing to the reinforcement of the dogma of rigorous isolation that physicians had already adopted as the only method to control the disease.¹⁰⁶

In light of the new theories of contagion and of the dubious epidemiological statistics of physicians, new information about leprosaria became visible. In his 1896 report to the president of the *Junta de Beneficencia*, Francisco Montaña, syndic of *Agua de Dios*, described the lazaretto:

"*Agua de Dios* lazaretto, as it exists today, is not an establishment conceived for isolating people attacked by the awful disease of leprosy.... If the disease is contagious, a circumstance that no Colombian can doubt, for the wave spreads with a rapidity that frightens, the lazaretto not only does not conform to the requirements of isolation, but all in it seems to be made to extend contagion. The lazaretto is not a hospital, it is not separated by a sanitary cordon, it is a town where whoever wants can enter or leave."¹⁰⁷

The picture of town-lazarettos as foci of infection was appalling. Although the Colombian state was the owner of most of *Agua de Dios*, charitable institutions and Catholic

¹⁰⁴ Carrasquilla, "Memoria sobre la lepra griega," pp. 122-124.

¹⁰⁵ There was also a fourth small institution for lepers in the city of Cali, but not much information about it is available; see: Pablo García Medina, "Profilaxia de la lepra en Colombia," Repertorio de Medicina y Cirugía, 1909, 1 (1):52-9.

¹⁰⁶ "Conferencia Internacional," Revista Médica, 1898, 20 (226):213-221; 20 (227):252-5; and 20 (228):269-82.

¹⁰⁷ Quoted by Montoya, Contribución, p. 148, 151.

missionaries played a considerable role there. The *Sociedad de San Lázaro* from Bogotá supplied their daily ration with half a *real* over the official allowance of twenty five cents for regular patients, and fifty cents for those who were unable to work. The insufficiency of national and departmental budgets for supporting leprosaria was aggravated during the civil wars. In fact, the inability of the government to provide lepers' allowances during violent conflicts often forced the impoverished sick to leave leprosaria in order to obtain their livelihood.¹⁰⁸ Furthermore, *Agua de Dios* was the object of special persecution during two civil wars: the conflict of 1895, a revolutionary outbreak by the Liberals which the government defeated in three months, and the war of the Thousand Days (1899-1902). This war was the bloodiest and most devastating of nineteenth-century Latin American civil wars, with an estimated number of deaths of between 75,000 and 100,000 out of a population of 4 million. The Liberals revolted without success against the Conservative regime which had been in power since 1886. The economic and social ruin to the country was devastating.¹⁰⁹ Probably because of its location, close to some of the war zones, and apparently because some of the residents, including some leprosy sufferers, were implicated with Liberal rebellions, the town suffered incursions from both the official army and the Liberal guerrillas.¹¹⁰ These incidents show how far the lazaretto was from being a medical institution and how intensely *Agua de Dios* participated in the ordinary life of a Colombian nineteenth-century town. Indeed, for most nineteenth century leprosy was not a medical problem. Lepers were objects of charity, and lazarettos remained philanthropic institutions.

Nationalism, Hysteria, and the Medical Authority

¹⁰⁸ *Ibid.*, p. 149.

¹⁰⁹ This was also the last declared civil war in Colombia. See: Charles W. Bergquist, *Coffee and Conflict in Colombia, 1886-1910* (Durham, N.C.: Duke University Press, 1978); Alvaro Tirado Mejía, *Aspectos sociales de las guerras civiles en Colombia* (Bogotá: Instituto Colombiano de Cultura, 1976), pp. 11-14, and Helen Delpar, *Red Against Blue: The Liberal Party in Colombian Politics, 1863-1899* (University: University of Alabama Press, 1981), on p. 157.

¹¹⁰ Gutiérrez, *Apuntamientos*, pp. 29-40.

The doctors' campaign against leprosy had an unexpected outcome. The alarm that physicians created about leprosy in Colombia was such that in 1899 the government invited Hansen himself "to cure leprosy, or at least to make it decrease," according to the telegram sent by Manuel Antonio Sanclemente the president of the republic to the Academy of Medicine, requesting their advice on the matter. The medical profession reacted with indignation indicating that there was nothing for Hansen to do in Colombia. Hansen's approach to leprosy was to enforce strict isolation of sufferers which the Academy had been advocating for at least the last twenty years--without being heard.¹¹¹ Obviously, Hansen never visited Colombia. He recalled the incident in his memoirs, interpreting it as a problem of lack of resources from the Colombian government.¹¹² However, the episode revealed more than just the deficiency of the official budget. The medical profession was in the process of becoming a distinctive occupation with a role in the society at large, but doctors were not yet powerful enough to persuade the government of its scientific competence. The government created boards of hygiene and enacted some public health laws, but it lacked the authority and resources to make them effective. Since the beginning of the republic, the approach to solving local problems by importing European solutions remained typical of nineteenth-century Colombian elites. The physicians' reaction to Hansen's invitation reveals their struggle to construct their technical competence and their scientific authority.

Physicians' nationalistic attitudes were also combined with the rhetoric of exaggeration even until the early twentieth century. This was the case with the doctor José María Lombana Barreneche who presented a pessimistic outlook on leprosy. After the war of the Thousand Days (1899-1902) was over, the issue of creating leprosaria was again raised by the Academy of Medicine. A law of 1903 ordered the creation of one lazaretto in

¹¹¹ "Informe del Secretario Bienal," Revista Médica, 1899, 21 (243):362-73, on p. 367.

¹¹² Gerhard Armauer Hansen, The Memories and Reflections of Dr. G. Armauer Hansen (Würzburg: German Leprosy Relief Association, 1976), p. 125.

each of the nine departments of the republic to be supported by the inheritance tax.¹¹³ This decision again induced discussions in medical academies and societies. Lombana Barreneche maintained that the organization of nine lazarettos was an impractical disposition due to scarcity of resources. In a hopeless way, Lombana predicted that the whole country would become an immense lazaretto in few years, if the problem of leprosy continued to be in the hands of philanthropic institutions. Then, according to him, the problem would be reversed: physicians and government officials would have to find a place to isolate the healthy.¹¹⁴ Lombana was also opposed to establishing city hospitals for lepers, as Norway had done. He censured the common practice of imitating foreign examples without studying the national conditions, and revived the proposal of arranging a unique national lazaretto in an island--the only place where isolation could be accomplished.¹¹⁵ Víctor A. Gómez, physician from Santander, contended that founding departmental leprosaria would signify multiplying the foci of contagion. He also argued in nationalistic terms:

"Rather than studying Greek leprosy by foreign authors the country should create a national medicine...we have thousands of lepers, and more of them emerge everywhere...and we still do not know the cause that among us favors the contagion or propagation of the malady."¹¹⁶

By the early twentieth century, physicians still struggled to secure social recognition. Their appeal to constructing a national knowledge, and declaring their independence from foreign

¹¹³ See: Ley 28 de 1903, in Montoya, Contribución, pp. 163-4.

¹¹⁴ José María Lombana Barreneche, "Fundación de lazaretos departamentales," Revista Médica, 1903, 23 (279):865-870.

¹¹⁵ José María Lombana Barreneche, "Lazaretos departamentales," Revista Médica, 1904, 24 (289):289-91.

¹¹⁶ Víctor A. Gómez, "Correspondencia sobre la lepra," Revista Médica, 1904, 24 (295):108-11, on pp. 110-11.

expertise was part of their battle to assert their cultural authority.

To enhance their power, physicians also overstated the number of leprosy sufferers. No census, apart from the incomplete 1890 Castañeda's survey had been conducted. The fantastic figures provided by the medical profession were a strategy to medicalize the disease. The bigger the numbers, the more important the issue. Some doctors described leprosy in terms of horror stories which tended to create a moral panic about leprosy at a time when the disease was not yet a medical issue.¹¹⁷ As part of their professionalization, physicians needed to convince the government that they had the expertise and the medical knowledge to properly deal with the illness. Doctors then had to fight against philanthropy. The medical profession needed to demonstrate that philanthropy had been unable to manage the problem, that the numbers had increased rather than diminished.

Furthermore, the professionalization of medicine in Colombia occurred when the practice of Western medicine was becoming "scientific." By the end of the nineteenth century leprosy became an object of medical expertise. Colombian doctors eventually excluded non-professional knowledge on leprosy as non-scientific. The medical profession became the authorized speaker about the intricacies of the disease, and other knowledges were banned. The germ theory with its explanation of diseases as produced by specific microorganisms became dominant. Most physicians dismissed leprosy patients' experience and information about the illness as non-scientific. This was the case with the notion that the disease, although contagious, was difficult to transmit. Leprosy remained out of control and mysterious. Earlier knowledge indicated a myriad of causes that supposedly produced the disease, among them contagion. Lacking the notion of a single, specific cause, it made no difference whether people took all possible precautions, or none. There were no special prohibitions for leaving leprosaria, or at least, they were not enforced. By the end of the

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Some sociologists use terms such as "horror story," and "moral panic" to examine the social construction of deviance. See, for example: Joel Best, Images of Issues: Typifying Contemporary Social Problems (New York: Aldine De Gruyter, 1989); and Nachman Ben-Yehuda, The Politics and Morality of Deviance: Moral Panics, Drug Abuse, Deviant Science, and Reversed Stigmatization (Albany: State University of New York Press, 1990).

century, with the new understanding of leprosy, the situation changed radically. The idea that the disease was contagious and that it was spreading fast, converted leprosy into a serious threat for the civilizing project that the elites envisioned.

The work of renowned European leprologists was translated and made accessible to the medical profession. Although Colombian physicians had long been familiar with *elephantiasis*, they embraced microbial theories about the causative agent of leprosy. The medical community formulated the problem of leprosy in what they believed were "universal" scientific terms. Colombian doctors also developed a rhetoric of urgency to forge a "national medicine" as they became a professional group. Western revelation of a "leprosy world" in the late nineteenth century and microbial theories of the causation of leprosy, justified practices of exclusion in scientific terms. At the end of the nineteenth century when medicine became a profession in Colombia, leprosy was one of the means physicians used to assert their scientific authority and to enhance their power.

Chapter 5

Medicalization of Leprosy: A National Strategy

"It's possible that the fear [people] have of *elefanciacos* is due to the ugly deformity and to the repugnant odor of those unfortunates; in any case...the phobia to *elefancia* is more accentuated in Bogotá, perhaps for the numerous cases that occur there, and it's uncommon for a *santafereño* doctor to step in the 'land of grief,' maybe because he is afraid that the public, informed of such visit, will refuse to receive him, making him lose his clientele; it requires great serenity and philosophy to approach these proscribed pariahs over whom a secular curse impends; thus with very rare exceptions, physicians don't treat *elefancia* in Colombia, and even regard with distrust the ones who do...this leprophobia is then as pernicious to science, as it is to those miserable beings, worthy of study as well as of charity."¹

In the early twentieth century, a new economic and political order in Colombia transformed leprosy from a charitable concern to an obstacle for economic progress and modernization. Indeed, after the war of the Thousand Days (1899-1902) and the loss of Panama (1903), a new era of peace, political stability, and economic growth started in Colombia. Chronic civil war, transitory constitutions, extreme ideological contention in dealing with political matters, and partisan exclusiveness within the government were left behind. Leprosy became a kind of national embarrassment to this progressive-minded Colombia. Thus, the government of General Rafael Reyes (1904-1909) and the medical community found exaggeration of data on leprosy an unnecessary strategy, and began to advertise new statistics at an international level, claiming that previous data had been overstated. Accordingly, the government enacted severe laws to enforce segregation of lepers and to expel their healthy relatives from the lazarettos. Yet, although the Colombian state took control of leprosaria and physicians began to medicalize leprosy, lazarettos did not become medical institutions. Since physicians lacked the knowledge to prevent the spread of leprosy and to cure the disease, this medicalization was only partially accomplished. Furthermore, the government reinforced the uniqueness of the disease by setting up two sorts of public health agencies: one for leprosy and another one

¹ Juan Bautista Montoya y Flórez, Contribución al estudio de la lepra en Colombia (Medellín: Imprenta Editorial, 1910), p.310.

for the rest of public health affairs. Leprosy, thus, remained a disease apart, as it had been in the nineteenth century. Most doctors and the government adopted a racist approach towards leprosy sufferers regarding them as racially "inferior." Patients and residents of leprosaria actively opposed these governmental measures, and the situation of lazarettos worsened compared to the previous period.

Reyes and the Modernization of Colombia

The period of political stability and economic growth based on an export-import economy and on a limited industrialization commenced with the administration of Rafael Reyes, and continued until the early 1940s. Although during the 1920s and 1930s there was ideological conflict between Liberals and Conservatives, it was essentially different from the political chaos of the previous century. The elites of both parties were committed to the construction of the nation and to a modernizing project. This program aimed at incorporating Colombia into "civilization," that is, to establishing permanent economic and cultural links with Europe and the United States.

The government of Reyes was committed to "modernizing" Colombia which had been devastated by the war of the Thousand Days and by the loss of Panama in 1903.² Reyes's main goals in order to place Colombia on the route of progress and civilization were national reconciliation between Liberals and Conservatives and economic reconstruction and development. Significant economic and social change occurred in the early twentieth century: Colombia became the second largest world provider of bulk coffee, and leading supplier of high quality mild coffees. During the Reyes administration coffee cultivation expanded substantially, and after 1911 the volume of coffee trade increased considerably. At this time, coffee was the only important

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In fact, with United States complicity, Panama declared its independence in 1903. On this issue, see: David Bushnell, The Making of Modern Colombia: A Nation in Spite of Itself (Berkeley: University of California Press, 1993), pp. 148-54; see also: Steven J Randall, Colombia and the United States: Hegemony and Interdependence (Athens, Georgia: University of Georgia Press, 1992), chapter 3.

Colombian export, and the United States became the primary market for the product. The significance of coffee should be emphasized in light of the successive nineteenth-century failures with quinine, indigo, tobacco, and rubber. Coffee became the first national product to compete successfully in the international market. Reyes's economic program was to fortify the agricultural export economy by expanding other foreign sales, for example, by promoting the banana industry. In addition, Reyes was convinced that the future of the country depended on foreign investments. Thus, one of his main goals was to normalize relations with the United States, ruined by the conflict over Panama. Reyes's international economic and political undertakings were significant. He accomplished the restoration of foreign credit for a country whose monetary system had been destroyed by continuous crisis. During Reyes's administration, some industries developed, like textiles for example, and railroad construction increased, thus creating a national market. The government established schools for training army and naval officers; from this point dated the beginning of the professionalization of the Colombian military.³

Sanitation and public health emerged as important concerns for Reyes. This is not surprising considering his background and interests. He had been an entrepreneur of quinine who in 1873 led an expedition with his three brothers through the Putumayo and the Amazon rivers, finally reaching Rio de Janeiro. Reyes saw himself as an enlightened pioneer battling to open up the tropics to civilization.⁴ The control of leprosy became a high priority in Reyes' administration, because leprosy seemed to be anachronistic within the context and the image of a modern nation.

³ On the government of Rafael Reyes see: Charles W. Bergquist, Coffee and Conflict in Colombia, 1886-1910 (Durham N.C.: Duke University Press, 1978), pp. 225-246; Marco Palacios, Coffee in Colombia, 1850-1970: An Economic, Social, and Political History (Cambridge: Cambridge University Press, 1980), pp. 141-7; see also Darío Mesa, "La vida política después de Panamá," Manual de Historia de Colombia Vol. 3 (Bogotá: Colcultura, 1980), pp. 83-176.

⁴ Boletín de la Sociedad Geográfica de Colombia Extraordinary issue, 1907, (April): 7-57.

The State Control of Leprosy

President Reyes appointed Pablo García Medina as consulting physician for the lazarettos in 1905. García Medina (1858-1935), was a professor of physiology at the National University and had been the most influential person in Colombian public health for almost three decades.⁵ Immediately, the new government started putting into practice doctors' previous recommendations. In 1905, a governmental decree created the *Oficina Central de Lazaretos* (Central Office of Lazarettos), a division of the Ministry of Government, to unify the direction of lazarettos. Previously, each lazaretto depended on local boards of charity. The Central Office of Lazarettos was formed by three physicians: a chief, a consultant physician, and a third doctor to examine suspected lepers. Thus, the Colombian centralized state arrogated the organization of leprosaria, taking it away from the *Juntas de Beneficencia*. The Central Office would be in charge of the administration of lazarettos, their income and organization, while the *Junta Central de Higiene* (Central Board of Hygiene) would regulate the scientific-medical aspects of leprosy control. The decree also ordered compulsory segregation for lepers, specifying home isolation for those with means. The law compelled Colombians to declare to the authorities any person afflicted with leprosy and exempted physicians from professional secrecy in the case of leprosy.⁶

The mayor's office in Bogotá had regulated in 1903 the mandatory declaration of contagious diseases, thereby generating physicians' opposition. Indeed, the physician José María Lombana Barreneche objected to the 1903 ordinance on the grounds that patients, instead of relying on doctors, would consider them as police informers and avoid them. He justified compulsory notification of contagious diseases only in the case of

⁵ Emilio Quevedo V lez, et al., "Ciencias médicas, estado y salud en Colombia: 1886-1957," *Historia Social de la Ciencia en Colombia* vol. 8 (Bogotá: Tercer Mundo, 1993), pp. 161-289, on p. 191.

⁶ See: Legislative Decree, Jan. 14th, 1905, and Resolution 3 from the Central Bureau of Lazarettos, in Montoya, *Contribución*, pp. 165-176; and Resolutions 2 and 3 from the Central Board of Hygiene, 1905, in *Revista Médica*, 1905, 25 (302):332-339.

poor and illiterate people who ignored hygienic procedures of disinfection, suggesting a defense of his private and probably wealthy clientele. Lombana described the deficient sanitary situation of Bogotá and differentiated between public and private hygiene, implying that the former would be applied to the poor, while the latter would be restricted to affluent individuals.⁷ The opposition of Lombana, who at the same time expressed a great concern about the spread of leprosy, is an example of the contradictions that physicians faced at this time. They held their private consultancy in high regard, since they had been trained for private practice, but it conflicted with the interests of public health, which necessitated measures such as mandatory declaration of infectious diseases.⁸

The Board of Hygiene and the Office of Lazarettos ordered other reforms to secure real segregation, among them: abolishing the status of municipalities that town-lazarettos had possessed hitherto, barring the movement of healthy people in and out of the lazarettos, eliminating the weekly market of *Agua de Dios* provided by healthy peasants of the surroundings, disinfecting letters or objects leaving leprosaria, and prohibiting lepers from taking seats in trains or streetcars. But the governmental measure that most irritated *Agua de Dios* inhabitants was the establishment of a barbed-wire fence to circumscribe an area of half a square *league* (about three square miles) guarded by twenty-five policemen. This was the "sanitary cordon" and the residents of the lazaretto, even non-leprous people were constrained to stay within that area.⁹

Besides these measures to enforce segregation, Reyes' government strategy to

⁷ José María Lombana Barreneche, "Declaración obligatoria de las enfermedades infecciosas," Revista Médica, 1903, 23 (279):883-887.

⁸ The historian Christopher Abel mentioned this opposition; see: Christopher Abel, Health Care in Colombia c.1920-c.1950: A Preliminary Analysis (London: University of London, 1994), p.3.

⁹ I will describe the reaction of *Agua de Dios*' residents in a following section. See: Legislative Decree, Jan. 14th, 1905, and Resolution 3 from the Central Bureau of Lazarettos, in Montoya, Contribución, pp. 165-176; and Resolutions 2 and 3 from the Central Board of Hygiene, 1905, in Revista Médica, 1905, 25 (302):332-339.

eradicate leprosy also included searching for international examples to follow. For instance, the government sent doctors Jenaro Payán and Guillermo Wills to Havana in 1907 to study the treatment of leprosy with the "red mangrove tree" (*Rhizophora mangle*) which grows on the South American coasts. This method was employed by the Cuban physicians Antonio Moreno Díaz and Matías Duque. They had used this medication with nineteen patients who had taken it orally, as an infusion, and had reported satisfactory results at the Third Pan American Medical Conference held in Havana in 1901.¹⁰ Cenón Solano, another Colombian physician, left for Hamburg in 1908 on an official commission to evaluate the method employed by the German physician P. G. Unna to treat leprosy. Indeed, Doctor Unna had made his reputation by successfully treating leprosy patients in his private clinic in Hamburg.¹¹ Unna's treatment consisted of *ichthyol* (a chemical product obtained from distilling certain crystalline rocks called schists) employed internally and externally, and of chrysophanic acid, pyrogalllic acid, and dioxibenzene, applied locally.¹² Both of these treatments, the Cuban and the German, were widely used by Colombian physicians.¹³

However, some members of the medical community, always inclined to defend the profession's interests, criticized using foreign expertise. The physician Miguel Canales, commenting on a lecture Solano gave when he returned from Germany, claimed that it was a mistake to believe that to study leprosy one had to go to Europe, where the number of lepers was insignificant. By contrast, Colombia offered conditions where

¹⁰ On the red-mangrove-tree remedy, see: Miguel A. González Prendes, *Historia de la lepra en Cuba* (La Habana: Museo Histórico de las Ciencias Médicas "Carlos J. Finlay," 1963) pp. 238-240.

¹¹ Montoya, *Contribución*, pp. 187-192.

¹² Sir Leonard Rogers and Ernest Muir, *Leprosy* (New York: William Wood, 1925), pp. 248-249.

¹³ See for example, Miguel Canales, R. Ucr s, and J. Olaya Laverde, "Informe de la Comisión encargada de visitar el lazareto de Agua de Dios," *Revista Médica*, 1911, 29 (342-4):39-73, on pp. 66-67.

physicians could accomplish meaningful work.¹⁴ Reyes's national strategy to deal with leprosy proved to be more influential, and despite criticisms, the state's plan to take complete control of leprosy continued. To this end, in 1906 the government appointed Juan Bautista Montoya y Flórez, a graduate of the Paris Faculty of Medicine, as Chief Physician of the Central Office of Lazarettos. The administration also nominated a physician as Director of the Laboratory at *Agua de Dios* and another physician to identify leprosy in each of the capitals of the departments, and created the *Laboratorio Central de Lazarettos* (Lazarettos' Central Laboratory) in Bogotá to verify diagnoses when needed. A law of 1907 defined leprosy as a "public calamity," and prohibited home isolation on the grounds that it had been inadequately practiced. In order to prevent contagion, this law forbade the circulation of regular Colombian currency in the lazarettos, replacing it with special money.¹⁵

Other reforms effected in the lazarettos included building an aqueduct to ensure a regular water supply and erecting nearby houses for resident physicians and pharmacists. Indeed after 1908, three physicians were appointed to work in *Agua de Dios* and to reside in the vicinity of the lazaretto. In 1909, the government designated non-leprous personnel for the administration of leprosaria which had previously been the hands of leprosy patients.¹⁶

City Hospitals, Agricultural Colonies, and Colonialism

Juan de Dios Carrasquilla opposed most of these measures. He participated in the Third Latin American Scientific Congress held in Rio de Janeiro in 1905 and presented a report on the etiology and prophylaxis of leprosy. Opposing the majority of his Colombian colleagues, Carrasquilla claimed that the spread of leprosy was produced by social

¹⁴ Miguel Canales, "Lepra: Observaciones a una conferencia del doctor Zenón [sic] Solano," *Revista Médica*, 1911, 29 (353-4):317-333, on p. 317.

¹⁵ Decree 1,095, Sep. 12th, 1906, and law 14th of 1907, in Montoya, *Contribución*, p. 178, 183.

¹⁶ Pablo García Medina, "Profilaxia de la lepra en Colombia," *Repertorio de Medicina y Cirugía*, 1909, 1-1 (1):52-59, on pp. 55-56.

circumstances, such as poverty, rather than climatic or telluric conditions. He asserted that the result of previous regulations by the Colombian government had just been persecution for the sick. Carrasquilla conceived of leprosy as a slightly contagious disease whose evolution was slow. He argued against common ideas about the transmission of leprosy through the use of objects handled by patients or through sexual relations.¹⁷ Indeed, some old beliefs about leprosy were still in place in Colombia. For example, doctor Proto Gómez maintained that one of the initial symptoms of leprosy was the increase of sexual desire.¹⁸ Carrasquilla wanted to dispel these views which he saw as "fables," and "humbugs." He strongly disagreed with the policy of oppression against lepers. Carrasquilla was also one of the first doctors to point out that the number of lepers had been exaggerated. Consequently, he urged Colombian authorities to collect accurate statistics in order to estimate the real occurrence of the disease.¹⁹

Although Carrasquilla believed in measures such as prohibition of immigration of leprosy patients and isolation, he advocated the creation of hospitals where leprosy would be treated as any other disease:

"...isolation by itself, empiric isolation, has no object other than to get rid of them [leprosy patients]...it is inhumane, ineffective, and must be replaced by rational prophylactic means."²⁰

For Carrasquilla, hospitals were to be located in the center of cities and towns where physicians, assistants, and medications were available; he opposed segregating lepers in remote colonies. In fact, the Academy of Medicine of Medellín had also arrived at the

¹⁷ "La lepra: Etiología, historia y profilaxis, por el Dr. Juan de D. Carrasquilla L. Memoria presentada al tercer Congreso Científico Latinoamericano que ha de reunirse en Rio Janeiro en Agosto de 1905," Revista Médica, 1905, 25 (301):289-302, on pp. 295-301.

¹⁸ Proto Gómez quoted by Carlos Michelsen U., "La lepra," Revista Médica, 1898, 21 (232):1-29, on p. 18.

¹⁹ "La lepra: Etiología, historia y profilaxis," pp. 298-300.

²⁰ Ibid., p. 300.

same conclusion as early as 1894.²¹ However, few physicians shared this approach. Although the Academy of Medellín selected a location to build a hospital-lazaretto for the department of Antioquia, many residents of that place protested, and the construction was never accomplished.²² In Carrasquilla's plan, the purposes of hospitals for leprosy patients were to seek their cure through the practice of hygiene, to study the disease, and to devise scientific treatments, as in the example of Norway.²³ Carrasquilla suggested adopting the model of sanatoria whose hygienic and rational treatment for tuberculosis became fashionable in Europe and in the United States in the early twentieth century.²⁴

The government and the medical community discarded the 1890s proposal of a unified national lazaretto located on an island. However, they did not put into practice Carrasquilla's advice. Instead they promoted the idea of establishing more lazarettos in the departments. For example, the department of Santander argued for a long time about the desirability of moving the *Contratación* lazaretto to a more suitable place. A commission composed by doctors from that region, such as Carlos E. Putnam, Carlos Tirado Macías, and Angel María Otero, concluded that the best locality was the town of Cepitá. However, the opposition of enraged neighbors frustrated the project.²⁵ The

²¹ See the letters interchanged between the Salesian father Evasio Rabagliati and the president of the Academy of Medicine of Medellín, doctor Teodomiro Villa, in 1902, and the letter from the president of the Academy in 1894, Rafael Pérez, to the secretary of government of the department of Antioquia, in: "Lazaretos: Documentos relativos a la fundación de hospitales para leprosos en Antioquia," *Revista Médica*, 1903, 23 (277):850-5.

²² Abraham Aparicio, "La lepra y los lazaretos," *Revista Médica*, 1891, 15 (163-4):506-12, on pp. 509-12.

²³ Juan de Dios Carrasquilla, "Los sanatorios y la lepra," *Revista Médica*, 1905, 26 (306):65-71.

²⁴ On sanatoria for tuberculosis, see the classical study by René J. and Jean Dubos, *The White Plague: Tuberculosis, Man and Society* (Boston: Little Brown, 1952). See also: Lynda Bryder, *Below the Magic Mountain: A Social History of Tuberculosis in Twentieth-Century Britain* (Oxford: Clarendon Press, 1988), and Sheila M. Rothman, *Living in the Shadow of Death: Tuberculosis and the Social Experience of Illness in American History* (New York: Basic Books, 1994).

²⁵ Carlos E. Putnam, "Un lazareto en el municipio de Cepitá," *Revista Médica*, 1906, 28 (316):28-30.

department of Cauca commissioned the French specialist on leprosy, Dom Sauton, to make recommendations on how to control leprosy. Sauton also proposed establishing city hospitals following the example of Norway. Juan Bautista Montoya y Flórez, opposing foreign expertise, called Sauton's suggestions inappropriate. According to Montoya, the system of city hospitals would be too expensive for the Colombian budget.²⁶ Instead of city hospitals for lepers, proposed by both Sauton and Carrasquilla, the government established a mixed system of agricultural colonies which included hospitals for leprosy patients. The medical community considered this strategy more suitable for Colombia, where the majority of leprosy patients were peasants. Consequently, the government built new hospitals in the lazarettos.²⁷ Colombia was not alone in erecting agricultural colonies for lepers. For example, Spain also employed this model during the same period, when the Spanish state determined that leprosy was a national problem.²⁸

Colombia's strategy to deal with leprosy paralleled the methods used by the United States occupational government in the Philippines at this time. Both, the Colombian and the U.S. models were inspired by the case of Hawaii. When the United States appropriated the Philippine islands in 1898 as a result of the Spanish-American war, U.S. officers found leprosy among the diseases that ravaged the population. As had been the case in other Spanish colonies, Filipino lepers were sheltered in the Saint Lazarus hospital in Manila which had been founded in 1784 by the Franciscan order. The U.S. military authorities took over the hospital and started to collect leprosy sufferers.

²⁶ Montoya, *Contribución*, pp. 356-7.

²⁷ Pablo García Medina, "Profilaxia de la lepra en Colombia," *Repertorio de Medicina y Cirugía*, 1909, 1-1 (1):52-59, on pp. 55-56.

²⁸ Indeed, between 1907 and 1909, the Spanish government founded the Fontilles sanatorium-leprosarium located in Alicante, a province of Valencia, where leprosy was endemic, to segregate leprosy patients from the rest of the population. See: Josep Bernabeu Mestre and Teresa Ballester Artigues, "Lepra y sociedad en la España de la primera mitad siglo XX: La colonia Sanatorio de Fontilles (1908-1932) y su proceso de intervención por la Segunda República," *Dynamis Acta Hispanica ad Medicinae Scientiarumque Historiam Illustrandam*, 1991, 11:287-344, on pp. 300-3.

Friars and others estimated the leper population on the islands to be between 10,000 and 30,000. However, statistics collected by U.S. officials soon revealed the exaggeration, and counted instead between 3,500 and 4,000 cases of leprosy, with some 1,200 new cases developing each year.²⁹ Following the model of Molokai in Hawaii, in 1906 the U.S. military authorities built a leper colony in the island of Culion.³⁰ A law of 1907 gave to the Director of Health, Victor G. Heiser, the power to apprehend every person believed to be a leper, and to detain all in whom the bacillus of leprosy could be demonstrated through bacteriological methods. An active campaign to segregate lepers began producing resistance from the patients and their families. The U.S. sanitary authorities implemented in the Culion leper colony measures similar to those effected in Colombia such as disinfection of letters and the replacement of ordinary tender for special coinage.³¹ In 1909, Heiser complained because segregation had not been sufficiently efficient:

"If the work of collecting lepers could have been rushed through with military rigidity, the problem would have been very much simplified, but it was deemed advisable to precede the collection of the lepers by a campaign of education and thereby secure the cooperation of the public rather than its opposition."³²

The affinities between U.S. policy in the Philippines and Colombian policy reveal that Colombian authorities regarded its leper population with a colonizing attitude which

²⁹ Ronald Fettes Chapman, Leonard Wood and the Leprosy in the Philippines: The Culion Leper Colony, 1921-1927 (University Press of America, 1982), pp. 1-6.

³⁰ Another Saint Lazarus hospital founded by the Spaniards in Culion in 1784, administered by a Jesuit and nursed by the Sisters of Saint Paul de Chartres's order, probably did not exist in 1906. On the foundation of Saint Lazarus hospitals in the Philippines, see: Félix Contreras Dueñas and Ramón Miquel y Suárez Inclán, Historia de la lepra en España (Madrid: Gráfica Hergon, 1973), p. 91.

³¹ Chapman, Leonard Wood and the Leprosy in the Philippines, pp. 7-11.

³² Victor G. Heiser, "Leprosy in the Philippine Islands," Public Health Reports, 1909, 24 (33):1155-59, on pp. 1155-6.

would prevail up until at least the 1930s.

Leprosy and the *Inferior* Races

By the early twentieth century, the Colombian medical community adopted a positivist approach to leprosy. Physicians wanted to see the disease as a problem they could manage through medical procedures. However, this did not imply that doctors abandoned their harsh attitude towards lepers. Leprosy needed to be eradicated, but since the mode of transmission of Hansen's bacillus was unknown, most physicians justified nearly any means to control the disease. This was one of the arguments of Montoya who became nationally and internationally recognized for his treatise on leprosy published in 1910. He also invoked the authority of the Second International Conference on Leprosy, held in Bergen (Norway) in 1909, chaired by Hansen himself. In fact, this conference ratified the decisions of the 1897 Berlin meeting: compulsory notification and strict isolation of patients to control the spread of the disease.³³ Other "tropical" diseases had been arrested by attacking the agents of disease. This model applied to leprosy degenerated into attacking lepers themselves, since they were the only known vectors of infection.

Montoya promoted an overtly social and political strategy to eradicate leprosy. This policy included considering leprosy a basis for divorce, prohibiting lepers from the exercise of certain professions, and impeding marriage for leprosy patients. Édouard Jeanselme also recommended these measures to control leprosy in French Indochina as part of his mission to that colony in 1899-1900.³⁴ Montoya also advised forbidding Chinese immigration on the grounds that Chinese coolies had propagated leprosy and other diseases in North America. Montoya added that the Chinese were the most dangerous race because their occupations often put them in contact with the upper

³³ Montoya presented his ideas at the second national medical congress held in Medellín in 1913. See: Juan Bautista Montoya y Flórez, "Profilaxis de la lepra en Colombia (Segundo Congreso Médico Nacional)" *Revista Médica*, 1913, 31 (375):321-331, on p. 327.

³⁴ Édouard Jeanselme, *La Lèpre* (Paris: G. Doin, 1934), pp. 563-4.

classes.³⁵ Montoya's belief fitted well with debates on immigration taking place within Colombia at the time. For example, an influential politician, the liberal leader Rafael Uribe Uribe was opposed to the immigration of Chinese coolies working on coffee plantations in Colombia.³⁶ Montoya's racist position echoed a widespread anti-Chinese sentiment prevalent in the United States and some European and Latin American countries like Brazil, Mexico, and Cuba. The negative image of the Chinese was condensed in the slogan "yellow peril."³⁷

Besides suggesting the prohibition of Chinese immigration, Montoya claimed that the Colombian masses were not ready for a policy of mild segregation as practiced in Norway. Justifying his opposition to the measures recommended by Carrasquilla and by Sauton, which included the establishment of city hospitals for leprosy patients, and explaining why the Colombian government revoked home isolation in 1907, Montoya maintained:

"It is understandable that in Norway a few white and educated diseased can be watched over by official doctors, but who watches over an Indian in Fúquene or a Negress in Lloró?...To become European, as Argentina is doing, we would need a strong immigration of races from the North to neutralize our inferior ethnic elements and to educate them because, as everybody knows, peoples of color, or mestizos from the white, Indian, and black races predominate here, and these mestizos are precisely the ones who present more cases of *elefancia*."³⁸

Other physicians also shared this racist approach to leprosy which was common in some European countries and in the United States at this time. Cenón Solano, for

³⁵ Montoya, "Profilaxis de la lepra en Colombia, pp. 322-5; and Montoya, Contribución, p. 299.

³⁶ Palacios, Coffee in Colombia, p. 145.

³⁷ On the case of the United States, see: Zachary Gussow, Leprosy, Racism, and Public Health: Social Policy in Chronic Disease Control (Boulder, Co.: Westview Press, 1989), pp. 111-129; on Latin America, see: Richard Graham (ed.) The Idea of Race in Latin America, 1870-1940 (Austin: University of Texas Press, 1990), pp. 3, 9, 54.

³⁸ Montoya, Contribución, pp. 336-7.

example, claimed that "pure" races, such as English or Saxon, developed mild forms of leprosy which healed easily and quickly, while mixed races like mestizos, mulattos, or *zambos* (born of an Indian and a Black), contracted types of leprosy which were more severe and more difficult to cure.³⁹

As part of their project of incorporating their country into the civilized world, the Colombian elites wanted to encourage white European immigration to "whiten" the indigenous and black Colombian population.⁴⁰ Eugenics as a social and scientific movement was not as important as it was in Brazil, Mexico and Argentina.⁴¹ However, Colombian physicians such as Luis López de Mesa elaborated racist doctrines to explain the backwardness of the nation.⁴² Whereas racial mixture (*mestizaje*) played an important role in the configuration of Colombian society, physicians argued that the "indolence" and "stupidity" of most of the population were responsible for the poverty and inferiority of the country.⁴³ The elites preferred to place the responsibility for the unsatisfactory social and economic situation on outsiders--those they considered inferior.

Thus, most Colombian physicians regarded leprosy patients as belonging to the "inferior" races.

³⁹ Cenón Solano, "Lepra: Herencia y contagio," Repertorio de Medicina y Cirugía, 1911, 2-10 (22):532-560, on p. 549.

⁴⁰ Although debates on race and the need for immigration started in the nineteenth century, the subject had not been sufficiently studied; see: Aline Helg, "Los intelectuales frente a la cuestión racial en el decenio de 1920," Estudios Sociales, 1989, 4 (Mar):37-52, on pp. 47-8; and Peter Wade, Blackness and Race Mixture: The Dynamics of Racial Identity in Colombia (Baltimore: The Johns Hopkins University Press, 1993).

⁴¹ Nancy Stepan, The Hour of Eugenics: Race, Gender and Nation in Latin America (Ithaca: Cornell University Press, 1992).

⁴² Bruce Michael Bagley and Gabriel Silva Luján, "De cómo se ha formado la nación colombiana: una lectura Política," Estudios Sociales, 1989, 4, (Mar):9-36, on p. 17.

⁴³ On the issue of *mestizaje*, see: Jaime Jaramillo Uribe, Ensayos sobre historia social colombiana (Bogotá: Universidad Nacional de Colombia, 1974).

A Red Stain on the Map: The National Stigma

By the early twentieth century, leprosy had become a national concern. The government of Rafael Reyes was devoted to bringing the country the benefits of modernization and economic development. Colombia's international position was an integral and prominent part of his strategy. According to the new national purpose set by the bipartisan elite of merchants, agriculturists, and nascent industrialists, the country desperately needed foreign capital.⁴⁴ According to the elites, the country also required white European immigration to import technical knowledge and modern ethical principles. Within this context, Colombia's reputation as a country plagued by leprosy was simply inadmissible. The elites needed to present an image of Colombia as a healthy country in order to attract foreign investments and personnel. They also needed to overcome concerns of the United States government and public about the potential danger of contracting infectious diseases through Latin American commodities.⁴⁵

At this time, most physicians realized that the exaggeration of the number of leprosy sufferers had created a negative international image of Colombia as a country where leprosy was rampant. Besides Carrasquilla, already mentioned, one of the first physicians to perceive the phenomenon was Julio Manrique. In fact, the Colombian government had sent him to India to study the treatment of leprosy by *leprolin*. This was a vaccine made by doctor Rost, a leprosy worker in that country, from acid-fast bacilli he believed had been cultivated from leprosy patients.⁴⁶ When Manrique arrived at London, in route to India, in July 1905, other leprologists had already discredited the use of *leprolin*, so his trip to India was canceled. Instead, he visited Norwegian leper hospitals. At his return, Manrique submitted a report to the Colombian government, in which he declared:

⁴⁴ Bergquist, Coffee and Conflict, p. 225.

⁴⁵ Abel, Health Care in Colombia, pp. 24-25.

⁴⁶ On Rost's *leprolin*, see: Rogers and Muir, Leprosy, p. 252.

"The country [Colombia] is enduring genuine and true [sic] outrages caused by exaggerated data given by the unlearned...which are daily published in foreign books and newspapers....In maps depicted in all classical works which indicate the distribution of leprosy in the world our country is stained in red, the color chosen to mark the abundance of the disease...[N]ot even in British India, where the numbers of diseased count in the hundreds of thousands, not even in the Sandwich and Hawaiian Islands, is the stain that stigmatizes as large, nor its color as bright..."⁴⁷

Physicians were astonished by the effect that the leprosy data publicized by their nineteenth-century colleagues had generated. They began to look for the reasons for such overstatement. Evaristo García, from the Society of Medicine of Cauca, claimed in 1904 that the desire to collect resources to build lazarettos and the wish of physicians to convince the government of the necessity of hospitalizing lepers were responsible for the exaggeration of the number of lepers in Colombia. Other physicians such as Teodoro Castrillón, who had previously translated and published in Paris an article from the Revista Médica including the exaggerated numbers, and José María Ruiz also expressed similar ideas with the intention of denouncing the overstatement of leprosy in Colombia.⁴⁸ In 1910, Juan Bautista Montoya y Flórez, the first historian of leprosy in Colombia, offered a carefully reasoned account of the exaggeration. According to him, nineteenth-century doctors wanted to promote charity by overstating the number of leprosy sufferers. Montoya primarily blamed Father Evasio Ravagliati for the exaggeration, ignoring that the latter used a strategy which was already being used by physicians.⁴⁹ The significance of Montoya's account lies in the fact that by incriminating a member of the Church, the physician attempted to exonerate the medical profession of which he was a prominent member. It is important to recall that in the nineteenth century

⁴⁷ Julio Manrique quoted by Montoya, Contribución, pp. 181-2. At this time, other physicians, such as, Teodoro Castrillón from Medellín, and José María Ruiz from Bogotá, also argued against overstated figures given by foreign leprosy specialists. Ibid., pp. 184-190.

⁴⁸ Montoya, Contribución, pp. 184-9, 354-5.

⁴⁹ Montoya, Contribución, pp. 345-7.

Colombian physicians were in explicit competition with religious and philanthropic institutions for the control of leprosy.

The idea that collecting accurate statistical information was an essential step to controlling leprosy was commonplace. Physicians' commitment to gathering reliable statistics had started in 1902 and was related to a broader concern for public health. In fact, in that year the Revista Médica began publishing monthly epidemiological data, including natality and mortality statistics from Bogotá. The journal later included statistics related to legal medicine, prostitution, vaccination, and public assistance to the poor.⁵⁰ García Medina, who during his long career as hygienist worked hard to ensure that the nation observed sanitary international agreements, was well aware of the adverse effects of Colombia's image as a country in which the spread of leprosy was uncontrollable. In his new position as a consulting physician for the lazarettos, García Medina collected statistics sent by doctors from the different Colombian regions. He accomplished this task between 1905 and 1909, and published the results of a more reliable census of leprosy compared with the deficient one executed by Castañeda in 1890. The 1909 census published by García Medina gave a number of 4,296 lepers, of which 3,031 (72%) were isolated in the three lazarettos, compared to 1,724 found by Castañeda who surveyed only thirteen per cent of Colombian municipalities. García Medina asserted that by 1905, when the government took control of leprosaria, only sixteen per cent of lepers were isolated in these institutions. Since leprosy was easily mistaken for other diseases, the actual number of leprosy sufferers was perhaps lower, he asserted.⁵¹ For a population of 4,500,000, the incidence of leprosy in Colombia in 1909 was 0.095%. Since Norway had become the model of leprosy control, its incidence of leprosy became the criterion for comparing rates of leprosy. The Colombian incidence (0.095%) was, according to this data, certainly much lower than that in Norway in 1856

⁵⁰ See for example: Revista Médica, 1902, 23 (263) and (266).

⁵¹ Pablo García Medina, "Profilaxia de la lepra en Colombia," Repertorio de Medicina y Cirugía, 1909, 1-1 (1):52-59; 1-2 (2):112-124, on pp. 120-2; and 1-3 (3):177-187.

(0.23%), considered one of the peak years of leprosy in that country.⁵²

Physicians had an additional interest in advertising the new statistics on both national and international levels. As a professional body they needed to avoid being regarded as incompetent and powerless. In 1912, government officials published more data. The Minister of Government, Pedro M. Carreño, reported 3,675 lepers segregated in leper colonies, that is, 76.5% out of a total of 4,802 lepers in the whole country. Carreño emphasized the fact that among the number of 1,127 suspected patients in need of isolation, there were probably many who were not afflicted with leprosy. As had by now become customary, the Minister stressed that the previous overstatements of the incidence of leprosy in Colombia made public abroad had injured the nation in many ways.⁵³ García Medina presented even lower statistics in that same year. Indeed, he counted a total of 4,420 lepers in the country, with 3,692 in leprosaria; 83.5% of the Colombian leper population was already isolated in lazarettos, according to García Medina.⁵⁴ Using statistics for rhetorical purposes, doctors emphasized the high proportion of patients who were isolated as an indication of medical efficiency. One of the sessions of the Second National Medical Congress, held in Medellín in 1913, was devoted to leprosy. Besides issues such as segregation, diagnosis, and obligatory declaration of the disease by doctors, one of the main topics of discussion was the recent statistics of leprosy in Colombia and the urgency of disseminating them abroad so that the negative image of the nation would be eliminated and the efficiency of Colombian doctors

⁵² Th. M. Vogelsang, "The Termination of Leprosy in Norway: An Important Chapter in Norwegian Medical History; Together with a Portrait of Armauer Hansen circa 1873," International Journal of Leprosy, 1957, 25 (4):345-51, on p. 345.

⁵³ See the chapter referring to "lazarettos" in the report presented by Pedro M. Carreño, Ministry of Government: "Lazarettos," Revista Médica, 1912, 30 (362-364):262-76.

⁵⁴ Pablo García Medina, "Estadística de la lepra en Colombia: Trabajo presentado al Segundo Congreso Médico Nacional reunido in Medellín in 1913," Revista Médica, 1916, 34 (407-411):372-90, on p. 381.

emphasized.⁵⁵

For at least the first four decades of the twentieth century, Colombian physicians worried about the problem of Colombia's international reputation as a nation beset with leprosy. Doctors tried to correct this image at international conferences. For example, García Medina, then Director of the National Bureau of Hygiene, attended the Sixth Pan American Sanitary Conference held in Montevideo in 1921. There, he portrayed Colombian policy against leprosy as highly successful, since the application of mandatory declaration in 1905. In an optimistic report he announced that eighty per cent of the Colombian leper population was isolated and that the remaining twenty per cent would be segregated within one year. García Medina insisted that the leprosy statistics showed only 6,560 Colombians afflicted with the disease in the whole country, instead of the previous exaggerated figure of 20,000. Exhibiting his political acumen, he declared that the country was able to observe all its current international sanitary obligations.⁵⁶

The First American Conference on Leprosy, held in Brazil in 1922, was another opportunity for Colombian doctors to advertise what they regarded as an effective policy of isolation. Representatives from thirteen American countries, including Argentina, Colombia, Costa Rica, Cuba, Ecuador, Guatemala, Mexico, Panama, Paraguay, Peru, the United States, Uruguay, and Venezuela, gathered to discuss the problem of leprosy. Carlos Chagas, the illustrious Brazilian discoverer of *Trypanosomiasis americana*, was the president of the conference.⁵⁷ García Medina sent his study, "Prophylaxis and

⁵⁵ "Segundo Congreso Médico Nacional," Revista Médica, 1917, 35 (420-1):353-477, on pp. 416-421.

⁵⁶ Pablo García Medina, "Sexta Conferencia Sanitaria Internacional Panamericana de Montevideo: Informe presentado por el Delegado de la República de Colombia," Repertorio de Medicina y Cirugía, 1921, 12-8 (140):406-20, on pp. 408, 413; see also: "VI Conferencia Sanitaria Internacional de las Rep blicas Americanas," Ibid., 1921, 12-6 (138):288-95.

⁵⁷ On Carlos Chagas, see: Nancy Stepan, Beginnings of Brazilian Science: Oswaldo Cruz, Medical Research and Policy, 1890-1920 (New York: Science History Publications, 1981); Marília Coutinho and João Carlos Pinto Dias, "The Assembly of Chagas Disease," Manuscript, 1995; and François Delaporte, "Chagas, la logique et la découverte," Paper presented at the ORSTOM conference "Les sciences hors d'Occident au XXème siècle." Paris, 1994.

treatment of leprosy in Colombia," and José Ignacio Uribe, a professor of dermatology at the National University, was the Colombian delegate. Uribe reiterated that in Colombia only 0.1 per cent of its population was afflicted with the disease, a rate which was not comparable to that of India which, with about 125,000 leprosy sufferers in 1885, was considered worldwide as the highest. The conference's conclusions encouraged the organization of technical associations to realize scientific research on leprosy and the creation of special leprosy chairs in the medical faculties of the American nations. Neither of these suggestions was put into practice in Colombia for at least a decade.⁵⁸

The contrast between these statements and late nineteenth-century descriptions of leprosy is noteworthy. The tone of early twentieth-century reports, either by doctors or by civil servants, was purposefully optimistic. For example, García Medina noticed that among Hispanic-American countries, Colombia had made the greatest effort to control leprosy.⁵⁹ Doctors and government officials wanted to present a portrait of a modern country where the medical profession exerted control over public health problems. Not only their professional interests were at stake, but also the commercial interests of the whole nation.

Despite the lengthy struggle of Colombian physicians to disseminate their new statistics on leprosy, their conflicting data created a deep confusion within the international community of leprosy specialists. This puzzlement can be illustrated by a 1925 declaration by Leonard Rogers and Ernest Muir, recognized authorities on leprosy:

"Very varying statements have been made of the incidence of leprosy in Colombia in recent years, Hicks in 1890 estimating 18,000 or 3 per mille, Hollopeau 30,000, or 7.5 per mille, Sauton 8.2 per mille, while Ruiz in

⁵⁸ "La primera Conferencia Americana de la lepra," Repertorio de Medicina y Cirugía, 1927, 14-3 (159):85-90, and José Ignacio Uribe, "Sobre Lepra," Ibid., pp. 90-99.

⁵⁹ Pablo García Medina, "Estadística de la lepra en Colombia: Trabajo presentado al Segundo Congreso Médico Nacional reunido en Medellín en 1913," Revista Médica, 1916, 34 (407-411):372-90, on p. 389.

1908 only knew of 0.85 per mille, and Montaya [sic] in 1910 gives nearly 1.0 per mille."⁶⁰

Until at least the late 1930s, the nineteenth-century overstatement of the number of leprosy patients still irritated Colombian physicians and health authorities.⁶¹

Strengthening Scientific Authority

The professionalization of medicine modified physicians' visions of leprosy. Certainly, their new professional status made it possible for doctors to construct a "scientific" understanding of leprosy. Science gave doctors access to a kind of privileged knowledge not available to other, less well educated healers. During most of the nineteenth century Colombian authors of studies on leprosy, with few exceptions, had rarely been in a lazaretto. Even doctors of the post-Hansen era such as Gabriel J. Castañeda, Abraham Aparicio and Nicanor Insignares, cited the European authorities Hansen and Neisser, but hardly ever had personal experience with lazarettos. Nor did Juan de Dios Carrasquilla, the leading exponent of the bacteriological approach to leprosy in the nineteenth century, carry out investigations at the lazarettos. Instead, he performed his research with patients in Bogotá, and Dr. Pedro Pablo Nates with the help of five medical students implemented Carrasquilla's serological therapy in *Agua de Dios*. The application of what we can consider "scientific" medicine within the lazarettos of the nineteenth century was only sporadic. Leprosy was not yet medicalized. However, the situation was to change rather abruptly at the beginning of the twentieth century.

From the reorganization of leprosaria in the early twentieth century, physicians appointed to the lazarettos began publishing their observations in the main medical journals. For example, G. Lobo Guerrero, physician of *Contratación*, Julio Aparicio and Ricardo F. Parra, physicians of *Agua de Dios*, all wrote about treatments of leprosy. Julio

⁶⁰ Rogers and Muir, *Leprosy*, p. 44.

⁶¹ See chapter 6.

Aparicio was the son of Abraham Aparicio, one of the physicians who had made exaggerated claims about the incidence of leprosy in the nineteenth-century. Other physicians of *Agua de Dios* who published on leprosy were Rafael A. Muñoz, who wrote about its contagiousness, and Joaquín Fajardo, who wrote about the presence of the bacillus in the feces of leprosy sufferers.⁶² Physicians created a new link between leprosaria and professional practice, and leprosy patients started to become objects of medical knowledge.

The new recognized authorities on leprosy, Pablo García Medina and Juan Bautista Montoya y Flórez, both had official appointments at the lazarettos. They were among the leading Colombian physicians who investigated leprosy in situ. García Medina claimed in 1916 that genuine diagnoses of leprosy were only possible in leprosaria.⁶³ Montoya, as the Chief Physician of the Central Office of Lazarettos from 1906 to 1909, was the first to publish a lengthy study of the disease which included statistical information on leprosy since the colonial era, etiology, prophylaxis and treatment.⁶⁴ This investigation was also the earliest medical history of leprosy in Colombia which clearly showed the continuity of Colombian leprosy policy from colonial times to the nineteenth century. Montoya claimed that he published his treatise in 1910 as a "tribute to the martyrs of the liberty of my homeland in its first glorious

⁶² Rafael A. Muñoz, "Contagiosidad de la lepra," Repertorio de Medicina y Cirugía, 1910, 1-7 (7):438-443; and "Úlcera perforante plantar de origen leproso y su tratamiento racional," Revista Médica, 1910, 29 (341):28-30; Julio Aparicio, "Tratamiento de la lepra por medio de la nastina," Revista Médica, 1912, 30 (355-7):11-23; Ricardo F. Parra, "Tratamiento de la lepra en Agua de Dios (Nota preliminar)," Repertorio de Medicina y Cirugía, 1922, 13-6 (150):306-11; Joaquín Fajardo, "El bacilo de Hansen se encuentra en las deposiciones de los leprosos," Repertorio de Medicina y Cirugía, 1924, 16-3 (183):117-124; and G. Lobo Guerrero, "Tratamiento de la lepra en el lazareto de Contratación," Repertorio de Medicina y Cirugía, 1926, 17-4 (196):194-201.

⁶³ Pablo García Medina, "Estadística de la lepra en Colombia: Trabajo presentado al Segundo Congreso Médico Nacional reunido en Medellín en 1913," Revista Médica, 1916, 34 (407-411):372-90, on p. 381.

⁶⁴ See: Montoya, Contribución.

centennial."⁶⁵ He also declared in the introduction of his 455-page volume that he had accepted the appointment of scientific director of leprosaria because he needed to collect data and observations on leprosy for this publication.⁶⁶

As a consistent observer, Montoya asserted that doctors from Bogotá never practiced in the lazarettos because they were afraid of losing their clientele. Montoya recorded the horror and rejection that people felt about *elefanci acos*. According to this physician, common prejudices were major obstacles not only to helping patients, but also to advancing scientific knowledge. He recommended an open-minded attitude and "philosophy" to approach the study of the disease (see the epigraph of this chapter).⁶⁷ This was certainly a new language. Not only did leprosy play a role in the creation of scientific prestige, as in the case of Montoya, but it raised new interest in scientific research among doctors. Physicians denounced the pitiful and despicable expressions common in the rhetoric of some of their nineteenth-century colleagues and embraced the language of statistics and scientific facts which embodied a new approach to leprosy. This was the beginning of the medicalization of leprosy.

Reinforcing the Disease-Apart Approach

As part of this scientific approach to leprosy, at the end of 1910, an official commission appointed by the Academy of Medicine and the government examined *Agua de Dios*. The commission, composed of doctors Miguel Canales, Rafael Ucrós, and Jesús Olaya Laverde, presented the next year a detailed account of the lazaretto. Their inspection coincided with a brief stop by the new president of the republic, Carlos E. Restrepo (1910-1914). This was the first time a Colombian president had visited a lazaretto, an illustration of the increasing significance that the government attached to leprosy. The

⁶⁵ *Ibid.*, p. i.

⁶⁶ *Ibid.*, p. iv.

⁶⁷ *Ibid.*, p. 310.

commission's account was optimistic, describing the colony as a joyful town with clean, tree-lined streets, and an organized administration, in contrast with previous pathetic narratives that named *Agua de Dios* "the land of grief."⁶⁸ Evidently, the group of physicians wanted to emphasize the beneficial aspects of the take-over of the lazarettos by the Colombian government. The medical delegation reported that three powers--ecclesiastical, medical, and administrative competed for authority in *Agua de Dios*. Knowing that disregarding the religious personnel was inconceivable, the committee suggested separating their respective jurisdictions. The commission claimed that effective segregation of lepers was difficult, as sick and healthy inhabitants of the lazaretto were accustomed to socialize freely. Thus, it recommended increasing the police force to implement isolation. The committee disagreed with an earlier recommendation made by the Academy of Medicine and the Board of Health to take complete control of leprosia without mediation of the Ministry of Government. The appointed physicians asserted that the administration of lazarettos involved a variety of situations that were hardly medical such as the collection of the inheritance tax to finance leprosia and the distribution of rations for leprosy sufferers. Therefore, the commission justified the establishment of special governmental agencies to deal with leprosy. In practice, the government and the physicians placed leprosy apart and treated it as a special disease. Leprosy was only partially a medical question; it was mainly a social problem which needed the Colombian state's intervention.⁶⁹

The government put into practice most of the commission's recommendations.

⁶⁸ Miguel Canales, R. Ucrós, and J. Olaya Laverde, "Informe de la Comisión encargada de visitar el lazareto de Agua de Dios," *Revista Médica*, 1911, 29 (342-4):39-73, on p. 40. Leprosy sufferers themselves gave various names to *Agua de Dios* which conveyed the idea of extreme sorrow, pain and affliction. See Antonio Gutiérrez Pérez, *Apuntamientos para la historia de Agua de Dios* (Bogotá : Imprenta Nacional, 1925), *passim*.

⁶⁹ One more example of the medicalization of leprosy was that physicians organized a medical library devoted to leprosy at *Agua de Dios*; see Miguel Canales et al., "Informe de la Comisión encargada de visitar el lazareto de Agua de Dios," *Revista Médica*, 1911, 29 (342-4):39-72.

Strict regulations on isolation implied exclusion for the healthy, not only as a measure to avoid contagion, but also as an economic procedure. By 1911, more than 250 non-leprous individuals, who were receiving allowances as lepers, were expelled from *Agua de Dios* after their diagnoses were verified.⁷⁰ Some inhabitants of *Agua de Dios* were so desperate for their livelihood that they simulated having the disease or tried by all means to get infected with leprosy to avoid being dismissed from the colony. Many had sought refuge there out of economic necessity. Occasionally, physicians reported healthy children of leprous parents as infected with leprosy, so that they could receive the government's daily ration--a necessity for mere survival.⁷¹ This fact suggests that lazarettos were partially answers to poverty, as were hospitals for the mad in the eighteenth-century France.⁷² By 1912, there were three hospitals run by the Sisters of Charity, two asylums for children afflicted with leprosy, and four government-appointed physicians in *Agua de Dios*. *Contratación* counted two resident physicians, one hospital for men, a hospital for women whose construction was about to be finished, and two asylums for sick children. In *Caño de Loro*, the government deferred any reform until it could find an appropriate place to relocate the leprosarium.⁷³

The government continued to give leprosy an important place in the national agenda. In 1918, the Colombian parliament enacted a law creating the *Dirección General de Lazaretos* (General Bureau of Lazarettos) which replaced the Central Office of Lazaretos. The same law established the *Dirección Nacional de Higiene* (National Bureau of Hygiene) which replaced the Central Board of Hygiene. This new institution

⁷⁰ See: Decree 903 from 1910, regulating the stay of healthy relatives of patients, in: Gutiérrez, *Apuntamientos*, pp.378-80. See also, Jorge Roa, "Notas del Señor Ministro de Gobierno sobre Lazaretos," *Revista Médica*, 1911, 29 (347-8):139-41.

⁷¹ Montoya, *Contribución*, p. 365.

⁷² Michel Foucault, *Madness and Civilization* (New York: Random House, 1961/1965), pp. 48-49.

⁷³ See the chapter referring to "lazarettos" in the report presented by Pedro M. Carreño, Ministry of Government: "Lazaretos," *Revista Médica*, 1912, 30 (362-364):262-76.

was located in the Ministry of Public Instruction and possessed more power than the previous Board of Hygiene to make decisions in the event of epidemics. In 1920 the National Bureau of Hygiene was relocated to the Ministry of Agriculture and Commerce, indicating the new economic approach to health. However, the fact that in 1923 the Bureau returned to the Ministry of Public Instruction suggests that the state viewed public health as part of its educational and civilizing mission.⁷⁴

The 1918 law reinforced the disease-apart approach to leprosy by maintaining two separate realms, one for leprosy, and one for all other public health concerns. For physicians and for the government, leprosy was unique; thus, an exceptional strategy was required to deal with it and with its sufferers. This law indicated the extraordinary importance that doctors and Colombian authorities conferred on leprosy. Indeed, out of its fifty-two clauses, forty five (86%) were devoted to leprosy. Only 14% of the law was dedicated to other public health matters. The law strengthened the principles of compulsory isolation regardless of social or economic status. The national congress granted the new Bureau of Lazarettos ample powers to regulate leprosaria, to isolate the diseased, and to inspect the collection of taxes destined to intensify the struggle against leprosy. The decree also ordered the construction of hospitals within each lazaretto to experiment with special treatments for leprosy and gave the Colombian state the responsibility for caring for children born or living in the leprosaria.⁷⁵ This legislation implied that leprosy remained a special disease in need of singular measures--thus strengthening the disease-apart approach.

⁷⁴ Quevedo et al., "Ciencias médicas, estado y salud en Colombia," pp. 189-191.

⁷⁵ "Ley 32 de 1918 (Octubre 29) sobre organización y dirección de los Lazarettos de la República y reorganización de la Dirección Nacional de Higiene," Revista de Higiene, 1918, 9 (3):72-78. See also, Enrique Enciso, "Breve historia de la campaña contra la lepra en Colombia. Nuevo plan de lucha contra esta enfermedad," Revista de Higiene, 1932, 13 (Segunda época) (8):257-295, on p. 265.

Segregation and Rebellion

Leprosy patients were not as confident as doctors about the reorganization of leprosaria. The medicalization of leprosy in the first decades of the twentieth century, rather than generating optimism about finding effective treatments and discovering answers to puzzles, such as the way the leprosy bacillus entered the human body, signified oppression and abuse for leprosy patients. Because the mode of transmission of leprosy was unknown, the medical authorities aimed to take all possible precautions to prevent infection. Patients and residents of the lazarettos actively opposed measures of strict isolation. For example, in mid-1907, residents of the lazaretto destroyed the barbed-wire fence that the government had built to separate the area of the sanitary cordon. This incident provoked a fierce reaction from the governor of the department of Cundinamarca who immediately arrived at the lazaretto with a group of soldiers. The transgressors were not found because, as the patient Antonio Gutiérrez recalled in his memoirs, "it was a common cause among all the diseased." According to Gutiérrez, the government overlooked the case, thanks to the magnanimity of General Reyes, the president of Colombia.⁷⁶

The protagonists of a second riot, in 1911, were not so lucky. Indeed, the malaise produced by the reforms increased between 1910 and 1911 due to a series of incidents. Up until this time, leprosy patients served as medical assistants and pharmacists in the administration of the lazaretto. The new authorities replaced them with employees who were free from the disease in order to enforce isolation. This displacement generated friction and anxieties among the population of *Agua de Dios*. When a smallpox epidemic broke out in 1910, none of the resident physicians of the lazaretto, nor their attendants, assisted the ill. The only help came from a leprous nurse. In addition, one patient died--presumably because one of the new pharmacists had confused a prescription. Patients interpreted these episodes as instances of inefficiency and lack of commitment related to

⁷⁶ Gutiérrez, *Apuntamientos*, pp. 46-48.

the new rules established in the leprosarium since 1910. In May, 1911, a group of leprosy sufferers who had escaped from *Contratación* arrived at *Agua de Dios*. The Minister of Government ordered them to return to that lazaretto. The authorities of *Agua de Dios* also sent to *Contratación* a number of their own patients for supposed violation of the lazaretto's rules. This event caused great consternation among *Agua de Dios* residents. Other dispositions had also generated a climate of fear and apprehension. For example, additional measures directed to prevent contagion included the replacing of common Colombian money for special currency called "coscoja," and the requirement of official permits for sick and healthy inhabitants of *Agua de Dios* in order to get in and out town. On July 9, 1911, the incompetence of the leprosarium's administration to issue the mandatory passes prompted a riot among the crowd gathered for the town's weekly market. Enraged patients, some of them with weapons, demanded from the Chief Physician the immediate distribution of the required certificates. As a result of the tumult, the apothecary's shop was partially destroyed. The administrator, the physicians, and other employees escaped. The government dispatched additional soldiers to *Agua de Dios*, and nominated a military officer as the new administrator. In consequence, thirteen lepers were found guilty of the riots and deported to *Caño de Loro*.⁷⁷

After the disturbances, doctor Miguel Canales, one of the originators of the policy of isolation, came out in favor of increasing the permanent police force within leprosaria.⁷⁸ Writing in the early 1920s, the patient Antonio Gutiérrez compared the last ten-year period of *Agua de Dios*'s history with the relatively prosperous, flourishing, and almost happy age, prior to the overturn by the government:

"The rebuilt barbed-wire fence...has since then been protected and reinforced by a luxurious...Corps of Gendarmerie which with weapons in their arms and fixed bayonet[s] guards permanently the great flock of outcasts which [have been] relegated with their families to their last

⁷⁷ *Ibid.*, pp. 57-66.

⁷⁸ Canales, "Lepra: Observaciones a una conferencia del doctor Zenón [sic] Solano," p. 333.

entrenchments, this is, to their humble dwellings; [they] cannot move except within the narrow perimeter of the triple and intimidating fence, emphatically called *sanitary cordon*, which surrounds the village."⁷⁹

In the previous era, though lazarettos were places of confinement, they were the only locations where lepers could be protected from public hostility and prejudice.⁸⁰

Additionally, in order to preclude any expansion of leprosy within the areas surrounding *Agua de Dios* the government abolished the weekly market. The authorities instead made agreements with a dealer to supply provisions to the lazaretto. Unfortunately, this decision resulted in the organization of a food monopoly that charged exorbitant prices to *Agua de Dios* residents. Agriculture and craftsmanship had been main sources of livelihood for the lazaretto's inhabitants. The imposition of the sanitary cordon severely limited these occupations, contributing to starvation and discontent among the residents.⁸¹ The few leprous peasants who were able to do some farming were forced to sell their produce to the monopoly and later to buy their own products but at higher prices. The physicians Julio Manrique and Arturo Arboleda censured this situation when they visited *Agua de Dios* in 1913 to examine patients' eye problems.⁸² Not only had the circumstances of patients worsened, but the goal of isolation was hardly accomplished. The special currency, for example, meant to prevent contagion, served instead as a means of corruption and abuse, while regular currency circulated freely. Conditions for non-leprous people, usually patients' relatives, were equally adverse, since they were subjected to the same inspections, passes, and disinfections. Additionally, the

⁷⁹ Gutiérrez, *Apuntamientos*, p. 114.

⁸⁰ This attitude was reflected in earlier accounts of *Agua de Dios* by leprosy sufferers; see: Luis Carlos Pradilla, "Nuestra misión y nuestro deber," *La voz del proscrito*, 1880, 1 (5) in: Gutiérrez, *Apuntamientos*, pp. 235-7.

⁸¹ Adolfo León-Gómez, *La Ciudad del Dolor* 3rd. ed. (Bogotá: Imprenta de Sur América, 1927), pp. 252-254, and 278-280.

⁸² Julio Manrique and Arturo Arboleda, "Una visita al lazaretto de Agua de Dios," *Repertorio de Medicina y Cirugía*, 1913, 4-4 (40):208-224, on pp. 219-220.

employees regarded them with much suspicion.⁸³

Further riots, most of them provoked by hunger, broke out at *Agua de Dios*, until at least 1919. As a result, the official repression increased, and the lazaretto remained under military rule throughout the period. Rumors about the lazaretto as a "colony of bandits," and a "crowd of furious lunatics" proliferated. These images not only evoked a medieval portrait of the leper as heretic, angry, and evil, but also revealed deeper political anxieties of the upper classes as they constructed the nation. Displaying insensitivity, intolerance, and lack of information, one of the ministers of the government referred to *Agua de Dios* as a "Bolshevik republic" where hate, despair, and envy prevailed.⁸⁴ Furthermore, in 1920 a group of patients created a Committee for the Public Good (*Comité de Bien Público*) in *Agua de Dios* to submit to the government reforms they thought necessary within the lazaretto. The authorities regarded them with suspicion, dispatching informants to their sessions, and corroborating the belief that patients were "Bolsheviks."⁸⁵ These astounding statements corresponded to more general issues which Colombian society confronted at the time. In fact, confrontations between land entrepreneurs and peasant-colonists had been common in the period of coffee growth (1870-1930).⁸⁶ However, the first decades of the twentieth century saw the evolution of a specific Colombian labor movement. Workers established several labor organizations and assemblies during the 1910s in Bogotá. In 1918, diverse social groups created a Workers' Assembly as an attempt to handle the epidemics of influenza and typhoid fever of the city. A year later, a variety of organizations combined within the Workers' Assembly, proclaiming themselves a Socialist Party to struggle for proletarian interests

⁸³ León-Gómez, *La Ciudad del Dolor*, pp. 280-3; and Gutiérrez, *Apuntamientos*, pp. 90-116.

⁸⁴ León-Gómez, *Ibid.*, p. 120, and Gutiérrez, *Ibid.*, p. 137.

⁸⁵ León Gómez, *La Ciudad del Dolor*, pp. 180-6.

⁸⁶ Catherine LeGrand, "Agrarian Antecedents of the Violence," *Violence in Colombia: The Contemporary Crisis in Historical Perspective* ed. by Charles Bergquist, Ricardo Pe araña, and Gonzalo Sánchez (Wilmington Delaware: Scholarly Resources, 1992), pp. 31-50, p. 39.

and against social injustices.⁸⁷ Additionally, between 1918 and 1919 various worker protests exploded in the principal Caribbean ports, in the department of Cundinamarca, and in the major cities of Colombia. These strikes involved banana workers of the United Fruit company near Santa Marta in the Caribbean, river and railway transport workers, and urban artisans.⁸⁸ Several of these strikes involved issues related to health in the work place and demands for medical care in the event of accidents or illnesses and for better hygienic conditions in coffee areas.⁸⁹ The advent of these mobilizations, together with events in the international political arena such as the 1917 Socialist Soviet Revolution, frightened the Conservative government and the elites. Since lepers were already regarded as the "other," and considered dangerous, it is not surprising that they were also an object of political apprehension, as they had been in medieval society.⁹⁰

Patients and *Scientific* Medicine: The Limits of Medicalization

Fifteen years after the establishment of what doctors saw as scientific medicine in *Agua de Dios*, the patients generally held a negative opinion of the results. Gutiérrez, for example, wrote about the numerous physicians that had visited or worked permanently at the lazaretto:

"none of them, not even out of curiosity, have tried to investigate the causes that produce the disease....They know its effects and the variety of forms that it presents, but do nothing [about it]..."⁹¹

Another leprosy patient, Adolfo León-Gómez, a prestigious journalist, lawyer, and ex-

⁸⁷ David Sowell, The Early Colombian Labor Movement: Artisans and Politics in Bogotá, 1832-1919 (Philadelphia: Temple University Press, 1992). pp. 150-151.

⁸⁸ Charles Bergquist, Labor in Latin America: Comparative Essays on Chile, Argentina, Venezuela and Colombia (Stanford: Stanford University Press, 1986), pp. 330-332.

⁸⁹ Abel, Health Care in Colombia, p. 23.

⁹⁰ R.I. Moore, The Formation of a Persecuting Society: Power and Deviance in Western Europe, 950-1250 (Oxford: Basil Blackwell, 1987).

⁹¹ Gutiérrez, Apuntamientos, p. 126.

adviser of the Minister of Foreign Relations of Colombia who entered *Agua de Dios* in 1919, also judged the role of physicians negatively. In 1923 he published La Ciudad del Dolor (The City of Grief) a book which went through three editions. In this volume, he described the persecutions which patients were subjected to by the authorities at the lazaretto. Until his death in 1927, he wrote and published numerous articles in newspapers from Bogotá and from other cities, denouncing the situation of the Colombian lazarettos and suggesting reforms. He provided appalling descriptions of the way physicians injected chaulmoogra oil and gynocardic acid (a mixture of acids derived from chaulmoogra) without adequate sanitary conditions. Recalling his experience, León-Gómez maintained that no doctor examined him during the first twenty months of his arrival at the lazaretto. When one of the physicians finally examined him, the doctor also asked him what kind of treatment he wanted to follow. In fact, patients at *Agua de Dios* invented their own treatments as they pleased.⁹² This episode revealed that regardless of the rhetoric of medical journals, physicians' control of the disease was far from complete. Lazarettos were still an easy market for charlatans offering miraculous cures, and because the medical staff had no better options, they were forced to tolerate impostors. Moreover, because lazarettos were not hospitals, physicians lacked the authority to order treatments. Ricardo F. Parra, Chief Physician of *Agua de Dios* in 1922, claimed that because of the internal regime of the lazaretto, physicians possessed no power to prescribe treatments and to make the sick follow them.⁹³

From the late nineteenth, on in other parts of the world, scientists and patients themselves had produced some advancements in the treatment of leprosy, thus modifying the previous vision that the disease was incurable. Therefore, medicine had better options than to rely exclusively on "spontaneous healing." Chaulmoogra oil therapy had

⁹² León-Gómez, La Ciudad del Dolor, pp. 46-51.

⁹³ Ricardo F. Parra, "Tratamiento de la lepra en Agua de Dios," Repertorio de Medicina y Cirugía, 1922, 13-6 (150):306-311.

improved considerably. Earlier, the oil was administered as an ointment and also by mouth, but it was so nauseating that patients rejected it. In 1879, scientists in diverse parts of the world started to isolate some of the constituent parts of the oil, namely its fatty acids. From 1894, Engel Bey, an Egyptian doctor, started to use it by injection, and in 1909 the Bayer company began to produce the ethyl esters of the fatty acids of chaulmoogra, under the name "antileprol."⁹⁴ At this time, hydnocarpus oil from the seeds of another Indian tree proved to be more beneficial for leprosy than chaulmoogra oil. In 1915, the British leprologist Leonard Rogers introduced a modification in the use of these oils. He used sodium salts of chaulmoogra oil from the tree *Taraktogenos kurzii* and hydnocarpus oil from the tree *Hydnocarpus anthelmintica* in watery solution, a combination which made the injections less painful than the application of the oil itself.⁹⁵ On the other hand, patients at the Culion leprosarium in the Philippines discovered themselves that applying chaulmoogra by means of numerous pin-prick injections made the treatment more effective. This method, known as the "intradermal infiltration" technique was accepted and practiced worldwide.⁹⁶

Regardless of critical comments of patients themselves, Colombian doctors were aware of these scientific developments. Patients had known of the oral and the topical uses of chaulmoogra oil since the 1880s. In 1910 physicians began to prescribe "antileprol" for patients in *Agua de Dios* as well as in *Contratación*. From at least 1922, physicians commenced trials in these two lazarettos to test Rogers' therapy.⁹⁷ Although these methods were the best at the time, many patients could not tolerate them. They

⁹⁴ Patrick Feeny, The Fight Against Leprosy (New York: American Leprosy Mission, 1964), pp. 107-8.

⁹⁵ Anthony Weymouth, Through the Leper-Squint: A Study of Leprosy from Pre-Christian Times to the Present Day (London: Selwyn and Blount, Paternoster House, 1938), p. 223.

⁹⁶ Feeny, The Fight Against Leprosy, p. 111.

⁹⁷ Ricardo F. Parra, "Tratamiento de la lepra en Agua de Dios (Nota preliminar)," Repertorio de Medicina y Cirugía, 1922, 13-6 (150):306-11; and of the same author, "Tratamiento de la lepra en Agua de Dios," Ibid., 1926, 17-5 (197):260-66; and G. Loboguerrero, "Tratamiento de la lepra en el lazareto de Contratación," Ibid., 1926, 17-4 (196):194-201.

were still painful, and improvements, if any, were only seen after long-term application. Most patients regarded these therapies with skepticism, or with the same ephemeral hope they experienced with remedies offered by quacks. However, the real problem was not the disadvantages of the available medicines. The difficulty stemmed from the disease-apart approach adopted in Colombia, which frustrated the systematic application of those treatments. Since leprosaria were marketplaces where physicians and popular healers competed, the physicians lacked the cultural authority to make patients follow their treatments. They tended to abandon them hastily, replacing doctors' therapies for cures that sounded more promising.

Unscrupulous quacks exploited the credulity of patients, but some members of the medical profession did it too. Although physicians were required to notify the authorities of cases of leprosy, in the case of wealthy patients, physicians were reluctant to divulge confidential information. Leprosy presented opportunities for abuses, and many occurred. León-Gómez censured the inconsistent behavior of physicians who immediately denounced poor patients and hid wealthy sufferers, and all the while publicly frightened the society by claiming that leprosy was extremely contagious.⁹⁸ According to León-Gómez, governmental decrees suspending professional secrecy in the case of leprosy made of doctors, an "official body of informants" and a "secret police."⁹⁹

Official policy required rigorous practices of disinfection for inhabitants who wished to leave the lazaretto. Visitors of inhabitants also had to endure the same course of disinfection. Nonetheless, physicians, apothecaries, civil servants, the Salesian priests, and the Sisters of Charity departed without those procedures, showing that decontamination was exercised as a ritual rather than a real preventive measure. About this, León-Gómez wrote with irony: "Science, Authority, and Religion, preserve [people]

⁹⁸ León-Gómez, *La Ciudad del Dolor*, pp. 188-192.

⁹⁹ *Ibid.*, p. 234.

from contagion."¹⁰⁰ Moreover, patients believed that the anti-contagionist policy developed at the lazaretto was ineffectual; Gutiérrez for example claimed:

"the general concept of all the inhabitants of this place of desolation and horror, of tears and bitterness, is that the government and society should not continue supporting any longer such an unnecessary and costly contagionist apparatus which, it has been demonstrated, is totally useless and derisory."¹⁰¹

Patients insisted that leprosy was not contagious; however, they knew that contagionist theories had won the day. Physicians, on the other hand, were aware of patients' beliefs, and in their crusade against the spread of the disease, regarded patients' opinions as deterrents that needed to be overcome. Some patients wrote extensively about leprosy. On the eve of the extreme segregation policy, the patient José F. Correal wrote several letters to the Minister of Government arguing against theories of contagion and heredity of leprosy. He protested against obligatory isolation of leprosy sufferers, contending that their "repugnant and yet ugly aspect" was the sole basis for the discrimination.¹⁰² Correal summarized concepts of European authors who regarded leprosy as only slightly contagious, including citations from *La Presse Médicale*, and arguments from former leprosy physicians of *Agua de Dios*, using the style of a lawyer's argument to demonstrate his position. In fact, he accumulated numerous notarized testimonies from *Agua de Dios*'s patients, who narrated various circumstances of their lives in order to prove that contagion or heredity had played no role in their conditions; nor had they infected anybody in the course of their lives. Correal, who was a member of the homeopathic Hahnemann society of Colombia, also published a couple of booklets on the same subject, but the medical community dismissed them.¹⁰³ As an indication that

¹⁰⁰ *Ibid.*, p. 288.

¹⁰¹ Gutiérrez, *Apuntamientos*, p. 127.

¹⁰² José F. Correal, "Carta al Ministro de Gobierno," May 15, 1909, in Gutiérrez, *Apuntamientos*, pp. 325-326, on p. 326.

¹⁰³ See letters by José F. Correal under the title "El contagio de la lepra," in: *Ibid.*, pp. 325-348.

lepers not only had lost their civil rights, but also their liberty to feel and to think, Antonio Gutiérrez remarked with a certain irony:

"our great Colombian leprologist, doctor Juan B. Montoya y Flórez, declares with frankness, maybe interpreting the unanimous sentiment of our compatriots, that such writings have no value because they come from the diseased."¹⁰⁴

Not only physicians, but also civil servants disregarded patients' experiences and ideas. For example, León-Gómez published numerous articles in the Colombian press about the conditions of patients in *Agua de Dios*, including suggestions as to how to improve the institution for the benefit of patients. However, the authorities blatantly ignored them. At this time (1920-1923) the General Bureau of Lazarettos and the National Bureau of Hygiene belonged to the Ministry of Agriculture. The Minister of Agriculture once admitted that he had read only one of the articles written by León-Gómez merely by chance while traveling in a train.¹⁰⁵ Medicalization of leprosy meant repression for patients without the compensation of an effective treatment. Additionally, in one more instance of the assertion of their cultural authority, physicians dismissed patients' knowledge and experience. Leprosy patients and their relatives knew that the disease was not highly contagious, but the government, acting on the dominant opinion of the medical community, imposed a policy of strict segregation which did not conform to the general scientific understanding of the disease in the early twentieth century. Because physicians did not know how to cure and prevent leprosy and designated it as a disease apart, medicalization was only partially accomplished.

Something More than Just a Bacillus: The Role of Social Conditions

After all, patients' beliefs about the low contagiousness of leprosy were subject to debate

¹⁰⁴ *Ibid.*, p. 54.

¹⁰⁵ León-Gómez, *La Ciudad del Dolor*, p. 284.

in medical circles. For example, after his trip to Europe, the physician Cenón Solano, gave a lecture in 1911 in Bogotá about the role of heredity and contagion in the transmission of leprosy. Solano had visited the leprosy clinic of Dr. Unna in Hamburg and had presented a paper in the Second International Conference on Leprosy held in Bergen in 1909.¹⁰⁶ In his lecture in Bogotá, Solano departed from the extreme contagionist standpoint on leprosy which he had maintained in the past. He claimed that a conclusive, experimental proof of the contagiousness of the disease was lacking, and that direct inoculation from person to person was not yet verified. However, leprosy's contagious character had been accepted because the leprosy bacillus was constantly present in the diseased. Solano asserted that knowledge about the bacillus was insufficient; thus it was imperative to introduce methods of observation and experimentation, to conduct bacteriological and micrographic research, and especially to study the specific national pathology of leprosy, since he was convinced that the disease presented special characteristics in Colombia. For this physician, even if leprosy proved to be transmissible, it would still be the least contagious of all communicable diseases.¹⁰⁷

In his lecture, Solano also maintained that Hansen's bacillus could not be regarded as the unique agent of the spread of leprosy. For him, the authentic causes of the propagation of leprosy in Colombia were: oppression, wars, poverty, starvation, lack of public and private hygiene, and alcoholism, along with other social conditions. Solano also contradicted the conclusions of the 1910 commission that inspected *Agua de Dios*, which were the basis of the current policy on leprosy in Colombia.¹⁰⁸ Solano's views on leprosy coincided with theories expressed by H. P. Lie, the general secretary of the leprosy conference of Bergen which Solano attended, and the Chief Medical Officer for

¹⁰⁶ Cenón Solano, "La lèpre dans la Colombie," Mitteilungen und Verhandlungen II Internationale Wissenschaftliche Lepra-Konferenz Abgehalten vom 16 bis 19 August 1909 in Bergen (Norwegen) (Leipzig: Johann Ambrosius Barth, 1910), pp. 63-73.

¹⁰⁷ Solano, "Lepra: Herencia y contagio," pp.532-560.

¹⁰⁸ Ibid., pp. 532-560.

Leprosy in Norway after Hansen died in 1912. According to Lie, leprosy could not be described as a very infectious disease, and it could be related primarily to situations of want and misery.¹⁰⁹

Prestigious members of the Colombian medical establishment, such as Miguel Canales, who was a member of the delegation which inspected *Agua de Dios* in 1910, disapproved of Solano's lecture. Canales wrote an acrimonious response, arguing that it was false that poverty and unhealthy living conditions produced leprosy, because pre-Columbian peoples who were also poor, were never afflicted with the disease. Furthermore, Canales justified the severe measures taken in the lazarettos, particularly after the 1911 riots, on the basis that leprosy was contagious, and claimed that most countries where leprosy was rampant had adopted absolute segregation to control its expansion.¹¹⁰

Other doctors expressed opinions similar to Solano's.¹¹¹ For example, Enrique Gómez contended that young doctors had magnified the contagiousness of leprosy and he recommended that physicians seek an answer in the clinic. According to him, clinical criteria showed that infection with leprosy is difficult, and that a set of conditions besides the presence of the bacillus were needed for the transmission to occur. Gómez's advice to return to clinical research indicated also the existence of conflict between bacteriologists and clinicians in the early twentieth century. Probably as elsewhere, in Colombia the reception of the germ theory generated a wave of optimism, but also caused skepticism among doctors trained in the old and well-known clinical practices of the French school of medicine.¹¹²

¹⁰⁹ H.P. Lie, "Why is Leprosy Decreasing in Norway?" *International Journal of Leprosy*, 1933, 1 (2):205-216. This article was a reprint of a paper read at a dermatological meeting in 1928, but contained ideas that Lie had been communicating since 1904 in his work on leprosy in Norway.

¹¹⁰ Canales, "Lepra: Observaciones a una conferencia del doctor Zenón [sic] Solano," pp. 317-333.

¹¹¹ See for example, Rafael A. Muñoz, "Contagiosidad de la lepra," *Repertorio de Medicina y Cirugía*, 1910, 1-7 (7):438-443, on p. 443.

¹¹² Enrique Gómez, "Algo sobre la propagación de la lepra," *Repertorio de Medicina y Cirugía*, 1916, 8-3 (87):111-117. On the conflict between clinics and bacteriology in the United States,

The question that divided clinicians and bacteriologists, the role of the bacillus versus the roles of other environmental or social conditions, had been an issue among doctors ever since the publication of the statistics on leprosy. The most prestigious leaders of the crusade against leprosy, García Medina and Montoya y Flórez expressed differing opinions. According to Montoya, 29% of the leprosy patients in Colombia were peasants, while only 1.76% were beggars; additionally, 3.8% were capitalists and proprietors. Thus, he concluded, leprosy is not a disease of indigence, because the living conditions of peasants were good, and because there were even capitalists among the patients:

"Our peasants earn good salaries, their clothes are sufficient especially in warm climates, their food is not very good, but it's not scarce, and however, they present the higher percentage of lepers....All this contrasts with the small percentage among beggars."¹¹³

That leprosy was a disease of misery had been common knowledge since the nineteenth century, and probably even before.¹¹⁴ The fact that occasionally members of the Colombian elite were afflicted with leprosy only revealed the depressed level of Colombian society, which affected all social classes. Although the upper classes possessed a better understanding of hygiene, diet, clothing, and housing than the lower classes, they were dependent upon the same unhealthy general conditions.¹¹⁵ The role of poverty in the propagation of the disease was critical, as it implied different versions of

see: Russell C. Maulitz, "Physician vs. Bacteriologist: The Ideology of Science in Clinical Medicine," The Therapeutic Revolution: Essays in the History of American Medicine ed. by Morris J. Vogel and Charles E. Rosenberg (University of Pennsylvania Press, 1979), pp. 91-107.

¹¹³ Pablo García Medina, "Profilaxia de la lepra en Colombia," Repertorio de Medicina y Cirugía, 1909, 1-2 (2):112-124, on p. 121; see the same conclusion in Montoya, Contribución, pp. 229-230; many historians would contradict the idyllic picture presented by these doctors; see for example, Palacios, Coffee in Colombia, p. 108.

¹¹⁴ On this issue, see: E.G. Keil, "The Importance of Nutrition in the Prevention and Cure of Leprosy," International Journal of Leprosy, 1033, 1 (4):393-8.

¹¹⁵ Abel, Health Care in Colombia, p. 26.

public health policy. The extreme contagionists, García Medina, Montoya, Canales, among others, demanded a policy of strict segregation. Other physicians, such as Carrasquilla and Cenón Solano, advocated general hygienic measures and social reform, and supported a policy of mild isolation. Unlike their French peers, who associated disease with poverty, thus developing a public health movement with a well articulated social character, the Colombian medical community resisted this approach.¹¹⁶ As a group, they remained indifferent to the needs of social reform.¹¹⁷

Colombian physicians medicalized leprosy in the early twentieth century. The medical community and the state took control of leprosaria. Since physicians were ascending to a position of power, they started to think and act as "experts." This contrasts with their previous situation in which they engaged in the discussion of leprosy as "distinguished" and "enlightened" citizens. Throughout this process doctors generated leprosy statistics which contradicted the exaggerated data of nineteenth-century physicians. As part of the elite, physicians were committed to the project of modernizing Colombia by attracting foreign capital and white immigration. The new rhetoric of statistics was a significant part of this national goal.

Leprosy provided a significant object of study for Colombian doctors. Through claiming possession of specialized knowledge about leprosy, they increased their cultural authority and social power. However, they promised more than they were technically capable of doing: the medical community was unable to devise effective methods to control the disease. Additionally, most doctors tended to ignore poverty as a major cause of diseases, including leprosy. Their struggle against leprosy became a battle against lepers. They maintained the disease apart by specifying two different realms--one for leprosy and another one for all other diseases. This strategy proved ineffective.

¹¹⁶ Ann La Berge, Mission and Method: The Early Nineteenth-Century French Public Health Movement (Cambridge: Cambridge University Press, 1992), p. 15.

¹¹⁷ Abel, Health Care in Colombia, p. 3.

Regardless of their public rhetoric, doctors never actually controlled lazarettos. Their methods produced unnecessary persecution for leprosy patients, as lazarettos became prison-like institutions. Segregation had additional meanings: setting leprosy patients apart was a way for society to preserve itself from the dread of the sight of lepers. Isolation also served to conceal the humiliating fact that medical knowledge was so insignificant that physicians were unable to arrest the spread of the disease.

The construction of leprosy as a specific disease produced by a specific microorganism made Colombian doctors focus only on its contagiousness. The resulting public health model was then to avoid infection, and isolation became the only means to prevent the spread of leprosy. Doctors concentrated almost exclusively on leprosy, neglecting other ailments that decimated the Colombian population. By asserting leprosy's communicability, which they believed Colombian people ignored, physicians incited ancient fears and stigma about the disease. By the early twentieth century, it was clear for physicians such as Carrasquilla that leprosy was not extremely contagious. Therefore, means other than strict segregation of leprosy patients could have been devised. Nonetheless, Colombian physicians embraced the international movement in favor of creation of leprosaria, adopting a colonialist attitude toward their own leprosy population. They adopted procedures like the ones devised by the Western world in their colonial possessions in the late nineteenth century. Colombian leprosy patients who had lived for a long time with the religious opprobrium of being *lazarinos* or *elefanci acos* experienced the addition of a new, modern Western stigma. Leprosy became a disease originating from "poor," "uncivilized" countries and "inferior" peoples.

Chapter 6

The Anti-Leprosy Campaign: The Rhetoric of Public Health and Science

"...the Republic of Colombia votes 80%--eighty per cent--of its public health budget of \$2,000,000, to meet the expenses of leprosy institutions alone.

"The remaining 20%--twenty per cent--goes for salaries of officials, public dispensaries, port medical authorities, infant welfare, anti-venereal, anti-anaemic, anti-alcoholic, anti-tubercular campaigns, for the Samper and Martinez Laboratory, and for the general expenses of the Public Health Department.

"The Public Health Department is nothing more than a very expensive administrative department for leprosy institutions..."¹

During the 1920s, the medical community realized that the disease-apart strategy of leprosy control was inefficient, expensive and cruel. Several physicians wrote criticisms of the anti-leprosy policy which in the next decade contributed to generating changes in the direction of what they called the "anti-leprosy campaign." In the early 1930s health officials started to incorporate leprosy within the general sanitary institutions, by merging the Bureau of Lazarettos and the National Department of Hygiene. The disease-apart approach started to be replaced by a more general public health strategy which involved controlling other illnesses such as tuberculosis, malaria, yellow fever, syphilis, and hookworm. Prevention and research started playing a more influential role within the new model.

These changes were prompted by national as well as international circumstances. In the first place, a unified national bourgeoisie developed during the 1920s, displacing powerful regional elites. This bourgeoisie gained access to power in 1930. Like the elite which maintained Reyes in power between 1904 and 1909, the new Colombian bourgeoisie aimed at modernizing the country. Public health was an important part of this project of modernization. The new sanitary officials saw leprosy in the light of the economic rationality of expenditures, and they placed more emphasis on therapies, making them

¹ Alfonso López Pumarejo, President of the Republic of Colombia (1934-1938) in his message to Congress, July, 1935, "Budgeting for Leprosy," *Leprosy Review*, 1936, 7:144-5), on p. 145 (Translated by Dr. J.W. Lindsay from *Boletín de la Oficina Sanitaria Panamericana*, Dec. 1935).

mandatory for all patients. Improvements in leprosy treatment which had been developed after 1915 became widely known and available. In the 1930s, leprosy workers created the International Leprosy Association which aimed at expanding the epidemiological, etiological, and bacteriological knowledge of the disease; Colombian physicians joined this organization. A new confidence of the medical community in medical procedures and in scientific research permeated the new approach. However, the image of leprosy as a special condition was deeply entrenched within the Colombian culture and institutions. The medical and official rhetoric certainly changed substantially, but to break with several decades of persecution was a complex and difficult task. Regardless of this enlightened and scientific rhetoric, at the end of the 1930s leprosy was hardly regarded as just another disease.

Challenging the Disease-Apart Approach

The medical optimism of the first years of the twentieth century about leprosy control soon decreased. Numerous physicians began to criticize the leprosy policy as inadequate and brutal.² For example, in 1918 the physician Cenón Solano, Director of Hygiene for the city of Bogotá, expressed his concern for the way those suspected of being infected with leprosy were treated. The president of the Central Board of Hygiene, Manuel N. Lobo, responded, portraying such inspection as a medical procedure performed with the required scientific rigor and humanitarian concern. He also regarded Solano as an enemy of the Board of Health who only wanted to discredit the committee. In fact, Solano had gained the animosity of many of his colleagues by portraying leprosy as only slightly contagious and by opposing some aspects of the policy of segregation.³

² For example, by 1915 an unsigned article in the Repertorio de Medicina y Cirugía contended that leprosy was spreading, and that it was not sufficient to isolate the diseased in remote places without investigating the problem; see: "Lepra," Repertorio de Medicina y Cirugía, 1915, 6-5 (65):161-4.

³ "Examen de leprosos en Bogotá," Revista de Higiene, 1918, 9 (3):36-38. In 1920, Emiliano Vicaría, a student of medicine who was then preparing his doctoral thesis on leprosy, made comments similar to Solano's. In fact, Vicaría described in pathetic terms the conditions of the location where such

By the 1920s more doctors started to regard the policy of segregation as a failure. An editorial of the Repertorio de Medicina y Cirugía contended that after fifteen years of compulsory segregation, the results were unsatisfactory. The number of leprosy sufferers was in fact increasing, and the ones segregated in leprosaria left the institutions when they pleased. According to the editorial, lazarettos expanded, the appointed physicians diminished, and the government failed to promote medical careers of doctors who worked at leprosaria. Consequently, young practitioners had no motivation to devote their lives to the study of the disease. The author suggested exploring other avenues for controlling leprosy, including those Carrasquilla once advocated, such as the abolition of the enormous colonies, and the founding of hospitals close to urban centers.⁴ The numerous articles published by the patient Adolfo León-Gómez (from 1920) denouncing the appalling conditions of *Agua de Dios* made some effect. The government appointed a commission similar to the 1910 commission composed by doctors and congressmen to study the lazarettos.⁵

An increasing number of physicians began to view leprosy within the context of the general health conditions of the population, challenging the disease-apart approach. The Repertorio stressed the importance of allocating resources to organize campaigns against not only leprosy, but also against hookworm, malaria, syphilis, yaws, and tuberculosis.⁶ The government initiated some public health work to control the spread of these diseases. For instance, in 1918-1919 it created a national board to coordinate the struggle against

examinations were performed; see: "Por los leprosos," Repertorio de Medicina y Cirugía, 1920, 11-7 (127):337-9, on p. 338.

⁴ "Lucha antileprosa," Repertorio de Medicina y Cirugía, 1920, 11-8 (128):393-395.

⁵ Adolfo León-Gómez, La Ciudad del Dolor 3rd ed. (Bogotá: Imprenta de Sur América, 1927), p. 180, and Antonio Gutiérrez Pérez, Apuntamientos para la Historia de Agua de Dios (Bogotá: Imprenta Nacional, 1925), pp. 103-6.

⁶ "Progreso de la Higiene Nacional," Repertorio de Medicina y Cirugía, 1926, 17-10 (202):545-7.

tuberculosis, to provide information and to diffuse knowledge about the disease.⁷ Coffee and sugar cane zones, significant for the export economy, were infested by hookworm infection. The government contracted with the Rockefeller Foundation to survey yellow fever in 1916, and in 1920 to appraise the extension of hookworm contamination in Cundinamarca. After 1920, the foundation continued health work in Colombia up until 1945.⁸ The campaign against hookworm was taken as a model to teach the Colombian population the benefits of hygiene and sanitation.⁹ These events illustrate that the government had begun to allocate resources for other public health conditions than leprosy.

Some physicians also opposed segregation. For example, in 1922, the physician Carlos Esguerra claimed that leprosy was less contagious and less dangerous than syphilis or tuberculosis. He believed that segregation as it was practiced in Colombia was an old tradition which had its origin in the idea that infections were transmitted by miasmas. He argued that those practices were not justified after science had discovered the mode of transmission of infectious diseases. Esguerra maintained that leprosy patients were treated with excessive rigor, depriving them of their civil and political rights, and subjecting them to tortures reminiscent of the medieval ages. He asserted that modern science permitted the isolation of patients with infectious diseases in general hospitals. Esguerra thus suggested the abolition of mandatory segregation, the revival of home isolation, and a shift in the campaign against leprosy from defense of society to protection of lepers. Since leprosy increased with impoverishment and decreased with civilization, the best safeguard for society was to improve the general hygienic conditions, including those of the diseased themselves. Esguerra proposed providing leprosaria with resources similar to those of

⁷ Christopher Abel, Health Care in Colombia c.1920-c.1950: A Preliminary Analysis (London: Institute of Latin American Studies, 1994), pp. 28-29.

⁸ Christopher Abel, "External Philanthropy and Domestic Change in Colombian Health Care: The Role of the Rockefeller Foundation, ca. 1920-1950," The Hispanic American Historical Review, 1995, 75 (3):339-376, on p. 351.

⁹ Emilio Quevedo Vélez, et al., "Ciencias médicas, estado y salud en Colombia: 1886-1957," Historia Social de la Ciencia en Colombia vol. 8 (Bogotá: Tercer Mundo, 1993), pp. 161-289, on p. 216.

modern hospitals and organizing asylums and schools for sick children. He maintained that non-leprous children should be taken to regular institutions outside the leprosaria. He also advocated the creation of Saint Lazarus societies to support the lazarettos, in conjunction with national, departmental, and municipal powers. As Carrasquilla once did, Esguerra proposed adopting the same project to fight tuberculosis, since his plan was inspired by the campaigns against this disease in Europe and in the United States.¹⁰

Between 1926 and 1927, several editorials of the Repertorio were devoted to the problem of leprosy. The idea that leprosy was a disease of poverty, and that lepers were just sick people in need of hospitals and treatments, became more frequent in the medical literature. However, citizens horrified by their prejudices objected strongly to the idea of establishing hospitals for leprosy near urban settlements.¹¹ A common theme at the time, voiced in an editorial of the Repertorio in 1927, was to argue against obligatory isolation and to portray the anti-leprosy campaign as an expensive failure. Indeed, the crusade against leprosy was described as a forty-year persecution performed by the police, mayors, and the municipal public health authorities. Leprosaria were called "perpetual prisons," as in fact they were. One of the suggestions of the editorial's author was to suspend the anti-leprosy campaign altogether. Instead, insightful persons would study the endemic regions to propose the means to change the living and hygienic conditions of common people. Leprosy would disappear once civilization arrived:

"Wherever civilization penetrates, wherever water and soap, essential companions of abundance, enter to form an inescapable part of the habits of citizenship, wherever changing clothes becomes frequent, and dwellings improve, leprosy vanishes..."¹²

¹⁰ Carlos Esguerra, "El problema de la lepra en Colombia," Repertorio de Medicina y Cirugía, 1922, 13-6 (150):291-305.

¹¹ "La lepra: siempre la lepra," Repertorio de Medicina y Cirugía, 1926, 18-3 (207):115-118.

¹² "Sobre la lepra," Repertorio de Medicina y Cirugía, 1927, 18-7 (211):335-9, on p. 338.

The medical community, always ready to defend its cultural authority, was forced to respond to critiques by the general press which maintained that there was no plan to protect the country against the scourge of leprosy. The media also accused doctors of ignoring the methods employed abroad, since treatments adopted by them at leprosaria bore no scientific basis. The press suggested that Colombian physicians should be sent to Hawaii and to India to investigate remedies employed there. The Repertorio reacted by reaffirming national technical expertise and dismissing foreign advice as unnecessary.¹³ The pride of the Colombian medical profession was also reflected in its relations with the Rockefeller Foundation. Even though, the Faculty of Medicine in Bogotá was the best medical school of northern South America, in 1923, the International Health Board of the Rockefeller Foundation declined to collaborate with medical education in Colombia because of the "high-strung individualism" of the Colombian physicians.¹⁴ This was probably one of the reasons why the Rockefeller Foundation never got involved in leprosy work in Colombia, as it did in the Philippines at this time.¹⁵

In 1927, the government responded to public criticism by giving more power to the General Bureau of Lazarettos in terms of organization of leprosaria, isolation and treatments. However, segregation remained the main strategy to control the spread of the disease. The parliament enacted a law in 1927 defining lazarettos as asylums for individuals afflicted with leprosy. According to the law, the organization of leprosaria should aim at obtaining isolation and scientific treatments for all patients regardless of the stage of their illness and of their social class; it also established penalties for transgressors of leprosaria's rules such as deportation to a different lazaretto. This law aspired to modify the previous procedure of selecting specific groups of patients for treatment, preferring those in

¹³ "El problema de la lepra," Repertorio de Medicina y Cirugía, 1926, 17-5 (197):245-9,

¹⁴ Abel, "External Philanthropy and Domestic Change in Colombian Health Care," p. 365.

¹⁵ Ronald Fettes Chapman, Leonard Wood and Leprosy in the Philippines: The Culion Leper Colony, 1921-1927 (University Press of America, 1982), p. 74.

earlier stages of the disease in which therapy was most effective. The law probably also tried to correct fraudulent practices which tended to choose patients for treatment according to their social status.¹⁶

The problem of leprosy challenged Colombian doctors for many decades. Their actual inability to solve it as quickly and efficiently as they hoped became a source of permanent frustration.¹⁷ The mingling of healthy people with the sick in the lazarettos after more than twenty years of unsuccessful attempts of isolation, as well as the apparent increase of the number of people afflicted with leprosy, were visible symbols of inefficiency. As León-Gómez noted:

"physicians who don't believe in miracles, believe however in the miracle of 'spontaneous healing,' and they praised it as the only resource, maybe to conceal the absolute ignorance of science in these matters."¹⁸

The frustration of physicians was evident in the late 1920s. The physician Eliseo Montaña maintained in 1929 that although leprosy had occupied Colombian doctors more than any other public health matter in the country, the problem was getting increasingly complicated. The campaign against leprosy employed no method, except for those left by ancestral prejudices, and lacked the essential basis to arrest the disease: there were no accurate statistics available, no knowledge of the causes or agents of the disease, and no understanding of its chances of cure. Colombian leprosy patients had been the victims of an army of charlatans from abroad that arrived in the country to earn money by abusing the

¹⁶ "Ley 20 de 1927 sobre lazaretos," Compilación de leyes, decretos, acuerdos y resoluciones vigentes sobre higiene y sanidad en Colombia Formada por el Dr. Pablo García Medina, ex-director de Higiene y Asistencia Pública (Bogotá: Imprenta Nacional, 1932), pp. 363-366.

¹⁷ This frustration is revealed in the titles of medical journal articles; see for example: Carlos Esguerra, "El problema de la lepra en Colombia," Repertorio de Medicina y Cirugía, 1922, 13-6 (150):291-305; and "La lepra: siempre la lepra," Ibid., 1926, 18-3 (207):115-118.

¹⁸ León-Gómez, La Ciudad del Dolor, p. 310.

sick. This was the case of the Cuban impostor Angel García who advertised his miraculous cure for leprosy, defrauding numerous patients not only in *Agua de Dios*, but also in the Fontilles leprosarium in Spain.¹⁹ In many ways, foreign physicians, both professionals and charlatans, tried to colonize Colombian lepers.

Etienne Burnet, secretary of the Leprosy Commission of the League of Nations, visited Colombia in 1929 to assess the dimensions of the leprosy problem. He examined *Agua de Dios* and *Caño de Loro*, and gave a lecture on leprosy at the Faculty of Medicine. He contended that the disease was less contagious than previously thought and that it was curable. Therefore, the strategy to control leprosy needed to be based on the new knowledge. Burnet recommended the practice of isolation of contagious cases, the rigorous separation of children from their leprous parents, and the creation of leprological societies to study the etiology, pathogeny, and bacteriology of the disease. Referring to Burnet's visit, Montaña declared that his advice was no different from what some Colombian physicians had long recommended--without being heard.²⁰

Introducing Economic Rationality

The dissatisfaction of physicians with the leprosy control policy in the 1920s was probably related to a more general malaise about social issues which permeated the period. Indeed, Colombian society had undergone substantial demographic and socioeconomic changes within the last half a century. By 1870, 5% of the population lived in towns; by 1938 the urban population had expanded to 30%. In the 1920s the country became the most important Latin American commercial partner of the United States and a first-order coffee

¹⁹ Eliseo Montaña. "Estado actual de la lucha contra la lepra en Colombia (La conferencia del profesor Burnet)," *Repertorio de Medicina y Cirugía*, 1929, 20-4 (232):172-79, on pp. 172-3. On the case of Angel García, see: Josep Bernabeu Mestre, and Teresa Ballester Artigues. "Lepra y sociedad en la España de la primera mitad del siglo XX: La Colonia Sanatorio de Fontilles (1908-1932) y su proceso de intervención por la Segunda República," *Dynamis: Acta Hispanica ad Medicinae Scientiarumque Historiam Illustrandam*, 1991, 11: 287-344, on pp. 306-8.

²⁰ Montaña, "Estado actual de la lucha contra la lepra," pp. 176-9.

exporting country. There were also great expectations about North American oil investments. Moreover, coffee created a national bourgeoisie--producing new alliances that made the nineteenth-century regional rivalries no longer relevant.²¹ Several laws enacted in 1922 stimulated foreign immigration--until then, minimal in Colombia. Colonization of public lands was encouraged. Colombian international involvement in the 1920s can also be indicated by the numerous international commissions that visited the country to advise the government: the North American Kemmerer Commission for the Economy (1923), the German Pedagogic Commission (1924), and the Swiss Military Commission (1924).²² The world crisis of 1929-1930 provoked the decline of coffee prices in the international market by 50%, and inflation and unemployment increased. Political conflict divided the government party. Thus the Liberals, representing a new bourgeoisie, won the presidential election of 1930, defeating the Conservative regime which had been in power for almost forty-five years. In Colombia, unlike most Latin American countries, the world depression did not generate a revolutionary change, and the country recovered rapidly from its negative impact.²³ During the 1930s, Colombia experienced economic expansion; the middle classes grew, and the profits of the upper classes were augmented. Although there was some industrial development, the economy was more dependent than ever on the coffee export sector, and on the United States market.²⁴ This was the prevalent climate in the 1930s which brought about a notable variation within the leprosy policy.

²¹ Marco Palacios, Coffee in Colombia, 1850-1970: An Economic, Social, and Political History (Cambridge: Cambridge University Press, 1980), pp. 25-54; see also: José Antonio Ocampo, Colombia y la economía mundial 1830-1910 (Bogotá: Siglo XXI, 1984), pp. 125-8.

²² Aline Helg, "El desarrollo de la instrucción militar en Colombia en los años 20: Estudio del impacto de una misión militar suiza," Revista Colombiana de Educación, 1986, (17):19-40, on pp. 19-20.

²³ Palacios, Coffee in Colombia, pp. 209-216. On the Colombian political history, see also: Francisco Leal Buitrago, Estado y Política en Colombia (Bogotá: Siglo XXI/CEREC, 1984); Gerardo Molina, Las ideas liberales en Colombia 1915-1934 vol. 2 (Bogotá: Tercer Mundo, 1974); and of the same author, Las ideas liberales en Colombia: De 1935 a la iniciación del Frente Nacional vol. 3, 2nd ed. (Bogotá: Tercer Mundo, 1978).

²⁴ José Antonio Ocampo and Santiago Montenegro, Crisis mundial, protección e industrialización: Ensayos de historia económica colombiana (Bogotá: Fondo Editorial CEREC, 1984), pp. 43-50.

On the grounds of the 1927 law which aimed at giving more power to physicians within the lazarettos, the first group of patients was freed from *Agua de Dios* in 1930. Alejandro Herrera Restrepo, Director of the General Bureau of Lazarettos, felt compelled to explain the decision to the medical community and to the general public: clinical and bacteriological tests proved that these patients were not infective. After forty years or so of frightening Colombian society with the high infectiousness of leprosy, physicians were required to explain this action. Herrera demonstrated that the determination was based on scientific theories and practices accepted in the United States and Europe almost a decade before.²⁵ Indeed, the knowledge that leprosy was not equally infectious in all stages of the disease was available long time before 1930, but Colombian doctors were stuck with the old disease-apart approach. The measure of discharging non-infective patients also revealed a distinct rationale which later became the main criterion in the handling of the disease during the 1930s. By releasing leprosy patients from leprosaria, the government attempted to introduce principles of economic rationality.

Probably for economic and administrative reasons, in 1931 the government consolidated the Bureau of Lazarettos and the National Department of Hygiene into one single entity.²⁶ For the first time, leprosy was considered a disease to be controlled like other diseases, and the budget for leprosy became part of the general budget for public health. This was one of the first steps the government took in order to eliminate the disease-apart approach. Enrique Enciso, the first Colombian physician to receive a grant from the Rockefeller Foundation to study public hygiene in the United States, was appointed Technical Director of the National Department of Hygiene in 1932. Thanks to the new political climate, Enciso was able to put into practice a vision of leprosy control that other doctors before him had been advocating without result. He contended that the policy of

²⁵ Alejandro Herrera Restrepo, "Sobre lepra," Repertorio de Medicina y Cirugía, 1930, 21-9 (249):422-6; and "Resolución Número 17 de 1930 (Marzo 5)," Ibid.: 427-29.

²⁶ Enrique Enciso, "Breve historia de la campaña contra la lepra en Colombia. Nuevo plan de lucha contra esta enfermedad," Revista de Higiene Segunda época, 1932, 13 (8):257-295, on p. 265.

sequestration was responsible for the aggravation of the problem, since such tactics promoted the concealment of recently infected persons who were afraid of being isolated for the rest of their lives. These were the most dangerous cases, since they were permanent sources of infection. Enciso also suggested abolishing the "prison-lazarettos" and treating non-infective patients at home, or in special dispensaries. Isolation in the hospitals of the lazarettos would be mandatory only for "open" or infective cases and for invalids. The system of regional dispensaries was, according to the new director of Hygiene, more effective than the most rigid segregation, and such establishments needed not be a menace for the neighboring region. On the contrary, well-organized clinics secured treatment for newly infected people who benefited the most from therapies and prevented the spread of the infection.²⁷

The strategy suggested by Enciso relied on international experiences. As the British leprologists Leonard Rogers and Ernest Muir claimed in 1925, where there were drastic measures of compulsory segregation, usually in prison-like asylums, people inevitably hide cases which would cause new infections.²⁸ Additionally, therapeutic improvements altered the view of leprosy as an incurable disease. Rogers and Muir obtained satisfactory results treating patients in India and elsewhere with innovations they made in the application of chaulmoogra and hydnocarpus oil. Indeed, in a pamphlet entitled "Recent Advances in the Treatment of Leprosy," Rogers discussed the case of the island of Nauru with a population of 2,500. Leprosy spread rapidly there after an influenza epidemic and due to the deficient diet of the population; no less than 30 per cent were infected. A policy of early recognition, isolation of the infected, treatment of patients with chaulmoogra and hydnocarpus derivatives, and frequent inspection of all contacts, reduced the incidence of the disease. In

²⁷ Ibid., pp. 257-295.

²⁸ Sir Leonard Rogers and Ernest Muir, Leprosy (New York: William Wood and Co., 1925), pp. 101-102, 126.

1924 there were 193 infective cases, and by the end of 1933 there were only 66.²⁹

In another example, Leonard Wood, the Governor General of the Philippines (1921-1927), improved the conditions at Culion Leper Colony. The government appointed a total of 18 physicians and 27 nurses, for a total of about 5,000 inmates, stationed permanently at the leprosarium, and extended the treatment of chaulmoogra and hydnocarpus oil to most patients. Previously, because of its cost the treatment was only applied to a limited number of patients.³⁰ Thus, physicians H. Windsor Wade and Casimero B. Lara at the Culion Leprosarium were able to present cures from 15% to 20% of advanced cases. By 1930 the journal of the Philippine Islands Medical Association reported that 1,600 patients were rendered bacteriologically negative in a period of seven years, so they were allowed to leave leprosaria.³¹ Enciso also reported that in *Agua de Dios* 24.7% of patients treated with the new chaulmoogra and hydnocarpus derivatives healed within a four-year period. With the new control program of supervision of bacteriologically-negative patients, possible relapses which normally occurred in leprosy, as in tuberculosis, would be immediately detected.³²

Enciso presented a forceful economic argument to prove that the rigorous-isolation policy was also a failure from an economic point of view: the cost of isolating a person for seven days in a Colombian leprosarium was equivalent to the cost of medicines to treat a leprosy patient for a year. Moreover, the Colombian government consumed a full 75% of its national budget for hygiene and public assistance in supporting leprosaria. The other 25% paid for hospitals, sanitation of city ports, the expenses of the recently created National Institute of Hygiene, infant protection, and the campaigns against hookworm, tuberculosis, venereal diseases, malaria, and smallpox. Alfonso López Pumarejo, president of the

²⁹ Anthony Weymouth, Through the Leper-Squint: A Study of Leprosy from Pre-Christian Times to the Present Day (London: Selwyn and Blount, Paternoster House, 1938), pp. 231-232.

³⁰ Chapman, Leonard Wood and Leprosy in the Philippines, pp. 83-90.

³¹ Patrick Feeny, The Fight Against Leprosy (New York: American Leprosy Mission, 1964), p. 111.

³² Enciso, "Breve historia de la campaña contra la lepra en Colombia," pp. 257-295.

Republic from 1934 to 1938, would later claim that 80% of the national public health budget was spent in leprosaria (see the epigraph of this chapter). The expenditures were not in proportion to the problems. Tuberculosis, hookworm, syphilis, and malaria, Enciso declared, were responsible for one third of the total annual mortality. Furthermore, the infant mortality was one of the most elevated in Latin America. The public health budget clearly did not reflect these priorities.³³ The campaign against leprosy was expensive, irrational, and its results were contrary to its purposes:

"What is the reason to distribute the money in this way and to continue clinging to a system which in more than a century of experience has not given satisfactory results? It is as urgent to attack leprosy as tuberculosis, syphilis and malaria. These are more prevalent and cause a larger number of victims. If we isolate lepers, why not to do the same with tuberculous patients? This disease is one hundred times more contagious than leprosy and it's responsible for ten per cent of the general mortality. Is it because society is more frightened by leprosy, and wants to avoid the displeasure of seeing its fellows disfigured or mutilated?"³⁴

The disparity in public health expenditures is made even clearer by a comparison with the Philippines, where the government spent 33% of its total appropriation for health work on leprosy control, and it was considered a high proportion of the total health expenditure.³⁵ Responding to Enciso's argument, the Colombian congress passed a law in 1932 enacting his recommendations. With this law the concept of leprosy as a "public calamity" disappeared. Instead, the first article declared:

"The campaign against leprosy in this country shall be carried on in accordance with the universally accepted principles of prophylaxis of the

³³ Ibid., pp. 269-277.

³⁴ Ibid., p. 277.

³⁵ Perry Burgess, "The Leonard Wood Memorial: Its Origin, Purposes and Activities," International Journal of Leprosy, 1934, 2 (4):395-402, on p. 396.

disease, according to which the contagious cases, which constitute a menace to society, shall be isolated, while those which do not constitute such danger may remain at large, subject, however to the supervision of the health authorities and to regulations prescribed by the National Department of Hygiene."³⁶

Although most physicians challenged the disease-apart approach in the 1920s, it was only in the 1930s when the government started to put into practice the new point of view thanks to the needs of a new economic rationality.

Intensifying Public Health

Although the state of research in the history of public health in Colombia does not allow a conclusive judgment, the 1932 law and previous legislation suggest that leprosy played a leading role in the building of a public health system in Colombia. To justify the approval of the 1932 law, Enciso proposed that since leprosy was the disease that Colombians feared the most while ignoring other ailments, the local dispensaries created for controlling leprosy be used to expand the action of sanitary authorities to the whole nation. Eventually, according to Enciso, these dispensaries would be transformed into clinics to treat other diseases.³⁷ This phenomena was no different than what occurred in other countries where the construction of public health systems was induced by the need to control specific diseases. For example, in the United States yellow fever and cholera prompted public health reforms in the nineteenth century, while in England typhus and typhoid fevers motivated the hygienic movement. In France however which had been the mecca for Colombian physicians, no particular disease encouraged the development of the public

³⁶ "Ley Número 32 de 1932 (Noviembre 18) por la cual se dictan algunas medidas relativas a la lucha contra la lepra y se adoptan otras disposiciones en el ramo de la higiene," Revista de Higiene Segunda época, 1933, 14-2 (2):50-54; this law was transcribed in "Leprosy News," International Journal of Leprosy, 1935, 3 (2):232-4.

³⁷ Enciso, "Breve historia de la campaña contra la lepra en Colombia," pp. 287-9.

health movement, but a social and political concern with poverty.³⁸

However, independently of the 1930 law the government took some actions to improve public health. After 1929, the National Institute of Hygiene produced bacteriological analysis of food and its nutritional composition. During the 1930s, Carlos Lleras Restrepo as Controller-General published indices of the cost of living and promoted studies on workers' nutrition.³⁹ At the same time, the social and economic roots of leprosy within the highly stratified Colombian society became more evident for Colombian physicians. Julio Manrique, the doctor who had visited Norwegian leprosy hospitals in 1905, claimed that starvation and malnutrition were the actual causes of leprosy. He asserted that until the end of the nineteenth century leprosy was common even among the elite, but by the early 1930s cases of leprosy among wealthy people were infrequent. Manrique attributed this epidemiological shift to the general transformation of customs in urban Colombian areas. In the late nineteenth century, consumption of fruits and vegetables and hygienic habits like daily bathing were rare even among the elite in cities like Bogotá. Poor people in regions where leprosy was endemic consumed almost exclusively corn, wheat, and yucca. For Manrique, economic deprivation was thus an undeniable antecedent of leprosy.⁴⁰ During the pre-bacteriological era, the idea that leprosy was produced by multiple causes, among them certain types of food and lack of hygiene, had been common among doctors. However physicians and officials constructed leprosy as a contagious disease, physicians such as Juan Bautista Montoya y Flórez and Pablo García Medina sought to demonstrate that leprosy was unrelated to poverty. They emphasized its infectiousness to promote segregation as the only method to control the spread of the disease.

³⁸ Ann F. La Berge, Mission and Method: The Early Nineteenth-Century French Public Health Movement (Cambridge: Cambridge University Press, 1992), p. 284.

³⁹ Abel, Health Care in Colombia, p. 44.

⁴⁰ Julio Manrique, "¿Carate y lepra, enfermedades de carencia?" Repertorio de Medicina y Cirugía, 1932, 23-3 (267):99-102.

The second president of the Liberal republic, Alfonso López Pumarejo (1934-1938), gave a new impulse to the anti-leprosy campaign. During his administration, social and labor questions became the heart of political contention. López was a banker, who had been engaged in the import-export coffee business. For López and his collaborators it was clear, after the social uproars of the 1920s and early 1930s, that it was dangerous for the social order to continue neglecting the needs of the poor. The sanitary conditions of the population could prevent economic development. The administration labeled itself "the Revolution on the March." However, López's government was not a revolution. The regime adopted a mixture of revolutionary language with socialist symbols inspired by the Mexican revolution, but some aspects of López's Liberal republic were influenced by the "New Deal" of Franklin D. Roosevelt. Nevertheless, the rupture with the tradition was far from complete, and popular demands were not always attended to.⁴¹ Although "the Revolution on the March" granted more importance to education, public health also played some role in the social policy of the regime.⁴²

López asked the Academy of Medicine as a consultative body to suggest sanitary priorities for the new administration. The Academy listed leprosy in the sixth place in terms of urgency, conferring more importance to infant welfare, alcoholism, syphilis, tuberculosis, tropical diseases, and rural hygiene.⁴³ Leprosy was not included among the "tropical diseases." The earlier obsession of the medical community with leprosy was giving way to a different view of the needs of the country. Leprosy was certainly serious, but it was not the principal threat to public health. López's governmental strategy to control leprosy basically continued and expanded the policy devised after 1931 of granting more

⁴¹ Christopher Abel, Política, Iglesia y Partidos en Colombia: 1886-1953 (Bogotá: FAES/Universidad Nacional de Colombia, 1987), pp. 121-122, 211-212; see also: Daniel Pécaut, Orden y Violencia en Colombia 1930-1954 vol. 1 (Bogotá: Siglo XXI/ CEREC, 1987), p. 284; and David Bushnell, The Making of Modern Colombia: A Nation in Spite of Itself (Berkeley: University of California Press, 1993), p. 185.

⁴² Abel, Health Care in Colombia, p. 40.

⁴³ Quevedo, "Ciencias médicas, estado y salud," p. 229.

importance to scientific research. The government increased to six the number of physicians of *Agua de Dios*, and some doctors created a Scientific Society in *Contratación* to discuss scientific as well as social and organizational issues related to that lazaretto. At the same time, physicians, instead of military officers or other professionals, were charged with the direction of leprosaria.⁴⁴

One of the most important aspects of the new policy was the concern of sanitary authorities towards children. In fact, the 1931 law had created an office for infant welfare.⁴⁵

While current knowledge indicated that leprosy, when compared to tuberculosis, could be described as only slightly contagious, it was easily transmitted to children. Therefore, a genuine sanitary campaign should pay special attention to preventive measures aimed at children. Ricardo R. Parra, physician at *Agua de Dios*, advocated immediate separation of healthy children from their diseased parents, periodical physical examinations, and proper education in state institutions.⁴⁶ F. Gómez Pinzón, Chief of the section of lazarettos at the National Bureau of Hygiene, explained that the protection of infants should be a state rather than a charitable concern. Criticizing the model of asylums for children within the lazarettos, he claimed that those children were ostracized while young, which made them unproductive for society.⁴⁷ Physicians referred to the question of leprosy in a modern economic and political language.

The innovations suggested by Enciso, Manrique, and others implied radical modifications of the Colombia's leprosy policy that were not easily accomplished. For example, 1,094 healthy children under the age of fifteen were still living in *Agua de Dios* in

⁴⁴ "Sociedad científica del lazaretto de Contratación," *Revista de Higiene* Segunda época, 1933, 14-2 (2):47-9; *Ibid.*, 1933, 14-2 (4):111-114; "Resolución Número 25 de 1933," *Ibid.*, pp. 117-121; and "Decreto Número 1286 de 1934," *Ibid.*, 1934, 15 (3-10):354-360.

⁴⁵ Quevedo et al., "Ciencias médicas, estado y salud," p. 193.

⁴⁶ Ricardo F. Parra, "Lepra y niños," *Revista de Higiene*, 1935, 16 (7-10):164-178.

⁴⁷ F. Gómez Pinzón, "Los hijos sanos de los enfermos de lepra," *Revista de Higiene*, 1935, 16 (1-4):15-17.

1935.⁴⁸ Doctor F. Gómez Pinzón presented a report in that same year claiming that the Colombian government was still using most of its anti-leprosy campaign's budget for the administration of leprosaria. Gómez proposed instead employing a considerable part of the resources for the treatment of the sick and for a preventive campaign throughout the country. According to his report, at this time there was still a considerable population free from leprosy living within the lazarettos, the total of escapes was significant, and control over sanitary cordons was limited. Hygienic conditions at leprosaria were unsatisfactory, and death rates were high.⁴⁹

Gómez acknowledged the lack of reliable statistics and thus the need to organize a census of leprosy covering the entire nation. As to the actual figures of patients within the lazarettos, he commented that those numbers expressed the total of people currently receiving official rations. Although they were listed as leprosy patients, the data did not indicate whether or not they were actually afflicted with the disease. Many leprosy sufferers within the lazarettos had never been examined by a doctor, and the authorities suspected that the total number of individuals receiving support from the government far exceeded the number of actual leprosy sufferers. These cases were the result of mistaken diagnoses or they were children of diseased poor parents reported as infected with leprosy so that they would obtain official allowances and would avoid starvation. In consequence, hygienic authorities started clinical and bacteriological examinations of those registered as lepers. From 1930 to 1935, 754 leprosy patients were discharged as non-infective and therefore able to live in society. However, only 200 of them were subsequently controlled, of which sixty-two (31%) returned to the lazarettos because they suffered a relapse, because they were incapable of work, or because society rejected them, owing to their permanent

⁴⁸ Ibid., p. 16.

⁴⁹ "Informe sobre lepra que la Sección 5a. rinde al señor Director Nacional de Higiene," Revista de Higiene, 1935, 16 (7-10):53-149. A summary of this report appeared in: International Journal of Leprosy, 1937, 5 (3):373-5.

disfigurements.⁵⁰

A significant aspect of the present strategy of leprosy control was to reinforce the medicalization of leprosy by establishing mandatory treatment for all patients. This measure aimed at eradicating not only popular medicine in the lazarettos, but more importantly, at eliminating troublesome competitors of the medical establishment. Indeed, the officials uncovered several past abuses in connection with the treatment of patients. In the last few years, some doctors such as the Spanish physician Aaron Benchetrit, had made costly arrangements with the government so that they could apply their treatments in the lazarettos. Their therapies were based on chaulmoogra derivatives. The new sanitary authorities canceled those exorbitant contracts, ordered an official mandatory treatment for all patients based on hydnocarpus oil, and proscribed all other competing therapies.⁵¹ In order to make the medication inexpensive, chemists at the *Instituto Nacional de Higiene Samper y Martínez* (National Institute of Hygiene Samper & Martínez) prepared the hydnocarpus derivatives from seeds of the tree *Hydnocarpus wightiana*, imported from India.⁵² It is interesting to note that the prohibition of these particular treatments originated in a section of a law which regulated the exercise of the profession of medicine and surgery.⁵³ This was another example of the leading role that leprosy played in the consolidation of the profession of medicine. The case of Benchetrit also paralleled the example of professional physicians in the late eighteenth-century France who occasionally acted like charlatans.⁵⁴ They, as Benchetrit did, exploited proprietary remedies and

⁵⁰ Ibid., pp. 64-66.

⁵¹ Ibid., pp. 134-7; see also a comment on this situation in "Leprosy News and Notes," International Journal of Leprosy, 1938, 6 (2):258-9.

⁵² A.M. Barriga Villalba, "La nueva planta de fabricación y purificación de los ésteres etílicos de Chaulmoogra, del Instituto Nacional de Higiene Samper & Martínez," Revista Colombiana de Leprología, 1939, 1 (3):167-71.

⁵³ "Campaña contra la lepra en 1935," Revista de Higiene, 1935, 16 (7-10):153-5, on p. 154.

⁵⁴ Matthew Ramsey, Professional and Popular Medicine in France, 1770-1830: The Social World of Medical Practice (Cambridge: Cambridge University Press, 1988), pp. 48-49.

celebrated their efficacy in popular publications. This quack behavior certainly operated against professional interests and solidarity.⁵⁵

According to the new dispositions, local dispensaries to control leprosy were established in 1934 in Cundinamarca, Norte de Santander, Valle, and Boyacá (see map 4 in the Appendix). The physician Darío Hernández, director of the Anti-leprosy Dispensary of Norte de Santander, one of the departments where the disease was most prevalent, reported in 1935 that a sanitary commission composed of a physician and three assistants traveled throughout the department for a period of twenty two months looking for new cases of infection. They had previously dispatched questionnaires and information on leprosy to mayors, local doctors, merchants, school teachers, and parish priests. The commission claimed to have examined every person suspected of being infected with leprosy of the rural and urban population of each town. They expressed their amazement at the accuracy of most popular diagnoses of leprosy, corroborating observations of eighteenth-century physicians. The commission gave public lectures on the problem of leprosy, its infectiousness, curability, and the importance of early diagnosis. According to Hernández, the sanitary conscience of the department started to change, so much so that patients from remote places began to arrive spontaneously at the dispensary. The dispensary also distributed among the population booklets prepared by the Board of Hygiene containing scientific information on leprosy.⁵⁶ Although this report could be inflated, at least is an indication of the ideal at which public health officials aimed at this time. Between 1936 and 1939, the government created three more regional dispensaries, and appointed twelve traveling physicians to search for new cases of infection and eleven traveling health assistants who attended to the treatment of patients discharged from the lazarettos as

⁵⁵ Aaron Benchetrit, Datos para la Historia de la Lepra en Colombia durante la década de 1926 a 1936 (Bogotá: Editorial Minerva, 1960).

⁵⁶ Darío Hernández B., "Memorandum de las labores desarrolladas por la Campaña anti-leprosa del Norte de Santander," Revista de Higiene, 1935, 16 (7-10):149-152.

"socially cured" or non-infective.⁵⁷

The need to rationalize the expenses of leprosaria was so pressing that in 1935 sanitary authorities suggested consolidating the three leprosaria at *Agua de Dios*, the largest of them. The rationale for the unification was that *Contratación* and *Caño de Loro*'s locations made it more difficult to organize them technically. The integration would bring together 7,500 inmates and would render *Agua de Dios* the biggest leprosarium in the world, since the current largest, Culion Leper Colony at the Philippines, had 6,500 inhabitants in 1934. A comment in the section "Leprosy News" of the International Journal of Leprosy, the main international journal in the field, treated this announcement as contrary to a worldwide tendency. Indeed, the leprological community at the time recommended the arrangement of multiple regional stations as less offensive to those affected, and thus more effective for the anti-leprosy campaign.⁵⁸ The suggested consolidation never occurred, and the proposal remained as an example of the Colombian government's public health strategy which was rather to demand greater efficiency in the use of resources, than to increase the total amount of funds assigned to sanitation.⁵⁹

Leprosy Research: Initial Efforts

In the 1930s, epidemiological and bacteriological research began to play a more important role in the new approach to eradicating leprosy. Although Colombian physicians had studied leprosy before this period, their investigations were mostly the result of their personal interest rather than a deliberate component of a scientific public health strategy. The most relevant example was Juan de Dios Carrasquilla who completed not only clinical but bacteriological research at the end of the nineteenth and early twentieth centuries. He

⁵⁷ Mario Bernal Londoño, "Anotaciones alrededor de la campaña de profilaxis antileprosa," Revista Colombiana de Leprología, 1940, 1 (4):257-260.

⁵⁸ "News Items," International Journal of leprosy, 1936, 4 (3):384.

⁵⁹ Abel, Health Care in Colombia, p. 41.

focused mostly on exploring serological methods as a therapy for leprosy, as was explained in chapter 4, but he was also interested in the etiology of the disease. Through experimental research, Carrasquilla found Hansen's bacillus in fleas' intestines and presented his theory of the transmission of leprosy by fleas, a hypothesis that still was being debated among the leprological community in 1940.⁶⁰ Based on Carrasquilla's findings, Entomological News announced in 1905 that the entomologist C.F. Baker from the Agronomical Station in Santiago de las Vegas, Cuba, together with scientists from Brazil and the United States, had started a research program on fleas (*Pulex irritans*) and diseases, similar to that which had been organized for yellow fever and mosquitos.⁶¹

When Carrasquilla's colleagues at the Berlin conference rejected the conclusions of his serological research on the grounds that Hansen's bacillus was not present in the blood of patients, Carrasquilla tried to cultivate the microorganism in order to use cultures instead of blood to prepare the serum. Consequently, Carrasquilla got involved in what several worldwide leprosy workers had attempted since Hansen "discovered" the bacillus--its cultivation. Like them, he also believed he had succeeded, only to find that other researchers were unable to replicate his experiments.⁶² When Carrasquilla undertook his research program, science was not institutionalized in Colombia as a socially appreciated activity.⁶³ Therefore, his work was rather idiosyncratic. The government's support for the

⁶⁰ "La lepra: Etiología, historia y profilaxis, por el Dr. Juan de D. Carrasquilla L. Memoria presentada al tercer Congreso Científico Latinoamericano que ha de reunirse en Rio Janeiro en Agosto de 1905," Revista Médica, 1905, 25 (301):289-302, on pp. 297-8; also: E. Marchoux, and V. Chorine, "Transmission of *B. leprae* by Fleas," International Journal of Leprosy, 1940, 8 (1):135.

⁶¹ C.F. Baker, "Las pulgas y las enfermedades," Revista Médica, 1905, 25 (299):278-9; see also: C.F. Baker, "Fleas and Disease," Entomological News, 1905, 16 (5):143-144. On yellow fever, see: François Delaporte, The History of Yellow Fever: An Essay on the Birth of Tropical Medicine (Cambridge: The MIT Press, 1991).

⁶² "Cuarta comunicación del señor doctor D. Juan de Dios Carrasquilla L., sobre lepra," Revista Médica, 1899, 21 (240):257-66.

⁶³ On the institutionalization of scientific activities in Colombia, see the nine volumes published by Colciencias, Historia Social de la Ciencia en Colombia 9 vols. (Bogotá: Tercer Mundo, 1993).

creation of a serological research institute faded away when the first dissenting opinions emerged. The Colombian government believed that scientific research was a luxury that the impoverished country could not afford. Carrasquilla's dream of the establishment of a Pasteur Institute in Colombia, emulating the institutions founded in Saigon, Tunis, Morocco, and Tangiers at the end of the nineteenth century, was never accomplished.⁶⁴

Nonetheless, from the early twentieth century on, physicians undertook a limited amount of clinical, epidemiological, and bacteriological research within the lazarettos. Indeed, as discussed previously, García Medina performed epidemiological investigations, and Montoya achieved the most complete historical, epidemiological and clinical study of leprosy ever accomplished in Colombia.⁶⁵ Other doctors also undertook some research on leprosy. For example, Joaquín Fajardo, who worked as a physician at *Agua de Dios*, published findings which corroborated an old theory by the Norwegian Carl Wilhelm Boeck about the transmission of leprosy through the feces.⁶⁶ However, the research budget was restricted, laboratory equipment was scarce and rudimentary, and the lazaretto's physicians hardly had time to carry out investigations. Therefore, most of the studies, such as clinical observations about prevalent types of leprosy, hypotheses on possible sites and manners of entrance of the leprosy bacillus, and conclusions on the value of applying diverse therapies, were completed without the use of sophisticated laboratory equipment.⁶⁷ After Carrasquilla, another Colombian bacteriologist, Jorge Martínez Santamaría, attempted the

⁶⁴ On the Pasteur Institutes in Asia and Africa, see: Anne Marie Moulin, "Patriarchal Science: the Network of the Overseas Pasteur Institutes," Science and Empires: Historical Studies about Scientific Development and European Expansion Ed. Patrick Petitjean, Catherine Jami, and Anne Marie Moulin (Dordrecht: Kluwer Academic Press, 1992), pp. 307-322.

⁶⁵ Juan Bautista Montoya y Flórez, Contribución al estudio de la lepra en Colombia (Medellín: Imprenta Editorial, 1910).

⁶⁶ Joaquín Fajardo, "El bacilo de Hansen se encuentra en las deposiciones de los leprosos," Repertorio de Medicina y Cirugía, 1924, 16-3 (183):117-124.

⁶⁷ Carlos J. Cleves Vargas, "Formas curables de lepra," Repertorio de Medicina y Cirugía, 1917, 8-10 (94):458-65.

cultivation of the leprosy bacillus. Martínez presented his investigation entitled "Study of the culture of Hansen's bacillus and some considerations on acid-fast group bacilli," to the third Colombian medical congress held in Cartagena in 1918. His research won the annual award of the National Academy of Medicine. However, Martínez's work remained an individual and isolated effort with no impact on the national struggle against leprosy.⁶⁸

Searching for a Vaccine: The Mysteries of *Mycobacterium leprae*

In Colombia, bacteriology was a powerful vehicle for the ideology of science. The Academy of Medicine had held discussions on the germ theory and its implications for medicine since the 1880s.⁶⁹ Although Colombian doctors were also acquainted with Koch's investigations, Pasteur's accomplishments were better known, as French academic influence was stronger.⁷⁰ Among the enthusiasts of bacteriology in Colombia, the veterinary doctor Federico Lleras Acosta was a truly devoted Pasteurian. He belonged to what the historian and philosopher of medicine Anne Marie Moulin has called a worldwide "monastic order" which held a spiritual goal--to spread the gospel which they believed was the Pasteurian "scientific revolution." Indeed, Pasteurians acted like a religious order, for they had a "saint" as their founder, and they obeyed a monastic rule, the Pasteurian methodology.⁷¹ Since the early twentieth century, Lleras was involved, together with García Medina and

⁶⁸ This study was apparently never published; it was mentioned in the annual report of the activities of the Academy of Medicine; see: Julio Aparicio, "Informe," Revista Médica, 1918, 36 (433-5):319-361, on p. 356.

⁶⁹ See for example, the address by Abraham Aparicio to the then Society of Medicine of Bogotá in: Revista Médica, 1884, 8 (93):378-380, and Louis Pasteur, "Rabia: Nuevos hechos que sirven para el conocimiento de esta enfermedad," (Translation from Bulletin Général de Thérapeutique Jan. 1883) Revista Médica, 1883, 7 (83):481-486.

⁷⁰ News about Koch's work were also translated in Colombian medical journals; see for example: "Congreso de Berlín," Revista Médica, 1890, 14 (155):243-245; and Carlos Esguerra and Pablo García Medina, "Tratamiento de la tuberculosis por el profesor Robert Koch," Revista Médica, 1891, 14 (157):336-341.

⁷¹ Moulin, "Patriarchal Science," pp. 307-308.

others, in the limited Colombian "hygienic movement." As a veterinarian, he was unable to deal with leprosy patients, but as a bacteriologist he was aware of the potential significance of achieving the cultivation of Hansen's bacillus. The ultimate goal was to produce a vaccine. On the other hand, Lleras was convinced that the prophylaxis and therapeutics of leprosy should be determined by bacteriology. Consequently, he decided to focus his research efforts on culturing Hansen's bacillus.⁷²

Cultivation of *M. leprae* presented many difficulties. Since 1874, when Gerhard A. Hansen published his first observations of the bacillus and his theories about the causative agent of leprosy, many researchers cultivated acid-fast bacilli from leprosy nodules. The name "acid-fast" came from a peculiarity of *Mycobacteria* discovered by Paul Ehrlich in 1882. Tubercle bacilli were difficult to stain, but once stained with gentian violet and saturated aniline solution in water, they resisted decolorization by mineral acids. Thus, this peculiarity became the principal method of differentiating them from other microorganisms.⁷³ The bacilli cultivated from leprosy nodules were considered as the cause of the disease, although attempts to replicate the work of other researchers always failed. Many bacteriologists, starting with Hansen himself, tried to cultivate the bacillus, but they were unable to maintain a viable culture outside the human organism.⁷⁴ In 1933, in the first issue of the International Journal of Leprosy, E. Loewenstein from the State Serotherapeutic Institute in Vienna, claimed that acid-fast bacilli reported as true *M. leprae* were not. He obtained results similar to those obtained by researchers who claimed such cultivation, using bacilli from individuals not infected by leprosy. Acid-fast bacilli, Loewenstein argued, were extensively found in nature; indeed, they proliferated in milk and butter. What

⁷² Miguel Jiménez López, "Discurso pronunciado el 29 de Marzo en la Academia Nacional de Medicina por el profesor Miguel Jiménez López," Revista de la Facultad de Medicina, 1938, 6 (10):540-3.

⁷³ Yoshio Yoshie, "Advances in the Microbiology of *M. leprae* in the Past Century," International Journal of Leprosy, 1973, 41 (3):361-371, on p. 363.

⁷⁴ Rogers and Muir, Leprosy, pp. 152-157.

researchers took for the true Hansen's bacillus were just contaminations from laboratories or from human skin (*Smegma bacillus*). Loewenstein then suggested using blood from leprosy patients instead of skin tissue to make cultures. He also described improved methods for taking uncontaminated blood specimens and for preparing the media.⁷⁵

Following Loewenstein's suggestions, Lleras started his attempts to cultivate the microorganism. Because the hospital in Bogotá lacked a leprology service, due to the disease-apart approach, he worked in the private office of the physician José I. Uribe. Lleras presented his first results to the National Academy of Medicine in 1933 when he claimed that he had obtained an acid-fast bacillus in pure culture on Petraghani's medium from the blood of patients suffering from nodular leprosy. Since at this time there were no animals known to be receptive to the inoculation of Hansen's bacillus, the three Koch postulates (isolation-culture-inoculation) could not be fulfilled. However, according to Lleras, "this bacillus has the same morphology, grouping and staining reactions as the *Mycobacterium leprae* found in the lymph and nasal mucus in leprosy."⁷⁶ Lleras prepared an antigen in order to find confirmation of the specificity of his bacillus in the "complement fixation reaction," also called "Bordet and Gengou's reaction". Jules Bordet and Octave Gengou had developed an antibody research technique in 1901 based on the ability of antigen-antibody complexes to fix complement non-specifically.⁷⁷ The better-known application of this technique was the Wassermann reaction, which some French call "Bordet-Wassermann reaction," for diagnosis of syphilis, developed by August Wassermann, a disciple of Koch.⁷⁸ The causative agent of syphilis, *Treponema pallidum*,

⁷⁵ E. Loewenstein, "Bacteriological Diagnosis of Leprosy by Means of Blood Culture, International Journal of Leprosy, 1933, 1 (1):39-44.

⁷⁶ Federico Lleras Acosta, Revista de la Facultad de Medicina, 1933, 1 (12):929-935, on p. 932.

⁷⁷ Arthur M. Silverstein, A History of Immunology (San Diego, CA: Academic Press, 1989), p. 166; and Anne Marie Moulin, Le dernier langage de la médecine: Histoire de l'immunologie de Pasteur au Sida, (Paris: Presses Universitaires de France, 1991), p. 92.

⁷⁸ Ludwik Fleck, Genesis and Development of a Scientific Fact ed. by Thaddeus Trenn and Robert K. Merton (Chicago: The University of Chicago Press, 1935/1979), pp. 52-81.

was like *M. leprae*, non-culturable. As Carrasquilla once did, Lleras used the analogy between syphilis and leprosy to make his antigen. Lleras also prepared an anti-virus using Alexandre Besredka's method which he combined with the antigen to produce a specific treatment for leprosy.⁷⁹ However, Lleras expressed his doubts:

"I have read many journals, but between us [in Colombia] the bibliography is always insufficient, thus many times we believe we have made a discovery, but it proves to be a matter already solved somewhere else."⁸⁰

Although isolation still played the main role, according to the new rhetoric by the new public health leaders, scientific research was an important instrument for the success of the anti-leprosy campaign. In 1934, López's Liberal government created the Central Laboratory of Leprosy Research, and appointed Lleras as its director. The purpose of the institution was to advance studies on the etiology, pathology, epidemiology, serology, clinics, and therapeutics of the disease.⁸¹ At this laboratory, located in the recently created anti-leprosy dispensary of Cundinamarca, Lleras had access to a larger number of patients on whom to test his reaction. He also counted on the collaboration of physicians of the three Colombian leprosaria and the departmental dispensaries. Lleras's research programs obtained the approval of the National Board of Hygiene, and they were included as an important aspect of the anti-leprosy campaign. Previously, the government and physicians themselves considered scientific research a private vocation, but the new sanitary authorities conceived of the research and study of leprosy as part of the state responsibilities and a

⁷⁹ At this time in Colombia, the term "virus" was still used in the original sense of a toxic or poisonous microorganism.

⁸⁰ Federico Lleras Acosta, "Algunas consideraciones sobre la biología del bacilo de Hansen" (Comunicación hecha a la Academia de Medicina el día 30 de Mayo de 1933) Revista de la Facultad de Medicina, 1933, 1 (12): 929-935., p. 930.

⁸¹ "Decreto Número 1649 de 1934," Revista de Higiene, Segunda época, 1934, 15 (3-10):362-3.

component of the struggle against leprosy.⁸² The Liberal government supported Lleras's bacteriological research for nationalistic reasons. Inspired by the example of Mexico, Peru and the Spanish republic of the 1930s, López's regime generated a strong rhetoric as to the necessity of creating a national culture through the study of the peculiarities of the country.⁸³ However, the advance of scientific investigation of leprosy was not supported by an encompassing project of social reform to modify the conditions of poverty which contributed to the expansion of the disease.

Lleras looked for legitimation of his investigations in research centers such as the Rockefeller Institute in New York and the Oswaldo Cruz Institute in Rio de Janeiro. In March of 1934, he visited the Rockefeller Institute, where some researchers studied his cultures and gave him valuable advice about research strategies. In 1935 Lleras started inoculating mice and applying some of the suggestions he procured at the Rockefeller Institute.⁸⁴ Regarding Lleras's links with the Oswaldo Cruz Institute, he maintained an ongoing relation with H.C. Souza Araujo, a renowned Brazilian leprosy researcher, who later visited Colombia to provide professional advice to the anti-leprosy campaign. Souza Araujo prepared antigens from several strains of bacilli isolated by various workers on leprosy in different parts of the world, among them, Lleras's acid-fast cultures. By injecting those antigens into leprosy patients, Souza Araujo concluded that those prepared from Lleras's cultures were the most active, this is, they provoked the strongest reaction in

⁸² Federico Lleras Acosta, Pruebas de la especificidad de un bacilo aislado de la sangre de los leprosos Comunicación hecha a la Academia Nacional de Medicina el día 16 de Junio de 1936 (Bogotá: Imprenta del Departamento, 1936), p. 2.

⁸³ Aline Helg, La educación en Colombia 1918-1957 (Bogotá, Fondo editorial CEREC, 1987), pp. 138-144.

⁸⁴ Lleras prepared an emulsion of his culture mixed with Reynals's T factor (testicular extract which heightened infections, diffused the inert particles, and produced an anticancerous effect) and inoculated a monkey (*Macacus rhesus*) obtained from the yellow fever department of the Rockefeller Institute. *Ibid.*, pp. 147-154. This aspect of his research was the most innovative, according to later scientific scrutiny. See: Roberto Franco et al., "Los trabajos del Profesor Federico Lleras Acosta, sobre lepra, Revista de la Facultad de Medicina, 1938, 6 (11):569-584.

patients. Thus, Lleras's antigens were a potentially effective tool for diagnosis.⁸⁵

In 1936, three years after his first communication to the Academy of Medicine Lleras announced new results. He had kept his bacilli in pure culture and made over forty subcultures.⁸⁶ Lleras concluded that his complement fixation reaction was specific; thus it insured an early diagnosis because of its sensitivity. Lleras believed that his reaction would become the basis of the scientific prophylaxis of leprosy.⁸⁷ With Lleras's reaction, the very definition of the disease changed. Early diagnosis of leprosy proved the existence of more leprosy sufferers than the statistics had previously showed by revealing infection in individuals lacking clinical symptoms.⁸⁸ Bacteriology rather than clinical medicine started to demarcate the distinction between health and disease.

Nevertheless, the situation surrounding the cultivation of Hansen's bacillus was indeed confused in the 1930s. Several researchers claimed success in growing *M. leprae* in vitro using a variety of media cultures and diverse temperatures and techniques.⁸⁹ However, when other leprosy workers replicated these methods, they hardly ever achieved

⁸⁵ H.C. Souza Araujo, "Current Literature: Intradermo-reacções em leprosos com antigenos de culturas de bacillos acido-alcool resistentes," International Journal of Leprosy, 1938, 6 (4): 597.

⁸⁶ Lleras claimed he had obtained surprising results with his application of the complement fixation reaction to leprosy. Lleras used a methylic extract of the culture of "his" bacillus as antigen: he performed 3,038 reactions on leprosy patients with an outcome of 96% positive reactions. To prepare his antigen he used Bouquet and Nègre's technique for their tuberculous methylic antigen. For the test, he used Kolmer's technique. See: Lleras, Pruebas de la especificidad de un bacilo, pp. 3-7.

⁸⁷ Federico Lleras Acosta, "The Specificity of a Bacillus isolated from the Blood of Lepers," (Summary), International Journal of Leprosy, 1938, 6 (1):91-93.

⁸⁸ Lleras, Pruebas de la especificidad de un bacilo, pp. 76-77.

⁸⁹ Among the scientists who claimed successful cultivation of *M. leprae* were Malcom H. Soule and the team of Earl McKinley and Elizabeth Verder. All of them used minced chick embryo suspended in Tyrode's solution as a culture medium for *M. leprae* taken from Puerto Rican leprosy patients. The Brazilian H.C. de Souza Araujo also reported cultivation of the bacillus using glycerin potatoes (Shiga's technique), Petroff media and Loewenstein media. See: Earl B. McKinley and Elizabeth Verder, "Cultivation of *Mycobacterium leprae*," International Journal of Leprosy, 1933, 1 (3):351-3; and also H.C. Souza Araujo, "Essais de Culture du *Mycobacterium leprae* (*Coccothrix leprae*, Lutz 1886) par la Méthode de Sumiyoshi-Shiga," International Journal of Leprosy, 1933, 1 (1):45-47.

the same conclusions. For example, Souza Araujo reported that the cultivation by Shiga's method was impossible, whereas cultivation by Loewenstein's method was successful. Other scientists, though, reported Loewenstein's method a failure. An endless list of researchers claimed success in culturing Hansen's bacillus using their own methods, while reporting qualified failure when replicating other workers' research.⁹⁰ Accordingly, Lleras's results generated a strong polemic in Colombian medical circles in which professional rivalries were not absent. Many doctors doubted Lleras's claims simply on the grounds that, after all, he was not even a physician. A commission from the National Academy of Science studied Lleras's results, and presented a sober report. They reviewed the status of the numerous attempts to cultivate *M. leprae* and to inoculate it in animals, followed by an extensive bibliography. Finally, they concluded that Lleras's research was extremely valuable, that his results were not definitive, and that the most important part of his work was the serological reaction. They also proposed that he continue his investigation.⁹¹

In 1938, an editorial in the International Journal of Leprosy stated that Lleras's results were "especialmente interesantes" and recommended further investigation.⁹² The Liberal Colombian government, Lleras's permanent sponsor, acted on Souza Araujo's recommendation that Lleras be sent to Cairo, for the Fourth International Leprosy Congress. As the Colombian press had once claimed Carrasquilla a hero, now it was Lleras' turn. The headlines announced: "Brazilian leprologists demand Lleras's presence" [at the Cairo conference].⁹³ However, Lleras never arrived at Cairo. He died in Marseille on March 18, 1938, on his way to the conference. The Colombian government re-named the Central

⁹⁰ See: "Correspondence: Cultivation of *M. leprae*," International Journal of Leprosy, 1936, 4 (2):234-7; Bernice E. Eddy, "Attempted Cultivation of *Mycobacterium leprae*," Ibid., 1937, 5 (1):31-43; and "Current Literature," Ibid., 1934, 2 (2):241.

⁹¹ Franco et al., "Los trabajos del profesor Federico Lleras Acosta," p. 574.

⁹² "The Immunology Problem (Editorial)," International Journal of Leprosy, 1938, 6 (1):95-101, on p. 98.

⁹³ El Tiempo Nov. 24, 1937, p. 1.

Laboratory of Leprosy Research the "Institute of Leprosy Research Federico Lleras Acosta." The International Leprosy Congress in its official conclusions lamented the death of the official Colombian representative.⁹⁴

The organizers of the Egyptian conference had initially arranged three subcommittees on the issues of classification, treatment, and epidemiology and control of leprosy. However, a fourth subcommittee on in vitro cultivation of *M. leprae* was appointed during the course of the meeting, no doubt because of the relevance that the problem of cultivation of Hansen's bacillus had acquired within the last decade. The official report of the fourth subcommittee consisted of a brief statement, signed by researchers who had themselves maintained that they cultured Hansen's bacillus. According to the report, claims of successful cultivation of *M. leprae* were impossible to duplicate; therefore, the problems of growing Hansen's bacillus in vitro were not yet solved. The committee also encouraged researchers to continue working along this line.⁹⁵ In 1939, the Brazilian scientist P.C.R. Pereira reviewed various reactions proposed for diagnosing leprosy, among them, Lleras's reaction. He found a large discrepancy between his observations and those of Lleras.⁹⁶ In 1941, U.S. scientists S.H. Black and H. Ross reported a comprehensive trial of Lleras's complement fixation reaction. They observed a small proportion of positive reactions among the bacteriologically negative cases of leprosy and the occurrence of positive results in cases of persons not afflicted with the disease. Thus, they concluded that

⁹⁴ "Congreso Internacional de Lepra: Conclusiones fundamentales," Revista de Higiene, 1938, 19-9 (9):4-24, on p. 8.

⁹⁵ A dissenting member of the committee, the Swedish leprologist John Reenstierna, who visited Colombia in 1936 and studied Lleras's cultures, contradicted the statement. He presented instead another claim: that the Soviet pathologist and bacteriologist Wassily Ivanovitch Kedrowsky and a few other researchers had actually succeed cultivating *M. leprae*. See: "Reports on Meetings," International Journal of Leprosy, 1938, 6 (3):408-9.

⁹⁶ P.C.R. Pereira, "Current Literature: A reação de Lleras Acosta na leprose," International Journal of Leprosy, 1939, 7 (1):123.

the reaction was of no practical value for the diagnosis of leprosy.⁹⁷

That was the final scientific judgment on Lleras's work. Regarding the cultivation of *M. leprae*, Lleras failed as all others had failed. Growing Hansen's bacillus in vitro and producing a vaccine for leprosy proved to be an impossible task. Despite the claims, scientists never acknowledged that the organism had been cultured. The field of bacteriological research on leprosy was dispersed during Lleras's lifetime: researchers in diverse institutional settings in Europe, the United States, South America, Japan, and India tried to solve the mysteries of *M. leprae*. This dispersion/diversion made it difficult to find homogeneous conditions of replicability. Thus, it was impossible for leprologists to accept the claim that the culture of Hansen's bacillus was achieved by a member of their community. Lleras's investigations played an influential role in developing a bacteriological research tradition on leprosy which colleagues and disciples carried on after his death.⁹⁸ However, as part of the leprosy control program, Lleras's studies were not as influential. The Liberal regime relied excessively on the chances of producing a vaccine rather than promoting social and sanitary reform to eradicate poverty and malnutrition. Although the exact mode of transmission of *M. leprae* was still unknown at this time, the example of Norway showed that it was possible to arrest the spread of leprosy through improving the living conditions of the population. Furthermore, as Lleras advanced his studies, the leaders of the campaign against leprosy in Colombia increasingly took part in the new international crusade against leprosy. In the late 1930s this participation became more visible and institutionalized.

⁹⁷ S.H. Black and H. Ross, "The complement fixation reaction of Lleras in leprosy," International Journal of Leprosy, 1941, 9 (2):270.

⁹⁸ For example: J. Ignacio Chala informed in the first ordinary session of the Leprological Society about the studies on serotherapy advanced at the Institute of Leprosy Research; see: Revista Colombiana de Leprología, 1939, 1 (2):146-8; other examples are: Jacobo Tovar Daza, La Reacción de la Leprolina Lleras (Bogotá: Editorial Santafé, 1936); Bernardo de Castro Gómez, "Sedimentación globular en la lepra," Revista de Higiene, 1938, 19 (3):9-25; Manuel García Núñez, "Valor diagnóstico de la punción ganglionar en la lepra," Revista de Higiene, 1938, 19 (11):5-45; and J. Ignacio Chala H., Lucien Ch. Brumpt, and Federico Lleras Restrepo, "Punción de la médula ósea en la lepra," Revista Colombiana de Leprología, 1940, 1 (4):246-256.

The Anti-Leprosy Campaign Becomes International

After the first international leprosy congress in Berlin in 1897, subsequent congresses were held in Bergen in 1909, in Strasbourg in 1923, and in Cairo in 1938. From the first conference, leprologists aspired to establish a permanent international organization to arrange successive meetings and to gather epidemiological and statistical information about the disease. This ambition was partially accomplished with the creation of a journal called Lepra, Bibliotheca Internationalis which had a brief existence (1900-1915).⁹⁹ In the late 1920s the Philippine government created the Leonard Wood Memorial for the Eradication of Leprosy in the Philippines, as a memorial to the Governor who took so much interest in improving the conditions of leprosy patients at Culion. Some of the funds for this organization were contributions made by U.S. citizens. The purpose of the new institution was to advance scientific research on leprosy and to find adequate treatments for the disease. The Memorial funded the construction of several research laboratories at the islands' principal leprosarium, in Culion, and at the island of Cebu which had the highest prevalence of leprosy in the Philippines at the time. In 1931, the Memorial, together with the Leprosy Commission of the League of Nations, organized an international conference on leprosy in Manila. Many of the world's leading leprologists attended, including Robert G. Cochrane from the British Empire Leprosy Relief Association, Etienne Burnet, from the Leprosy Commission of the League of Nations, Ernest Muir from the Calcutta School of Tropical Medicine, and others. The main purposes of the conference were to study methods of leprosy control, including diagnosis and treatment, prevention and research, and to coordinate the scattered research on leprosy. This meeting was the origin of the International Leprosy Association and of its publication, the International Journal of Leprosy, whose first issue was published in 1933. The journal is still being published, with

⁹⁹ Édouard Jeanselme, La Lèpre (Paris: G. Doin, 1934), on p. 558. An international organization for the study of leprosy called *Société Internationale de Leprologie* was planned between 1925 and 1926, but it was never really active.

the addition in 1966 of the subtitle "And Other Mycobacterial Diseases."¹⁰⁰

Although no Colombian physicians participated in the Manila conference, they became familiar with the new developments in leprosy research. In 1935 Arturo Robledo, director of the Board of Hygiene, sent letters to internationally renowned leprologists, with a questionnaire about contagion, isolation, modern therapies, and other relevant aspects of a leprosy control program. The answer by Etienne Burnet was published by the Revista de Higiene, but his main points were analogous to Enciso's approach suggested three years earlier.¹⁰¹ In addition, Colombian leprosy officials began publishing information about the anti-leprosy campaign in the International Journal of Leprosy.¹⁰² In 1938 the Colombian government created the National Ministry of Work, Hygiene and Social Welfare, one of the nine departments of which was the *Departamento de Lucha Antileprosa* (Department for the Anti-Leprosy Campaign). The news about this event appeared in the International Journal of Leprosy under the title "A new era in Colombia."¹⁰³

In the same vein, the resolutions of the 1938 Cairo conference were widely diffused in the Colombian medical press. The Colombian government had already put into practice some of the main conclusions of this congress.¹⁰⁴ For example, the international convention determined that the struggle against leprosy was essentially an official responsibility and that governments should encourage leprosy research. Colombian hygienic authorities had already made both decisions. These determinations were important to end the disease-apart

¹⁰⁰ Esmond R. Long, "Forty Years of Leprosy Research: History of the Leonard Wood Memorial (American Leprosy Foundation) 1928 to 1967," International Journal of Leprosy, 1967, 35 (2):239-303, on pp. 239-247; see also: Perry Burgess, Born of those Years (New York: Henry Holt, 1951), pp. 78-80.

¹⁰¹ "Respuesta del Profesor Burnet a una carta dirigida por el Departamento Nacional de Higiene a los más eminentes Leprólogos del mundo," Revista de Higiene, 1935, 16 (7-10):156-163.

¹⁰² See for example, "Leprosy News: Changes at Agua de Dios," International Journal of Leprosy, 1934, 2 (4):487; and "Current Literature: [Colombia] (Leprosy in the Republic of Colombia)," Ibid., p. 498.

¹⁰³ "Leprosy News and Notes," International Journal of Leprosy, 1939, 7 (3):415-6.

¹⁰⁴ See: "Congreso internacional de lepra," Revista de Higiene, 1938, 19 (9):4-32, on pp. 4-5.

approach to leprosy:

"the Congress, while appreciating to the full the work of voluntary organizations in antileprosy work, wishes to emphasize strongly its opinion that the control of leprosy is essentially the responsibility of the governments of the countries where the disease is common, and that antileprosy work should form an important integral part of the public health programmes of such countries. It is also urged that governments should do everything possible to initiate and encourage research with a view to improving methods of leprosy control."¹⁰⁵

The conference also enhanced the role of the state by recommending the use of pure hydnocarpus oil and esters prepared in official institutions, as opposed to proprietary preparations available on the market.¹⁰⁶ Physicians had practiced this procedure in Colombia since 1935, when the government prohibited the application of expensive treatments by private doctors within the lazarettos. The recommendations of the Cairo leprosy congress aimed at lessening the role of religious mission societies which since the great alarm about leprosy in the late nineteenth century, had played a considerable role worldwide in caring for lepers, raising funds for their support, and spreading the stigma of leprosy as a unique and loathsome disease. However, leprologists gathered at international conferences of leprosy and within the International Leprosy Association did not possess the political power to generate these changes. The actual incorporation of leprosy within the public health systems of the nations where it was endemic occurred after World War II. As the historian Zachary Gussow has pointed out, three series of circumstances brought about the end of treating leprosy as a disease apart in the 1940s: the development of the sulfonamides, the termination of colonial empires, and the creation of the World Health

¹⁰⁵ "Reports of Meetings: The Cairo Congress," International Journal of Leprosy, 1938, 6 (3):377-424, on p. 386.

¹⁰⁶ Ibid., p. 399.

Organization.¹⁰⁷ This was the approach that the Colombian government and physicians had been trying to implement since the 1930s, battling against prejudices the medical community itself had helped to create.

In one more instance of the internationalization of the anti-leprosy campaign, in 1939, the Colombian government invited the Brazilian doctor H.C. Souza Araujo to assess the country's control program against the disease. The leprologist, together with some of the lazarettos' physicians, carried on several studies of the leprosy problem, among them, a study on healthy children who were still living in the lazarettos, and an epidemiological inquiry of leprosy in *Caño de Loro*.¹⁰⁸ Souza Araujo also gave a course on the disease which was attended by thirty-two physicians, twenty-four of them members of the leprosy staff of the Ministry of Hygiene.¹⁰⁹ One of the results of his visit was the creation of the Colombian Leprological Society, a move which Etienne Burnet had also recommended in his 1929 visit to Colombia. Indeed, a group of physicians founded a leprological society with forty members to advance research on leprosy and to provide scientific bases for the campaign against the disease. Ten of these members joined the International Leprosy Association. With governmental sponsorship, the Leprological Society started publishing a quarterly journal, the Revista Colombiana de Leprología. The journal contained a section with varied information from the main research sites on leprosy and about leprosy control programs of other nations.¹¹⁰ Colombia was effectively entering a new international

¹⁰⁷ Zachary Gussow, Leprosy, Racism, and Public Health: Social Policy in Chronic Disease Control (Boulder, CO: Westview Press, 1989), pp. 218-224.

¹⁰⁸ H.C. Souza Araujo, Mario Bernal Londoño, and Manuel Medina, "Encuesta epidemiológica sobre los niños considerados sanos en el lazareto de Agua de Dios," Revista Colombiana de Leprología, 1939, 1 (2):78-93; and Tomás Morales Muñoz, Mario Bernal Londoño and H.C. Souza Araujo, "La lepra en Colombia, Encuestas epidemiológicas: Lazareto de Caño de Loro-Cartagena," Ibid., 1939, 1 (1):6-35.

¹⁰⁹ See: H.C. Souza Araujo, "La lucha antileprosa en el Brasil," Ibid., 1939, 1 (1):36-47; and of the same author, "Curso de Leprología," Ibid., pp. 48-53.

¹¹⁰ "Acta de instalación de la sociedad colombiana de leprología," Revista Colombiana de Leprología, 1939, 1 (1):54-56.

network of institutions dealing with epidemiological, clinical, and bacteriological research on the disease. Souza Araujo's presence did not provoke the same professional jealousy of Colombian doctors which Dom Sauton's visit had produced in the early twentieth century. Since Souza Araujo's sojourn enhanced national expertise, Colombian physicians gained respect for him. In the late 1930s, the medical community felt more secure as a professional body in its competition with foreign specialists.

At this time, the international image of the nation still worried Colombian elites. Arturo Robledo, appointed Ministry of Work, Hygiene and Social Welfare, declared that one of the purposes of the new leprological society, besides joining the "scientific world," was to dispel false information about the country, referring no doubt to the exaggerated Colombian statistics on leprosy which had become known worldwide.¹¹¹ In fact, a doctoral thesis on medicine titled La lutte antilépreuse en Amérique du Sud (The anti-leprosy campaign in South America) done in Montpellier in 1932 still reported the exaggerated figure of 31,000 cases of leprosy infection in Colombia.¹¹² In 1939, Darío Maldonado Romero, physician at *Agua de Dios* and member of the Leprological Society, referred to the account of leprosy in South American countries by H.W. Wade, chief physician of the Leonard Wood Memorial, who presented a rate of 0.3% of the Colombian population as infected with leprosy.¹¹³ Although a strict census had not been conducted, Maldonado objected to this data. He applied a formula used by Souza Araujo which determined that each leprosy patient had likely infected six persons in twenty years before being isolated. Studying *Agua de Dios*'s statistics, Maldonado calculated that each patient in Colombia had been free during an average time of 12.36 years, thus estimating the number of unknown cases as 7,170. He then concluded that the incidence of leprosy in Colombia was only

¹¹¹ Arturo Robledo, "Propósitos," Revista Colombiana de Leprología, 1939, 1 (1):1-2.

¹¹² See: "Current Literature," International Journal of Leprosy, 1934, 2 (3):374.

¹¹³ H.W. Wade, "South America and Leprosy," (Editorial) International Journal of Leprosy, 1938, 6 (4):553-560, on p. 554.

0.192%, a lower figure than that of Norway in the peak year of 1856 (0.23%), and significantly lower than Wade's rate (0.3%). Of these, Maldonado reported, 57.31% were under control either in the lazarettos or in local dispensaries.¹¹⁴

Mario Bernal Londoño, Director of the Department for the Anti-Leprosy Campaign, addressed a national medical conference in 1940. He reported that between 1936 and 1939 the Department had carefully surveyed half of the Colombian municipalities. Bernal explained that in 1936 there were 797 newly infected individuals out of a scanned population of 9,798; that is, 8.13% were infected with leprosy. By contrast, in 1939 only 661 new cases were discovered, out of an examined population five times larger (48,979); that is, only 1.35% were contaminated. According to Bernal, the decrease of infecting foci was a result of the effective control by the sanitary institutions. He also reported that 2,055 patients with a "non-contagious" certificate had been discharged from the leprosaria, and the number of admissions at the lazarettos had diminished significantly in the same period. Furthermore, 1,498 children who were previously living within the lazarettos were now under the care of the Colombian state in five asylums located outside leprosaria.¹¹⁵ Indeed, the problem of children was a main focus of the preventive strategy. In 1939, Elvira Lleras Restrepo, a daughter of Federico Lleras Acosta, had started an association of women to collect funds for leprosy. The association's goal was to prevent infection with leprosy by organizing homes and schools to separate children from their diseased parents. As had become customary, she argued in terms of the economic value of a healthy population for a modern nation:

¹¹⁴ Darío Maldonado Romero, "La incidencia de la lepra en Colombia," Revista Colombiana de Leprología, 1939, 1 (3):186-9; about leprosy in Norway, see: Th. M. Vogelsang, "The Termination of Leprosy in Norway: An Important Chapter in Norwegian Medical History; Together with a Portrait of Armauer Hansen circa 1873," International Journal of Leprosy, 1957, 25 (4):345-51, on p. 345..

¹¹⁵ Mario Bernal Londoño, "Anotaciones alrededor de la campaña de profilaxis antileprosa," Revista Colombiana de Leprología, 1940, 1 (4):257-260.

"it is absolutely indispensable that children accommodated in nurseries a few days after being born find afterwards the institution which educates and gives them the training which incorporates them into the social life, and instead of being persons who constitute a charge for the State they will be healthy individuals whose work contributes in effective ways to improving the national economy."¹¹⁶

There was an obvious need for Colombian physicians and elites to look "modern." This was probably one of the motives behind a 1940 description of the "Research Institute Federico Lleras Acosta" which was published in the Revista Colombiana de Leprología. Indeed, its director, Luis Patiño Camargo, characterized it as a modern institution with laboratories of serology and biological chemistry, microbiology, anatomy and pathology, medical offices, conference room, administrative offices, library, museum of anatomy and pathology, pavilion for patients, and an area for experimental animals. According to Patiño, the institute gave special importance to the scientific study of the transmission of leprosy, since without the understanding of the mode of communication, the prophylaxis of leprosy was only empirical. A team of five full-time researchers set up a research program on diverse aspects of leprosy control.¹¹⁷ Again, a wave of optimism based on a renewed confidence in scientific methods permeated the medical community and the sanitary authorities.

By the end of the 1920s, it became clear for most Colombian physicians that the model of segregation to control leprosy had failed. Public expenditure on leprosaria was excessive, there was no actual isolation within the lazarettos, and the disease was still propagating. Physicians started to suggest sanitary reform and economic development as more effective ways to check the spread of the disease. Some minor changes in the leprosy

¹¹⁶ Elvira Lleras Restrepo, "Preventorios infantiles," Revista Colombiana de Leprología, 1939, 1 (3):149-150, on p. 149.

¹¹⁷ Luis Patiño Camargo, "Instituto de Investigación Federico Lleras: Objeto de este centro de investigación-organización técnica y estudios que se adelantan," Revista Colombiana de Leprología, 1940, 1 (4):261-6.

policy occurred in the late 1920s through expanding the use of chaulmoogra oil to all patients segregated in leprosaria and through empowering the medical profession with therapeutic decisions and organization of the lazarettos. However, more meaningful changes occurred when the Liberal governments of the 1930s began to put into practice a new economic criterion. Within a wider frame of public health, new sanitary officials with a new rhetoric of economic modernization and progress, began to reverse the disease-apart approach to leprosy. The care and prevention of the expansion of leprosy became a responsibility of the National Department of Hygiene, instead of being the duty of a separate entity which was the General Bureau of Lazarettos. However, lazarettos still remained places of confinement, and isolation was still the main strategy to deal with leprosy.

These innovations were related to more complex social and economic transformations of Colombian society. When the Liberals won the presidential election in 1930, they introduced principles of state rationalization. The cost of leprosy control which was no more than the expenditure on leprosaria took most of the total assigned to public health. The strategy of the new government was reducing the cost involved in supporting the lazarettos, instead of enlarging public health resources. However limited the public health budget was, it represented an initial effort to arrest the spread of tuberculosis, hookworm infection, yellow fever, and other diseases. The obsession of the medical community with leprosy gave place to a more realistic attitude towards other public health needs of the Colombian population. The needs of the economic expansion of the 1930s, and the significance that the Liberal regime of Alfonso López Pumarejo (1934-1938) granted to social issues played important roles in the new interest in public health.

The government created regional dispensaries in some of the departments to survey the propagation of leprosy. Early detection of new cases of infection, instead of rigid isolation for all patients became the key to the new approach. In the same way that physicians of earlier periods had instructed the Colombian public on the high contagiousness of leprosy, now physicians tried to educate the community on the low

infectiousness of the disease. They also eased the policy of strict segregation for all infected cases, replacing it by an approach of treating new infections earlier in dispensaries, and isolating only advanced and contagious cases. However, after decades of being frightened by the dangers of the disease, to see leprosy as a common ailment, instead of a special condition colored with moral overtones, was not easy. The complete insertion of leprosy within hospitals and medical institutions was not accomplished at this time in Colombia, nor in other countries.

The Colombian rhetoric of leprosy control changed as a result of national and international circumstances. At the national level, the Colombian state needed to rationalize its expenditure on leprosy. This strategy was possible due to international innovations in the use of chaulmoogra and hydnocarpus oil and their derivatives which made them less repulsive and painful for patients. These oils needed to be applied for long periods of time in order to be effective, and did not always stop the advance of the infection. However, until the 1940s these were the only remedies capable of achieving some cure for leprosy. The use of these medications helped changing the belief that leprosy was an incurable disease.

Besides prevention, research on leprosy was another relevant element of the new strategy to arrest its spread. Federico Lleras Acosta, the leading bacteriologist researching on leprosy focused on the cultivation of the etiological agent of the disease with the intention of producing a vaccine. Although he failed in this attempt, since *M. leprae* proved impossible to culture with the techniques available at the time, Lleras's work generated a tradition of leprosy research in Colombia. Despite the rhetoric of López's regime in terms of its commitment to the lower classes, there was no radical transformation of the inequitable Colombian society. The dominant classes chose to rely on medical technology rather than to promote social and economic reform to eradicate leprosy. They preferred to count on the promise of a vaccine for leprosy rather than alleviating the harsh living conditions of the poor.

Epilogue and Conclusions

"In theory, isolation of all infectious cases should break the chain of infection, and eventually result in the eradication of the disease. As a matter of fact, many cases are infectious for years before they are diagnosed and isolated, and the fear of compulsory segregation makes patients hide their condition as long as they can, precisely during the period when it would be most curable. Consequently, institutional isolation alone has not given the results expected of it and has failed as a control measure even when applied rigorously and on an adequate scale."¹

Until at least the 1940s most governments (either colonial or independent) treated leprosy as an unique and exceptional disease: religious missions from Great Britain, France, Germany and the United States, among others, created leprosaria in colonial territories and appropriated the care and treatment for leprosy patients. This was a worldwide movement which started with the alarm of the outbreak of leprosy in the 1860s in Hawaii, intensified with the news of Father Damien's death in the 1890s, and concluded after World War II. As Zachary Gussow explained, after the war three events marked the end of the disease-apart approach to leprosy: the synthesis of sulfones, the dissolution of the colonial empires, and the creation of the World Health Organization (WHO). Sulfones, first applied to leprosy in 1941, offered prospects of arresting the infection faster and more effectively than chaulmoogra and related oils. The termination of the colonial empires altered the status of religious missions. They saw themselves as guests in foreign territories, whereas in the previous era they had considerably more power to operate. The foundation of the WHO to provide advice for governments on a wide variety of public-health matters made possible what leprologists had advocated since the early twentieth century: to produce a general picture of the disease, its epidemiological variation in different regions, classification and research. One of the main declarations of the first WHO expert committee on leprosy gathered in Brazil in 1952 was to condemn the disease-apart approach and the strategy of compulsory isolation (see the epigraph of this section). In most countries leprosy began to

¹ WHO, First Report, Expert Committee on Leprosy (Geneva: WHO, 1953), pp. 8-9.

be secularized in the late 1940s and 1950s, when control programs for leprosy and institutions for leprosy patients became integrated into general health programs.²

The history of leprosy in Colombia in many ways followed international patterns: segregation practices based on medieval notions of infection before the nineteenth century; a period of panic with strong revival of old myths and prejudices about leprosy, together with the scientific reconstruction of the disease as extremely contagious in the late nineteenth century; reversal of the idea of its high infectiousness with diffusion of hopes as to the curability of the disease in the 1920s; and a slow beginning of the incorporation of leprosy in general public health systems, with increasing scientific research in the 1930s. However, the national context also played a significant role in shaping the history of the disease. Changes in the conceptualization of leprosy and the modifications of public health policies to control the disease are also explained by the professionalization of medicine. Indeed, Colombian physicians rose to a position of "cultural authority" with a consequent loss of prestige and power for other groups, such as, missionaries, popular healers, herbalists, and empirics. Thus, they were able to medicalize leprosy.

This study started with segregation procedures devised in medieval times to exclude lepers. Although there is no conclusive evidence that illnesses grouped under the name "lepra" in medieval Europe were Hansen's disease, leprosy as constructed in the nineteenth century acquired all connotations and characteristics of those medieval afflictions. More than a disease in today's medical sense, medieval leprosy was a moral condition. People feared social and cultural contamination. Medieval society physically excluded lepers, but integrated them spiritually through the church. Lepers were objects of charity and abomination at the same time. People believed they were elected to suffer on earth to get directly to heaven. However, they were emblems of sin and decay. These religious notions were well entrenched in medieval European society. The intensification of the persecution

² Zachary Gussow, Leprosy, Racism, and Public Health: Social Policy in Chronic Disease Control (Boulder, CO: Westview Press, 1989), p. 224.

of lepers in the twelfth century was closely related to the emergence of a bureaucracy specialized in the arts of government. After the sixteenth century, the institutions which made of leprosy a sinful disease disappeared, and leper hospitals faded away. However, those institutions remained in certain places, like Scandinavia, Spain, and Portugal, among others.

Via the Spanish culture, leprosy (better known as *elefancia*) in New Granada possessed most of the connotations of medieval leprosy. *Elefancia* was understood as a moral disease, associated with spiritual decay. The disease was also customarily confused with syphilis, and probably with many others illnesses. Physicians as well as the public believed that *elefancia* was infectious. The notion of infection meant that leprosy corrupted the body, producing general decay. As the concept of specificity of diseases was absent, doctors understood leprosy as emanating from diverse and numerous causes. In the same manner, they formulated a myriad of remedies to treat the disease. These ideas were still in place at the time of the advent of the germ theory in the nineteenth century.

During the entire period of colonial domination leprosy was a political issue which opposed the metropolitan government and regional interests. The provinces struggling for autonomy constantly demanded the foundation of local hospitals for lepers, but the colonial government denied those petitions. Lepers were then secluded in the San Lázaro hospital of Cartagena, and occasionally in leper houses that some provinces organized. As in leper hospitals in Europe, the purpose of these institutions was to care for the soul of the leper. It was understood that there was not much to do for the body. The practice of isolating patients--a practice which was based on old traditions--served the purpose of keeping lepers apart, out of sight. However, leprosy, as poverty or death, was one of the facts of life, better discerned and accepted within a religious context. Diseases, *elefancia* in particular, were believed to be God's retribution. By the 1870s, leprosy patients themselves in search for a place to survive without being harassed founded town-lazarettos. The government, in its role of supporting private charity, purchased the land on which leprosy patients could live. Patients were allowed to cultivate the land and build their houses. The government

provided allowances for leprosy sufferers, and charitable institutions contributed to the support of leprosaria. The government and philanthropy provided for lepers, but they had to accept being excluded from society. However, their separation was only partial, since they lived with their families, and the town-lazarettos developed commercial and social relations with their neighbors.

Two events marked the history of leprosy during the nineteenth century. First, the Norwegian physician Gerhard A. Hansen initially observed the leprosy bacillus (*M. leprae*) in the 1870s, and theorized about the microorganism as the specific causative agent of leprosy. Prevalent medical theories at the time indicated that leprosy was inherited. Partisans of heredity and contagion argued over the mode of transmission of leprosy. Proving the contagiousness of the disease was difficult, since the bacillus defied all attempts at cultivation in vitro. Therefore, advocates of contagion could not offer scientific evidence from the point of view of bacteriology to demonstrate that the microorganism was the specific cause of the disease. However, they defeated hereditary theories by using epidemiological data provided by physicians working in the colonial empires. The construction of leprosy as a microbial disease was the outcome of a negotiation within the scientific community of bacteriologists and pathologists.

Second, the Western world discovered leprosy in their nineteenth-century colonial territories. The disease, which had been virtually forgotten, came to international attention in the 1860s with the outbreak of leprosy in the Hawaiian islands. Furthermore, with the publicized death of the Catholic priest Father Damien, the dread of leprosy revived. Colonialists discovered real or presumed leprosy everywhere. Leprosy was then reconstructed not only as a highly contagious and dangerous disease, but as incurable and "tropical." Leprosy became an ailment of racially "inferior" people. Many feared that leprosy would infest Europe and the United States, and a new phase of persecution of leprosy patients began. Since the mode of transmission of leprosy was unclear, segregation of lepers became the only weapon to control the spread of the disease. Since leprosy has a very long incubation period and slow evolution, sequestration of patients had to be

perpetual. The model of moderate isolation of patients in hospitals which had been practiced for many decades in Norway became known worldwide. The incidence of leprosy infection in Norway decreased significantly not only through isolation, but because of the improvement of general living conditions of the population.

However, only one aspect of the Norwegian approach was imitated in the colonial world--segregation. The leper colony of Molokai (Hawaii) became the contrasting model to leprosy control. The result in Hawaii and other colonies was open persecution and oppression of leprosy patients. Imperial administrators developed a singular repugnance for leprosy sufferers. Facing the absence of an intermediate host which acted as a vector of leprosy, as in the case of other "tropical" diseases, the attack against the agents of disease became attack against patients themselves, the only known vectors of leprosy. The results of the policy of compulsory segregation were disastrous. Actual leprosy patients hid themselves until the devastating effects of the disease were impossible to conceal. Meanwhile they had many chances of infecting other people. In addition, concealment of patients frustrated the opportunities of arresting the disease in its initial stages when remedies like chaulmoogra oil produced better effects. Otherwise, the only hope was spontaneous recovery, which sometimes occurred.

As the imperialist nations "rediscovered" leprosy in their colonial world in the late nineteenth century, Colombian physicians "rediscovered" leprosy as endemic in their own "colonial" territories: in lands located far away from urban areas as well as among poor rural immigrants coming into the cities. Two processes developed together in Colombia in the last third of the nineteenth century: professionalization of medicine and reconstruction of leprosy as a bacterial disease. Medicine became a distinct occupation recognized by Colombian society at this time. Physicians organized societies, published journals, renovated medical education, and began advising the government in matters of public hygiene and the sanitation of ports. Colombian physicians wanted to construct a national medicine in order to study national characteristics. They also wanted to conform to what they saw as "universal" medical expertise. Their contacts with the profession in Europe

increased, and particularly France became the model to imitate.

At the same time, doctors constructed leprosy as an extremely contagious and alarming disease. Heredity, which was until the 1870s the accepted scientific explanation for the mode of transmission of leprosy among European medical circles, was never a dominant theory within the small Colombian medical community. One of the reasons for this absence was the weakness of academic medicine. Since the medical community as an agent for the diffusion and reconstruction of medical theories was notably feeble, there were no dominant paradigms in terms of the origin of leprosy until the 1870s. However, the situation was different when it came to theories of contagion. Microbial theories acquired great prestige in Colombia. The medical community acted as an institutional vehicle for the diffusion and reconstruction of bacteriological explanations of disease causation. Physicians embraced these theories and rejected humoral, miasmatic and hereditary concepts of the causation of leprosy.

Doctors claimed possession of expert knowledge about the disease. However, leprosaria were in the hands of philanthropic institutions. Physicians initiated a battle to take over Colombian lazarettos. One of the main strategies to medicalize leprosy was to provoke fears through exaggerating the number of leprosy sufferers. The medical community also diffused the notion that leprosy was extremely contagious and dangerous and that it was spreading alarmingly among the Colombian population. As a means to build and enhance their cultural authority, they wanted to demonstrate that charity was incapable of dealing with the problem of leprosy.

As a result, the Colombian government approved the first laws of compulsory segregation of lepers by the end of the nineteenth century. The disease was set apart not by the patients' will, but because they were defined as a new socially dangerous category. *Elefanci acos* ceased to be objects of compassion and charity. They became a social calamity and a danger to be fought. Colombian citizens added to their obligations the one to denounce lepers. Leprosy sufferers needed to be secluded not as an exercise of the Catholic virtue of charity as in previous periods, but out of fear and disgust. The

conclusions of the leprosy congress held in Berlin in 1897 only gave international sanction to what Colombian physicians and the government had already put into practice: compulsory segregation of leprosy patients.

However, the Colombian state was powerless in the late nineteenth century. Regional elites engaged in civil wars, and medical projects to control leprosy were delayed. The early twentieth century saw the consolidation of the Colombian state, and the formation of a national bourgeoisie. The nation initiated its inclusion within the world economy through the expansion of coffee exports. Modernization of the country became a national priority. This was the time to put previous medical recommendations into practice. The elites saw leprosy as an obstacle for these modernizing and civilizing projects. However, the impediment was rather symbolic: the statistics about leprosy which Colombian doctors had previously diffused in international conferences and journals became known worldwide. According to numerous publications on the geography of leprosy at the time, Colombia competed with India for primacy in terms of incidence of leprosy. This was a contest that the Colombian elites refused to win. As to the civilizing project, Colombia desperately needed foreign capital, investments, and white immigration. The country also needed to increase its exports within the international market, particularly to the United States. The image of the nation as ravaged by leprosy became a significant barrier to the advancement of these projects.

The Colombian government, with the expert assistance of the medical community, adopted a two-fold strategy. At the international level, physicians advertised new and, according to them, more accurate statistics of leprosy incidence in Colombia. They portrayed previous figures as exaggerated, mainly accusing religious orders of overstatement. They also maintained that the policy of leprosy control was successful, since most of the patients were already isolated. At the national level, the state started to take control of lazarettos, and physicians began to medicalize leprosy. The government enacted extremely severe laws in order to control lazarettos. Their main purpose was to block the extensive social and economic links of the town-lazarettos with the external

world. The rationale for this position was to arrest the spread of the disease. Lepers were confined within leprosaria. The government also attempted to expel from the lazarettos a large population free of leprosy, mainly composed of relatives of leprosy sufferers. The period in which the Colombian state began to control leprosaria coincided with the formation/modernization of the Colombian state. Refinement of the arts of government, definition of citizenry (for example, through the establishment of such obligations as denouncing victims of leprosy), and exclusion of a social group defined as "lepers" came together. Colombian society began to recognize doctors' legitimate capacity to conduct medical issues. Such confidence allotted by society reinforced physicians' cultural authority, and the medical authority reinforced the social order. Apart from individual cases such as Juan de Dios Carrasquilla, doctors as a professional group dealt with the disease with the same aversion as Western colonists demonstrated in their handling of leprosy in Hawaii and other colonies. For Colombian doctors, sufferers of leprosy, mainly mestizo peasants and artisans, belonged to "inferior" races.

The disease-apart approach was institutionalized by establishing two distinct domains of public health: a special official agency was set up for leprosy, while all other diseases were handled through a different department. However, in spite of the efforts of physicians and the government, leprosy was not thoroughly medicalized. Patients actively opposed compulsory segregation with attempts at converting lazarettos into prison-asylums. Non-leprous people remained at the lazarettos. After all, these had been ordinary towns until the state took control of them in the early twentieth century. On the other hand, the medicalization of leprosy was only partially accomplished because of its demarcation as a disease-apart. Since leprosaria were not hospitals, physicians were unable to order treatments. Scientific medicine competed with popular healers, herbalists, and charlatans within the lazarettos.

By the 1920s, it became evident that the strategy adopted to control leprosy was a failure. Doctors had been previously reluctant to recognize the close connection between poverty and leprosy. In the past, the majority of physicians preferred to hold onto a narrow

bacteriological reductionism, according to which the unique cause of leprosy was *M. leprae*.

However, by the 1920s more doctors contended that the propagation of leprosy was associated with penury, and that poor living conditions were the leading cause of disease and mortality among the Colombian population. This new medical outlook was related to broader social issues that exploded in Colombian society at this time within the context of the crisis of a Conservative regime which had been in power since the late nineteenth century.

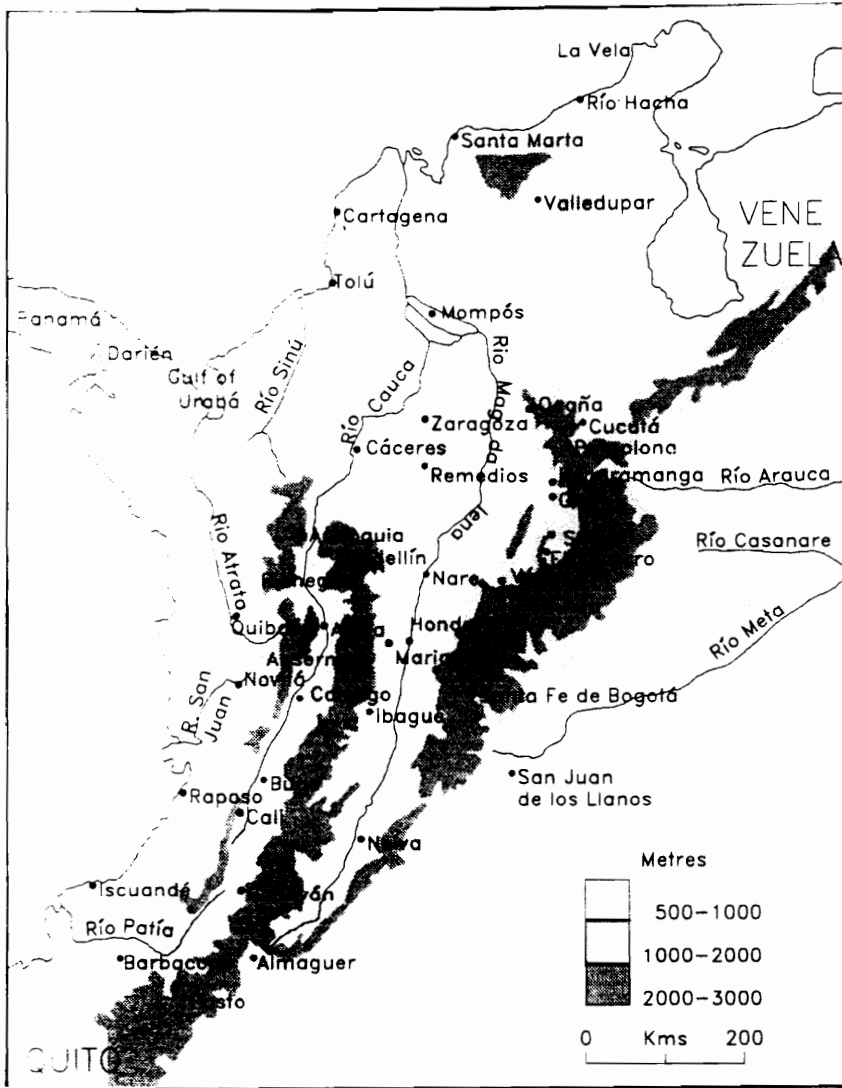
By the 1930s, a new Liberal regime with a renewed interest in modernization and economic development took the first measures to alleviate the severe rule to which leprosy patients had been hitherto subjected. The main purpose was, however, the rationalization of public expenditure on leprosy. The expense of this disease alone was about 80 per cent of the total public health budget. In terms of mortality, leprosy was far from being the most serious killer of the Colombian population. Diseases such as tuberculosis, malaria, yellow fever, hookworm, and others demanded the attention of the medical community and public health authorities. The government opened the first regional dispensaries in the departments where the disease was most endemic. The purpose was to detect early infections and to offer treatment based on chaulmoogra and related oils and derivatives. Segregation laws were eased in the sense that only extreme cases were to be isolated in leprosaria. The emphasis was on prevention and early detection of newly infected cases. At the same time, as a means to rationalize the already excessive cost of lazarettos, the government began to discharge from leprosaria patients who, according to bacteriological tests, were non-infective. However, this policy also generated social problems. In some cases, patients who owned a medical certificate of non-infectiousness were disfigured. Most of these individuals were compelled to return to leprosaria, as society rejected them. In the previous era, doctors were obsessed with contagion and isolation; now their main concern was the exorbitant expense of lazarettos. Instead of expanding the budget to cover the newly recognized requirements of public health, the new sanitary authorities tried to spend a smaller proportion on leprosy. In no case did leprosy patients' interests and needs

rank highly in the physicians' agenda.

Another aspect of the new strategy to control leprosy was to advance scientific research. However, most of the research conducted at the time aimed at searching for a vaccine. Bacteriological reductionism was still the main paradigm for the control of leprosy. The medical critiques of the 1920s of a leprosy control policy excessively focused on the microorganism while neglecting social conditions were taken only rhetorically. The government and the medical community favored the technocratic approach in the search for a vaccine rather than the promotion of social reform as a means to improve general living conditions. The proposals of Juan de Dios Carrasquilla were in the minority within the medical community. He advocated treating leprosy like any other disease, building hospitals for leprosy patients, and encouraging therapeutic research. The case of Norway, where the spread of leprosy was arrested even before Hansen postulated the bacillus as its causative agent, and the scientific/compassionate proposals of Carrasquilla demonstrate that the history could have been different. However, the interests of the medical community and of the different Colombian governments prevailed over leprosy patients' interests. For more than half a century, lepers were persecuted in Colombia in the name of science.

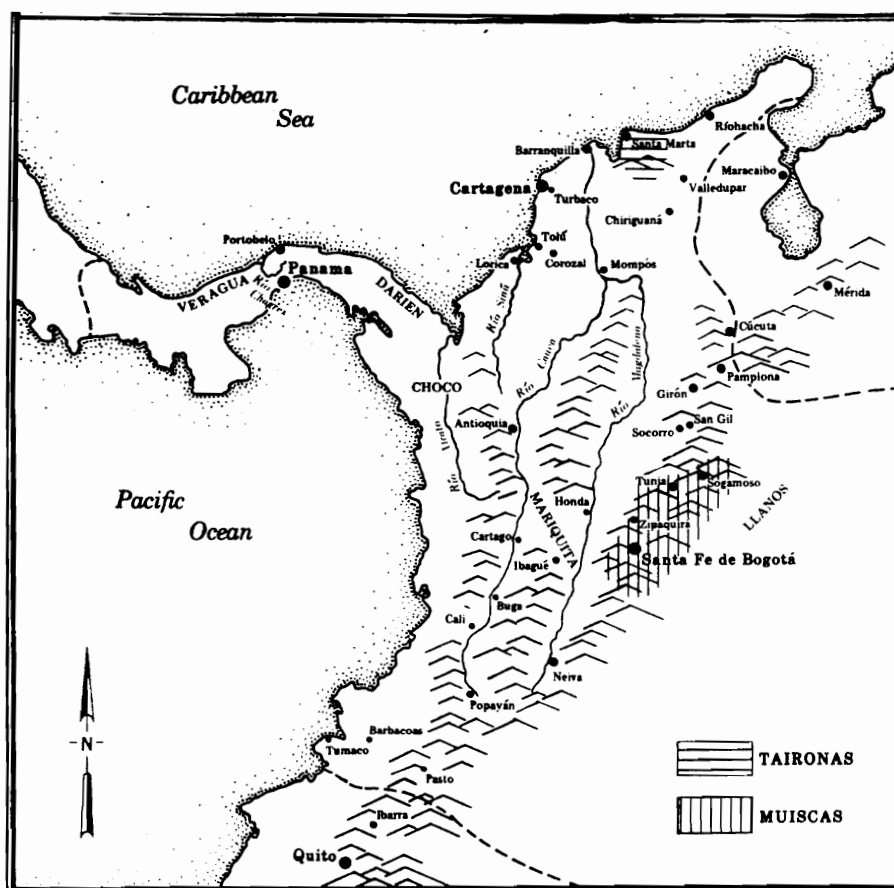
Leprosy certainly has gone beyond the simple existence of *Mycobacterium leprae*. As an infection produced by a bacillus, leprosy in itself has no meaning. However, because it occurs within the human context, leprosy generates responses, modifies people's lives and ideas, and becomes imbued with cultural and political significance. There is no escape from culture and from human values. We cannot have a purely scientific image of an unadulterated relation between a microorganism and a human host. Culture and society inevitably mold science. However, this does not mean that we cannot have science. We can analyze, criticize, be aware of, and change our cultural values which in turn would modify scientific practices.

Appendix



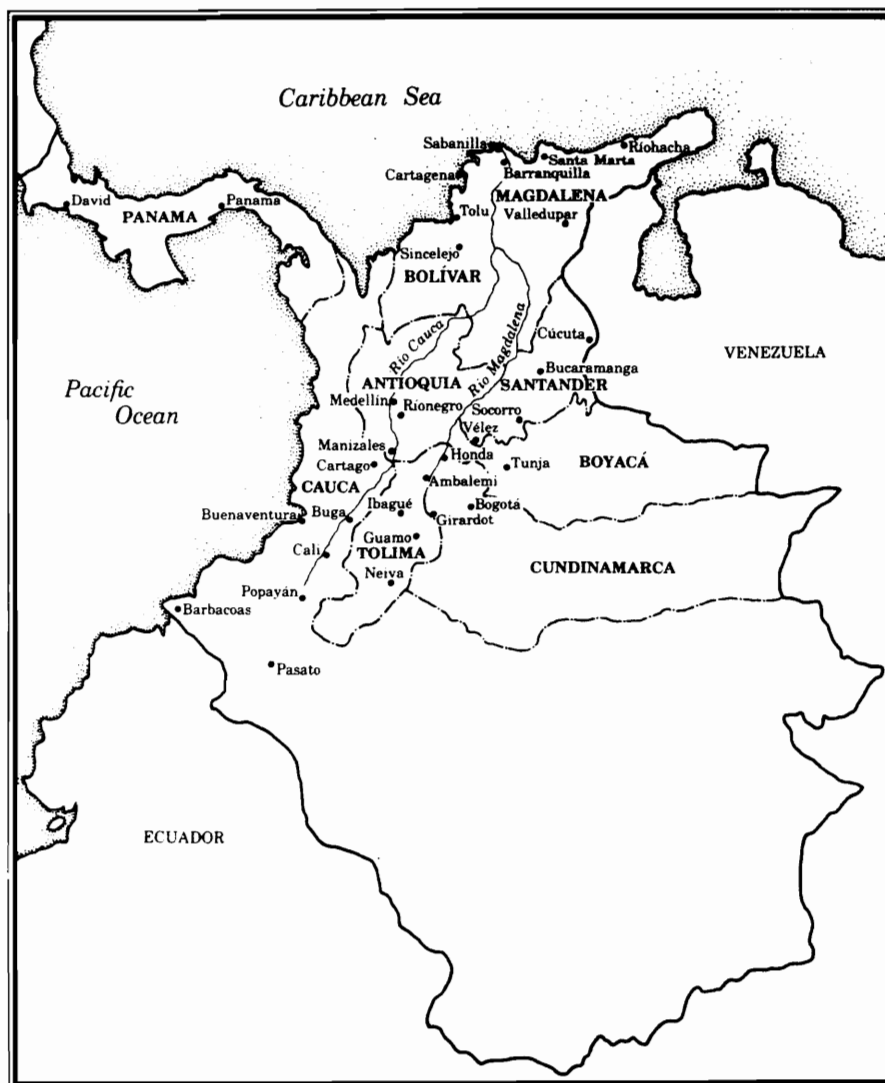
Map 1. New Granada: Relief

Source: Anthony McFarlane, Colombia before Independence: Economy, Society, and Politics under Bourbon Rule (Cambridge: Cambridge University Press, 1993), p. 11.



Map 2. Colonial New Granada

Source: David Bushnell, The Making of Modern Colombia: A Nation in Spite of Itself (Berkeley: University of California Press, 1993), p. 4.



Map 3. The federal Republic (1858-1885)

Source: David Bushnell, The Making of Modern Colombia: A Nation in Spite of Itself (Berkeley: University of California Press, 1993), p. 123.



Map 4. Contemporary Colombia

Source: David Bushnell, The Making of Modern Colombia: A Nation in Spite of Itself (Berkeley: University of California Press, 1993), p. 171.

Glossary

Alcaldes examinadores mayores: physicians appointed by the crown in fifteenth-century Spain to inspect apothecaries' shops and license medical practitioners; renamed *protomédicos* in the sixteenth century.

Alcaldes de lepra: physicians appointed by the crown in fifteenth-century Spain to identify lepers.

Alcaldí as mayores: colonial and republican administrative unit.

Aguardiente: anise-flavored alcoholic beverage made from the molasses of sugar cane.

Azumbre: liquid measure, about two liters.

Bubas: venereal disease.

Cabildo: town councils formed by local residents either Spaniards or Creoles (native-born whites).

Cédula real: a royal decree signed by the king.

Ciudad letrada: Spanish American colonial city, site of ecclesiastical and civil bureaucratic power.

Colegio: educational institution that provided secondary-level instruction.

Colegio nacional: name given between 1850 and 1867 to the three major universities located in Bogotá, Cartagena and Popayán.

Corregimiento: colonial and republican administrative/judicial unit, less important than the *gobiernos*.

Comuneros: members of a commune; supporters of a popular revolt.

Cuartillo: fourth part of a *real*.

Cuartillo sobre el azumbre de aguardiente: colonial tax to support San Lázaro hospitals.

Departamento de Lucha Antileprosa: Department for the Antileprosy Campaign.

Derecho de anclaje de naví os: anchoring ships fee.

Dirección General de Lazaretos: General Bureau of Lazarettos.

Dirección Nacional de Higiene: National Bureau of Hygiene.

Elefancia: leprosy.

Elefanci aco: leper.

Elefantiasis: leprosy (elephantiasis)

Gafo (gapho): leper.

Gobierno: territorial/administrative units of New Granada, created by Spanish conquerors during the sixteenth century; above *corregimientos* and *alcaldí as mayores*.

Guaco: plant found in America from Mexico to Paraguay (a liana); popular remedy to treat leprosy, rheumatism, cholera, and poisonous bites.

Hospitales de San Lázaro: leper hospitals.

Junta de Beneficencia: Board of Charity.

Junta de Higiene: Board of Hygiene.

Lázaro: leper or leprosy.

Lazarino: leper.

Lepra (s): leprosy (leprosy)

Libres: mestizo

Mal de San Antonio: leprosy (considered a different disease until the 1880s).

Mal de San Lázaro: leprosy.

Mayoral: administrator of leper hospitals.

Mestizaje: the process of miscegenation.

Mestizo: half-breed of European and Indian blood.

Oficina Central de Lazaretos: Central Office of Lazarettos.

Otoba: American tree, similar to a nutmeg tree, whose fruit was a popular remedy for leprosy.

Patacón (patacones): currency in New Granada during the colonial period.

Protomedicato: a board of physicians appointed by the Spanish crown to license practitioners, arbitrate disputes between them, and punish malpractice and quackery.

Protomédico: a chief physician of the crown appointed to license and supervise medical practitioners.

Real: silver coin worth 34 *maravedí s* (the basic unit of accounting).

Santafereño: native from Santafé de Bogotá.

Sociedad de San Lázaro: a charitable society to support lepers segregated in lazarettos.

Teatina: Theatin, a type of grass; popular remedy for leprosy.

Zábila: aloe; a liliaceous plant; popular remedy for leprosy.

Zambo: born of an Indian and a black person.

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