



The Landscapes of Disease and Death in Colonial Mauritius

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Accepted: 13 July 2023
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Abstract

The recurring ebb and flow of epidemic diseases profoundly impacted how colonial administrations dealt with death. This article focuses on the role disease played in shaping the “necrogeography” of colonial landscapes, a key point of intersection between funerary and landscape archaeology. Using an extensive corpus of evidence from cemeteries that capture inhumation practices from formerly enslaved and indentured populations, this article provides an assessment of these burial contexts as part of the cultural landscape in Mauritius. Drawing together functional and emotional dimensions, their features and development will be considered against the backdrop of the island’s specific and dynamic disease ecology.

Keywords Landscape Archaeology · Funerary Archaeology · Necrogeography · Mauritius · Epidemics

Introduction

Mauritius is the archetypical example of a location where the disease ecology was completely transformed by human impact on the land. The spread of epidemic diseases was particularly pronounced between the eighteenth and nineteenth centuries. At that time, the British instituted new policies aimed at controlling transmission and containing the escalating mortality rate. The accompanying infrastructures that transformed the land- and seascapes primarily involved services related to public health and disease prevention, such as hospitals, dispensaries, and quarantine stations. In

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addition, new practices for the management, treatment, and disposal of those who died of infectious diseases were introduced, influencing funeral habits and the spatial organization of cemeteries.

A review of written sources combined with an analysis of the archaeological record, integrating evidence along a gradient from human remains to burial archives to geospatial dimensions of the cemetery itself, allows for an assessment of how new practices were implemented and adapted to meet different demands. Considering Teather's (2001:185) definition of deathscapes as "the material expression in the landscape of practices relating to death," Mauritian deathscapes have conveyed the varied experiences of different ethnic and religious communities over time since the beginning of stable human settlements. Mixed patterns in the commemoration of the dead corresponded to new waves of immigration, but how did the massive demographic flux of indentured laborers, combined with drastically altered environmental conditions that catalyzed epidemics, change the necrogeography of the island? Ongoing archaeological, historical, and anthropological investigations, conducted by the Mauritian Archaeology and Cultural Heritage (MACH) group (Seetah 2015a), provide the basis to understand the diachronic development of the local necrogeography, defined in its broadest sense as "the use of the dead to punctuate and mark-out and reinforce tasksapes of the living" (Semple and Brookes 2020:3).

After a brief overview of the distribution of cemeteries throughout the Mauritian landscape, this paper will present three main archaeological case studies in different environmental contexts. The three sites reveal distinctive attitudes toward the dead during the crucial decades of transition from enslavement to indenture, focusing on the role of population ecology and public health practices. Each site is outstanding in its own way: Le Morne is the only post-emancipation cemetery excavated from the southwestern Indian Ocean islands, Bois Marchand is the largest cemetery in the southern hemisphere, and finally Flat Island is the best-preserved quarantine station in the Indian Ocean. The selected cases were analyzed considering the impact of the disease, how the disease was incorporated into the funerary record, and how representative they may be of the changes that epidemic crises produced in Mauritian deathscapes. A broader overview has been devoted to quarantine stations, as they represent a new object of study for historical archaeology in the Indian Ocean (Bashford 2016:5–9).

Spaces of the Dead in Colonial Mauritius

Like all the islands of the Mascarene archipelago, Mauritius had no prior Indigenous population and is an exemplary place where extraordinary environmental changes happened in a brief period (Ashmore 2004; Gosden 2004; Seetah et al. 2022) (Fig. 1).

First, the short Dutch occupation in the seventeenth century (1638–1710) focused on the exploitation of teak and ebony forest, particularly on the eastern coast of Mauritius (Brouard 1963:1–12; Florens et al. 2012). Since then, the island's ecosystem has gradually changed due to the decline of native animal and plant species and the intentional or unintentional introduction of foreign ones (Cheke and Hume 2008; De Boer et al. 2014; Seetah 2018:44–45).

Fig. 1 Map of the Mascarene Islands



Second, the Mauritian landscape was further redesigned under French rule in the eighteenth century (1715–1810) by the introduction of sugar cane cultivation, which reached its peak during the nineteenth century under British hegemony (1810–1968). The massive investment in monocrop agriculture caused drastic deforestation, mainly in the accessible coastal areas (Florens 2013; Norder et al. 2017). Furthermore, the transition from a French to a British administration resulted in a radical transformation of demographics. The demand for labor following the growth of the sugar industry and the abolition of slavery prompted plantation owners to contract indentured workers (Allen 2008; Northrup 1995). The island's population increased considerably, from about 78,000 in 1851 to at least 310,000 in 1861 (Allen 1999:17). Within 250 years, an island that was uninhabited before 1638 became a complex cultural landscape, in which most of the population belonged to the lowest social classes: from formerly enslaved people (Alpers 2009, 2013) to workers from East Africa, India, China, and Southeast Asia (Seetah 2016).

Over the decades, this brief but complex history of human mobility and landscape change has been accompanied by recurring disease outbreaks. Between 1771 and 1862 a cycle of smallpox and cholera epidemics occurred, culminating in the devastating malaria epidemic between 1866 and 1868 (Boodhoo 2010; Reddi and Sookrajowa 2019). Later, less frequent outbreaks of cholera and smallpox were followed by sporadic epidemics of dengue fever, diphtheria, beriberi (Meldrum 1881:29), and even plague at the end of the nineteenth century (Arnold 2015; Parahoo 1986:420–421) (Fig. 2).

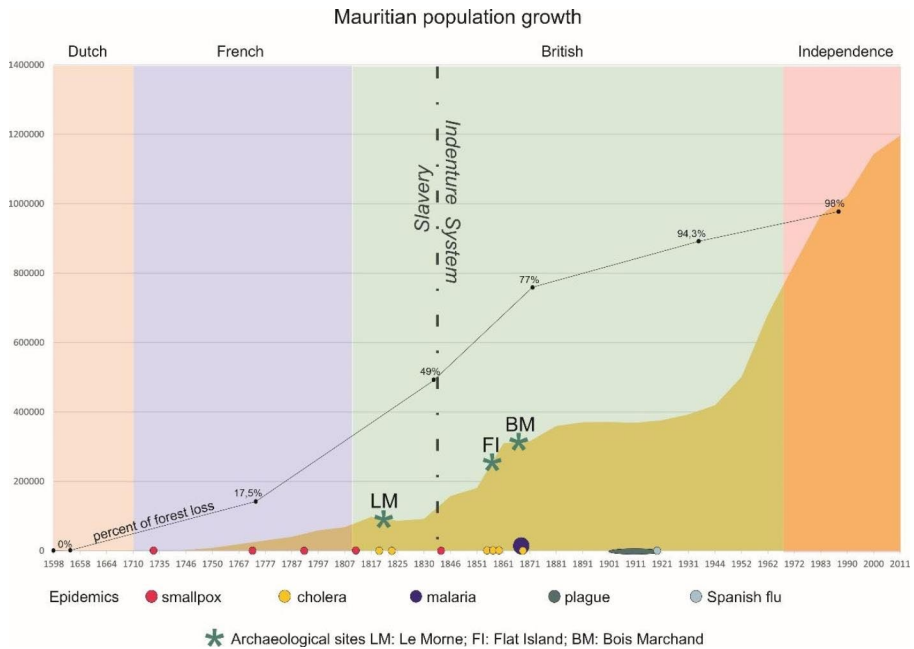


Fig. 2 Chart of population growth in relation to deforestation rate and major epidemics recorded in Mauritius from 1598 to 2011. Forest loss data is based on Norder et al. 2017. Records of major epidemics were retrieved from Boodhoo 2019, and Reddi and Sookrajowa 2019. Source data for population development are from Statistics Mauritius (<https://statsmauritius.govmu.org/SitePages/Index.aspx>.)

After the advent of vaccination in the early eighteenth century, smallpox was considered preventable, although the lack of vaccine and public dependency delayed its eradication in the colonies (Arnold 1993:119–120). In the nineteenth century, the debate among doctors over the transmission of other emerging infectious diseases, such as cholera and malaria, was generally polarized between contagionists and anti-contagionists (Chase-Levenson 2020:192–200). However, the development of meteorology and the enhanced knowledge of tropical climate triggered an in-depth observation of the environmental factors that influenced the outbreak and spread of epidemics in the colonies (Mahony and Endfield 2018; Seth 2018). As cholera, malaria, and dysentery threatened Mauritius, the island was incorporated by medical writers into the medical topography of the tropics (Arnold 2006:42–67; Cosgrove 2005). In particular, the variation in mortality rates caused by malarial fever within different regions of the island was analyzed and explained by scientists and observers, who gave essential information on climate changes and environmental threats registered on the island in conjunction with the outbreaks of epidemics (Meldrum 1881; Small 1868). Among various factors, it was generally known that deforestation, the combination of floods and droughts, and the change in the prevailing winds transformed “one of the healthiest islands within the tropics” (Anderson 1858:97) into a malarial colony. Although scientists were aware of the relationship between climate and environmental conditions and the outbreak of epidemics, authorities and public opinion identified the origin of the disease with its transport from other coun-

tries, due to permeability across water, air, soil, and bodies, following the miasmatic theory of infection (Barnes 2014). Under British rule, the main immigration flow became indentured laborers from South Asia; then, a particular ship was identified as the first epidemic source, and the newcomers were blamed for introducing new diseases (Alpers 2020:221–228; Hurgobin 2016). The process of identification between disease and foreign workers was reinforced by the names given to the supposed new diseases. For example, *HMS Topaze*, a frigate from Ceylon, was blamed for the outbreak of “Asiatic cholera” in 1819–20 (Macmillan 2000:43); later, in 1865, the ship *Spunky* allegedly carried malaria, which was called “Bombay fever” (Anderson 1918:173; Small and Power 1868:15).

Based on miasmatic theory, natural processes such as respiration, excretion, putrefaction, and air stagnation, were identified by governors as the main causes of air corruption (Kisacky 2005:4–6). Corpses, along with swamps and waste, were considered local sources of disease. Therefore, cemeteries became an environmental concern when population growth was accompanied by epidemics. Since the late eighteenth century, health reformers in Europe had been speaking out against overcrowding in churchyards and unhealthy burial grounds, which were considered a serious health hazard. In France, Napoleon’s 1804 “Imperial Decree on Burials” required cities to remove the dead from the urban center and bury them in places that were more conducive to contemplation and for better hygiene control. It also ordered that each person be buried separately, with the use of a coffin (Legacey 2019:68–70). In Britain, following Chadwick’s supplementary report on burial practices in towns (Chadwick 1843), Parliament enacted a series of laws and acts to establish new rules and spatial regulations for managing burial and preventing pollution of inhabited areas (Jassal 2015:491; Rugg 2021). Increasing urbanization, space limitations in churches and cemeteries, and, finally, the magnitude of cholera deaths during the 1848–49 epidemic catalyzed the creation of large, secular cemeteries outside the main towns, though the ownership, management, style, and day-to-day functioning varied greatly (Laqueur 2015:211–238; Mytum 2004:45–46).

New regulations governing burial practice resulted in the development of distinct material cultures associated with interment in the colonies, as a consequence of environmental and social peculiarities. In Mauritius, although the population of plantations increased under French rule, especially in the northern districts with optimal soil conditions for cultivation (Pamplemousses, Rivère du Rempart, and Flacq), the highest population density was concentrated in the towns (Toussaint 1977:38–39). Therefore, epidemics had immediate implications for the organization of burial grounds, and this was first seen in the capital, Port Louis. The largest and best documented cemeteries were connected to urban centers, where new public burial grounds were opened and enlarged because of cyclical epidemics. During the first five decades of French colonization the Cimetière de l’Enfoncement was the main graveyard in Port Louis, near the Company Garden (La Hausse de la Louvière 2007:157–174; La Hausse de la Louvière and Carter 1996). In 1771, after an outbreak of smallpox, the authorities established the Western Cemetery, a new burial ground in a “healthier location” at the edge of Fort Blanc, Cassis. Over the decades, the site has been extended, and today consists of adjoining cemeteries delineated along religious or ethnic lines of the deceased (St. Georges cemetery, Gebert cemetery, Western cemetery, Muslim

cemetery, and Chinese cemetery). Macmillan (2000:292–293), describing the site of the oldest cemetery, pointed out its health threats: “previous to 1771 the site of the present Company’s Gardens was a cemetery of the worst possible description, for it was a low marshy lagoon, partly covered by the sea when the tide set in, and exposed to the rays of a burning sun when it receded.”

In the countryside, the main formal distinction after death was between the baptized and the unbaptized. The former were buried in cemeteries attached to churches; the latter, represented mostly by enslaved community members, lived on numerous plantations where they were usually buried in improvised or informal burial grounds (Vaughan 2005). An example of the former case is the historic village of Pamplemousses, where two cemeteries were established. The first, called Old Cemetery, near the St. François d’Assise church, was used since 1743. The later New Cemetery, not far from the same church, is attested to as early as 1780 on historical maps (Maurer George-Molland 2014:112–113). It was also known as the Black Cemetery, at least from 1759, because it was dedicated especially to non-European people, apparently indicative of enslaved people, then more generally to descendants of African and Asian immigrants from different social groups (Teelock and Salle-Essoo 2008:160–162). Indeed, Article 14 of the Code Noir (1723) stated that masters were required to bury their baptized enslaved people in hallowed ground. The New Cemetery in the Pamplemousses district could be one of the first cemeteries used for this purpose in Mauritius (another example used for the baptized enslaved community is the Black cemetery in Agalega but further research would be needed: Teelock and Salle-Essoo 2008:193–194.) In the absence of archaeological evidence, we can assume from the historical maps and the oldest preserved grave markers that these were both Christian cemeteries with graves traditionally orientated (head to the west and feet to the east) and belonging to parishioners of the nearby church. The main outward distinction was between wealthy people who could afford epitaphs or gravestones and poor people whose burials were barely distinguishable from each other.

The unbaptized were instead victims of anonymous and scattered burials, as the Code Noir stipulated that they be buried at night in a field near the place where they died. For this reason and because written sources on the subject are almost silent, it is challenging to locate burials of unbaptized enslaved people. Even in documents related to the management of individual plantations, the topic remains unreported until the second half of the nineteenth century, when a little information begins to be traced.

Each sugar plantation was organized following a compact and centralized settlement plan, focused on the division of labor, maximization of work time, and rigid spatial organization to reduce worker mobility within the estate (Delle 1998; Haines 2018; Wilson Marshall 2015). A communal cemetery could have been included within the plantations’ boundaries, possibly at the edges, as indicated by archaeological research conducted in the Atlantic colonies (Handler and Lange 1978; Watters 1994), or in unmarked graves in smaller burial sites, confined to areas near workers’ houses (in the yards or underneath: Blouet 2013). To date, archaeological evidence of a cemetery of enslaved people directly related to a plantation is absent for the Mascarenes. Between 2021 and 2022 a cemetery in Albion, on the western coast of Mauritius, has been investigated by the MACH team, documenting a portion of

the burial ground with nine intact burials, but we are not certain the cemetery was related to a plantation. The archaeological analysis is still ongoing, but preliminary bioarcheological results confirm that the deceased are representative of a community of Sub-Saharan African and Malagasy ancestry.

Under British rule, a shift happened because public and private burial grounds were subordinated to the same public healthcare regulations. A collection of laws from 1862 to 1865 stated that landowners and religious communities might own private burial grounds (Rouillard 1868:195–197). According to these laws, private cemeteries had to be registered after a proper inspection by the district's local board of health in which they were situated. However, the location in marginal areas and the absence of landmarks or funerary buildings make it difficult to pinpoint these sites in the landscape. Furthermore, as a social measure, the British tradition of raising funds to assist the poor and destitute through public subscription led to a centralized welfare or Poor Law system, applied not only in Great Britain (Laqueur 2015:312–336) but also in the overseas colonies (Midgley and Piachaud 2011; Parahoo 1986; Slack 1995). A major factor in enforcing this regulation, which guaranteed formal burial even for the poor, was the fear of infectious diseases. Therefore, funeral practices were regulated and homogenized, despite the multicultural milieu of the island (Peerthum 2017). The Mauritian population was characterized by the variety of religions and belief systems combining standard features and specific rituals for upper and lower social classes (Čaval 2018; De Salle-Essoo 2011). After epidemics, the introduction of strict measures and sanctions for offenders hindered traditional forms of commemoration and burial. Firstly, towns and cities required new, well-organized burial grounds because they usually had higher mortality rates caused by crowding and poor hygiene (Hotz 2001). A clear design of new cemeteries was planned by the government, establishing the dimensions, depth, and distribution of graves in rows and sectors, delineated along social or religious ascription, as the exemplary case of Bois Marchand (Rouillard 1868:182–197). Another significant change, especially for death caused by a contagious disease, was the prohibition of *pre-mortem* practices. Belief in miasma theory effectively implied that the dead were buried as soon as possible, especially if the etiology of the disease was not well known (Snowden 2019:348). With the cholera outbreak in 1854, new regulations arose, including the imposition of burying the dead locally to avoid transportation to other districts. In case bodies needed to be transported, the use of leaden coffins became mandatory (Boodhoo 2019:127), as they guaranteed better isolation and safer management of the corpse during burial. This was a significant change in funeral practice because at their home country, most Indians, both Muslims and Hindus, used to carry their dead to the grave without a coffin (Report 1857:449). Moreover, charcoal and lime were used as disinfectants (Arnold 1993:217; Pugh 2003). Before the development of bacteriology, disinfection was usually related to fumigation, ventilation, whitewashing, or using chemical solutions, such as carbolic acid or lime (Barnes 2014:91–95). On the contrary, cremation was considered very harmful because it could spread miasmas from infected corpses. In Mauritius, this practice was rarely permitted until the last quarter of the nineteenth century (Report 1857:477) and began to spread in the twentieth century (Čaval 2018).

Only a few locations avoided the burial rules imposed by the British. During the transition from slavery to indenture, non-settled and marginal spaces outside the large estates and disconnected from direct European control allowed the development of small communities composed of escaped or freed individuals (Allen 2002; Colwell-Chanthaphonh et al. 2014). Archaeological evidence of these settlements remains sparse, due to their location in marginal areas and the less durable materials used to build shelters and huts (Chowdhury 2003). In this regard, the Le Morne Old Cemetery is an exceptional site as it is possible to understand how the emancipated community expressed its independence by creating and managing its own burial spaces.

Quarantine: Containing Disease, Controlling Migration, and Concealing Death

In conjunction with the implementation of new cemetery regulations, preventive measures against epidemics led to the creation of new quarantine stations. Given their function as temporary isolation and confinement of suspected sick people and high mortality rates, these sites became crucial to the development of landscapes of disease and death in the colonies. The introduction of different diseases in Mauritius can be traced through historical sources from the French period when recurring smallpox outbreaks occurred (Parahoo 1986). At that time, the practice of quarantine was mainly applied through the so-called “maritime quarantine,” which meant maintaining ships anchored at Belle Buoy for disinfection before disembarking people in Port Louis. Smallpox outbreaks were quite frequent on ships carrying soldiers or enslaved people: in some exceptional cases a specific place was used to house passengers from infected ships. In 1770, a pioneer lazaret had been established on Tonneliers Island, outside the capital’s harbor, and was certainly used in 1792 to control a smallpox outbreak on a slave ship (Marimoutou-Oberlé 2015:166).

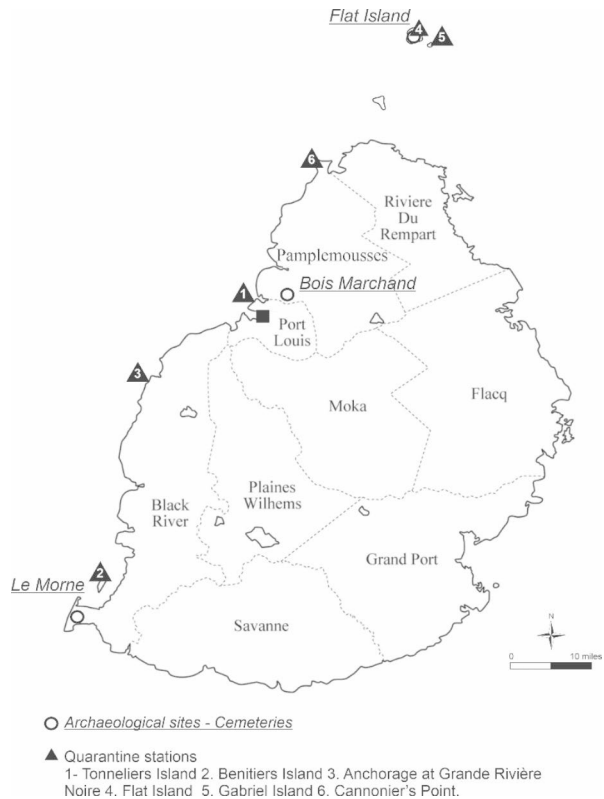
The most dramatic epidemics happened during the second half of the nineteenth century under British rule. The likely cause stems from the environmental and demographic transformations that overtook most British colonies (Arnold 1991; Kuczynski 1949). High labor demand justified taking health risks-taking: for example, ships carrying sick passengers were allowed to dock at Aapravasi Ghat, in Port Louis. Furthermore, vessels used to transport indentured laborers did not provide basic sanitation, and the voyage, often worsened due to bad weather, debilitated further the already poor condition of migrants. The catastrophic malaria epidemic in 1866-68 (Alpers 2020; Seetah 2018:291–315) occurred against a backdrop of regular outbreaks of smallpox, cholera, and fever. In March 1854, cholera, supposedly introduced by a ship carrying indentured labourers, broke out in Port Louis (Macmillan 2000:54). Cholera epidemics recurred in 1856, 1859, and 1861 (Boodhoo 2010:140; Reddi and Sookrajowa 2019). These epidemics increased the national death rate and particularly damaged the labor force (Hurgobin 2016). Dr. Beaugeard reported that in 1870, the Indians consistently had higher mortality rates than Creoles or Europeans: “the average per thousands of fatal cases among Europeans was 18.4, among Creoles 66.6 and among the Indians 158.6. This high mortality rate among the Indians was attributed to the fact that when the Indians were admitted to hospital, their physical condition was in a debilitating state because of the repeated fever caused by malaria, that they have received little or no medical care, and because of the lack

of food” (Parahoo 1986:413). To avoid the outbreak of other diseases, the British management of the indenture system underwent a radical change also due to pressure from the Indian colonial government (Hurgobin 2016:6–7). After a temporary interruption of this system in 1838, new compulsory sanitary measures were introduced. For instance, all indentured laborers underwent medical inspections before their departure at embarkation ports; then further examinations were performed at the arrival port, where they were often forced to wash themselves and change their clothes (Arnold 1993:205–206; Čaval and Cianciosi 2023). Nevertheless, the main tool for surveillance of goods and people remained the implementation of systematic quarantine in major ports. Under pressure from the Indian government, the quarantine system was introduced in the Indian Ocean, although in Britain a long tradition of opposition branded it as anti-commercial, antisocial, and anti-Christian (Bashford 2004; Fairchild 2003: 6; Maglen 2016: 12.)

In 1840, formalities concerning arrival and departure of ships were collected under Ordinance 17 (Mauritius National Archives, *Laws and Ordinances*, volume 1839–1844, pp.109–118). A clean bill of health was expected of all ships arriving in Mauritius, and if not, quarantine aboard the ships was mandatory (Marimoutou-Oberlé 2015:181–182). Therefore, in the 1850s, at least six quarantine stations were established in Mauritius: Tonneliers and Benitiers Islands for smallpox, the anchorage at Grande Rivière Noire for maritime quarantine, Flat Island (Île Plate), and neighboring Gabriel Island (Îlot Gabriel) to provide quarantine during cholera outbreaks, and finally the station at the Canonier’s Point (Pointe aux Canonniers) for other diseases (Fig. 3).

Initially, the quarantine stations were confinement sites with temporary shelters and precarious wooden structures. Thus, the main problem was not the risk of contagious disease but poor living conditions in a hostile environment. Gabriel Island illustrates this point and was thoroughly reported on following inquiry on probable causes of the cholera outbreak (Report 1857). In 1856, at the beginning of January, two ships, *Hyderee* and *Futtay Mombarrack*, each carrying more than 300 Indian laborers, reported cases of cholera and dysentery. Once docked in Port Louis, they were forced into quarantine on the Flat Island station. At the time, some construction was underway on Flat Island, as a result, the ships had to land on nearby Gabriel Island. This islet lacked adequate facilities for all immigrants. There were not enough shelters, and the water shortage was exacerbated by a cyclone, which prevented regular water provisions from being shipped from the mainland. In the report on the outbreak of cholera in Mauritius in 1856, Dr. Clerihew, the chief medical officer in Mauritius, recommended in a letter to Dr. Finlay, the quarantine doctor: “The greatest care must be taken to prevent any contamination of the atmosphere by the bodies of the dead. Dead bodies ought to be buried at as great a depth as possible, with lime over them, and a larger quantity of lime ought to be placed over the graves of those already buried and covered by a layer of sand or earth. For this purpose, a quantity of lime is sent to you by the Steamer, now despatched [sic!], and if you want more, apply for some to the Contractor at Flat Island, taking care to dip all letters to him in vinegar” (Report 1857:77). A week later, the demoralizing report of the visit Gabriel Island by Dr. Hardie, a member of the government commission, was as follows: “Graves are to leeward of the camp though not very far from it. The soil is light and

Fig. 3 Map of cited archaeological sites and quarantine stations established by the British empire in Mauritius



sandy. Each man is buried in a separate grave from 5 to 6 feet deep. Has no lime to put over the bodies. Has only two broken spades, now quite worn out, not [sic!] longer in the handles than 4 inches” (Report 1857:97).

Between January 14 and May 6, the harsh conditions, aggravated by the cholera epidemic, led to the deaths of nearly half of the 692 immigrants who landed on Gabriel Island. This tragedy catalyzed another temporary halt to Indian immigration, and the Indian government requested a permanent quarantine station on the mainland. Considering these demands, two permanent quarantine stations were established: one on Flat Island for cholera and another on the main island at Cannonier’s Point for all other infections. The spatial and functional organization of these facilities reflected the medical theory of the time on the relationship between environment and disease transmission, particularly on Flat Island, which was a new ecological space to be settled (Cianciosi et al. 2022). The main quarters were located close to the sea: orientation and ventilation of buildings, especially of the hospitals and infirmaries, were aligned to combat miasmas. Specific structures were also built for implementing fumigation and disinfection procedures. The internal segregation of the sick, exacerbated by geographical isolation, profoundly influenced the experience of illness and death for thousands of people.

Generally, the written sources shed little light on how the sick were treated or the burial practices used for the deceased (Allen 2021). Some information on burial

practices after the introduction of indenture comes from La Grande Chaloupe, a lazaret in French-controlled Reunion. Historical sources state that one of the duties of indentured laborers in the quarantine station was gathering wood for cooking and “burials,” probably for the wooden coffins. Moreover, when a smallpox outbreak occurred in 1858, the superintendent of the lazaret required a vessel from the chief medical officer to throw corpses overboard because there was insufficient land for burials (Marimoutou-Oberlé 2015:323). Despite the variety of written sources, on the subject of burial practices there is no information on the majority of the Mauritian population. The identification of archaeological sites and their investigation through state-of-the-art analysis allow researchers to grasp the complexity of Mauritian colonial society, which is often simplified by the opposition between colonizers and colonized.

Archaeological Case Studies

Based on the historical background outlined above, I will present three archaeological case studies from sites in various Mauritius zones and at different research stages. The selected cemeteries were crucial to understand the changes that epidemic crises produced in Mauritian deathscapes, considering the impact of the disease and how the disease was incorporated into the funerary record.

The oldest is the Le Morne Old Cemetery, located in a rural coastal area and used by a community of Mauritians of African descent during the first half of the nineteenth century, before cholera and malaria epidemics. In contrast, the other two sites, Bois Marchand and Flat Island, are the materialization of the policy undertaken by the British government in response to epidemics. The Bois Marchand cemetery was intended primarily for the urban or suburban population of Port Louis but also for the dead from the Civil Hospital, where plantation workers from the countryside were often hospitalized. While the burial ground in Flat Island station was mostly used to bury indentured laborers who perished during quarantine before landing in Mauritius (see Fig. 3).

Le Morne

The Le Morne Old Cemetery is a post-emancipation cemetery in operation from at least the mid-1830s, located on the southwestern tip of Mauritius. At the time of writing, it appears to be the only post-emancipation cemetery excavated from the southwestern Indian Ocean islands (Seetah 2015a). It can therefore be considered a crucial example of “informal” burial practices during slavery or soon after its abolition. The site is geographically integrated into an “ancestral” landscape: the presence of water (the lagoon and the mouth of a small stream), the insularity of the area (the peninsula becomes an island during high tide), and the vicinity of the Le Morne Brabant mountain, are strong elements of identity for the descendants of individuals buried there and the community living in the present village (Müller 2017:285–288). The absence of a religious building or chapel and the variability in the tombs’ orientation make this site distinctive in Mauritian necrogeography.

The MACH team partially excavated the cemetery between 2009 and 2015, recovering 28 interments of members of a community that lived nearby (Appleby et al. 2014; Seetah 2015b). Genetic analyses of the mitochondrial DNA suggested that individuals were mostly Mozambican and Malagasy origin (Fregel et al. 2014). Although it is possible that the cemetery was used earlier, the archaeological finds date the graves to the post-abolition period. To date, no concrete evidence of specific epidemic disease has been recorded from the osteological remains, except for a few samples of *cribra orbitalia*, a lesion that generally indicates anemia, a pathological symptom related to many causal factors, one of which is malaria (Gowland and Western 2012; Walker et al. 2009:110).

Nevertheless, diseases can be read as a part of the burial record from biological and archaeological points of view. The osteological analysis highlighted the presence of inflammatory conditions, compromised immunity, and chronic illnesses, such as malnutrition and immune-deficiency diseases (Lightfoot et al. 2020:3). In addition, artifacts that were voluntarily buried with individuals may have a connection to healing practices. A compelling example comes from grave 23, where an elderly male individual (of at least 60 years of age) was buried with five clay pipes, an iron fire striker, five flints (including two cores from which the flints were cut), and a glass bottle on the bottom of the coffin near the skull (Fig. 4). This archaeological assemblage can be interpreted as preparation for a person with a specific role, potentially a healer within his community. As in other colonial sites, some common objects such as pipes and glass bottles, became part of non-European cultural practices and were

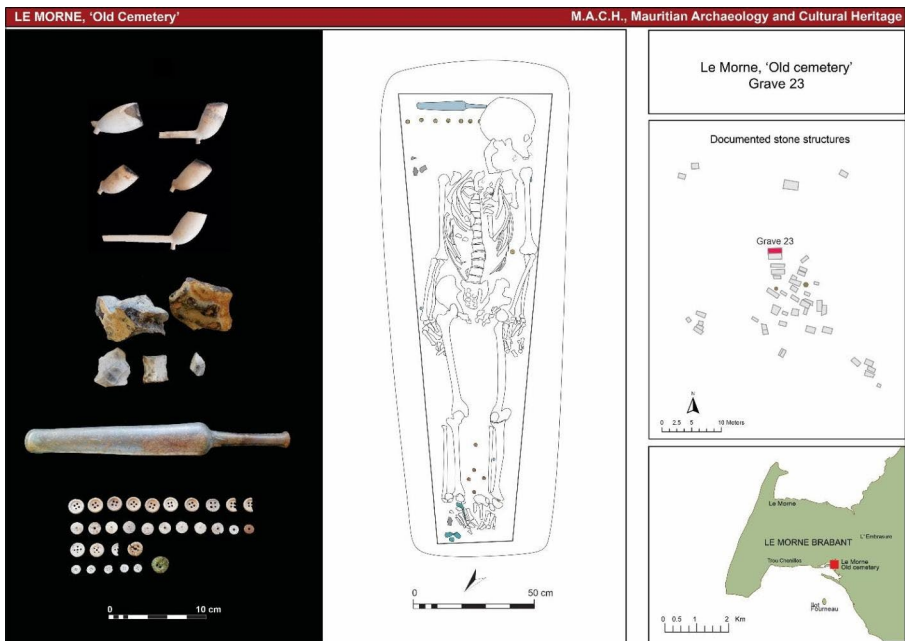


Fig. 4 Le Morne Old cemetery. Archaeological finds from grave 23. From the top down: five clay pipes, five flints, a glass bottle, and several buttons

significant as spiritual items (Rubertone 2001). Pipes were manufactured in Britain, where smoking a pipe was “seen as an essential part of working-class culture” in the Victorian era (Hilton 2000:48). Nevertheless, their use played varied roles in different contexts, including as part of the paraphernalia of healers and as grave goods for enslaved communities, as documented in the Atlantic colonies (Handler 1997; Handler and Corruccini 1983). Further confirmation of ceremonial and therapeutic uses of smoking at Le Morne are based on analysis of organic residues extracted from the pipes, which recorded the presence of tobacco, but also of other psychoactive plants such as cannabis (which was probably imported from East Africa and Madagascar and cultivated locally: Seetah et al., [in prep.](#)).

The bottle found in grave 23 exhibited signs of wear and probably contained medicine, perfume, or balsam, having been identified as a cologne bottle (Van den Bossche 2022:14), although analysis of residues has not yet been done. In early modern Western Europe, perfumes, flowers, and aromatic substances were commonly used to rectify the “bad air” and were considered very effective against contagion (Cavallo 2016:709–710; Jenner 2000:127–145). As bad smells were associated with disease, scents and aromas were associated with purification and cleanliness up to and in the nineteenth century (Tullett 2019). The importance of odor in African ethnic traditions has recently been explored within the historical settings of the Atlantic Slave Trade, where numerous rituals involved perfume and witchcraft to create fair and foul smells (Kettler 2020: 123–154). The inability to import material culture from their homelands and the prohibition of many cultural practices forced enslaved and emancipated peoples to appropriate the material culture of the colonizers (Seetah 2015b; Seetah et al. 2018). In contrast to the imposition of strict funerary rules, private beliefs were also expressed through a practice unique to Mauritius, called *longanis*, which was based on the healing power attributed to human remains and the use of personal items associated with the victim or beneficiary of the ritual. This practice, derived from ancestral African religious traditions mixed with Catholicism and Hinduism (De Salle-Essoo 2011; Sussman 1980), was largely adopted by enslaved communities (Seetah 2015b). At Le Morne *longanis* practices have incorporated environmental elements. Two old trees in the center of the cemetery had been used, even recently, for rituals, such as nailing metal bottle caps with small packets containing a cloth or a piece of paper which listed a name or a set of names (Čaval 2018; Seetah 2015b) (Fig. 5). Further archaeometric analysis of archaeological artifacts and comparison with similar contexts in Mauritius (e.g., the recent excavation of Albion cemetery) will be crucial to fully exploit Le Morne’s potential as a critical burial ground. Regarding the landscapes of disease and death, the site offers a useable informal comparative to formalized and well-governed practices instituted in public and official cemeteries.

Bois Marchand

Bois Marchand is a formal cemetery in the northern part of the island, approximately 10 km from Port Louis. Covering some 162 ha, it was the largest cemetery in the southern hemisphere when established in 1867 in response to 41,000 people who died of malaria, most of whom died at the Civil Hospital, in Port Louis (Pike 1873:110).



Fig. 5 The site of Le Morne Old Cemetery and traces of *longanis*



Fig. 6 Bois Marchand cemetery from a satellite image (in yellow the original size of the cemetery) and a recent overview of the archaeological site next to the cemetery still in use

The original location was outside the eastern side of the capital to avoid overcrowding of the existing Western cemetery. Today, it is in an urbanized area and is even crossed by the island's main highway (and formerly, a railway line). Satellite photos make clear the impact of this site on the island's landscape. Its size and intensive use reflected the enormous and rapid mortality caused by the malaria epidemic. Still, its social role was even more evident from the time it opened, so much so that it was included in the railroad network, with a train station, becoming the iconic burial site for the capital's growing population (Fig. 6).

Bois Marchand can be considered a perfect example of the definition by Laqueur (2015:283–287): “Cemeteries were where they needed to be, their location determined by the demands of instrumental reason, not history, not sentiment, not something holy.” Being a public cemetery, payable and open to all inhabitants of the island, regardless of their social status, it required the creation of segregated denominational sections (Mytum 2004:52). A map made in 1896 shows its orderly organization based on the division into large parcels with different religious and occupational ascriptions. Although most of the original area has been used continuously until today, a marginal

portion was abandoned at the end of the nineteenth century. This undisturbed area proved to be of significant archaeological interest and was investigated by the MACH team between 2012 and 2018 (Čaval 2023). The recovered individuals represent a cross-section of the Mauritian population, including South Asian and African descendants, as genetic analysis has shown (Fregel et al. 2014). Except for one ossuary with at least 12 individuals (MNI), the 48 excavated graves documented 21 individual burials and 25 double burials for a total of 47 individuals, distributed in narrow and regular rows. Due to the ferrallitic soil in the area, the human remains were in a poor state of preservation, and this precluded a thorough osteological study of the skeletons (Lightfoot et al. 2020:4). However, archaeological research has shown that the need for a quick burial did not prevent some preparation of the deceased. Despite the absence of epitaphs or gravestones, the presence of personal items (buttons, earrings, and rings), other artifacts (coins and rosaries), and formal commemoration practices, such as the use of wooden and metal coffins as well as simple shrouds, indicated the ethnic origin of the deceased. These finds indicate the possibility that the relatives of the deceased negotiated the rules or at least adapted them to their mourning wishes. A confirmation of infectious diseases as the cause of death was the use of quicklime as a disinfectant in some burials, although evidence of bioarcheological markers of disease cannot be detected (Schotsmans et al. 2015).

Bois Marchand is a paradigmatic example of the planned management of burials enacted by the British. The standard organization of graves was in response to the demand for rapid and systematic burial to accommodate the high death toll caused by epidemics. The cemetery was also used during the plague epidemic at the end of the nineteenth century (Campbell and Colonia 1899) and, more recently, for the victims of Covid-19 in 2021. The continued observance of these practices in modern burials demonstrates a long-established use of the site and a strong connection with the past.

Flat Island

Flat Island, an islet of some 2.5 km², situated approximately 12 km offshore from the northernmost tip of Mauritius, was used as a quarantine station between the middle of the nineteenth to the beginning of the twentieth centuries (Pike 1873:203–210). After the tragedy on Gabriel Island in 1856, a permanent quarantine station was planned to guarantee a resistant shelter for travelers placed in quarantine on account of confirmed or suspected cases of cholera. Research in the Mauritius National Archives showed that at least 43 ships carrying indentured laborers landed at this station from 1857 to 1877 (Miao Foh 2018). Thomas Corby, the government's surveyor, drew a detailed map in 1857, showing how the islet was organized as a completely new medical space (Cianciosi et al. 2022). There were two main quarters: the European one with stone buildings along the eastern coast; and two camps for indentured workers composed of wooden huts on the western coast. The prevailing notion of miasma, combined with colonial elitism, resulted in preferential treatment for Europeans, mainly the officials in charge of the station. The European quarter was established on the windward side of the island to benefit from the direction of the prevailing wind, which blew away any disease. Instead, on the leeward side, at Palissade Bay, immi-

grants in quarantine were housed in overcrowded barracks, with additional restrictions on mobility, due to the need for separation between sick and healthy people.

The construction and maintenance work involved a massive investment of time and resources as all the raw materials for infrastructure, water, and food supplies, had to be shipped from the mainland. Further accommodations and improvements were made up to 1859, such as the planting of some 1,000 filao trees to counter strong winds, to provide shade, and timber, and building a distilling apparatus to obtain drinkable water from seawater (Miao Foh 2018:41–42). Lack of fresh water and risk of contamination were associated with disease, primarily cholera, the transmission of which depended on climatic factors and human activities (Alpers 2013:125). The water tanks often represented the first cause of the proliferation of *vibrio cholerae*, especially in places of poor sewage, and inadequate drinking water sanitation (Snowden 2019:262–263). In 1873, a request was made for six additional huts, with water tanks, cookhouses, latrines, and lavatories, to accommodate immigrants from at least two ships (around 700–800 people). In addition, it was requested that the floor of the camps be made of wood instead of sand to reduce the onset of bronchitis and ophthalmic diseases. Finally, by raising the roof of the huts better ventilation was achieved. Despite these improvements, in 1875, the Indian government claimed that the accommodation provided to immigrants was inadequate when many convoys arrived at once (Deerpalsingh and Carter 1996:236–237). Thus, this station was not

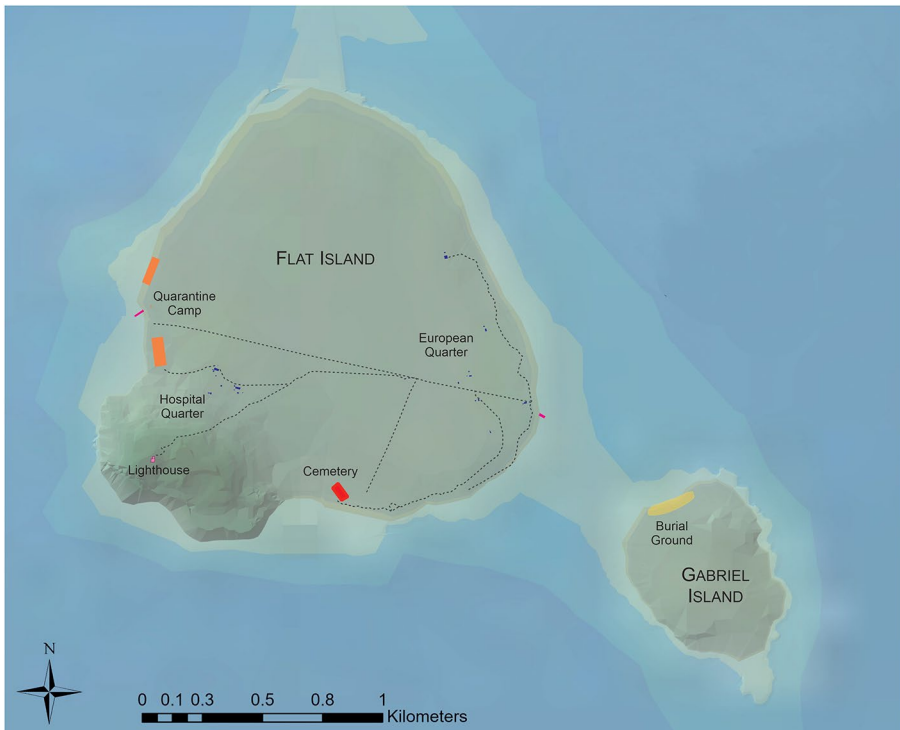


Fig. 7 Map of Flat Island and Gabriel Island with the location of the main paths and quarantine station quarters

particularly effective in preventing the outbreak of cholera epidemics on the mainland or in improving the poor health conditions of immigrants (Fig. 7).

Although there are many documents about the establishment and management of the quarantine station, there are only brief notes on the number of sick and dead in Flat Island (Miao Foh 2018). A reticence in mentioning the treatment of death characterizes all the documentary repertoire analyzed so far, including medical reports. It is likely that the British government wanted to suppress information about epidemic outbreaks at the quarantine station for economic and social reasons, further exacerbating the problem of underrepresentation of mortality rates. During recent archaeological fieldwork (2022), the quarantine station's cemetery was surveyed. The cemetery was located in Barclay Bay, on the southwestern coast of the island, at the foot of the lighthouse, away from the European quarter and quarantine camps to prevent contamination. The cemetery was enclosed by a meter-high basalt wall and two main paths, made of stone cobblestones with curbs, creating the alignment of the rows of graves running from northwest to southeast. The main entrance was located on the northwest side of the cemetery, and nineteen graves, marked by epitaphs, concrete sarcophagi, chests, tombstones, or a frame made of aligned stones, were located. We found two main groups of graves, marked on the surface by stones: one along the northeast side and a row along the main paths in the central area of the cemetery (Fig. 8). Some preserved epitaphs indicate a chronological range between 1878 and 1919. All the graves mapped were likely related to European people: officials, doctors, and their families who died on the island. The cemetery used for immigrants who died at the quarantine station was supposed to be more extensive but has not yet been identified in the field. Gabriel Island was also used to bury hundreds of immigrants during 1856, but there were no indications on the ground surface, and archaeological test pits revealed no evidence of graves.

Discussion

Three main factors have been considered for the development of Mauritian deathscapes: the diaspora of people from different geographical and cultural backgrounds, the alteration of the island's environment due to the exploitation of natural sources, and the emergence of epidemic diseases.

Simplifying the combination of these three elements, the progressive deforestation, promoted under Dutch and French rule, can be associated with the slavery system and the diaspora of African and Malagasy people. In this period, the outbreak of smallpox epidemics mainly affected the population of African ancestry and was favored by overcrowded conditions and difficulties with massive vaccination in the colonies. Then, the cholera and malaria epidemics were related to the British empire and the establishment of the indenture system, implicating the diaspora of thousands of South-Asian people and indiscriminate exploitation of soil for sugar plantations. Even at this stage, the labor force suffered the worst consequences of epidemics. Although funerary practices are usually related to religious beliefs and cultural background, the sites studied in Mauritius demonstrate the influence of the environment on the medical theories and healing practices of the time.

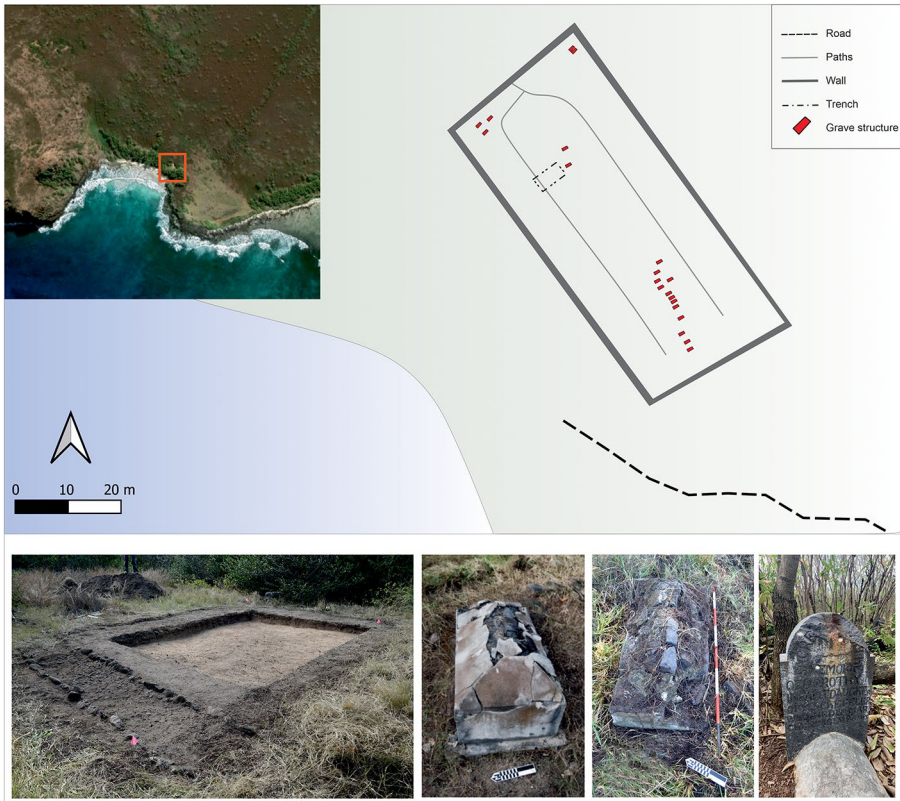


Fig. 8 Top: Map of the cemetery surveyed in 2022. Bottom: The trench and examples of tombstones documented in the cemetery

The site at Le Morne shows how enslaved people, or an early emancipated community, broke away from the conventional deathscapes imposed by the colonizers, creating their own connection with their surroundings, and enacting their healing practices. The importance of the Le Morne Old Cemetery in Mauritian necrogeography is displayed in its location integrated into an “ancestral” landscape and the role of performative space that has been preserved to the present day. Disease was incorporated into the burial record, but its role was not comparable with the impact of epidemic disease as a sociocultural phenomenon (Inhorn and Brown 1990) exhibited at the other two sites.

In contrast with Le Morne, where a convergence of cultural and natural landscapes can be seen, Bois Marchand and Flat Island materialized the transformation of the landscapes of disease and death during and after epidemics, where the built environment prevailed over the natural, and public health regulation superseded the need for private mourning. In Bois Marchand, despite the funeral practice accorded in the same space to all social groups and religions, the sense of detachment imposed by the British toward the deceased is amplified by the rules imposed, the confinement of the site within an enclosure, the strict segregation of sections, and containment of free

religious practices. The financial investment made by the British government was not only limited to the opening of one of the largest colonial cemeteries but also to the infrastructure and human resources associated with it, making it an impressive site in the island's necrogeography.

The investment in the bureaucratic and structural apparatus promoted by British policy also entailed the construction of new institutions for disease surveillance. Intensive use of quarantine stations for several decades of the nineteenth century shaped Mauritian deathscapes, including uninhabited islets and marginal sites, almost unexplored until then. From an uninhabited and healthy islet, Flat Island became the colony's main lazaret and the first landing site for thousands of indentured laborers. The newly built environment was, in theory, supposed to promote the wellbeing of immigrants, preparing them for employment in sugar estates on the mainland, but in practice, it concretized the stigma of contagion brought by immigrants. The strict control on mobility and activities of immigrants, combined with the brevity of their stay at the station and the condition of health risk to which they were usually subjected, made the practice of their rituals more difficult and less visible on the ground.

Sites such as the Le Morne Old Cemetery, still underrepresented in the archaeological literature, are central to understanding the process of place-making by small communities living on the fringes of the colonies during the period of slavery or emancipation (Rubertone 2008). Bois Marchand and Flat Island are embedded in a common process of transformation in necrogeography promoted by the colonizers. Their influence on the social and cultural habits of the entire population is still evident. The identification of these sites with disease and the fear of contagion has led to considerable denial of memory in the contemporary community. However, the process of remembering the two sites has been different, as the first site continues to be used and the second has been completely abandoned. The continuous use of the Bois Marchand cemetery made it possible to preserve the portion used during the historical epidemics and to keep it indirectly connected to ritual activities. In addition, archaeological investigations revealed an unexpected variability of material culture collected from the graves and opened a window into the complexity of burial management even during public health emergencies. Instead, quarantine stations, usually equated with disease and harsh confinement, became the places where not only mortality rates were highest, but also the process of erasing the past was deepest. The lack of a stable community to take care of the burials fostered the inevitable oblivion. In addition, the distance of the islet from the mainland, its geography, and, above all, fear of disease favored episodes of necroviolence (Mbembé and Meintjes 2003), such as throwing bodies into the sea or neglecting any burial rituals.

Conclusion

Mauritius is an ideal place to understand the complex historical entanglement between humans and their environment (Norder et al. 2017; Seetah et al. 2022), like other islands where the history of human colonization and corresponding impacts is recent and well documented (Keegan and Diamond 1987; Hunt et al. 2017). The main agents of this change were not only the predominant European elite (Crosby

1986) but also thousands of people who moved there or passed through as enslaved or indentured laborers, which became advocates or mediators of the various waves of colonization and cultural influences (Carey 2018; Seetah et al. 2022; van Dommelen 2014). Nevertheless, natural agents, such as cyclones and monsoons, as well as pathogens, have altered the island's ecology, albeit indirectly and unintentionally through. Despite their relatively short chronology, landscapes of disease and death are the result of the intense modern history of the island and a fundamental component of its built environment and cultural landscape.

The archaeo-historical study of cemeteries reveals the complexity of colonial necrogeography through a combination of environmental, archival, and material data (Allen 2021). Epidemics that were common in the overseas colonies, particularly those associated with the migration of thousands of people (Harrison 2004), forced and free laborers, were catalysts for changing the landscape of both the living and the dead. These changes included collective healing rituals, individual burial practices, group mourning, and acts of discrimination and exclusion (Maddrell 2020). Through the lens of disease ecology, it is possible to analyze how the relationship between the environment and burials evolved and how the pressure of epidemic diseases on colonial governments influenced the shaping of deathscapes. As this paper has shown, new research focusing on landscapes of disease and death during the colonial period would be a valuable contribution to a broader discussion of the impact of epidemic diseases as a sociocultural phenomenon and the resulting processes of memorialization and oblivion as political constructs.

Acknowledgments I thank Christelle Miao Foh, who conducted the research on archival sources as part of the Aapravasi Ghat Trust Fund Research Plan (2016–2021), for providing her report and for giving me suggestions to facilitate my research in the Mauritius National Archives. My deepest gratitude goes to staff members at Mauritius National Parks and Conservation Services for their support during fieldwork on Flat Island and Gabriel Island. I am especially grateful to Prof. Seetah and his team for involving me in the MACH project and supervising me during the fieldwork in Mauritius.

This research was undertaken as part of the European Union's Horizon 2020 research and innovation program under the Marie Skłodowska-Curie grant agreement No 897004.

Declarations

Conflict of Interest The author declares no conflict of interest.

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