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Articles

Fractured Understandings of Leprosy in Bombay City, 1867–1933

Vivek Neelakantan

Abstract. Between 1867 and 1933, the understanding of leprosy within the colonial medical establishment in Bombay city was fractured on two issues: whether leprosy was contagious and whether individuals with leprosy should be segregated. This article explores how legislation paved the way for resolving these issues in Bombay between 1867 and 1933. Furthermore, the article seeks to problematize the notion of "diseased bodies" or "lepers" through legislation to protect healthy individuals from possible degeneration. Leprosy in Bombay reflected the anxieties of the city's business elite who were averse to accommodating patients from other parts of British India. In addition, the article studies leprosy and "lepers" by analyzing archival documents and public health reports within the context of Bombay city.

Keywords. leprosy, colonial Bombay, private philanthropy, leper asylum, vagrant and indigent lepers, *Lepers Act III*, segregation, contagion, medicine

Résumé. Entre 1867 et 1933, la lèpre au sein de l'institution médicale coloniale de la ville de Bombay a été débattue autour de deux questions : était-elle contagieuse et les personnes atteintes devaient-elles faire l'objet

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d'une ségrégation? Cet article explore la manière dont la législation a ouvert la voie à la résolution de ces questions à Bombay pour la période étudiée. En outre, l'article cherche à problématiser la notion de « corps malades » ou de « lépreux » au sein d'une législation qui visait à protéger les individus sains d'une éventuelle dégénérescence. La lèpre à Bombay reflétait les inquiétudes de l'élite économique de la ville, peu encline à accueillir des patients originaires d'autres régions de l'Inde britannique. L'article se penche également sur la lèpre et les « lépreux » en analysant des documents d'archives et des rapports de santé publique portant sur la ville de Bombay.

Mots-clés. lèpre, Bombay colonial, philanthropie privée, asile de lépreux, lépreux vagabonds et indigents, *Lepers Act III*, ségrégation, contagion, médecine

The leprous butcher's case caused a little excitement in the city of Bombay. In July 1889, Rama Tookia, the leprous butcher was charged by the municipality at the Girgaum Police Court with bringing meat unfit for human consumption from Coorla to Bombay, and the magistrate promptly fined him fifty rupees. Subsequently, in addressing the court, the magistrate said that as Rama had no money to pay the fine, a distress warrant would be issued and his bullock and cart would be confiscated so that he would be prevented from conveying meat from Coorla in the future. The magistrate contended that there was considerable objection to sending Rama to jail, as there was no means of segregating him from the other prisoners except by subjecting him to a good deal of hardship. If he was sent to prison, he would have to be incarcerated in the civil side of the jail where he would probably be ordered to remain for fifteen days at the expense of government, and at the risk of spreading the disease to the other prisoners.[1] The leprous butcher's case highlighted two issues: (1) the inadequacy of the law in dealing with minor offences committed by leprosy patients; and (2) the futility of applying quarantine measures – apparent in the management of epidemic diseases such as cholera, smallpox, or the plague – to leprosy.

Leprosy is caused by *Mycobacterium leprae*. In the twentieth century it was known as Hansen's disease after the Norwegian microbiologist A.G.H. Hansen isolated the microorganism in 1873. The disease is debilitating. The leprosy bacillus multiplies slowly, usually in the sheaths of peripheral nerves. Losing sensation in discrete patchy areas of the skin is one of the earliest symptoms of infection.[2] A "bear claw" foot or hand becomes one of the characteristically maiming and stigmatizing features of leprosy.[3] Owing to the afflic-

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tion of the nerves connecting the dermis with *Mycobacterium leprae*, the face loses its "free play of expression."[4] Due to social stigmas historically associated with the disease, patients often evaded treatment.

The Hindus stigmatized leprosy not only due to its external symptoms but because the disease was associated with bad karma.[5] According to the *Manusmriti* (traditionally the most authoritative of the books of the Hindu code), an atrocious person becomes leprous. The lepers formed one of the five classes of people with infirmities registered across British India, the other four being the insanes, the idiots, the deaf and dumb, and the blind.[6] In the vernaculars of Bombay presidency, leprosy was known as *rākta-pittī*.[7]

Bombay city was selected for this study for four reasons. First, among the presidential towns (Bombay, Madras, and Calcutta), Bombay was unique as the city witnessed the rise of Indian industrialists, particularly from the Parsee and Gujarati Bania community. Second, the introduction of Western education during the nineteenth century resulted in the growth of an English-educated local elite in the city. The elite assumed the role of new arbiters of appropriate conduct and strove to distinguish themselves from those who were poor, uncivilized, and "in need of improvement."[8] Third, the missionary activity supporting those with leprosy in Bombay city was less prominent compared to other parts of British India.[9] Fourth, the city of Bombay provided a backdrop for therapeutic studies on leprosy by Bhau Daji, Sakharam Arjun, J.S.P. Rodrigues, and T.S.B. Williams.

This article examines the history of leprosy in Bombay city, beginning in 1867 from the perspective of local history. That year coincided with the publication of the Royal College of Physicians' report. To quote the findings of the report:

> In the case of our vast Indian empire with its 150 millions of inhabitants, the question of the food of the people in its probable relations to the wide spread prevalence of leprosy and other endemic disorders, is a matter of the highest interest in an economical as well as in a scientific point of view. That a marked change in the habits of the native population will ensue upon the increase of diverse industries, the improved cultivation of the land, the less frequent recurrence of famines, and the consequent amelioration of their general condition from year to year, and that better food, better clothing, and better housing, with

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> greater personal cleanliness, will lead to the abatement of leprosy, may be confidently anticipated.[10]

The above quotation from the report had strong sanitarian underpinnings and was at odds with Dr. Henry Vandyke Carter (from the Indian Medical Service and an anatomy professor at Grant Medical College in Bombay) who proposed the segregation of leprous individuals.[11] Likewise, the *Bombay Act VI, 1867* stipulated the criminalization of leprosy patients.[12] In 1889, the death of Belgian priest Father Damien who contracted the disease after several years of associating with leprosy sufferers at Molokai, Hawaii, served as a catalyst to local newspapers in Bombay city (particularly the *Times of India*) to sensationalize the issue of leprosy in Bombay. The newspaper castigated the colonial administration for its lack of earnestness in legislating the leprosy issue.[13]

The *1898 Leper Act* introduced the segregation and medical treatment of "pauper lepers" and empowered the police to arrest "pauper lepers" after due examination before a medical officer (inspector of lepers) and a magistrate.[14] But by 1933, the implementation of the act faltered due to two reasons: (1) the legal ambiguities with respect to who constituted a "pauper leper"; and (2) administrative disagreements between the Bombay government and the Municipal Corporation with reference to accommodating and subsequently repatriating leprous beggars who had migrated to the city from other parts of India.[15] By the early 1930s, the segregation of leprosy patients was questioned by Leonard Rogers, a founding member of the Royal Society of Tropical Medicine and Hygiene, on the grounds that isolation and treatment was applicable only to patients in the early stages of the disease.[16]

In examining the history of leprosy in Bombay city between 1867 and 1933, this article contends that the colonial government was reluctant to contribute finances to alleviate the leprosy problem and instead relied on local private philanthropy. There was a distinct class dimension in which leprosy was framed in Bombay. The idea of arresting "pauper lepers" and isolating them in asylums was uncritically accepted by the Bombay urban elites who were afraid of contracting leprosy.

A Historiographical Overview

Subsequent to the publication of Edward Said's *Orientalism* (1978) and the application of Foucauldian frameworks of power/knowledge

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by medical historians of the 1980s and 1990s, catchphrases such as "colonizing the body" have become synonymous with colonial medicine.[17] While it is legitimate to critique the "civilizing mission," one of the tenets of colonial medicine is the tendency among historians to lump together the West into a singular colonial force.[18] But the colony-versus-metropole dichotomy fails to recognize joint partnerships between indigenous elites and the colonial state, with particular reference to the establishment of hospitals and asylums.[19]

Because leprosy was never a top priority in British India, there is a considerable gap in recordings related to the disease.[20] Subsequent to the Sepoy Mutiny (1857), the colonial state emphasized the welfare of British troops and any investigation of disease tended to focus on either smallpox or cholera.[21] The Raj authorities sidelined leprosy in favour of sanitation.

A fetish for social control, stigma, and social exclusion was the legacy left behind since the publication of Michel Foucault's *Madness and Civilization*. The historiography of colonial psychiatry veers toward colonial motivations for starting mental asylums as a means of social control and the legitimization of colonial rule.[22] Historians of colonial medicine have adopted a similar approach. To the present, a Foucauldian perspective has influenced the writing of leprosy histories worldwide.[23]

The first breakthrough in the historiography of leprosy came with the 1996 publication of Sanjiv Kakar's influential article "Medical Developments and Patient Unrest in the Leprosy Asylum, 1860 to 1940." In his article, Kakar contends that the study of leprosy in colonial India offers fresh insights into the complex process of forming colonial health policies. There were great similarities in Western and Indian perceptions of leprosy and the common tradition of discrimination.[24] Furthermore, Kakar notes that at the end of the nineteenth century, the leprosy asylum was pivotal not only in treatment but also in confining infectious cases of the disease. The colonial state tolerated asylums and the segregation of patients but was unwilling to incur any expenditure on leprosy.[25] Kakar's article provides an overview of the local specificities of leprosy in colonial India. In the case of Bombay city, Parsee philanthropy rather than missionary medicine played a dominant role in the establishment of leprosy asylums.[26] Jo Robertson argues that leprosy asylums were founded due to the coming together of missionary, medical, and political supports. The article emphasizes the geographic specificity of leprosy asylums within the broader context of

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the international circulation of information about leprosy control and asylum creation.[27]

The underlying theme in Jane Buckingham's monograph "Leprosy in Colonial South India" is the expression of colonial power through law, particularly through the use of police power to confine vagrant leprosy sufferers. The history of leprosy, according to Buckingham's hypothesis, is part of the wider history of the poor. The vagrant Indian poor with leprosy were the most visible to the British. The poor were the recipients of British institutional care, test cases for new leprosy cases, and targets of confinement. Buckingham argues that British medicine was neither derivative of medical science at the centre of the empire nor dependent on it for direction. The British medical treatment of leprosy was at times circumscribed by the presidency and local medical initiatives. British medicine was not the inexorable source of colonial power radiating from Britain to India. As Britain moved away from the Government of India, the presidency and local levels of authority diffused the capacity of British medicine to act as the expression of colonial power. It became subject to British medical authority in India and negotiated opposition within the British medical ranks. The effectiveness of decisions about those with leprosy was entirely dependent on the cooperation of the sufferer.[28]

Buckingham's hypothesis that the British medical authority in India was fissured holds water in the Bombay context with respect to the administrative fractures that existed between the Bombay government and the municipal commissioner in the management of leprosy asylums. A conspicuous gap in Buckingham's monograph are the voices of leprosy sufferers.

The history of leprosy in Bombay city and its presidency has received modest historical attention. Shubhada Pandya in her dissertation contends that the period between 1840 and 1897 witnessed growing anxiety and curiosity about the disease, and medical activism for those with leprosy. Between 1840 and 1897, the liberty of the leprosy patient in Bombay was curtailed by no less than eleven legislations promulgated by either the local or central government; these legislations had various degrees of stringency.[29] The projected *Lepers Act* (initially drafted in British India in 1895) emphasized selective segregation of ulcerous and vagrant lepers in large towns.[30] Simkie Sarkar outlines the establishment of the Matunga Asylum (1891) and indigenous treatments for leprosy.[31] Mridula Ramanna's prosopography of N.H. Choksy briefly alludes to his work as su-

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perintendent of the newly established leprosy asylum at Matunga between 1890 and 1897.[32] A major shortcoming on extant historiography of leprosy in Bombay city is the narrow focus on the period between 1840 and 1897. Bombay historians have yet to examine shortcomings in the implementation of the *Lepers Act* (1898) during the early-twentieth century and the eclipse of segregation by case detection and treatment of patients by the early 1930s.

Tensions between Contagion and Heredity

The pre-nineteenth century propositions of leprosy did not arise *de novo*; the ideological framework for each was bequeathed by a century of observation in the northern and southern fringes of Europe and in leprosy-prone countries with a colonial connection. It was through such a connection that leprosy maintained a foothold in mainstream medical consciousness in Europe.[33] It can be inferred that the contagion hypothesis rose from the outward similarities between leprosy and syphilis. At the dawn of the nineteenth century, the word "contagion" strictly meant disease poison transmitted from the sick to the healthy by touch, while infection was used to describe transmission by a medium, usually air.[34] At the turn of the twentieth century, "infection" and "contagion" were used interchangeably. A greater part of disagreements on leprosy was due to differing perspectives on contagion.

A hereditary disease was understood to be one that affected more than one generation of a family, either as a structural defect of organs (solidism) or abnormalities of body fluids (humoralism).[35] The position of contagion theory with the transmission of leprosy became increasingly insecure in the first three decades of the nineteenth century with influential authors such as Whitelaw Ainslie attributing leprosy to heredity acted on by external factors such as climate, temperature, and living conditions.[36]

Rudolf Virchow (1821–1902), regarded as the founder of social medicine, agreed that a hereditary element was a long-established fact in leprosy, but preferred to refer to it as "hereditary predisposition" since the disease is rarely congenitally present and develops only in later years.[37] He had reservations about the full support of the hereditary hypothesis, believing that the idea of inheritance was an inadequate factor to understand why leprosy disappeared from large parts of Europe. Immigrants to leprous countries acquired the disease only infrequently. Virchow did allocate a special role to a

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locality that may be hospitable to leprosy (e.g., Norway) or hostile to it (e.g., North America). In disproving the dogma of the hereditary transmission of leprosy, Virchow cleared the way for the discovery of lepra bacillus by Armauer Hansen.[38]

Gavin Milroy was a leading sanitarian of the Victorian age whose introduction to leprosy took place in 1853 during a tour of the West Indies to investigate a cholera epidemic. He held quarantine to be ineffective against cholera.[39] In 1873, Milroy took on the role of the one-man commission deputed by the Royal College of Physicians, London, to report on the imputed contagiousness of leprosy.[40] He asserted that leprosy was not a specific disease but possibly a hereditary "distemper" brought about by unwholesome food, unhygienic conditions, climate, and malaria. Isolation of leprosy patients in asylums was not, in his view, "in accord with the teachings of medical experience, and perpetuated many delusions."[41]

Indian Medical Service Officer H.V. Carter in 1871, with ten years of study to back him, refuted all of Milroy's contentions. Carter was of the opinion that the various sub-climates of Concan and Deccan had no role in the prevalence of leprosy. Nor did he believe that malaria was connected to leprosy or that leprosy was attributable to diet, social habits, or defects of sanitation.[42] Carter became a confirmed contagionist after seeing Hansen's discovery and *Mycobacterium leprae* under the microscope. According to Carter, the "cure" for leprosy by medical treatment had not contributed toward the obliteration of the disease. In 1875, Hansen's study had shown that in Norway (in the districts of Tromso and Trondheim) from 1856–65 and despite hygienic progress, 352 leprosy cases were reported for the years 1856–60, whereas from 1861–65 an almost identical leprosy figure was reported.[43] In 1861, there were 293 lepers sent to the asylums. During the following five years, the number of new leprosy cases declined by thirty-seven. Carter's hypothesis was that hygienic changes, even if concomitantly made, had little or no impact on the progress of the disease. The asylums were a means of partially evacuating the infected districts, particularly the worst examples of the disease.[44] Carter generalized that, as was the case in Norway, segregation and isolation of lepers was the only method of lessening the spread of leprosy in India.[45] Segregation of leprosy patients consisted of founding asylums that would serve as centres for detention. In addition to funds, Carter noted that legislative authority was needed to remove the sorely diseased who were insufficiently guarded at home.[46]

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The Government of India Home Department dismissed Carter's hypothesis that the leprosy in Norway was identical to the leprosy in India. Although leprosy declined in Norway due to segregation, Carter only offered a slender basis of evidence as only one-third of Norwegian patients were admitted to asylums by the end of 1870.[47] As there were no less than 100,000 lepers in British India, the colonial authorities could not afford to build hospitals for all patients, clothe them, and then turn release them to become "sick paupers."[48] Furthermore, the imperial government dismissed Carter's proposal of appointing a leprosy commissioner to inquire into the prevalence of leprosy across British India as such an inquiry did not take into consideration other diseases, such as malaria, in leprosy-endemic areas that vitiated the overall productivity of the population. The Government of India insisted that any investigation pertaining to the prevalence of leprosy in British India would be carried out as a sanitary inquiry that would involve sanitary commissioners and civil surgeons and the cooperation of local governments.[49]

In the pursuit of his investigations on leprosy, British businessman and wide-ranging social reformer William Tebb – well known for his stance against vaccination – was confronted with conflicting theories.[50] According to Tebb, the contagionist position, with regard to leprosy, was that it was only through the insertion of the leprous virus into blood through a sore or prick that the disease was communicable.[51] The synchronicity between the spread of leprosy and vaccination records had given rise to such a dread about vaccination that thoughtful parents sought to prevent vaccination of their children.[52] From personal inquiries made at lazarettos, Tebb inferred that there was little danger of contagion due to contact between unbroken surfaces of the body.

Debates on the aetiology of leprosy during the latter half of the nineteenth century ranged from whether leprosy could be attributed to unsanitary conditions, diet, or climate; was communicated by contagion (touch or bodily fluids); was due to heridity; or a combination of two or more factors.

Bhau Daji's Attempt to Cure Leprosy

Bhau Daji was an alumnus of Grant Medical College in Bombay. He secured the post of assistant surgeon after graduating. Bhau Daji was learned and well-skilled as a physician. In his practice as a surgeon,

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he performed with uniform success many difficult operations such as lithotomies, cataract operations, the removal of tumours, and midwifery operations.[53] In addition to establishing a reputation as a skilled surgeon, Bhau Daji's name is famous in the history of Bombay as a social reformer.

A famous Sanskrit scholar from Poona, Pandit Balshastri Dev Tonkekar – who had experienced a severe case of leprosy and lost all hope of recovery – testified to Bhau Daji's "effective" medication.[54] For six years, Tonkekar suffered from leprosy. Although he had taken medications from renowned *vaidyas* (traditional Ayurvedic healers), he had reached a point that he began to fear that his whole body would be devoured by leprosy. He had accepted the suffering as part of his bad karma from a previous life. Then in August 1867, Bhau Daji began to treat him. The medication consisted of a dietary regimen consisting of a little medicine with milk.[55] He was asked to apply a kind of prescribed oil over his body. The consequence was that the oil succeeded in reducing the numbness caused by leprosy. He was expected to abstain from spicy foods and wear clean clothes. Bhau Daji sumptuously fed the scholar rice, milk, and vegetables. Seeing Tonkekar's penury, Bhau Daji had distributed the medication free of cost. A native Christian pastor suffering from leprosy also entrusted himself to Bhau Daji's care. He praised Bhau Daji's objectiveness and spirit of inquiry in attempting a cure for leprosy.[56]

Bhau Daji used gynocordia odorata in the treatment of leprosy.[57] While using more than one drug in the treatment of leprosy, he placed most of his confidence on gynocordia odorata. The internal and external use of this drug was regulated by diet.[58] Of the thirteen patients under Bhau Daji's care, four benefited considerably from the treatment.[59] Bhau Daji's letter to the chief secretary of the Bombay government dated May 10, 1871, highlights his personal account of treating leprosy cases. The majority of Bhau Daji's cases spent no more than two years in treatment. The leprosy patient's progression from disease to recovery was fully illustrated with photographs.[60] On the question of the newness of his remedy in treating leprosy, his stance was the dictum, "There is nothing new under the sun." To quote Bhau Daji's letter: "The patience of Job and the perseverance of Bhagiratha were required, and a Hindu physician and Hindu perseverance in administration and taking remedies which providence had placed in such abundance in India."[61] He was willing to disclose the names of the drugs he had used in treating patients to the Bombay government on the condition that they were not published

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until he had submitted his report. His treatment for leprosy consisted of nearly the same dose of medicine for nearly three years and a wholesome diet. The patient would be consequently cured of leprosy in the first year; the remaining years were required to eradicate the disease from the system.[62] Seventy-five per cent of the leprosy cases received gratuitous treatment.

Besides Bhau Daji, Sakharam Arjun conducted clinical investigations of chaulmoogra oil in the treatment of leprosy cases. A botany instructor at Grant Medical College, Sakharam Arjun was a sub-assistant surgeon in charge of leprosy patients in the "Ward of Incurables" at Jamsetjee Jejeebhoy (JJ) Hospital.[63] While at JJ Hospital, he was entrusted with the clinical investigation of chaulmoogra oil in the treatment of eighty-nine leprosy patients during the 1870s.[64] He scrupulously followed the principles of such investigations, controlling the study conditions, and noting the severity and duration of the disease in individual patients over a period of almost five years. All of the subjects were placed under the same conditions and subjected to the same treatment, given in serial order, to enable a comparison of results. Sakharam Arjun came to be associated with the colonial medicine's privileged knowledge base as a result of his connection with Grant Medical College and JJ Hospital. In 1872, a *hakeem* (practitioner of Unani medicine) treated three leprosy patients after obtaining prior approval from the principal of Grant Medical College. Although the *hakeem* claimed that the three patients were treated successfully, the doctor in charge of the Lepor [*sic*] Hospital, Succaram Arjoon, did not acknowledge the success because of a "biased opinion" and "jealousy."[65] It was not surprising that Sakharam Arjun disapproved of Bhau Daji's secrecy.[66]

The *Times of India* brought specific charges against Bhau Daji to the effect that he had acted unprofessionally in concealing the remedies employed in his treatment of leprosy.[67] There was an allegation that Bhau Daji secretly made experiments on humans, which was a criminal act.[68] The contention of the article, "Leprosy Cure and the Sceptics," in the *Times of India* in October 1871 was that the remedy that Bhau Daji had tried for leprosy had long been known to Indian medical practitioners. The article was sceptical as to whether the cure for leprosy depended on something else besides the medicine.[69]

In 1874, Bhau Daji suddenly passed away, and the details of his secretive cure for leprosy died along with him.[70] The Bhau Daji collection of photographs of leprosy are curated at the Royal Col-

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lege of Physicians Museum. These images represent dual colonial action: (1) anxieties of the transmission of leprosy to white European colonists, and (2) colonial hierarchies of power in the translation of Bhau Daji's medical expertise from a colonial space to a metropolitan setting.[71] The photographs are indicative of his attempts to legitimize and convince British authorities of his medical expertise and the effectiveness of his treatments.

Uncertainty, Anxiety, and Frugality

Leprosy in colonial Bombay during the nineteenth century closely corresponds to Leo van Bergen's study of leprosy in the Dutch East Indies; both are marked with uncertainty, anxiety, and frugality. First, there was lack of certainty regarding the magnitude of the leprosy problem. During the period under study, medical questions far outnumbered answers.[72] The aetiology of leprosy was not strictly defined, and there was considerable uncertainty with respect to the degree of contagion. Second, considerable ambiguity existed in colonial legislation with respect to the identification of leprous individuals. Third, was the question of whether isolation was the appropriate answer. Fourth, the imperialist anxiety of contagion was highlighted in English-language newspapers.[73] Fifth, although the isolation of leprosy patients gained acceptance around 1890, there was a lack of unanimity on how the segregation of patients would be enforced. This section expatiates on the five points mentioned above.

In his letter dated January 30, 1889, the education inspector from the Central Department reported that on visiting St. Xavier's College and Elphinstone High School in Bombay, he found a colony of lepers in the area surrounding the large Jacoda's tank situated between these two buildings. The appeal of the school authorities to the police was futile. The rector of the college had informed the municipal commissioner that he had seen with his own eyes lepers scratching their open sores on the angular iron bars surrounding Elphinstone High School. After school, the boys let loose from classes would sit on the same railing used by the lepers.[74] The solicitor to the government stated that in all probability, the lepers had committed an instance of "public nuisance."[75] If leprosy was an infectious disease, the government might under Section 12 of the *Bombay Act of 1867* remove lepers to the sanatorium. The municipal commissioner for the city of Bombay was requested to take measures

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to remove the lepers from Jacoda's tank and prevent them from returning. According to a resolution in the General Department (No. 3102), dated August 3, 1889, the municipal commissioner was required to provide a suitable place for the reception of lepers. Notices given by the commissioner of police in consultation with the municipal officer stated that any leper found loitering about the streets of Bombay would be prosecuted under Section 85, Act 13 of 1836 or Section 291 of the Indian Penal Code. The Government of India sought clarifications from the Bombay government as to the grounds on which leprosy was perceived as an infectious disease that was dangerous to life.[76]

Local Bombay newspapers capitalized on the fear of leprosy following the demise of Father Damien in 1889. He had contracted leprosy during his association with patients in Molokai, Hawaii. Father Damien's death strengthened the arguments of the contagionists. In June 1889, the Bombay commissioner of police reported that leprosy patients were on the increase, that no suitable accommodation was available to isolate them, and that it was futile to place them before the magistrates as vagrants as the magistrates would not imprison them.[77] Under the provisions of Section 424 of the *Bombay Municipal Act* (1888), the commissioner or any police officer could, on the basis of a certificate issued by the health officer, order the removal of any indigent person suffering from a dangerous disease.[78] But the implementation of Section 424 of the *Bombay Municipal Act* (1888) faltered for two reasons. First, although Section 424 authorized municipal authorities to remove leprosy patients from the city's thoroughfares, it did not empower them to detain patients. Second, there was a lack of coordination between the Bombay presidency and the municipal administrations. For these reasons, the Municipal Corporation did not implement Section 424 related to the removal of indigent lepers. The establishment of the National Leprosy Fund in June 1889 mobilized public interest in the alleviation of the disease. At the same time, the Government of India issued a resolution on the subject of leprosy that was circulated with the draft bill to provinces within British India for expert consultation.

The Lepers Bill of 1889 proposed to segregate pauper lepers and the control of lepers following certain callings. It was to extend throughout British India and enforced only with the notification of the local government and the previous sanction of the governor general in council. The bill categorized "leper" as any person suffer-

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ing from any variety of leprosy in whom the process of ulceration had commenced. Furthermore, the Lepers Bill of 1889 noted the repugnance pertaining to the use of the word "leper." It defined "leper" as a person to whom a certificate that they were suffering from leprosy was made by a medical practitioner that had local government special authority, by name or virtue of his office, general or special authority to certify as to the existence or non-existence of the disease in any person alleged to be suffering from it.[79] Retreat meant to a place approved by the local government as suitable for the accommodation by lepers. Any council, board, committee, corporation, or any other person of authority over any municipality or cantonment had the authority to establish or contribute to the maintenance of a retreat. This act also stated that a person suffering from leprosy could apply for admission into a retreat either for life or for a term of years.[80] Any police officer was empowered as per the provisions of the Lepers Bill of 1889 to arrest without warrant any person who happened to be a "pauper leper."[81]

In commenting on the Lepers Bill, the *Indian Spectator* in its July 7, 1889 edition remarked that the word "leper" should be defined to exclude from the scope of the bill all persons who suffered from "white leprosy."[82] The Anglo-Gujarati daily *Bombay Samachar* (1889) was critical of the draft bill for the segregation of lepers. The bill proposed to charge municipalities within the jurisdiction of the Bombay presidency for establishing and maintaining the costs of leper retreats. The *Bombay Samachar* recommended that leper retreats be maintained out of imperial funds, as the question of leprosy was of general and not local importance, a point also broached by the Anglo-Marathi newspaper *Sudharak*.[83] As there were reports of forced detention of relatives of leprosy sufferers in retreats at the discretion of medical practitioners consulted by the magistrate (regardless of whether these individuals were infected), *Sudharak* suggested that the Lepers Bill enumerate all symptoms of contagious leprosy.[84]

The 1889 Lepers Bill was not enacted. The chief contention between the Government of India and the Bombay presidency administration was the question of segregation of leprosy patients.[85] The Bombay presidency administration noted that such a measure was prohibitive and had no appreciable effect in arresting the spread of the disease. A significant shortcoming of the 1889 Lepers Bill was the categorization and stereotyping of leprosy patients by referring

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only to "lepers wandering without employment," and "beggar lepers" while remaining silent on the disease itself.

Between 1890 and 1891, a Leprosy Commission visited India, and a couple of years later submitted a report to the imperial government. The Government of India, pressed two questions on the Leprosy Commission: (1) the segregation of lepers, and (2) the restraint of lepers in certain callings with respect to bringing leprous individuals into immediate contact with the food and clothing of their neighbours. On the question of segregation, the Commission was ambiguous and noted:

> For India, complete segregation may be considered impracticable. Neither do the conclusions given … as to the nature of the disease justify any recommendation of absolute segregation. The presence of a leper in a healthy community is a source of danger no greater than the presence of an individual suffering from tuberculosis. Both diseases are contagious in an equal and minimal degree. The amount of ulceration which exists in both diseases is to some extent a measure of the danger of contagion.[86]

Members of the Leprosy Commission prescribed voluntary segregation of leprous individuals as the only practical solution to address the leprosy problem of British India.

The Leprosy Commission reached the following conclusions in 1890–91:

Leprosy was a disease *sui generis*, neither a form of syphilis nor tuberculosis although it bore striking etiological resemblances to the latter. Leprosy was not passed down by hereditary transmission. Though in the scientific classification of diseases, leprosy was regarded as both contagious and inoculable, the extent to which it was propagated by these means was small indeed. Leprosy was not caused by eating a particular food, or by living in a particular climate or unsanitary living conditions, nor did it specifically affect any race or caste. Sanitary surroundings indirectly influenced leprosy. Leprosy *de novo* originated due to a concurrence of causes and conditions imperfectly known.[87] The Commission empowered the municipal authorities to pass bylaws to prevent vagrants suffering from leprosy from begging in the streets. The large presidency towns possessed leper asylums that could be enlarged by municipal funds. The Commission expressed a certain reservation as to the extent that leprosy

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was contagious. The Leprosy Commission's statement leaves room for interpretation, particularly in regards to the degree of contagion.

An early effort to establish a leper asylum in Bombay was pioneered by Roman Catholic Bishop Vicar Apostolic of Bombay on September 24, 1883. The vicar requested that the Bombay government place one of the forts around the island of Bombay at his disposal for five years; namely, either Sewri, Sion, Matunga, or Worli, together with a portion of land that could be cultivated in the locality with an intention of converting the same into a leper colony or village. In its reply dated May 9, 1884, the Bombay government raised certain objections with respect to the conversion of any of the old forts of Bombay into a leprosy asylum but were optimistic that this proposal could be looked into in the near future.[88]

On February 1, 1890, Dinshawji Maneckji Petit, a Parsee entrepreneur from Bombay and the founder of one of the first textile mills of India wrote to the Governor of Bombay Presidency Lord Raey, offering a sum of 100,000 rupees for the erection of a leper home subject to certain conditions. He stipulated that the home be maintained by those who would be responsible for the maintenance of the equipment of such institutions.[89] The government letter to the corporation dated February 7, 1890, asked whether the corporation would be willing to accede to the request of the generous donor of equipping and maintaining the home. The corporation in their reply dated March 13, 1890 stated that without the legal liability as implied by the letter, they were of the opinion that the letter of Petit should be accepted on the conditions stated.

The Bombay Municipal Corporation would undertake the duties regarding the maintenance of the leper asylum while the Bombay government had the ultimate responsibility of financing the institution.[90] The administrative differences between the Bombay government and Bombay Corporation indicate the limits of colonial intervention in health. In such a situation, indigenous merchant elites such as the Petits dictated their terms and conditions with regards to the funding of leprosy asylums.

The Bombay municipal commissioner, H.A. Acworth, mobilized the support of the wealthier citizens of Bombay city to stimulate their charity. He examined the feasibility of housing the leper home at Dharavi, located to the north of the Island of Bombay. Acworth faced stiff opposition within the corporation.[91] Later, the corporation stumbled on Wadala for the establishment of the leper asylum. Personal solicitation from every corner of the city to raise funds for

the leprosy home at Wadala was carried out by native gentlemen of Bombay including Harkisondas Narrotamdas, Ghelabhai Haridas, Fazalbhoy Vishram, Haji Suleiman, and Chutterbhooj Morarji.[92] The establishment of the leprosy asylum at Wadala (Matunga) pointed to a method by which leprosy was to be managed in India. The public charity in Bombay solved a problem that no one before had achieved. The asylum was maintained at the joint cost of the corporation and the Bombay government. The leprosy asylum at Matunga constituted what urban historian Preeti Chopra termed "joint enterprise": partnerships in which the local administration and philanthropists shared costs and responsibilities in constituting the public realm of Bombay city.[93]

The treatment of vagrant lepers, an issue that continued to plague the Bombay presidency and city administrations, was not fully settled until 1890. At the time, then Municipal Commissioner Acworth collected public subscriptions for the establishment of the Matunga leprosy asylum. Under the provisions of *Act VI of 1867*, Acworth collected vagrant lepers, put them in the leprosy asylum, and obtained a grant from the municipality and the government.[94] Nevertheless, the leprosy asylum at Matunga was unable to cope with the vastly increasing number of cases in Bombay.[95]

At a meeting of the General Committee of the Homeless Leper Relief Fund at the Municipal Room in 1891, President Dinshaw Petit stated that hospital wards in Bombay catering to leprosy patients were overcrowded and consequently, new admissions were refused.[96] Having no place of refuge, leprosy patients frequented the bazaars and were forced by their necessities to sell vegetables and expose their maimed bodies to public gaze. By 1892, land for the extension of the Matunga Asylum and Dinshaw Petit's contribution of 100,000 rupees remained unused due to the administrative deadlock between the Government of Bombay and the Municipal Corporation over the question of "police charges" in the maintenance of the asylum.[97]

The *Lepers Act* of 1898 stated that the word "leper" referred to any person suffering from leprosy in which the process of ulceration had commenced.[98] A pauper was defined as a leper who publicly solicited alms or exposed his sores, wounds, or deformities with the purpose of eliciting alms. Any police officer, according to *Act III of 1898* could arrest any person who appeared to be a pauper leper. Twenty per cent of the lepers in Bombay presidency were classified as "pauper lepers" according to the surgeon general with the Bombay presidency,

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whereas the proportion in Bombay city was much lower at ten per cent.[99] However a large percentage of lepers lived in places where the *Lepers Act* of 1898 was not enforced. According to the surgeon general, lepers in Bombay were for the most part outsiders but there was no evidence to prove that the vast majority of them were recent immigrants.[100]

The surgeon general of the Bombay presidency reiterated the view of the Leprosy Commission that "vagrant and indigent lepers" living in villages were the source of little or no danger, but "vagrant and indigent lepers" herded together under conditions of extreme poverty formed communities that offended public decency.[101] The only place in the Bombay presidency where the presence of pauper lepers was a matter of serious concern was the City of Bombay. The total pauper leper population of Bombay was estimated at 530 persons.[102] To put a stop to the influx of pauper lepers into the city of Bombay from up-country areas of the presidency, leper asylums would be established in Trombay, Ratnagiri, Sholapur, Nasik, and Ahmedabad in the Bombay presidency.[103] The *Lepers Act* of 1898 would be applied to all of the districts in the Bombay presidency where leper asylums existed. Owing to defective accommodation in the asylums up-country in the Bombay presidency, apparently 150 vagrant lepers were found in Bombay city. There was no legal mechanism to compel the municipalities or local bodies within the Bombay presidency to pay for the lepers who had wandered from their home.

A critical examination of the *Lepers Act* of 1898 reveals several loopholes that impeded the control of leprosy in British India, particularly in colonial Bombay. First, the act was to extend throughout British India, but the implementation was at the discretion of the presidency government. The act defined a leper as a person who suffered from any variety of leprosy in whom the process of ulceration had just commenced while ignoring the ulceration of the nasal passages, mouth, or throat where no ulceration was noticeable. The act empowered the police to arrest any person who appeared as a "pauper leper." However, the act failed to take into account the fact that well-to-do people suffering from leprosy escaped enumeration at the census. As a result, the actual number of leprosy patients in the Bombay presidency was underestimated.

The purpose of the *Lepers Act* of 1898 was twofold: prevent nuisance by pauper lepers and debar lepers from engaging in certain trades.[104] A pauper leper could be confined to an asylum if they had no one willing to care for them.[105] Of the 5,831 lepers reported to be

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living in the Bombay presidency, the percentage of individuals defined as "lepers" as per the strict provisions of the 1898 act remained unclear.

Jahangir Cursetji's article in the *Times of India* was instructive of the leprosy question.[106] The municipal commissioner reported that it was the duty of the corporation to protect the interests of the rate payers; consequently, it would be averse to enlarge the Acworth Leprosy Asylum to accommodate patients from other parts of India. Accommodating leprosy immigrants in asylums and provisioning them became a dicey issue between the corporation and the government.

The letter from Robertson, the secretary to the Bombay government, to the municipal commissioner for Bombay city dated June 9, 1910, acts as a lens through which a social historian could gauge the implementation of legal measures for the control of leprosy.[107] Under the *Police Charges Act, 1907* (*Bombay Act III of 1907*) the provision for the accommodation of lepers in Bombay city devolved on the Bombay Municipal Corporation. The president of the Bombay Municipal Corporation had expressed reservations about supporting immigrant lepers coming to the city from up-country, as provisioning for these lepers would exert a financial burden on the Bombay rate payer.[108] However, the Bombay government was prepared to defray the expenses of repatriating immigrant "pauper lepers" to the mofussil, detained as per the provisions of the *Bombay Act III of 1907*. The cost of providing for these lepers would be borne by the asylum to which they were removed. Although the corporation would not defray the cost of the maintenance of lepers originating from outside of Bombay city from its funds, it would agree to accommodate them in the Matunga Asylum, but the cost of maintenance of the lepers would be borne by Bombay government funds.

The question of leprosy as an administrative problem had become urgent in Bombay city soon after the demise of Father Damien in 1889 and the creation of the National Leprosy Fund in England. The National Leprosy Fund appointed leprosy commissioners who, in turn, made recommendations related to the feasibility of isolating infectious cases of leprosy. While the isolation of leprosy cases was a certainty, what shape it would take was uncertain. As a result, many bills were drafted, rejected, revised, or even passed. There was no dearth of ideas in Bombay city on how to combat the leprosy problem. Any idea that was considered medically sound was considered financially unviable. This was particularly true of segregation.

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New Approaches to Leprosy during the Early-Twentieth Century

Between 1867 and 1933, the nature of leprosy was contested. Whereas the Royal College of Physicians (1867) decided that the disease was hereditary and did not require segregation, Hansen's discovery of *Mycobacterium leprae*, the germ theory of disease, became the paradigm that was used to understand the aetiology of leprosy. The historical decline of the disease in Norway was explained in social evolutionary terms; that is, the extinction of weak individuals and the rise of civilization.[109] The conspicuous decline of leprosy in Norway was used to justify segregation. The Leprosy Commission (1891) endorsed segregation but advocated against strict segregation. During the 1910s, doctors from the Indian Medical Service led by T.S.B. Williams and Rogers in Bombay and Calcutta, respectively, claimed to have found a technical fix for leprosy. They promoted treatments that would arrest leprosy rather than promise a cure.

The Leprosy Commission assembled in India in 1891 was uncertain on the extent to which leprosy was contagious. The First and Second Leprosy Conference – convened in Berlin (1897) and Bergen (1909) – concluded that leprosy was contagious, but there was a lack of certainty with respect to the method by which the contagion was transmitted. The Bergen Conference concluded that leprosy was not hereditary. In consequence of this and the established sterility among those with leprosy, delegates inferred that the disease had a natural tendency to die out.[110] Subsequent to the conclusion of the Bergen meeting, additional resolutions were passed by British and colonial delegates: "Leprosy is most prevalent under conditions of personal and domestic uncleanliness and overcrowding, especially where there is a good and protracted association between the leprous and the non-leprous."[111] The British and colonial delegates recommended to the Government of India that compulsory segregation of all lepers was impossible as such a measure inflicted undue hardship on leprosy patients without any corresponding benefit accrued to the public.[112]

Although the resolution of delegates at Bergen affirmed that leprosy was not hereditary, Bombay Presidency Surgeon General H.W. Stevenson contended that children born to individuals with leprosy had a fifty per cent chance of contracting leprosy. He recommended that unaffected children of leprous individuals be provided a separate building within the Matunga leprosy asylum complex.[113] On the

contrary, P.R. Cadell, then the acting municipal commissioner of the City of Bombay, recommended a system of partial segregation of non-infected children of leprous individuals.[114] By 1910, government physicians from Bombay became convinced about the contagiousness of leprosy and advocated for a discrimination between lepers who were in an infective state and those who were not. Such a measure was calculated to detain only leprosy patients in the infective stage in the Matunga asylum.[115] Overcrowding was not uncommon at the Matunga Asylum; over two-thirds of inmates were migrant lepers.

In 1933, the Matunga Asylum could accommodate 222 males and 142 females, and new admissions were often refused.[116] The asylum did not strictly enforce the provisions of the *Lepers Act* (1898), which stipulated that only those lepers who had been in residence for over five years would be detained at Matunga Asylum.[117]

In India, it was only compulsory that indigent lepers be segregated. The 1898 act was ineffective. Some 10,000 patients were accommodated in leper asylums during the 1930s across British India, mostly aided by missionary and grants from the Government of India. The majority of leprosy cases in British India referred to asylums were advanced and non-infective; isolation was a charitable rather than preventive measure.[118] In 1920, Rogers proposed establishing agricultural leprosy settlements, supported by special dispensaries to which highly infectious cases would be admitted.[119] Unfortunately, as funds from the imperial government were not forthcoming, limited efforts were made across British India to establish leprosy settlements. Given the biological and etiological similarities between *tubercle bacillus* and *Mycobacterium leprae*, it was widely held that European anti-TB measures may be suitable for leprosy control in British India.

Deycke Pasha from the medical school in Constantinople claimed to have discovered a technical fix that offered a short-term solution to the leprosy question.[120] In 1908, Pasha promoted treating leprosy using nastin at Bushehr, Persia, and was said to have successfully treated ten patients.[121] Nastin is a fat extracted from cultured streptothrix leproides (a genus of higher bacteria). When administered by injection to leprosy sufferers, it produced similar immunological responses as tuberculin did for tuberculosis patients.[122]

The 1908 trial to investigate Pasha's nastin treatment of leprosy at the Matunga Leper Asylum coincided with the withdrawal of

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the Bombay presidency government's grant to the Matunga Leper Asylum. Consequently, responsibility for funding the trial was devolved to the Bombay municipality.[123] In October 1908, the Bombay government had already sanctioned a grant of 600 rupees for the experiment of treating leprosy patients with nastin at the Kagrapeth Leprosy Asylum in Ahmedabad. Consequently, the government proposed to draw 2,800 rupees from the savings accrued on account of inmates' dieting charges at the leper asylum, and Ratnagiri was to fund the nastin experiment at Bombay.[124]

Initial results of using nastin to treat thirty chronic leprosy cases at the Matunga Asylum were promising.[125] Most patients showed a marked improvement in their overall health after being treated with nastin. The chair of the Matunga Leprosy Asylum expressed reservations that the full cost of the trial would be beyond the asylum budget.[126] The Bombay presidency authorities agreed to extend the duration of the nastin trial from six months to one year and sanctioned a grant of 1,980 rupees to meet half of the treatment costs.[127]

In 1909, Indian Medical Service physician Dr. T.S.B. Williams was deputed to the Matunga Asylum to investigate Pasha's nastin treatment of leprosy. In addition to nastin, he conducted an investigation into the nature of *Mycobacterium leprae* under the supervision of Col. Bannerman.[128] In his trial with nastin, Williams noted the amelioration of leprosy symptoms in several patients, but could not arrive at a definitive conclusion because the trial lasted for only six months.[129] In May 1910, Williams' term at Matunga Leprosy Asylum was extended by an additional six months.

Nastin injections could not cure severe cases of leprosy that were of a long duration. At the same time, trials were expected to come to a definitive conclusion with respect to the curative properties of nastin. The Matunga Leper Asylum's medical officer, J.S.P. Rodrigues, administered nastin injections to twenty-four leprosy patients.[130] Adverse side effects such as "cloudy vision" were reported in at least four cases after the administration of a nastin injection.[131] Although patients under nastin treatment required isolation, it was impossible to segregate them due to the overcrowding in the asylum. The Matunga Leprosy Asylum did not have adequate funds to buy a large quantity of nastin.

Up to 1916, leprosy was regarded as incurable. In 1916 and 1917, Rogers (then based at the Calcutta School of Tropical Medicine) published colour photographs documenting patients before and af-

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ter treatment by injecting soluble preparations of chaulmoogra and hydnocarpus oils.[132] The administration of chaulmoogra and hydnocarpus injections was successful in treating cases of early-onset leprosy. By 1930, Rogers asserted that the old method of segregating leprosy patients was impracticable for financial and administrative reasons. Furthermore, segregation of leprosy patients did not bring about a decline in the incidence of the disease as early and more amenable cases of leprosy remained hidden due to the fear of compulsory segregation.[133] In 1931, Rogers was optimistic that leprosy could be stamped out through periodical examination of leprosy cases and their contacts, and the effective treatment of early cases of the disease. But by the mid-1930s, the optimism was shattered as less than one per cent of the subjects of the British Empire received institutional care.[134]

Conclusion

This article focuses on the medical, socio-legal, and administrative aspects of leprosy in Bombay city during the colonial era between 1867 and 1933. During the latter half of the nineteenth century, debates in Europe focused on the aetiologies of leprosy. In the article, I contended that the understanding of leprosy in late-nineteenth century Bombay was fractured on two issues, the degree of contagiousness and the segregation of individual patients.

Although leprosy was a serious public health problem in Norway during the early-nineteenth century, it subsequently declined by the mid-nineteenth century. The decline in the prevalence of leprosy in Norway informed global discussions related to aetiologies of the disease. Three competing theories that provided a plausible explanation for the disease's decline in Norway included heredity, sanitation, and contagion. The Royal College of Physicians report (1867) was sceptical on the question of contagion and instead correlated the prevalence of leprosy in British India with diet and unsanitary living conditions. The ascendance of the germ theory of disease – subsequent to the discovery of *Mycobacterium leprae* by Hansen in 1873 and the death of Father Damien in 1889 – strengthened the position of the contagionists, particularly Carter. Both factors heightened Bombay's elite and middle-class' anxieties toward vagrant lepers that were reflected by the local newspapers of Bombay city, particularly the *Indian Spectator, Bombay Samachar*, and *Times of India*.

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The establishment of the Matunga Leprosy Asylum in 1891 (British India) intended to segregate vagrant patients of leprosy in the asylum and was premised on the question of colonial investment and private philanthropy. There was a distinct class dimension apparent in the way the all-India *Lepers Act* of 1898 intended to segregate infectious lepers in an asylum. The colonial state was reluctant to commit finances to the amelioration of leprosy, and its efforts were largely supported by private philanthropy. Some of the Bombay elite, particularly the influential Petits, supported the foundation of the Matunga Asylum. Philanthropic activities offered the local elites an opportunity to be incorporated into the colonial power structure.

Despite the fact that the Berlin Conference (1897) emphasized the contagiousness of leprosy, the British Indian government could not be pressured into taking action. Legislation against leprosy was intended to exclude vagrant lepers from society rather than on the public health hazards posed by the disease. The "economics of segregation" had always been a dominant factor in the imperial government's half-hearted response to preventing leprosy. For example, the Leprosy Commission (1890–91) and the *Lepers Act* of 1898 devolved the responsibility of maintaining the leper asylums to the already cash-strapped local or provincial authorities. In a similar vein, all medical plans were liable to fail if they exceeded the financial spending limit set by the colonial state. This was particularly true with respect to the administrative fractures at the levels of the imperial government, the Bombay government, and the Bombay municipality on the question of funding the experiment at the Matunga Asylum on the nastin treatment for leprosy (1908–10).

The history of leprosy control in Bombay city reveals that the development of a scientific medical culture in India occurred in the context of a dynamic relationship between Western and Indian systems of medicine.[135] Despite the pre-eminent position of Western medicine after the germ theory of disease was established in the 1870s, the dominance of Western medicine in the field of leprosy was incomplete for two reasons. First, Western-trained Indian doctors, particularly Bhau Daji and Sakharam Arjun, served as points of contact between Indian and Western medicine with respect to leprosy. Bhau Daji refused to make any claim with respect to his leprosy treatment without thorough experimentation, and he unabashedly associated himself with his Indian heritage. In contrast, although Sakharam Arjun used chaulmoogra oil (an Ayurvedic panacea), he was scornful of traditional medical practitioners. Second, the trials

involving the use of nastin in the treatment of leprosy cases at the Matunga Leprosy Asylum were under the control of the Bombay presidency, municipal authorities, and the leprosy asylum rather than the imperial government. Leprosy research in Bombay questions David Arnold's assertion that during the late-nineteenth century, Western medicine – seeing itself as rational, scientific, and universalistic – defined itself in opposition to the presumed irrationality and superstition of indigenous medicine.[136]

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